

2023 ANNUAL GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
ASH LANDFILL
SPRINGVILLE GENERATING STATION
SPRINGVILLE, ARIZONA

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1. Introduction

This 2023 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) addresses the Ash Landfill at the Springerville Generating Station (SGS), operated by Tucson Electric Power Company (TEP). This Annual Report was developed in accordance with the U.S. Environmental Protection Agency Coal Combustion Residual (CCR) Rule (Rule) effective October 19, 2015, including subsequent revisions, specifically Title 40 Code of Federal Regulations (40 CFR), subsection 257.90(e). This Annual Report documents the groundwater monitoring system for the Ash Landfill consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2023) and demonstrates compliance with the Rule. The specific requirements for the Annual Report listed in § 257.90(e) of the Rule are provided in Sections 1 and 2 of this Annual Report and are in bold italic font, followed by a narrative describing how each Rule requirement has been met.

1.1 40 CFR § 257.90(e)(6) SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

1.1.1 40 CFR § 257.90(e)(6)(i) – Initial Monitoring Program

At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the start of the current annual reporting period (January 1, 2023), the Ash Landfill was operating under a detection monitoring program in compliance with 40 CFR § 257.94.

1.1.2 40 CFR § 257.90(e)(6)(ii) – Final Monitoring Program

At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the end of the current annual reporting period (December 31, 2023), the Ash Landfill was operating under a detection monitoring program in compliance with 40 CFR § 257.94.

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

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

1.1.3.1 40 CFR § 257.90(e)(6)(iii)(a) – Statistically Significant Increase Constituents

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

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No statistically significant increases (SSI) over background were identified in downgradient monitoring wells during the previous calendar year (2023). The statistical analyses were completed within 90 days of receipt of laboratory data and were conducted pursuant to 40 CFR § 257.93 of the CCR Rule. Summaries of the statistical analyses for February 2023 and August 2023 are included in Tables I and II, respectively.

1.1.3.2 40 CFR § 257.90(e)(6)(iii)(b) – Initiation of Assessment Monitoring

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

No SSIs over background were identified in downgradient monitoring wells during the previous calendar year (2023); therefore, an assessment monitoring program was not initiated for the Ash Landfill in 2023.

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

If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to § 257.95(g) include all of the following:

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

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

The Ash Landfill remained in detection monitoring in 2023. Therefore, no statistically significant levels above the groundwater protection standard for constituents listed in Appendix IV were identified for the Ash Landfill.

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

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

No assessment of corrective measures was required to be initiated in 2023 for this unit. The Ash Landfill remained in detection monitoring during 2023.

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

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

An assessment of corrective measures was not required for the Ash Landfill in 2023; therefore, a public meeting was not held.

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

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

No assessment of corrective measures was required to be initiated in 2023 for this unit. The Ash Landfill remained in detection monitoring during 2023.

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

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

The Ash Landfill remains in detection monitoring, and no remedy was required to be selected.

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

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

No remedial activities were required in 2023; therefore, no demonstration or certification is applicable for this unit.

2. 40 CFR § 257.90 Applicability

2.1 40 CFR § 257.90(a)

All CCR Landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under §§ 257.90 through 257.99, except as provided in paragraph (g) [Suspension of groundwater monitoring requirements] of this section.

TEP has installed and certified a groundwater monitoring system at the SGS Ash Landfill. The Ash Landfill is subject to the groundwater monitoring and corrective action requirements described under 40 CFR §§ 257.90 through 257.98. This document addresses the requirement for the Owner/Operator to prepare an Annual Report per § 257.90(e).

2.2 40 CFR § 257.90(e) – SUMMARY

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

This Annual Report describes monitoring completed and actions taken for the groundwater monitoring system at the SGS Ash Landfill as required by the Rule. Groundwater sampling and analysis was conducted in accordance with requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.94 is provided in this report. This Annual Report documents the applicable groundwater-related activities completed in the calendar year 2023.

2.2.1 Status of the Groundwater Monitoring Program

Statistical analyses of detection monitoring data collected in February and August 2023 were completed in 2023 and indicated no Appendix III SSIs at downgradient monitoring wells at SGS Ash Landfill. Summaries of the statistical analyses for February and August 2023 are included in Tables I and II, respectively. The Ash Landfill remained in the detection monitoring program during 2023.

2.2.2 Key Actions Completed

The 2022 Annual Groundwater Monitoring and Corrective Action Report was completed in January 2023. Semiannual detection monitoring events were completed in February and August of 2023.

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Statistical analyses were completed within 90 days of receipt of laboratory data for the February and August 2023 semiannual detection monitoring sampling events and were conducted pursuant to 40 CFR § 257.93 of the CCR Rule. No SSIs were determined for these sampling events in downgradient monitoring wells.

2.2.3 Verification Sampling

Two potential issues were encountered during groundwater monitoring activities in 2023. Initial concentrations of Appendix III constituents were detected above statistical background concentrations at two monitoring wells during two separate monitoring events. Verification sampling was conducted to confirm the elevated concentrations and to determine if additional actions were needed, as described below.

- An elevated total dissolved solids (TDS) concentration was detected in the sample collected from monitoring well CCR-2D during the February 2023 semiannual detection monitoring sampling event. A verification sample was collected from the monitoring well in April 2023. The verification sample TDS result was below the statistical background concentration and consistent with historical concentrations at this location indicating that the February 2023 result was an outlier.
- An elevated fluoride concentration was detected in the sample collected from upgradient monitoring well CCR-1U during the August 2023 semiannual detection monitoring sampling event. A verification sample was collected from monitoring well CCR-1U in October 2023. The verification sample fluoride result was below the statistical background concentration.

2.2.4 Actions to Resolve Potential Issues

The resolution of potential issues encountered in 2023 included verification sampling, as described above. The analytical results were revised accordingly. No other potential issues (i.e., damaged wells, issues with sample collection or lack of sampling, and problems with analytical analysis) were encountered at the Ash Landfill in 2023; therefore, no additional actions to resolve issues were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities planned for 2024 include completion of the 2023 Annual Groundwater Monitoring and Corrective Action Report, semiannual detection monitoring, and subsequent statistical evaluations.

2.3 40 CFR § 257.90(e) – INFORMATION

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

2.3.1 40 CFR § 257.90(e)(1)

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

As required by § 257.90(e)(1), a map showing the locations of the CCR unit and associated upgradient and downgradient monitoring wells for the Ash Landfill is included in this report as Figure 1.

2.3.2 40 CFR § 257.90(e)(2) – Monitoring System Changes

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

No monitoring wells were installed or decommissioned as part of the certified groundwater monitoring network in 2023.

TEP collected one groundwater sample from an existing monitoring well (CCR-4D) located at the downgradient edge of waste that may be used to supplement the existing monitoring network. An evaluation to determine the relationship of the existing monitoring well to the groundwater monitoring network is ongoing.

2.3.3 40 CFR § 257.90(e)(3) – Summary of Sampling Events

In addition to all the monitoring data obtained under § 257.90 through § 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

In accordance with § 257.94(b), two independent detection monitoring samples from each background and downgradient monitoring well were collected in 2023. One groundwater sample was collected from monitoring well CCR-4D in August 2023. A summary including the sample names, sample dates, field parameters, and monitoring data obtained for the groundwater monitoring program for the SGS Ash Landfill is presented in Table III with corresponding laboratory analytical reports provided in Attachment 1 of this report. Groundwater potentiometric elevation contour maps, along with calculated groundwater flow velocity and direction at each groundwater monitoring sampling event in 2023, are provided in Figures 2 and 3.

2.3.4 40 CFR § 257.90(e)(4) – Monitoring Transition Narrative

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

Data from the detection monitoring groundwater sampling events for the downgradient monitoring wells were compared to the calculated background concentrations (upper prediction limits) for the Appendix III constituents at the Ash Landfill. The background concentrations provided in Table I and Table II were updated based on statistical evaluation of analytical results collected through 2022. The updated values were used for evaluations of the February 2023 and August 2023 semiannual detection monitoring results.

Once the data is verified, a sample concentration greater than the prediction limit (PL) is considered to represent a SSI over background. The statistical analyses completed in 2023 for the February and August 2023 semiannual detection monitoring sampling events indicated no SSIs for Appendix III constituents in downgradient monitoring wells. The SGS Ash Landfill remains in detection monitoring; therefore, there is no transition between monitoring programs.

2.3.5 40 CFR § 257.90(e)(5) – Other Requirements

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

This Annual Report documents activities conducted to comply with § 257.90 through § 257.94 of the Rule. It is understood that there are supplemental references in § 257.90 through § 257.98 to information that must be placed in the Annual Report. The following requirements include relevant and required information in the Annual Report for activities completed in calendar year 2023.

2.3.5.1 40 CFR § 257.94(d)(3) – Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An alternative groundwater detection monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.2 40 CFR § 257.94(e)(2) – Detection Monitoring Alternate Source Demonstration

The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional

engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

No Appendix III SSIs were indicated in downgradient monitoring wells by statistical analyses completed in 2023; consequently, no alternative source demonstration or certification was required during 2023.

2.3.5.3 40 CFR § 257.95(c)(3) – Demonstration for Alternative Assessment Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

The SGS Ash Landfill remains in detection monitoring and an alternative groundwater assessment monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.4 40 CFR § 257.95(d)(3) – Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

The SGS Ash Landfill remained in detection monitoring in 2023. Consequently, TEP is not required to establish groundwater protection standards for this CCR unit, and this criterion is not applicable.

2.3.5.5 40 CFR § 257.95(g)(3)(ii) – Assessment Monitoring Alternate Source Demonstration

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the

approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Assessment monitoring statistical analyses were not required or completed in 2023. Therefore, this criterion is not applicable.

2.3.5.6 40 CFR § 257.96(a) – Demonstration for Additional Time for Assessment of Corrective Measures

Within 90 days of finding that any constituent listed in Appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Assessment monitoring statistical analyses were not required or completed in 2023. Therefore, this criterion is not applicable.

2.4 40 CFR § 257.90(f)

The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in § 257.105(h), the notification requirements specified in § 257.106(h), and the internet requirements specified in § 257.107(h).

In order to comply with the Rule recordkeeping requirements, the following actions must be completed:

- Pursuant to § 257.105(h)(1), this Annual Report must be placed in the facility's operating record.
- Pursuant to § 257.106(h)(1), notification must be sent to the relevant State Director and/or Tribal authority within 30 days of this Annual Report being placed on the facility's operating record [§ 257.106(d)].
- Pursuant to § 257.107(h)(1), this Annual Report must be posted to the TEP CCR website within 30 days of this Annual Report being placed on the facility's operating record [§ 257.107(d)].

3. Summary

TEP completed the two semi-annual groundwater monitoring sampling events, and two subsequent verification sampling events in 2023 in accordance with 40 CFR § 257.94(b). The analytical results for Appendix III constituents generated from these sampling events were compared against updated background values to identify potential exceedances. The background groundwater quality values were updated based on statistical evaluation of analytical results collected through 2022.

No Appendix III SSIs were indicated at downgradient monitoring wells based on statistical analyses completed in 2023. The SGS Ash Landfill remains under a detection monitoring program. No corrective actions were required for the downgradient compliance wells.

TABLES

TABLE I
FEBRUARY 2023 SUMMARY OF SEMIANNUAL DETECTION
GROUNDWATER MONITORING STATISTICAL EVALUATION
TUCSON ELECTRIC POWER COMPANY
SPRINGERVILLE GENERATING STATION, ASH LANDFILL
SPRINGERVILLE, ARIZONA

Well Number	February 2023 Sampling Result	Outliers Removed	Analysis (Interwell/Intrawell)	Background Distribution	Trend	Background Value (UPL) ¹	SSI (Yes/No)
CCR Appendix-III: Boron, Total (mg/L)							
CCR-1U (upgradient)	0.82	No	Intrawell	Parametric	Stable	0.97	No
CCR-2U (upgradient)	1.1	No	Intrawell	Non-Parametric	Stable	1.20	No
CCR-1D	0.79	No	Intrawell	Parametric	Stable	0.96	No
CCR-2D	0.85	No	Intrawell	Parametric	Stable	1.03	No
CCR-3D	0.82	No	Intrawell	Parametric	Stable	1.03	No
CCR Appendix-III: Calcium, Total (mg/L)							
CCR-1U (upgradient)	480	No	Intrawell	Parametric	Stable	508	No
CCR-2U (upgradient)	740	No	Intrawell	Parametric	Stable	756	No
CCR-1D	470	No	Intrawell	Parametric	Increasing	546	No
CCR-2D	680	No	Intrawell	Parametric	Stable	697	No
CCR-3D	460	No	Intrawell	Parametric	Stable	504	No
CCR Appendix-III: Chloride (mg/L)							
CCR-1U (upgradient)	500	Yes ²	Intrawell	Parametric	Stable	588	No
CCR-2U (upgradient)	440	No	Intrawell	Parametric	Stable	513	No
CCR-1D	480	No	Intrawell	Parametric	Stable	574	No
CCR-2D	510	No	Intrawell	Parametric	Stable	610	No
CCR-3D	510	No	Intrawell	Parametric	Stable	625	No
CCR Appendix-III: Fluoride (mg/L)							
CCR-1U (upgradient)	3.3	No	Intrawell	Parametric	Increasing	3.7	No
CCR-2U (upgradient)	2.4	No	Intrawell	Parametric	Stable	3.0	No
CCR-1D	3.0	No	Intrawell	Non-Parametric	Increasing	3.0	No
CCR-2D	2.8	No	Intrawell	Non-Parametric	Stable	2.8	No
CCR-3D	3.0	No	Intrawell	Non-Parametric	Increasing	3.2	No
CCR Appendix-III: pH (lab) (SU)							
CCR-1U (upgradient)	6.7	No	Intrawell	Parametric	Stable	7.4	No
CCR-2U (upgradient)	6.5	No	Intrawell	Parametric	Stable	7.0	No
CCR-1D	6.7	No	Intrawell	Parametric	Stable	7.3	No
CCR-2D	6.7	No	Intrawell	Parametric	Stable	7.2	No
CCR-3D	6.7	No	Intrawell	Parametric	Stable	7.2	No
CCR Appendix-III: Sulfate (mg/L)							
CCR-1U (upgradient)	1,300	No	Intrawell	Parametric	Increasing	1,409	No
CCR-2U (upgradient)	1,900	No	Intrawell	Parametric	Stable	2,093	No
CCR-1D	1,200	No	Intrawell	Parametric	Stable	1,568	No
CCR-2D	1,700	No	Intrawell	Parametric	Stable	1,983	No
CCR-3D	1,300	No	Intrawell	Parametric	Stable	1,488	No
CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)							
CCR-1U (upgradient)	3,200	No	Intrawell	Parametric	Stable	3,710	No
CCR-2U (upgradient)	3,900	No	Intrawell	Non-Parametric	Stable	4,740	No
CCR-1D	638	No	Intrawell	Parametric	Increasing	3,528	No
CCR-2D	3,800 ³	No	Intrawell	Non-Parametric	Stable	3,800	No
CCR-3D	3,000	No	Intrawell	Parametric	Stable	3,515	No

Notes:

¹ UPL calculated using intrawell background data collected from 11/15/2016 through 09/07/2022.

² The chloride concentration from monitoring well CCR-1U from October 2018 was removed from UPL calculation since it was a magnitude lower than historic chloride concentrations at the monitoring well and is considered a statistical outlier.

³ Verification sample collected from the monitoring well in April 2023 to confirm original result collected during the February 2023 semi-annual detection monitoring sampling event.

CCR = coal combustion residual

mg/L = milligrams per Liter

SSI = statistically significant increase

SU = standard unit

UPL = upper prediction limit

TABLE II
AUGUST 2023 SUMMARY OF SEMIANNUAL DETECTION
GROUNDWATER MONITORING STATISTICAL EVALUATION
TUCSON ELECTRIC POWER COMPANY
SPRINGERVILLE GENERATING STATION, ASH LANDFILL
SPRINGERVILLE, ARIZONA

Well Number	August 2023 Sampling Result	Outliers Removed	Analysis (Interwell/Intrawell)	Background Distribution	Trend	Background Value (UPL) ¹	SSI (Yes/No)
CCR Appendix-III: Boron, Total (mg/L)							
CCR-1U (upgradient)	0.9	No	Intrawell	Parametric	Stable	0.97	No
CCR-2U (upgradient)	1.2	No	Intrawell	Non-Parametric	Stable	1.20	No
CCR-1D	0.90	No	Intrawell	Parametric	Stable	0.96	No
CCR-2D	0.94	No	Intrawell	Parametric	Stable	1.03	No
CCR-3D	0.89	No	Intrawell	Parametric	Stable	1.03	No
CCR Appendix-III: Calcium, Total (mg/L)							
CCR-1U (upgradient)	460	No	Intrawell	Parametric	Stable	508	No
CCR-2U (upgradient)	690	No	Intrawell	Parametric	Stable	756	No
CCR-1D	480	No	Intrawell	Parametric	Increasing	546	No
CCR-2D	640	No	Intrawell	Parametric	Stable	697	No
CCR-3D	440	No	Intrawell	Parametric	Stable	504	No
CCR Appendix-III: Chloride (mg/L)							
CCR-1U (upgradient)	489	Yes ²	Intrawell	Parametric	Stable	588	No
CCR-2U (upgradient)	418	No	Intrawell	Parametric	Stable	513	No
CCR-1D	468	No	Intrawell	Parametric	Stable	574	No
CCR-2D	488	No	Intrawell	Parametric	Stable	610	No
CCR-3D	499	No	Intrawell	Parametric	Stable	625	No
CCR Appendix-III: Fluoride (mg/L)							
CCR-1U (upgradient)	3.70 ³	No	Intrawell	Parametric	Increasing	3.7	No
CCR-2U (upgradient)	2.43	No	Intrawell	Parametric	Stable	3.0	No
CCR-1D	2.86	No	Intrawell	Non-Parametric	Increasing	3.0	No
CCR-2D	2.71	No	Intrawell	Non-Parametric	Stable	2.8	No
CCR-3D	3.02	No	Intrawell	Non-Parametric	Increasing	3.2	No
CCR Appendix-III: pH (lab) (SU)							
CCR-1U (upgradient)	6.6	No	Intrawell	Parametric	Stable	7.4	No
CCR-2U (upgradient)	6.5	No	Intrawell	Parametric	Stable	7.0	No
CCR-1D	6.6	No	Intrawell	Parametric	Stable	7.3	No
CCR-2D	6.5	No	Intrawell	Parametric	Stable	7.2	No
CCR-3D	6.6	No	Intrawell	Parametric	Stable	7.2	No
CCR Appendix-III: Sulfate (mg/L)							
CCR-1U (upgradient)	1,270	No	Intrawell	Parametric	Increasing	1,409	No
CCR-2U (upgradient)	1,820	No	Intrawell	Parametric	Stable	2,093	No
CCR-1D	1,250	No	Intrawell	Parametric	Stable	1,568	No
CCR-2D	1,670	No	Intrawell	Parametric	Stable	1,983	No
CCR-3D	1,240	No	Intrawell	Parametric	Stable	1,488	No
CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)							
CCR-1U (upgradient)	3,180	No	Intrawell	Parametric	Stable	3,710	No
CCR-2U (upgradient)	3,900	No	Intrawell	Non-Parametric	Stable	4,740	No
CCR-1D	3,170	No	Intrawell	Parametric	Increasing	3,528	No
CCR-2D	3,700	No	Intrawell	Non-Parametric	Stable	3,800	No
CCR-3D	3,130	No	Intrawell	Parametric	Stable	3,515	No

Notes:

¹ UPL calculated using intrawell background data collected from 11/15/2016 through 09/07/2022.

² The chloride concentration from monitoring well CCR-1U from October 2018 was removed from UPL calculations since it was a magnitude lower than historic chloride concentrations at the monitoring well and is considered a statistical outlier.

³ Verification sample collected from the monitoring well in October 2023 to confirm original result collected during the August 2023 semi-annual detection monitoring sampling event.

CCR = coal combustion residual

mg/L = milligrams per liter

SSI = statistically significant increase

SU = standard unit

UPL = upper prediction limit

TABLE III
SUMMARY OF ANALYTICAL RESULTS - 2023 DETECTION MONITORING
TUCSON ELECTRIC POWER COMPANY
SPRINGERVILLE GENERATING STATION, ASH LANDFILL
SPRINGERVILLE, ARIZONA

Location	Upgradient						Downgradient								
	CCR-1U			CCR-2U			CCR-1D		CCR-2D				CCR-3D		CCR-4D
Measure Point (TOC)	6951.63			6782.62			6708.98		6837.64				6867.04		6818.99
Sample Name	CCR-1U	CCR-1U	CCR-1U (RESAMPLE)	CCR-2U	CCR-2U DUP	CCR-2U	CCR-1D	CCR-1D	CCR-2D	CCR-2D (RESAMPLE)	CCR-2D	CCR-2D DUP	CCR-3D	CCR-3D	ALF-Shallow Well
Sample Date	2/20/2023	8/22/2023	10/11/2023	2/20/2023	2/21/2023	8/22/2023	2/21/2023	8/23/2023	2/20/2023	4/13/2023	8/22/2023	8/22/2023	2/20/2023	8/22/2023	8/23/2023
Depth to Water (ft btoc)	804.05	803.54	803.77	798.05	-	805.49	843.89	843.11	897.1	-	896.34	-	828.23	827.96	218.15
Temperature (Deg C)	14.8	16.7	15.6	15.2	-	18.2	14.7	17.5	13	14.6	16.4	-	14.6	17.9	16.4
Conductivity (µS/cm)	4,137	4,199	3,388	4,504	-	4,372	3,854	3,930	4,618	4,492	3,848	-	4,051	3,995	11943
Turbidity (NTU)	2	3	10	2	-	2	2	3	4	4	4	-	2	3	41
pH, Field (su)	6.94	7.04	6.78	6.69	-	6.86	6.82	6.94	6.80	6.72	6.90	-	6.90	7.03	5.62
Dissolved Oxygen, Field (mg/L)	6.32	5.81	0.47	1.42	-	1.15	0.33	0.54	1.95	0.91	1.96	-	0.85	0.43	1.15
ORP, Field (mV)	-40.3	-30.8	-34.4	-10.6	-	2.8	-0.4	-8.9	-19.9	74.5	20.8	-	-17.3	-12.7	-132.2
Boron, Total (mg/L)	0.82	0.90	-	1.1	1.1	1.2	0.79	0.90	0.85	-	0.94	0.94	0.82	0.89	1.3
Calcium, Total (mg/L)	480	460	-	740	740	690	470	480	680	-	640	640	460	440	720
Chloride (mg/L)	500	489	-	440	440	418	480	468	510	-	488	493	510	499	3200
Fluoride (mg/L)	3.3	3.59	3.70	2.4	2.5	2.43	3.0	2.86	2.8	-	2.71	2.71	3.0	3.02	1.2
Sulfate (mg/L)	1,300	1,270	-	1,900	1,900	1,820	1,200	1,250	1,700	-	1,670	1,690	1,300	1,240	2,500
pH (su)	6.7	6.6	-	6.5	6.5	6.5	6.7	6.6	6.7	-	6.5	6.5	6.7	6.6	7.0
TDS (mg/L)	3,200	3,180	-	3,900	3,800	3,900	638	3,170	7,790	3,800	3,700	3,720	3,000	3,130	9,100

Notes:
Bold value: Detection above laboratory reporting limit.
µS/cm = micro Siemens per centimeter
Deg C = degrees Celsius
ft btoc = feet below top of casing
mg/L = milligrams per liter
NTU = Nephelometric Turbidity Unit
su = standard unit
TDS = total dissolved solids
TOC = top of casing

FIGURES

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0208568\GIS\0208568 TUSCON ELECTRIC.aprx - USER: thensen - LAST SAVED: 1/17/2024 9:59 AM

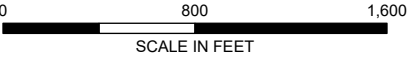


LEGEND

-  PROPOSED CCR MONITORING WELL, WATER QUALITY ONLY
-  CCR MONITORING WELL
-  ASH LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. CCR = COAL CUMBUSTION RESIDUALS
3. PROPOSED MONITORING WELL CCR-4D MAY BE USED TO SUPPLEMENT THE DOWNGRAIENT MONITORING NETWORK.
4. AERIAL IMAGERY SOURCE: ESRI



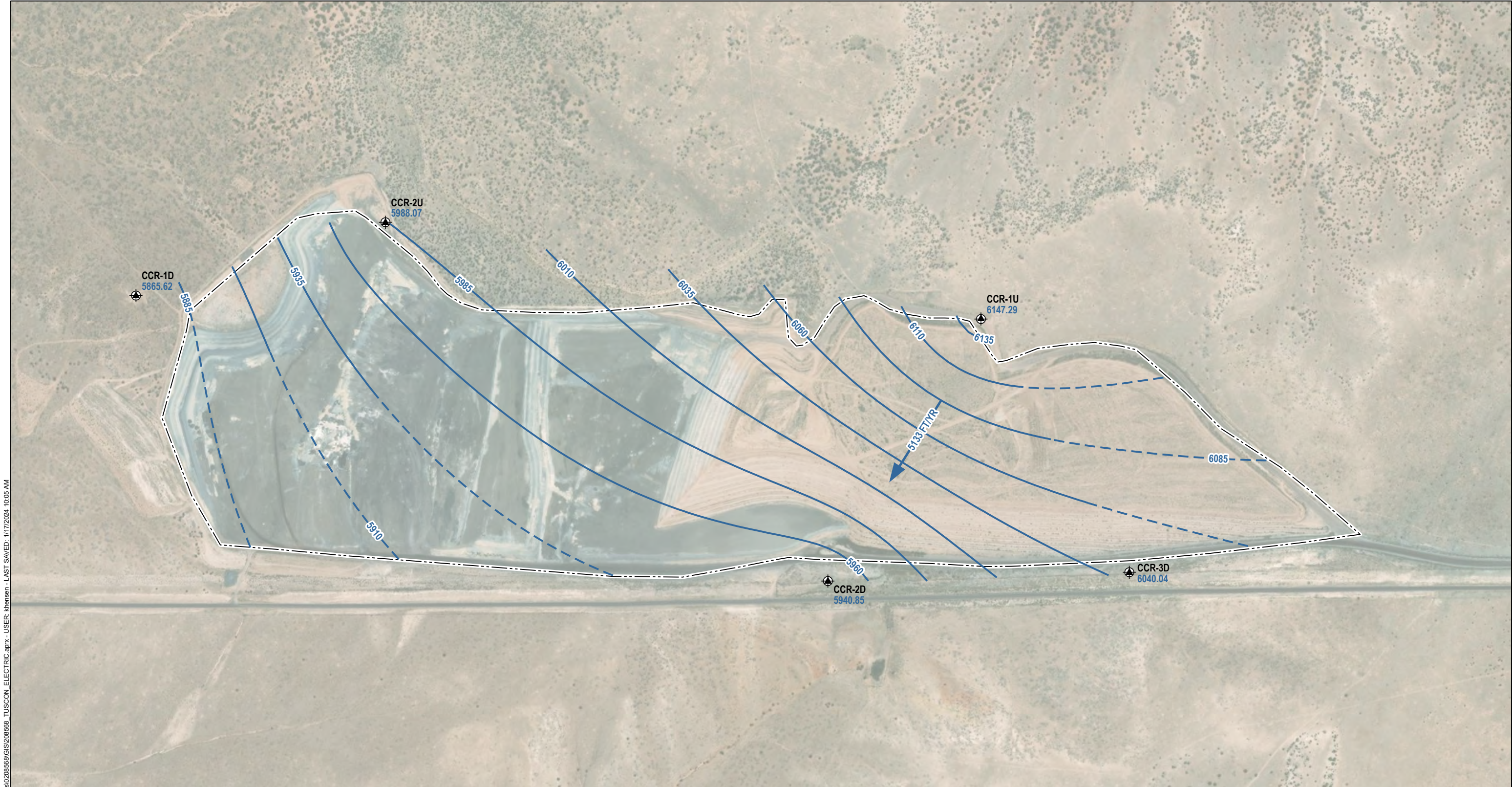
TUSCON ELECTRIC POWER COMPANY
SPRINGVILLE GENERATING STATION
SPRINGVILLE, ARIZONA

WELL LOCATION MAP

JANUARY 2024

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\0208568\GIS\0208568 TUSCON ELECTRIC.aprx - USER: thensen - LAST SAVED: 1/17/2024 10:05 AM

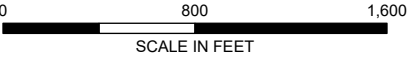


LEGEND

-  COAL CUMBUSTION RESIDUALS (CCR) MONITORING WELL WITH **GROUNDWATER ELEVATION** IN FEET ABOVE MEAN SEA LEVEL (AMSL)
-  GROUNDWATER ELEVATION CONTOUR, 25-FT INTERVAL, DASHED WHERE INFERRED
-  GROUNDWATER FLOW DIRECTION WITH APPROXIMATE FLOW RATE (FEET/YEAR)
-  ASH LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED FEBRUARY 2023 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM PUBLISHED SOURCES.
3. AERIAL IMAGERY SOURCE: ESRI



**HALEY
ALDRICH**

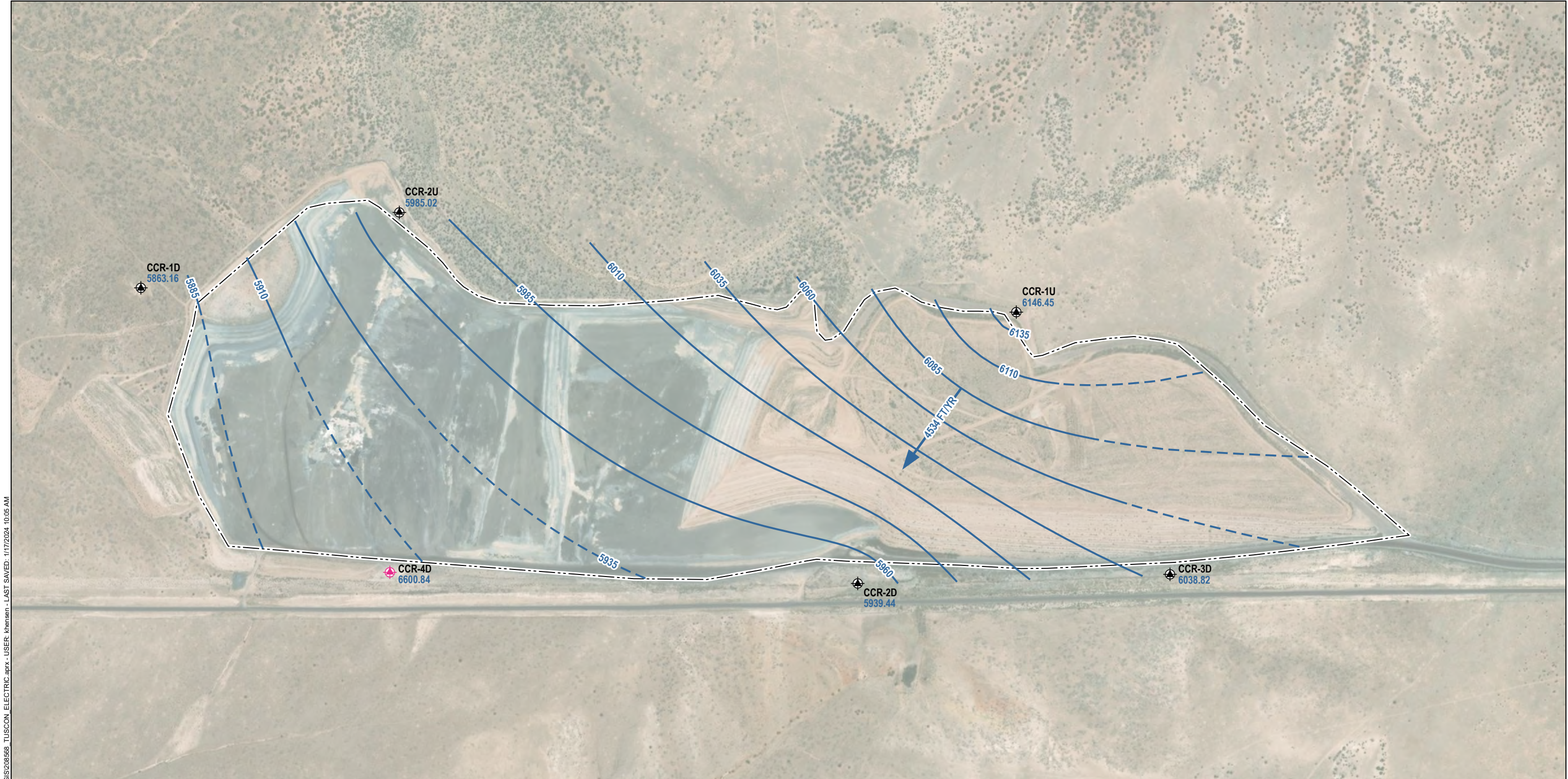
TUSCON ELECTRIC POWER COMPANY
SPRINGVILLE GENERATING STATION
SPRINGVILLE, ARIZONA

GROUNDWATER ELEVATION
CONTOUR MAP - FEBRUARY 2023

JANUARY 2024

FIGURE 2

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\20208588\GIS\20208588 TUSCON ELECTRIC.aprx - USER: thensen - LAST SAVED: 1/17/2024 10:05 AM

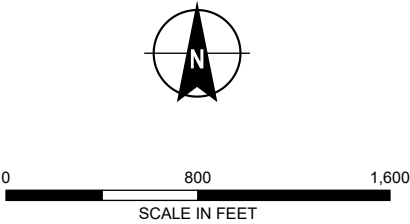


LEGEND

- PROPOSED CCR MONITORING WELL, WATER QUALITY ONLY
- CCR MONITORING WELL
- GROUNDWATER ELEVATION CONTOUR, 25-FT INTERVAL, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION WITH APPROXIMATE FLOW RATE (FEET/YEAR)
- ASH LANDFILL BOUNDARY

NOTES

- ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
- GROUNDWATER ELEVATION INDICATED IN **BOLD BLUE TEXT** IN FEET ABOVE MEAN SEA LEVEL (AMSL)
- MONITORING WELL CCR-4D WAS NOT INCLUDED IN THE DATA SET USED TO CREATE THE DISPLAYED GROUNDWATER ELEVATION CONTOURS.
- THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED AUGUST 2023 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM PUBLISHED SOURCES.
- AERIAL IMAGERY SOURCE: ESRI



HALEY ALDRICH TUSCON ELECTRIC POWER COMPANY
SPRINGVILLE GENERATING STATION
SPRINGVILLE, ARIZONA

GROUNDWATER ELEVATION
CONTOUR MAP - AUGUST 2023

JANUARY 2024

FIGURE 3

ATTACHMENT 1
Laboratory Analytical Reports

ATTACHMENT 1-1
February 2023 Semiannual Sampling
Event Laboratory Analytical Report



ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Hammond
Tucson Electric Power
PO BOX 2222
Springerville, Arizona 85938

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JOB DESCRIPTION

SGS CCR - DETECTION
SDG NUMBER SGS

JOB NUMBER

550-198130-1

Eurofins Phoenix

Job Notes

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

Authorization



Authorized for release by
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(602)659-7629

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Definitions/Glossary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

General Chemistry

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

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: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Job ID: 550-198130-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative 550-198130-1

Comments

No additional comments.

Receipt

The samples were received on 2/21/2023 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.4° C and 2.1° C.

HPLC/IC

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

Metals

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

General Chemistry

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

Job ID: 550-198130-2

Laboratory: Eurofins Phoenix

Narrative

Job Narrative 550-198130-2

Comments

No additional comments.

Receipt

The samples were received on 2/21/2023 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.4° C and 2.1° C.

HPLC/IC

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

General Chemistry

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

Sample Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-198130-1	CCR-1U	Water	02/20/23 14:45	02/21/23 16:40
550-198130-2	CCR-2U	Water	02/20/23 12:40	02/21/23 16:40
550-198130-3	CCR-2U DUP	Water	02/20/23 12:45	02/21/23 16:40
550-198130-4	CCR-1D	Water	02/21/23 09:15	02/21/23 16:40
550-198130-5	CCR-2D	Water	02/21/23 09:15	02/21/23 16:40
550-198130-6	CCR-3D	Water	02/20/23 10:55	02/21/23 16:40

Detection Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Client Sample ID: CCR-1U

Lab Sample ID: 550-198130-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.3		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	1300	D2	100	21	mg/L	50		300.0	Total/NA
Chloride	500	D2	100	26	mg/L	50		300.0	Total/NA
Boron	0.82		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3200	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	6.7	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-2U

Lab Sample ID: 550-198130-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.4		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	1900	D2	100	21	mg/L	50		300.0	Total/NA
Chloride	440	D2	100	26	mg/L	50		300.0	Total/NA
Boron	1.1		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	740		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3900	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	6.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-2U DUP

Lab Sample ID: 550-198130-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.5		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	1900	D2	100	21	mg/L	50		300.0	Total/NA
Chloride	440	D2	100	26	mg/L	50		300.0	Total/NA
Boron	1.1		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	740		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3800	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	6.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-1D

Lab Sample ID: 550-198130-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.0		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	1200	D2	100	21	mg/L	50		300.0	Total/NA
Chloride	480	D2	100	26	mg/L	50		300.0	Total/NA
Boron	0.79		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	638		20.0		mg/L	1		SM 2540C	Total/NA
pH	6.7	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-2D

Lab Sample ID: 550-198130-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.8		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	1700	D2	100	21	mg/L	50		300.0	Total/NA
Chloride	510	D2	100	26	mg/L	50		300.0	Total/NA
Boron	0.85		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	680		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	7790	D1	40.0		mg/L	1		SM 2540C	Total/NA
pH	6.7	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Client Sample ID: CCR-3D

Lab Sample ID: 550-198130-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.0		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	1300	D2	100	21	mg/L	50		300.0	Total/NA
Chloride	510	D2	100	26	mg/L	50		300.0	Total/NA
Boron	0.82		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3000	D1	100	100	mg/L	1		SM 2540C	Total/NA
pH	6.7	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Client Sample ID: CCR-1U

Date Collected: 02/20/23 14:45

Date Received: 02/21/23 16:40

Lab Sample ID: 550-198130-1

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.3		0.40	0.047	mg/L			02/22/23 14:06	1
Sulfate	1300	D2	100	21	mg/L			02/22/23 17:10	50
Chloride	500	D2	100	26	mg/L			02/22/23 17:10	50

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.82		0.050	0.0025	mg/L		02/23/23 06:20	02/27/23 21:45	1
Calcium	480		2.0	0.013	mg/L		02/23/23 06:20	03/27/23 20:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3200	D1	100	100	mg/L			02/22/23 13:56	1
pH (SM 4500 H+ B)	6.7	H5	1.7	1.7	SU			02/28/23 15:17	1

Client Sample ID: CCR-2U

Date Collected: 02/20/23 12:40

Date Received: 02/21/23 16:40

Lab Sample ID: 550-198130-2

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.4		0.40	0.047	mg/L			02/22/23 14:24	1
Sulfate	1900	D2	100	21	mg/L			02/22/23 17:29	50
Chloride	440	D2	100	26	mg/L			02/22/23 17:29	50

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.050	0.0025	mg/L		02/23/23 06:20	02/27/23 21:48	1
Calcium	740		2.0	0.013	mg/L		02/23/23 06:20	03/27/23 20:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3900	D1	100	100	mg/L			02/22/23 13:56	1
pH (SM 4500 H+ B)	6.5	H5	1.7	1.7	SU			02/28/23 15:18	1

Client Sample ID: CCR-2U DUP

Date Collected: 02/20/23 12:45

Date Received: 02/21/23 16:40

Lab Sample ID: 550-198130-3

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.5		0.40	0.047	mg/L			02/22/23 14:43	1
Sulfate	1900	D2	100	21	mg/L			02/22/23 17:47	50
Chloride	440	D2	100	26	mg/L			02/22/23 17:47	50

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.050	0.0025	mg/L		02/23/23 06:20	02/27/23 21:51	1
Calcium	740		2.0	0.013	mg/L		02/23/23 06:20	03/27/23 20:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3800	D1	100	100	mg/L			02/22/23 13:56	1

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Client Sample ID: CCR-2U DUP

Lab Sample ID: 550-198130-3

Date Collected: 02/20/23 12:45

Matrix: Water

Date Received: 02/21/23 16:40

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.5	H5	1.7	1.7	SU			02/28/23 15:19	1

Client Sample ID: CCR-1D

Lab Sample ID: 550-198130-4

Date Collected: 02/21/23 09:15

Matrix: Water

Date Received: 02/21/23 16:40

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.0		0.40	0.047	mg/L			02/22/23 15:01	1
Sulfate	1200	D2	100	21	mg/L			02/22/23 18:05	50
Chloride	480	D2	100	26	mg/L			02/22/23 18:05	50

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.79		0.050	0.0025	mg/L		02/23/23 06:20	02/27/23 21:53	1
Calcium	470		2.0	0.013	mg/L		02/23/23 06:20	03/27/23 20:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	638		20.0		mg/L			02/24/23 13:15	1
pH (SM 4500 H+ B)	6.7	H5	1.7	1.7	SU			02/28/23 15:20	1

Client Sample ID: CCR-2D

Lab Sample ID: 550-198130-5

Date Collected: 02/21/23 09:15

Matrix: Water

Date Received: 02/21/23 16:40

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.8		0.40	0.047	mg/L			02/22/23 15:19	1
Sulfate	1700	D2	100	21	mg/L			02/22/23 18:24	50
Chloride	510	D2	100	26	mg/L			02/22/23 18:24	50

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.85		0.050	0.0025	mg/L		02/23/23 06:20	02/27/23 21:56	1
Calcium	680		2.0	0.013	mg/L		02/23/23 06:20	03/27/23 20:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7790	D1	40.0		mg/L			02/24/23 13:15	1
pH (SM 4500 H+ B)	6.7	H5	1.7	1.7	SU			02/28/23 15:21	1

Client Sample ID: CCR-3D

Lab Sample ID: 550-198130-6

Date Collected: 02/20/23 10:55

Matrix: Water

Date Received: 02/21/23 16:40

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.0		0.40	0.047	mg/L			02/22/23 15:38	1
Sulfate	1300	D2	100	21	mg/L			02/22/23 18:42	50
Chloride	510	D2	100	26	mg/L			02/22/23 18:42	50

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Client Sample ID: CCR-3D

Lab Sample ID: 550-198130-6

Date Collected: 02/20/23 10:55

Matrix: Water

Date Received: 02/21/23 16:40

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.82		0.050	0.0025	mg/L		02/23/23 06:20	02/27/23 21:59	1
Calcium	460		2.0	0.013	mg/L		02/23/23 06:20	03/27/23 20:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3000	D1	100	100	mg/L			02/22/23 13:56	1
pH (SM 4500 H+ B)	6.7	H5	1.7	1.7	SU			02/28/23 15:22	1

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-295063/1

Matrix: Water

Analysis Batch: 295063

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND	E8	0.40	0.047	mg/L			02/22/23 10:31	1
Chloride	ND	E8	2.0	0.52	mg/L			02/22/23 10:31	1

Lab Sample ID: LCS 550-295063/6

Matrix: Water

Analysis Batch: 295063

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	4.00	4.21		mg/L		105	90 - 110
Chloride	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-295063/8

Matrix: Water

Analysis Batch: 295063

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	4.00	3.97		mg/L		99	90 - 110	6	20
Chloride	20.0	20.9		mg/L		104	90 - 110	1	20

Lab Sample ID: 550-198141-B-1 MS ^5

Matrix: Water

Analysis Batch: 295063

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.2	D1	20.0	23.8	D1	mg/L		108	80 - 120
Chloride	22	D1	100	123	D1	mg/L		101	80 - 120

Lab Sample ID: 550-198141-B-1 MSD ^5

Matrix: Water

Analysis Batch: 295063

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.2	D1	20.0	24.3	D1	mg/L		110	80 - 120	2	20
Chloride	22	D1	100	124	D1	mg/L		102	80 - 120	1	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-295080/1-A

Matrix: Water

Analysis Batch: 295499

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 295080

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	E8	0.050	0.0025	mg/L		02/23/23 06:20	02/27/23 21:28	1

Lab Sample ID: MB 550-295080/1-A

Matrix: Water

Analysis Batch: 297134

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 295080

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.227	E4	2.0	0.013	mg/L		02/23/23 06:20	03/27/23 20:36	1

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-295080/2-A
Matrix: Water
Analysis Batch: 295499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295080

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.00	0.936		mg/L		94	85 - 115

Lab Sample ID: LCS 550-295080/2-A
Matrix: Water
Analysis Batch: 297134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295080

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	21.0	21.6		mg/L		103	85 - 115

Lab Sample ID: LCSD 550-295080/3-A
Matrix: Water
Analysis Batch: 295499

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295080

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	1.00	0.922		mg/L		92	85 - 115	2	20

Lab Sample ID: LCSD 550-295080/3-A
Matrix: Water
Analysis Batch: 297134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295080

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	21.0	21.6		mg/L		103	85 - 115	0	20

Lab Sample ID: 550-198113-I-1-D MS
Matrix: Water
Analysis Batch: 295499

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 295080

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.25		1.00	1.23		mg/L		98	70 - 130

Lab Sample ID: 550-198113-I-1-E MSD
Matrix: Water
Analysis Batch: 295499

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 295080

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.25		1.00	1.22		mg/L		97	70 - 130	1	20

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

Lab Sample ID: MB 550-295037/1
Matrix: Water
Analysis Batch: 295037

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			02/22/23 13:56	1

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

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

Lab Sample ID: LCS 550-295037/2
Matrix: Water
Analysis Batch: 295037

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	1000	1020		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-295037/3
Matrix: Water
Analysis Batch: 295037

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	1000	1020		mg/L		102	90 - 110	0	10

Lab Sample ID: 550-198089-A-1 DU
Matrix: Water
Analysis Batch: 295037

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1300		1320		mg/L		0.8	10

Lab Sample ID: MB 550-295199/1
Matrix: Water
Analysis Batch: 295199

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20.0		mg/L			02/24/23 13:15	1

Lab Sample ID: LCS 550-295199/2
Matrix: Water
Analysis Batch: 295199

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	1000	1010		mg/L		101	90 - 110

Lab Sample ID: LCSD 550-295199/3
Matrix: Water
Analysis Batch: 295199

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	1000	986.0		mg/L		98	90 - 110	2	10

Lab Sample ID: 550-198124-E-1 DU
Matrix: Water
Analysis Batch: 295199

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	640		630.0		mg/L		2	10

Lab Sample ID: 550-198141-A-1 DU
Matrix: Water
Analysis Batch: 295199

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	952		946.0		mg/L		0.6	10

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QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-295488/1
Matrix: Water
Analysis Batch: 295488

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

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100.0	98.5 - 101.5

Lab Sample ID: 550-198121-K-1 DU
Matrix: Water
Analysis Batch: 295488

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.7	H5	7.7	H5	SU		0.1	5

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

HPLC/IC

Analysis Batch: 295063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-1	CCR-1U	Total/NA	Water	300.0	
550-198130-1	CCR-1U	Total/NA	Water	300.0	
550-198130-2	CCR-2U	Total/NA	Water	300.0	
550-198130-2	CCR-2U	Total/NA	Water	300.0	
550-198130-3	CCR-2U DUP	Total/NA	Water	300.0	
550-198130-3	CCR-2U DUP	Total/NA	Water	300.0	
550-198130-4	CCR-1D	Total/NA	Water	300.0	
550-198130-4	CCR-1D	Total/NA	Water	300.0	
550-198130-5	CCR-2D	Total/NA	Water	300.0	
550-198130-5	CCR-2D	Total/NA	Water	300.0	
550-198130-6	CCR-3D	Total/NA	Water	300.0	
550-198130-6	CCR-3D	Total/NA	Water	300.0	
MB 550-295063/1	Method Blank	Total/NA	Water	300.0	
LCS 550-295063/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-295063/8	Lab Control Sample Dup	Total/NA	Water	300.0	
550-198141-B-1 MS ^5	Matrix Spike	Total/NA	Water	300.0	
550-198141-B-1 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 295080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-1	CCR-1U	Total/NA	Water	200.7	
550-198130-2	CCR-2U	Total/NA	Water	200.7	
550-198130-3	CCR-2U DUP	Total/NA	Water	200.7	
550-198130-4	CCR-1D	Total/NA	Water	200.7	
550-198130-5	CCR-2D	Total/NA	Water	200.7	
550-198130-6	CCR-3D	Total/NA	Water	200.7	
MB 550-295080/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-295080/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-295080/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-198113-I-1-D MS	Matrix Spike	Total/NA	Water	200.7	
550-198113-I-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 295499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-1	CCR-1U	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-2	CCR-2U	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-3	CCR-2U DUP	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-4	CCR-1D	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-5	CCR-2D	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-6	CCR-3D	Total/NA	Water	200.7 Rev 4.4	295080
MB 550-295080/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	295080
LCS 550-295080/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	295080
LCSD 550-295080/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	295080
550-198113-I-1-D MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	295080
550-198113-I-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	295080

Analysis Batch: 297134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-1	CCR-1U	Total/NA	Water	200.7 Rev 4.4	295080

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QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Metals (Continued)

Analysis Batch: 297134 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-2	CCR-2U	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-3	CCR-2U DUP	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-4	CCR-1D	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-5	CCR-2D	Total/NA	Water	200.7 Rev 4.4	295080
550-198130-6	CCR-3D	Total/NA	Water	200.7 Rev 4.4	295080
MB 550-295080/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	295080
LCS 550-295080/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	295080
LCSD 550-295080/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	295080

General Chemistry

Analysis Batch: 295037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-1	CCR-1U	Total/NA	Water	SM 2540C	
550-198130-2	CCR-2U	Total/NA	Water	SM 2540C	
550-198130-3	CCR-2U DUP	Total/NA	Water	SM 2540C	
550-198130-6	CCR-3D	Total/NA	Water	SM 2540C	
MB 550-295037/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-295037/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-295037/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-198089-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 295199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-4	CCR-1D	Total/NA	Water	SM 2540C	
550-198130-5	CCR-2D	Total/NA	Water	SM 2540C	
MB 550-295199/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-295199/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-295199/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-198124-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	
550-198141-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 295488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-198130-1	CCR-1U	Total/NA	Water	SM 4500 H+ B	
550-198130-2	CCR-2U	Total/NA	Water	SM 4500 H+ B	
550-198130-3	CCR-2U DUP	Total/NA	Water	SM 4500 H+ B	
550-198130-4	CCR-1D	Total/NA	Water	SM 4500 H+ B	
550-198130-5	CCR-2D	Total/NA	Water	SM 4500 H+ B	
550-198130-6	CCR-3D	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-295488/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-198121-K-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Client Sample ID: CCR-1U

Lab Sample ID: 550-198130-1

Date Collected: 02/20/23 14:45

Matrix: Water

Date Received: 02/21/23 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	295063	AS1	EET PHX	02/22/23 14:06
Total/NA	Analysis	300.0		50	295063	AS1	EET PHX	02/22/23 17:10
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	295499	GLW	EET PHX	02/27/23 21:45
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	297134	GLW	EET PHX	03/27/23 20:45
Total/NA	Analysis	SM 2540C		1	295037	JNW	EET PHX	02/22/23 13:56 - 02/23/23 13:35 ¹
Total/NA	Analysis	SM 4500 H+ B		1	295488	MAN	EET PHX	02/28/23 15:17

Client Sample ID: CCR-2U

Lab Sample ID: 550-198130-2

Date Collected: 02/20/23 12:40

Matrix: Water

Date Received: 02/21/23 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	295063	AS1	EET PHX	02/22/23 14:24
Total/NA	Analysis	300.0		50	295063	AS1	EET PHX	02/22/23 17:29
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	295499	GLW	EET PHX	02/27/23 21:48
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	297134	GLW	EET PHX	03/27/23 20:48
Total/NA	Analysis	SM 2540C		1	295037	JNW	EET PHX	02/22/23 13:56 - 02/23/23 13:35 ¹
Total/NA	Analysis	SM 4500 H+ B		1	295488	MAN	EET PHX	02/28/23 15:18

Client Sample ID: CCR-2U DUP

Lab Sample ID: 550-198130-3

Date Collected: 02/20/23 12:45

Matrix: Water

Date Received: 02/21/23 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	295063	AS1	EET PHX	02/22/23 14:43
Total/NA	Analysis	300.0		50	295063	AS1	EET PHX	02/22/23 17:47
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	295499	GLW	EET PHX	02/27/23 21:51
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	297134	GLW	EET PHX	03/27/23 20:51
Total/NA	Analysis	SM 2540C		1	295037	JNW	EET PHX	02/22/23 13:56 - 02/23/23 13:35 ¹
Total/NA	Analysis	SM 4500 H+ B		1	295488	MAN	EET PHX	02/28/23 15:19

Client Sample ID: CCR-1D

Lab Sample ID: 550-198130-4

Date Collected: 02/21/23 09:15

Matrix: Water

Date Received: 02/21/23 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	295063	AS1	EET PHX	02/22/23 15:01
Total/NA	Analysis	300.0		50	295063	AS1	EET PHX	02/22/23 18:05

Eurofins Phoenix

Lab Chronicle

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Client Sample ID: CCR-1D

Lab Sample ID: 550-198130-4

Date Collected: 02/21/23 09:15

Matrix: Water

Date Received: 02/21/23 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	295499	GLW	EET PHX	02/27/23 21:53
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	297134	GLW	EET PHX	03/27/23 20:53
Total/NA	Analysis	SM 2540C		1	295199	JNW	EET PHX	02/24/23 13:15 - 02/28/23 12:44 ¹
Total/NA	Analysis	SM 4500 H+ B		1	295488	MAN	EET PHX	02/28/23 15:20

Client Sample ID: CCR-2D

Lab Sample ID: 550-198130-5

Date Collected: 02/21/23 09:15

Matrix: Water

Date Received: 02/21/23 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	295063	AS1	EET PHX	02/22/23 15:19
Total/NA	Analysis	300.0		50	295063	AS1	EET PHX	02/22/23 18:24
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	295499	GLW	EET PHX	02/27/23 21:56
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	297134	GLW	EET PHX	03/27/23 20:56
Total/NA	Analysis	SM 2540C		1	295199	JNW	EET PHX	02/24/23 13:15 - 02/28/23 12:44 ¹
Total/NA	Analysis	SM 4500 H+ B		1	295488	MAN	EET PHX	02/28/23 15:21

Client Sample ID: CCR-3D

Lab Sample ID: 550-198130-6

Date Collected: 02/20/23 10:55

Matrix: Water

Date Received: 02/21/23 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	295063	AS1	EET PHX	02/22/23 15:38
Total/NA	Analysis	300.0		50	295063	AS1	EET PHX	02/22/23 18:42
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	295499	GLW	EET PHX	02/27/23 21:59
Total/NA	Prep	200.7			295080	SGO	EET PHX	02/23/23 06:20
Total/NA	Analysis	200.7 Rev 4.4		1	297134	GLW	EET PHX	03/27/23 20:59
Total/NA	Analysis	SM 2540C		1	295037	JNW	EET PHX	02/22/23 13:56 - 02/23/23 13:35 ¹
Total/NA	Analysis	SM 4500 H+ B		1	295488	MAN	EET PHX	02/28/23 15:22

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Eurofins Phoenix

Accreditation/Certification Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Laboratory: Eurofins Phoenix

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23

- 1
- 2
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Method Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-198130-1
SDG: SGS

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET PHX
200.7 Rev 4.4	Metals (ICP)	EPA	EET PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET PHX
SM 4500 H+ B	pH	SM	EET PHX
200.7	Preparation, Total Metals	EPA	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

eurofins

198130
Environment Testing
America

3/29/2023

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Environment Testing America

[illegible]

Page 22 of 23

Login Sample Receipt Checklist

Client: Tucson Electric Power

Job Number: 550-198130-1

SDG Number: SGS

Login Number: 198130

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins Phoenix

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Hammond
Tucson Electric Power
PO BOX 2222
Springerville, Arizona 85938

Generated 4/25/2023 4:46:06 PM

JOB DESCRIPTION

SGS CCR - DETECTION
SDG NUMBER SGS

JOB NUMBER

550-200687-1

Eurofins Phoenix

Job Notes

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

Authorization



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4/25/2023 4:46:06 PM

Authorized for release by
Emily Petrunia, Project Manager I
Emily.Petrunia@et.eurofinsus.com
(602)659-7629

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Definitions/Glossary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Qualifiers

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

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: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Job ID: 550-200687-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-200687-1

Comments

No additional comments.

Receipt

The sample was received on 4/13/2023 1:16 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.4° C.

General Chemistry

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

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Sample Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-200687-1	CCR-2D	Water	04/13/23 08:00	04/13/23 13:16

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Detection Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Client Sample ID: CCR-2D

Lab Sample ID: 550-200687-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	3800		40	40	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Client Sample ID: CCR-2D

Date Collected: 04/13/23 08:00

Date Received: 04/13/23 13:16

Lab Sample ID: 550-200687-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3800		40	40	mg/L			04/17/23 14:11	1

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

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

Lab Sample ID: MB 550-298395/1
Matrix: Water
Analysis Batch: 298395

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			04/17/23 14:11	1

Lab Sample ID: LCS 550-298395/2
Matrix: Water
Analysis Batch: 298395

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	1000	982		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-298395/3
Matrix: Water
Analysis Batch: 298395

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	1000	982		mg/L		98	90 - 110	0	10

Lab Sample ID: 550-200651-A-2 DU
Matrix: Water
Analysis Batch: 298395

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1700		1680		mg/L		1	10

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

General Chemistry

Analysis Batch: 298395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-200687-1	CCR-2D	Total/NA	Water	SM 2540C	
MB 550-298395/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-298395/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-298395/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-200651-A-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Client Sample ID: CCR-2D
Date Collected: 04/13/23 08:00
Date Received: 04/13/23 13:16

Lab Sample ID: 550-200687-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	298395	JNW	EET PHX	04/17/23 14:11 - 04/20/23 13:21 ¹

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:
EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

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Accreditation/Certification Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Laboratory: Eurofins Phoenix

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23

- 1
- 2
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Method Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-200687-1
SDG: SGS

Method	Method Description	Protocol	Laboratory
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET PHX

Protocol References:

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

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Eurofins Phoenix

4625 East Cotton Center Boulevard
Suite 189
Phoenix, AZ 85040-4807
phone 602.437.3340

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Eurofins Environment Testing America

[illegible]

550-200687 Chain of Custody

Login Sample Receipt Checklist

Client: Tucson Electric Power

Job Number: 550-200687-1

SDG Number: SGS

Login Number: 200687

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins Phoenix

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

ATTACHMENT 1-2
August 2023 Semiannual Sampling
Event Laboratory Analytical Report

ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Foster
Tucson Electric Power
PO BOX 2222
Springerville, Arizona 85938

Generated 8/31/2023 1:10:33 PM

JOB DESCRIPTION

SGS CCR - DETECTION
SDG NUMBER SGS

JOB NUMBER

550-206747-1

Eurofins Phoenix

Job Notes

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Authorization



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Authorized for release by
Emily Petrunia, Project Manager I
Emily.Petrunia@et.eurofinsus.com
(602)659-7629

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Definitions/Glossary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

General Chemistry

Qualifier	Qualifier Description
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

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: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Job ID: 550-206747-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-206747-1

Comments

No additional comments.

Receipt

The samples were received on 8/23/2023 5:07 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0° C and 1.2° C.

HPLC/IC

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

Metals

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

General Chemistry

Method SM 2540C: Constant weight was not achieved after 3 drying cycles for the following sample: CCR-2D (550-206747-4).

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

Sample Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-206747-1	CCR-1U	Water	08/22/23 13:15	08/23/23 17:07
550-206747-2	CCR-2U	Water	08/22/23 14:50	08/23/23 17:07
550-206747-3	CCR-1D	Water	08/22/23 11:25	08/23/23 17:07
550-206747-4	CCR-2D	Water	08/22/23 08:55	08/23/23 17:07
550-206747-5	CCR-2D DUP	Water	08/22/23 09:10	08/23/23 17:07
550-206747-6	CCR-3D	Water	08/22/23 11:05	08/23/23 17:07

Detection Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Client Sample ID: CCR-1U

Lab Sample ID: 550-206747-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.59		0.400		mg/L	1		300.0	Total/NA
Sulfate	1270	D2	40.0		mg/L	20		300.0	Total/NA
Chloride	489	D2	40.0		mg/L	20		300.0	Total/NA
Boron	0.90		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3180		40.0		mg/L	1		SM 2540C	Total/NA
pH	6.6	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-2U

Lab Sample ID: 550-206747-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.43		0.400		mg/L	1		300.0	Total/NA
Sulfate	1820	D2	40.0		mg/L	20		300.0	Total/NA
Chloride	418	D2	40.0		mg/L	20		300.0	Total/NA
Boron	1.2		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	690		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3900		40.0		mg/L	1		SM 2540C	Total/NA
pH	6.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-1D

Lab Sample ID: 550-206747-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.86		0.400		mg/L	1		300.0	Total/NA
Sulfate	1250	D2	40.0		mg/L	20		300.0	Total/NA
Chloride	468	D2	40.0		mg/L	20		300.0	Total/NA
Boron	0.90		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3170		40.0		mg/L	1		SM 2540C	Total/NA
pH	6.6	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-2D

Lab Sample ID: 550-206747-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.71		0.400		mg/L	1		300.0	Total/NA
Sulfate	1670	D2	40.0		mg/L	20		300.0	Total/NA
Chloride	488	D2	40.0		mg/L	20		300.0	Total/NA
Boron	0.94		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	640		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3700		40.0		mg/L	1		SM 2540C	Total/NA
pH	6.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: CCR-2D DUP

Lab Sample ID: 550-206747-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.71		0.400		mg/L	1		300.0	Total/NA
Sulfate	1690	D2	40.0		mg/L	20		300.0	Total/NA
Chloride	493	D2	40.0		mg/L	20		300.0	Total/NA
Boron	0.94		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	640		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3720		40.0		mg/L	1		SM 2540C	Total/NA
pH	6.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Client Sample ID: CCR-3D

Lab Sample ID: 550-206747-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.02		0.400		mg/L	1		300.0	Total/NA
Sulfate	1240	D2	40.0		mg/L	20		300.0	Total/NA
Chloride	499	D2	40.0		mg/L	20		300.0	Total/NA
Boron	0.89		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3130		40.0		mg/L	1		SM 2540C	Total/NA
pH	6.6	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Client Sample ID: CCR-1U

Lab Sample ID: 550-206747-1

Date Collected: 08/22/23 13:15

Matrix: Water

Date Received: 08/23/23 17:07

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.59		0.400		mg/L			08/24/23 15:44	1
Sulfate	1270	D2	40.0		mg/L			08/24/23 16:12	20
Chloride	489	D2	40.0		mg/L			08/24/23 16:12	20

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.90		0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 20:44	1
Calcium	460		2.0	0.013	mg/L		08/24/23 04:49	08/29/23 20:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3180		40.0		mg/L			08/24/23 13:30	1
pH (SM 4500 H+ B)	6.6	H5	1.7	1.7	SU			08/24/23 13:29	1

Client Sample ID: CCR-2U

Lab Sample ID: 550-206747-2

Date Collected: 08/22/23 14:50

Matrix: Water

Date Received: 08/23/23 17:07

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.43		0.400		mg/L			08/24/23 16:40	1
Sulfate	1820	D2	40.0		mg/L			08/24/23 17:08	20
Chloride	418	D2	40.0		mg/L			08/24/23 17:08	20

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.2		0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 20:47	1
Calcium	690		2.0	0.013	mg/L		08/24/23 04:49	08/29/23 20:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3900		40.0		mg/L			08/24/23 13:30	1
pH (SM 4500 H+ B)	6.5	H5	1.7	1.7	SU			08/24/23 13:31	1

Client Sample ID: CCR-1D

Lab Sample ID: 550-206747-3

Date Collected: 08/22/23 11:25

Matrix: Water

Date Received: 08/23/23 17:07

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.86		0.400		mg/L			08/24/23 17:36	1
Sulfate	1250	D2	40.0		mg/L			08/24/23 19:28	20
Chloride	468	D2	40.0		mg/L			08/24/23 19:28	20

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.90		0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 20:50	1
Calcium	480		2.0	0.013	mg/L		08/24/23 04:49	08/29/23 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3170		40.0		mg/L			08/24/23 13:30	1

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Client Sample ID: CCR-1D

Date Collected: 08/22/23 11:25

Date Received: 08/23/23 17:07

Lab Sample ID: 550-206747-3

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.6	H5	1.7	1.7	SU			08/24/23 13:32	1

Client Sample ID: CCR-2D

Date Collected: 08/22/23 08:55

Date Received: 08/23/23 17:07

Lab Sample ID: 550-206747-4

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.71		0.400		mg/L			08/24/23 19:56	1
Sulfate	1670	D2	40.0		mg/L			08/24/23 20:24	20
Chloride	488	D2	40.0		mg/L			08/24/23 20:24	20

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.94		0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 20:59	1
Calcium	640		2.0	0.013	mg/L		08/24/23 04:49	08/29/23 20:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3700		40.0		mg/L			08/24/23 13:30	1
pH (SM 4500 H+ B)	6.5	H5	1.7	1.7	SU			08/24/23 13:33	1

Client Sample ID: CCR-2D DUP

Date Collected: 08/22/23 09:10

Date Received: 08/23/23 17:07

Lab Sample ID: 550-206747-5

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.71		0.400		mg/L			08/24/23 20:52	1
Sulfate	1690	D2	40.0		mg/L			08/24/23 21:19	20
Chloride	493	D2	40.0		mg/L			08/24/23 21:19	20

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.94		0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 21:01	1
Calcium	640		2.0	0.013	mg/L		08/24/23 04:49	08/29/23 21:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3720		40.0		mg/L			08/24/23 13:30	1
pH (SM 4500 H+ B)	6.5	H5	1.7	1.7	SU			08/24/23 13:34	1

Client Sample ID: CCR-3D

Date Collected: 08/22/23 11:05

Date Received: 08/23/23 17:07

Lab Sample ID: 550-206747-6

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.02		0.400		mg/L			08/24/23 21:48	1
Sulfate	1240	D2	40.0		mg/L			08/24/23 22:16	20
Chloride	499	D2	40.0		mg/L			08/24/23 22:16	20

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Client Sample ID: CCR-3D

Date Collected: 08/22/23 11:05

Date Received: 08/23/23 17:07

Lab Sample ID: 550-206747-6

Matrix: Water

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.89		0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 21:04	1
Calcium	440		2.0	0.013	mg/L		08/24/23 04:49	08/29/23 21:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3130		40.0		mg/L			08/24/23 13:30	1
pH (SM 4500 H+ B)	6.6	H5	1.7	1.7	SU			08/24/23 13:35	1

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-306453/2

Matrix: Water

Analysis Batch: 306453

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.400		mg/L			08/24/23 11:32	1
Sulfate	ND		2.00		mg/L			08/24/23 11:32	1
Chloride	ND		2.00		mg/L			08/24/23 11:32	1

Lab Sample ID: LCS 550-306453/5

Matrix: Water

Analysis Batch: 306453

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	4.00	4.147		mg/L		104	90 - 110
Sulfate	20.0	20.61		mg/L		103	90 - 110
Chloride	20.0	19.79		mg/L		99	90 - 110

Lab Sample ID: LCSD 550-306453/6

Matrix: Water

Analysis Batch: 306453

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	4.00	4.167		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.49		mg/L		102	90 - 110	1	20
Chloride	20.0	19.71		mg/L		99	90 - 110	0	20

Lab Sample ID: 550-203909-A-3 MS ^10

Matrix: Water

Analysis Batch: 306453

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	ND		40.0	41.34		mg/L		103	80 - 120
Sulfate	53.8		200	237.8		mg/L		92	80 - 120
Chloride	138		200	297.2		mg/L		80	80 - 120

Lab Sample ID: 550-203909-A-3 MSD ^10

Matrix: Water

Analysis Batch: 306453

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	ND		40.0	42.57		mg/L		106	80 - 120	3	20
Sulfate	53.8		200	244.8		mg/L		96	80 - 120	3	20
Chloride	138		200	303.4		mg/L		83	80 - 120	2	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-306359/1-A

Matrix: Water

Analysis Batch: 306675

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 306359

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.00392	E4	0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 20:11	1
Calcium	ND	E8	2.0	0.013	mg/L		08/24/23 04:49	08/29/23 20:11	1

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-306359/2-A
Matrix: Water
Analysis Batch: 306675

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 306359

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.00	1.05		mg/L		105	85 - 115
Calcium	21.0	21.1		mg/L		101	85 - 115

Lab Sample ID: LCSD 550-306359/3-A
Matrix: Water
Analysis Batch: 306675

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 306359

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	1.00	1.06		mg/L		106	85 - 115	2	20
Calcium	21.0	21.5		mg/L		103	85 - 115	2	20

Lab Sample ID: 550-206707-K-1-A MS
Matrix: Water
Analysis Batch: 306675

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 306359

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.0082	E4	1.00	1.07		mg/L		106	70 - 130
Calcium	28		21.0	48.7		mg/L		99	70 - 130

Lab Sample ID: 550-206707-K-1-B MSD
Matrix: Water
Analysis Batch: 306675

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 306359

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.0082	E4	1.00	1.05		mg/L		104	70 - 130	1	20
Calcium	28		21.0	47.4		mg/L		93	70 - 130	3	20

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

Lab Sample ID: MB 550-306409/1
Matrix: Water
Analysis Batch: 306409

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20.0		mg/L			08/24/23 13:30	1

Lab Sample ID: LCS 550-306409/2
Matrix: Water
Analysis Batch: 306409

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	1000	984.0		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-306409/3
Matrix: Water
Analysis Batch: 306409

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	1000	974.0		mg/L		97	90 - 110	1	10

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

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

Lab Sample ID: 550-206725-E-1 DU
Matrix: Water
Analysis Batch: 306409

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	278		280.0		mg/L		0.7	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-306437/13
Matrix: Water
Analysis Batch: 306437

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

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100.0	98.5 - 101.5

Lab Sample ID: LCSSRM 550-306437/25
Matrix: Water
Analysis Batch: 306437

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

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100.1	98.5 - 101.5

Lab Sample ID: 550-206747-1 DU
Matrix: Water
Analysis Batch: 306437

Client Sample ID: CCR-1U
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.6	H5	6.6		SU		0	5

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

HPLC/IC

Analysis Batch: 306453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206747-1	CCR-1U	Total/NA	Water	300.0	
550-206747-1	CCR-1U	Total/NA	Water	300.0	
550-206747-2	CCR-2U	Total/NA	Water	300.0	
550-206747-2	CCR-2U	Total/NA	Water	300.0	
550-206747-3	CCR-1D	Total/NA	Water	300.0	
550-206747-3	CCR-1D	Total/NA	Water	300.0	
550-206747-4	CCR-2D	Total/NA	Water	300.0	
550-206747-4	CCR-2D	Total/NA	Water	300.0	
550-206747-5	CCR-2D DUP	Total/NA	Water	300.0	
550-206747-5	CCR-2D DUP	Total/NA	Water	300.0	
550-206747-6	CCR-3D	Total/NA	Water	300.0	
550-206747-6	CCR-3D	Total/NA	Water	300.0	
MB 550-306453/2	Method Blank	Total/NA	Water	300.0	
LCS 550-306453/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-306453/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-203909-A-3 MS ^10	Matrix Spike	Total/NA	Water	300.0	
550-203909-A-3 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 306359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206747-1	CCR-1U	Total/NA	Water	200.7	
550-206747-2	CCR-2U	Total/NA	Water	200.7	
550-206747-3	CCR-1D	Total/NA	Water	200.7	
550-206747-4	CCR-2D	Total/NA	Water	200.7	
550-206747-5	CCR-2D DUP	Total/NA	Water	200.7	
550-206747-6	CCR-3D	Total/NA	Water	200.7	
MB 550-306359/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-306359/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-306359/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-206707-K-1-A MS	Matrix Spike	Total/NA	Water	200.7	
550-206707-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 306675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206747-1	CCR-1U	Total/NA	Water	200.7 Rev 4.4	306359
550-206747-2	CCR-2U	Total/NA	Water	200.7 Rev 4.4	306359
550-206747-3	CCR-1D	Total/NA	Water	200.7 Rev 4.4	306359
550-206747-4	CCR-2D	Total/NA	Water	200.7 Rev 4.4	306359
550-206747-5	CCR-2D DUP	Total/NA	Water	200.7 Rev 4.4	306359
550-206747-6	CCR-3D	Total/NA	Water	200.7 Rev 4.4	306359
MB 550-306359/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	306359
LCS 550-306359/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	306359
LCSD 550-306359/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	306359
550-206707-K-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	306359
550-206707-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	306359

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

General Chemistry

Analysis Batch: 306409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206747-1	CCR-1U	Total/NA	Water	SM 2540C	
550-206747-2	CCR-2U	Total/NA	Water	SM 2540C	
550-206747-3	CCR-1D	Total/NA	Water	SM 2540C	
550-206747-4	CCR-2D	Total/NA	Water	SM 2540C	
550-206747-5	CCR-2D DUP	Total/NA	Water	SM 2540C	
550-206747-6	CCR-3D	Total/NA	Water	SM 2540C	
MB 550-306409/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-306409/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-306409/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-206725-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 306437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206747-1	CCR-1U	Total/NA	Water	SM 4500 H+ B	
550-206747-2	CCR-2U	Total/NA	Water	SM 4500 H+ B	
550-206747-3	CCR-1D	Total/NA	Water	SM 4500 H+ B	
550-206747-4	CCR-2D	Total/NA	Water	SM 4500 H+ B	
550-206747-5	CCR-2D DUP	Total/NA	Water	SM 4500 H+ B	
550-206747-6	CCR-3D	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-306437/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-306437/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-206747-1 DU	CCR-1U	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Client Sample ID: CCR-1U

Lab Sample ID: 550-206747-1

Date Collected: 08/22/23 13:15

Matrix: Water

Date Received: 08/23/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	306453	SMA	EET PHX	08/24/23 15:44
Total/NA	Analysis	300.0		20	306453	SMA	EET PHX	08/24/23 16:12
Total/NA	Prep	200.7			306359	SGO	EET PHX	08/24/23 04:49
Total/NA	Analysis	200.7 Rev 4.4		1	306675	GLW	EET PHX	08/29/23 20:44
Total/NA	Analysis	SM 2540C		1	306409	JJI	EET PHX	08/24/23 13:30 - 08/28/23 16:20 ¹
Total/NA	Analysis	SM 4500 H+ B		1	306437	MAN	EET PHX	08/24/23 13:29

Client Sample ID: CCR-2U

Lab Sample ID: 550-206747-2

Date Collected: 08/22/23 14:50

Matrix: Water

Date Received: 08/23/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	306453	SMA	EET PHX	08/24/23 16:40
Total/NA	Analysis	300.0		20	306453	SMA	EET PHX	08/24/23 17:08
Total/NA	Prep	200.7			306359	SGO	EET PHX	08/24/23 04:49
Total/NA	Analysis	200.7 Rev 4.4		1	306675	GLW	EET PHX	08/29/23 20:47
Total/NA	Analysis	SM 2540C		1	306409	JJI	EET PHX	08/24/23 13:30 - 08/28/23 16:20 ¹
Total/NA	Analysis	SM 4500 H+ B		1	306437	MAN	EET PHX	08/24/23 13:31

Client Sample ID: CCR-1D

Lab Sample ID: 550-206747-3

Date Collected: 08/22/23 11:25

Matrix: Water

Date Received: 08/23/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	306453	SMA	EET PHX	08/24/23 17:36
Total/NA	Analysis	300.0		20	306453	SMA	EET PHX	08/24/23 19:28
Total/NA	Prep	200.7			306359	SGO	EET PHX	08/24/23 04:49
Total/NA	Analysis	200.7 Rev 4.4		1	306675	GLW	EET PHX	08/29/23 20:50
Total/NA	Analysis	SM 2540C		1	306409	JJI	EET PHX	08/24/23 13:30 - 08/28/23 16:20 ¹
Total/NA	Analysis	SM 4500 H+ B		1	306437	MAN	EET PHX	08/24/23 13:32

Client Sample ID: CCR-2D

Lab Sample ID: 550-206747-4

Date Collected: 08/22/23 08:55

Matrix: Water

Date Received: 08/23/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	306453	SMA	EET PHX	08/24/23 19:56
Total/NA	Analysis	300.0		20	306453	SMA	EET PHX	08/24/23 20:24
Total/NA	Prep	200.7			306359	SGO	EET PHX	08/24/23 04:49
Total/NA	Analysis	200.7 Rev 4.4		1	306675	GLW	EET PHX	08/29/23 20:59
Total/NA	Analysis	SM 2540C		1	306409	JJI	EET PHX	08/24/23 13:30 - 08/28/23 16:20 ¹
Total/NA	Analysis	SM 4500 H+ B		1	306437	MAN	EET PHX	08/24/23 13:33

Lab Chronicle

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Client Sample ID: CCR-2D DUP

Lab Sample ID: 550-206747-5

Date Collected: 08/22/23 09:10

Matrix: Water

Date Received: 08/23/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	306453	SMA	EET PHX	08/24/23 20:52
Total/NA	Analysis	300.0		20	306453	SMA	EET PHX	08/24/23 21:19
Total/NA	Prep	200.7			306359	SGO	EET PHX	08/24/23 04:49
Total/NA	Analysis	200.7 Rev 4.4		1	306675	GLW	EET PHX	08/29/23 21:01
Total/NA	Analysis	SM 2540C		1	306409	JJI	EET PHX	08/24/23 13:30 - 08/28/23 16:20 ¹
Total/NA	Analysis	SM 4500 H+ B		1	306437	MAN	EET PHX	08/24/23 13:34

Client Sample ID: CCR-3D

Lab Sample ID: 550-206747-6

Date Collected: 08/22/23 11:05

Matrix: Water

Date Received: 08/23/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	306453	SMA	EET PHX	08/24/23 21:48
Total/NA	Analysis	300.0		20	306453	SMA	EET PHX	08/24/23 22:16
Total/NA	Prep	200.7			306359	SGO	EET PHX	08/24/23 04:49
Total/NA	Analysis	200.7 Rev 4.4		1	306675	GLW	EET PHX	08/29/23 21:04
Total/NA	Analysis	SM 2540C		1	306409	JJI	EET PHX	08/24/23 13:30 - 08/28/23 16:20 ¹
Total/NA	Analysis	SM 4500 H+ B		1	306437	MAN	EET PHX	08/24/23 13:35

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Laboratory: Eurofins Phoenix

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-24

- 1
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Method Summary

Client: Tucson Electric Power
Project/Site: SGS CCR - DETECTION

Job ID: 550-206747-1
SDG: SGS

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET PHX
200.7 Rev 4.4	Metals (ICP)	EPA	EET PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET PHX
SM 4500 H+ B	pH	SM	EET PHX
200.7	Preparation, Total Metals	EPA	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Eurofins Phoenix

4625 East Cotton Center Boulevard
Suite 189
Phoenix, AZ 85040-4807
phone 602.437.3340

Chain of Custody Record



Environment Testing
America

8/31/2023

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

206747

Eurofins Environment Testing America

Client Contact Company Name: <u>Tucson Electric Power</u> Address: <u>PO Box 2222</u> City/State/Zip: <u>Springerville AZ 85938</u> Phone: <u>928-551-5202</u> FAX: _____ Project Name: <u>SGS CCR - DETECTION</u> Site: <u>SGS</u> P O #: _____		Project Manager: Jeff Foster Email: <u>JFoster@TEP.com</u> Tel/Fax: <u>928-551-5202</u> Analysis Turnaround Time ☒ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below _____ ☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Site Contact: _____ Lab Contact: <u>Emily Petrunin</u> Date: <u>8-23-23</u> Carrier: _____		COC No: _____ of _____ COCs TALS Project #: _____ Sampler: <u>89</u> For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____										
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N) Perform MS / MSD (Y/N)	200.7, CA, B 300, CA, FL, SD4 50400, pH 2540C, TDS	Sample Specific Notes:							
CCR-1U -1		8/22/23	13:15	G	W	2	N	X X X X	DETECTION PARAMETERS							
CCR-2U -2		8/22/23	14:50				N	X X X X								
CCR-1D -3		8/23/23	11:25				N	X X X X								
CCR-2D -4		8/22/23	8:55				N	X X X X								
CCR-2D DUP -5		8/22/23	9:10				N	X X X X								
CCR-3D -6		8/22/23	11:05				N	X X X X								
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other		Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months		Special Instructions/QC Requirements & Comments: Report to MDL. Report SO4 & TDS to 3 significant figures.										
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.: _____		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____		Relinquished by: _____ Company: <u>AMTECH</u> Date/Time: <u>8/23/23</u> Received by: _____ Company: _____ Date/Time: _____ Relinquished by: _____ Company: _____ Date/Time: _____ Received by: _____ Company: _____ Date/Time: _____ Relinquished by: _____ Company: _____ Date/Time: _____ Received in Laboratory by: <u>FETA-PHX</u> Company: <u>FETA-PHX</u> Date/Time: <u>8/23/23 17:07</u>										

Login Sample Receipt Checklist

Client: Tucson Electric Power

Job Number: 550-206747-1

SDG Number: SGS

Login Number: 206747

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins Phoenix

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Foster
Tucson Electric Power
PO BOX 2222
Springerville, Arizona 85938

Generated 9/23/2023 6:09:15 PM

JOB DESCRIPTION

SGS Ash Landfill
SDG NUMBER SGS

JOB NUMBER

550-206746-1

Eurofins Phoenix

Job Notes

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

Authorization



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Definitions/Glossary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

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)

Definitions/Glossary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Glossary (Continued)

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

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Case Narrative

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Job ID: 550-206746-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative 550-206746-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 8/23/2023 5:07 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 7: ALF Shallow Well (550-206746-1), CCR - 1U (550-206748-1), CCR - 2U (550-206748-2), CCR - 1D (550-206748-3), CCR - 2D (550-206748-4), CCR - 2D DUP (550-206748-5) and CCR - 3D (550-206748-6). The samples were adjusted to the appropriate pH in the laboratory.

Job: 550-206746 and Job: 550-206748

HPLC/IC

Method 300_ORGFMS: Reagent was not expired for this batch. Sample times were not transferred correctly. Appropriate start and end time of the batch is recorded in the batch information tab where each sample takes 18 minutes to complete. Manual time entries are not available. (550-203909-A-2 MS ^10) and (550-203909-A-2 MSD ^10)

Method 300_ORGFMS: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 550-306502 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Metals

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

General Chemistry

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

Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 625810 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. ALF Shallow Well (550-206746-1), (LCS 160-625810/2-A), (MB 160-625810/1-A), (380-60279-L-2-A) and (380-60279-L-2-B DU)

Method 904.0: Radium-228 prep batch 160-625811 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. ALF Shallow Well (550-206746-1), (LCS 160-625811/2-A), (MB 160-625811/1-A), (380-60279-L-2-C) and (380-60279-L-2-D DU)

Case Narrative

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Job ID: 550-206746-1 (Continued)

Laboratory: Eurofins Phoenix (Continued)

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

Rad

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

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Sample Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-206746-1	ALF Shallow Well	Water	08/23/23 09:55	08/23/23 17:07

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Detection Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Client Sample ID: ALF Shallow Well

Lab Sample ID: 550-206746-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.2		0.40	0.047	mg/L	1		300.0	Total/NA
Sulfate	2500	D2	400	85	mg/L	200		300.0	Total/NA
Chloride	3200	D2	400	100	mg/L	200		300.0	Total/NA
Boron	1.3		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	720		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.2		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total Recoverable
Antimony	0.00014	E4	0.0010	0.000043	mg/L	1		200.8 LL	Total/NA
Arsenic	0.0020		0.00050	0.00025	mg/L	1		200.8 LL	Total/NA
Barium	0.029		0.00050	0.00026	mg/L	1		200.8 LL	Total/NA
Cadmium	0.000047	E4	0.00010	0.000023	mg/L	1		200.8 LL	Total/NA
Chromium	0.082		0.0010	0.00043	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00062		0.00050	0.000063	mg/L	1		200.8 LL	Total/NA
Lead	0.0010		0.00050	0.00022	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0077		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Selenium	0.035		0.00050	0.000074	mg/L	1		200.8 LL	Total/NA
Thallium	0.00020		0.00010	0.000013	mg/L	1		200.8 LL	Total/NA
Total Dissolved Solids	9100		100	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Client Sample ID: ALF Shallow Well

Lab Sample ID: 550-206746-1

Date Collected: 08/23/23 09:55

Matrix: Water

Date Received: 08/23/23 17:07

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.2		0.40	0.047	mg/L			08/25/23 07:54	1
Sulfate	2500	D2	400	85	mg/L			08/26/23 02:12	200
Chloride	3200	D2	400	100	mg/L			08/26/23 02:12	200

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 20:42	1
Calcium	720		2.0	0.013	mg/L		08/24/23 04:49	08/29/23 20:42	1
Beryllium	ND	E8	0.0010	0.000067	mg/L		08/24/23 04:49	08/29/23 20:42	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.2		0.020	0.0091	mg/L		09/13/23 07:55	09/13/23 18:45	1

Method: EPA 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00014	E4	0.0010	0.000043	mg/L		08/24/23 06:19	08/25/23 16:58	1
Arsenic	0.0020		0.00050	0.00025	mg/L		08/24/23 06:19	08/25/23 16:58	1
Barium	0.029		0.00050	0.00026	mg/L		08/24/23 06:19	08/25/23 16:58	1
Cadmium	0.000047	E4	0.00010	0.000023	mg/L		08/24/23 06:19	08/25/23 16:58	1
Chromium	0.082		0.0010	0.00043	mg/L		08/24/23 06:19	08/25/23 16:58	1
Cobalt	0.00062		0.00050	0.000063	mg/L		08/24/23 06:19	08/25/23 16:58	1
Lead	0.0010		0.00050	0.00022	mg/L		08/24/23 06:19	08/25/23 16:58	1
Molybdenum	0.0077		0.00050	0.00020	mg/L		08/24/23 06:19	08/25/23 16:58	1
Selenium	0.035		0.00050	0.000074	mg/L		08/24/23 06:19	08/25/23 16:58	1
Thallium	0.00020		0.00010	0.000013	mg/L		08/24/23 06:19	08/25/23 16:58	1

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	E8	0.00020	0.000070	mg/L		09/01/23 13:09	09/01/23 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	9100		100	100	mg/L			08/28/23 15:30	1
pH (SM 4500 H+ B)	7.0	H5	1.7	1.7	SU			08/24/23 13:26	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.866		0.207	0.221	1.00	0.138	pCi/L	08/29/23 09:09	09/20/23 15:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.2		30 - 110					08/29/23 09:09	09/20/23 15:13	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	6.21		0.948	1.11	1.00	0.709	pCi/L	08/29/23 09:17	09/15/23 11:55	1

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Client Sample ID: ALF Shallow Well

Lab Sample ID: 550-206746-1

Date Collected: 08/23/23 09:55

Matrix: Water

Date Received: 08/23/23 17:07

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.2		30 - 110	08/29/23 09:17	09/15/23 11:55	1
Y Carrier	81.1		30 - 110	08/29/23 09:17	09/15/23 11:55	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	7.07		0.970	1.13	5.00	0.709	pCi/L		09/21/23 15:37	1

Tracer/Carrier Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)					
		Ba					
Lab Sample ID	Client Sample ID	(30-110)					
380-60279-L-2-B DU	Duplicate	90.2					
550-206746-1	ALF Shallow Well	94.2					
LCS 160-625810/2-A	Lab Control Sample	93.0					
MB 160-625810/1-A	Method Blank	90.7					
Tracer/Carrier Legend							
Ba = Ba Carrier							

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)					
		Ba	Y				
Lab Sample ID	Client Sample ID	(30-110)	(30-110)				
380-60279-L-2-D DU	Duplicate	90.2	82.2				
550-206746-1	ALF Shallow Well	94.2	81.1				
LCS 160-625811/2-A	Lab Control Sample	93.0	79.3				
MB 160-625811/1-A	Method Blank	90.7	78.1				
Tracer/Carrier Legend							
Ba = Ba Carrier							
Y = Y Carrier							

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-306454/2

Matrix: Water

Analysis Batch: 306454

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND	E8	0.40	0.047	mg/L			08/24/23 11:08	1
Sulfate	ND	E8	2.0	0.43	mg/L			08/24/23 11:08	1
Chloride	ND	E8	2.0	0.52	mg/L			08/24/23 11:08	1

Lab Sample ID: LCS 550-306454/5

Matrix: Water

Analysis Batch: 306454

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	4.00	3.90		mg/L		98	90 - 110
Sulfate	20.0	21.0		mg/L		105	90 - 110
Chloride	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-306454/6

Matrix: Water

Analysis Batch: 306454

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	4.00	4.00		mg/L		100	90 - 110	2	20
Sulfate	20.0	21.1		mg/L		106	90 - 110	0	20
Chloride	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-203909-A-2 MS ^10

Matrix: Water

Analysis Batch: 306454

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	1.1	E4	40.0	40.5		mg/L		98	80 - 120
Sulfate	45		200	239		mg/L		97	80 - 120
Chloride	110		200	292		mg/L		91	80 - 120

Lab Sample ID: 550-203909-A-2 MSD ^10

Matrix: Water

Analysis Batch: 306454

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	1.1	E4	40.0	40.8		mg/L		99	80 - 120	1	20
Sulfate	45		200	241		mg/L		98	80 - 120	1	20
Chloride	110		200	296		mg/L		93	80 - 120	1	20

Lab Sample ID: MB 550-306502/2

Matrix: Water

Analysis Batch: 306502

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND	E8	0.40	0.047	mg/L			08/25/23 11:16	1
Sulfate	ND	E8	2.0	0.43	mg/L			08/25/23 11:16	1
Chloride	ND	E8	2.0	0.52	mg/L			08/25/23 11:16	1

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-306502/5

Matrix: Water

Analysis Batch: 306502

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	4.00	4.18		mg/L		104	90 - 110
Sulfate	20.0	20.4		mg/L		102	90 - 110
Chloride	20.0	19.8		mg/L		99	90 - 110

Lab Sample ID: LCSD 550-306502/6

Matrix: Water

Analysis Batch: 306502

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	4.00	4.18		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20
Chloride	20.0	19.8		mg/L		99	90 - 110	0	20

Lab Sample ID: 550-206865-A-1 MS

Matrix: Water

Analysis Batch: 306502

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.63		4.00	4.58		mg/L		99	80 - 120
Sulfate	280	E2 M3	20.0	289	E2 M3	mg/L		26	80 - 120
Chloride	170	M3	20.0	177	M3	mg/L		50	80 - 120

Lab Sample ID: 550-206865-A-1 MSD

Matrix: Water

Analysis Batch: 306502

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.63		4.00	4.83		mg/L		105	80 - 120	5	20
Sulfate	280	E2 M3	20.0	291	E2 M3	mg/L		35	80 - 120	1	20
Chloride	170	M3	20.0	179	M3	mg/L		59	80 - 120	1	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-306359/1-A

Matrix: Water

Analysis Batch: 306675

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 306359

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.00392	E4	0.050	0.0025	mg/L		08/24/23 04:49	08/29/23 20:11	1
Calcium	ND	E8	2.0	0.013	mg/L		08/24/23 04:49	08/29/23 20:11	1
Beryllium	0.0000700	E4	0.0010	0.000067	mg/L		08/24/23 04:49	08/29/23 20:11	1

Lab Sample ID: LCS 550-306359/2-A

Matrix: Water

Analysis Batch: 306675

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 306359

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.00	1.05		mg/L		105	85 - 115
Calcium	21.0	21.1		mg/L		101	85 - 115
Beryllium	1.00	1.05		mg/L		105	85 - 115

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: LCSD 550-306359/3-A

Matrix: Water

Analysis Batch: 306675

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 306359

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	1.00	1.06		mg/L		106	85 - 115	2	20
Calcium	21.0	21.5		mg/L		103	85 - 115	2	20
Beryllium	1.00	1.07		mg/L		107	85 - 115	2	20

Lab Sample ID: 550-206707-K-1-A MS

Matrix: Water

Analysis Batch: 306675

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 306359

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.0082	E4	1.00	1.07		mg/L		106	70 - 130		
Calcium	28		21.0	48.7		mg/L		99	70 - 130		
Beryllium	0.00017	E4	1.00	1.06		mg/L		106	70 - 130		

Lab Sample ID: 550-206707-K-1-B MSD

Matrix: Water

Analysis Batch: 306675

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 306359

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.0082	E4	1.00	1.05		mg/L		104	70 - 130	1	20
Calcium	28		21.0	47.4		mg/L		93	70 - 130	3	20
Beryllium	0.00017	E4	1.00	1.05		mg/L		105	70 - 130	2	20

Lab Sample ID: MB 280-625284/1-A

Matrix: Water

Analysis Batch: 626168

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 625284

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	E8	0.020	0.0091	mg/L		09/13/23 07:55	09/13/23 18:11	1

Lab Sample ID: LCS 280-625284/2-A

Matrix: Water

Analysis Batch: 626168

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 625284

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	1.00	0.940		mg/L		94	90 - 112		

Lab Sample ID: 280-181064-B-1-B MS

Matrix: Water

Analysis Batch: 626168

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

Prep Batch: 625284

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	0.011	E4	1.00	0.949		mg/L		94	70 - 130		

Lab Sample ID: 280-181064-B-1-C MSD

Matrix: Water

Analysis Batch: 626168

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 625284

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	0.011	E4	1.00	0.950		mg/L		94	70 - 130	0	20

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-306361/1-A
Matrix: Water
Analysis Batch: 306531

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 306361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0010	0.000043	mg/L		08/24/23 06:19	08/25/23 16:31	1
Arsenic	ND	E8	0.00050	0.00025	mg/L		08/24/23 06:19	08/25/23 16:31	1
Barium	ND	E8	0.00050	0.00026	mg/L		08/24/23 06:19	08/25/23 16:31	1
Cadmium	ND	E8	0.00010	0.000023	mg/L		08/24/23 06:19	08/25/23 16:31	1
Chromium	ND	E8	0.0010	0.00043	mg/L		08/24/23 06:19	08/25/23 16:31	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		08/24/23 06:19	08/25/23 16:31	1
Lead	ND	E8	0.00050	0.00022	mg/L		08/24/23 06:19	08/25/23 16:31	1
Molybdenum	ND	E8	0.00050	0.00020	mg/L		08/24/23 06:19	08/25/23 16:31	1
Selenium	ND	E8	0.00050	0.000074	mg/L		08/24/23 06:19	08/25/23 16:31	1
Thallium	ND	E8	0.00010	0.000013	mg/L		08/24/23 06:19	08/25/23 16:31	1

Lab Sample ID: LCS 550-306361/2-A
Matrix: Water
Analysis Batch: 306531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 306361

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.100	0.0907		mg/L		91	85 - 115
Arsenic	0.100	0.0904		mg/L		90	85 - 115
Barium	0.100	0.103		mg/L		103	85 - 115
Cadmium	0.100	0.0922		mg/L		92	85 - 115
Chromium	0.100	0.0937		mg/L		94	85 - 115
Cobalt	0.100	0.0972		mg/L		97	85 - 115
Lead	0.100	0.0912		mg/L		91	85 - 115
Molybdenum	0.100	0.0973		mg/L		97	85 - 115
Selenium	0.100	0.0890		mg/L		89	85 - 115
Thallium	0.100	0.0990		mg/L		99	85 - 115

Lab Sample ID: LCSD 550-306361/3-A
Matrix: Water
Analysis Batch: 306531

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 306361

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.100	0.0887		mg/L		89	85 - 115	2	20
Arsenic	0.100	0.0883		mg/L		88	85 - 115	2	20
Barium	0.100	0.113		mg/L		113	85 - 115	10	20
Cadmium	0.100	0.0912		mg/L		91	85 - 115	1	20
Chromium	0.100	0.0922		mg/L		92	85 - 115	2	20
Cobalt	0.100	0.0926		mg/L		93	85 - 115	5	20
Lead	0.100	0.0903		mg/L		90	85 - 115	1	20
Molybdenum	0.100	0.0960		mg/L		96	85 - 115	1	20
Selenium	0.100	0.0864		mg/L		86	85 - 115	3	20
Thallium	0.100	0.0912		mg/L		91	85 - 115	8	20

Lab Sample ID: 550-206707-K-1-D MS
Matrix: Water
Analysis Batch: 306531

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 306361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.000096	E4	0.100	0.0878		mg/L		88	70 - 130

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-206707-K-1-D MS

Matrix: Water

Analysis Batch: 306531

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 306361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00068		0.100	0.0915		mg/L		91	70 - 130
Barium	0.015		0.100	0.117		mg/L		102	70 - 130
Cadmium	0.000048	E4	0.100	0.0874		mg/L		87	70 - 130
Chromium	ND	E8	0.100	0.0932		mg/L		93	70 - 130
Cobalt	0.000071	E4	0.100	0.0940		mg/L		94	70 - 130
Lead	0.00053		0.100	0.0909		mg/L		90	70 - 130
Molybdenum	0.00026	E4	0.100	0.0959		mg/L		96	70 - 130
Selenium	ND	E8	0.100	0.0870		mg/L		87	70 - 130
Thallium	0.00015		0.100	0.0960		mg/L		96	70 - 130

Lab Sample ID: 550-206707-K-1-E MSD

Matrix: Water

Analysis Batch: 306531

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 306361

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.000096	E4	0.100	0.0942		mg/L		94	70 - 130	7	20
Arsenic	0.00068		0.100	0.0925		mg/L		92	70 - 130	1	20
Barium	0.015		0.100	0.129		mg/L		114	70 - 130	10	20
Cadmium	0.000048	E4	0.100	0.0913		mg/L		91	70 - 130	4	20
Chromium	ND	E8	0.100	0.0928		mg/L		93	70 - 130	0	20
Cobalt	0.000071	E4	0.100	0.0956		mg/L		96	70 - 130	2	20
Lead	0.00053		0.100	0.0902		mg/L		90	70 - 130	1	20
Molybdenum	0.00026	E4	0.100	0.0986		mg/L		98	70 - 130	3	20
Selenium	ND	E8	0.100	0.0881		mg/L		88	70 - 130	1	20
Thallium	0.00015		0.100	0.0960		mg/L		96	70 - 130	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-306887/1-A

Matrix: Water

Analysis Batch: 306897

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 306887

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	E8	0.00020	0.000070	mg/L		09/01/23 13:09	09/01/23 16:01	1

Lab Sample ID: LCS 550-306887/2-A

Matrix: Water

Analysis Batch: 306897

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 306887

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00486		mg/L		97	85 - 115

Lab Sample ID: LCSD 550-306887/3-A

Matrix: Water

Analysis Batch: 306897

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 306887

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00500	0.00493		mg/L		99	85 - 115	1	20

Eurofins Phoenix

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 550-207080-L-1-A MS
Matrix: Water
Analysis Batch: 306897

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 306887

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	E8	0.00500	0.00511		mg/L		102	70 - 130

Lab Sample ID: 550-207080-L-1-B MSD
Matrix: Water
Analysis Batch: 306897

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 306887

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	E8	0.00500	0.00528		mg/L		106	70 - 130	3	20

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

Lab Sample ID: MB 550-306575/1
Matrix: Water
Analysis Batch: 306575

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			08/28/23 15:30	1

Lab Sample ID: LCS 550-306575/2
Matrix: Water
Analysis Batch: 306575

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	1000	990		mg/L		99	90 - 110

Lab Sample ID: LCSD 550-306575/3
Matrix: Water
Analysis Batch: 306575

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	1000	970		mg/L		97	90 - 110	2	10

Lab Sample ID: 550-206785-E-1 DU
Matrix: Water
Analysis Batch: 306575

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2100		2090		mg/L		0.8	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-306437/1
Matrix: Water
Analysis Batch: 306437

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

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		99.9	98.5 - 101.5

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-306437/13

Matrix: Water

Analysis Batch: 306437

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100.0	98.5 - 101.5

Lab Sample ID: 550-206543-K-1 DU

Matrix: Water

Analysis Batch: 306437

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.8	H5	8.8	H5	SU		0.1	5

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-625810/1-A

Matrix: Water

Analysis Batch: 628850

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 625810

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08964	U	0.0762	0.0766	1.00	0.110	pCi/L	08/29/23 09:09	09/20/23 15:12	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.7		30 - 110					08/29/23 09:09	09/20/23 15:12	1

Lab Sample ID: LCS 160-625810/2-A

Matrix: Water

Analysis Batch: 628850

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 625810

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.82		1.16	1.00	0.114	pCi/L	96	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	93.0		30 - 110						

Lab Sample ID: 380-60279-L-2-B DU

Matrix: Water

Analysis Batch: 628853

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 625810

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.0327	U	0.05910	U	0.0959	1.00	0.101	pCi/L	0.15	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	90.2		30 - 110							

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-625811/1-A
Matrix: Water
Analysis Batch: 628311

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 625811

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4215	U	0.392	0.394	1.00	0.624	pCi/L	08/29/23 09:17	09/15/23 11:55	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.7		30 - 110					08/29/23 09:17	09/15/23 11:55	1
Y Carrier	78.1		30 - 110					08/29/23 09:17	09/15/23 11:55	1

Lab Sample ID: LCS 160-625811/2-A
Matrix: Water
Analysis Batch: 628311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 625811

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.87	9.732		1.35	1.00	0.558	pCi/L	124	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	93.0		30 - 110						
Y Carrier	79.3		30 - 110						

Lab Sample ID: 380-60279-L-2-D DU
Matrix: Water
Analysis Batch: 628177

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 625811

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	1.19		0.7329		0.442	1.00	0.390	pCi/L	0.50	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	90.2		30 - 110							
Y Carrier	82.2		30 - 110							

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

HPLC/IC

Analysis Batch: 306454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	300.0	
MB 550-306454/2	Method Blank	Total/NA	Water	300.0	
LCS 550-306454/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-306454/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-203909-A-2 MS ^10	Matrix Spike	Total/NA	Water	300.0	
550-203909-A-2 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 306502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	300.0	
MB 550-306502/2	Method Blank	Total/NA	Water	300.0	
LCS 550-306502/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-306502/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-206865-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-206865-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 306359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	200.7	
MB 550-306359/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-306359/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-306359/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-206707-K-1-A MS	Matrix Spike	Total/NA	Water	200.7	
550-206707-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Prep Batch: 306361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	200.8	
MB 550-306361/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-306361/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-306361/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-206707-K-1-D MS	Matrix Spike	Total/NA	Water	200.8	
550-206707-K-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 306531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	200.8 LL	306361
MB 550-306361/1-A	Method Blank	Total/NA	Water	200.8 LL	306361
LCS 550-306361/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	306361
LCSD 550-306361/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	306361
550-206707-K-1-D MS	Matrix Spike	Total/NA	Water	200.8 LL	306361
550-206707-K-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	306361

Analysis Batch: 306675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	200.7 Rev 4.4	306359
MB 550-306359/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	306359
LCS 550-306359/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	306359
LCSD 550-306359/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	306359

Eurofins Phoenix

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Metals (Continued)

Analysis Batch: 306675 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206707-K-1-A MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	306359
550-206707-K-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	306359

Prep Batch: 306887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	245.1	
MB 550-306887/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-306887/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-306887/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-207080-L-1-A MS	Matrix Spike	Total/NA	Water	245.1	
550-207080-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Analysis Batch: 306897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	245.1	306887
MB 550-306887/1-A	Method Blank	Total/NA	Water	245.1	306887
LCS 550-306887/2-A	Lab Control Sample	Total/NA	Water	245.1	306887
LCSD 550-306887/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	306887
550-207080-L-1-A MS	Matrix Spike	Total/NA	Water	245.1	306887
550-207080-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	306887

Prep Batch: 625284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total Recoverable	Water	200.7	
MB 280-625284/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 280-625284/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
280-181064-B-1-B MS	Matrix Spike	Total Recoverable	Water	200.7	
280-181064-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Analysis Batch: 626168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total Recoverable	Water	200.7 Rev 4.4	625284
MB 280-625284/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	625284
LCS 280-625284/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	625284
280-181064-B-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	625284
280-181064-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	625284

General Chemistry

Analysis Batch: 306437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-306437/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-306437/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-206543-K-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 306575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	SM 2540C	
MB 550-306575/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-306575/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Eurofins Phoenix

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

General Chemistry (Continued)

Analysis Batch: 306575 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-306575/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-206785-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 625810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	PrecSep-21	
MB 160-625810/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-625810/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
380-60279-L-2-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 625811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-206746-1	ALF Shallow Well	Total/NA	Water	PrecSep_0	
MB 160-625811/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-625811/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
380-60279-L-2-D DU	Duplicate	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Client Sample ID: ALF Shallow Well

Lab Sample ID: 550-206746-1

Date Collected: 08/23/23 09:55

Matrix: Water

Date Received: 08/23/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	306454	SMA	EET PHX	08/25/23 07:54
Total/NA	Analysis	300.0		200	306502	MMH	EET PHX	08/26/23 02:12
Total Recoverable	Prep	200.7			625284	LJS	EET DEN	09/13/23 07:55
Total Recoverable	Analysis	200.7 Rev 4.4		1	626168	ADL	EET DEN	09/13/23 18:45
Total/NA	Prep	200.7			306359	SGO	EET PHX	08/24/23 04:49
Total/NA	Analysis	200.7 Rev 4.4		1	306675	GLW	EET PHX	08/29/23 20:42
Total/NA	Prep	200.8			306361	SGO	EET PHX	08/24/23 06:19
Total/NA	Analysis	200.8 LL		1	306531	DSJ	EET PHX	08/25/23 16:58
Total/NA	Prep	245.1			306887	HHL	EET PHX	09/01/23 13:09
Total/NA	Analysis	245.1		1	306897	HHL	EET PHX	09/01/23 16:23
Total/NA	Analysis	SM 2540C		1	306575	JJI	EET PHX	08/28/23 15:30 - 09/05/23 16:49 ¹
Total/NA	Analysis	SM 4500 H+ B		1	306437	MAN	EET PHX	08/24/23 13:26
Total/NA	Prep	PrecSep-21			625810	KAC	EET SL	08/29/23 09:09
Total/NA	Analysis	903.0		1	628850	FLC	EET SL	09/20/23 15:13
Total/NA	Prep	PrecSep_0			625811	KAC	EET SL	08/29/23 09:17
Total/NA	Analysis	904.0		1	628311	SCB	EET SL	09/15/23 11:55
Total/NA	Analysis	Ra226_Ra228 Pos		1	629188	SCB	EET SL	09/21/23 15:37

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

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

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

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

Accreditation/Certification Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Laboratory: Eurofins Phoenix

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-24

Laboratory: Eurofins Denver

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

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-10-24
Arizona	State	AZ0713	12-20-23
Arkansas DEQ	State	19-047-0	05-31-23 *
California	State	2513	01-09-24
Connecticut	State	PH-0686	09-30-24
Florida	NELAP	E87667-57	06-30-24
Georgia	State	4025-011	01-08-24
Illinois	NELAP	2000172019-1	04-30-24
Iowa	State	370	12-01-24
Kansas	NELAP	E-10166	04-30-24
Kentucky (WW)	State	KY98047	12-31-23
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23 *
Louisiana (All)	NELAP	30785	06-30-24
Minnesota	NELAP	1788752	12-31-23
Nevada	State	CO000262020-1	07-31-24
New Hampshire	NELAP	2053	04-28-24
New Jersey	NELAP	230001	06-30-24
New York	NELAP	59923	03-31-24
North Carolina (WW/SW)	State	358	12-31-23
North Dakota	State	R-034	01-08-24
Oregon	NELAP	4025-019	01-08-24
Pennsylvania	NELAP	013	07-31-24
South Carolina	State	72002001	01-08-24
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
USDA	US Federal Programs	P330-20-00065	12-19-25
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23 *
Virginia	NELAP	12037	06-14-23 *
Washington	State	C583-19	08-03-23 *
West Virginia DEP	State	354	11-30-23
Wisconsin	State	999615430	08-31-24
Wyoming (UST)	A2LA	2907.01	10-31-22 *

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25

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

Eurofins Phoenix

Accreditation/Certification Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
West Virginia DEP	State	381	10-31-23

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

Eurofins Phoenix

Method Summary

Client: Tucson Electric Power
Project/Site: SGS Ash Landfill

Job ID: 550-206746-1
SDG: SGS

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET PHX
200.7 Rev 4.4	Metals (ICP)	EPA	EET DEN
200.7 Rev 4.4	Metals (ICP)	EPA	EET PHX
200.8 LL	Metals (ICP/MS)	EPA	EET PHX
245.1	Mercury (CVAA)	EPA	EET PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET PHX
SM 4500 H+ B	pH	SM	EET PHX
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	EET SL
200.7	Preparation, Total Recoverable Metals	EPA	EET DEN
200.7	Preparation, Total Metals	EPA	EET PHX
200.8	Preparation, Total Metals	EPA	EET PHX
245.1	Preparation, Mercury	EPA	EET PHX
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

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

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

Laboratory References:

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

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

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

Chain of Custody Record



**Environment Testing
America**

9/23/2023

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Environment Testing America

[illegible]

[illegible]

[illegible]

Login Sample Receipt Checklist

Client: Tucson Electric Power

Job Number: 550-206746-1

SDG Number: SGS

Login Number: 206746

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins Phoenix

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

Login Sample Receipt Checklist

Client: Tucson Electric Power

Job Number: 550-206746-1

SDG Number: SGS

Login Number: 206746

List Number: 3

Creator: Little, Matthew L

List Source: Eurofins Denver

List Creation: 08/25/23 12:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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?	N/A	
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 $<6\text{mm}$ (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: Tucson Electric Power

Job Number: 550-206746-1

SDG Number: SGS

Login Number: 206746

List Number: 2

Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis

List Creation: 08/25/23 10:30 AM

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



ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Foster
Tucson Electric Power
PO BOX 2222
Springerville, Arizona 85938

Generated 10/22/2023 5:13:24 PM

JOB DESCRIPTION

SGS DETECTION (FI Only)

JOB NUMBER

550-208986-1

Eurofins Phoenix

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Definitions/Glossary

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

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: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Job ID: 550-208986-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative 550-208986-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 10/11/2023 5:09 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C

HPLC/IC

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

Sample Summary

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-208986-1	CCR-1U	Water	10/11/23 08:30	10/11/23 17:09

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Detection Summary

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Client Sample ID: CCR-1U

Lab Sample ID: 550-208986-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.7		0.40	0.047	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample Results

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Client Sample ID: CCR-1U

Lab Sample ID: 550-208986-1

Date Collected: 10/11/23 08:30

Matrix: Water

Date Received: 10/11/23 17:09

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.7		0.40	0.047	mg/L			10/20/23 00:12	1

QC Sample Results

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-309673/88

Matrix: Water

Analysis Batch: 309673

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND	E8	0.40	0.047	mg/L			10/19/23 18:04	1

Lab Sample ID: LCS 550-309673/91

Matrix: Water

Analysis Batch: 309673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	4.00	4.32		mg/L		108	90 - 110

Lab Sample ID: LCSD 550-309673/92

Matrix: Water

Analysis Batch: 309673

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	4.00	4.31		mg/L		108	90 - 110	0	20

Lab Sample ID: 550-208858-A-1 MS

Matrix: Water

Analysis Batch: 309673

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.82		4.00	4.94		mg/L		103	80 - 120

Lab Sample ID: 550-208858-A-1 MSD

Matrix: Water

Analysis Batch: 309673

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.82		4.00	5.06		mg/L		106	80 - 120	2	20

QC Association Summary

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

HPLC/IC

Analysis Batch: 309673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-208986-1	CCR-1U	Total/NA	Water	300.0	
MB 550-309673/88	Method Blank	Total/NA	Water	300.0	
LCS 550-309673/91	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-309673/92	Lab Control Sample Dup	Total/NA	Water	300.0	
550-208858-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-208858-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Lab Chronicle

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Client Sample ID: CCR-1U
Date Collected: 10/11/23 08:30
Date Received: 10/11/23 17:09

Lab Sample ID: 550-208986-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	309673	MMH	EET PHX	10/20/23 00:12

Laboratory References:
EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

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Accreditation/Certification Summary

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Laboratory: Eurofins Phoenix

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-24

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Method Summary

Client: Tucson Electric Power
Project/Site: SGS DETECTION (FI Only)

Job ID: 550-208986-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

**Environment Testing
America**

10/22/2023

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

208986

Eurofins Environment Testing America

[illegible]

Login Sample Receipt Checklist

Client: Tucson Electric Power

Job Number: 550-208986-1

Login Number: 208986

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins Phoenix

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