2023 Annual Groundwater Monitoring and Corrective Action Report

W.A Parish Generating Station, Thompsons, Texas

CCR RN 108

Solid Waste Disposal Area (SWMU 001) CCR Multiunit Landfill
Air Preheater Pond (SWMU 021)
FDG Emergency Pond (SWMU 020)

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Prepared For
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Thompsons, Texas

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Executive Summary

Pursuant to 30 Texas Administrative Code (30 TAC) Chapter 352, Coal Combustion Residuals Waste Management and Registration Program for Coal Combustion Residuals (CCR) Implementation (TCEQ's CCR Permit Program), the owner or operator of an existing CCR unit must prepare an annual groundwater monitoring and corrective action report (Annual Report) no later than January 31, 2024, addressing the preceding calendar year. The information to be provided in the Annual Report is described in Subsection 1.2 of the Texas Commission on Environmental Quality (TCEQ) Draft Technical Guidance No. 32, Coal Combustion Residuals Groundwater Monitoring and Corrective Action. In addition, at the request of TCEQ, this Annual Report provides the field and laboratory analytical results for three years of monitoring: 2021, 2022, and 2023.

TRC Environmental Corporation (TRC) has prepared the *2023 Annual Groundwater Monitoring and Corrective Action Report* (Annual Report) for the three CCR units at the W.A. Parish Electric Generating Station (Station):

- Solid Waste Disposal Area (SWDA, SWMU 001) CCR Multiunit Landfill, which includes Landfill Cell 1C, Landfill Cell 2A, Landfill Cell 2B, and Landfill Cell 3;
- FGD Emergency Pond (E Pond, SWMU 020); and
- Air Preheater Pond (APH Pond, SWMU 021).

TRC has prepared this Annual Report on behalf of NRG Texas Power, LLC (NRG). This Annual Report also provides the following information:

- The groundwater monitoring systems for the CCR units operated under detection monitoring at the start and end of 2023; and
- Potentially statistically significant increases (SSIs) of Appendix III CCR constituents above background in groundwater and provides the alternative source demonstrations (ASDs) successfully completed during 2023.

In conclusion, this Annual Report contains the information required pursuant to 30 TAC §352.901 and 30 TAC §352.902 and TCEQ Draft Technical Guidance No. 32 of the TCEQ CCR Permit Program. In addition, at the request of TCEQ, this Annual Report provides the field and laboratory analytical results for three years of monitoring: 2021, 2022, and 2023. This information is provided in this Annual Report. No other information is required to be included in the Annual Report as specified in 30 TAC §352.971 and §352.981 of the TCEQ CCR Permit Program.

Based on the key activities performed during 2023, it is recommended that the three CCR units: SWDA CCR Multiunit Landfill, APH Pond, and the E Pond; remain in detection monitoring subject to the following key activities and that the following project timeline be implemented during 2024:

- The *2023 Annual Report* will be prepared and placed into the Station's Facility Operating Record (FOR) by January 31, 2024, submitted to the TCEQ within 30 days of placement in the FOR, and posted to the Station's publicly accessible CCR website by March 2, 2024;
- An ASD for the second half 2023 (October) semi-annual detection monitoring events will be prepared and submitted to the TCEQ with this Annual Report;
- Both semi-annual groundwater detection monitoring events for the three CCR units will be performed during the first and second halves of 2024 (March and September) for the Appendix III detection monitoring parameters;
- As necessary, the first and second half 2024 resampling detection monitoring events for the Landfill CCR will be performed within 30 days of the original monitoring events and samples will be reanalyzed for select Appendix III detection monitoring constituents;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2024 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined for the first and second halves of 2024 semi-annual detection monitoring events;
- Statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2024 semi-annual detection monitoring events;
- NRG will notify TCEQ, if required, if potential SSIs are identified and whether ASDs will be prepared for the first and second halves of 2024 semi-annual detection monitoring events; and
- Written ASDs will be prepared and submitted to TCEQ for review and approval, if required, to evaluate potential SSIs above background for the first and second halves of 2024 semi-annual detection monitoring events.

Section 1
Introduction

1.1 CCR Program Summary

On June 28, 2021, the United States Environmental Protection Agency (USEPA) published the final approval of the TCEQ partial State Coal Combustion Residuals (CCR) Permit Program, which became effective on July 28, 2021. The TCEQ adopted by reference the Federal CCR Program (40 CFR Part 257) as amended through the July 30, 2018 issue of the Federal Register (83 FR 36435), subject to the changes and additions provided in the TCEQ CCR Permit Program. As stated in USEPA's approval of the TCEQ CCR Permit Program on June 28, 2021, the TCEQ CCR Permit Program now operates in lieu of the Federal CCR program. Therefore, during 2022, the three CCR units operated pursuant to the requirements of the TCEQ CCR Permit Program.

Pursuant to the TCEQ CCR Permit Program, no later than January 31 of each calendar year, the owner or operator must prepare an annual groundwater monitoring and corrective action report (Annual Report) for the CCR units addressing the preceding calendar year. At a minimum, per TCEQ Draft Technical Guidance No. 32, the Annual Report must contain:

- A map, aerial image, or diagram showing the CCR unit(s) 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(s);
- Narrative description of the Facility and Unit Descriptions and groundwater monitoring system, monitoring well inspection;
- Hydrogeology (groundwater flow rate and direction) with potentiometric surface map;
- 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;
- In addition to all the monitoring data, 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 and laboratory reports;
- Statistical analysis and results;
- 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 other information required to be included in the annual report, as specified in 30 TAC §§352.971 and 352.981; and

- Summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, conclusions and recommendations, and project timelines and key activities for the upcoming year.

TRC Environmental Corporation (TRC) has prepared the *2023 Groundwater Monitoring and Corrective Action Report* (*Annual Report*) for the three CCR units located at the Station on behalf of NRG in accordance with 30 TAC §352.901 and 30 TAC §352.902 and TCEQ Draft Technical Guidance No. 32 of the TCEQ CCR Permit Program.

Pursuant to the TCEQ CCR Permit Program, NRG will comply with the recordkeeping requirements, the notification requirements, and will post the Annual Report to NRG's publicly accessible CCR Web site. In addition, pursuant to §352.902 of the TCEQ CCR Permit Program, NRG will submit the Annual Report to the TCEQ for review no later than 30 days after the report has been placed into the Station's FOR.

1.2 Corrective Measures and Corrective Action

Finally, since the three CCR units are not currently subject to corrective measures or correct action activities under the TCEQ CCR Permit Program, the provisions of 30 TAC §352.971 and §352.981 of the TCEQ CCR Permit Program do not apply. Therefore, per §352.901 of the TCEQ CCR Permit Program, no other information relative to corrective measures or corrective action must be provided in this Annual Report.

1.3 Station Overview

The Station is located in Thompsons, Texas (Figure 1-1). The Station is adjacent to Smithers Lake with the electricity generating portion located on the southeastern shore (location of the E Pond and the APH Pond) and the SWDA CCR Multiunit Landfill located along the northeastern shore (Figure 1-2). The Station currently uses western United States coal as a fuel source to power the boilers. The spent coal fuels or CCR have been classified by the TCEQ as a Class II Nonhazardous waste and consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. During 2021, the Station had the following three active CCR Units per the TCEQ CCR Permit Program:

- SWDA CCR Multiunit Landfill (SWMU 001), which includes Landfill Cell 1C, Landfill Cell 2A, Landfill Cell 2B, and Landfill Cell 3;
- E Pond (SWMU 020); and
- APH Pond (SWMU 021).

All four landfill cells are constructed on native clay soils and are generally constructed with berms having vegetated exterior slopes. The inside slopes and crests of the berms are surfaced with stabilized CCR to control vegetation and to act as an erosion protection layer. CCR management and stormwater control activities performed at the CCR landfill cells are described below:

- Landfill Cell 1C. Landfill Cell 1C receives nonmarketable CCR, which are trucked from the Station. Storm water is directed to the storm water collection pond in the western portion of Cell 1C, where it is then transferred to the Cell 3 stormwater pond on an as-needed basis for discharge from this pond to Texas Pollutant Discharge Elimination System (TPDES) Outfall 004.
- Landfill Cell 2A. Landfill Cell 2A is a small active portion of Cell 2, which has been closed. A pugmill operation for mixing and stabilizing CCR for disposal in other cells or for beneficial reuse outside the SWMU 001 Landfill CCR multiunit had been located at Cell 2A, Storm water is directed to the southwestern portion of Cell 2A, where it is then transferred to the Cell 3 stormwater pond on an as needed basis for discharge from this pond to TPDES Outfall 004.
- Landfill Cell 2B. Landfill Cell 2B receives marketable CCR, which is trucked from the Station. Storm water is directed to the storm water collection pond in the southern portion of Cell 2B, where it is then transferred to the Cell 3 stormwater pond on an as-needed basis for discharge from this pond to TPDES Outfall 004.
- Landfill Cell 3. Landfill Cell 3 receives bottom ash, which is trucked from the Station. Storm water is directed to the storm water collection pond in the western portion of Cell 3. In accordance with the facility's TPDES permit, water from the Cell 3 stormwater pond is discharged through Outfall 004 to Smithers Lake on an as-needed basis.

A description of both CCR surface impoundments at the Station, including CCR management and stormwater control activities performed are described below:

- FGD Emergency Pond (E Pond, SWMU 020). The E Pond is located in the central portion of the Station as shown on Figure 1-2. The E Pond receives storm water runoff from the FGD dewatering area and also blowdown from the FGD system. This impoundment may also receive the contents of an FGD process vessel when the FGD system is not in operation. Per §257.101(k) of the Federal CCR Rule, CCR was removed from the E Pond and the E Pond was decontaminated. The E Pond was then retrofitted with the instillation of a bottom composite liner system during 2021.
- Air Preheater Pond (APH Pond, SWMU 021). The APH Pond is located in the southwestern portion of the Station as shown on Figure 1-2. The APH Pond receives effluent from air preheater wash and boiler cleaning wash, which consists of fly ash or economizer ash particles and water. Per §257.101(k) of the Federal CCR Rule and as per

the TCEQ CCR Permit Program, CCR was removed from the APH Pond and the APH Pond was decontaminated during 2020. The APH Pond was then retrofitted with the installation of a bottom composite liner system during 2020 and 2021.

Section 2
Groundwater Monitoring Systems and Hydrogeology

2.1 Groundwater Monitoring Systems

The groundwater monitoring systems for the three CCR units at the Station consist of a total of 25 wells installed into the uppermost aquifer, which are described in the subsections below. The locations and well identification numbers for the background (or upgradient) and downgradient groundwater monitoring wells that are part of the groundwater monitoring program are shown on the following figures:

- SWDA CCR Multiunit Landfill, Figure 2-1;
- E Pond, Figure 2-2; and
- APH Pond, Figure 2-3.

2.1.1 SWDA CCR Multiunit Landfill (SWMU 001)

The groundwater monitoring system for the SWDA CCR Multiunit Landfill consists of 14 monitoring wells screened into the uppermost aquifer (see Table 2-1 and Figure 2-1). Six monitoring wells are located hydraulically upgradient of the SWDA CCR Multiunit Landfill and monitor background quality in the uppermost aquifer. The remaining eight wells are located hydraulically downgradient of the SWDA CCR Multiunit Landfill and monitor the quality of groundwater in the uppermost aquifer passing beneath the waste boundary of the SWDA CCR Multiunit Landfill. The downgradient monitoring wells making up the CCR groundwater monitoring system were selected based on the direction of groundwater flow and using a well-spacing consistent with the locations of the upgradient wells. The SWDA CCR Multiunit Landfill wells are provided in Table 2-1 below.

SWDA CCR Multiunit Landfill Monitoring Well Network

UPGRADIENT WELLS	DOWNGRADIENT WELLS
MW-23R, MW-28D, MW-42, MW-43, MW-47, MW-48	MW-44, MW-46R, MW-50, MW-52, MW-54, MW-55R, MW-58, MW-65

No groundwater monitoring wells were installed or decommissioned as part of the CCR groundwater monitoring system for the SWDA CCR Multiunit Landfill during 2023.

2.1.2 E Pond (SWMU 020)

The groundwater monitoring system for the E Pond (SWMU 020) consists of five monitoring wells (MW-36, MW-37, MW-38R, MW-60, and MW-61) screened into the uppermost aquifer (see Figure 2-2). Monitoring wells MW-36 and MW-60 are located hydraulically upgradient of the E Pond and monitor background quality in the uppermost aquifer. The remaining three wells (MW-37, MW-38R, and MW-61) are located downgradient of the E Pond and monitor the quality of groundwater in the uppermost aquifer passing beneath the waste boundary of the E Pond.

No groundwater monitoring wells were installed or decommissioned as part of the CCR groundwater monitoring system for the E Pond during 2023.

2.1.3 APH Pond (SWMU 021)

The groundwater monitoring system for the APH Pond (SWMU 021) consists of six monitoring wells (MW-39R, MW-40, MW-41, MW-62, MW-63, and MW-64). Monitoring wells MW-39R, MW-40, and MW-62 are located hydraulically upgradient of the APH Pond and monitors background quality in the uppermost aquifer. MW-41, MW-63, and MW-64 are located hydraulically downgradient of the APH Pond and monitor the quality of groundwater in the uppermost aquifer passing beneath the waste boundary of the APH Pond.

During 2018, groundwater potentiometric surface maps historically prepared for the 2015 through 2017 detection monitoring events were reviewed to re-evaluate the apparent directions of groundwater flow in the uppermost aquifer at the APH Pond. Based on this re-evaluation, the groundwater monitoring system for the APH Pond was revised and updated to more adequately reflect the apparent directions of groundwater flow observed since the groundwater monitoring system was originally installed and to more accurately represent the natural range of background groundwater quality. As part of this re-evaluation, MW-39R and MW-40 were re-designated as background upgradient monitoring wells.

No new groundwater monitoring wells were installed or decommissioned as part of the CCR groundwater monitoring system for the APH Pond during 2023.

2.2 Semi-annual Detection Monitoring Sampling

Hydrologic Monitoring Inc. (HMI) performed the semi-annual detection monitoring events during the first and second half of 2023 per §352.941 of the TCEQ CCR Permit Program. HMI performed the monitoring activities under contract to TRC.

A total of four detection monitoring sampling events were performed during 2023. The first half 2023 semi-annual detection monitoring event was performed in April 2023 and a verification sampling event was performed during May 2023 to evaluate select parameters. The second half 2023 semi-annual detection monitoring event was performed during October 2023 and a verification resampling event was performed during November 2023 to evaluate select parameters.

2.2.1 Monitoring Well Inspection

Prior to sample collection, each well was visually inspected for conditions that could potentially affect the validity of the analytical results. The results of the inspection were documented on a Water Sample Log.

No deficiencies in well construction were noted during the four groundwater monitoring events performed during 2023.

2.2.2 Quarterly Background Detection Monitoring

Quarterly background groundwater quality detection monitoring was completed in April 2021 as part of developing a new background groundwater quality data set for the CCR unit (see *2019 Annual Report*). A total of eight quarterly background monitoring events were performed beginning in the third quarter of 2019 through the second quarter of 2021. The quarterly background samples were analyzed for both the Appendix III and Appendix IV Federal CCR Rule parameters. Wells sampled for the quarterly background detection monitoring events are as follows:

CCR UNIT	UPGRADIENT WELLS	DOWNGRADIENT WELLS
SWDA Multiunit	MW-23R, MW-28D, MW-42, MW-43, MW-47, MW-48	MW 44, MW-46R, MW-50, MW-52, MW-54, MW-55R, MW-58, MW-65
E Pond	MW-36, MW-60	MW-37, MW-38R, MW-61
APH Pond	MW-39R, MW-40, MW-62	MW-41, MW-63, MW-64

2.2.3 Semi-annual Detection Monitoring

The Appendix III field and laboratory analytical data collected during the April 2023 and October 2023 semi-annual detection monitoring events were the fourth and fifth semi-annual detection monitoring events that used the new background water quality data set to identify potential SSIs for the Appendix III data.

2.2.4 Analytical Laboratory

During 2023, the semi-annual detection monitoring groundwater samples were analyzed by ALS Environmental (ALS) located in Houston, Texas, which is a TCEQ certified laboratory (TCEQ ID T104704231-22-29).

2.2.5 Laboratory and Field Analyses

The semi-annual groundwater detection monitoring samples were analyzed for the Appendix III CCR constituents pursuant to 30 TAC Chapter 352. Additionally, field parameters (pH, temperature, specific conductivity, and turbidity) were obtained for all monitoring wells during the four groundwater monitoring events performed during 2023.

Laboratory and field analytical data are provided in Appendices A and B. The semi-annual detection monitoring analytical data for 2021 through 2023 are summarized in Table 2-2.

2.3 Laboratory Data Quality Review

Upon receipt of the April and October 2023 groundwater monitoring analytical data from the analytical laboratory and the May and November 2023 resampling events, the data were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination.

TRC concluded that the April, May, October, and November laboratory analytical data, analyzed by ALS, were complete and usable for the purposes of the CCR quarterly background and semi-annual detection monitoring programs. Laboratory data quality review information is provided in Appendix C.

2.4 Groundwater Flow Direction, Gradient, and Rate

Static groundwater elevations were measured for each monitoring well at all three CCR units during the April and October 2023 detection monitoring events prior to sample collection. These measurements are provided in Table 2-1 for the three CCR units. Groundwater potentiometric surface maps were developed for the April and October detection monitoring events to evaluate groundwater flow directions. The potentiometric surface maps are provided as the following figures:

- SWDA CCR Multiunit Landfill. Figures 2-4, and 2-7;
- APH Pond. Figures 2-5, and 2-8; and
- E Pond. Figures 2-6, and 2-9.

Groundwater flow direction and gradient information for all three CCR units for the 2023 detection monitoring sampling events are provided below:

SWDA CCR Multiunit Landfill. Groundwater is typically encountered at depths ranging from 15.42 (MW-23R) to 31.38 (MW-50) feet below the top of casing (btoc) at the SWDA CCR Multiunit Landfill, with the overall direction of groundwater flow beneath and in the vicinity of the CCR unit to the northeast. The average calculated groundwater gradient ranged from 0.0016 ft/ft to 0.0018 ft/ft with an average groundwater flow velocity of 15 ft/yr.

E Pond. Groundwater is typically encountered at depths ranging from 7.49 (MW-60) to 13.06 (MW-61) feet btoc at the E Pond, with the overall direction of groundwater flow beneath and in the vicinity of the CCR unit to the southwest. The average calculated groundwater gradient ranged from 0.0072 ft/ft to 0.0088 ft/ft with an average groundwater flow velocity of 78 ft/yr.

APH Pond. Groundwater is typically encountered at depths ranging from 8.01 (MW-41) to 14.18 (MW-40) feet btoc at the APH Pond, with the overall direction of groundwater flow beneath and in the vicinity of the CCR unit to the southwest and southeast. The average calculated groundwater gradient ranged from 0.0018 ft/ft to 0.0021 ft/ft with an average groundwater flow velocity of 21 ft/yr.

2.5 Monitoring Wells Installed or Decommissioned

No groundwater monitoring wells were installed or decommissioned during 2023.

Section 3
Status of Groundwater Monitoring and Corrective Action Program

3.1 Semi-annual Detection Monitoring Summary

This Annual Report provides the monitoring data for the two semi-annual detection monitoring events that were performed for all three CCR units during April and October 2023. In addition, this Annual Report provides the previous monitoring data from 2021 and 2022.

Previous monitoring data were provided in the 2017, 2018, 2019, 2020, 2021 and 2022 Annual Reports. Based on the data and results of the monitoring activities during 2023, the status of the groundwater monitoring and corrective action program at the Station including key actions completed, problems encountered, and actions to resolve the problems are summarized in the following subsections.

3.2 Key Actions Completed

The following key actions were completed during 2023:

- The *2022 Annual Groundwater Monitoring and Corrective Action Report* was prepared per §257.90(e) and (f) of the Federal CCR Rule and 30 TAC Chapter 352 of the TCEQ CCR Permit Program, placed into the FOR by January 31, 2023, and posted to NRG's publicly accessible CCR website by March 2, 2023;
- The first and second half 2023 semi-annual detection monitoring events for the CCR units was performed during April and October 2023 and the samples were analyzed for the Appendix III detection monitoring constituents;
- Resampling monitoring events were performed during May and November 2023 to confirm the detection of potential SSIs;
- To perform the statistical analysis for the two semi-annual (April and October) semi-annual detection monitoring events, the Appendix III analytical results were compared to the new background water quality data set developed using the eight quarterly detection monitoring events performed beginning in the third quarter of 2019 through the second quarter of 2021;
- Groundwater potentiometric surface maps were prepared for the CCR units for the April and October 2023 semi-annual detection monitoring events;
- The directions and apparent flow rate of groundwater were determined;

- Potential SSIs above background were identified for the CCR units for the second half 2022, first half 2023, and second half 2023 semi-annual detection monitoring events;
- NRG notified TCEQ in December 2022 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2022 (October) semi-annual detection monitoring event. An ASD was submitted to TCEQ during the first quarter 2023;
- NRG notified TCEQ in June 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the first half 2023 (April) semi-annual detection monitoring event. An ASD was submitted to the TCEQ in the third quarter of 2023; and
- NRG notified TCEQ in December 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2023 (October) semi-annual detection monitoring event and that NRG would prepare and submit an ASD with this Annual Report; and
- Written ASDs were completed during 2023 that successfully demonstrated that potential SSIs above background for the second half 2022 (October), the first half 2023 (April) and second half 2023 (October) semi-annual detection monitoring events were due to alternative sources.

Based on the successful completion of written ASDs, all three CCR units remained in detection monitoring during 2023. No corrective action activities were performed for the CCR units pursuant to the TCEQ Permit Program during 2023.

3.3 Problems Encountered and Resolution

During 2023, no problems were encountered for the CCR groundwater monitoring program for the Station and no actions were taken to resolve problems.

Section 4
Statistical Analysis and Results

This Annual Report identifies potential SSIs above background that were determined for groundwater samples collected during the April 2023, and October 2023 semi-annual detection monitoring events.

4.1 April 2023 Semi-annual Detection Monitoring Event

Statistical analysis and identification of potential SSIs for the first half 2023 (April 2023) semi-annual detection monitoring event were completed during June 2023. Select wells and analytes were resampled in May 2023 following receipt of the April 2023 sampling data. The statistical analysis was conducted in accordance with the revised Statistical Methods Certification (August 2018) using Lower Tolerance Limits (LTLs) where applicable, and upper tolerance limits (UTLs) per the TCEQ CCR Permit Program.

The eighth and final quarterly background detection monitoring event was performed during April 2021 as part of the development of a new background groundwater quality data set for the groundwater monitoring program. Statistical analysis and identification of potential SSIs for the April 2023 semi-annual detection monitoring event was performed using the new background water quality data set. Per the TCEQ CCR Permit Program, potential SSIs were identified in June 2023 for the April 2023 semi-annual detection monitoring event.

The results of the statistical analysis for the April 2023 semi-annual detection monitoring event for the three CCR units are summarized below in Tables 4-1, 4-2, and 4-3. In accordance with 30 TAC Chapter 352, ASDs were successfully performed during 2023 to evaluate the potential SSIs as discussed in Section 5.0, which are provided with the 2023 Annual Report. The ASDs were also submitted to TCEQ in August 2023.

4.1.1 SWDA CCR Multiunit Landfill

The results of the statistical analysis for the April 2023 semi-annual detection monitoring event are summarized in the table below. Three potential SSIs were identified in upgradient monitoring well MW-23R.

Table 4-1
Potential SSIs – April 2023, Detection Monitoring, SWDA CCR Multiunit Landfill SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
UPGRADIENT MONITORING WELLS						
Calcium	MW-23R	N/A	420	5/1/2023	533	mg/L
Sulfate	MW-23R	N/A	670	5/1/2023	1,670	mg/L
TDS	MW-23R	N/A	3,700	5/1/2023	4,390	mg/L

mg/L= milligrams per liter N/A = Not Applicable
LTL – Lower Tolerance Limit UTL – Upper Tolerance Limit

4.1.2 E Pond

The results of the statistical analysis for the April 2023 semi-annual detection monitoring event are summarized in the table below. Eight potential SSIs were identified. The eight potential SSIs were identified in downgradient monitoring wells MW-37, MW-38R, and MW-61.

Table 4-2
Potential SSIs – April 2023, Detection Monitoring, E Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	N/A	0.12	5/1/2023	0.329	mg/L
Boron	MW-38R	N/A	0.12	5/1/2023	0.425	mg/L
Boron	MW-61	N/A	0.12	5/1/2023	1.24	mg/L
Sulfate	MW-37	N/A	470	5/1/2023	1,110	mg/L
Sulfate	MW-38R	N/A	470	5/1/2023	860	mg/L
Sulfate	MW-61	N/A	470	5/1/2023	1,330	mg/L
TDS	MW-37	N/A	1,800	5/1/2023	1,930	mg/L
TDS	MW-61	N/A	1,800	5/1/2023	1,890	mg/L

mg/L= milligrams per liter N/A = Not Applicable
LTL – Lower Tolerance Limit UTL – Upper Tolerance Limit

4.1.3 APH Pond

The results of the statistical analysis for the April 2023 semi-annual detection monitoring event are summarized in the table below. Two potential SSIs were identified. Two potential SSIs were identified in downgradient monitoring well MW-63.

Table 4-3
Potential SSIs – April 2023, Detection Monitoring, APH Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-63	N/A	360	5/1/2023	735	mg/L
Calcium	MW-63	N/A	290	5/1/2023	335	mg/L

mg/L= milligrams per liter N/A = Not Applicable
LTL – Lower Tolerance Limit UTL – Upper Tolerance Limit

4.2 October 2023 Semi-annual Detection Monitoring Event

Statistical analysis and identification of potential SSIs for the second half 2023 (October) semi-annual detection monitoring event were completed during December 2023. Select wells and analytes were resampled in November 2023 following receipt of the October 2023 sampling data. The statistical analysis was conducted in accordance with the revised Statistical Methods Certification (August 2018) using LTLs where applicable, and UTLs per the TCEQ CCR Permit Program.

The results of the statistical analysis for the October 2023 semi-annual detection monitoring event for the three CCR units are summarized below in Tables 4-4, 4-5, and 4-6. In accordance with 30 TAC Chapter 352, ASDs were successfully performed to evaluate the potential SSIs as discussed in Section 5.0, which are provided with this Annual Report. The ASDs were also submitted to TCEQ during the first quarter 2024.

4.2.1 SWDA CCR Multiunit Landfill

The results of the statistical analysis for the October 2023 semi-annual detection monitoring event are summarized in the table below. Four potential SSIs were identified. Two potential SSI in upgradient monitoring wells MW-23R and MW-48, and two potential SSIs in downgradient monitoring wells MW-52 and MW-65.

Table 4-4
Potential SSIs – October 2023, Detection Monitoring, SWDA CCR Multiunit Landfill SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
UPGRADIENT MONITORING WELLS						
Sulfate	MW-23R	N/A	670	11/1/2023	1,540	mg/L
Boron	MW-48	N/A	0.65	10/9/2023	0.735	mg/L
DOWNGRADIENT MONITORING WELLS						
pH	MW52	6.9		11/1/2023	6.74	SU

pH	MW-65	6.9		11/1/2023	6.84	SU

mg/L= milligrams per liter   N/A = Not Applicable
LTL – Lower Tolerance Limit   UTL – Upper Tolerance Limit   SU – Standard Units

4.2.2 E Pond

The results of the statistical analysis for the October 2023 semi-annual detection monitoring event are summarized in the table below. Six potential SSIs were identified in downgradient monitoring wells MW-37, MW-38R, and MW-61.

Table 4-5
Potential SSIs – October 2023, Detection Monitoring, E Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
DOWNGRADIENT MONITORING WELLS						
Boron	MW-37	N/A	0.12	11/1/2023	0.401	mg/L
Sulfate	MW-37	N/A	470	11/1/2023	1,130	mg/L
Boron	MW-38R	N/A	0.12	11/1/2023	0.406	mg/L
Sulfate	MW-38R	N/A	470	11/1/2023	738	mg/L
Boron	MW-61	N/A	0.12	11/1/2023	1.01	mg/L
Sulfate	MW-61	N/A	470	11/1/2023	1,190	mg/L

mg/L= milligrams per liter   N/A = Not Applicable
LTL – Lower Tolerance Limit   UTL – Upper Tolerance Limit

4.2.3 APH Pond

The results of the statistical analysis for the October 2023 semi-annual detection monitoring event are summarized in the table below. One potential SSI was identified in downgradient monitoring well MW-63.

Table 4-6
Potential SSIs – October 2023, Detection Monitoring, APH Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-63	N/A	360	11/1/2023	661	mg/L

mg/L= milligrams per liter   S.U. = standard units   N/A = Not Applicable
LTL – Lower Tolerance Limit   UTL – Upper Tolerance Limit

Section 5
Alternative Source Demonstrations

As described in Section 4.0, potential SSIs above background levels were identified for the three CCR units for the first half (April) 2023, and the second half (October) 2023 semi-annual detection monitoring events. ASDs were prepared for the first half (April) 2023 monitoring events during 2023 that successfully documented that alternative sources or historical errors in statistical analysis were responsible for the potential SSIs observed. The ASDs were submitted to TCEQ in August 2023.

ASDs for the three CCR units for the second half (October) 2023 monitoring event will be prepared and submitted to TCEQ during the first quarter 2024. At the request of TCEQ, these ASDs are appended to this Annual Report in Appendix D.

Pursuant to the TCEQ CCR Permit Program, the owner or operator may demonstrate that a source other than the CCR unit caused the SSI(s) over background levels for a constituent or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. To evaluate the potential SSIs and to determine whether an ASD could be successfully demonstrated for the CCR Units, ASDs were completed and certified by a qualified Texas P.E. during 2023 per 30 TAC Chapter 352 as follows:

- In February 2023, ASDs were certified for potential SSIs for the three CCR units for the second half (October) 2022 semi-annual detection monitoring sampling event;
- In August 2023, ASDs were certified for potential SSIs for the three CCR units for the first half (April) 2023 semi-annual detection monitoring sampling event; and
- In January 2024, ASDs were certified for potential SSIs for the three CCR units for the second half (October) 2023 semi-annual detection monitoring sampling event.

The second half 2022 and first half 2023 ASDs were submitted to TCEQ for review and approval pursuant to the TCEQ CCR Permit Program. The second half 2023 ASD is being submitted to TCEQ for review and approval with this Annual Report at the request of TCEQ.

Pursuant to the TCEQ CCR Permit Program, ASDs were successfully completed for the three CCR units. Therefore, all three CCR units remained in detection monitoring during 2023. A total of six ASDs were completed during 2023 and three were completed in January 2024 for the three semi-annual detection monitoring events, which are discussed in the subsections below. The completed ASDs are provided in Appendix D.

5.1 Summary of ASDs

5.1.1 SWDA CCR Multiunit Landfill

Three ASDs were successfully completed for the SWDA CCR Multiunit Landfill during 2023. The ASDs are summarized for the second half (October) 2022, first half (April) 2023 and second half (October) 2023 semi-annual detection monitoring sampling events below:

- October 2022. Sulfate and TDS were identified for upgradient monitoring well MW-23R. The ASD was completed in February 2023. Two alternative sources were identified for the potential SSIs:
    1) Natural variations in upgradient background groundwater quality; and
    2) Enhanced mineral dissolution and changes in geochemical conditions within the aquifer.
- April 2023. Calcium, sulfate, and TDS were identified for upgradient monitoring well MW-23R. The ASD was completed in August 2023. Two alternative sources were identified for the potential SSIs:
    1) Calcium and sulfate SSIs are likely associated with natural variations in the geochemistry of groundwater in the aquifer; and
    2) The increasing concentrations of calcium and sulfate were consistent with increasing concentrations of TDS, which were likely related to enhanced mineral dissolution and changes in geochemical conditions within the aquifer.
- October 2023. Sulfate was identified for upgradient monitoring well MW-23R, boron was identified for upgradient monitoring well MW-48, and pH was identified for downgradient monitoring wells MW-52 and MW-65. The ASD was completed in January 2024. Two alternative sources were identified for the potential SSIs:
    1) Boron, sulfate, and pH SSIs are likely associated with natural variations in the geochemistry of groundwater in the aquifer; and
    2) The increasing concentrations of boron and sulfate were consistent with increasing concentrations of TDS, which were likely related to enhanced mineral dissolution and changes in geochemical conditions within the aquifer.

5.1.2 E Pond

Three ASDs were successfully completed for the E Pond during 2023. The ASDs are summarized for the second half (October) 2022, first half (April 2023) and second half (October) 2023 semi-annual detection monitoring sampling events below:

- October 2022. Eight potential SSIs were identified in three downgradient monitoring wells, MW-37, MW-38R and MW-61. Boron, sulfate, and TDS were identified as potential SSIs. Alternative sources were identified for the potential SSIs:
  1) The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
  2) The presence of CCR materials in the vicinity of the monitoring wells prior to their modification to include risers from the ground surface provided an opportunity for surface materials to inadvertently enter the wells directly from the ground surface.
  3) Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical date for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.
  4) It appears that the construction activities that occurred during the retrofit of the E Pond per the federal CCR Rule and the Closure Plan during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
     a. As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
     b. Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
     c. Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;

    d. As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;

  5) As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters; and
  6) Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

- April 2023. Eight potential SSIs were identified in three downgradient monitoring wells, MW-37, MW-38R and MW-61. Boron, sulfate, and TDS were identified as potential SSIs. Alternative sources were identified for the potential SSIs:
  1) The bottom of the E Pond is separated from the upper aquifer system by a confining unit (Stratum PA-1) that hydraulically isolates the bottom of the E Pond from the upper aquifer system (Stratum PA-2). Available data indicate the upper aquifer system is under confined conditions and the confining unit (Stratum PA-1) acts as a vertical hydraulic barrier between the bottom of the E Pond and the upper aquifer system (Stratum PA-2).
  2) The E Pond is located at an area of active Station activities where both CCR and non-CCR materials are present at the immediate vicinity and hydraulically upgradient of the E Pond, which could potentially serve as alternative sources of CCR constituents in groundwater;
  3) Prior to the third semiannual detection monitoring event, NRG modified the monitoring wells by installing casing extensions and protective casings to protect the wells from the accidental introduction of CCR materials directly into groundwater samples during sample collection. The wells were further redeveloped prior to the fourth sampling event. Although the wells have been improved and sampling collection methods modified, groundwater/groundwater samples may still be affected by the prior, historical inadvertent introduction of surface CCR into the monitoring wells and/or groundwater samples during sample collection.
- October 2023. Six potential SSIs were identified at three downgradient monitoring wells (MW-37, MW-38R and MW-61). Boron and sulfate were identified as potential SSIs. Alternative sources were identified for the potential SSIs:

1. The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
2. Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical data for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters. Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

5.1.3 APH Pond

Three ASDs were successfully completed for the APH Pond during 2023. The ASDs are summarized for the second half (October) 2022, first half (April) 2023 and second half (October 2023) semi-annual detection monitoring sampling events below:

- October 2022. Three potential SSIs were identified in one downgradient monitoring wells (MW-63). Calcium, sulfate, and pH were identified as potential SSIs. Alternative sources were identified for the potential SSIs:
    1) It appears that the construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
        a. As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
        b. Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
        c. Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the

uppermost aquifer system by acting as a barrier to any such potential migration;

    d. As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;

2) As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters; and
3) Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

- April 2023. Two potential SSIs were identified in one downgradient monitoring wells (MW-63). Calcium and sulfate were identified as potential SSIs. Alternative sources were identified for the potential SSIs:
    1) The construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer.;
    2) As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.; and
    3) Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

- October 2023. One potential SSI was identified at one downgradient monitoring well (MW-63). Sulfate was identified as a potential SSI. Alternative sources were identified for the potential SSIs:
    1. The construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer.;
    2. As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.; and

3. Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

5.2 Detection Monitoring During 2023

As discussed previously, written ASDs were completed and certified by a qualified Texas P.E. during 2023 and 2024 for the three CCR units. The ASDs successfully demonstrated that alternative sources or laboratory data quality issues were responsible for the potential SSIs identified in groundwater for the first half (April 2023) and second half (October 2023) semi-annual detection monitoring events. Therefore, all three CCR units remained in detection monitoring programs at the start and end of 2023.

5.3 Transition Between Monitoring Programs

During 2023, the groundwater monitoring system for all three CCR units remained in detection monitoring. Therefore, there was no transition between detection and assessment monitoring programs for the Landfill CCR unit during 2023.

Section 6
Projected Key Activities and Timelines for 2024

Key activities and project timelines for 2024 will be performed pursuant to TCEQ's CCR Permit Program and are as follows:

- The *2023 Annual Report* will be prepared and placed into the Station's Facility Operating Record (FOR) by January 31, 2024, submitted to the TCEQ within 30 days of placement in the FOR, and posted to the Station's publicly accessible CCR website by March 2, 2024;
- An ASD for the second half 2023 (October) semi-annual detection monitoring events will be prepared and submitted to the TCEQ with this Annual Report;
- Both semi-annual groundwater detection monitoring events for the three CCR units will be performed during the first and second halves of 2024 (March and September) for the Appendix III detection monitoring parameters;
- As necessary, the first and second half 2024 resampling detection monitoring events for the Landfill CCR will be performed within 30 days of the original monitoring events and samples will be reanalyzed for select Appendix III detection monitoring constituents;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2024 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined for the first and second halves of 2024 semi-annual detection monitoring events;
- Statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2024 semi-annual detection monitoring events;
- NRG will notify TCEQ, if required, if potential SSIs are identified and whether ASDs will be prepared for the first and second halves of 2024 semi-annual detection monitoring events; and
- Written ASDs will be prepared and submitted to TCEQ for review and approval, if required, to evaluate potential SSIs above background for the first and second halves of 2024 semi-annual detection monitoring events.

Section 7
Conclusions and Recommendations

In conclusion, this Annual Report contains the information required pursuant to 30 TAC §352.901 and 30 TAC §352.902 and Subsection 1.2 of the TCEQ Draft Technical Guidance No. 32 of the TCEQ CCR Permit Program. This information is provided in this Annual Report. No other information is required to be included in the Annual Report as specified in 30 TAC §352.971 and §352.981 of the TCEQ CCR Permit Program. The following key actions were completed during 2023:

- The *2022 Annual Groundwater Monitoring and Corrective Action Report* was prepared per §257.90(e) and (f) of the Federal CCR Rule and 30 TAC Chapter 352 of the TCEQ CCR Permit Program, placed into the FOR by January 31, 2023, and posted to NRG's publicly accessible CCR website by March 2, 2023;
- The first and second half 2023 semi-annual detection monitoring events for the CCR units was performed during April and October 2023 and the samples were analyzed for the Appendix III detection monitoring constituents;
- Resampling monitoring events were performed during May and November 2023 to confirm the detection of potential SSIs;
- To perform the statistical analysis for the two semi-annual (April and October) semi-annual detection monitoring events, the Appendix III analytical results were compared to the new background water quality data set developed using the eight quarterly detection monitoring events performed beginning in the third quarter of 2019 through the second quarter of 2021;
- Groundwater potentiometric surface maps were prepared for the CCR units for the April and October 2023 semi-annual detection monitoring events;
- The directions and apparent flow rate of groundwater were determined;
- Potential SSIs above background were identified for the CCR units for the second half 2022, first half 2023, and second half 2023 semi-annual detection monitoring events;
- NRG notified TCEQ in December 2022 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2022 (October) semi-annual detection monitoring event. An ASD was submitted to TCEQ during the first quarter 2023;
- NRG notified TCEQ in June 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the first half 2023 (April) semi-annual detection monitoring event. An ASD was submitted to the TCEQ in the third quarter of 2023; and

- NRG notified TCEQ in December 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2023 (October) semi-annual detection monitoring event and that NRG would prepare and submit an ASD with this Annual Report; and
- Written ASDs were completed during 2023 that successfully demonstrated that potential SSIs above background for the second half 2022 (October), the first half 2023 (April) and second half 2023 (October) semi-annual detection monitoring events were due to alternative sources.

Based on the key activities performed during 2023, it is recommended that the SWDA CCR Multiunit Landfill, APH Pond, and the E Pond remain in detection monitoring subject to the following key activities and that the following project timeline be implemented during 2024:

- The *2023 Annual Report* will be prepared and placed into the Station's Facility Operating Record (FOR) by January 31, 2024, submitted to the TCEQ within 30 days of placement in the FOR, and posted to the Station's publicly accessible CCR website by March 2, 2024;
- An ASD for the second half 2023 (October) semi-annual detection monitoring events will be prepared and submitted to the TCEQ with this Annual Report;
- Both semi-annual groundwater detection monitoring events for the three CCR units will be performed during the first and second halves of 2024 (March and September) for the Appendix III detection monitoring parameters;
- As necessary, the first and second half 2024 resampling detection monitoring events for the Landfill CCR will be performed within 30 days of the original monitoring events and samples will be reanalyzed for select Appendix III detection monitoring constituents;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2024 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined for the first and second halves of 2024 semi-annual detection monitoring events;
- Statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2024 semi-annual detection monitoring events;
- NRG will notify TCEQ, if required, if potential SSIs are identified and whether ASDs will be prepared for the first and second halves of 2024 semi-annual detection monitoring events; and
- Written ASDs will be prepared and submitted to TCEQ for review and approval, if required, to evaluate potential SSIs above background for the first and second halves of 2024 semi-annual detection monitoring events.

Section 8
References

Federal Register, Vol. 80 No. 74, April 17, 2015, 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule.

Federal Register, Vol. 85, No. 168, August 28, 2020, 40 CFR Part 257, Hazardous and Solid Waste Management System; Disposal of CCR from Electric Utilities; A Holistic Approach to Closure Part A: Deadline to Initiate Closure.

ERM, Sampling and Analysis Plan, October 2017, W.A. Parish Electric Generating Station, Thompsons, Texas.

ERM, CCR Statistical Analysis Plan, October 2017, W.A. Parish Electric Generating Station, Thompsons, Texas.

TCEQ, Draft Technical Guidance No. 32, Coal Combustion Residuals Groundwater Monitoring and Corrective Action.

TCEQ, 30 TAC Chapter 352, Coal Combustion Residuals Waste Management and Registration Program for Coal Combustion Residuals (CCR) Implementation.

TRC, 2018 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2019, W.A. Parish Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Thompsons, Texas.

TRC, 2019 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2020, W.A. Parish Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Thompsons, Texas.

TRC, 2020 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2021, W.A. Parish Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Thompsons, Texas.

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TRC, 2022 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2023, W.A. Parish Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Thompsons, Texas.

TRC, Alternative Source Demonstration, February 2023, W.A. Parish Electric Generating Station, FGD Emergency Pond (SWMU 020), Thompsons, Texas.

TRC, Alternative Source Demonstration, February 2023, W.A. Parish Electric Generating Station, Air Preheater Pond (SWMU 021), Thompsons, Texas.

TRC, Alternative Source Demonstration, February 2023, W.A. Parish Electric Generating Station, Solid Waste Disposal Area (SWMU 001) CCR Multiunit, Jewett, Texas.

TRC, Alternative Source Demonstration, August 2023, W.A. Parish Electric Generating Station, FGD Emergency Pond (SWMU 020), Thompsons, Texas.

TRC, Alternative Source Demonstration, August 2023, W.A. Parish Electric Generating Station, Air Preheater Pond (SWMU 021), Thompsons, Texas.

TRC, Alternative Source Demonstration, August 2023, W.A. Parish Electric Generating Station, Solid Waste Disposal Area (SWMU 001) CCR Multiunit, Jewett, Texas.

TRC, Alternative Source Demonstration, January 2024, W.A. Parish Electric Generating Station, FGD Emergency Pond (SWMU 020), Thompsons, Texas.

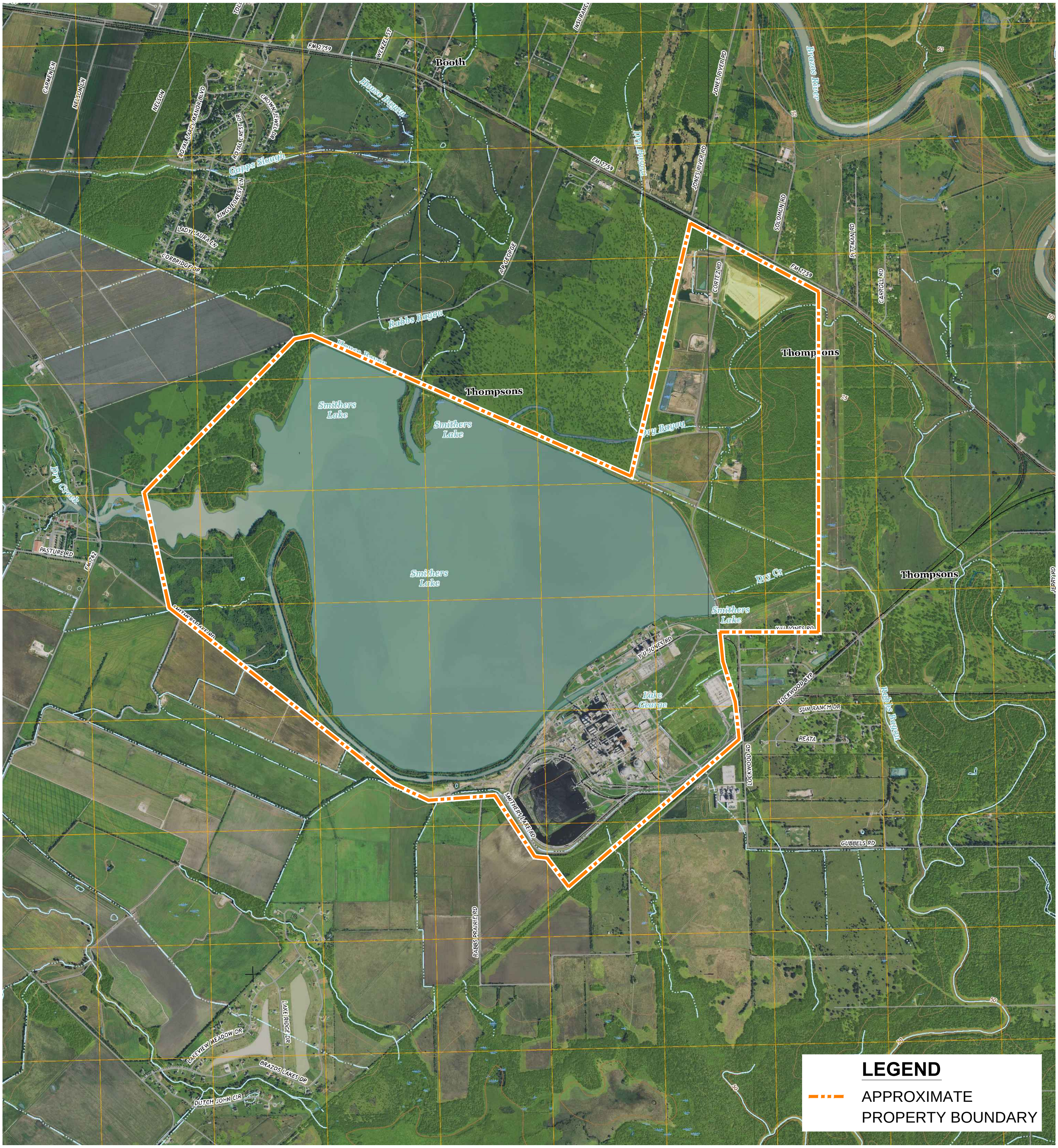
TRC, Alternative Source Demonstration, January 2024, W.A. Parish Electric Generating Station, Air Preheater Pond (SWMU 021), Thompsons, Texas.

TRC, Alternative Source Demonstration, January 2024, W.A. Parish Electric Generating Station, Solid Waste Disposal Area (SWMU 001), Thompsons, Texas.

TRC, Groundwater Monitoring System Certification, August 2018, W.A. Parish Electric Generating Station, Thompsons, Texas.

TRC, Statistical Methods Certification, August 2018, W.A. Parish Electric Generating Station, Thompsons, Texas.

Figures



REFERENCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLES
MISSOURI CITY, TEXAS (2016) / SMITHERS LAKE, TEXAS (2016) / SUGAR LAND, TEXAS (2016) / THOMPSONS, TEXAS (2016)

TEXAS
QUADRANGLE LOCATION

N

0 | 2,000' | 4,000' | 8,000'

SCALE IN FEET
1" = 4,000'-0"

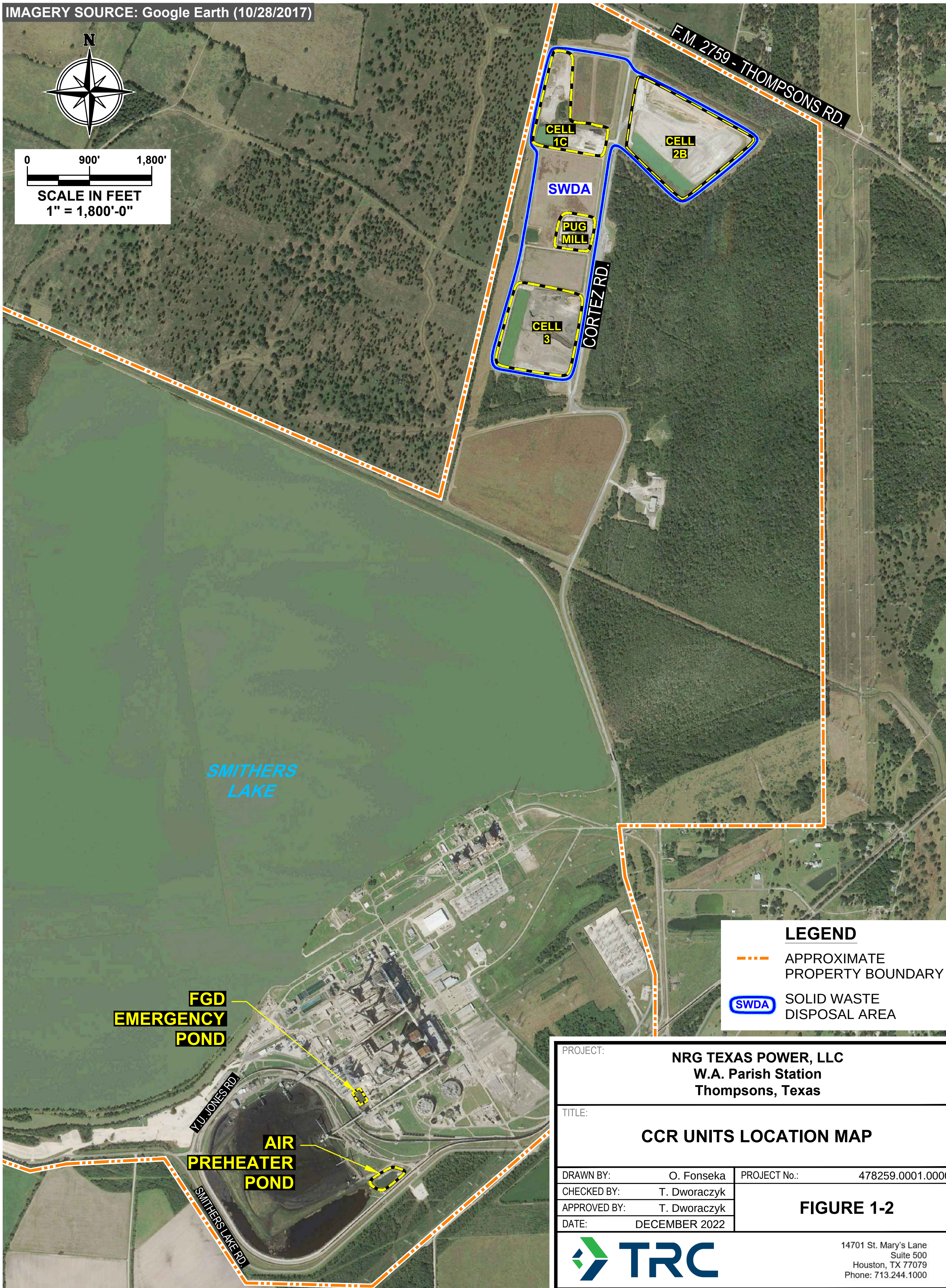
PROJECT:	**NRG TEXAS POWER, LLC** **W.A. Parish Station** **Thompsons, Texas**
TITLE:	**SITE LOCATION MAP**

DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk		**FIGURE 1-1**
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC
14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg 01/16/19



PROJECT: NRG TEXAS POWER, LLC W.A. Parish Station Thompsons, Texas			
TITLE: CCR UNITS LOCATION MAP			
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	FIGURE 1-2	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg 01/30/19

LEGEND

- Upgradient Monitoring Well
- Downgradient Monitoring Well

0 250 500 Feet
1 " = 500 '
1:6,000
N

NOTE:
R = Monitoring Well replaced in 2019

TRC
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PROJECT:	NRG TEXAS POWER, LLC W.A. PARISH STATION THOMPSONS, TEXAS	DRAWN BY:	F. YARBROUGH
		CHECKED BY:	J. ATWELL
		APPROVED BY:	
TITLE:	SOLID WASTE DISPOSAL AREA GROUNDWATER MONITORING NETWORK	DATE:	JANUARY 2023
		PROJ NO:	478259.0001.0000
		FILE:	478259.0001_2-1.mxd
		FIGURE 2-1	

Legend

Upgradient Monitoring Well

Downgradient Monitoring Well

N

0 150 300 FT

1 " = 150 '
1:1,800

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PROJECT:

NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

FGD EMERGENCY POND
GROUNDWATER MONITORING NETWORK

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ. NO:	478259.0001.0000
FILE:	478259.0001_2-2

FIGURE 2-2

Legend

- Downgradient Monitoring Well
- Upgradient Monitoring Well

AERIAL IMAGE SOURCE: GOOGLE EARTH AND THEIR DATA PARTNERS (10/28/2017).

N

0 150 300 FT

1 " = 150 '
1:1,800

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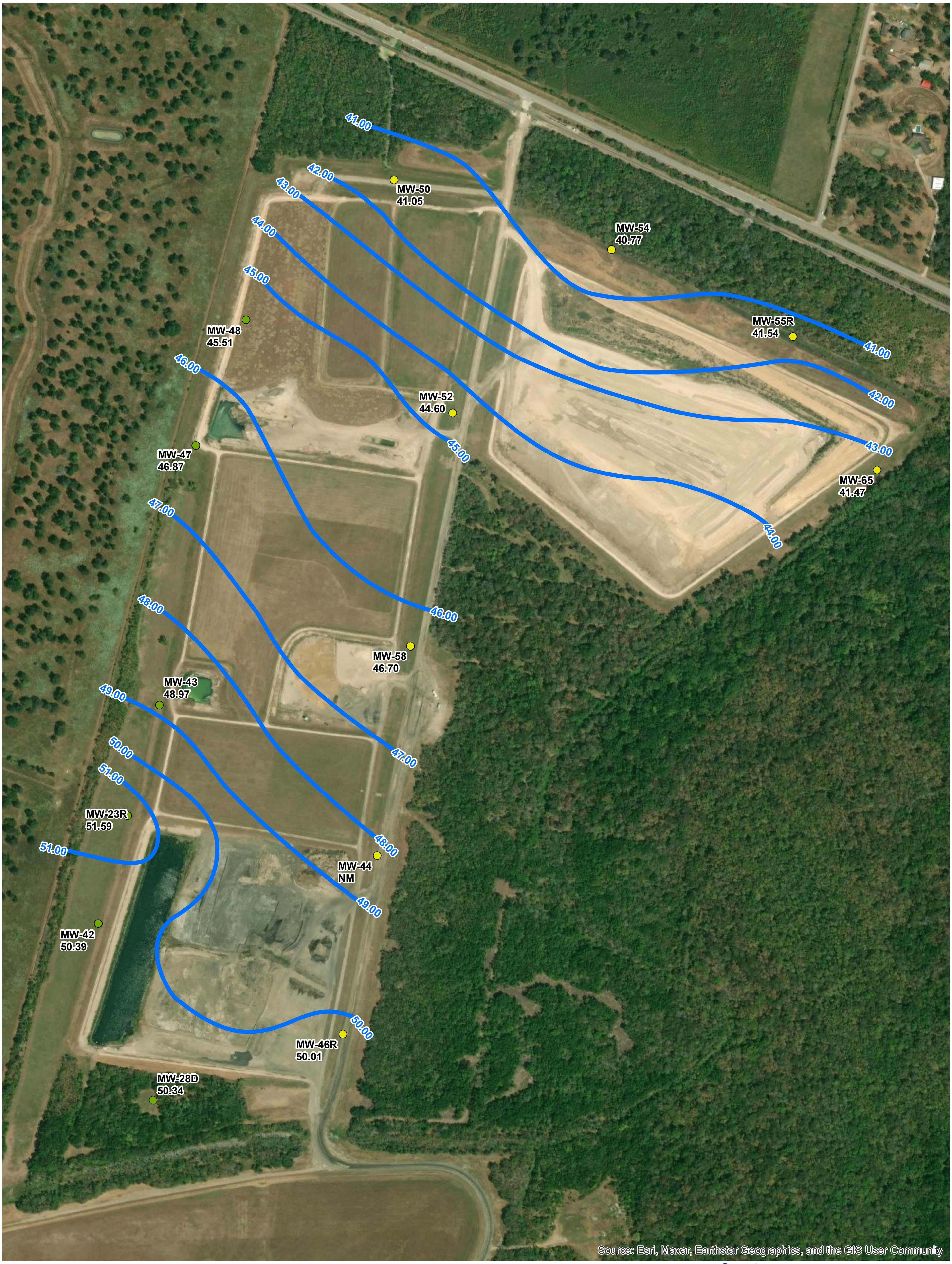
PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
AIR PREHEATER POND
GROUNDWATER MONITORING NETWORK

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	
DATE:	JANUARY 2023
PROJ. NO.:	478259.0001.0000
FILE:	478259.0001_2-3.mxd

FIGURE 2-3



LEGEND

- Multiunit Upgradient Monitor Well
- Multiunit Downgradient Monitor Well
- *50.34* Groundwater Elevation (FT MSL)
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)

NOTE: GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2023.

0 250 500 Feet

1 " = 500 '

1:6,000

N

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PROFESSIONAL GEOSCIENTIST

AD 1-29-24

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PROJECT:

NRG TEXAS POWER, LLC
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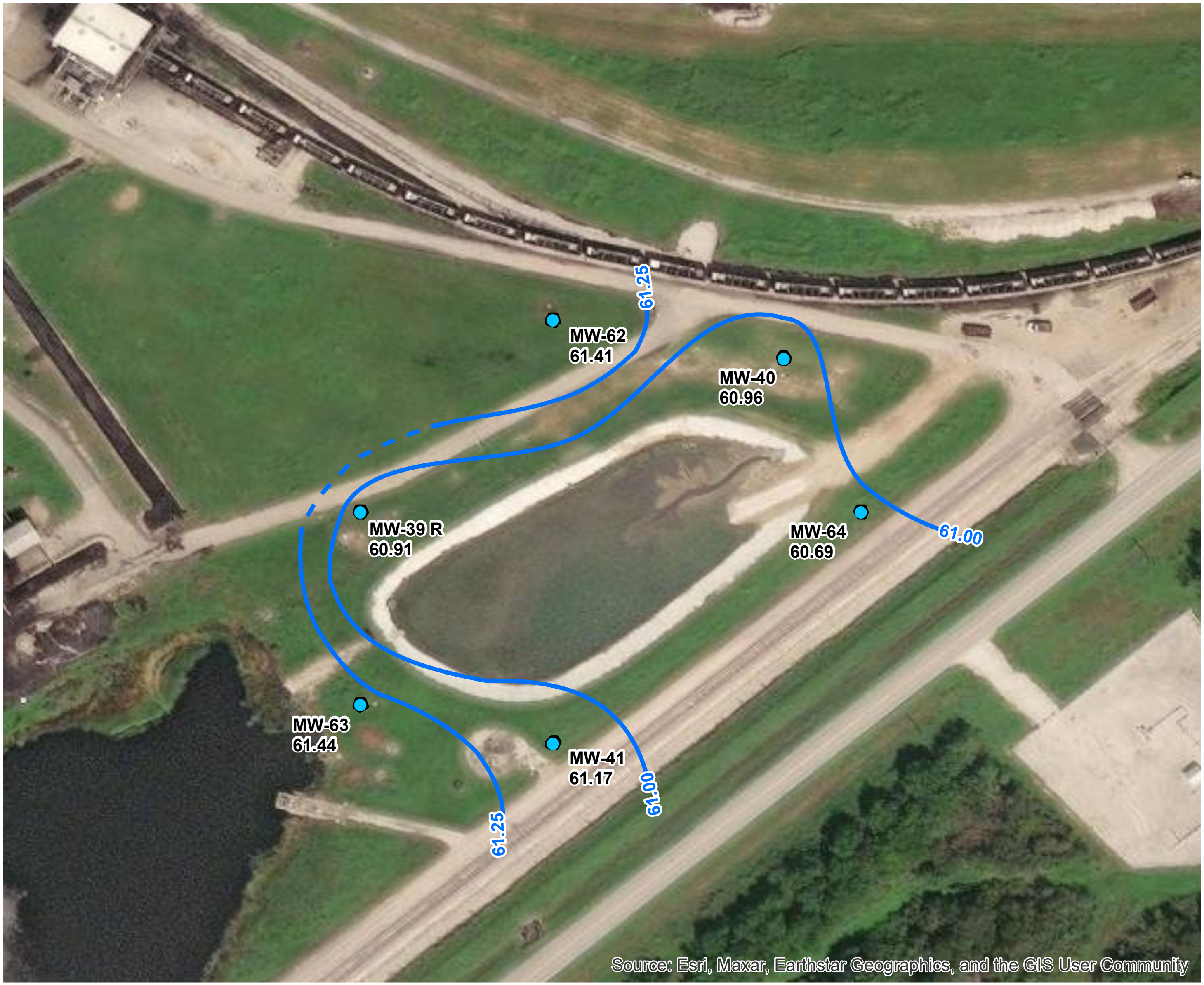
THOMPSONS, TEXAS

TITLE:

SOLID WASTE DISPOSAL AREA
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ NO:	528472.0000.0000
FILE:	528472.0000_2-4.mxd

FIGURE 2-4



Legend

- Monitor Well
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- ***61.41*** Groundwater Elevation (FT MSL)

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NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2023.

N

0 150 300 FT

1 " = 150 '
1:1,800

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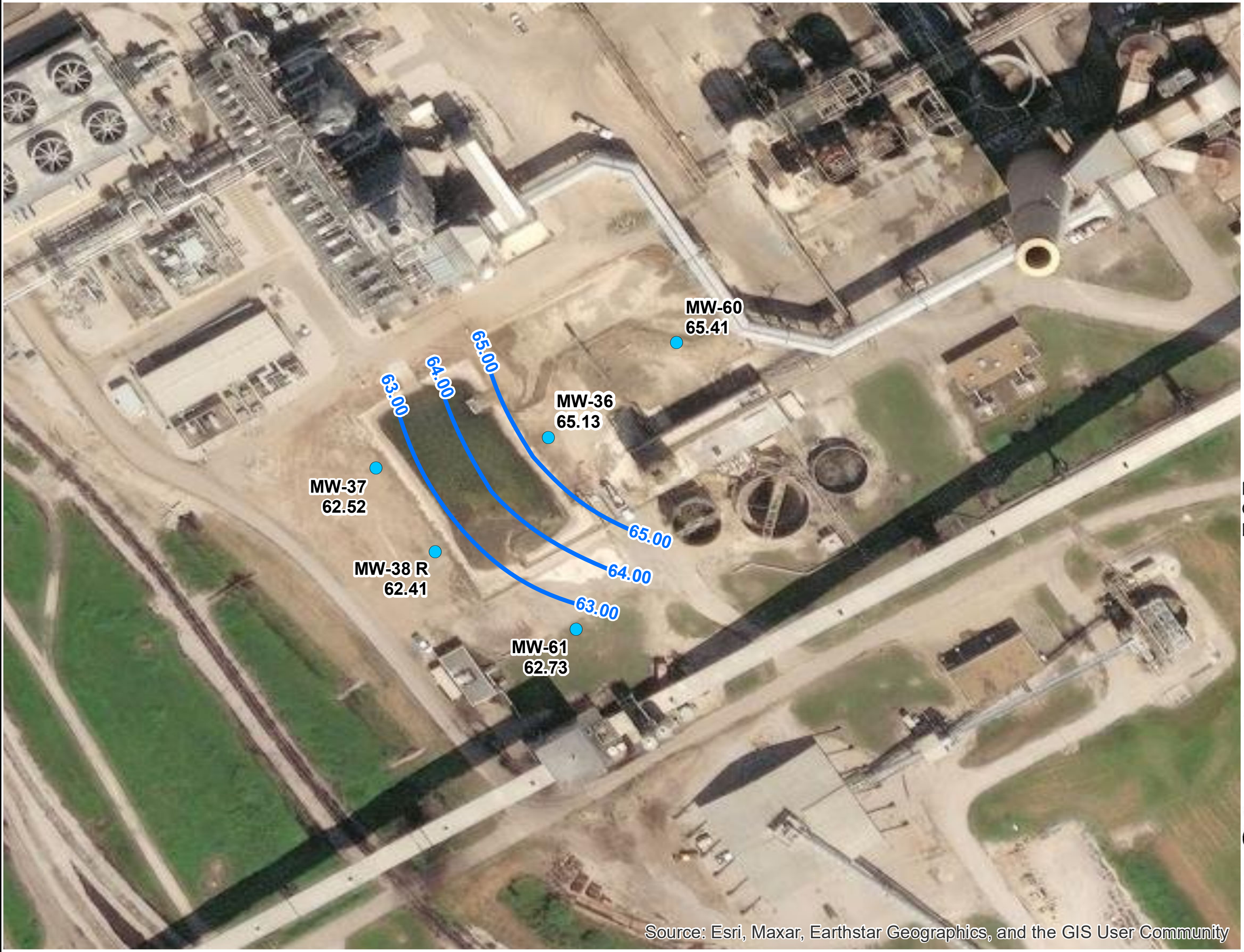
PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
AIR PREHEATER POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ. NO.:	585638.0000.0001
FILE:	585638.0000_2-5

FIGURE 2-5



Legend

- Monitor Well
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- *65.41* Groundwater Elevation (FT MSL)

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PROFESSIONAL GEOSCIENTIST

AD
1-23-24

NOTE:
GROUNDWATER ELEVATION MEASURED
BY HMI ON APRIL 2023

N

0 150 300 FT
1 " = 150 '
1:1,800

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PROJECT:

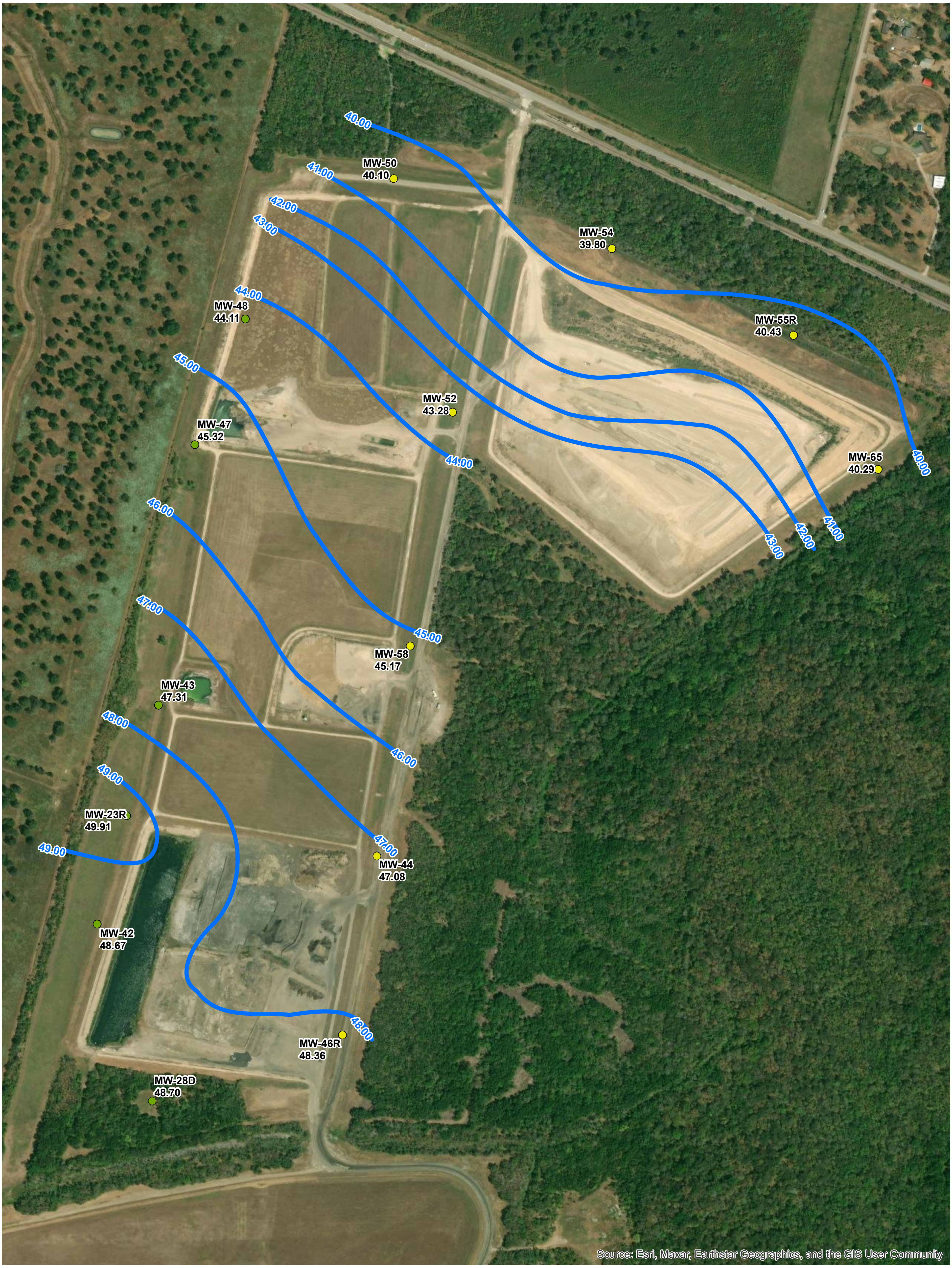
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

FGD EMERGENCY POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ. NO:	585638.0000.0001
FILE:	585638.0000_2-6.mxd

FIGURE 2-6



LEGEND

- Multiunit Upgradient Monitor Well
- Multiunit Downgradient Monitor Well
- *48.70* Groundwater Elevation (FT MSL)

Groundwater Elevation Contour - Dashed where Inferred (FT MSL)

Groundwater Flow Direction

NOTE: GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2023.

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0 250 500
Feet
1 " = 500 '
1:6,000
N

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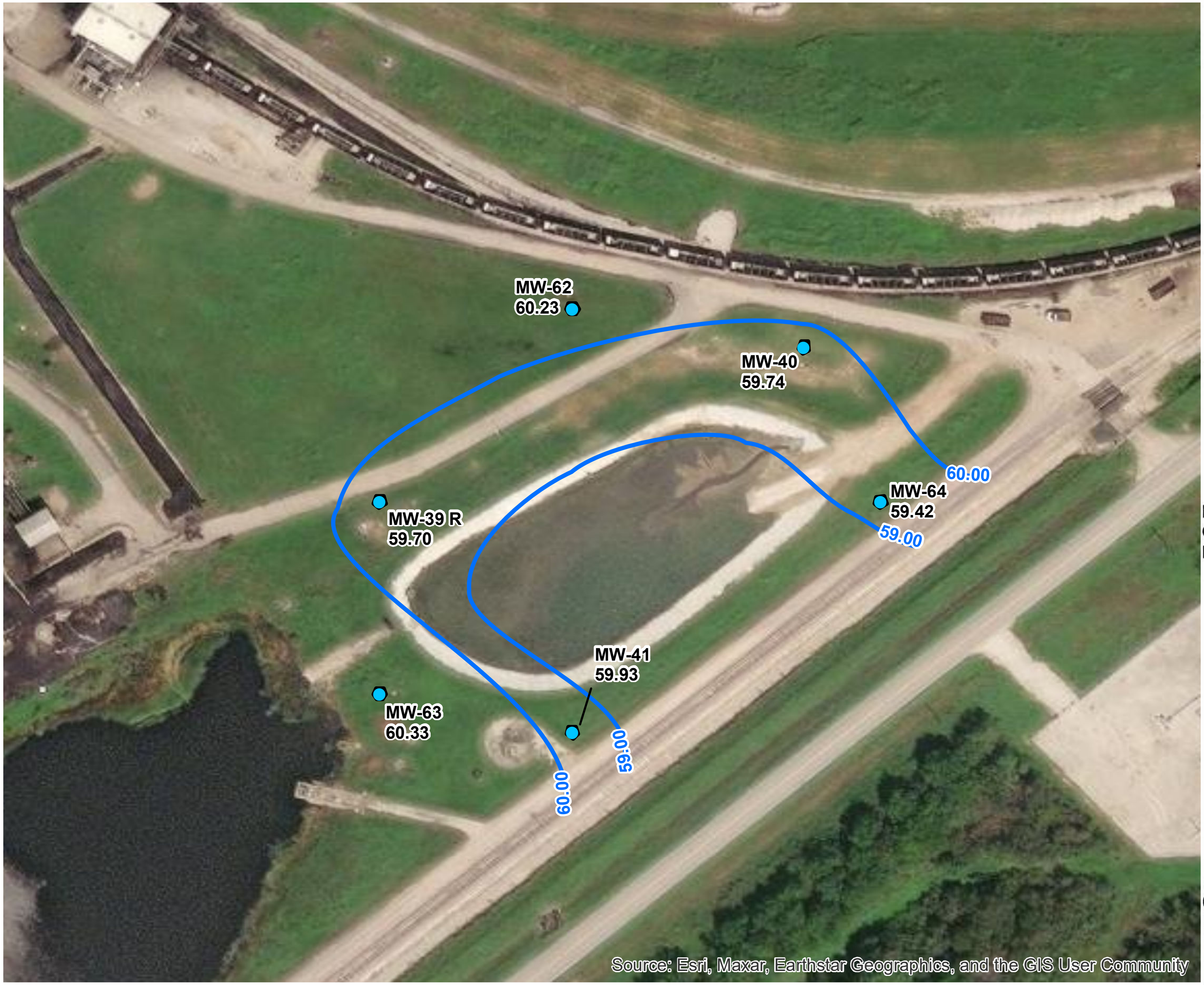
PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
SOLID WASTE DISPOSAL AREA
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ NO:	585638.0000.0001
FILE:	585638.0000_2-7.mxd

FIGURE 2-7



Legend

- Monitor Well
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- *59.42* Groundwater Elevation (FT MSL)

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NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2023.

N

0 150 300 FT

1 " = 150 '
1:1,800

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PROJECT:

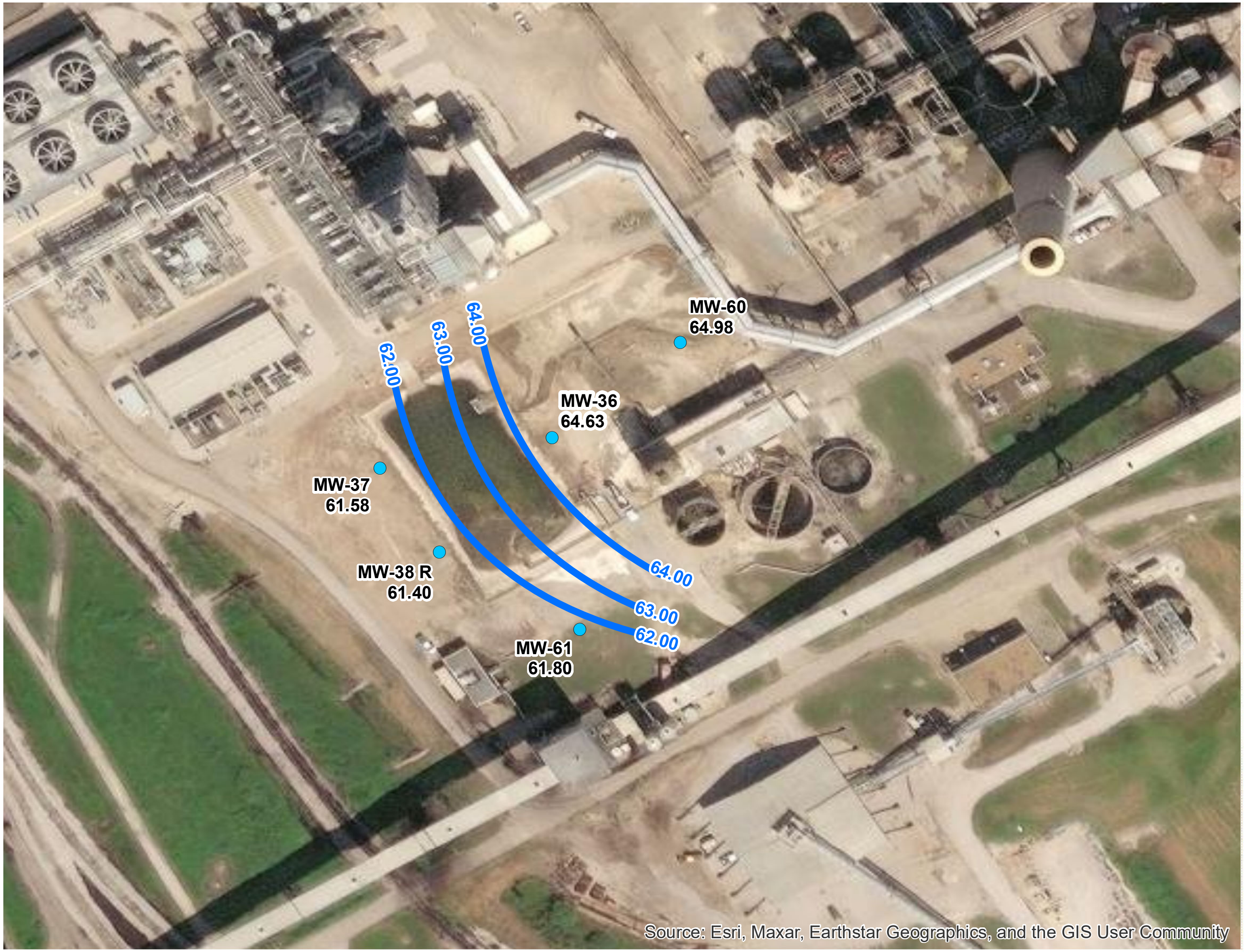
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

AIR PREHEATER POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ. NO.:	585638.0000.0001
FILE:	585638.0000_2-8

FIGURE 2-8



Legend

- Monitor Well
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- ***64.98*** Groundwater Elevation (FT MSL)

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NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2023.

N

0 150 300 FT

1 " = 150 '
1:1,800

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PROJECT:

NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

FGD EMERGENCY POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ. NO:	585638.0000.0001
FILE:	528472.0000_2-9.mxd

FIGURE 2-9

Tables

Table 2-1
Summary of Groundwater Elevation Data
January - December 2023
WA Parish Electric Generating Station - Thompsons, Texas

Well Description	Monitor Well ID	Measurement Date	Top of Casing (ft. MSL)	Depth to Water (ft.)	Ground Water Elevation (ft. MSL)
Air Heating Pond					
Downgradient	MW-41	4/3/2023	69.18	8.01	61.17
		5/1/2023	69.18	7.36	61.82
		10/10/2023	69.18	9.25	59.93
	MW-63	4/3/2023	70.35	8.91	61.44
		5/1/2023	70.35	8.49	61.86
		10/10/2023	70.35	10.02	60.33
		11/1/2023	70.35	10.85	59.50
	MW-64	4/3/2023	70.00	9.31	60.69
		10/10/2023	70.00	10.58	59.42
		11/1/2023	70.00	11.54	58.46
Upgradient	MW-39R	4/3/2023	73.50	12.59	60.91
		10/10/2023	73.50	13.80	59.70
	MW-40	4/3/2023	73.92	12.96	60.96
		10/10/2023	73.92	14.18	59.74
	MW-62	4/3/2023	72.59	11.18	61.41
		10/10/2023	72.59	12.36	60.23
		11/1/2023	72.59	13.20	59.39
CCR - SWDA Multiunit					
Downgradient	MW-44	4/3/2023	68.05	19.30	48.75
		5/1/2023	68.05	19.23	48.82
		10/10/2023	68.05	20.97	47.08
	MW-46R	4/3/2023	67.92	17.91	50.01
		5/1/2023	67.92	17.90	50.02
		10/10/2023	67.92	19.56	48.36
	MW-50	4/3/2023	71.27	30.22	41.05
		10/10/2023	71.27	31.17	40.10
		11/1/2023	71.27	31.38	39.89
	MW-52	4/3/2023	67.91	23.31	44.60
		10/10/2023	67.91	24.63	43.28
		11/1/2023	67.91	24.86	43.05
	MW-54	4/3/2023	68.29	27.52	40.77
		10/10/2023	68.29	28.49	39.80
		11/1/2023	68.29	28.71	39.58
	MW-55R	4/3/2023	69.82	28.28	41.54
		10/10/2023	69.82	29.39	40.43
		11/1/2023	69.82	29.58	40.24
	MW-58	4/3/2023	65.40	18.70	46.70
		10/10/2023	65.40	20.23	45.17
		11/1/2023	65.40	20.43	44.97
	MW-65	4/3/2023	66.65	25.18	41.47
		10/10/2023	66.65	26.36	40.29
		11/1/2023	66.65	26.52	40.13

Table 2-1
Summary of Groundwater Elevation Data
January - December 2023
WA Parish Electric Generating Station - Thompsons, Texas

Well Description	Monitor Well ID	Measurement Date	Top of Casing (ft. MSL)	Depth to Water (ft.)	Ground Water Elevation (ft. MSL)
Upgradient	MW-23R	4/3/2023	67.01	15.42	51.59
		5/1/2023	67.01	15.39	51.62
		10/10/2023	67.01	17.10	49.91
		11/1/2023	67.01	17.19	49.82
	MW-28D	4/3/2023	70.37	20.03	50.34
		10/10/2023	70.37	21.67	48.70
	MW-42	4/3/2023	65.88	15.49	50.39
		10/10/2023	65.88	17.21	48.67
	MW-43	4/3/2023	66.67	17.70	48.97
		10/10/2023	66.67	19.36	47.31
	MW-47	4/3/2023	70.40	23.53	46.87
		10/10/2023	70.40	25.08	45.32
	MW-48	4/3/2023	65.89	20.38	45.51
		10/10/2023	65.89	21.78	44.11
		11/1/2023	65.89	22.02	43.87
FGD Emergency Pond					
Downgradient	MW-37	4/3/2023	74.17	11.65	62.52
		5/1/2023	74.17	11.39	62.78
		10/10/2023	74.17	12.59	61.58
		11/1/2023	74.17	12.97	61.20
	MW-38R	4/3/2023	73.68	11.27	62.41
		5/1/2023	73.68	11.02	62.66
		10/10/2023	73.68	12.28	61.40
		11/1/2023	73.68	12.67	61.01
	MW-61	4/3/2023	74.49	11.76	62.73
		5/1/2023	74.49	11.47	63.02
		10/10/2023	74.49	12.69	61.80
		11/1/2023	74.49	13.06	61.43
Upgradient	MW-36	4/3/2023	73.81	8.68	65.13
		10/10/2023	73.81	9.18	64.63
		11/1/2023	73.81	9.53	64.28
	MW-60	4/3/2023	72.90	7.49	65.41
		10/10/2023	72.90	7.92	64.98

Notes
MSL Mean sea level
ft. feet

Table 2-2
Summary of Groundwater Monitoring Data
January 2021 through December 2023
WA Parish Electric Generating Station - Thompsons, Texas

			Analyte Group	NRG App III						
			Analyte	Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	pH, Field
			Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su
			Lab Method	SW6020A		E300	A4500-F C-11	E300	M2540C	NA
Well Description	Well ID	Sample Date	Duplicate							
Air Heating Pond										
Upgradient	MW-39R	01/04/2021	N	0.225	227	764	0.10	237	1990	6.75
		10/15/2021	N	0.129	216	454	0.17	66.3	1380	6.62
		04/01/2022	N	0.217	210	470	< 0.10 U	82.7	1280	6.77
		10/04/2022	N	0.137	172	429	0.0900 J	87.9	1470	6.80
		04/03/2023	N	0.131	204	443	< 0.10 U	173	1260	6.71
		10/09/2023	N	0.0884	174	327	0.09 J	132	968	6.65
	MW-40	01/04/2021	N	0.133 [J]	269	573	0.11	85.9	1750	6.61
		04/09/2021	N	0.0978	240	587	0.12	110	1970	6.63
		10/15/2021	N	0.0854	NU	548	0.13	140	1790	6.55
		12/07/2021	N	n/a	307	n/a	n/a	n/a	n/a	6.41
		04/01/2022	N	0.133	265	515	< 0.10 U	137	1660	6.71
		10/04/2022	N	0.107 [J]	271	461	0.100	121	1740	6.75
		04/03/2023	N	0.101	290	526	0.10	117	1830	6.73
		10/09/2023	N	0.0627	253	496	0.10	120	1420	6.51
	MW-62	01/04/2021	N	0.115 [J]	206	569	0.17	106	1440	6.73
		04/09/2021	N	0.0825 [J]	177	649	0.18	96.4	1870	7.01
		10/15/2021	N	0.0825	194	586	0.18	121	1600	6.90
		04/01/2022	N	0.0922	209	556	< 0.10 U	119	1500	6.48
		10/04/2022	N	0.0946 [J]	177	436	0.150	202	1520	6.73
		04/03/2023	N	0.0903	181	507	0.15	178	1620	6.84
		10/09/2023	N	0.0718	202	367	0.17	337	2590	6.62
		11/01/2023	N	n/a	n/a	n/a	n/a	n/a	1270	6.66
Downgradient	MW-41	01/04/2021	N	0.114 [J]	193	441	0.15	59.2	1210	6.90
		04/09/2021	N	0.0918 [J]	67.7	60.2	0.32	61.0	484	7.07
		10/15/2021	N	0.188	94.7	71.3	NU	47.9	486	6.83
		12/07/2021	N	n/a	n/a	n/a	0.29	n/a	n/a	6.78
		02/09/2022	N	n/a	n/a	n/a	0.22	n/a	n/a	6.79
		04/01/2022	N	0.0878	196	465	< 0.10 U	54.7	1250	7.25
		05/20/2022	N	n/a	n/a	n/a	n/a	n/a	n/a	7.39
		10/04/2022	N	0.0840 [J]	171	449	0.140	54.6	1420	6.94
		04/03/2023	N	0.0930	43.8	21.8	0.17	13.8	234	7.37
		05/01/2023	N	n/a	207	500	n/a	71.6	1490	6.64
		10/09/2023	N	0.0499	177	488	0.13	59.5	1300	6.53
	MW-63	01/04/2021	N	0.121	304	397	0.11	487	1590	6.56
		04/09/2021	N	0.130	303	409	0.13	449	1740	6.57
		10/15/2021	N	NU	254	344	NU	NU	1710	6.57
		12/07/2021	N	0.424	n/a	n/a	0.15	425	n/a	6.44
		02/09/2022	N	0.137	n/a	n/a	n/a	n/a	n/a	6.53
		04/01/2022	N	0.133	306	376 [JL]	< 0.10 U	532 [JL]	1710	6.68
		05/20/2022	N	n/a	287	329	n/a	490	n/a	6.56
		10/04/2022	N	0.124	335	331	0.0900 J	581	1950	6.75
		11/22/2022	N	n/a	334	n/a	n/a	579	n/a	6.59
		04/03/2023	N	0.0991	303	333	< 0.10 U	606	1920	6.71
		05/01/2023	N	n/a	335	n/a	n/a	735	n/a	6.73
		10/09/2023	N	0.445	285	257	0.1	572	1490	6.41
		11/01/2023	N	0.110	n/a	n/a	n/a	661	n/a	6.45
	MW-64	01/04/2021	N	0.130 [J]	234	590	0.18	44.0	1610	6.64
		04/09/2021	N	0.0998	195	550	0.23	46.7	1870	6.76
		10/15/2021	N	0.101	227	495	NU	44.9	1560	6.63
		12/07/2021	N	n/a	n/a	n/a	0.24	n/a	n/a	6.54
		02/09/2022	N	n/a	n/a	n/a	0.52	n/a	n/a	6.79
		04/01/2022	N	0.102	234	522	0.070 J	49.8	1440	6.72
		10/04/2022	N	0.103 [J]	230	540	0.200	47.8	1990	6.81
		04/03/2023	N	0.105	238	574	0.19	47.9	1940	6.71
		10/09/2023	N	0.0756	237	560	0.17	50.3	3130	6.41
		11/01/2023	N	n/a	n/a	n/a	n/a	n/a	1620	6.48
CCR - SWDA Multiunit										
Upgradient	MW-23R	01/04/2021	N	0.207 [J]	325	1050	< 0.10 U	395	2470	11.76
		04/09/2021	N	0.226	285	754	0.39	673	2530	6.89
		10/15/2021	N	0.230	NU	NU	0.32	NU	3730	7.01
		12/07/2021	N	n/a	436	947	n/a	1060	n/a	6.90
		04/01/2022	N	0.270	492	1050	0.10	1200	3960	7.03
		05/20/2022	N	n/a	509	n/a	n/a	1220	4070	6.94
		10/04/2022	N	0.272	405	1010	0.270	1170	4200	6.87

Table 2-2
Summary of Groundwater Monitoring Data
January 2021 through December 2023
WA Parish Electric Generating Station - Thompsons, Texas

			Analyte Group	NRG App III						
			Analyte	Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	pH, Field
			Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su
			Lab Method	SW6020A		E300	A4500-F C-11	E300	M2540C	NA
Well Description	Well ID	Sample Date	Duplicate							
Upgradient	MW-23R	11/22/2022	N	n/a	n/a	n/a	n/a	1220	3760	6.79
		04/03/2023	N	0.284	460	1080	0.25	1390	4460	6.84
		05/01/2023	N	n/a	533	n/a	n/a	1670	4390	6.86
		10/09/2023	N	0.284	502	993	0.28	1370	1450	6.86
		11/01/2023	N	n/a	322	n/a	n/a	1540	n/a	6.60
	MW-28D	01/04/2021	N	0.208 J	127	133	0.35	95.5	738	7.13
		04/09/2021	N	0.168	109	156	0.34	115	826	7.02
		10/15/2021	N	0.145	115	181	0.30	100	818	6.85
		04/01/2022	N	0.163	116	163	0.090 J	92.4	774	6.80
		05/20/2022	N	n/a	n/a	n/a	n/a	89.2	n/a	7.20
		10/04/2022	N	0.147	134	216	0.240	85.3	900	7.23
		04/03/2023	N	0.156	126	176	0.25	92.3	820	7.17
		10/09/2023	N	0.139	118	142	0.28	95.6	590	7.14
	MW-42	01/04/2021	N	0.573	173	334	0.60	519	1680	7.44
		04/09/2021	N	0.511	151	354	0.58	550	1820	7.04
		10/15/2021	N	0.450	140	321	0.58	506	1610	7.32
		04/01/2022	N	0.501	156	333	0.61	504	1590	7.32
		10/04/2022	N	0.533	163	320	0.530	456	1660	7.06
		04/03/2023	N	0.506	155	329	0.52	537	1680	6.99
		10/09/2023	N	0.444	139	304	0.54	471	640	6.88
	MW-43	01/04/2021	N	0.349	89.0	242	0.61	70.2	790	8.26
		04/09/2021	N	0.410	87.5	256	0.57	78.6	898	7.55
		10/15/2021	N	0.364	85.5	223	0.57	69.4	802	7.47
		04/01/2022	N	0.381	89.5	236	0.65	70.2	836	7.43
		10/04/2022	N	0.385	93.3	226	0.500	68.4	1000	7.18
		04/03/2023	N	0.397	91.5	234	0.5	72.4	804	7.19
		10/09/2023	N	0.306	74.7	213	0.53	72.1	592	7.17
	MW-47	01/04/2021	N	0.324	127	351	0.45	88.9	1060	7.32
		04/09/2021	N	0.295	102	334	0.42	81.7	1080	7.38
		10/15/2021	N	0.229	111	291	0.39	72.7	968	7.15
		04/01/2022	N	0.237	130	343	0.38	71.2	1030	7.19
		10/04/2022	N	0.263	122	298	0.370	73.9	1050	7.12
		04/03/2023	N	0.243	109	323	0.33	79.8	976	7.15
		10/09/2023	N	0.224	113	297	0.36	76.6	800	6.94
	MW-48	01/04/2021	N	0.540	79.1	371	0.73	88.0	1080	7.35
		04/09/2021	N	0.573	69.1	393	0.70	96.8	1280	7.40
		10/15/2021	N	0.551	71.1	388	0.71	91.0	1200	7.21
		04/01/2022	N	0.603	79.3	404	0.73	94.0	1180	7.14
		10/04/2022	N	0.601	78.7	362	0.710	89.1	1210	7.16
		04/03/2023	N	0.583 [J]	82.4	390	0.61	95.5	1140	7.2
		10/09/2023	N	0.735	74.5	365	0.66	95.5	940	6.90
		11/01/2023	N	n/a	n/a	n/a	n/a	n/a	1140	7.06
Downgradient	MW-44	01/04/2021	FD	0.293	152	351	0.44	244	1320	n/a
		01/04/2021	N	0.274	144	346	0.44	239	1270	7.02
		04/09/2021	N	0.249	133	336	0.43	228	1390	7.02
		04/09/2021	FD	0.239	123	341	0.42	232	1290	n/a
		10/15/2021	N	0.227	124	288	0.42	198	1120	7.17
		10/15/2021	FD	0.209	120	298	0.41	204	1150	n/a
		04/01/2022	FD	0.269	131	323	0.47	206	1280	n/a
		04/01/2022	N	0.263	138	320	0.41	197	1170	7.00
		10/04/2022	FD	0.359	148	315	0.350	223	1290	n/a
		10/04/2022	N	0.340	145	309	0.360	217	1340	7.03
		04/03/2023	FD	0.264	128	267	0.36	173	944	n/a
		04/03/2023	N	0.312	138	269	0.37	178	1060	6.85
		05/01/2023	N	n/a	n/a	n/a	n/a	n/a	n/a	6.97
		10/09/2023	FD	0.226	98.0	205	0.42	93.7	748	n/a
		10/09/2023	N	0.217	103	204	0.41	93.1	808	7.20
	MW-46R	01/04/2021	N	0.170	116	163	0.40	90.5	698	7.07
		04/09/2021	N	0.184	106	173	0.37	100	816	6.94
		10/15/2021	N	0.148	101	158	0.36	87.5	766	6.89
		04/01/2022	N	0.169	105	165	0.36	90.7	792	7.27
		10/04/2022	N	0.190	118	162	0.320	90.9	830	7.01
		04/03/2023	N	0.178	98.6	166	0.30	97.1	736	6.65
		05/01/2023	N	n/a	n/a	n/a	n/a	n/a	n/a	7.15
		10/09/2023	N	0.167	104	161	0.32	99.2	714	7.04

Table 2-2
Summary of Groundwater Monitoring Data
January 2021 through December 2023
WA Parish Electric Generating Station - Thompsons, Texas

			Analyte Group	NRG App III						
			Analyte	**Boron**	**Calcium**	**Chloride**	**Fluoride**	**Sulfate**	**Total Dissolved Solids**	**pH, Field**
			Unit	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**su**
			Lab Method	**SW6020A**		**E300**	**A4500-F C-11**	**E300**	**M2540C**	**NA**
Well Description	**Well ID**	**Sample Date**	**Duplicate**							
Downgradient	MW-50	01/04/2021	N	0.274	138	355	0.48	103	980	7.36
		04/09/2021	N	0.266	118	416	0.45	128	1310	7.28
		10/15/2021	N	0.266	129	346	0.44	98.9	1170	7.10
		04/01/2022	N	0.295	138	404	0.47	126	1240	7.11
		10/04/2022	N	0.318	147	386	0.440	119	1330	7.04
	MW-50	04/03/2023	N	0.293	143	411	0.38	141	1300	7.09
		10/09/2023	N	0.292	133	391	0.460	150	976	6.79
	MW-52	01/04/2021	N	0.332	251	757	0.53	500	2270	6.91
		04/09/2021	N	0.351	248	782	0.51	518	2570	6.93
		10/15/2021	N	0.356	276	607	0.52	390	2010	7.02
		04/01/2022	N	0.344	240	608	0.53	420	1930	7.02
		10/04/2022	N	0.386	192	565	0.530	395	2190	6.96
		04/03/2023	N	0.345	228	567	0.47	429	1350	7.02
		10/09/2023	N	0.332	217	513	0.55	401	1420	6.72
	MW-54	01/04/2021	N	0.244	91.9	249	0.52	71.8	690	6.93
		04/09/2021	N	0.286	90.5	267	0.49	78.8	838	6.98
		10/15/2021	N	0.267	92.1	240	0.50	72.8	868	7.15
		04/01/2022	N	0.271	93.5	257	0.51	74.2	868	7.17
		10/04/2022	N	0.269	93.8	242	0.480	71.7	920	7.07
		04/03/2023	N	0.278	106	280	0.40	81.3	756	7.07
		10/09/2023	N	0.251	93.5	260	0.48	90.5	772	6.82
	MW-55R	01/04/2021	N	0.418	118	320	0.74	106	1050	7.20
		04/09/2021	N	0.487	106	351	0.75	118	1260	6.73
		10/15/2021	N	0.459	112	312	0.72	96.1	1060	7.11
		04/01/2022	N	0.456	115	325	0.73	99.1	1060	7.08
		10/04/2022	N	0.472	116	300	0.720	93.3	1100	7.06
		04/03/2023	N	0.406	112	336	0.61	105	948	7.07
		10/09/2023	N	0.417	105	307	0.73	98.7	808	6.81
		11/01/2023	N	0.421	n/a	n/a	n/a	n/a	n/a	7.01
	MW-58	01/04/2021	N	0.245	145	412	0.44	130	1200	7.14
		04/09/2021	N	0.296	145	408	0.43	153	1410	6.97
		10/15/2021	N	NU	228	289	0.32	NU	1770	7.27
		12/07/2021	N	0.697	n/a	n/a	n/a	165	n/a	7.18
		02/09/2022	N	0.313	n/a	n/a	n/a	n/a	n/a	7.11
		02/10/2022	N	n/a	n/a	353	n/a	n/a	n/a	7.04
		04/01/2022	N	0.309	114	354	0.47	115	1180	7.23
		10/04/2022	N	0.530	132	314	0.400	172	1200	7.01
		04/03/2023	N	0.373	114	316	0.37	97.6	1000	6.97
		10/09/2023	N	0.935 [JL]	122	259	0.44	272	1160	7.12
		11/01/2023	N	0.421	n/a	n/a	n/a	n/a	n/a	7.01
	MW-65	01/04/2021	N	0.266	178	173	0.42	534	1280	7.22
		04/09/2021	N	0.363	200	259	0.38	691	2050	6.91
		10/15/2021	N	0.347	157	271	0.33	650	1810	7.02
		04/01/2022	N	0.348	239	308	0.37	635	1940	6.98
		10/04/2022	N	0.373	207	300	0.350	556	1850	6.98
		04/03/2023	N	0.320	199	318	0.28	614	2090	6.98
		10/9/2023	N	0.306	196	314	0.35	604	1470	6.69
FGD Emergency Pond										
Upgradient	MW-36	01/04/2021	N	0.0765 [J]	226	339	0.43	448	1360	6.58
		01/04/2021	FD	0.0928 [J]	222	343	0.42	457	1460	n/a
		04/09/2021	N	n/a	n/a	n/a	n/a	n/a	n/a	6.81
		04/09/2021	N	0.0727 [J]	147 [J]	356	0.40	474	1730	n/a
		04/09/2021	FD	0.0625 [J]	217 [J]	355	0.38	460	1650	n/a
		10/15/2021	N	0.0649	162	378	0.39	NU	1480	6.72
		10/15/2021	FD	0.0784	164	322	0.39	412	1420	n/a
		12/07/2021	N	n/a	n/a	n/a	n/a	369	n/a	6.95
		04/01/2022	N	0.0811	250	325	0.42	410	1590	6.85
		04/01/2022	FD	0.0956	226	327	0.44	414	1600	n/a
		10/04/2022	FD	0.0779 [J]	212	314	0.330	402	1540	n/a
		10/04/2022	N	0.0858 [J]	237	313	0.360	400	1560	6.81
		04/03/2023	N	0.0712	231	306	0.36	422	1480	6.88
		04/03/2023	FD	0.0772	224	312	0.32	433	1770	n/a
		10/09/2023	N	0.0720	223	278	0.40	413	932	6.85
		10/09/2023	FD	0.343	219	245	0.23	964	1710	n/a
		11/01/2023	N	0.0672	218	300	0.36	468	1200	6.68

Table 2-2
Summary of Groundwater Monitoring Data
January 2021 through December 2023
WA Parish Electric Generating Station - Thompsons, Texas

			Analyte Group	NRG App III						
			Analyte	Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	pH, Field
			Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su
			Lab Method	SW6020A		E300	A4500-F C-11	E300	M2540C	NA
Well Description	**Well ID**	**Sample Date**	**Duplicate**							
Upgradient	MW-36	11/01/2023	FD	0.0682	232	306	0.39	476	964	n/a
Upgradient	MW-60	01/04/2021	N	0.0979 [J]	210	358	0.18	179	1290	6.52
Upgradient	MW-60	04/09/2021	N	0.0945	140	376	0.16	200	1450	6.65
Upgradient	MW-60	10/15/2021	N	0.0868	113	310	0.13	218	1300	6.90
Upgradient	MW-60	04/01/2022	N	0.117	208	314	0.15 [JH]	242	1400	6.83
Upgradient	MW-60	10/04/2022	N	0.111	252	300	0.120	254	1380	6.52
Upgradient	MW-60	04/03/2023	N	0.0891	217	312	0.12	290	1360	6.64
Upgradient	MW-60	10/09/2023	N	0.0511	205	288	0.15	298	1070	6.65
Downgradient	MW-37	01/04/2021	N	0.312	247	266	0.27	910	1990	6.77
Downgradient	MW-37	04/09/2021	N	0.384	251	269	0.26	936	2080	6.65
Downgradient	MW-37	10/15/2021	N	NU	195	253	0.24	NU	NU	6.78
Downgradient	MW-37	12/07/2021	N	0.585	n/a	n/a	n/a	882	2160	6.85
Downgradient	MW-37	02/09/2022	N	n/a	n/a	n/a	n/a	n/a	2040	6.83
Downgradient	MW-37	04/01/2022	N	0.367	234	321	0.32	1030	1880	7.03
Downgradient	MW-37	05/20/2022	N	0.366	n/a	n/a	n/a	716	1840	6.61
Downgradient	MW-37	10/04/2022	N	0.363	173	260	0.230	717	1930	6.72
Downgradient	MW-37	04/03/2023	N	0.383	239	256	0.21	916	2090	6.72
Downgradient	MW-37	05/01/2023	N	0.389	n/a	n/a	n/a	1110	1930	6.69
Downgradient	MW-37	10/09/2023	N	0.385	234	244	0.28	954	1750	6.87
Downgradient	MW-37	11/01/2023	N	0.401	252	273	0.21	1130	1720	6.65
Downgradient	MW-38R	01/04/2021	N	0.388	245	272	0.26	680	1690	6.85
Downgradient	MW-38R	04/09/2021	N	0.398	225	259	0.25	799	1870	6.61
Downgradient	MW-38R	10/15/2021	N	NU	142	324	0.22	NU	1680	6.81
Downgradient	MW-38R	12/07/2021	N	0.593	n/a	n/a	n/a	575	n/a	6.89
Downgradient	MW-38R	04/01/2022	N	0.421	237	286	0.21 [JH]	572	1720	7.15
Downgradient	MW-38R	05/20/2022	N	0.412	n/a	n/a	n/a	531	n/a	6.82
Downgradient	MW-38R	10/04/2022	N	0.440	235	242	0.200	646	1740	6.71
Downgradient	MW-38R	04/03/2023	N	0.435	256	245	0.18	734	1690	6.54
Downgradient	MW-38R	05/01/2023	N	0.425	n/a	n/a	n/a	860	n/a	6.80
Downgradient	MW-38R	10/09/2023	N	0.416	238	243	0.23	650	1240	6.49
Downgradient	MW-38R	11/01/2023	N	0.406	n/a	n/a	n/a	738	n/a	6.65
Downgradient	MW-61	01/04/2021	N	1.15	222	128	0.32	935	1820	6.85
Downgradient	MW-61	04/09/2021	N	1.19	192	133	0.30	938	1860	6.83
Downgradient	MW-61	10/15/2021	N	NU	146	248	0.29	NU	1660	6.83
Downgradient	MW-61	12/07/2021	N	1.25	n/a	n/a	n/a	743	n/a	7.04
Downgradient	MW-61	04/01/2022	N	1.29	207	130	0.33	916	1880	6.84
Downgradient	MW-61	05/20/2022	N	1.32	n/a	n/a	n/a	958	1850	6.25
Downgradient	MW-61	10/04/2022	N	1.58	289	123	0.250	987	2010	6.87
Downgradient	MW-61	04/03/2023	N	1.10 [J]	239	122	0.23	1100	2060	6.86
Downgradient	MW-61	05/01/2023	N	1.24	n/a	n/a	n/a	1330	1890	6.92
Downgradient	MW-61	10/09/2023	N	0.987	227	119	0.28	1070	1720	6.93
Downgradient	MW-61	11/01/2023	N	1.01	n/a	n/a	n/a	1190	n/a	6.79

Notes
N: Normal Sample
FD: Field Duplicate
NA: Not Applicable
J: Concentration is an estimated value. Result is less than the method quantitation limit but ≥ to the method detection limit.
U: Analyte was not detected at or above the method detection limit.
JL: Estimated data - bias in sample, likely to be low.; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.
JH: Estimated data - bias in sample, likely to be high; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.
NU: Resampled for analyte. Data not used.
mg/L: Milligrams per liter
su: Standard units
n/a: Not analyzed

Appendix A
Detection Monitoring Data (April 2023)

right solutions.
right partner.

10450 Stancliff Rd. Suite 210
Houston, TX 77099
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August 22, 2023

Lori Burris
TRC Corporation
14701 St. Mary's Lane
Suite 500
Houston, TX 77079

Work Order: **HS23040094**

Laboratory Results for: **NRG Parish – CCR Program**

Dear Lori Burris,

ALS Environmental received 28 sample(s) on Apr 03, 2023 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

Generated By: ANDREW.NEIR

Andy C. Neir

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: **HS23040094**

TRRP Laboratory Data Package Cover Page

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:
a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:
a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Parish – CCR Program	
WorkOrder:	**HS23040094**	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] ______________ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Andy C. Neir

Laboratory Review Checklist: Reportable Data

Laboratory Name: ALS Laboratory Group	LRC Date: 04/14/2023
Project Name: NRG Parish – CCR Program	Laboratory Job Number: HS23040094
Reviewer Name: Andy Neir	Prep Batch Number(s): 192106, 192107, R431773, R431774, R432048, R432053, R432177, R432235

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				2
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Supporting Data

Laboratory Name: ALS Laboratory Group	LRC Date: 04/14/2023
Project Name: NRG Parish – CCR Program	Laboratory Job Number: HS23040094
Reviewer Name: Andy Neir	Prep Batch Number(s): 192106, 192107, R431773, R431774, R432048, R432053, R432177, R432235

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			3
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		X			4
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 04/14/2023
Project Name: NRG Parish – CCR Program	Laboratory Job Number: HS23040094
Reviewer Name: Andy Neir	Prep Batch Number(s): 192106, 192107, R431773, R431774, R432048, R432053, R432177, R432235

ER#[5]	**Description**
1	Batch 192106, Metals by method SW6020, Sample HS23040090-07, MS and MSD were performed on an unrelated sample. Batch 192107, Metals by method SW6020, Samples MW-58, MW-63, MS/MSD recovered outside control limits for Calcium; however, the results in the parent sample is greater than 4x the spike amount Batch R431773, Anions by E300.0, Sample MW-63: MS/MSD recovered outside control limits for Sulfate due to sample matrix interference. Batch R431774, Anions by E300.0, Sample MW-58, MS/MSD recovered outside control limits for Chloride and Sulfate.
2	Analyses of Fluoride were performed by ALS Holland, MI. Report is appended.
3	See Run Log and CCB Exception Reports
4	Batch 192106, Metals by method SW6020, Sample HS23040090-07, PDS was performed on an unrelated sample Batch 192107, Metals by method SW6020, Samples MW-58, PDS recovered outside control limits for Calcium; however, the results in the parent sample is greater than 4x the spike amount. The percent difference between the results of the sample and the serial dilution were greater than 10%.for Boron.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094
Start Date: 10-Apr-2023 End Date: 11-Apr-2023

Run ID:ICPMS06_432196
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	10-Apr-2023 11:04	023_ICV.d	B CA
LLICV2	1	10-Apr-2023 11:06	024LCV2.d	B CA
LLICV5	1	10-Apr-2023 11:07	025LCV5.d	B CA
ICB	1	10-Apr-2023 11:09	026_ICB.d	B CA
ICSA	1	10-Apr-2023 11:13	028ICSA.d	B CA
ICSAB	1	10-Apr-2023 11:15	029ICSB.d	B CA
CCV 1	1	10-Apr-2023 11:27	032_CCV.d	B CA
CCB 1	1	10-Apr-2023 11:29	033_CCB.d	B CA
CCV 2	1	10-Apr-2023 12:03	044_CCV.d	B CA
CCB 2	1	10-Apr-2023 12:04	045_CCB.d	B CA
CCV 3	1	10-Apr-2023 12:31	056_CCV.d	B CA
CCB 3	1	10-Apr-2023 12:33	057_CCB.d	B CA
CCV 4	1	10-Apr-2023 13:04	066_CCV.d	B CA
CCB 4	1	10-Apr-2023 13:05	067_CCB.d	B CA
CCV 5	1	10-Apr-2023 13:30	078_CCV.d	B CA
CCB 5	1	10-Apr-2023 13:32	079_CCB.d	B CA
CCV 6	1	10-Apr-2023 14:15	090_CCV.d	B CA
CCB 6	1	10-Apr-2023 14:17	091_CCB.d	B CA
CCV 7	1	10-Apr-2023 14:45	102_CCV.d	B CA
CCB 7	1	10-Apr-2023 14:47	103_CCB.d	B CA
CCB 8	1	10-Apr-2023 15:13	115_CCB.d	B CA
CCV 8	1	10-Apr-2023 15:17	117_CCV.d	B CA
CCB 9	1	10-Apr-2023 15:47	129_CCB.d	B CA
CCV 9	1	10-Apr-2023 15:49	130_CCV.d	B CA
ICCV 10	1	10-Apr-2023 16:18	145_ICV.d	B CA
LLCCV2	1	10-Apr-2023 16:20	146LCV2.d	B CA
LLCCV5	1	10-Apr-2023 16:22	147LCV5.d	B CA
ICCB 10	1	10-Apr-2023 16:24	148_ICB.d	B CA
CCV 11	1	10-Apr-2023 16:28	150_CCV.d	B CA
CCB 11	1	10-Apr-2023 16:30	151_CCB.d	B CA
CCV 12	1	10-Apr-2023 16:52	162_CCV.d	B CA
CCB 12	1	10-Apr-2023 16:54	163_CCB.d	B CA
CCV 13	1	10-Apr-2023 17:15	174_CCV.d	B CA
CCB 13	1	10-Apr-2023 17:17	175_CCB.d	B CA
CCV 14	1	10-Apr-2023 18:26	209_CCV.d	B CA
CCB 14	1	10-Apr-2023 18:28	210_CCB.d	B CA
CCV 15	1	10-Apr-2023 18:50	221_CCV.d	B CA
CCB 15	1	10-Apr-2023 18:52	222_CCB.d	B CA
CCV 16	1	10-Apr-2023 19:09	230_CCV.d	B CA
CCB 16	1	10-Apr-2023 19:11	231_CCB.d	B CA
ICCV 17	1	10-Apr-2023 19:44	244_ICV.d	B CA
LLCCV2	1	10-Apr-2023 19:46	245LCV2.d	B CA
LLCCV5	1	10-Apr-2023 19:48	246LCV5.d	B CA
ICCB 17	1	10-Apr-2023 19:50	247_ICB.d	B CA
CCV 18	1	10-Apr-2023 19:54	249_CCV.d	B CA
CCB 18	1	10-Apr-2023 19:56	250_CCB.d	B CA
MBLK-192107	1	10-Apr-2023 19:58	251SMPL.d	B CA
LCS-192107	1	10-Apr-2023 20:00	252SMPL.d	B CA
MW-63	1	10-Apr-2023 20:02	253SMPL.d	B
MW-63SD	5	10-Apr-2023 20:04	254SMPL.d	B

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094
Start Date: 10-Apr-2023 End Date: 11-Apr-2023

Run ID:ICPMS06_432196
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
MW-63MS	1	10-Apr-2023 20:06	255SMPL.d	B CA
MW-63MSD	1	10-Apr-2023 20:08	256SMPL.d	B CA
MW-63PDS	1	10-Apr-2023 20:10	257SMPL.d	B
CCV 19	1	10-Apr-2023 20:14	259_CCV.d	B CA
CCB 19	1	10-Apr-2023 20:16	260_CCB.d	B CA
MW-47	1	10-Apr-2023 20:18	261SMPL.d	B CA
MW-48	1	10-Apr-2023 20:20	262SMPL.d	B CA
MW-50	1	10-Apr-2023 20:22	263SMPL.d	B CA
MW-52	1	10-Apr-2023 20:24	264SMPL.d	B
MW-54	1	10-Apr-2023 20:26	265SMPL.d	B CA
MW-55R	1	10-Apr-2023 20:28	266SMPL.d	B CA
MW-65	1	10-Apr-2023 20:32	268SMPL.d	B
CCV 20	1	10-Apr-2023 20:36	270_CCV.d	B CA
CCB 20	1	10-Apr-2023 20:38	271_CCB.d	B CA
MW-36	1	10-Apr-2023 20:40	272SMPL.d	B
MW-37	1	10-Apr-2023 20:42	273SMPL.d	B
MW-38R	1	10-Apr-2023 20:44	274SMPL.d	B
MW-60	1	10-Apr-2023 20:46	275SMPL.d	B
Field Blank	1	10-Apr-2023 20:50	277SMPL.d	B CA
Field Duplicate 1	1	10-Apr-2023 20:52	278SMPL.d	B
Field Duplicate 2	1	10-Apr-2023 20:54	279SMPL.d	B CA
CCV 21	1	10-Apr-2023 20:58	281_CCV.d	B CA
CCB 21	1	10-Apr-2023 21:00	282_CCB.d	B CA
MBLK-192106	1	10-Apr-2023 21:02	283SMPL.d	B CA
LCS-192106	1	10-Apr-2023 21:04	284SMPL.d	B CA
ZZZZZZSD	5	10-Apr-2023 21:08	286SMPL.d	CA
ZZZZZZMS	1	10-Apr-2023 21:10	287SMPL.d	B CA
ZZZZZZMSD	1	10-Apr-2023 21:12	288SMPL.d	B CA
ZZZZZZPDS	1	10-Apr-2023 21:14	289SMPL.d	CA
CCV 22	1	10-Apr-2023 21:18	291_CCV.d	B CA
CCB 22	1	10-Apr-2023 21:32	294_CCB.d	B CA
CCV 23	1	10-Apr-2023 21:40	298_CCV.d	B CA
CCB 23	1	10-Apr-2023 21:42	299_CCB.d	B CA
CCV 24	1	10-Apr-2023 22:00	308_CCV.d	B CA
CCB 24	1	10-Apr-2023 22:17	311_CCB.d	B CA
CCV 25	1	10-Apr-2023 22:24	315_CCV.d	B CA
CCB 25	1	10-Apr-2023 22:26	316_CCB.d	B CA
MW-39R	1	10-Apr-2023 22:28	317SMPL.d	B
MW-40	1	10-Apr-2023 22:30	318SMPL.d	B
MW-41	1	10-Apr-2023 22:32	319SMPL.d	B CA
MW-62	1	10-Apr-2023 22:34	320SMPL.d	B
MW-64	1	10-Apr-2023 22:36	321SMPL.d	B
MW-23R	1	10-Apr-2023 22:38	322SMPL.d	B
MW-28D	1	10-Apr-2023 22:40	323SMPL.d	B CA
CCV 26	1	10-Apr-2023 22:44	325_CCV.d	B CA
CCB 26	1	10-Apr-2023 22:46	326_CCB.d	B CA
MW-42	1	10-Apr-2023 22:48	327SMPL.d	B CA
MW-43	1	10-Apr-2023 22:50	328SMPL.d	B CA
MW-44	1	10-Apr-2023 22:52	329SMPL.d	B CA
MW-46R	1	10-Apr-2023 22:54	330SMPL.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094
Start Date: 10-Apr-2023 End Date: 11-Apr-2023

Run ID:ICPMS06_432196
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCV 27	1	10-Apr-2023 23:02	334_CCV.d	B CA
CCB 27	1	10-Apr-2023 23:04	335_CCB.d	B CA
CCV 28	1	10-Apr-2023 23:22	344_CCV.d	B CA
CCB 28	1	10-Apr-2023 23:31	348_CCB.d	B CA
CCV 29	1	10-Apr-2023 23:48	356_CCV.d	B CA
CCB 29	1	10-Apr-2023 23:50	357_CCB.d	B CA
CCV 30	1	11-Apr-2023 00:08	366_CCV.d	B CA
CCB 30	1	11-Apr-2023 00:09	367_CCB.d	B CA
CCV 31	1	11-Apr-2023 00:30	377_CCV.d	B CA
CCB 31	1	11-Apr-2023 00:31	378_CCB.d	B CA
CCV 32	1	11-Apr-2023 00:53	389_CCV.d	B CA
CCB 32	1	11-Apr-2023 00:55	390_CCB.d	B CA
CCV 33	1	11-Apr-2023 01:01	393_CCV.d	B CA
CCB 33	1	11-Apr-2023 01:03	394_CCB.d	B CA
LLCCV2	1	11-Apr-2023 01:05	395LCV2.d	B CA
LLCCV5	1	11-Apr-2023 01:07	396LCV5.d	B CA
ICSA	1	11-Apr-2023 01:09	397ICSA.d	B CA
ICSAB	1	11-Apr-2023 01:11	398ICSB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094
Start Date: 11-Apr-2023 End Date: 12-Apr-2023

Run ID:ICPMS06_432302
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	11-Apr-2023 10:56	026_ICV.d	B CA
LLICV2	1	11-Apr-2023 10:57	027LCV2.d	B CA
LLICV5	1	11-Apr-2023 10:59	028LCV5.d	B CA
ICB	1	11-Apr-2023 11:01	029_ICB.d	B CA
ICSA	1	11-Apr-2023 11:05	031ICSA.d	B CA
ICSAB	1	11-Apr-2023 11:08	032ICSB.d	B CA
CCV 1	1	11-Apr-2023 11:16	035_CCV.d	B CA
CCB 1	1	11-Apr-2023 11:18	036_CCB.d	B CA
MW-63	20	11-Apr-2023 11:27	040SMPL.d	CA
MW-63SD	100	11-Apr-2023 11:29	041SMPL.d	CA
MW-63PDS	20	11-Apr-2023 11:30	042SMPL.d	CA
MW-52	20	11-Apr-2023 11:32	043SMPL.d	CA
MW-65	20	11-Apr-2023 11:34	044SMPL.d	CA
MW-36	20	11-Apr-2023 11:36	045SMPL.d	CA
CCV 2	1	11-Apr-2023 11:41	047_CCV.d	B CA
CCB 2	1	11-Apr-2023 11:43	048_CCB.d	B CA
MW-37	20	11-Apr-2023 11:48	049SMPL.d	CA
MW-38R	20	11-Apr-2023 11:50	050SMPL.d	CA
MW-60	20	11-Apr-2023 11:52	051SMPL.d	CA
MW-61	10	11-Apr-2023 11:54	052SMPL.d	B CA
Field Duplicate 1	20	11-Apr-2023 11:56	053SMPL.d	CA
LCS-192106	1	11-Apr-2023 11:58	054SMPL.d	
ZZZZZZSD	50	11-Apr-2023 12:02	056SMPL.d	B
ZZZZZZPDS	10	11-Apr-2023 12:04	057SMPL.d	B
CCV 3	1	11-Apr-2023 12:08	059_CCV.d	B CA
CCB 3	1	11-Apr-2023 12:10	060_CCB.d	B CA
MW-39R	20	11-Apr-2023 12:22	066SMPL.d	CA
MW-40	20	11-Apr-2023 12:24	067SMPL.d	CA
MW-62	20	11-Apr-2023 12:26	068SMPL.d	CA
MW-64	20	11-Apr-2023 12:28	069SMPL.d	CA
CCB 4	1	11-Apr-2023 12:35	072_CCB.d	B CA
CCV 4	1	11-Apr-2023 12:37	073_CCV.d	B CA
MW-23R	20	11-Apr-2023 12:40	074SMPL.d	CA
CCV 5	1	11-Apr-2023 12:59	084_CCV.d	B CA
CCB 5	1	11-Apr-2023 13:01	085_CCB.d	B CA
CCV 6	1	11-Apr-2023 13:23	096_CCV.d	B CA
CCB 6	1	11-Apr-2023 13:25	097_CCB.d	B CA
CCV 7	1	11-Apr-2023 13:46	108_CCV.d	B CA
CCB 7	1	11-Apr-2023 13:48	109_CCB.d	B CA
CCV 8	1	11-Apr-2023 14:14	120_CCV.d	B CA
CCB 8	1	11-Apr-2023 14:15	121_CCB.d	B CA
CCV 9	1	11-Apr-2023 14:49	132_CCV.d	B CA
CCB 9	1	11-Apr-2023 14:51	133_CCB.d	B CA
CCV 10	1	11-Apr-2023 15:14	144_CCV.d	B CA
CCB 10	1	11-Apr-2023 15:15	145_CCB.d	B CA
CCV 11	1	11-Apr-2023 15:43	156_CCV.d	B CA
CCB 11	1	11-Apr-2023 15:45	157_CCB.d	B CA
CCV 12	1	11-Apr-2023 16:08	168_CCV.d	B CA
CCB 12	1	11-Apr-2023 16:10	169_CCB.d	B CA
CCV 13	1	11-Apr-2023 16:20	173_CCV.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094
Start Date: 11-Apr-2023 End Date: 12-Apr-2023

Run ID:ICPMS06_432302
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCB 13	1	11-Apr-2023 16:22	174_CCB.d	B CA
CCV 14	1	11-Apr-2023 16:46	183_CCV.d	B CA
CCB 14	1	11-Apr-2023 16:47	184_CCB.d	B CA
CCV 15	1	11-Apr-2023 17:18	195_CCV.d	B CA
CCB 15	1	11-Apr-2023 17:24	198_CCB.d	B CA
CCV 16	1	11-Apr-2023 17:54	209_CCV.d	B CA
CCB 16	1	11-Apr-2023 17:55	210_CCB.d	B CA
CCV 17	1	11-Apr-2023 18:19	221_CCV.d	B CA
CCB 17	1	11-Apr-2023 18:20	222_CCB.d	B CA
CCV 18	1	11-Apr-2023 18:43	233_CCV.d	B CA
CCB 18	1	11-Apr-2023 18:45	234_CCB.d	B CA
ICCV 19	1	11-Apr-2023 20:11	266_ICV.d	B CA
LLCCV2	1	11-Apr-2023 20:13	267LCV2.d	B CA
LLCCV5	1	11-Apr-2023 20:15	268LCV5.d	B CA
ICCB 19	1	11-Apr-2023 20:17	269_ICB.d	B CA
CCV 20	1	11-Apr-2023 20:21	271_CCV.d	B CA
CCB 20	1	11-Apr-2023 20:23	272_CCB.d	B CA
CCV 21	1	11-Apr-2023 21:39	308_CCV.d	B CA
CCB 21	1	11-Apr-2023 21:40	309_CCB.d	B CA
CCV 22	1	11-Apr-2023 21:56	317_CCV.d	B CA
CCB 22	1	11-Apr-2023 21:58	318_CCB.d	B CA
CCV 23	1	11-Apr-2023 22:14	326_CCV.d	B CA
CCB 23	1	11-Apr-2023 22:15	327_CCB.d	B CA
CCV 24	1	11-Apr-2023 22:33	336_CCV.d	B CA
CCB 24	1	11-Apr-2023 22:35	337_CCB.d	B CA
CCV 25	1	11-Apr-2023 22:51	345_CCV.d	B CA
CCB 25	1	11-Apr-2023 22:53	346_CCB.d	B CA
CCV 26	1	11-Apr-2023 23:14	356_CCV.d	B CA
CCB 26	1	11-Apr-2023 23:16	357_CCB.d	B CA
CCV 27	1	11-Apr-2023 23:36	367_CCV.d	B CA
CCB 27	1	11-Apr-2023 23:38	368_CCB.d	B CA
CCV 28	1	11-Apr-2023 23:58	378_CCV.d	B CA
CCB 28	1	12-Apr-2023 00:00	379_CCB.d	B CA
CCV 29	1	12-Apr-2023 00:16	387_CCV.d	B CA
CCB 29	1	12-Apr-2023 00:18	388_CCB.d	B CA
LLCCV2	1	12-Apr-2023 00:20	389LCV2.d	B CA
LLCCV5	1	12-Apr-2023 00:21	390LCV5.d	B CA
ICSA	1	12-Apr-2023 00:23	391ICSA.d	B CA
ICSAB	1	12-Apr-2023 00:26	392ICSB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094
Start Date: 13-Apr-2023 End Date: 14-Apr-2023

Run ID:ICPMS06_432544
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	13-Apr-2023 10:45	024_ICV.d	B CA
LLICV2	1	13-Apr-2023 10:47	025LCV2.d	B CA
LLICV5	1	13-Apr-2023 10:49	026LCV5.d	B CA
ICB	1	13-Apr-2023 10:51	027_ICB.d	B CA
ICSA	1	13-Apr-2023 10:55	029ICSA.d	B CA
ICSAB	1	13-Apr-2023 10:57	030ICSB.d	B CA
CCV 1	1	13-Apr-2023 11:07	033_CCV.d	B CA
CCB 1	1	13-Apr-2023 11:08	034_CCB.d	B CA
CCV 2	1	13-Apr-2023 11:40	045_CCV.d	B CA
CCB 2	1	13-Apr-2023 11:42	046_CCB.d	B CA
CCV 3	1	13-Apr-2023 12:07	057_CCV.d	B CA
CCB 3	1	13-Apr-2023 12:09	058_CCB.d	B CA
CCV 4	1	13-Apr-2023 12:32	068_CCV.d	B CA
CCB 4	1	13-Apr-2023 12:34	069_CCB.d	B CA
CCV 5	1	13-Apr-2023 12:57	080_CCV.d	B CA
CCB 5	1	13-Apr-2023 12:59	081_CCB.d	B CA
CCV 6	1	13-Apr-2023 13:31	092_CCV.d	B CA
CCB 6	1	13-Apr-2023 13:33	093_CCB.d	B CA
CCV 7	1	13-Apr-2023 14:08	103_CCV.d	B CA
CCB 7	1	13-Apr-2023 14:16	106_CCB.d	B CA
MW-58	1	13-Apr-2023 14:20	107SMPL.d	B CA
MW-58SD	5	13-Apr-2023 14:22	108SMPL.d	B CA
MW-58MS	1	13-Apr-2023 14:23	109SMPL.d	B CA
MW-58MSD	1	13-Apr-2023 14:25	110SMPL.d	B CA
MW-58PDS	1	13-Apr-2023 14:27	111SMPL.d	B CA
CCV 8	1	13-Apr-2023 14:44	113_CCV.d	B CA
CCB 8	1	13-Apr-2023 14:46	114_CCB.d	B CA
CCV 9	1	13-Apr-2023 15:13	122_CCV.d	B CA
CCB 9	1	13-Apr-2023 15:15	123_CCB.d	B CA
CCV 10	1	13-Apr-2023 15:38	134_CCV.d	B CA
CCB 10	1	13-Apr-2023 15:40	135_CCB.d	B CA
CCV 11	1	13-Apr-2023 16:06	146_CCV.d	B CA
CCB 11	1	13-Apr-2023 16:08	147_CCB.d	B CA
CCV 12	1	13-Apr-2023 16:18	151_CCV.d	B CA
CCB 12	1	13-Apr-2023 16:20	152_CCB.d	B CA
CCV 13	1	13-Apr-2023 16:50	163_CCV.d	B CA
CCB 13	1	13-Apr-2023 16:51	164_CCB.d	B CA
CCV 14	1	13-Apr-2023 17:27	174_CCV.d	B CA
CCB 14	1	13-Apr-2023 17:39	177_CCB.d	B CA
CCV 15	1	13-Apr-2023 18:04	188_CCV.d	B CA
CCB 15	1	13-Apr-2023 18:06	189_CCB.d	B CA
CCB 16	1	13-Apr-2023 18:40	201_CCB.d	B CA
CCV 16	1	13-Apr-2023 18:54	204_CCV.d	B CA
CCV 17	1	13-Apr-2023 19:10	212_CCV.d	B CA
CCB 17	1	13-Apr-2023 19:12	213_CCB.d	B CA
CCV 18	1	13-Apr-2023 19:26	220_CCV.d	B CA
CCB 18	1	13-Apr-2023 19:28	221_CCB.d	B CA
CCV 19	1	13-Apr-2023 19:48	231_CCV.d	B CA
CCB 19	1	13-Apr-2023 19:50	232_CCB.d	B CA
CCV 20	1	13-Apr-2023 20:04	239_CCV.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094
Start Date: 13-Apr-2023 End Date: 14-Apr-2023

Run ID:ICPMS06_432544
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCB 20	1	13-Apr-2023 20:06	240_CCB.d	B CA
CCB 21	1	13-Apr-2023 20:32	251_CCB.d	B CA
CCV 21	1	13-Apr-2023 20:52	253_CCV.d	B CA
ICCV 22	1	13-Apr-2023 21:20	266_ICV.d	B CA
LLCCV2	1	13-Apr-2023 21:22	267LCV2.d	B CA
LLCCV5	1	13-Apr-2023 21:23	268LCV5.d	B CA
ICCB 22	1	13-Apr-2023 21:25	269_ICB.d	B CA
CCV 23	1	13-Apr-2023 21:29	271_CCV.d	B CA
CCB 23	1	13-Apr-2023 21:31	272_CCB.d	B CA
CCV 24	1	13-Apr-2023 21:47	280_CCV.d	B CA
CCB 24	1	13-Apr-2023 21:49	281_CCB.d	B CA
CCV 25	1	13-Apr-2023 22:05	289_CCV.d	B CA
CCB 25	1	13-Apr-2023 22:07	290_CCB.d	B CA
CCV 26	1	13-Apr-2023 22:25	299_CCV.d	B CA
CCB 26	1	13-Apr-2023 22:27	300_CCB.d	B CA
ICCV 27	1	13-Apr-2023 23:14	322_ICV.d	B CA
LLCCV2	1	13-Apr-2023 23:16	323LCV2.d	B CA
LLCCV5	1	13-Apr-2023 23:18	324LCV5.d	B CA
ICCB 27	1	13-Apr-2023 23:20	325_ICB.d	B CA
CCV 28	1	13-Apr-2023 23:24	327_CCV.d	B CA
CCB 28	1	13-Apr-2023 23:26	328_CCB.d	B CA
CCV 29	1	13-Apr-2023 23:48	339_CCV.d	B CA
CCB 29	1	13-Apr-2023 23:50	340_CCB.d	B CA
CCV 30	1	14-Apr-2023 00:07	349_CCV.d	B CA
CCB 30	1	14-Apr-2023 00:09	350_CCB.d	B CA
CCV 31	1	14-Apr-2023 00:25	358_CCV.d	B CA
CCB 31	1	14-Apr-2023 00:27	359_CCB.d	B CA
CCV 32	1	14-Apr-2023 00:39	365_CCV.d	B CA
CCB 32	1	14-Apr-2023 00:41	366_CCB.d	B CA
CCV 33	1	14-Apr-2023 01:03	377_CCV.d	B CA
CCB 33	1	14-Apr-2023 01:05	378_CCB.d	B CA
CCV 34	1	14-Apr-2023 01:23	387_CCV.d	B CA
CCB 34	1	14-Apr-2023 01:25	388_CCB.d	B CA
LLCCV2	1	14-Apr-2023 01:27	389LCV2.d	B CA
LLCCV5	1	14-Apr-2023 01:29	390LCV5.d	B CA
ICSA	1	14-Apr-2023 01:31	391ICSA.d	B CA
ICSAB	1	14-Apr-2023 01:33	392ICSB.d	B CA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

Run ID:ICPMS06_432196
Instrument:ICPMS06
Method:SW6020A

CCB 7	Date: 10-Apr-2023 14:47	Seq: 7226258	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	13.73	11	20

CCB 9	Date: 10-Apr-2023 15:47	Seq: 7226553	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	112.9	11	20

CCB 12	Date: 10-Apr-2023 16:54	Seq: 7226834	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	-12.04	11	20

CCB 13	Date: 10-Apr-2023 17:17	Seq: 7226868	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	-13.94	11	20

CCB 15	Date: 10-Apr-2023 18:52	Seq: 7227522	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	-12.99	11	20

CCB 16	Date: 10-Apr-2023 19:11	Seq: 7227530	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	-12.21	11	20

CCB 19	Date: 10-Apr-2023 20:16	Seq: 7227563	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	14.16	11	20

CCB 20	Date: 10-Apr-2023 20:38	Seq: 7227574	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	14.05	11	20

CCB 21	Date: 10-Apr-2023 21:00	Seq: 7227585	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	12.31	11	20

CCB 28	Date: 10-Apr-2023 23:31	Seq: 7227670	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	27.75	11	20

CCB 29	Date: 10-Apr-2023 23:50	Seq: 7227674	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	17.48	11	20

CCB 30	Date: 11-Apr-2023 00:09	Seq: 7227690	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	44.11	11	20

CCB 31	Date: 11-Apr-2023 00:31	Seq: 7227701	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	44.52	11	20

CCB 32	Date: 11-Apr-2023 00:55	Seq: 7227713	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

Run ID:ICPMS06_432196
Instrument:ICPMS06
Method:SW6020A

	Analyte	Result	MDL	Report Limit
	Boron	25.95	11	20

CCB 33 Date: 11-Apr-2023 01:03 Seq: 7227680 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	21.17	11	20

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

Run ID:ICPMS06_432302
Instrument:ICPMS06
Method:SW6020A

CCB	Date	Seq	D/F	Units	Analyte	Result	MDL	Report Limit
CCB 3	11-Apr-2023 12:10	7228527	1	ug/L	Boron	12.82	11	20
CCB 5	11-Apr-2023 13:01	7228662	1	ug/L	Boron	12.22	11	20
CCB 7	11-Apr-2023 13:48	7228719	1	ug/L	Boron	11.1	11	20
CCB 8	11-Apr-2023 14:15	7228870	1	ug/L	Boron	12.93	11	20
CCB 10	11-Apr-2023 15:15	7229452	1	ug/L	Boron	12.15	11	20
CCB 11	11-Apr-2023 15:45	7229539	1	ug/L	Boron	11.99	11	20
CCB 13	11-Apr-2023 16:22	7229650	1	ug/L	Boron	11.32	11	20
CCB 15	11-Apr-2023 17:24	7229783	1	ug/L	Boron	15.48	11	20
CCB 16	11-Apr-2023 17:55	7229889	1	ug/L	Boron	13.34	11	20
CCB 22	11-Apr-2023 21:58	7230200	1	ug/L	Boron	22.77	11	20
CCB 24	11-Apr-2023 22:35	7230179	1	ug/L	Boron	13.12	11	20
CCB 26	11-Apr-2023 23:16	7230211	1	ug/L	Boron	21.92	11	20

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

Run ID:ICPMS06_432544
Instrument:ICPMS06
Method:SW6020A

CCB	Date	Seq	D/F	Units	Analyte	Result	MDL	Report Limit
CCB 2	13-Apr-2023 11:42	7234304	1	ug/L	Boron	18.7	11	20
CCB 3	13-Apr-2023 12:09	7234384	1	ug/L	Boron	14.49	11	20
CCB 5	13-Apr-2023 12:59	7234645	1	ug/L	Boron	178.5	11	20
CCB 6	13-Apr-2023 13:33	7234750	1	ug/L	Boron	82.2	11	20
CCB 7	13-Apr-2023 14:16	7234787	1	ug/L	Boron	27.64	11	20
CCB 8	13-Apr-2023 14:46	7234948	1	ug/L	Boron	24.66	11	20
CCB 9	13-Apr-2023 15:15	7235058	1	ug/L	Boron	20.85	11	20
CCB 10	13-Apr-2023 15:40	7235461	1	ug/L	Boron	14.99	11	20
CCB 11	13-Apr-2023 16:08	7235473	1	ug/L	Boron	16.67	11	20
CCB 12	13-Apr-2023 16:20	7235478	1	ug/L	Boron	15.3	11	20
CCB 13	13-Apr-2023 16:51	7235569	1	ug/L	Boron	23.31	11	20
CCB 15	13-Apr-2023 18:06	7235736	1	ug/L	Boron	18.86	11	20
CCB 16	13-Apr-2023 18:40	7235748	1	ug/L	Boron	12.88	11	20
CCB 17	13-Apr-2023 19:12	7236065	1	ug/L				

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

Run ID:ICPMS06_432544
Instrument:ICPMS06
Method:SW6020A

Analyte	Result	MDL	Report Limit
Boron	13.09	11	20

CCB 20 Date: 13-Apr-2023 20:06 Seq: 7236096 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	32.32	11	20

CCB 21 Date: 13-Apr-2023 20:32 Seq: 7236107 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	48.87	11	20

CCB 24 Date: 13-Apr-2023 21:49 Seq: 7236136 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	29.38	11	20

CCB 25 Date: 13-Apr-2023 22:07 Seq: 7236113 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	11.97	11	20

CCB 26 Date: 13-Apr-2023 22:27 Seq: 7236188 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	16.96	11	20

CCB 31 Date: 14-Apr-2023 00:27 Seq: 7236350 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	32.24	11	20

CCB 32 Date: 14-Apr-2023 00:41 Seq: 7236357 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	16.02	11	20

CCB 33 Date: 14-Apr-2023 01:05 Seq: 7236327 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	25.57	11	20

CCB 34 Date: 14-Apr-2023 01:25 Seq: 7236337 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	30.54	11	20

Client: TRC Corporation
Project: NRG Parish – CCR Program
Work Order: HS23040094

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23040094-01	MW-39R	Water		03-Apr-2023 08:25	03-Apr-2023 13:50	☐
HS23040094-02	MW-40	Water		03-Apr-2023 11:15	03-Apr-2023 13:50	☐
HS23040094-03	MW-41	Water		03-Apr-2023 09:55	03-Apr-2023 13:50	☐
HS23040094-04	MW-62	Water		03-Apr-2023 11:55	03-Apr-2023 13:50	☐
HS23040094-05	MW-63	Water		03-Apr-2023 09:05	03-Apr-2023 13:50	☐
HS23040094-06	MW-64	Water		03-Apr-2023 10:35	03-Apr-2023 13:50	☐
HS23040094-07	MW-23R	Water		03-Apr-2023 12:15	03-Apr-2023 13:50	☐
HS23040094-08	MW-28D	Water		03-Apr-2023 11:20	03-Apr-2023 13:50	☐
HS23040094-09	MW-42	Water		03-Apr-2023 11:25	03-Apr-2023 13:50	☐
HS23040094-10	MW-43	Water		03-Apr-2023 13:00	03-Apr-2023 13:50	☐
HS23040094-11	MW-44	Water		03-Apr-2023 09:20	03-Apr-2023 13:50	☐
HS23040094-12	MW-46R	Water		03-Apr-2023 08:25	03-Apr-2023 13:50	☐
HS23040094-13	MW-47	Water		03-Apr-2023 11:00	03-Apr-2023 13:50	☐
HS23040094-14	MW-48	Water		03-Apr-2023 10:20	03-Apr-2023 13:50	☐
HS23040094-15	MW-50	Water		03-Apr-2023 11:45	03-Apr-2023 13:50	☐
HS23040094-16	MW-52	Water		03-Apr-2023 12:25	03-Apr-2023 13:50	☐
HS23040094-17	MW-54	Water		03-Apr-2023 08:10	03-Apr-2023 13:50	☐
HS23040094-18	MW-55R	Water		03-Apr-2023 09:00	03-Apr-2023 13:50	☐
HS23040094-19	MW-58	Water		03-Apr-2023 10:25	03-Apr-2023 13:50	☐
HS23040094-20	MW-65	Water		03-Apr-2023 09:40	03-Apr-2023 13:50	☐
HS23040094-21	MW-36	Water		03-Apr-2023 10:35	03-Apr-2023 13:50	☐
HS23040094-22	MW-37	Water		03-Apr-2023 09:05	03-Apr-2023 13:50	☐
HS23040094-23	MW-38R	Water		03-Apr-2023 08:25	03-Apr-2023 13:50	☐
HS23040094-24	MW-60	Water		03-Apr-2023 11:20	03-Apr-2023 13:50	☐
HS23040094-25	MW-61	Water		03-Apr-2023 09:45	03-Apr-2023 13:50	☐
HS23040094-26	Field Blank	Water		03-Apr-2023 09:50	03-Apr-2023 13:50	☐

Client: TRC Corporation
Project: NRG Parish – CCR Program
Work Order: HS23040094

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23040094-27	Field Duplicate 1	Water		03-Apr-2023 12:00	03-Apr-2023 13:50	☐
HS23040094-28	Field Duplicate 2	Water		03-Apr-2023 08:00	03-Apr-2023 13:50	☐

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-39R		Lab ID:HS23040094-01
Collection Date:	03-Apr-2023 08:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.131**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:28
Calcium	**204**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 12:22
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**443**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 18:17
Sulfate	**173**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 18:17
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,260**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 11:52
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-40		Lab ID:HS23040094-02
Collection Date:	03-Apr-2023 11:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.101**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:30
Calcium	**290**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 12:24
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**526**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 19:03
Sulfate	**117**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 19:03
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,830**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 11:52
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-41		Lab ID:HS23040094-03
Collection Date:	03-Apr-2023 09:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0930**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:32
Calcium	**43.8**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 22:32
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**21.8**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 19:09
Sulfate	**13.8**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 19:09
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**234**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 11:52
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-62		Lab ID:HS23040094-04
Collection Date:	03-Apr-2023 11:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0903**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:34
Calcium	**181**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 12:26
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**507**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 19:49
Sulfate	**178**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 19:49
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,620**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 11:52
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-63		Lab ID:HS23040094-05
Collection Date:	03-Apr-2023 09:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0991**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:02
Calcium	**303**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:27
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**333**		**4.00**	**10.0**	**mg/L**	20	04-Apr-2023 19:26
Sulfate	**606**		**4.00**	**10.0**	**mg/L**	20	04-Apr-2023 19:26
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,920**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 11:52
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-64		Lab ID:HS23040094-06
Collection Date:	03-Apr-2023 10:35		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.105**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:36
Calcium	**238**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 12:28
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**574**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 20:30
Sulfate	**47.9**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 20:24
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,940**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

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Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-23R		Lab ID:HS23040094-07
Collection Date:	03-Apr-2023 12:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.284**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:38
Calcium	**460**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 12:40
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**1,080**		**4.00**	**10.0**	**mg/L**	20	04-Apr-2023 18:23
Sulfate	**1,390**		**4.00**	**10.0**	**mg/L**	20	04-Apr-2023 18:23
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**4,460**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

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Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-28D		Lab ID:HS23040094-08
Collection Date:	03-Apr-2023 11:20		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.156**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:40
Calcium	**126**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 22:40
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**176**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 20:41
Sulfate	**92.3**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 20:36
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**820**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-42		Lab ID:HS23040094-09
Collection Date:	03-Apr-2023 11:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.506**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:48
Calcium	**155**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 22:48
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**329**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 20:47
Sulfate	**537**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 20:47
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,680**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-43		Lab ID:HS23040094-10
Collection Date:	03-Apr-2023 13:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.397**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:50
Calcium	**91.5**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 22:50
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**234**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 20:59
Sulfate	**72.4**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 20:53
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**804**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-44		Lab ID:HS23040094-11
Collection Date:	03-Apr-2023 09:20		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.312**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:52
Calcium	**138**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 22:52
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**269**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 21:10
Sulfate	**178**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 21:10
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,060**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-46R		Lab ID:HS23040094-12
Collection Date:	03-Apr-2023 08:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.178**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 22:54
Calcium	**98.6**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 22:54
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**166**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 21:51
Sulfate	**97.1**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 21:45
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**736**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-47		Lab ID:HS23040094-13
Collection Date:	03-Apr-2023 11:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.243**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:18
Calcium	**109**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 20:18
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**323**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 22:20
Sulfate	**79.8**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 22:20
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**976**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

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Client:	TRC Corporation	ANALYTICAL REPORT
Project:	NRG Parish – CCR Program	WorkOrder:HS23040094
Sample ID:	MW-48	Lab ID:HS23040094-14
Collection Date:	03-Apr-2023 10:20	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.583**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:20
Calcium	**82.4**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 20:20
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**390**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 22:25
Sulfate	**95.5**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 22:25
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,140**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-50		Lab ID:HS23040094-15
Collection Date:	03-Apr-2023 11:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.293**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:22
Calcium	**143**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 20:22
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**411**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 22:31
Sulfate	**141**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 22:31
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,300**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program	WorkOrder:	HS23040094
Sample ID:	MW-52	Lab ID:	HS23040094-16
Collection Date:	03-Apr-2023 12:25	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.345**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:24
Calcium	**228**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:32
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**567**		**4.00**	**10.0**	**mg/L**	20	04-Apr-2023 22:37
Sulfate	**429**		**4.00**	**10.0**	**mg/L**	20	04-Apr-2023 22:37
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,350**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	NRG Parish – CCR Program	WorkOrder:HS23040094
Sample ID:	MW-54	Lab ID:HS23040094-17
Collection Date:	03-Apr-2023 08:10	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.278**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:26
Calcium	**106**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 20:26
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**280**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 23:23
Sulfate	**81.3**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 23:18
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**756**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-55R		Lab ID:HS23040094-18
Collection Date:	03-Apr-2023 09:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.406**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:28
Calcium	**112**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 20:28
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**336**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 23:35
Sulfate	**105**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 23:35
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**948**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

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Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program	WorkOrder:	HS23040094
Sample ID:	MW-58	Lab ID:	HS23040094-19
Collection Date:	03-Apr-2023 10:25	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.373**		**0.0110**	**0.0200**	**mg/L**	1	13-Apr-2023 14:20
Calcium	**114**		**0.0340**	**0.500**	**mg/L**	1	13-Apr-2023 14:20
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**316**		**2.00**	**5.00**	**mg/L**	10	04-Apr-2023 23:58
Sulfate	**97.6**		**0.200**	**0.500**	**mg/L**	1	04-Apr-2023 23:41
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,000**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-65		Lab ID:HS23040094-20
Collection Date:	03-Apr-2023 09:40		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.320**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:32
Calcium	**199**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:34
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**318**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 00:04
Sulfate	**614**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 00:04
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,090**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-36		Lab ID:HS23040094-21
Collection Date:	03-Apr-2023 10:35		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0712**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:40
Calcium	**231**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:36
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**306**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 00:10
Sulfate	**422**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 00:10
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,480**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation	**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program	WorkOrder:HS23040094
Sample ID:	MW-37	Lab ID:HS23040094-22
Collection Date:	03-Apr-2023 09:05	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.383**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:42
Calcium	**239**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:48
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**256**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:08
Sulfate	**916**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:08
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,090**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program	WorkOrder:	HS23040094
Sample ID:	MW-38R	Lab ID:	HS23040094-23
Collection Date:	03-Apr-2023 08:25	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.435**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:44
Calcium	**256**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:50
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**245**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:13
Sulfate	**734**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:13
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,690**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program	WorkOrder:	HS23040094
Sample ID:	MW-60	Lab ID:	HS23040094-24
Collection Date:	03-Apr-2023 11:20	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0891**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:46
Calcium	**217**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:52
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**312**		**2.00**	**5.00**	**mg/L**	10	05-Apr-2023 01:19
Sulfate	**290**		**2.00**	**5.00**	**mg/L**	10	05-Apr-2023 01:19
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,360**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	MW-61		Lab ID:HS23040094-25
Collection Date:	03-Apr-2023 09:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**1.10**		**0.110**	**0.200**	**mg/L**	10	11-Apr-2023 11:54
Calcium	**239**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2023 11:54
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**122**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:25
Sulfate	**1,100**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:25
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,060**		**5.00**	**10.0**	**mg/L**	1	06-Apr-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Privileged and Confidential

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	Field Blank		Lab ID:HS23040094-26
Collection Date:	03-Apr-2023 09:50		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0158**	J	**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:50
Calcium	**0.291**	J	**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 20:50
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	< 0.200		0.200	0.500	mg/L	1	05-Apr-2023 01:31
Sulfate	**0.300**	J	**0.200**	**0.500**	**mg/L**	1	05-Apr-2023 01:31
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	< 5.00		5.00	10.0	mg/L	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program		WorkOrder:HS23040094
Sample ID:	Field Duplicate 1		Lab ID:HS23040094-27
Collection Date:	03-Apr-2023 12:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0772**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:52
Calcium	**224**		**0.680**	**10.0**	**mg/L**	20	11-Apr-2023 11:56
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**312**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:37
Sulfate	**433**		**4.00**	**10.0**	**mg/L**	20	05-Apr-2023 01:37
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,770**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish – CCR Program	WorkOrder:	HS23040094
Sample ID:	Field Duplicate 2	Lab ID:	HS23040094-28
Collection Date:	03-Apr-2023 08:00	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.264**		**0.0110**	**0.0200**	**mg/L**	1	10-Apr-2023 20:54
Calcium	**128**		**0.0340**	**0.500**	**mg/L**	1	10-Apr-2023 20:54
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**267**		**2.00**	**5.00**	**mg/L**	10	05-Apr-2023 01:42
Sulfate	**173**		**2.00**	**5.00**	**mg/L**	10	05-Apr-2023 01:42
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**944**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	10-Apr-2023 10:09

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Revision:** 1

Weight / Prep Log

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

Batch ID: 192106 **Start Date:** 10 Apr 2023 12:00 **End Date:** 10 Apr 2023 12:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23040094-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-12		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 192107 **Start Date:** 10 Apr 2023 12:30 **End Date:** 10 Apr 2023 12:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23040094-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-19		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-20		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-21		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-22		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-23		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-24		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-25		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-26		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-27		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040094-28		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

DATES REPORT

Batch ID: 192106 (0) **Test Name :** ICP-MS METALS BY SW6020A **Matrix:** Water

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
HS23040094-01	MW-39R	03 Apr 2023 08:25		10 Apr 2023 12:00	11 Apr 2023 12:22	20
HS23040094-01	MW-39R	03 Apr 2023 08:25		10 Apr 2023 12:00	10 Apr 2023 22:28	1
HS23040094-02	MW-40	03 Apr 2023 11:15		10 Apr 2023 12:00	11 Apr 2023 12:24	20
HS23040094-02	MW-40	03 Apr 2023 11:15		10 Apr 2023 12:00	10 Apr 2023 22:30	1
HS23040094-03	MW-41	03 Apr 2023 09:55		10 Apr 2023 12:00	10 Apr 2023 22:32	1
HS23040094-04	MW-62	03 Apr 2023 11:55		10 Apr 2023 12:00	11 Apr 2023 12:26	20
HS23040094-04	MW-62	03 Apr 2023 11:55		10 Apr 2023 12:00	10 Apr 2023 22:34	1
HS23040094-06	MW-64	03 Apr 2023 10:35		10 Apr 2023 12:00	11 Apr 2023 12:28	20
HS23040094-06	MW-64	03 Apr 2023 10:35		10 Apr 2023 12:00	10 Apr 2023 22:36	1
HS23040094-07	MW-23R	03 Apr 2023 12:15		10 Apr 2023 12:00	11 Apr 2023 12:40	20
HS23040094-07	MW-23R	03 Apr 2023 12:15		10 Apr 2023 12:00	10 Apr 2023 22:38	1
HS23040094-08	MW-28D	03 Apr 2023 11:20		10 Apr 2023 12:00	10 Apr 2023 22:40	1
HS23040094-09	MW-42	03 Apr 2023 11:25		10 Apr 2023 12:00	10 Apr 2023 22:48	1
HS23040094-10	MW-43	03 Apr 2023 13:00		10 Apr 2023 12:00	10 Apr 2023 22:50	1
HS23040094-11	MW-44	03 Apr 2023 09:20		10 Apr 2023 12:00	10 Apr 2023 22:52	1
HS23040094-12	MW-46R	03 Apr 2023 08:25		10 Apr 2023 12:00	10 Apr 2023 22:54	1

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 192107 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23040094-05	MW-63	03 Apr 2023 09:05		10 Apr 2023 12:30	11 Apr 2023 11:27	20
HS23040094-05	MW-63	03 Apr 2023 09:05		10 Apr 2023 12:30	10 Apr 2023 20:02	1
HS23040094-13	MW-47	03 Apr 2023 11:00		10 Apr 2023 12:30	10 Apr 2023 20:18	1
HS23040094-14	MW-48	03 Apr 2023 10:20		10 Apr 2023 12:30	10 Apr 2023 20:20	1
HS23040094-15	MW-50	03 Apr 2023 11:45		10 Apr 2023 12:30	10 Apr 2023 20:22	1
HS23040094-16	MW-52	03 Apr 2023 12:25		10 Apr 2023 12:30	11 Apr 2023 11:32	20
HS23040094-16	MW-52	03 Apr 2023 12:25		10 Apr 2023 12:30	10 Apr 2023 20:24	1
HS23040094-17	MW-54	03 Apr 2023 08:10		10 Apr 2023 12:30	10 Apr 2023 20:26	1
HS23040094-18	MW-55R	03 Apr 2023 09:00		10 Apr 2023 12:30	10 Apr 2023 20:28	1
HS23040094-19	MW-58	03 Apr 2023 10:25		10 Apr 2023 12:30	13 Apr 2023 14:20	1
HS23040094-20	MW-65	03 Apr 2023 09:40		10 Apr 2023 12:30	11 Apr 2023 11:34	20
HS23040094-20	MW-65	03 Apr 2023 09:40		10 Apr 2023 12:30	10 Apr 2023 20:32	1
HS23040094-21	MW-36	03 Apr 2023 10:35		10 Apr 2023 12:30	11 Apr 2023 11:36	20
HS23040094-21	MW-36	03 Apr 2023 10:35		10 Apr 2023 12:30	10 Apr 2023 20:40	1
HS23040094-22	MW-37	03 Apr 2023 09:05		10 Apr 2023 12:30	11 Apr 2023 11:48	20
HS23040094-22	MW-37	03 Apr 2023 09:05		10 Apr 2023 12:30	10 Apr 2023 20:42	1
HS23040094-23	MW-38R	03 Apr 2023 08:25		10 Apr 2023 12:30	11 Apr 2023 11:50	20
HS23040094-23	MW-38R	03 Apr 2023 08:25		10 Apr 2023 12:30	10 Apr 2023 20:44	1
HS23040094-24	MW-60	03 Apr 2023 11:20		10 Apr 2023 12:30	11 Apr 2023 11:52	20
HS23040094-24	MW-60	03 Apr 2023 11:20		10 Apr 2023 12:30	10 Apr 2023 20:46	1
HS23040094-25	MW-61	03 Apr 2023 09:45		10 Apr 2023 12:30	11 Apr 2023 11:54	10
HS23040094-26	Field Blank	03 Apr 2023 09:50		10 Apr 2023 12:30	10 Apr 2023 20:50	1
HS23040094-27	Field Duplicate 1	03 Apr 2023 12:00		10 Apr 2023 12:30	11 Apr 2023 11:56	20
HS23040094-27	Field Duplicate 1	03 Apr 2023 12:00		10 Apr 2023 12:30	10 Apr 2023 20:52	1
HS23040094-28	Field Duplicate 2	03 Apr 2023 08:00		10 Apr 2023 12:30	10 Apr 2023 20:54	1

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R431773 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23040094-01	MW-39R	03 Apr 2023 08:25			04 Apr 2023 18:17	10
HS23040094-02	MW-40	03 Apr 2023 11:15			04 Apr 2023 19:03	10
HS23040094-03	MW-41	03 Apr 2023 09:55			04 Apr 2023 19:09	1
HS23040094-04	MW-62	03 Apr 2023 11:55			04 Apr 2023 19:49	10
HS23040094-05	MW-63	03 Apr 2023 09:05			04 Apr 2023 19:26	20
HS23040094-06	MW-64	03 Apr 2023 10:35			04 Apr 2023 20:30	10
HS23040094-06	MW-64	03 Apr 2023 10:35			04 Apr 2023 20:24	1
HS23040094-07	MW-23R	03 Apr 2023 12:15			04 Apr 2023 18:23	20
HS23040094-08	MW-28D	03 Apr 2023 11:20			04 Apr 2023 20:41	10
HS23040094-08	MW-28D	03 Apr 2023 11:20			04 Apr 2023 20:36	1
HS23040094-09	MW-42	03 Apr 2023 11:25			04 Apr 2023 20:47	10
HS23040094-10	MW-43	03 Apr 2023 13:00			04 Apr 2023 20:59	10
HS23040094-10	MW-43	03 Apr 2023 13:00			04 Apr 2023 20:53	1
HS23040094-11	MW-44	03 Apr 2023 09:20			04 Apr 2023 21:10	10
HS23040094-12	MW-46R	03 Apr 2023 08:25			04 Apr 2023 21:51	10
HS23040094-12	MW-46R	03 Apr 2023 08:25			04 Apr 2023 21:45	1
Batch ID: R431774 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23040094-13	MW-47	03 Apr 2023 11:00			04 Apr 2023 22:20	10
HS23040094-14	MW-48	03 Apr 2023 10:20			04 Apr 2023 22:25	10
HS23040094-15	MW-50	03 Apr 2023 11:45			04 Apr 2023 22:31	10
HS23040094-16	MW-52	03 Apr 2023 12:25			04 Apr 2023 22:37	20
HS23040094-17	MW-54	03 Apr 2023 08:10			04 Apr 2023 23:23	10
HS23040094-17	MW-54	03 Apr 2023 08:10			04 Apr 2023 23:18	1
HS23040094-18	MW-55R	03 Apr 2023 09:00			04 Apr 2023 23:35	10
HS23040094-19	MW-58	03 Apr 2023 10:25			04 Apr 2023 23:58	10
HS23040094-19	MW-58	03 Apr 2023 10:25			04 Apr 2023 23:41	1
HS23040094-20	MW-65	03 Apr 2023 09:40			05 Apr 2023 00:04	20
HS23040094-21	MW-36	03 Apr 2023 10:35			05 Apr 2023 00:10	20
HS23040094-22	MW-37	03 Apr 2023 09:05			05 Apr 2023 01:08	20
HS23040094-23	MW-38R	03 Apr 2023 08:25			05 Apr 2023 01:13	20
HS23040094-24	MW-60	03 Apr 2023 11:20			05 Apr 2023 01:19	10
HS23040094-25	MW-61	03 Apr 2023 09:45			05 Apr 2023 01:25	20
HS23040094-26	Field Blank	03 Apr 2023 09:50			05 Apr 2023 01:31	1
HS23040094-27	Field Duplicate 1	03 Apr 2023 12:00			05 Apr 2023 01:37	20
HS23040094-28	Field Duplicate 2	03 Apr 2023 08:00			05 Apr 2023 01:42	10

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R432048 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23040094-01	MW-39R	03 Apr 2023 08:25			06 Apr 2023 11:52	1
HS23040094-02	MW-40	03 Apr 2023 11:15			06 Apr 2023 11:52	1
HS23040094-03	MW-41	03 Apr 2023 09:55			06 Apr 2023 11:52	1
HS23040094-04	MW-62	03 Apr 2023 11:55			06 Apr 2023 11:52	1
HS23040094-05	MW-63	03 Apr 2023 09:05			06 Apr 2023 11:52	1
Batch ID: R432053 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23040094-06	MW-64	03 Apr 2023 10:35			06 Apr 2023 12:30	1
HS23040094-07	MW-23R	03 Apr 2023 12:15			06 Apr 2023 12:30	1
HS23040094-08	MW-28D	03 Apr 2023 11:20			06 Apr 2023 12:30	1
HS23040094-09	MW-42	03 Apr 2023 11:25			06 Apr 2023 12:30	1
HS23040094-10	MW-43	03 Apr 2023 13:00			06 Apr 2023 12:30	1
HS23040094-11	MW-44	03 Apr 2023 09:20			06 Apr 2023 12:30	1
HS23040094-12	MW-46R	03 Apr 2023 08:25			06 Apr 2023 12:30	1
HS23040094-13	MW-47	03 Apr 2023 11:00			06 Apr 2023 12:30	1
HS23040094-14	MW-48	03 Apr 2023 10:20			06 Apr 2023 12:30	1
HS23040094-15	MW-50	03 Apr 2023 11:45			06 Apr 2023 12:30	1
HS23040094-16	MW-52	03 Apr 2023 12:25			06 Apr 2023 12:30	1
HS23040094-17	MW-54	03 Apr 2023 08:10			06 Apr 2023 12:30	1
HS23040094-18	MW-55R	03 Apr 2023 09:00			06 Apr 2023 12:30	1
HS23040094-19	MW-58	03 Apr 2023 10:25			06 Apr 2023 12:30	1
HS23040094-20	MW-65	03 Apr 2023 09:40			06 Apr 2023 12:30	1
HS23040094-21	MW-36	03 Apr 2023 10:35			06 Apr 2023 12:30	1
HS23040094-22	MW-37	03 Apr 2023 09:05			06 Apr 2023 12:30	1
HS23040094-23	MW-38R	03 Apr 2023 08:25			06 Apr 2023 12:30	1
HS23040094-24	MW-60	03 Apr 2023 11:20			06 Apr 2023 12:30	1
HS23040094-25	MW-61	03 Apr 2023 09:45			06 Apr 2023 12:30	1

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R432177 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS23040094-01	MW-39R	03 Apr 2023 08:25			10 Apr 2023 10:09	1
HS23040094-02	MW-40	03 Apr 2023 11:15			10 Apr 2023 10:09	1
HS23040094-03	MW-41	03 Apr 2023 09:55			10 Apr 2023 10:09	1
HS23040094-04	MW-62	03 Apr 2023 11:55			10 Apr 2023 10:09	1
HS23040094-05	MW-63	03 Apr 2023 09:05			10 Apr 2023 10:09	1
HS23040094-06	MW-64	03 Apr 2023 10:35			10 Apr 2023 10:09	1
HS23040094-07	MW-23R	03 Apr 2023 12:15			10 Apr 2023 10:09	1
HS23040094-08	MW-28D	03 Apr 2023 11:20			10 Apr 2023 10:09	1
HS23040094-09	MW-42	03 Apr 2023 11:25			10 Apr 2023 10:09	1
HS23040094-10	MW-43	03 Apr 2023 13:00			10 Apr 2023 10:09	1
HS23040094-11	MW-44	03 Apr 2023 09:20			10 Apr 2023 10:09	1
HS23040094-12	MW-46R	03 Apr 2023 08:25			10 Apr 2023 10:09	1
HS23040094-13	MW-47	03 Apr 2023 11:00			10 Apr 2023 10:09	1
HS23040094-14	MW-48	03 Apr 2023 10:20			10 Apr 2023 10:09	1
HS23040094-15	MW-50	03 Apr 2023 11:45			10 Apr 2023 10:09	1
HS23040094-16	MW-52	03 Apr 2023 12:25			10 Apr 2023 10:09	1
HS23040094-17	MW-54	03 Apr 2023 08:10			10 Apr 2023 10:09	1
HS23040094-18	MW-55R	03 Apr 2023 09:00			10 Apr 2023 10:09	1
HS23040094-19	MW-58	03 Apr 2023 10:25			10 Apr 2023 10:09	1
HS23040094-20	MW-65	03 Apr 2023 09:40			10 Apr 2023 10:09	1
HS23040094-21	MW-36	03 Apr 2023 10:35			10 Apr 2023 10:09	1
HS23040094-22	MW-37	03 Apr 2023 09:05			10 Apr 2023 10:09	1
HS23040094-23	MW-38R	03 Apr 2023 08:25			10 Apr 2023 10:09	1
HS23040094-24	MW-60	03 Apr 2023 11:20			10 Apr 2023 10:09	1
HS23040094-25	MW-61	03 Apr 2023 09:45			10 Apr 2023 10:09	1
HS23040094-26	Field Blank	03 Apr 2023 09:50			10 Apr 2023 10:09	1
HS23040094-27	Field Duplicate 1	03 Apr 2023 12:00			10 Apr 2023 10:09	1
HS23040094-28	Field Duplicate 2	03 Apr 2023 08:00			10 Apr 2023 10:09	1
Batch ID: R432235 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23040094-26	Field Blank	03 Apr 2023 09:50			07 Apr 2023 01:30	1
HS23040094-27	Field Duplicate 1	03 Apr 2023 12:00			07 Apr 2023 01:30	1
HS23040094-28	Field Duplicate 2	03 Apr 2023 08:00			07 Apr 2023 01:30	1

WorkOrder: HS23040094
InstrumentID: ICPMS06
Test Code: ICP_TW
Test Number: SW6020A
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Boron	7440-42-8	0.0500	0.0467	0.0110	0.0200
A	Calcium	7440-70-2	1.00	0.936	0.0340	0.500

WorkOrder:	HS23040094
InstrumentID:	Subcontract
Test Code:	Sub_Flouride
Test Number:	NA
Test Name:	Subcontract Analysis - Flouride

METHOD DETECTION / REPORTING LIMITS

Matrix:

Units:

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Subcontract Analysis		0	0	0	0

Revision: 1

WorkOrder: HS23040094
InstrumentID: ICS-Integrion
Test Code: 300_W
Test Number: E300
Test Name: Anions by E300.0, Rev 2.1, 1993

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Chloride	16887-00-6	0	0	0.200	0.500
A	Sulfate	14808-79-8	0	0	0.200	0.500

WorkOrder: HS23040094
InstrumentID: Balance1
Test Code: TDS_W 2540C
Test Number: M2540C
Test Name: Total Dissolved Solids by SM2540C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Dissolved Solids (Residue, Filterable)	TDS	5.00	4.00	5.00	10.0

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: 192106 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-192106** Units: **mg/L** Analysis Date: **10-Apr-2023 21:02**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227635** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	< 0.0340	0.500								

LCS Sample ID: **LCS-192106** Units: **mg/L** Analysis Date: **10-Apr-2023 21:04**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227636** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4921	0.0200	0.5	0	98.4	80 - 120				
Calcium	5.077	0.500	5	0	102	80 - 120				

MS Sample ID: **HS23040090-07MS** Units: **mg/L** Analysis Date: **10-Apr-2023 21:10**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227639** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.421	0.0200	0.5	0.9377	96.7	80 - 120				E
Calcium	154.7	0.500	5	158.1	-67.2	80 - 120				SO

MSD Sample ID: **HS23040090-07MSD** Units: **mg/L** Analysis Date: **10-Apr-2023 21:12**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227640** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.402	0.0200	0.5	0.9377	92.8	80 - 120	1.421	1.36	20	E
Calcium	153.2	0.500	5	158.1	-98.7	80 - 120	154.7	1.03	20	SO

PDS Sample ID: **HS23040090-07PDS** Units: **mg/L** Analysis Date: **11-Apr-2023 12:04**
Client ID: Run ID: **ICPMS06_432302** SeqNo: **7228524** PrepDate: **10-Apr-2023** DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	5.65	0.200	5	0.6019	101	75 - 125				

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: 192106 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

PDS Sample ID: **HS23040090-07PDS** Units: **mg/L** Analysis Date: **10-Apr-2023 21:14**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227641** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	154.7	0.500	10	158.1	-34.1	75 - 125				SO

SD Sample ID: **HS23040090-07SD** Units: **mg/L** Analysis Date: **11-Apr-2023 12:02**
Client ID: Run ID: **ICPMS06_432302** SeqNo: **7228523** PrepDate: **10-Apr-2023** DF: **50**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.7681	1.00					0.6019	0	10	J

SD Sample ID: **HS23040090-07SD** Units: **mg/L** Analysis Date: **10-Apr-2023 21:08**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227638** PrepDate: **10-Apr-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	160.1	2.50					158.1	1.3	10	

The following samples were analyzed in this batch:

HS23040094-01	HS23040094-02	HS23040094-03	HS23040094-04
HS23040094-06	HS23040094-07	HS23040094-08	HS23040094-09
HS23040094-10	HS23040094-11	HS23040094-12	

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: 192107 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-192107** Units: **mg/L** Analysis Date: **10-Apr-2023 19:58**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227554** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	0.06932	0.500								J

LCS Sample ID: **LCS-192107** Units: **mg/L** Analysis Date: **10-Apr-2023 20:00**
Client ID: Run ID: **ICPMS06_432196** SeqNo: **7227555** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4716	0.0200	0.5	0	94.3	80 - 120				
Calcium	5.208	0.500	5	0	104	80 - 120				

MS Sample ID: **HS23040094-19MS** Units: **mg/L** Analysis Date: **13-Apr-2023 14:23**
Client ID: **MW-58** Run ID: **ICPMS06_432544** SeqNo: **7234812** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.8813	0.0200	0.5	0.3177	113	80 - 120				
Calcium	113.1	0.500	5	110.1	59.8	80 - 120				SO

MS Sample ID: **HS23040094-05MS** Units: **mg/L** Analysis Date: **10-Apr-2023 20:06**
Client ID: **MW-63** Run ID: **ICPMS06_432196** SeqNo: **7227558** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5449	0.0200	0.5	0.09915	89.1	80 - 120				
Calcium	313.9	0.500	5	311.1	56.1	80 - 120				SEO

MSD Sample ID: **HS23040094-19MSD** Units: **mg/L** Analysis Date: **13-Apr-2023 14:25**
Client ID: **MW-58** Run ID: **ICPMS06_432544** SeqNo: **7234813** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.8925	0.0200	0.5	0.3177	115	80 - 120	0.8813	1.26	20	
Calcium	114.3	0.500	5	110.1	85.1	80 - 120	113.1	1.12	20	O

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: 192107 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MSD Sample ID: **HS23040094-05MSD** Units: **mg/L** Analysis Date: **10-Apr-2023 20:08**
Client ID: **MW-63** Run ID: **ICPMS06_432196** SeqNo: **7227559** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5567	0.0200	0.5	0.09915	91.5	80 - 120	0.5449	2.15	20	
Calcium	318	0.500	5	311.1	138	80 - 120	313.9	1.29	20	SEO

PDS Sample ID: **HS23040094-19PDS** Units: **mg/L** Analysis Date: **13-Apr-2023 14:27**
Client ID: **MW-58** Run ID: **ICPMS06_432544** SeqNo: **7234814** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.8861	0.0200	0.5	0.3177	114	75 - 125				
Calcium	114	0.500	10	110.1	39.5	75 - 125				SO

PDS Sample ID: **HS23040094-05PDS** Units: **mg/L** Analysis Date: **10-Apr-2023 20:10**
Client ID: **MW-63** Run ID: **ICPMS06_432196** SeqNo: **7227560** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5741	0.0200	0.5	0.09915	95.0	75 - 125				

PDS Sample ID: **HS23040094-05PDS** Units: **mg/L** Analysis Date: **11-Apr-2023 11:30**
Client ID: **MW-63** Run ID: **ICPMS06_432302** SeqNo: **7228463** PrepDate: **10-Apr-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	517.5	10.0	200	302.9	107	75 - 125				

SD Sample ID: **HS23040094-19SD** Units: **mg/L** Analysis Date: **13-Apr-2023 14:22**
Client ID: **MW-58** Run ID: **ICPMS06_432544** SeqNo: **7234811** PrepDate: **10-Apr-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.4959	0.100					0.3177	56.1	10	R
Calcium	115.4	2.50					110.1	4.86	10	

SD Sample ID: **HS23040094-05SD** Units: **mg/L** Analysis Date: **10-Apr-2023 20:04**
Client ID: **MW-63** Run ID: **ICPMS06_432196** SeqNo: **7227557** PrepDate: **10-Apr-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.1174	0.100					0.09915	0	10	

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: **192107 (0)** **Instrument:** **ICPMS06** **Method:** **ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23040094-05SD** Units: **mg/L** Analysis Date: **11-Apr-2023 11:29**
Client ID: **MW-63** Run ID: **ICPMS06_432302** SeqNo: **7228462** PrepDate: **10-Apr-2023** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	306	50.0					302.9	1.02	10	

The following samples were analyzed in this batch:

HS23040094-05	HS23040094-13	HS23040094-14	HS23040094-15
HS23040094-16	HS23040094-17	HS23040094-18	HS23040094-19
HS23040094-20	HS23040094-21	HS23040094-22	HS23040094-23
HS23040094-24	HS23040094-25	HS23040094-26	HS23040094-27
HS23040094-28			

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: R431773 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **04-Apr-2023 16:09**
Client ID: Run ID: **ICS-Integrion_431773** SeqNo: **7215318** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **04-Apr-2023 16:15**
Client ID: Run ID: **ICS-Integrion_431773** SeqNo: **7215319** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.62	0.500	20	0	98.1	90 - 110				
Sulfate	19.7	0.500	20	0	98.5	90 - 110				

MS Sample ID: **HS23040094-05MS** Units: **mg/L** Analysis Date: **04-Apr-2023 19:32**
Client ID: **MW-63** Run ID: **ICS-Integrion_431773** SeqNo: **7215346** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	515.5	10.0	200	332.8	91.4	80 - 120				
Sulfate	761.8	10.0	200	606	77.9	80 - 120				S

MS Sample ID: **HS23040094-03MS** Units: **mg/L** Analysis Date: **04-Apr-2023 19:15**
Client ID: **MW-41** Run ID: **ICS-Integrion_431773** SeqNo: **7215343** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	31.18	0.500	10	21.82	93.6	80 - 120				
Sulfate	23.23	0.500	10	13.77	94.6	80 - 120				

MSD Sample ID: **HS23040094-05MSD** Units: **mg/L** Analysis Date: **04-Apr-2023 19:38**
Client ID: **MW-63** Run ID: **ICS-Integrion_431773** SeqNo: **7215347** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	518.5	10.0	200	332.8	92.9	80 - 120	515.5	0.588	20	
Sulfate	765.2	10.0	200	606	79.6	80 - 120	761.8	0.447	20	S

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: **R431773 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23040094-03MSD** Units: **mg/L** Analysis Date: **04-Apr-2023 19:20**

Client ID: **MW-41** Run ID: **ICS-Integrion_431773** SeqNo: **7215344** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	31.06	0.500	10	21.82	92.4	80 - 120	31.18	0.389	20	
Sulfate	23.21	0.500	10	13.77	94.3	80 - 120	23.23	0.111	20	

The following samples were analyzed in this batch:

HS23040094-01	HS23040094-02	HS23040094-03	HS23040094-04
HS23040094-05	HS23040094-06	HS23040094-07	HS23040094-08
HS23040094-09	HS23040094-10	HS23040094-11	HS23040094-12

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: R431774 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **04-Apr-2023 22:08**
Client ID: Run ID: **ICS-Integrion_431774** SeqNo: **7215392** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **04-Apr-2023 22:14**
Client ID: Run ID: **ICS-Integrion_431774** SeqNo: **7215393** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.74	0.500	20	0	104	90 - 110				
Sulfate	20.83	0.500	20	0	104	90 - 110				

MS Sample ID: **HS23040094-19MS** Units: **mg/L** Analysis Date: **04-Apr-2023 23:46**
Client ID: **MW-58** Run ID: **ICS-Integrion_431774** SeqNo: **7215407** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	299.3	0.500	10	300.2	-8.46	80 - 120				SEO
Sulfate	103.3	0.500	10	97.61	56.7	80 - 120				SEO

MS Sample ID: **HS23040094-16MS** Units: **mg/L** Analysis Date: **04-Apr-2023 22:43**
Client ID: **MW-52** Run ID: **ICS-Integrion_431774** SeqNo: **7215398** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	730.1	10.0	200	566.8	81.6	80 - 120				
Sulfate	596	10.0	200	429.2	83.4	80 - 120				

MSD Sample ID: **HS23040094-19MSD** Units: **mg/L** Analysis Date: **04-Apr-2023 23:52**
Client ID: **MW-58** Run ID: **ICS-Integrion_431774** SeqNo: **7215408** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	298.7	0.500	10	300.2	-14.4	80 - 120	299.3	0.198	20	SEO
Sulfate	103.1	0.500	10	97.61	54.9	80 - 120	103.3	0.174	20	SEO

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: **R431774 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23040094-16MSD** Units: **mg/L** Analysis Date: **04-Apr-2023 22:49**

Client ID: **MW-52** Run ID: **ICS-Integrion_431774** SeqNo: **7215399** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	732	10.0	200	566.8	82.6	80 - 120	730.1	0.26	20	
Sulfate	595.8	10.0	200	429.2	83.3	80 - 120	596	0.0336	20	

The following samples were analyzed in this batch:

HS23040094-13	HS23040094-14	HS23040094-15	HS23040094-16
HS23040094-17	HS23040094-18	HS23040094-19	HS23040094-20
HS23040094-21	HS23040094-22	HS23040094-23	HS23040094-24
HS23040094-25	HS23040094-26	HS23040094-27	HS23040094-28

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: R432048 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-04062023** Units: **mg/L** Analysis Date: **06-Apr-2023 11:52**
Client ID: Run ID: **Balance1_432048** SeqNo: **7221990** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **LCS-040623** Units: **mg/L** Analysis Date: **06-Apr-2023 11:52**
Client ID: Run ID: **Balance1_432048** SeqNo: **7221989** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1098	10.0	1000	0	110	85 - 115				

DUP Sample ID: **HS23040094-05DUP** Units: **mg/L** Analysis Date: **06-Apr-2023 11:52**
Client ID: **MW-63** Run ID: **Balance1_432048** SeqNo: **7221988** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1940	10.0					1920	1.04	20	

DUP Sample ID: **HS23040090-18DUP** Units: **mg/L** Analysis Date: **06-Apr-2023 11:52**
Client ID: Run ID: **Balance1_432048** SeqNo: **7221974** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	154	10.0					156	1.29	20	

The following samples were analyzed in this batch:

HS23040094-01	HS23040094-02	HS23040094-03	HS23040094-04
HS23040094-05			

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: R432053 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-04062023** Units: **mg/L** Analysis Date: **06-Apr-2023 12:30**
Client ID: Run ID: **Balance1_432053** SeqNo: **7222125** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **LCS-04062023** Units: **mg/L** Analysis Date: **06-Apr-2023 12:30**
Client ID: Run ID: **Balance1_432053** SeqNo: **7222124** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1096	10.0	1000	0	110	85 - 115				

DUP Sample ID: **HS23040094-19DUP** Units: **mg/L** Analysis Date: **06-Apr-2023 12:30**
Client ID: **MW-58** Run ID: **Balance1_432053** SeqNo: **7222117** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	996	10.0					1000	0.401	20	

DUP Sample ID: **HS23040094-08DUP** Units: **mg/L** Analysis Date: **06-Apr-2023 12:30**
Client ID: **MW-28D** Run ID: **Balance1_432053** SeqNo: **7222105** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	816	10.0					820	0.489	20	

The following samples were analyzed in this batch:

HS23040094-06	HS23040094-07	HS23040094-08	HS23040094-09
HS23040094-10	HS23040094-11	HS23040094-12	HS23040094-13
HS23040094-14	HS23040094-15	HS23040094-16	HS23040094-17
HS23040094-18	HS23040094-19	HS23040094-20	HS23040094-21
HS23040094-22	HS23040094-23	HS23040094-24	HS23040094-25

Client: TRC Corporation
Project: NRG Parish – CCR Program
WorkOrder: HS23040094

QC BATCH REPORT

Batch ID: R432235 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-04072023** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: Run ID: **Balance1_432235** SeqNo: **7226124** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **LCS-04072023** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: Run ID: **Balance1_432235** SeqNo: **7226123** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1070	10.0	1000	0	107	85 - 115				

DUP Sample ID: **HS23040177-02DUP** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: Run ID: **Balance1_432235** SeqNo: **7226110** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1420	10.0					1416	0.282	20	

DUP Sample ID: **HS23040078-01DUP** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: Run ID: **Balance1_432235** SeqNo: **7226102** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1284	10.0					1288	0.311	20	

The following samples were analyzed in this batch: HS23040094-26 HS23040094-27 HS23040094-28

Client:	TRC Corporation	**QUALIFIERS, ACRONYMS, UNITS**
Project:	NRG Parish – CCR Program	
WorkOrder:	**HS23040094**	

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID:	HS23040094	**Date/Time Received:**	**03-Apr-2023 13:50**
Client Name:	TRC-HOU	**Received by:**	**Paul Matta**

Completed By:	*|S| Nilesh D. Ranchod*	03-Apr-2023 15:47	**Reviewed by:**	*|S| Nieka.Carson*	04-Apr-2023 09:42
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	4 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:293341/293340/293342/ 293339
	Yes ☑	No ☐	
Samplers name present on COC?			
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.9C/1.4C, 3.2C/2.7C UC/C		IR #31
Cooler(s)/Kit(s):	50368/49801		
Date/Time sample(s) sent to storage:	04/03/2023 16:00		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 4

COC ID: 293342

HS23040094
TRC Corporation
WA Parish CCR Program

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	179965	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number		B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-39R	4-3-23	825	Water	2,8	3	X	X	X	X							
2	MW-40	↓	1115	Water	2,8	3	X	X	X	X							
3	MW-41		955	Water	2,8	3	X	X	X	X							
4	MW-62		1155	Water	2,8	3	X	X	X	X							
5	MW-63		905	Water	2,8	3	X	X	X	X							
6	MW-64		1035	Water	2,8	3	X	X	X	X							
7	MW-23R		1215	Water	2,8	3	X	X	X	X							
8	MW-28D		1120	Water	2,8	3	X	X	X	X							
9	MW-42		1125	Water	2,8	3	X	X	X	X							
10	MW-43		1300	Water	2,8	3	X	X	X	X							

Sampler(s) Please Print & Sign: Brian Hillin / HMI Team [signature]

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by: Gabriel Garcia	Date: 4.3.23	Time: 1350	Received by:
Relinquished by:	Date: 4/13/23	Time: 1350	Received by (Laboratory): [signature]
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory): PM

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
	0.5
~~50690~~	~~0.9~~
50368	1.9
~~50692~~	~~3.5~~

PM (RH91)

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other ____
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

Page 2 of 4

COC ID: 293341

HS23040094
TRC Corporation
WA Parish CCR Program

, WV

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	179965	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number		B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-44	4-3-23	920	Water	2,8	3	X	X	X	X							
2	MW-46R	↓	825	Water	2,8	3	X	X	X	X							
3	MW-47		1100	Water	2,8	3	X	X	X	X							
4	MW-48		1020	Water	2,8	3	X	X	X	X							
5	MW-50		1145	Water	2,8	3	X	X	X	X							
6	MW-52		1225	Water	2,8	3	X	X	X	X							
7	MW-54		810	Water	2,8	3	X	X	X	X							
8	MW-55R		900	Water	2,8	3	X	X	X	X							
9	MW-58		1025	Water	2,8	3	X	X	X	X							
10	MW-65		940	Water	2,8	3	X	X	X	X							

Sampler(s) Please Print & Sign: Brian Hillin/HMI Team [signature]

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by: Gabe Garcia	Date: 4.3.23	Time: 1350	Received by:
Relinquished by:	Date: 4/3/23	Time: 1350	Received by (Laboratory): [signature]
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory): PM

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
	0.5
49801	3.2
~~50695~~	~~2.3~~
	1RE31

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other ____
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
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3. The Chain of Custody is a legal document. ...

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Holland, MI +1 616 399 6070

Chain of Custody Forn

Page 3 of 4

COC ID: 293340

HS23040094
TRC Corporation
WA Parish CCR Program

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	179965	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number		B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	
				F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-36	4-3-23	1035	Water	2,8	3	X	X	X	X							
2	MW-37		905	Water	2,8	3	X	X	X	X							
3	MW-38R		825	Water	2,8	3	X	X	X	X							
4	MW-60		1120	Water	2,8	3	X	X	X	X							
5	MW-61		945	Water	2,8	3	X	X	X	X							
6	MW-58 - MS		1025	Water	2,8	3	X	X	X	X							
7	MW-58 - MSD		1025	Water	2,8	3	X	X	X	X							
8	MW-63 MS		905	Water	2,8	3	X	X	X	X							
9	MW-63 MSD		905	Water	2,8	3	X	X	X	X							
10	Field Blank		950	Water	2,8	3	X	X	X	X							

Sampler(s) Please Print & Sign: Brian Hillin / HMI Team

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Gabe Garza	4.3.23	1350	

Relinquished by:	Date:	Time:	Received by (Laboratory):
	4/3/23	1350	[signature]

Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

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Holland, MI +1 616 399 6070

Chain of Custody Form

Page 4 of 4

COC ID: 293339

HS23040094
TRC Corporation
WA Parish CCR Program

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	179965	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number		B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	
				F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Duplicate 1	4-3-23	1200	Water	2,8	3	X	X	X	X							
2	Field Duplicate 2	↓	800	Water	2,8	3	X	X	X	X							
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Brian Hillin / AMI Team

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by: Gabe Garcia	Date: 4.3.23	Time: 1350	Received by:
Relinquished by:	Date: 4/3/23	Time: 1356	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☐ TRRP C
☐ TRRP

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Privileged and Confidential

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
50368

CUSTODY SEAL

Date: 4-3-23 Time: 1330
Name: B. Hillin
Company: HMF

Seal Broken By: SW
Date: 04/03/23

50368 APR 03 2023

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
49801

CUSTODY SEAL

Date: 4-3-23 Time: 1330
Name: B. Hillin
Company: HMF

Seal Broken By: SW
Date: 04/03/23

49801 APR 03 2023

10-Apr-2023

Andrew Neir
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS23040094** Work Order: **23040360**

Dear Andrew,

ALS Environmental received 28 samples on 05-Apr-2023 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 39.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Chelsey Cook

Electronically approved by: Chelsey Cook

Chelsey Cook
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 10-Apr-23

Client: ALS Environmental
Project: HS23040094
Work Order: **23040360**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
23040360-01	MW-39R	Water	HS23040094-01	4/3/2023 08:25	4/5/2023 09:00	☐
23040360-02	MW-40	Water	HS23040094-02	4/3/2023 11:15	4/5/2023 09:00	☐
23040360-03	MW-41	Water	HS23040094-03	4/3/2023 09:55	4/5/2023 09:00	☐
23040360-04	MW-62	Water	HS23040094-04	4/3/2023 11:55	4/5/2023 09:00	☐
23040360-05	MW-63	Water	HS23040094-05	4/3/2023 09:05	4/5/2023 09:00	☐
23040360-06	MW-64	Water	HS23040094-06	4/3/2023 10:35	4/5/2023 09:00	☐
23040360-07	MW-23R	Water	HS23040094-07	4/3/2023 12:15	4/5/2023 09:00	☐
23040360-08	MW-28D	Water	HS23040094-08	4/3/2023 11:20	4/5/2023 09:00	☐
23040360-09	MW-42	Water	HS23040094-09	4/3/2023 11:25	4/5/2023 09:00	☐
23040360-10	MW-43	Water	HS23040094-10	4/3/2023 13:00	4/5/2023 09:00	☐
23040360-11	MW-44	Water	HS23040094-11	4/3/2023 09:20	4/5/2023 09:00	☐
23040360-12	MW-46R	Water	HS23040094-12	4/3/2023 08:25	4/5/2023 09:00	☐
23040360-13	MW-47	Water	HS23040094-13	4/3/2023 11:00	4/5/2023 09:00	☐
23040360-14	MW-48	Water	HS23040094-14	4/3/2023 10:20	4/5/2023 09:00	☐
23040360-15	MW-50	Water	HS23040094-15	4/3/2023 11:45	4/5/2023 09:00	☐
23040360-16	MW-52	Water	HS23040094-16	4/3/2023 12:25	4/5/2023 09:00	☐
23040360-17	MW-54	Water	HS23040094-17	4/3/2023 08:10	4/5/2023 09:00	☐
23040360-18	MW-55R	Water	HS23040094-18	4/3/2023 09:00	4/5/2023 09:00	☐
23040360-19	MW-58	Water	HS23040094-19	4/3/2023 10:25	4/5/2023 09:00	☐
23040360-20	MW-65	Water	HS23040094-20	4/3/2023 09:40	4/5/2023 09:00	☐
23040360-21	MW-36	Water	HS23040094-21	4/3/2023 10:35	4/5/2023 09:00	☐
23040360-22	MW-37	Water	HS23040094-22	4/3/2023 09:05	4/5/2023 09:00	☐
23040360-23	MW-38R	Water	HS23040094-23	4/3/2023 08:25	4/5/2023 09:00	☐
23040360-24	MW-60	Water	HS23040094-24	4/3/2023 11:20	4/5/2023 09:00	☐
23040360-25	MW-61	Water	HS23040094-25	4/3/2023 09:45	4/5/2023 09:00	☐
23040360-26	Field Blank	Water	HS23040094-26	4/3/2023 09:50	4/5/2023 09:00	☐
23040360-27	Field Duplicate 1	Water	HS23040094-27	4/3/2023 12:00	4/5/2023 09:00	☐
23040360-28	Field Duplicate 2	Water	HS23040094-28	4/3/2023 08:00	4/5/2023 09:00	☐

ALS Group, USA

Date: 10-Apr-23

Client: ALS Environmental
Project: HS23040094
WorkOrder: **23040360**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

Client:	ALS Environmental
Project:	HS23040094
Work Order:	23040360

Case Narrative

Samples for the above noted Work Order were received on 04/05/2023. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group, USA

Date: *10-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-39R	**Lab ID:**	23040360-01
Collection Date:	4/3/2023 08:25 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-40	**Lab ID:**	23040360-02
Collection Date:	4/3/2023 11:15 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.100**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-41	**Lab ID:**	23040360-03
Collection Date:	4/3/2023 09:55 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.170**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040094
Sample ID: MW-62
Collection Date: 4/3/2023 11:55 AM

Work Order: 23040360
Lab ID: 23040360-04
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.150**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-63	**Lab ID:**	23040360-05
Collection Date:	4/3/2023 09:05 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-64	**Lab ID:**	23040360-06
Collection Date:	4/3/2023 10:35 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.190**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: MW-23R **Lab ID:** 23040360-07
Collection Date: 4/3/2023 12:15 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.250**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: MW-28D **Lab ID:** 23040360-08
Collection Date: 4/3/2023 11:20 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.250**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094
Sample ID: MW-42
Collection Date: 4/3/2023 11:25 AM

Work Order: 23040360
Lab ID: 23040360-09
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.520**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: MW-43 **Lab ID:** 23040360-10
Collection Date: 4/3/2023 01:00 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.500**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040094
Sample ID: MW-44
Collection Date: 4/3/2023 09:20 AM
Work Order: 23040360
Lab ID: 23040360-11
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.370**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094
Sample ID: MW-46R
Collection Date: 4/3/2023 08:25 AM

Work Order: 23040360
Lab ID: 23040360-12
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.300**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-47	**Lab ID:**	23040360-13
Collection Date:	4/3/2023 11:00 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.330**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-48	**Lab ID:**	23040360-14
Collection Date:	4/3/2023 10:20 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.610**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: MW-50 **Lab ID:** 23040360-15
Collection Date: 4/3/2023 11:45 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.380**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-52	**Lab ID:**	23040360-16
Collection Date:	4/3/2023 12:25 PM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.470**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: MW-54 **Lab ID:** 23040360-17
Collection Date: 4/3/2023 08:10 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.400**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040094
Sample ID: MW-55R
Collection Date: 4/3/2023 09:00 AM

Work Order: 23040360
Lab ID: 23040360-18
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.610**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-58	**Lab ID:**	23040360-19
Collection Date:	4/3/2023 10:25 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.370**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-65	**Lab ID:**	23040360-20
Collection Date:	4/3/2023 09:40 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.280**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: MW-36 **Lab ID:** 23040360-21
Collection Date: 4/3/2023 10:35 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.360**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094
Sample ID: MW-37
Collection Date: 4/3/2023 09:05 AM

Work Order: 23040360
Lab ID: 23040360-22
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.210**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: MW-38R **Lab ID:** 23040360-23
Collection Date: 4/3/2023 08:25 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.180**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-60	**Lab ID:**	23040360-24
Collection Date:	4/3/2023 11:20 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.120**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040094	**Work Order:**	23040360
Sample ID:	MW-61	**Lab ID:**	23040360-25
Collection Date:	4/3/2023 09:45 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.230**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094
Sample ID: Field Blank
Collection Date: 4/3/2023 09:50 AM

Work Order: 23040360
Lab ID: 23040360-26
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040094 **Work Order:** 23040360
Sample ID: Field Duplicate 1 **Lab ID:** 23040360-27
Collection Date: 4/3/2023 12:00 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.320**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *10-Apr-2023*

Client: ALS Environmental
Project: HS23040094
Sample ID: Field Duplicate 2
Collection Date: 4/3/2023 08:00 AM
Work Order: 23040360
Lab ID: 23040360-28
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.360**		**0.10**	**mg/L**	1	4/6/2023 04:12 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Work Order: 23040360
Project: HS23040094

QC BATCH REPORT

Batch ID: **R367981A** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R367981-R367981A** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**

Client ID: Run ID: **TITRATOR 1_230406B** SeqNo: **9416818** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	ND	0.10								

LCS Sample ID: **LCS-R367981-R367981A** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**

Client ID: Run ID: **TITRATOR 1_230406B** SeqNo: **9416819** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.15	0.10	5	0	103	90-110	0			

MS Sample ID: **23040360-05AMS** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**

Client ID: **MW-63** Run ID: **TITRATOR 1_230406B** SeqNo: **9416826** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5	0.10	5	0.09	98.2	90-110	0			

MSD Sample ID: **23040360-05AMSD** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**

Client ID: **MW-63** Run ID: **TITRATOR 1_230406B** SeqNo: **9416827** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.92	0.10	5	0.09	96.6	90-110	5	1.61	20	

The following samples were analyzed in this batch:

23040360-01A	23040360-02A	23040360-03A
23040360-04A	23040360-05A	23040360-06A
23040360-07A	23040360-08A	23040360-09A
23040360-10A	23040360-11A	23040360-12A
23040360-13A	23040360-14A	23040360-15A
23040360-16A	23040360-17A	23040360-18A
23040360-20A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 23040360
Project: HS23040094

QC BATCH REPORT

Batch ID: **R367981B** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R367981-R367981B** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**
Client ID: Run ID: **TITRATOR 1_230406B** SeqNo: **9416857** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	ND	0.10								

LCS Sample ID: **LCS-R367981-R367981B** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**
Client ID: Run ID: **TITRATOR 1_230406B** SeqNo: **9416858** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.92	0.10	5	0	98.4	90-110	0			

MS Sample ID: **23040360-19AMS** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**
Client ID: **MW-58** Run ID: **TITRATOR 1_230406B** SeqNo: **9416860** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.24	0.10	5	0.37	97.4	90-110	0			

MS Sample ID: **23040366-02AMS** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**
Client ID: Run ID: **TITRATOR 1_230406B** SeqNo: **9416872** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.09	0.10	5	0.38	94.2	90-110	0			H

MS Sample ID: **23040366-07AMS** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**
Client ID: Run ID: **TITRATOR 1_230406B** SeqNo: **9416878** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.94	0.10	5	0.12	96.4	90-110	0			

MSD Sample ID: **23040360-19AMSD** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**
Client ID: **MW-58** Run ID: **TITRATOR 1_230406B** SeqNo: **9416861** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.18	0.10	5	0.37	96.2	90-110	5.24	1.15	20	

MSD Sample ID: **23040366-02AMSD** Units: **mg/L** Analysis Date: **4/6/2023 04:12 PM**
Client ID: Run ID: **TITRATOR 1_230406B** SeqNo: **9416873** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.09	0.10	5	0.38	94.2	90-110	5.09	0	20	H

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 23040360
Project: HS23040094

QC BATCH REPORT

Batch ID: **R367981B** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MSD	Sample ID: **23040366-07AMSD**				Units: **mg/L**		Analysis Date: **4/6/2023 04:12 PM**			
Client ID:		Run ID: **TITRATOR 1_230406B**			SeqNo: **9416879**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.94	0.10	5	0.12	96.4	90-110	4.94	0	20	

The following samples were analyzed in this batch:

23040360-19A	23040360-21A	23040360-22A
23040360-23A	23040360-24A	23040360-25A
23040360-26A	23040360-27A	23040360-28A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

23040360
ALS - HOUSTON: ALS Environmental
Project: HS23040094

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 21327**

SUBCONTRACT TO:

ALS Group USA, Corp.
3352 - 128th Ave
Holland, MI 494249263 **Phone:** +1 616 399 6070

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Andy C. Neir
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Andrew.Neir@ALSGlobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS23040094
TSR:	Ron Martino

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS23040094-01**	**MW-39R**	**Water**	**03 Apr 2023 08:25**
	Fluoride by ISE 4500			10 Apr 2023
2.	**HS23040094-02**	**MW-40**	**Water**	**03 Apr 2023 11:15**
	Fluoride by ISE 4500			10 Apr 2023
3.	**HS23040094-03**	**MW-41**	**Water**	**03 Apr 2023 09:55**
	Fluoride by ISE 4500			10 Apr 2023
4.	**HS23040094-04**	**MW-62**	**Water**	**03 Apr 2023 11:55**
	Fluoride by ISE 4500			10 Apr 2023
5.	**HS23040094-05**	**MW-63**	**Water**	**03 Apr 2023 09:05**
	Fluoride by ISE 4500			10 Apr 2023
6.	**HS23040094-06**	**MW-64**	**Water**	**03 Apr 2023 10:35**
	Fluoride by ISE 4500			10 Apr 2023
7.	**HS23040094-07**	**MW-23R**	**Water**	**03 Apr 2023 12:15**
	Fluoride by ISE 4500			10 Apr 2023
8.	**HS23040094-08**	**MW-28D**	**Water**	**03 Apr 2023 11:20**
	Fluoride by ISE 4500			10 Apr 2023
9.	**HS23040094-09**	**MW-42**	**Water**	**03 Apr 2023 11:25**

23040360

ALS - HOUSTON: ALS Environmental
Project: HS23040094

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 21327**

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
	Fluoride by ISE 4500			10 Apr 2023
10.	**HS23040094-10**	**MW-43**	**Water**	**03 Apr 2023 13:00**
	Fluoride by ISE 4500			10 Apr 2023
11.	**HS23040094-11**	**MW-44**	**Water**	**03 Apr 2023 09:20**
	Fluoride by ISE 4500			10 Apr 2023
12.	**HS23040094-12**	**MW-46R**	**Water**	**03 Apr 2023 08:25**
	Fluoride by ISE 4500			10 Apr 2023
13.	**HS23040094-13**	**MW-47**	**Water**	**03 Apr 2023 11:00**
	Fluoride by ISE 4500			10 Apr 2023
14.	**HS23040094-14**	**MW-48**	**Water**	**03 Apr 2023 10:20**
	Fluoride by ISE 4500			10 Apr 2023
15.	**HS23040094-15**	**MW-50**	**Water**	**03 Apr 2023 11:45**
	Fluoride by ISE 4500			10 Apr 2023
16.	**HS23040094-16**	**MW-52**	**Water**	**03 Apr 2023 12:25**
	Fluoride by ISE 4500			10 Apr 2023
17.	**HS23040094-17**	**MW-54**	**Water**	**03 Apr 2023 08:10**
	Fluoride by ISE 4500			10 Apr 2023
18.	**HS23040094-18**	**MW-55R**	**Water**	**03 Apr 2023 09:00**
	Fluoride by ISE 4500			10 Apr 2023
19.	**HS23040094-19**	**MW-58**	**Water**	**03 Apr 2023 10:25**
	Fluoride by ISE 4500			10 Apr 2023
20.	**HS23040094-20**	**MW-65**	**Water**	**03 Apr 2023 09:40**
	Fluoride by ISE 4500			10 Apr 2023
21.	**HS23040094-21**	**MW-36**	**Water**	**03 Apr 2023 10:35**
	Fluoride by ISE 4500			10 Apr 2023
22.	**HS23040094-22**	**MW-37**	**Water**	**03 Apr 2023 09:05**
	Fluoride by ISE 4500			10 Apr 2023
23.	**HS23040094-23**	**MW-38R**	**Water**	**03 Apr 2023 08:25**
	Fluoride by ISE 4500			10 Apr 2023
24.	**HS23040094-24**	**MW-60**	**Water**	**03 Apr 2023 11:20**
	Fluoride by ISE 4500			10 Apr 2023

23040360

ALS - HOUSTON: ALS Environmental
Project: HS23040094

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SAMPLING STATE: **Texas** **COC ID: 21327**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
25.	**HS23040094-25**	**MW-61**	**Water**	**03 Apr 2023 09:45**
	Fluoride by ISE 4500			10 Apr 2023
26.	**HS23040094-26**	**Field Blank**	**Water**	**03 Apr 2023 09:50**
	Fluoride by ISE 4500			10 Apr 2023
27.	**HS23040094-27**	**Field Duplicate 1**	**Water**	**03 Apr 2023 12:00**
	Fluoride by ISE 4500			10 Apr 2023
28.	**HS23040094-28**	**Field Duplicate 2**	**Water**	**03 Apr 2023 08:00**
	Fluoride by ISE 4500			10 Apr 2023

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
MS/MSD - HS23040094 -05 & 19

QC Level: STD (Laboratory Standard QC: method blank and LCS required)

Relinquished By: [illegible] Date/Time: 4/3/23 1800

Fedex Received By: [illegible] Date/Time: 4/5/23 0900

Cooler ID(s): IR3 Temperature(s): 2.5°C

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **ALS - HOUSTON**

Date/Time Received: **05-Apr-23 09:00**

Work Order: **23040360**

Received by: **KYB**

Checklist completed by	Karly Yablonski	05-Apr-23	Reviewed by:	Chelsey Cook	06-Apr-23
	eSignature	Date		eSignature	Date

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present	☐
Custody seals intact on shipping container/cooler?	Yes	☑	No	☐	Not Present	☐
Custody seals intact on sample bottles?	Yes	☐	No	☐	Not Present	☑
Chain of custody present?	Yes	☑	No	☐		
Chain of custody signed when relinquished and received?	Yes	☑	No	☐		
Chain of custody agrees with sample labels?	Yes	☑	No	☐		
Samples in proper container/bottle?	Yes	☑	No	☐		
Sample containers intact?	Yes	☑	No	☐		
Sufficient sample volume for indicated test?	Yes	☑	No	☐		
All samples received within holding time?	Yes	☑	No	☐		
Container/Temp Blank temperature in compliance?	Yes	☑	No	☐		
Sample(s) received on ice?	Yes	☑	No	☐		

Temperature(s)/Thermometer(s): 2.5/3.5C IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 4/5/2023 12:26:01 PM

Water - VOA vials have zero headspace?	Yes	☐	No	☐	No VOA vials submitted	☑
Water - pH acceptable upon receipt?	Yes	☐	No	☐	N/A	☑
pH adjusted?	Yes	☐	No	☐	N/A	☑

pH adjusted by: -

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

right solutions.
right partner.

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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May 09, 2023

Lori Burris
TRC Corporation
14701 St. Mary's Lane
Suite 500
Houston, TX 77079

Work Order: **HS23050030**

Laboratory Results for: **NRG Parish - CCR Re-Sample**

Dear Lori Burris,

ALS Environmental received 8 sample(s) on May 01, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER

Andy C. Neir

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Parish - CCR Re-Sample	
WorkOrder:	**HS23050030**	

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:
a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:
a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Parish - CCR Re-Sample	
WorkOrder:	**HS23050030**	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _______________ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Andy C. Neir

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 05/09/2023				
Project Name: NRG Parish - CCR Re-Sample			Laboratory Job Number: HS23050030				
Reviewer Name: Andy Neir			Prep Batch Number(s): 193364, R434366, R434367, R434468, R434691				
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?		X			1
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Supporting Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 05/09/2023					
Project Name: NRG Parish - CCR Re-Sample			Laboratory Job Number: HS23050030					
Reviewer Name: Andy Neir			Prep Batch Number(s): 193364, R434366, R434367, R434468, R434691					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			3
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 05/09/2023
Project Name: NRG Parish - CCR Re-Sample	Laboratory Job Number: HS23050030
Reviewer Name: Andy Neir	Prep Batch Number(s): 193364, R434366, R434367, R434468, R434691

ER#[5]	Description
1	Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier. The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.
2	Batch 193364, Metals by method SW6020, Sample HS23040893-07, MS and MSD were performed on an unrelated sample Batch R434691, Anions by method E300.0, Samples HS23041449-01, HS23041446-01: MS and MSD were performed on an unrelated sample
3	See Run Log and CCB Exception Reports

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030
Start Date: 08-May-2023 End Date: 08-May-2023

Run ID:ICS-Integrion_434691
Instrument:ICS-Integrion
Method:E300

Sample No.	D/F	Time	FileID	Analytes
CCV 1	1	08-May-2023 13:23	LIMS Export_09_05_2023 09_50.txt	CL SO4
CCB 1	1	08-May-2023 13:40	LIMS Export_09_05_2023 09_50.txt	CL SO4
MBLK	1	08-May-2023 13:58	LIMS Export_09_05_2023 09_50.txt	CL SO4
LCS	1	08-May-2023 14:09	LIMS Export_09_05_2023 09_50.txt	CL SO4
CCB 2	1	08-May-2023 15:26	LIMS Export_09_05_2023 09_50.txt	CL SO4
MW-41	5	08-May-2023 16:02	LIMS Export_09_05_2023 09_50.txt	CL SO4
MW-63	10	08-May-2023 16:07	LIMS Export_09_05_2023 09_50.txt	SO4
MW-37	20	08-May-2023 16:13	LIMS Export_09_05_2023 09_50.txt	SO4
MW-38R	20	08-May-2023 16:19	LIMS Export_09_05_2023 09_50.txt	SO4
MW-61	20	08-May-2023 16:25	LIMS Export_09_05_2023 09_50.txt	SO4
MW-23R	20	08-May-2023 16:31	LIMS Export_09_05_2023 09_50.txt	SO4
CCV 2	1	08-May-2023 16:54	LIMS Export_09_05_2023 09_50.txt	CL SO4
CCB 3	1	08-May-2023 17:00	LIMS Export_09_05_2023 09_50.txt	CL SO4
ZZZZZZMS	1	08-May-2023 17:24	LIMS Export_09_05_2023 09_50.txt	CL SO4
ZZZZZZMSD	1	08-May-2023 17:30	LIMS Export_09_05_2023 09_50.txt	CL SO4
ZZZZZZMS	1	08-May-2023 17:41	LIMS Export_09_05_2023 09_50.txt	CL SO4
ZZZZZZMSD	1	08-May-2023 17:47	LIMS Export_09_05_2023 09_50.txt	CL SO4
CCB 4	1	08-May-2023 18:28	LIMS Export_09_05_2023 09_50.txt	CL SO4
CCV 3	1	08-May-2023 18:57	LIMS Export_09_05_2023 09_50.txt	CL SO4
CCB 5	1	08-May-2023 19:09	LIMS Export_09_05_2023 09_50.txt	CL SO4

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

Run ID:ICS-Integrion_434691
Instrument:ICS-Integrion
Method:E300

CCB 3 Date: 08-May-2023 17:00 Seq: 7287562 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Chloride	204	200	500

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030
Start Date: 04-May-2023 End Date: 05-May-2023

Run ID:ICPMS06_434216
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	04-May-2023 11:25	020_ICV.d	B CA
LLICV2	1	04-May-2023 11:27	021LCV2.d	B
LLICV5	1	04-May-2023 11:29	022LCV5.d	B
ICB	1	04-May-2023 11:31	023_ICB.d	B CA
ICSA	1	04-May-2023 11:35	025ICSA.d	B
ICSAB	1	04-May-2023 11:37	026ICSB.d	B
CCV 1	1	04-May-2023 11:47	029_CCV.d	B CA
CCB 1	1	04-May-2023 11:49	030_CCB.d	B CA
CCV 2	1	04-May-2023 12:09	040_CCV.d	B CA
CCB 2	1	04-May-2023 12:11	041_CCB.d	B CA
CCV 3	1	04-May-2023 12:33	052_CCV.d	B CA
CCB 3	1	04-May-2023 12:35	053_CCB.d	B CA
CCV 4	1	04-May-2023 13:00	064_CCV.d	B CA
CCB 4	1	04-May-2023 13:02	065_CCB.d	B CA
CCV 5	1	04-May-2023 13:42	075_CCV.d	B CA
CCB 5	1	04-May-2023 13:44	076_CCB.d	B CA
CCV 6	1	04-May-2023 14:07	087_CCV.d	B CA
CCB 6	1	04-May-2023 14:09	088_CCB.d	B CA
CCV 7	1	04-May-2023 14:31	099_CCV.d	B CA
CCB 7	1	04-May-2023 14:33	100_CCB.d	B CA
CCV 8	1	04-May-2023 14:47	107_CCV.d	B CA
CCB 8	1	04-May-2023 14:49	108_CCB.d	B CA
CCV 9	1	04-May-2023 15:15	119_CCV.d	B CA
CCB 9	1	04-May-2023 15:17	120_CCB.d	B CA
CCB 10	1	04-May-2023 15:42	132_CCB.d	B CA
CCV 10	1	04-May-2023 15:44	133_CCV.d	B CA
CCB 11	1	04-May-2023 16:10	145_CCB.d	B CA
CCV 11	1	04-May-2023 16:12	146_CCV.d	B CA
CCV 12	1	04-May-2023 16:35	157_CCV.d	B CA
CCB 12	1	04-May-2023 16:37	158_CCB.d	B CA
CCV 13	1	04-May-2023 19:02	163_CCV.d	B CA
CCB 13	1	04-May-2023 19:04	164_CCB.d	B CA
CCV 14	1	04-May-2023 19:16	170_CCV.d	B CA
CCB 14	1	04-May-2023 19:18	171_CCB.d	B CA
CCV 15	1	04-May-2023 19:30	177_CCV.d	B CA
CCB 15	1	04-May-2023 19:32	178_CCB.d	B CA
CCV 16	1	04-May-2023 19:48	186_CCV.d	B CA
CCB 16	1	04-May-2023 19:50	187_CCB.d	B CA
CCV 17	1	04-May-2023 20:02	193_CCV.d	B CA
CCB 17	1	04-May-2023 20:04	194_CCB.d	B CA
CCV 18	1	04-May-2023 20:20	202_CCV.d	B CA
CCB 18	1	04-May-2023 20:22	203_CCB.d	B CA
CCV 19	1	04-May-2023 21:38	228_CCV.d	B CA
CCB 19	1	04-May-2023 21:40	229_CCB.d	B CA
MBLK-193364	1	04-May-2023 21:42	230SMPL.d	B CA
LCS-193364	1	04-May-2023 21:44	231SMPL.d	B CA
CCV 20	1	04-May-2023 21:46	232_CCV.d	B CA
CCB 20	1	04-May-2023 21:48	233_CCB.d	B CA
ZZZZZZSD	5	04-May-2023 21:52	235SMPL.d	B CA
ZZZZZZMS	1	04-May-2023 21:54	236SMPL.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030
Start Date: 04-May-2023 End Date: 05-May-2023

Run ID:ICPMS06_434216
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ZZZZZZMSD	1	04-May-2023 21:56	237SMPL.d	B CA
ZZZZZZPDS	1	04-May-2023 21:58	238SMPL.d	B
CCV 21	1	04-May-2023 22:00	239_CCV.d	B CA
CCB 21	1	04-May-2023 22:02	240_CCB.d	B CA
CCV 22	1	04-May-2023 22:20	249_CCV.d	B CA
CCB 22	1	04-May-2023 22:22	250_CCB.d	B CA
CCV 23	1	04-May-2023 22:44	258_CCV.d	B CA
CCB 23	1	04-May-2023 22:46	259_CCB.d	B CA
CCV 24	1	04-May-2023 22:54	263_CCV.d	B CA
CCB 24	1	04-May-2023 22:56	264_CCB.d	B CA
MW-37	1	04-May-2023 23:02	267SMPL.d	B
MW-38R	1	04-May-2023 23:04	268SMPL.d	B
CCV 25	1	04-May-2023 23:10	271_CCV.d	B CA
CCB 25	1	04-May-2023 23:12	272_CCB.d	B CA
ICCV 26	1	04-May-2023 23:33	283_ICV.d	B CA
LLCCV2	1	04-May-2023 23:35	284LCV2.d	B
LLCCV5	1	04-May-2023 23:37	285LCV5.d	B
ICCB 26	1	04-May-2023 23:39	286_ICB.d	B CA
ICSA	1	04-May-2023 23:41	287ICSA.d	B
ICSAB	1	04-May-2023 23:43	288ICSB.d	B
CCV 27	1	04-May-2023 23:47	290_CCV.d	B CA
CCB 27	1	04-May-2023 23:49	291_CCB.d	B CA
CCV 28	1	05-May-2023 00:05	299_CCV.d	B CA
CCB 28	1	05-May-2023 00:07	300_CCB.d	B CA
CCV 29	1	05-May-2023 00:25	309_CCV.d	B CA
CCB 29	1	05-May-2023 00:27	310_CCB.d	B CA
CCV 30	1	05-May-2023 00:43	318_CCV.d	B CA
CCB 30	1	05-May-2023 00:45	319_CCB.d	B CA
CCV 31	1	05-May-2023 00:59	326_CCV.d	B CA
CCB 31	1	05-May-2023 01:00	327_CCB.d	B CA
CCV 32	1	05-May-2023 01:19	336_CCV.d	B CA
CCB 32	1	05-May-2023 01:20	337_CCB.d	B CA
LLCCV2	1	05-May-2023 01:22	338LCV2.d	B
LLCCV5	1	05-May-2023 01:24	339LCV5.d	B
ICSA	1	05-May-2023 01:26	340ICSA.d	B
ICSAB	1	05-May-2023 01:28	341ICSB.d	B

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

Run ID:ICPMS06_434216
Instrument:ICPMS06
Method:SW6020A

CCB	Date	Seq	D/F	Units	Analyte	Result	MDL	Report Limit
CCB 8	04-May-2023 14:49	7279435	1	ug/L	Boron	39.34	11	20
CCB 9	04-May-2023 15:17	7279886	1	ug/L	Boron	17.43	11	20
CCB 10	04-May-2023 15:42	7279898	1	ug/L	Boron	14.04	11	20
CCB 11	04-May-2023 16:10	7279911	1	ug/L	Boron	19.5	11	20
CCB 12	04-May-2023 16:37	7279980	1	ug/L	Boron	12.18	11	20
CCB 18	04-May-2023 20:22	7280485	1	ug/L	Boron	51.37	11	20
CCB 19	04-May-2023 21:40	7280528	1	ug/L	Boron	14.11	11	20
CCB 20	04-May-2023 21:48	7280532	1	ug/L	Boron	14.47	11	20
CCB 21	04-May-2023 22:02	7280493	1	ug/L	Boron	13.17	11	20
CCB 23	04-May-2023 22:46	7280512	1	ug/L	Boron	12.67	11	20
CCB 24	04-May-2023 22:56	7280517	1	ug/L	Boron	12.55	11	20
CCB 25	04-May-2023 23:12	7280525	1	ug/L	Boron	12.88	11	20

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
Work Order: HS23050030

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23050030-01	MW-41	Water		01-May-2023 07:55	01-May-2023 10:14	☐
HS23050030-02	MW-63	Water		01-May-2023 08:30	01-May-2023 10:14	☐
HS23050030-03	MW-37	Water		01-May-2023 09:20	01-May-2023 10:14	☐
HS23050030-04	MW-38R	Water		01-May-2023 08:45	01-May-2023 10:14	☐
HS23050030-05	MW-61	Water		01-May-2023 08:10	01-May-2023 10:14	☐
HS23050030-06	MW-23R	Water		01-May-2023 09:45	01-May-2023 10:14	☐
HS23050030-07	MW-44	Water		01-May-2023 10:05	01-May-2023 10:14	☐
HS23050030-08	MW-46R	Water		01-May-2023 09:10	01-May-2023 10:14	☐

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-Sample		WorkOrder:HS23050030
Sample ID:	MW-41		Lab ID:HS23050030-01
Collection Date:	01-May-2023 07:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 04-May-2023		Analyst: MSC
Calcium	**207**		**0.680**	**10.0**	**mg/L**	20	05-May-2023 12:07
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**500**		**1.00**	**2.50**	**mg/L**	5	08-May-2023 16:02
Sulfate	**71.6**		**1.00**	**2.50**	**mg/L**	5	08-May-2023 16:02
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,490**		**5.00**	**10.0**	**mg/L**	1	03-May-2023 12:30
PH BY SW9040C		**Method:SW9040C**					Analyst: CD
pH	**7.01**	H	**0.100**	**0.100**	**pH Units**	1	05-May-2023 14:15
Temp Deg C @pH	**18.8**	H	**0**	**0**	**DEG C**	1	05-May-2023 14:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	NRG Parish - CCR Re-Sample	WorkOrder:HS23050030
Sample ID:	MW-63	Lab ID:HS23050030-02
Collection Date:	01-May-2023 08:30	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 04-May-2023		Analyst: MSC
Calcium	**335**		**1.70**	**25.0**	**mg/L**	50	05-May-2023 12:09
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**735**		**2.00**	**5.00**	**mg/L**	10	08-May-2023 16:07

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-Sample		WorkOrder:HS23050030
Sample ID:	MW-37		Lab ID:HS23050030-03
Collection Date:	01-May-2023 09:20		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 04-May-2023		Analyst: JC
Boron	**0.389**		**0.0110**	**0.0200**	**mg/L**	1	04-May-2023 23:02
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**1,110**		**4.00**	**10.0**	**mg/L**	20	08-May-2023 16:13
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,930**		**5.00**	**10.0**	**mg/L**	1	03-May-2023 12:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-Sample		WorkOrder:HS23050030
Sample ID:	MW-38R		Lab ID:HS23050030-04
Collection Date:	01-May-2023 08:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 04-May-2023		Analyst: JC
Boron	**0.425**		**0.0110**	**0.0200**	**mg/L**	1	04-May-2023 23:04
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**860**		**4.00**	**10.0**	**mg/L**	20	08-May-2023 16:19

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-Sample		WorkOrder:HS23050030
Sample ID:	MW-61		Lab ID:HS23050030-05
Collection Date:	01-May-2023 08:10		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 04-May-2023		Analyst: MSC
Boron	**1.24**		**0.110**	**0.200**	**mg/L**	10	05-May-2023 13:54
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**1,330**		**4.00**	**10.0**	**mg/L**	20	08-May-2023 16:25
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,890**		**5.00**	**10.0**	**mg/L**	1	03-May-2023 12:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-Sample		WorkOrder:HS23050030
Sample ID:	MW-23R		Lab ID:HS23050030-06
Collection Date:	01-May-2023 09:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 04-May-2023		Analyst: MSC
Calcium	**533**		**1.70**	**25.0**	**mg/L**	50	05-May-2023 12:11
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**1,670**		**4.00**	**10.0**	**mg/L**	20	08-May-2023 16:31
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**4,390**		**5.00**	**10.0**	**mg/L**	1	03-May-2023 15:43
PH BY SW9040C		**Method:SW9040C**					Analyst: CD
pH	**6.85**	H	**0.100**	**0.100**	**pH Units**	1	05-May-2023 14:15
Temp Deg C @pH	**18.7**	H	**0**	**0**	**DEG C**	1	05-May-2023 14:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-Sample		WorkOrder:HS23050030
Sample ID:	MW-44		Lab ID:HS23050030-07
Collection Date:	01-May-2023 10:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
PH BY SW9040C		**Method:SW9040C**					Analyst: CD
pH	**7.20**	H	**0.100**	**0.100**	**pH Units**	1	05-May-2023 14:15
Temp Deg C @pH	**19.5**	H	**0**	**0**	**DEG C**	1	05-May-2023 14:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-Sample		WorkOrder:HS23050030
Sample ID:	MW-46R		Lab ID:HS23050030-08
Collection Date:	01-May-2023 09:10		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
PH BY SW9040C		**Method:SW9040C**					Analyst: CD
pH	**7.13**	H	**0.100**	**0.100**	**pH Units**	1	05-May-2023 14:15
Temp Deg C @pH	**19.2**	H	**0**	**0**	**DEG C**	1	05-May-2023 14:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

Batch ID: 193364 **Start Date:** 04 May 2023 10:30 **End Date:** 04 May 2023 14:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23050030-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23050030-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23050030-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23050030-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23050030-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23050030-06		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 193364 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23050030-01	MW-41	01 May 2023 07:55		04 May 2023 10:30	05 May 2023 12:07	20
HS23050030-02	MW-63	01 May 2023 08:30		04 May 2023 10:30	05 May 2023 12:09	50
HS23050030-03	MW-37	01 May 2023 09:20		04 May 2023 10:30	04 May 2023 23:02	1
HS23050030-04	MW-38R	01 May 2023 08:45		04 May 2023 10:30	04 May 2023 23:04	1
HS23050030-05	MW-61	01 May 2023 08:10		04 May 2023 10:30	05 May 2023 13:54	10
HS23050030-06	MW-23R	01 May 2023 09:45		04 May 2023 10:30	05 May 2023 12:11	50
Batch ID: R434366 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23050030-01	MW-41	01 May 2023 07:55			03 May 2023 12:30	1
HS23050030-03	MW-37	01 May 2023 09:20			03 May 2023 12:30	1
HS23050030-05	MW-61	01 May 2023 08:10			03 May 2023 12:30	1
Batch ID: R434367 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23050030-06	MW-23R	01 May 2023 09:45			03 May 2023 15:43	1
Batch ID: R434468 (0)	**Test Name :** PH BY SW9040C				**Matrix:** Water	
HS23050030-01	MW-41	01 May 2023 07:55			05 May 2023 14:15	1
HS23050030-06	MW-23R	01 May 2023 09:45			05 May 2023 14:15	1
HS23050030-07	MW-44	01 May 2023 10:05			05 May 2023 14:15	1
HS23050030-08	MW-46R	01 May 2023 09:10			05 May 2023 14:15	1
Batch ID: R434691 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23050030-01	MW-41	01 May 2023 07:55			08 May 2023 16:02	5
HS23050030-02	MW-63	01 May 2023 08:30			08 May 2023 16:07	10
HS23050030-03	MW-37	01 May 2023 09:20			08 May 2023 16:13	20
HS23050030-04	MW-38R	01 May 2023 08:45			08 May 2023 16:19	20
HS23050030-05	MW-61	01 May 2023 08:10			08 May 2023 16:25	20
HS23050030-06	MW-23R	01 May 2023 09:45			08 May 2023 16:31	20

WorkOrder: HS23050030
InstrumentID: ICPMS06
Test Code: ICP_TW
Test Number: SW6020A
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Boron	7440-42-8	0.0500	0.0467	0.0110	0.0200
A	Calcium	7440-70-2	1.00	0.936	0.0340	0.500

WorkOrder: HS23050030
InstrumentID: ICS-Integrion
Test Code: 300_W
Test Number: E300
Test Name: Anions by E300.0, Rev 2.1, 1993

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Chloride	16887-00-6	0.250	9.70	0.200	0.500
A	Sulfate	14808-79-8	0.250	3.34	0.200	0.500

WorkOrder: HS23050030
InstrumentID: WetChem_HS
Test Code: pH_W_9040C
Test Number: SW9040C
Test Name: pH by SW9040C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** pH Units

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	pH	PH	0	0	0.100	0.100
A	Temp Deg C @pH	TEMP	0	0	0	0

WorkOrder: HS23050030
InstrumentID: Balance1
Test Code: TDS_W 2540C
Test Number: M2540C
Test Name: Total Dissolved Solids by

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Dissolved Solids (Residue, Filterable)	TDS	5.00	4.00	5.00	10.0

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

QC BATCH REPORT

Batch ID: 193364 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-193364** Units: **mg/L** Analysis Date: **04-May-2023 21:42**
Client ID: Run ID: **ICPMS06_434216** SeqNo: **7280529** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	< 0.0340	0.500								

LCS Sample ID: **LCS-193364** Units: **mg/L** Analysis Date: **04-May-2023 21:44**
Client ID: Run ID: **ICPMS06_434216** SeqNo: **7280530** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5142	0.0200	0.5	0	103	80 - 120				
Calcium	4.981	0.500	5	0	99.6	80 - 120				

MS Sample ID: **HS23040893-07MS** Units: **mg/L** Analysis Date: **04-May-2023 21:54**
Client ID: Run ID: **ICPMS06_434216** SeqNo: **7280535** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5685	0.0200	0.5	0.07811	98.1	80 - 120				
Calcium	310.1	0.500	5	318.2	-162	80 - 120				SEO

MSD Sample ID: **HS23040893-07MSD** Units: **mg/L** Analysis Date: **04-May-2023 21:56**
Client ID: Run ID: **ICPMS06_434216** SeqNo: **7280536** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5606	0.0200	0.5	0.07811	96.5	80 - 120	0.5685	1.4	20	
Calcium	309.1	0.500	5	318.2	-182	80 - 120	310.1	0.321	20	SEO

PDS Sample ID: **HS23040893-07PDS** Units: **mg/L** Analysis Date: **04-May-2023 21:58**
Client ID: Run ID: **ICPMS06_434216** SeqNo: **7280537** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6241	0.0200	0.5	0.07811	109	75 - 125				

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

QC BATCH REPORT

Batch ID: 193364 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

PDS Sample ID: **HS23040893-07PDS** Units: **mg/L** Analysis Date: **05-May-2023 11:52**
Client ID: Run ID: **ICPMS06_434422** SeqNo: **7281525** PrepDate: **04-May-2023** DF: **50**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	843.6	25.0	500	326.4	103	75 - 125				

SD Sample ID: **HS23040893-07SD** Units: **mg/L** Analysis Date: **04-May-2023 21:52**
Client ID: Run ID: **ICPMS06_434216** SeqNo: **7280534** PrepDate: **04-May-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.1294	0.100					0.07811	0	10	
Calcium	316.1	2.50					318.2	0.636	10	

SD Sample ID: **HS23040893-07SD** Units: **mg/L** Analysis Date: **05-May-2023 11:54**
Client ID: Run ID: **ICPMS06_434422** SeqNo: **7281526** PrepDate: **04-May-2023** DF: **250**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	333.4	125					326.4	2.14	10	

The following samples were analyzed in this batch:

HS23050030-01	HS23050030-02	HS23050030-03	HS23050030-04
HS23050030-05	HS23050030-06		

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

QC BATCH REPORT

Batch ID: R434366 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-05032023** Units: **mg/L** Analysis Date: **03-May-2023 12:30**
Client ID: Run ID: **Balance1_434366** SeqNo: **7279611** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **LCS-05032023** Units: **mg/L** Analysis Date: **03-May-2023 12:30**
Client ID: Run ID: **Balance1_434366** SeqNo: **7279610** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1062	10.0	1000	0	106	85 - 115				

DUP Sample ID: **HS23041850-01DUP** Units: **mg/L** Analysis Date: **03-May-2023 12:30**
Client ID: Run ID: **Balance1_434366** SeqNo: **7279597** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	586	10.0					588	0.341	20	

DUP Sample ID: **HS23041840-02DUP** Units: **mg/L** Analysis Date: **03-May-2023 12:30**
Client ID: Run ID: **Balance1_434366** SeqNo: **7279592** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	200	10.0					202	0.995	20	

The following samples were analyzed in this batch: HS23050030-01 HS23050030-03 HS23050030-05

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

QC BATCH REPORT

Batch ID: R434367 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-05032023** Units: **mg/L** Analysis Date: **03-May-2023 15:43**
Client ID: Run ID: **Balance1_434367** SeqNo: **7279624** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **LCS-05032023** Units: **mg/L** Analysis Date: **03-May-2023 15:43**
Client ID: Run ID: **Balance1_434367** SeqNo: **7279623** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1092	10.0	1000	0	109	85 - 115				

DUP Sample ID: **HS23050063-01DUP** Units: **mg/L** Analysis Date: **03-May-2023 15:43**
Client ID: Run ID: **Balance1_434367** SeqNo: **7279619** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	458	10.0					460	0.436	20	

The following samples were analyzed in this batch: HS23050030-06

Client:	TRC Corporation
Project:	NRG Parish - CCR Re-Sample
WorkOrder:	HS23050030

QC BATCH REPORT

Batch ID: **R434468 (0)** **Instrument:** **WetChem_HS** **Method:** **PH BY SW9040C**

DUP Sample ID: **HS23050030-07DUP** Units: **pH Units** Analysis Date: **05-May-2023 14:15**

Client ID: **MW-44** Run ID: **WetChem_HS_434468** SeqNo: **7282121** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.18	0.100					7.2	0.278	10	
Temp Deg C @pH	19.5	0					19.5	0	10	

The following samples were analyzed in this batch: HS23050030-01 HS23050030-06 HS23050030-07 HS23050030-08

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

QC BATCH REPORT

Batch ID: R434691 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **08-May-2023 13:58**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287541** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **08-May-2023 14:09**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287542** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.56	0.500	20	0	103	90 - 110				
Sulfate	20.2	0.500	20	0	101	90 - 110				

MS Sample ID: **HS23041449-01MS** Units: **mg/L** Analysis Date: **08-May-2023 17:41**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287568** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	508.3	0.500	10	525.1	-169	80 - 120				SEO
Sulfate	11.89	0.500	10	1.138	108	80 - 120				

MS Sample ID: **HS23041446-01MS** Units: **mg/L** Analysis Date: **08-May-2023 17:24**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287565** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	498.3	0.500	10	509.8	-115	80 - 120				SEO
Sulfate	11.2	0.500	10	1.27	99.3	80 - 120				

MSD Sample ID: **HS23041449-01MSD** Units: **mg/L** Analysis Date: **08-May-2023 17:47**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287569** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	508.6	0.500	10	525.1	-166	80 - 120	508.3	0.0539	20	SEO
Sulfate	11.99	0.500	10	1.138	109	80 - 120	11.89	0.849	20	

Client: TRC Corporation
Project: NRG Parish - CCR Re-Sample
WorkOrder: HS23050030

QC BATCH REPORT

Batch ID: **R434691 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23041446-01MSD** Units: **mg/L** Analysis Date: **08-May-2023 17:30**

Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287566** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	492.8	0.500	10	509.8	-171	80 - 120	498.3	1.12	20	SEO
Sulfate	11.13	0.500	10	1.27	98.6	80 - 120	11.2	0.616	20	

The following samples were analyzed in this batch:

HS23050030-01	HS23050030-02	HS23050030-03	HS23050030-04
HS23050030-05	HS23050030-06		

Client:	TRC Corporation	**QUALIFIERS, ACRONYMS, UNITS**
Project:	NRG Parish - CCR Re-Sample	
WorkOrder:	**HS23050030**	

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2023	31-Dec-2023
Oklahoma	2022-141	31-Aug-2023
Utah	TX026932022-13	31-Jul-2023

Sample Receipt Checklist

Work Order ID:	HS23050030	**Date/Time Received:**	**01-May-2023 10:14**
Client Name:	TRC-HOU	**Received by:**	**Malcolm Burleson**

Completed By:	/S/ Corey Grandits	01-May-2023 13:41	**Reviewed by:**	/S/ Andy C. Neir	01-May-2023 16:28
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **W** Carrier name: **Client**

	Yes	No	
Shipping container/cooler in good condition?	☑	☐	Not Present ☐
Custody seals intact on shipping container/cooler?	☑	☐	Not Present ☐
Custody seals intact on sample bottles?	☐	☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	Not Present ☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:289473
Samplers name present on COC?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Samples in proper container/bottle?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	
All samples received within holding time?	☑	☐	
Container/Temp Blank temperature in compliance?	☑	☐	

Temperature(s)/Thermometer(s):	4.8UC/4.7C	IR31
Cooler(s)/Kit(s):	48661	
Date/Time sample(s) sent to storage:	5/1/23	

	Yes	No	
Water - VOA vials have zero headspace?	☐	☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	☑	☐	N/A ☐
pH adjusted?	☐	☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | ...n, WV

Chain of Custody Form

Page 1 of 1

COC ID: 289473

HS23050030

TRC Corporation

NRG Parish - CCR Re-Sample

ALS Project Manager:

Customer Information		Project Information			Analyses
Purchase Order	20012	Project Name	NRG Parish - CCR Re-Sample	A	300_W (Cl, SO4)
Work Order		Project Number		B	300_W (SO4)
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	TDS_W 2540C (TDS)
Send Report To	Lori Burris	Invoice Attn	A/P	D	ICP_TW (Calcium)
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	ICP_TW (Calcium & Sodium)
				F	ICP_TW (Boron)
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	pH_W_9040C
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-41	5-1-23	755	Water	2,8	2	X		X	X			X				
2	MW-63	↓	830	Water	2,8	2		X		X							
3	MW-37	↓	920	Water	2,8	2		X	X			X					
4	MW-38R	↓	845	Water	2,8	2		X				X					
5	MW-61	↓	810	Water	2,8	2		X	X			X					
6	MW-23R	↓	945	Water	2,8	1		X	X	X			X				
7	MW-44	↓	1005	Water	8	1							X				
8	MW-46R	↓	910	Water	8	1							X				
9																	
10																	

Sampler(s) Please Print & Sign: BRANDON ALBRIGHT / B. Albright

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
BRANDON Albright	5-1-23	1014	05012023 1014
Relinquished by:	Date:	Time:	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG WA Parish - State Program

Cooler ID	Cooler Temp.
	IR31
48661	4.8c
	-0.1c

QC Package: (Check One Box Below)
☐ Level II Std QC ☒ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

48661

CUSTODY SEAL

Date: 5-1-23 Time:
Name:
Company: B. Cty

Seal Broken By: SM
Date: 05/01/23

48661 MAY 01 2023

Privileged and Confidential

Appendix B
Detection Monitoring Data (October 2023)

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

October 20, 2023

Lori Burris
TRC Corporation
14701 St. Mary's Lane
Suite 500
Houston, TX 77079

Work Order: **HS23100607**

Laboratory Results for: **WA Parish - CCR Program**

Dear Lori Burris,

ALS Environmental received 28 sample(s) on Oct 10, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL

Andy C. Neir

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	WA Parish - CCR Program	
WorkOrder:	**HS23100607**	

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:
a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:
a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _______________ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Andy C. Neir

Laboratory Review Checklist: Reportable Data

Laboratory Name: ALS Laboratory Group	LRC Date: 10/19/2023
Project Name: WA Parish - CCR Program	Laboratory Job Number: HS23100607
Reviewer Name: Andy Neir	Prep Batch Number(s): 201948,201951,201988,R449123,R449124,R449125,R449202,R449336, R449647

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				2
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);NA = Not Applicable; NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data

Laboratory Name: ALS Laboratory Group	LRC Date: 10/19/2023
Project Name: WA Parish - CCR Program	Laboratory Job Number: HS23100607
Reviewer Name: Andy Neir	Prep Batch Number(s): 201948,201951,201988,R449123,R449124,R449125,R449202,R449336,R449647

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			3
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		X			4
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

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NA = Not Applicable; NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 10/19/2023
Project Name: WA Parish - CCR Program	Laboratory Job Number: HS23100607
Reviewer Name: Andy Neir	Prep Batch Number(s): 201948,201951,201988,R449123,R449124,R449125,R449202,R449336,R449647

ER#[5]	Description
1	Batch 201948, Metals Method SW6020, sample HS23100470-01, MS and MSD were performed on unrelated sample. Batch 201951, Metals Method SW6020, sample MW-63, MS and or MSD recovered outside the control limit for Boron and Calcium, however, the result in the parent sample is 4x greater than the spike amount. Batch 201988, Metals Method SW6020, sample MW-58, MS MSD recovered outside the control limit for Boron and Calcium, however, the result in the parent sample is 4x greater than the spike amount for Calcium. Batch R449125, Anions Method E300 sample MW-46R, MS and MSD recovered outside the control limit for Chloride, however, the result in the parent sample is greater than 4x the spike amount.
2	The analysis for Fluoride was subcontracted to ALS Environmental in Holland, MI. Final report attached.
3	See Run Log and CCB Exceptions Report.
4	Batch 201948, Metals Method SW6020, sample HS23100470-01, PDS was performed on unrelated sample.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607
Start Date: 14-Oct-2023 End Date: 14-Oct-2023

Run ID:ICS-Integrion_449123
Instrument:ICS-Integrion
Method:E300

Sample No.	D/F	Time	FileID	Analytes
CCV 1	1	14-Oct-2023 10:08	LIMS Export_15_10_2023 11_55.txt	CL SO4
CCB 1	1	14-Oct-2023 10:14	LIMS Export_15_10_2023 11_55.txt	CL SO4
MBLK	1	14-Oct-2023 11:12	LIMS Export_15_10_2023 11_55.txt	CL SO4
LCS	1	14-Oct-2023 11:23	LIMS Export_15_10_2023 11_55.txt	CL SO4
CCB 2	1	14-Oct-2023 12:11	LIMS Export_15_10_2023 11_55.txt	CL SO4
ZZZZZZMS	1	14-Oct-2023 12:28	LIMS Export_15_10_2023 11_55.txt	CL SO4
ZZZZZZMSD	1	14-Oct-2023 12:34	LIMS Export_15_10_2023 11_55.txt	CL SO4
CCV 2	1	14-Oct-2023 13:32	LIMS Export_15_10_2023 11_55.txt	CL SO4
CCB 3	1	14-Oct-2023 13:38	LIMS Export_15_10_2023 11_55.txt	CL SO4
ZZZZZZMS	1	14-Oct-2023 13:55	LIMS Export_15_10_2023 11_55.txt	CL SO4
ZZZZZZMSD	1	14-Oct-2023 14:01	LIMS Export_15_10_2023 11_55.txt	CL SO4
MW-28D	1	14-Oct-2023 14:18	LIMS Export_15_10_2023 11_55.txt	SO4
MW-28D	5	14-Oct-2023 14:24	LIMS Export_15_10_2023 11_55.txt	CL
MW-42	20	14-Oct-2023 14:30	LIMS Export_15_10_2023 11_55.txt	CL SO4
MW-43	1	14-Oct-2023 14:35	LIMS Export_15_10_2023 11_55.txt	SO4
MW-43	10	14-Oct-2023 14:41	LIMS Export_15_10_2023 11_55.txt	CL
CCB 4	1	14-Oct-2023 15:04	LIMS Export_15_10_2023 11_55.txt	CL SO4
MW-44	1	14-Oct-2023 15:16	LIMS Export_15_10_2023 11_55.txt	SO4
MW-44	10	14-Oct-2023 15:22	LIMS Export_15_10_2023 11_55.txt	CL
CCV 3	1	14-Oct-2023 16:44	LIMS Export_15_10_2023 11_55.txt	CL SO4
CCB 5	1	14-Oct-2023 16:49	LIMS Export_15_10_2023 11_55.txt	CL SO4

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICS-Integrion_449123
Instrument:ICS-Integrion
Method:E300

CCB 2	Date: 14-Oct-2023 12:11	Seq: 7609556	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sulfate	201.4	200	500	

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607
Start Date: 16-Oct-2023 End Date: 17-Oct-2023

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	16-Oct-2023 10:19	020_ICV.d	B CA
LLICV2	1	16-Oct-2023 10:23	022LCV2.d	B CA
LLICV5	1	16-Oct-2023 10:25	023LCV5.d	B CA
ICB	1	16-Oct-2023 10:31	025_ICB.d	B CA
ICSA	1	16-Oct-2023 10:33	026ICSA.d	B CA
ICSAB	1	16-Oct-2023 10:36	027ICSB.d	B CA
CCV 1	1	16-Oct-2023 10:47	030_CCV.d	B CA
CCB 1	1	16-Oct-2023 10:50	031_CCB.d	B CA
CCV 2	1	16-Oct-2023 11:15	042_CCV.d	B CA
CCB 2	1	16-Oct-2023 11:17	043_CCB.d	B CA
CCB 3	1	16-Oct-2023 11:19	044_CCB.d	B CA
CCV 3	1	16-Oct-2023 11:22	045_CCV.d	B CA
CCV 4	1	16-Oct-2023 11:47	056_CCV.d	B CA
CCV 5	1	16-Oct-2023 11:47	056_CCV.d	B CA
CCB 4	1	16-Oct-2023 11:50	057_CCB.d	B CA
CCB 5	1	16-Oct-2023 11:50	057_CCB.d	B CA
CCV 6	1	16-Oct-2023 11:52	058_CCV.d	B CA
CCV 7	1	16-Oct-2023 11:52	058_CCV.d	B CA
CCB 6	1	16-Oct-2023 11:56	059_CCB.d	B CA
CCB 7	1	16-Oct-2023 11:56	059_CCB.d	B CA
CCB 8	1	16-Oct-2023 12:35	074_CCB.d	B CA
CCV 8	1	16-Oct-2023 12:38	075_CCV.d	B CA
CCV 9	1	16-Oct-2023 13:02	086_CCV.d	B CA
CCB 9	1	16-Oct-2023 13:04	087_CCB.d	B CA
CCV 10	1	16-Oct-2023 13:29	098_CCV.d	B CA
CCB 10	1	16-Oct-2023 13:31	099_CCB.d	B CA
CCB 11	1	16-Oct-2023 13:52	100_CCB.d	B CA
CCV 11	1	16-Oct-2023 14:18	111_CCV.d	B CA
CCB 12	1	16-Oct-2023 14:20	112_CCB.d	B CA
CCB 13	1	16-Oct-2023 14:24	113_CCB.d	B CA
CCV 12	1	16-Oct-2023 14:49	124_CCV.d	B CA
CCB 14	1	16-Oct-2023 14:52	125_CCB.d	B CA
CCB 15	1	16-Oct-2023 14:55	126_CCB.d	B CA
CCV 13	1	16-Oct-2023 15:20	137_CCV.d	B CA
CCB 16	1	16-Oct-2023 15:22	138_CCB.d	B CA
CCB 17	1	16-Oct-2023 15:25	139_CCB.d	B CA
CCV 14	1	16-Oct-2023 15:27	140_CCV.d	B CA
CCV 15	1	16-Oct-2023 15:52	151_CCV.d	B CA
CCB 18	1	16-Oct-2023 15:54	152_CCB.d	B CA
CCV 16	1	16-Oct-2023 16:20	163_CCV.d	B CA
CCB 19	1	16-Oct-2023 16:22	164_CCB.d	B CA
CCV 17	1	16-Oct-2023 17:08	175_CCV.d	B CA
CCB 20	1	16-Oct-2023 17:10	176_CCB.d	B CA
CCV 18	1	16-Oct-2023 17:35	187_CCV.d	B CA
CCB 21	1	16-Oct-2023 17:37	188_CCB.d	B CA
CCB 22	1	16-Oct-2023 17:40	189_CCB.d	B CA
CCV 19	1	16-Oct-2023 18:05	200_CCV.d	B CA
CCB 23	1	16-Oct-2023 18:08	201_CCB.d	B CA
CCV 20	1	16-Oct-2023 18:29	210_CCV.d	B CA
CCB 24	1	16-Oct-2023 18:31	211_CCB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607
Start Date: 16-Oct-2023 End Date: 17-Oct-2023

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCB 25	1	16-Oct-2023 20:07	214SMPL.d	B CA
CCV 21	1	16-Oct-2023 20:09	215_CCV.d	B CA
MBLK-201948	1	16-Oct-2023 20:14	217SMPL.d	B CA
LCS-201948	1	16-Oct-2023 20:16	218SMPL.d	B CA
ZZZZZZSD	5	16-Oct-2023 20:20	220SMPL.d	CA
ZZZZZZMS	1	16-Oct-2023 20:22	221SMPL.d	B CA
ZZZZZZMSD	1	16-Oct-2023 20:25	222SMPL.d	B CA
ZZZZZZPDS	1	16-Oct-2023 20:27	223SMPL.d	B CA
CCV 22	1	16-Oct-2023 20:31	225_CCV.d	B CA
CCB 26	1	16-Oct-2023 20:34	226_CCB.d	B CA
CCV 23	1	16-Oct-2023 21:04	228_CCV.d	B CA
ICCV 24	1	16-Oct-2023 21:32	240_ICV.d	B CA
LLCCV5	1	16-Oct-2023 21:34	241LCV5.d	B CA
LLCCV2	1	16-Oct-2023 21:36	242LCV2.d	B CA
ICCB 27	1	16-Oct-2023 21:38	243_ICB.d	B CA
CCV 25	1	16-Oct-2023 21:43	245_CCV.d	B CA
CCB 28	1	16-Oct-2023 21:45	246_CCB.d	B CA
CCV 26	1	16-Oct-2023 22:05	255_CCV.d	B CA
CCB 29	1	16-Oct-2023 22:07	256_CCB.d	B CA
CCV 27	1	16-Oct-2023 22:23	263_CCV.d	B CA
CCB 30	1	16-Oct-2023 22:25	264_CCB.d	B CA
CCV 28	1	16-Oct-2023 22:43	272_CCV.d	B CA
CCB 31	1	16-Oct-2023 22:46	273_CCB.d	B CA
MW-39R	20	16-Oct-2023 22:48	274SMPL.d	CA
MW-40	20	16-Oct-2023 22:50	275SMPL.d	CA
CCV 29	1	16-Oct-2023 22:55	277_CCV.d	B CA
CCB 32	1	16-Oct-2023 22:57	278_CCB.d	B CA
MBLK-201951	1	16-Oct-2023 22:59	279SMPL.d	B CA
LCS-201951	1	16-Oct-2023 23:02	280SMPL.d	B CA
MW-63	20	16-Oct-2023 23:04	281SMPL.d	B CA
MW-63SD	100	16-Oct-2023 23:06	282SMPL.d	B CA
MW-63MS	20	16-Oct-2023 23:08	283SMPL.d	B CA
MW-63MSD	20	16-Oct-2023 23:11	284SMPL.d	B CA
MW-63PDS	20	16-Oct-2023 23:13	285SMPL.d	CA
CCV 30	1	16-Oct-2023 23:17	287_CCV.d	B CA
CCB 33	1	16-Oct-2023 23:20	288_CCB.d	B CA
MW-41	20	16-Oct-2023 23:22	289SMPL.d	CA
MW-62	20	16-Oct-2023 23:24	290SMPL.d	CA
MW-64	20	16-Oct-2023 23:26	291SMPL.d	CA
MW-23R	20	16-Oct-2023 23:29	292SMPL.d	CA
MW-28D	20	16-Oct-2023 23:31	293SMPL.d	CA
MW-42	20	16-Oct-2023 23:33	294SMPL.d	CA
MW-43	20	16-Oct-2023 23:35	295SMPL.d	CA
MW-44	20	16-Oct-2023 23:38	296SMPL.d	CA
MW-46R	20	16-Oct-2023 23:40	297SMPL.d	CA
MW-47	20	16-Oct-2023 23:42	298SMPL.d	CA
CCV 31	1	16-Oct-2023 23:44	299_CCV.d	B CA
CCB 34	1	16-Oct-2023 23:47	300_CCB.d	B CA
ICSA	1	16-Oct-2023 23:49	301ICSA.d	B CA
ICSAB	1	16-Oct-2023 23:51	302ICSB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607
Start Date: 16-Oct-2023 End Date: 17-Oct-2023

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
MW-48	20	16-Oct-2023 23:58	305SMPL.d	CA
MW-50	20	17-Oct-2023 00:00	306SMPL.d	CA
MW-52	20	17-Oct-2023 00:03	307SMPL.d	CA
CCV 32	1	17-Oct-2023 00:05	308_CCV.d	B CA
CCB 35	1	17-Oct-2023 00:07	309_CCB.d	B CA
MW-54	20	17-Oct-2023 00:09	310SMPL.d	CA
MW-55R	20	17-Oct-2023 00:12	311SMPL.d	CA
MW-65	20	17-Oct-2023 00:14	312SMPL.d	CA
MW-36	20	17-Oct-2023 00:16	313SMPL.d	CA
MW-37	20	17-Oct-2023 00:18	314SMPL.d	CA
MW-38R	20	17-Oct-2023 00:21	315SMPL.d	CA
CCV 33	1	17-Oct-2023 00:25	317_CCV.d	B CA
CCB 36	1	17-Oct-2023 00:27	318_CCB.d	B CA
MBLK-201988	1	17-Oct-2023 00:30	319SMPL.d	B CA
LCS-201988	1	17-Oct-2023 00:32	320SMPL.d	B CA
MW-58	20	17-Oct-2023 00:34	321SMPL.d	B CA
MW-58SD	100	17-Oct-2023 00:36	322SMPL.d	B CA
MW-58MS	20	17-Oct-2023 00:39	323SMPL.d	B CA
MW-58MSD	20	17-Oct-2023 00:41	324SMPL.d	B CA
MW-58PDS	20	17-Oct-2023 00:43	325SMPL.d	B CA
CCV 34	1	17-Oct-2023 00:48	327_CCV.d	B CA
CCB 37	1	17-Oct-2023 00:50	328_CCB.d	B CA
ZZZZZZSD	100	17-Oct-2023 00:54	330SMPL.d	B CA
ZZZZZZMS	20	17-Oct-2023 00:57	331SMPL.d	CA
ZZZZZZMSD	20	17-Oct-2023 00:59	332SMPL.d	B CA
ZZZZZZPDS	20	17-Oct-2023 01:01	333SMPL.d	B CA
CCV 35	1	17-Oct-2023 01:06	335_CCV.d	B CA
CCB 38	1	17-Oct-2023 01:08	336_CCB.d	B CA
MW-60	20	17-Oct-2023 01:10	337SMPL.d	CA
MW-61	20	17-Oct-2023 01:12	338SMPL.d	B CA
Field Duplicate 1	20	17-Oct-2023 01:17	340SMPL.d	CA
Field Duplicate 2	20	17-Oct-2023 01:19	341SMPL.d	CA
CCV 36	1	17-Oct-2023 01:33	347_CCV.d	B CA
CCB 39	1	17-Oct-2023 01:35	348_CCB.d	B CA
CCV 37	1	17-Oct-2023 02:00	359_CCV.d	B CA
CCB 40	1	17-Oct-2023 02:02	360_CCB.d	B CA
CCV 38	1	17-Oct-2023 02:05	361_CCV.d	B CA
CCB 41	1	17-Oct-2023 02:07	362_CCB.d	B CA
LLCCV2	1	17-Oct-2023 02:09	363LCV2.d	B CA
LLCCV5	1	17-Oct-2023 02:11	364LCV5.d	B CA
ICSA	1	17-Oct-2023 02:14	365ICSA.d	B CA
ICSAB	1	17-Oct-2023 02:16	366ICSB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607
Start Date: 17-Oct-2023 End Date: 18-Oct-2023

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	17-Oct-2023 11:51	052_ICV.d	B CA
LLICV2	1	17-Oct-2023 11:56	054LCV2.d	B CA
LLICV5	1	17-Oct-2023 11:58	055LCV5.d	B CA
ICB	1	17-Oct-2023 12:08	057_ICB.d	B CA
ICSA	1	17-Oct-2023 12:10	058ICSA.d	B CA
ICSAB	1	17-Oct-2023 12:12	059ICSB.d	B CA
CCV 1	1	17-Oct-2023 12:18	061_CCV.d	B CA
CCB 1	1	17-Oct-2023 12:20	062_CCB.d	B CA
CCB 2	1	17-Oct-2023 12:27	064_CCB.d	B CA
CCV 2	1	17-Oct-2023 12:29	065_CCV.d	B CA
CCV 3	1	17-Oct-2023 12:54	076_CCV.d	B CA
CCB 3	1	17-Oct-2023 12:56	077_CCB.d	B CA
CCB 4	1	17-Oct-2023 12:58	078_CCB.d	B CA
CCV 4	1	17-Oct-2023 13:01	079_CCV.d	B CA
CCV 5	1	17-Oct-2023 13:25	090_CCV.d	B CA
CCV 6	1	17-Oct-2023 13:25	090_CCV.d	B CA
CCB 5	1	17-Oct-2023 13:28	091_CCB.d	B CA
CCB 6	1	17-Oct-2023 13:28	091_CCB.d	B CA
CCB 7	1	17-Oct-2023 13:30	092_CCB.d	B CA
CCV 7	1	17-Oct-2023 13:32	093_CCV.d	B CA
ZZZZZZMS	1	17-Oct-2023 13:35	094SMPL.d	
Field Blank	1	17-Oct-2023 13:44	098SMPL.d	CA
LCS-201948	1	17-Oct-2023 13:55	103SMPL.d	
CCV 8	1	17-Oct-2023 13:57	104_CCV.d	B CA
CCB 8	1	17-Oct-2023 14:00	105_CCB.d	B CA
CCV 9	1	17-Oct-2023 14:02	106_CCV.d	B CA
ICCV 10	1	17-Oct-2023 14:32	117_ICV.d	B CA
LLCCV2	1	17-Oct-2023 14:36	119LCV2.d	B CA
LLCCV5	1	17-Oct-2023 14:41	121LCV5.d	B CA
ICCB 9	1	17-Oct-2023 14:46	123_ICB.d	B CA
CCV 11	1	17-Oct-2023 14:48	124_CCV.d	B CA
CCB 10	1	17-Oct-2023 14:50	125_CCB.d	B CA
MW-39R	1	17-Oct-2023 14:53	126SMPL.d	B
MW-40	1	17-Oct-2023 14:55	127SMPL.d	B
MW-60	1	17-Oct-2023 14:57	128SMPL.d	B
Field Blank	1	17-Oct-2023 15:00	129SMPL.d	B
Field Duplicate 1	1	17-Oct-2023 15:02	130SMPL.d	B
Field Duplicate 2	1	17-Oct-2023 15:04	131SMPL.d	B
CCB 11	1	17-Oct-2023 15:13	135SMPL.d	B CA
CCV 12	1	17-Oct-2023 15:15	136_CCV.d	B CA
CCB 12	1	17-Oct-2023 15:18	137_CCB.d	B CA
ICCV 13	1	17-Oct-2023 16:31	157_ICV.d	B CA
LLCCV2	1	17-Oct-2023 16:36	159LCV2.d	B CA
LLCCV5	1	17-Oct-2023 16:38	160LCV5.d	B CA
ICCB 13	1	17-Oct-2023 16:43	162_ICB.d	B CA
CCV 14	1	17-Oct-2023 16:47	163_CCV.d	B CA
CCB 14	1	17-Oct-2023 16:49	164_CCB.d	B CA
ZZZZZZMS	1	17-Oct-2023 17:08	172SMPL.d	B
MW-63PDS	20	17-Oct-2023 17:10	173SMPL.d	B
CCV 15	1	17-Oct-2023 17:14	175_CCV.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation Run ID:ICPMS07_449322
Project: WA Parish - CCR Program Instrument:ICPMS07
WorkOrder: HS23100607 Method:SW6020A
Start Date: 17-Oct-2023 End Date: 18-Oct-2023

Sample No.	D/F	Time	FileID	Analytes
CCB 15	1	17-Oct-2023 17:17	176_CCB.d	B CA
MW-41	1	17-Oct-2023 17:19	177SMPL.d	B
MW-62	1	17-Oct-2023 17:21	178SMPL.d	B
MW-64	1	17-Oct-2023 17:24	179SMPL.d	B
MW-23R	1	17-Oct-2023 17:26	180SMPL.d	B
MW-28D	1	17-Oct-2023 17:28	181SMPL.d	B
MW-42	1	17-Oct-2023 17:30	182SMPL.d	B
MW-43	1	17-Oct-2023 17:33	183SMPL.d	B
MW-44	1	17-Oct-2023 17:35	184SMPL.d	B
MW-46R	1	17-Oct-2023 17:37	185SMPL.d	B
MW-47	1	17-Oct-2023 17:39	186SMPL.d	B
CCV 16	1	17-Oct-2023 17:42	187_CCV.d	B CA
CCB 16	1	17-Oct-2023 17:44	188_CCB.d	B CA
CCV 17	1	17-Oct-2023 17:46	189_CCV.d	B CA
CCV 18	1	17-Oct-2023 17:49	190_CCV.d	B CA
CCB 17	1	17-Oct-2023 17:56	192_CCB.d	B CA
MW-50	1	17-Oct-2023 18:01	194SMPL.d	B
MW-52	1	17-Oct-2023 18:03	195SMPL.d	B
MW-54	1	17-Oct-2023 18:05	196SMPL.d	B
MW-55R	1	17-Oct-2023 18:08	197SMPL.d	B
MW-65	1	17-Oct-2023 18:10	198SMPL.d	B
MW-36	1	17-Oct-2023 18:12	199SMPL.d	B
MW-37	1	17-Oct-2023 18:15	200SMPL.d	B
MW-38R	1	17-Oct-2023 18:17	201SMPL.d	B
MW-48	10	17-Oct-2023 18:19	202SMPL.d	B
CCV 19	1	17-Oct-2023 18:21	203_CCV.d	B CA
CCB 18	1	17-Oct-2023 18:24	204_CCB.d	B CA
CCB 19	1	17-Oct-2023 18:26	205_CCB.d	B CA
CCV 20	1	17-Oct-2023 18:51	216_CCV.d	B CA
CCB 20	1	17-Oct-2023 18:53	217_CCB.d	B CA
CCV 21	1	17-Oct-2023 19:18	228_CCV.d	B CA
CCB 21	1	17-Oct-2023 19:20	229_CCB.d	B CA
CCV 22	1	17-Oct-2023 19:45	240_CCV.d	B CA
CCB 22	1	17-Oct-2023 19:47	241_CCB.d	B CA
CCV 23	1	17-Oct-2023 20:00	245_CCV.d	B CA
CCB 23	1	17-Oct-2023 20:02	246_CCB.d	B CA
CCV 24	1	17-Oct-2023 20:27	257_CCV.d	B CA
CCB 24	1	17-Oct-2023 20:29	258_CCB.d	B CA
CCV 25	1	17-Oct-2023 20:41	260_CCV.d	B CA
CCV 26	1	17-Oct-2023 21:02	269_CCV.d	B CA
CCB 25	1	17-Oct-2023 21:04	270_CCB.d	B CA
CCV 27	1	17-Oct-2023 21:20	277_CCV.d	B CA
CCB 26	1	17-Oct-2023 21:22	278_CCB.d	B CA
CCV 28	1	17-Oct-2023 21:32	280_CCV.d	B CA
CCV 29	1	17-Oct-2023 21:46	285_CCV.d	B CA
CCB 27	1	17-Oct-2023 21:49	286_CCB.d	B CA
CCV 30	1	17-Oct-2023 22:07	294_CCV.d	B CA
CCB 28	1	17-Oct-2023 22:09	295_CCB.d	B CA
CCV 31	1	17-Oct-2023 22:34	306_CCV.d	B CA
CCB 29	1	17-Oct-2023 22:36	307_CCB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607
Start Date: 17-Oct-2023 End Date: 18-Oct-2023

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCV 32	1	17-Oct-2023 22:48	309_CCV.d	B CA
ICCV 33	1	17-Oct-2023 23:53	336_ICV.d	B CA
LLCCV5	1	17-Oct-2023 23:55	337LCV5.d	B CA
LLCCV2	1	17-Oct-2023 23:57	338LCV2.d	B CA
ICCB 30	1	18-Oct-2023 00:00	339_ICB.d	B CA
CCV 34	1	18-Oct-2023 00:05	341_CCV.d	B CA
CCB 31	1	18-Oct-2023 00:07	342_CCB.d	B CA
LLCCV2	1	18-Oct-2023 00:10	343LCV2.d	B CA
LLCCV5	1	18-Oct-2023 00:12	344LCV5.d	B CA
ICSA	1	18-Oct-2023 00:14	345ICSA.d	B CA
ICSAB	1	18-Oct-2023 00:17	346ICSB.d	B CA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

Blank	Date	Seq	Analyte	Result	MDL	Report Limit	D/F	Units
ICB	16-Oct-2023 10:31	7610785	Boron	11.46	11	20	1	ug/L
CCB 1	16-Oct-2023 10:50	7610791	Boron	21.31	11	20	1	ug/L
CCB 2	16-Oct-2023 11:17	7610793	Boron	27.65	11	20	1	ug/L
CCB 3	16-Oct-2023 11:19	7610794	Boron	18.26	11	20	1	ug/L
CCB 5	16-Oct-2023 11:50	7611081	Boron	26.91	11	20	1	ug/L
			Calcium	102.5	34	500		
CCB 4	16-Oct-2023 11:50	7610798	Boron	26.91	11	20	1	ug/L
			Calcium	102.5	34	500		
CCB 7	16-Oct-2023 11:56	7611083	Boron	28.52	11	20	1	ug/L
CCB 6	16-Oct-2023 11:56	7610800	Boron	28.52	11	20	1	ug/L
CCB 9	16-Oct-2023 13:04	7611076	Boron	61.33	11	20	1	ug/L
			Calcium	115	34	500		
CCB 10	16-Oct-2023 13:31	7611371	Boron	55.28	11	20	1	ug/L
			Calcium	118.5	34	500		
CCB 11	16-Oct-2023 13:52	7611372	Boron	44.01	11	20	1	ug/L
CCB 12	16-Oct-2023 14:20	7611444	Boron	30.81	11	20	1	ug/L
CCB 13	16-Oct-2023 14:24	7611450					1	ug/L

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

	Analyte	Result	MDL	Report Limit
	Boron	17.02	11	20

CCB 14 Date: 16-Oct-2023 14:52 Seq: 7611538 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	26.37	11	20

CCB 15 Date: 16-Oct-2023 14:55 Seq: 7611539 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	13.33	11	20

CCB 16 Date: 16-Oct-2023 15:22 Seq: 7611707 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	20.74	11	20
Calcium	38.3	34	500

CCB 17 Date: 16-Oct-2023 15:25 Seq: 7611708 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	13.14	11	20

CCB 18 Date: 16-Oct-2023 15:54 Seq: 7611810 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	16.3	11	20
Calcium	210	34	500

CCB 19 Date: 16-Oct-2023 16:22 Seq: 7612170 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	31.81	11	20

CCB 20 Date: 16-Oct-2023 17:10 Seq: 7612369 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	49.44	11	20

CCB 21 Date: 16-Oct-2023 17:37 Seq: 7612381 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	46.14	11	20
Calcium	705	34	500

CCB 22 Date: 16-Oct-2023 17:40 Seq: 7612382 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	18.97	11	20
Calcium	168.4	34	500

CCB 23 Date: 16-Oct-2023 18:08 Seq: 7612394 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	31.11	11	20
Calcium	463	34	500

CCB 24 Date: 16-Oct-2023 18:31 Seq: 7612419 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	29.06	11	20
Calcium	101.6	34	500

CCB 25 Date: 16-Oct-2023 20:07 Seq: 7612965 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

		Boron	15.01	11	20	
CCB 26	Date: 16-Oct-2023 20:34	Seq: 7612976		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	32.08	11	20	
		Calcium	405.4	34	500	
CCB 28	Date: 16-Oct-2023 21:45	Seq: 7612996		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Calcium	48.1	34	500	
CCB 29	Date: 16-Oct-2023 22:07	Seq: 7613000		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	42.48	11	20	
		Calcium	145.2	34	500	
CCB 30	Date: 16-Oct-2023 22:25	Seq: 7613008		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	26.87	11	20	
		Calcium	364.2	34	500	
CCB 31	Date: 16-Oct-2023 22:46	Seq: 7613017		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	18.52	11	20	
		Calcium	66.23	34	500	
CCB 32	Date: 16-Oct-2023 22:57	Seq: 7613028		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	14.61	11	20	
		Calcium	83.53	34	500	
CCB 33	Date: 16-Oct-2023 23:20	Seq: 7613038		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	14.3	11	20	
		Calcium	79.93	34	500	
CCB 34	Date: 16-Oct-2023 23:47	Seq: 7613050		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	11.6	11	20	
		Calcium	64.38	34	500	
CCB 35	Date: 17-Oct-2023 00:07	Seq: 7613076		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Calcium	68.7	34	500	
CCB 36	Date: 17-Oct-2023 00:27	Seq: 7613085		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Calcium	56.77	34	500	
CCB 37	Date: 17-Oct-2023 00:50	Seq: 7613095		D/F: 1		Units: ug/L
		Analyte	**Result**	**MDL**	**Report Limit**	
		Boron	11.76	11	20	
		Calcium	66.47	34	500	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

CCB 38	Date: 17-Oct-2023 01:08	Seq: 7613072	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	14.7	11	20
	Calcium	84	34	500

CCB 39	Date: 17-Oct-2023 01:35	Seq: 7613111	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Calcium	69.7	34	500

CCB 40	Date: 17-Oct-2023 02:02	Seq: 7613123	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	16.98	11	20
	Calcium	170.7	34	500

CCB 41	Date: 17-Oct-2023 02:07	Seq: 7613125	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	20.07	11	20
	Calcium	109	34	500

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

CCB 1 Date: 17-Oct-2023 12:20 Seq: 7614459 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	123.3	34	500

CCB 2 Date: 17-Oct-2023 12:27 Seq: 7614461 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	-17.68	11	20

CCB 3 Date: 17-Oct-2023 12:56 Seq: 7614464 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	13.29	11	20
Calcium	442.2	34	500

CCB 4 Date: 17-Oct-2023 12:58 Seq: 7614465 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	167.7	34	500

CCB 6 Date: 17-Oct-2023 13:28 Seq: 7614507 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	127	34	500

CCB 5 Date: 17-Oct-2023 13:28 Seq: 7614456 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	127	34	500

CCB 7 Date: 17-Oct-2023 13:30 Seq: 7614508 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	57.29	34	500

CCB 8 Date: 17-Oct-2023 14:00 Seq: 7614586 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	11.3	11	20
Calcium	75.12	34	500

CCB 10 Date: 17-Oct-2023 14:50 Seq: 7615190 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	17.06	11	20

CCB 11 Date: 17-Oct-2023 15:13 Seq: 7615200 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	297.9	34	500

CCB 12 Date: 17-Oct-2023 15:18 Seq: 7615202 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	23.84	11	20
Calcium	74.15	34	500

CCB 14 Date: 17-Oct-2023 16:49 Seq: 7615594 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	35.65	34	500

CCB 15 Date: 17-Oct-2023 17:17 Seq: 7615597 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	93.25	34	500

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

CCB	Date	Seq	Analyte	Result	MDL	Report Limit	D/F	Units
CCB 16	17-Oct-2023 17:44	7615609	Boron	20.55	11	20	1	ug/L
			Calcium	315.2	34	500		
CCB 18	17-Oct-2023 18:24	7615645	Boron	22.92	11	20	1	ug/L
			Calcium	348.1	34	500		
CCB 19	17-Oct-2023 18:26	7615646	Calcium	175.8	34	500	1	ug/L
CCB 20	17-Oct-2023 18:53	7616044	Boron	34.58	11	20	1	ug/L
			Calcium	215.7	34	500		
CCB 21	17-Oct-2023 19:20	7616056	Boron	28.73	11	20	1	ug/L
			Calcium	147.6	34	500		
CCB 22	17-Oct-2023 19:47	7616068	Boron	39.03	11	20	1	ug/L
			Calcium	590.4	34	500		
CCB 23	17-Oct-2023 20:02	7616073	Boron	13.31	11	20	1	ug/L
			Calcium	39.16	34	500		
CCB 24	17-Oct-2023 20:29	7616085	Calcium	41.85	34	500	1	ug/L
CCB 25	17-Oct-2023 21:04	7616097	Boron	256.5	11	20	1	ug/L
			Calcium	1336	34	500		
CCB 26	17-Oct-2023 21:22	7616100	Boron	86.79	11	20	1	ug/L
			Calcium	106.6	34	500		
CCB 27	17-Oct-2023 21:49	7616128	Boron	61.45	11	20	1	ug/L

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

CCB 28 — Date: 17-Oct-2023 22:09 — Seq: 7616107 — D/F: 1 — Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	66.4	11	20
Calcium	50.8	34	500

CCB 29 — Date: 17-Oct-2023 22:36 — Seq: 7616119 — D/F: 1 — Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	61.93	11	20
Calcium	1628	34	500

ICCB 30 — Date: 18-Oct-2023 00:00 — Seq: 7616154 — D/F: 1 — Units: ug/L

Analyte	Result	MDL	Report Limit
Calcium	151.9	34	500

CCB 31 — Date: 18-Oct-2023 00:07 — Seq: 7616135 — D/F: 1 — Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	22.21	11	20
Calcium	174.1	34	500

Client: TRC Corporation
Project: WA Parish - CCR Program
Work Order: HS23100607

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23100607-01	MW-39R	Water		09-Oct-2023 08:10	10-Oct-2023 15:06	☐
HS23100607-02	MW-40	Water		09-Oct-2023 09:20	10-Oct-2023 15:06	☐
HS23100607-03	MW-41	Water		09-Oct-2023 11:15	10-Oct-2023 15:06	☐
HS23100607-04	MW-62	Water		09-Oct-2023 08:45	10-Oct-2023 15:06	☐
HS23100607-05	MW-63	Water		09-Oct-2023 10:35	10-Oct-2023 15:06	☐
HS23100607-06	MW-64	Water		09-Oct-2023 09:55	10-Oct-2023 15:06	☐
HS23100607-07	MW-23R	Water		09-Oct-2023 11:00	10-Oct-2023 15:06	☐
HS23100607-08	MW-28D	Water		09-Oct-2023 09:30	10-Oct-2023 15:06	☐
HS23100607-09	MW-42	Water		09-Oct-2023 10:15	10-Oct-2023 15:06	☐
HS23100607-10	MW-43	Water		09-Oct-2023 11:45	10-Oct-2023 15:06	☐
HS23100607-11	MW-44	Water		09-Oct-2023 12:00	10-Oct-2023 15:06	☐
HS23100607-12	MW-46R	Water		09-Oct-2023 12:45	10-Oct-2023 15:06	☐
HS23100607-13	MW-47	Water		09-Oct-2023 11:00	10-Oct-2023 15:06	☐
HS23100607-14	MW-48	Water		09-Oct-2023 10:20	10-Oct-2023 15:06	☐
HS23100607-15	MW-50	Water		09-Oct-2023 11:50	10-Oct-2023 15:06	☐
HS23100607-16	MW-52	Water		09-Oct-2023 12:30	10-Oct-2023 15:06	☐
HS23100607-17	MW-54	Water		09-Oct-2023 08:05	10-Oct-2023 15:06	☐
HS23100607-18	MW-55R	Water		09-Oct-2023 08:55	10-Oct-2023 15:06	☐
HS23100607-19	MW-58	Water		09-Oct-2023 13:30	10-Oct-2023 15:06	☐
HS23100607-20	MW-65	Water		09-Oct-2023 09:35	10-Oct-2023 15:06	☐
HS23100607-21	MW-36	Water		09-Oct-2023 11:25	10-Oct-2023 15:06	☐
HS23100607-22	MW-37	Water		09-Oct-2023 09:00	10-Oct-2023 15:06	☐
HS23100607-23	MW-38R	Water		09-Oct-2023 10:40	10-Oct-2023 15:06	☐
HS23100607-24	MW-60	Water		09-Oct-2023 08:15	10-Oct-2023 15:06	☐
HS23100607-25	MW-61	Water		09-Oct-2023 09:50	10-Oct-2023 15:06	☐
HS23100607-26	Field Blank	Water		09-Oct-2023 10:05	10-Oct-2023 15:06	☐

Client: TRC Corporation
Project: WA Parish - CCR Program
Work Order: HS23100607

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23100607-27	Field Duplicate 1	Water		09-Oct-2023 12:00	10-Oct-2023 15:06	☐
HS23100607-28	Field Duplicate 2	Water		09-Oct-2023 10:00	10-Oct-2023 15:06	☐

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-39R		Lab ID:HS23100607-01
Collection Date:	09-Oct-2023 08:10		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.0884**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 14:53
Calcium	**174**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 22:48
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**327**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 20:17
Sulfate	**132**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 20:17
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**968**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-40		Lab ID:HS23100607-02
Collection Date:	09-Oct-2023 09:20		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.0627**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 14:55
Calcium	**253**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 22:50
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**496**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 20:29
Sulfate	**120**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 20:29
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,420**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-41		Lab ID:HS23100607-03
Collection Date:	09-Oct-2023 11:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.0499**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:19
Calcium	**177**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:22
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**488**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 20:41
Sulfate	**59.5**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 20:35
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,300**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-62		Lab ID:HS23100607-04
Collection Date:	09-Oct-2023 08:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.0718**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:21
Calcium	**202**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:24
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**367**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 20:52
Sulfate	**337**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 20:52
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**2,590**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program	WorkOrder:	HS23100607
Sample ID:	MW-63	Lab ID:	HS23100607-05
Collection Date:	09-Oct-2023 10:35	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.445**		**0.220**	**0.400**	**mg/L**	20	16-Oct-2023 23:04
Calcium	**285**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:04
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**257**		**4.00**	**10.0**	**mg/L**	20	14-Oct-2023 21:27
Sulfate	**572**		**4.00**	**10.0**	**mg/L**	20	14-Oct-2023 21:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,490**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	WA Parish - CCR Program	WorkOrder:HS23100607
Sample ID:	MW-64	Lab ID:HS23100607-06
Collection Date:	09-Oct-2023 09:55	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.0756**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:24
Calcium	**237**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:26
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**560**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 21:50
Sulfate	**50.3**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 21:44
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**3,130**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-23R		Lab ID:HS23100607-07
Collection Date:	09-Oct-2023 11:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.284**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:26
Calcium	**502**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:29
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**993**		**4.00**	**10.0**	**mg/L**	20	14-Oct-2023 21:56
Sulfate	**1,370**		**4.00**	**10.0**	**mg/L**	20	14-Oct-2023 21:56
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,450**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-28D		Lab ID:HS23100607-08
Collection Date:	09-Oct-2023 09:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.139**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:28
Calcium	**118**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:31
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**142**		**1.00**	**2.50**	**mg/L**	5	14-Oct-2023 14:24
Sulfate	**95.6**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 14:18
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**590**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-42		Lab ID:HS23100607-09
Collection Date:	09-Oct-2023 10:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.444**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:30
Calcium	**139**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:33
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**304**		**4.00**	**10.0**	**mg/L**	20	14-Oct-2023 14:30
Sulfate	**471**		**4.00**	**10.0**	**mg/L**	20	14-Oct-2023 14:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**640**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-43		Lab ID:HS23100607-10
Collection Date:	09-Oct-2023 11:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.306**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:33
Calcium	**74.7**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:35
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**213**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 14:41
Sulfate	**72.1**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 14:35
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**592**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	WA Parish - CCR Program	WorkOrder:HS23100607
Sample ID:	MW-44	Lab ID:HS23100607-11
Collection Date:	09-Oct-2023 12:00	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.217**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:35
Calcium	**103**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:38
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**204**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 15:22
Sulfate	**93.1**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 15:16
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**808**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-46R		Lab ID:HS23100607-12
Collection Date:	09-Oct-2023 12:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.167**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:37
Calcium	**104**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:40
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**161**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 23:05
Sulfate	**99.2**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 22:48
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**714**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-47		Lab ID:HS23100607-13
Collection Date:	09-Oct-2023 11:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.224**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:39
Calcium	**113**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:42
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**297**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 23:17
Sulfate	**76.6**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 23:11
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**800**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-48		Lab ID:HS23100607-14
Collection Date:	09-Oct-2023 10:20		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.735**		**0.110**	**0.200**	**mg/L**	10	17-Oct-2023 18:19
Calcium	**74.5**		**0.680**	**10.0**	**mg/L**	20	16-Oct-2023 23:58
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**365**		**2.00**	**5.00**	**mg/L**	10	14-Oct-2023 23:28
Sulfate	**95.5**		**0.200**	**0.500**	**mg/L**	1	14-Oct-2023 23:23
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**940**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-50		Lab ID:HS23100607-15
Collection Date:	09-Oct-2023 11:50		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.292**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:01
Calcium	**133**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:00
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**391**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:09
Sulfate	**150**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:09
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**976**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-52		Lab ID:HS23100607-16
Collection Date:	09-Oct-2023 12:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.332**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:03
Calcium	**217**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:03
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**513**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:15
Sulfate	**401**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:15
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,420**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-54		Lab ID:HS23100607-17
Collection Date:	09-Oct-2023 08:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.251**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:05
Calcium	**93.5**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:09
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**260**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:26
Sulfate	**90.5**		**0.200**	**0.500**	**mg/L**	1	15-Oct-2023 00:20
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**772**		**5.00**	**10.0**	**mg/L**	1	13-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-55R		Lab ID:HS23100607-18
Collection Date:	09-Oct-2023 08:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.417**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:08
Calcium	**105**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:12
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**307**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:38
Sulfate	**98.7**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:38
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**808**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-58		Lab ID:HS23100607-19
Collection Date:	09-Oct-2023 13:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.935**		**0.220**	**0.400**	**mg/L**	20	17-Oct-2023 00:34
Calcium	**122**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:34
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**259**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:44
Sulfate	**272**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 00:44
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,160**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	WA Parish - CCR Program	WorkOrder:HS23100607
Sample ID:	MW-65	Lab ID:HS23100607-20
Collection Date:	09-Oct-2023 09:35	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.306**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:10
Calcium	**196**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:14
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**314**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:30
Sulfate	**604**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,470**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-36		Lab ID:HS23100607-21
Collection Date:	09-Oct-2023 11:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.385**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:12
Calcium	**234**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:16
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**244**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:36
Sulfate	**954**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:36
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,750**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-37		Lab ID:HS23100607-22
Collection Date:	09-Oct-2023 09:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.0720**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:15
Calcium	**223**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:18
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**278**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:42
Sulfate	**413**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:42
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**932**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	WA Parish - CCR Program	WorkOrder:HS23100607
Sample ID:	MW-38R	Lab ID:HS23100607-23
Collection Date:	09-Oct-2023 10:40	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 13-Oct-2023		Analyst: MSC
Boron	**0.416**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 18:17
Calcium	**238**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:21
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**243**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:48
Sulfate	**650**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:48
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,240**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-60		Lab ID:HS23100607-24
Collection Date:	09-Oct-2023 08:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0511**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 14:57
Calcium	**205**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:10
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**288**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 01:53
Sulfate	**298**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 01:53
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,070**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	MW-61		Lab ID:HS23100607-25
Collection Date:	09-Oct-2023 09:50		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.987**		**0.220**	**0.400**	**mg/L**	20	17-Oct-2023 01:12
Calcium	**227**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:12
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**119**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:59
Sulfate	**1,070**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 01:59
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,720**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	Field Blank		Lab ID:HS23100607-26
Collection Date:	09-Oct-2023 10:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	< 0.0110		0.0110	0.0200	mg/L	1	17-Oct-2023 15:00
Calcium	**0.879**		**0.0340**	**0.500**	**mg/L**	1	17-Oct-2023 13:44
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	< 0.200		0.200	0.500	mg/L	1	15-Oct-2023 02:05
Sulfate	< 0.200		0.200	0.500	mg/L	1	15-Oct-2023 02:05
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	< 5.00		5.00	10.0	mg/L	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation	**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program	WorkOrder:HS23100607
Sample ID:	Field Duplicate 1	Lab ID:HS23100607-27
Collection Date:	09-Oct-2023 12:00	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.343**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 15:02
Calcium	**219**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:17
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**245**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 02:11
Sulfate	**964**		**4.00**	**10.0**	**mg/L**	20	15-Oct-2023 02:11
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,710**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS23100607
Sample ID:	Field Duplicate 2		Lab ID:HS23100607-28
Collection Date:	09-Oct-2023 10:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.226**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 15:04
Calcium	**98.0**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:19
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**205**		**2.00**	**5.00**	**mg/L**	10	15-Oct-2023 02:22
Sulfate	**93.7**		**0.200**	**0.500**	**mg/L**	1	15-Oct-2023 02:17
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**748**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	20-Oct-2023 07:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

Batch ID: 201948 **Start Date:** 13 Oct 2023 13:30 **End Date:** 13 Oct 2023 13:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23100607-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 201951 **Start Date:** 13 Oct 2023 13:30 **End Date:** 13 Oct 2023 13:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23100607-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-12		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-20		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-21		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-22		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-23		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 201988 **Start Date:** 16 Oct 2023 08:00 **End Date:** 16 Oct 2023 08:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23100607-19		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-24		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-25		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-26		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-27		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100607-28		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 201948 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23100607-01	MW-39R	09 Oct 2023 08:10		13 Oct 2023 13:30	17 Oct 2023 14:53	1
HS23100607-01	MW-39R	09 Oct 2023 08:10		13 Oct 2023 13:30	16 Oct 2023 22:48	20
HS23100607-02	MW-40	09 Oct 2023 09:20		13 Oct 2023 13:30	17 Oct 2023 14:55	1
HS23100607-02	MW-40	09 Oct 2023 09:20		13 Oct 2023 13:30	16 Oct 2023 22:50	20

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 201951 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23100607-03	MW-41	09 Oct 2023 11:15		13 Oct 2023 13:30	17 Oct 2023 17:19	1
HS23100607-03	MW-41	09 Oct 2023 11:15		13 Oct 2023 13:30	16 Oct 2023 23:22	20
HS23100607-04	MW-62	09 Oct 2023 08:45		13 Oct 2023 13:30	17 Oct 2023 17:21	1
HS23100607-04	MW-62	09 Oct 2023 08:45		13 Oct 2023 13:30	16 Oct 2023 23:24	20
HS23100607-05	MW-63	09 Oct 2023 10:35		13 Oct 2023 13:30	16 Oct 2023 23:04	20
HS23100607-06	MW-64	09 Oct 2023 09:55		13 Oct 2023 13:30	17 Oct 2023 17:24	1
HS23100607-06	MW-64	09 Oct 2023 09:55		13 Oct 2023 13:30	16 Oct 2023 23:26	20
HS23100607-07	MW-23R	09 Oct 2023 11:00		13 Oct 2023 13:30	17 Oct 2023 17:26	1
HS23100607-07	MW-23R	09 Oct 2023 11:00		13 Oct 2023 13:30	16 Oct 2023 23:29	20
HS23100607-08	MW-28D	09 Oct 2023 09:30		13 Oct 2023 13:30	17 Oct 2023 17:28	1
HS23100607-08	MW-28D	09 Oct 2023 09:30		13 Oct 2023 13:30	16 Oct 2023 23:31	20
HS23100607-09	MW-42	09 Oct 2023 10:15		13 Oct 2023 13:30	17 Oct 2023 17:30	1
HS23100607-09	MW-42	09 Oct 2023 10:15		13 Oct 2023 13:30	16 Oct 2023 23:33	20
HS23100607-10	MW-43	09 Oct 2023 11:45		13 Oct 2023 13:30	17 Oct 2023 17:33	1
HS23100607-10	MW-43	09 Oct 2023 11:45		13 Oct 2023 13:30	16 Oct 2023 23:35	20
HS23100607-11	MW-44	09 Oct 2023 12:00		13 Oct 2023 13:30	17 Oct 2023 17:35	1
HS23100607-11	MW-44	09 Oct 2023 12:00		13 Oct 2023 13:30	16 Oct 2023 23:38	20
HS23100607-12	MW-46R	09 Oct 2023 12:45		13 Oct 2023 13:30	17 Oct 2023 17:37	1
HS23100607-12	MW-46R	09 Oct 2023 12:45		13 Oct 2023 13:30	16 Oct 2023 23:40	20
HS23100607-13	MW-47	09 Oct 2023 11:00		13 Oct 2023 13:30	17 Oct 2023 17:39	1
HS23100607-13	MW-47	09 Oct 2023 11:00		13 Oct 2023 13:30	16 Oct 2023 23:42	20
HS23100607-14	MW-48	09 Oct 2023 10:20		13 Oct 2023 13:30	17 Oct 2023 18:19	10
HS23100607-14	MW-48	09 Oct 2023 10:20		13 Oct 2023 13:30	16 Oct 2023 23:58	20
HS23100607-15	MW-50	09 Oct 2023 11:50		13 Oct 2023 13:30	17 Oct 2023 18:01	1
HS23100607-15	MW-50	09 Oct 2023 11:50		13 Oct 2023 13:30	17 Oct 2023 00:00	20
HS23100607-16	MW-52	09 Oct 2023 12:30		13 Oct 2023 13:30	17 Oct 2023 18:03	1
HS23100607-16	MW-52	09 Oct 2023 12:30		13 Oct 2023 13:30	17 Oct 2023 00:03	20
HS23100607-17	MW-54	09 Oct 2023 08:05		13 Oct 2023 13:30	17 Oct 2023 18:05	1
HS23100607-17	MW-54	09 Oct 2023 08:05		13 Oct 2023 13:30	17 Oct 2023 00:09	20
HS23100607-18	MW-55R	09 Oct 2023 08:55		13 Oct 2023 13:30	17 Oct 2023 18:08	1
HS23100607-18	MW-55R	09 Oct 2023 08:55		13 Oct 2023 13:30	17 Oct 2023 00:12	20
HS23100607-20	MW-65	09 Oct 2023 09:35		13 Oct 2023 13:30	17 Oct 2023 18:10	1
HS23100607-20	MW-65	09 Oct 2023 09:35		13 Oct 2023 13:30	17 Oct 2023 00:14	20
HS23100607-21	MW-36	09 Oct 2023 11:25		13 Oct 2023 13:30	17 Oct 2023 18:12	1
HS23100607-21	MW-36	09 Oct 2023 11:25		13 Oct 2023 13:30	17 Oct 2023 00:16	20
HS23100607-22	MW-37	09 Oct 2023 09:00		13 Oct 2023 13:30	17 Oct 2023 18:15	1
HS23100607-22	MW-37	09 Oct 2023 09:00		13 Oct 2023 13:30	17 Oct 2023 00:18	20
HS23100607-23	MW-38R	09 Oct 2023 10:40		13 Oct 2023 13:30	17 Oct 2023 18:17	1
HS23100607-23	MW-38R	09 Oct 2023 10:40		13 Oct 2023 13:30	17 Oct 2023 00:21	20

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 201988 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23100607-19	MW-58	09 Oct 2023 13:30		16 Oct 2023 08:00	17 Oct 2023 00:34	20
HS23100607-24	MW-60	09 Oct 2023 08:15		16 Oct 2023 08:00	17 Oct 2023 14:57	1
HS23100607-24	MW-60	09 Oct 2023 08:15		16 Oct 2023 08:00	17 Oct 2023 01:10	20
HS23100607-25	MW-61	09 Oct 2023 09:50		16 Oct 2023 08:00	17 Oct 2023 01:12	20
HS23100607-26	Field Blank	09 Oct 2023 10:05		16 Oct 2023 08:00	17 Oct 2023 15:00	1
HS23100607-26	Field Blank	09 Oct 2023 10:05		16 Oct 2023 08:00	17 Oct 2023 13:44	1
HS23100607-27	Field Duplicate 1	09 Oct 2023 12:00		16 Oct 2023 08:00	17 Oct 2023 15:02	1
HS23100607-27	Field Duplicate 1	09 Oct 2023 12:00		16 Oct 2023 08:00	17 Oct 2023 01:17	20
HS23100607-28	Field Duplicate 2	09 Oct 2023 10:00		16 Oct 2023 08:00	17 Oct 2023 15:04	1
HS23100607-28	Field Duplicate 2	09 Oct 2023 10:00		16 Oct 2023 08:00	17 Oct 2023 01:19	20
Batch ID: R449123 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23100607-08	MW-28D	09 Oct 2023 09:30			14 Oct 2023 14:24	5
HS23100607-08	MW-28D	09 Oct 2023 09:30			14 Oct 2023 14:18	1
HS23100607-09	MW-42	09 Oct 2023 10:15			14 Oct 2023 14:30	20
HS23100607-10	MW-43	09 Oct 2023 11:45			14 Oct 2023 14:41	10
HS23100607-10	MW-43	09 Oct 2023 11:45			14 Oct 2023 14:35	1
HS23100607-11	MW-44	09 Oct 2023 12:00			14 Oct 2023 15:22	10
HS23100607-11	MW-44	09 Oct 2023 12:00			14 Oct 2023 15:16	1
Batch ID: R449124 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23100607-01	MW-39R	09 Oct 2023 08:10			14 Oct 2023 20:17	10
HS23100607-02	MW-40	09 Oct 2023 09:20			14 Oct 2023 20:29	10
HS23100607-03	MW-41	09 Oct 2023 11:15			14 Oct 2023 20:41	10
HS23100607-03	MW-41	09 Oct 2023 11:15			14 Oct 2023 20:35	1
HS23100607-04	MW-62	09 Oct 2023 08:45			14 Oct 2023 20:52	10
HS23100607-05	MW-63	09 Oct 2023 10:35			14 Oct 2023 21:27	20
HS23100607-06	MW-64	09 Oct 2023 09:55			14 Oct 2023 21:50	10
HS23100607-06	MW-64	09 Oct 2023 09:55			14 Oct 2023 21:44	1
HS23100607-07	MW-23R	09 Oct 2023 11:00			14 Oct 2023 21:56	20

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R449125 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23100607-12	MW-46R	09 Oct 2023 12:45			14 Oct 2023 23:05	10
HS23100607-12	MW-46R	09 Oct 2023 12:45			14 Oct 2023 22:48	1
HS23100607-13	MW-47	09 Oct 2023 11:00			14 Oct 2023 23:17	10
HS23100607-13	MW-47	09 Oct 2023 11:00			14 Oct 2023 23:11	1
HS23100607-14	MW-48	09 Oct 2023 10:20			14 Oct 2023 23:28	10
HS23100607-14	MW-48	09 Oct 2023 10:20			14 Oct 2023 23:23	1
HS23100607-15	MW-50	09 Oct 2023 11:50			15 Oct 2023 00:09	10
HS23100607-16	MW-52	09 Oct 2023 12:30			15 Oct 2023 00:15	10
HS23100607-17	MW-54	09 Oct 2023 08:05			15 Oct 2023 00:26	10
HS23100607-17	MW-54	09 Oct 2023 08:05			15 Oct 2023 00:20	1
HS23100607-18	MW-55R	09 Oct 2023 08:55			15 Oct 2023 00:38	10
HS23100607-19	MW-58	09 Oct 2023 13:30			15 Oct 2023 00:44	10
HS23100607-20	MW-65	09 Oct 2023 09:35			15 Oct 2023 01:30	20
HS23100607-21	MW-36	09 Oct 2023 11:25			15 Oct 2023 01:36	20
HS23100607-22	MW-37	09 Oct 2023 09:00			15 Oct 2023 01:42	20
HS23100607-23	MW-38R	09 Oct 2023 10:40			15 Oct 2023 01:48	20
HS23100607-24	MW-60	09 Oct 2023 08:15			15 Oct 2023 01:53	10
HS23100607-25	MW-61	09 Oct 2023 09:50			15 Oct 2023 01:59	20
HS23100607-26	Field Blank	09 Oct 2023 10:05			15 Oct 2023 02:05	1
HS23100607-27	Field Duplicate 1	09 Oct 2023 12:00			15 Oct 2023 02:11	20
HS23100607-28	Field Duplicate 2	09 Oct 2023 10:00			15 Oct 2023 02:22	10
HS23100607-28	Field Duplicate 2	09 Oct 2023 10:00			15 Oct 2023 02:17	1

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R449202 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23100607-01	MW-39R	09 Oct 2023 08:10			13 Oct 2023 13:30	1
HS23100607-02	MW-40	09 Oct 2023 09:20			13 Oct 2023 13:30	1
HS23100607-03	MW-41	09 Oct 2023 11:15			13 Oct 2023 13:30	1
HS23100607-04	MW-62	09 Oct 2023 08:45			13 Oct 2023 13:30	1
HS23100607-05	MW-63	09 Oct 2023 10:35			13 Oct 2023 13:30	1
HS23100607-06	MW-64	09 Oct 2023 09:55			13 Oct 2023 13:30	1
HS23100607-07	MW-23R	09 Oct 2023 11:00			13 Oct 2023 13:30	1
HS23100607-08	MW-28D	09 Oct 2023 09:30			13 Oct 2023 13:30	1
HS23100607-09	MW-42	09 Oct 2023 10:15			13 Oct 2023 13:30	1
HS23100607-10	MW-43	09 Oct 2023 11:45			13 Oct 2023 13:30	1
HS23100607-11	MW-44	09 Oct 2023 12:00			13 Oct 2023 13:30	1
HS23100607-12	MW-46R	09 Oct 2023 12:45			13 Oct 2023 13:30	1
HS23100607-13	MW-47	09 Oct 2023 11:00			13 Oct 2023 13:30	1
HS23100607-14	MW-48	09 Oct 2023 10:20			13 Oct 2023 13:30	1
HS23100607-15	MW-50	09 Oct 2023 11:50			13 Oct 2023 13:30	1
HS23100607-16	MW-52	09 Oct 2023 12:30			13 Oct 2023 13:30	1
HS23100607-17	MW-54	09 Oct 2023 08:05			13 Oct 2023 13:30	1
Batch ID: R449336 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23100607-18	MW-55R	09 Oct 2023 08:55			16 Oct 2023 12:00	1
HS23100607-19	MW-58	09 Oct 2023 13:30			16 Oct 2023 12:00	1
HS23100607-20	MW-65	09 Oct 2023 09:35			16 Oct 2023 12:00	1
HS23100607-21	MW-36	09 Oct 2023 11:25			16 Oct 2023 12:00	1
HS23100607-22	MW-37	09 Oct 2023 09:00			16 Oct 2023 12:00	1
HS23100607-23	MW-38R	09 Oct 2023 10:40			16 Oct 2023 12:00	1
HS23100607-24	MW-60	09 Oct 2023 08:15			16 Oct 2023 12:00	1
HS23100607-25	MW-61	09 Oct 2023 09:50			16 Oct 2023 12:00	1
HS23100607-26	Field Blank	09 Oct 2023 10:05			16 Oct 2023 12:00	1
HS23100607-27	Field Duplicate 1	09 Oct 2023 12:00			16 Oct 2023 12:00	1
HS23100607-28	Field Duplicate 2	09 Oct 2023 10:00			16 Oct 2023 12:00	1

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R449647 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS23100607-01	MW-39R	09 Oct 2023 08:10			20 Oct 2023 07:51	1
HS23100607-02	MW-40	09 Oct 2023 09:20			20 Oct 2023 07:51	1
HS23100607-03	MW-41	09 Oct 2023 11:15			20 Oct 2023 07:51	1
HS23100607-04	MW-62	09 Oct 2023 08:45			20 Oct 2023 07:51	1
HS23100607-05	MW-63	09 Oct 2023 10:35			20 Oct 2023 07:51	1
HS23100607-06	MW-64	09 Oct 2023 09:55			20 Oct 2023 07:51	1
HS23100607-07	MW-23R	09 Oct 2023 11:00			20 Oct 2023 07:51	1
HS23100607-08	MW-28D	09 Oct 2023 09:30			20 Oct 2023 07:51	1
HS23100607-09	MW-42	09 Oct 2023 10:15			20 Oct 2023 07:51	1
HS23100607-10	MW-43	09 Oct 2023 11:45			20 Oct 2023 07:51	1
HS23100607-11	MW-44	09 Oct 2023 12:00			20 Oct 2023 07:51	1
HS23100607-12	MW-46R	09 Oct 2023 12:45			20 Oct 2023 07:51	1
HS23100607-13	MW-47	09 Oct 2023 11:00			20 Oct 2023 07:51	1
HS23100607-14	MW-48	09 Oct 2023 10:20			20 Oct 2023 07:51	1
HS23100607-15	MW-50	09 Oct 2023 11:50			20 Oct 2023 07:51	1
HS23100607-16	MW-52	09 Oct 2023 12:30			20 Oct 2023 07:51	1
HS23100607-17	MW-54	09 Oct 2023 08:05			20 Oct 2023 07:51	1
HS23100607-18	MW-55R	09 Oct 2023 08:55			20 Oct 2023 07:51	1
HS23100607-19	MW-58	09 Oct 2023 13:30			20 Oct 2023 07:51	1
HS23100607-20	MW-65	09 Oct 2023 09:35			20 Oct 2023 07:51	1
HS23100607-21	MW-36	09 Oct 2023 11:25			20 Oct 2023 07:51	1
HS23100607-22	MW-37	09 Oct 2023 09:00			20 Oct 2023 07:51	1
HS23100607-23	MW-38R	09 Oct 2023 10:40			20 Oct 2023 07:51	1
HS23100607-24	MW-60	09 Oct 2023 08:15			20 Oct 2023 07:51	1
HS23100607-25	MW-61	09 Oct 2023 09:50			20 Oct 2023 07:51	1
HS23100607-26	Field Blank	09 Oct 2023 10:05			20 Oct 2023 07:51	1
HS23100607-27	Field Duplicate 1	09 Oct 2023 12:00			20 Oct 2023 07:51	1
HS23100607-28	Field Duplicate 2	09 Oct 2023 10:00			20 Oct 2023 07:51	1

WorkOrder: HS23100607
InstrumentID: ICPMS07
Test Code: ICP_TW
Test Number: SW6020A
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Boron	7440-42-8	0.0125	0.0200	0.0110	0.0200
A	Calcium	7440-70-2	0.0500	0.0428	0.0340	0.500

WorkOrder:	HS23100607		**METHOD DETECTION / REPORTING LIMITS**
InstrumentID:	Subcontract		
Test Code:	Sub_Flouride		
Test Number:	NA	**Matrix:**	**Units:**
Test Name:	Subcontract Analysis - Flouride		

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Subcontract Analysis		0	0	0	0

WorkOrder:	HS23100607
InstrumentID:	ICS-Integrion
Test Code:	300_W
Test Number:	E300
Test Name:	Anions by E300.0, Rev 2.1, 1993

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Chloride	16887-00-6	0.500	0.348	0.200	0.500
A	Sulfate	14808-79-8	0.500	0.432	0.200	0.500

WorkOrder:	HS23100607
InstrumentID:	Balance1
Test Code:	TDS_W 2540C
Test Number:	M2540C
Test Name:	Total Dissolved Solids by SM2540C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Dissolved Solids (Residue, Filterable)	TDS	5.00	4.00	5.00	10.0

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: 201948 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-201948** Units: **mg/L** Analysis Date: **16-Oct-2023 20:14**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7612967** PrepDate: **13-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	< 0.0340	0.500								

LCS Sample ID: **LCS-201948** Units: **mg/L** Analysis Date: **16-Oct-2023 20:16**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7612968** PrepDate: **13-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4354	0.0200	0.5	0	87.1	80 - 120				
Calcium	4.853	0.500	5	0	97.1	80 - 120				

MS Sample ID: **HS23100470-01MS** Units: **mg/L** Analysis Date: **16-Oct-2023 20:22**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7612971** PrepDate: **13-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5768	0.0200	0.5	0.1345	88.5	80 - 120				
Calcium	172.7	0.500	5	165.5	144	80 - 120				SO

MSD Sample ID: **HS23100470-01MSD** Units: **mg/L** Analysis Date: **16-Oct-2023 20:25**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7612972** PrepDate: **13-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6136	0.0200	0.5	0.1345	95.8	80 - 120	0.5768	6.18	20	
Calcium	172.4	0.500	5	165.5	137	80 - 120	172.7	0.211	20	SO

PDS Sample ID: **HS23100470-01PDS** Units: **mg/L** Analysis Date: **16-Oct-2023 20:27**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7612973** PrepDate: **13-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6055	0.0200	0.5	0.1345	94.2	75 - 125				
Calcium	178.7	0.500	10	165.5	131	75 - 125				SO

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: 201948 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

SD Sample ID: **HS23100470-01SD** Units: **mg/L** Analysis Date: **16-Oct-2023 20:20**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7612970** PrepDate: **13-Oct-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	161.8	2.50					165.5	2.26	10	

The following samples were analyzed in this batch: HS23100607-01 HS23100607-02

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: 201951 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-201951** Units: **mg/L** Analysis Date: **16-Oct-2023 22:59**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613029** PrepDate: **13-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	0.06435	0.500								J

LCS Sample ID: **LCS-201951** Units: **mg/L** Analysis Date: **16-Oct-2023 23:02**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613030** PrepDate: **13-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4353	0.0200	0.5	0	87.1	80 - 120				
Calcium	5.074	0.500	5	0	101	80 - 120				

MS Sample ID: **HS23100607-05MS** Units: **mg/L** Analysis Date: **16-Oct-2023 23:08**
Client ID: **MW-63** Run ID: **ICPMS07_449157** SeqNo: **7613033** PrepDate: **13-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5228	0.400	0.1	0.4449	77.9	80 - 120				SO
Calcium	290.7	10.0	5	284.5	123	80 - 120				SO

MSD Sample ID: **HS23100607-05MSD** Units: **mg/L** Analysis Date: **16-Oct-2023 23:11**
Client ID: **MW-63** Run ID: **ICPMS07_449157** SeqNo: **7613034** PrepDate: **13-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4905	0.400	0.05	0.4449	91.2	80 - 120	0.5228	6.38	20	O
Calcium	287.3	10.0	5	284.5	54.6	80 - 120	290.7	1.18	20	SO

PDS Sample ID: **HS23100607-05PDS** Units: **mg/L** Analysis Date: **17-Oct-2023 17:10**
Client ID: **MW-63** Run ID: **ICPMS07_449322** SeqNo: **7615486** PrepDate: **13-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	10.17	0.400	10	0.4449	97.3	75 - 125				

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: 201951 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

PDS Sample ID: **HS23100607-05PDS** Units: **mg/L** Analysis Date: **16-Oct-2023 23:13**
Client ID: **MW-63** Run ID: **ICPMS07_449157** SeqNo: **7613035** PrepDate: **13-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	492.2	10.0	200	284.5	104	75 - 125				

SD Sample ID: **HS23100607-05SD** Units: **mg/L** Analysis Date: **16-Oct-2023 23:06**
Client ID: **MW-63** Run ID: **ICPMS07_449157** SeqNo: **7613032** PrepDate: **13-Oct-2023** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 1.10	2.00					0.4449	0	10	
Calcium	304.4	50.0					284.5	6.97	10	

The following samples were analyzed in this batch:

HS23100607-03	HS23100607-04	HS23100607-05	HS23100607-06
HS23100607-07	HS23100607-08	HS23100607-09	HS23100607-10
HS23100607-11	HS23100607-12	HS23100607-13	HS23100607-14
HS23100607-15	HS23100607-16	HS23100607-17	HS23100607-18
HS23100607-20	HS23100607-21	HS23100607-22	HS23100607-23

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: 201988 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-201988** Units: **mg/L** Analysis Date: **17-Oct-2023 00:30**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613086** PrepDate: **16-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	0.0628	0.500								J

LCS Sample ID: **LCS-201988** Units: **mg/L** Analysis Date: **17-Oct-2023 00:32**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613087** PrepDate: **16-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4275	0.0200	0.5	0	85.5	80 - 120				
Calcium	4.792	0.500	5	0	95.8	80 - 120				

MS Sample ID: **HS23100630-02MS** Units: **mg/L** Analysis Date: **17-Oct-2023 17:08**
Client ID: Run ID: **ICPMS07_449322** SeqNo: **7615475** PrepDate: **16-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5385	0.0200	0.5	0	108	80 - 120				

MS Sample ID: **HS23100607-19MS** Units: **mg/L** Analysis Date: **17-Oct-2023 00:39**
Client ID: **MW-58** Run ID: **ICPMS07_449157** SeqNo: **7613090** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.099	0.400	0.25	0.9349	65.6	80 - 120				S
Calcium	136	10.0	10	122.3	137	80 - 120				SO

MS Sample ID: **HS23100630-02MS** Units: **mg/L** Analysis Date: **17-Oct-2023 00:57**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613098** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	152.1	10.0	5	147.3	96.1	80 - 120				O

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: 201988 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

MSD Sample ID: **HS23100630-02MSD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:59**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613099** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4434	0.400	0.51	0	86.9	80 - 120	0.4053	8.97	20	
Calcium	152.1	10.0	5	147.3	96.1	80 - 120	152.1	0.00135	20	O

MSD Sample ID: **HS23100607-19MSD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:41**
Client ID: **MW-58** Run ID: **ICPMS07_449157** SeqNo: **7613091** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.103	0.400	2.5	0.9349	6.73	80 - 120	1.099	0.391	20	S
Calcium	135.5	10.0	10	122.3	132	80 - 120	136	0.367	20	SO

PDS Sample ID: **HS23100630-02PDS** Units: **mg/L** Analysis Date: **17-Oct-2023 01:01**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613069** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	9.681	0.400	10	0.06681	96.1	75 - 125				
Calcium	332.7	10.0	200	147.3	92.7	75 - 125				

PDS Sample ID: **HS23100607-19PDS** Units: **mg/L** Analysis Date: **17-Oct-2023 00:43**
Client ID: **MW-58** Run ID: **ICPMS07_449157** SeqNo: **7613092** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	10.04	0.400	10	0.9349	91.1	75 - 125				
Calcium	314.3	10.0	200	122.3	96.0	75 - 125				

SD Sample ID: **HS23100630-02SD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:54**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613097** PrepDate: **16-Oct-2023** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 1.10	2.00					0.06681	0	10	
Calcium	150	50.0					147.3	1.85	10	

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: 201988 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23100607-19SD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:36**

Client ID: **MW-58** Run ID: **ICPMS07_449157** SeqNo: **7613089** PrepDate: **16-Oct-2023** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 1.10	2.00					0.9349	0	10	
Calcium	124.4	50.0					122.3	1.7	10	

The following samples were analyzed in this batch:

HS23100607-19	HS23100607-24	HS23100607-25	HS23100607-26
HS23100607-27	HS23100607-28		

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: R449123 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **14-Oct-2023 11:12**
Client ID: Run ID: **ICS-Integrion_449123** SeqNo: **7609551** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **14-Oct-2023 11:23**
Client ID: Run ID: **ICS-Integrion_449123** SeqNo: **7609552** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.43	0.500	20	0	97.2	90 - 110				
Sulfate	18.36	0.500	20	0	91.8	90 - 110				

MS Sample ID: **HS23100912-11MS** Units: **mg/L** Analysis Date: **14-Oct-2023 13:55**
Client ID: Run ID: **ICS-Integrion_449123** SeqNo: **7609570** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	11.27	0.500	10	1.347	99.3	80 - 120				
Sulfate	11.67	0.500	10	2.294	93.8	80 - 120				

MS Sample ID: **HS23100912-01MS** Units: **mg/L** Analysis Date: **14-Oct-2023 12:28**
Client ID: Run ID: **ICS-Integrion_449123** SeqNo: **7609558** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	14.28	0.500	10	4.159	101	80 - 120				
Sulfate	57.99	0.500	10	47.02	110	80 - 120				O

MSD Sample ID: **HS23100912-11MSD** Units: **mg/L** Analysis Date: **14-Oct-2023 14:01**
Client ID: Run ID: **ICS-Integrion_449123** SeqNo: **7609571** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	11.28	0.500	10	1.347	99.3	80 - 120	11.27	0.0621	20	
Sulfate	11.74	0.500	10	2.294	94.5	80 - 120	11.67	0.588	20	

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: **R449123 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23100912-01MSD** Units: **mg/L** Analysis Date: **14-Oct-2023 12:34**
Client ID: Run ID: **ICS-Integrion_449123** SeqNo: **7609559** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	14.33	0.500	10	4.159	102	80 - 120	14.28	0.405	20	
Sulfate	58.18	0.500	10	47.02	112	80 - 120	57.99	0.334	20	O

The following samples were analyzed in this batch: HS23100607-08 HS23100607-09 HS23100607-10 HS23100607-11

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: R449124 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **14-Oct-2023 15:39**
Client ID: Run ID: **ICS-Integrion_449124** SeqNo: **7609587** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **14-Oct-2023 15:51**
Client ID: Run ID: **ICS-Integrion_449124** SeqNo: **7609588** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.24	0.500	20	0	96.2	90 - 110				
Sulfate	18.14	0.500	20	0	90.7	90 - 110				

MS Sample ID: **HS23100607-05MS** Units: **mg/L** Analysis Date: **14-Oct-2023 21:33**
Client ID: **MW-63** Run ID: **ICS-Integrion_449124** SeqNo: **7609634** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	447.6	10.0	200	256.9	95.4	80 - 120				
Sulfate	801.6	10.0	200	572.3	115	80 - 120				

MS Sample ID: **HS23091898-02MS** Units: **mg/L** Analysis Date: **14-Oct-2023 16:14**
Client ID: Run ID: **ICS-Integrion_449124** SeqNo: **7609592** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	11.14	0.500	10	1.316	98.2	80 - 120				
Sulfate	20.31	0.500	10	11.89	84.2	80 - 120				

MSD Sample ID: **HS23100607-05MSD** Units: **mg/L** Analysis Date: **14-Oct-2023 21:38**
Client ID: **MW-63** Run ID: **ICS-Integrion_449124** SeqNo: **7609635** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	447.5	10.0	200	256.9	95.3	80 - 120	447.6	0.0223	20	
Sulfate	803.9	10.0	200	572.3	116	80 - 120	801.6	0.281	20	

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: **R449124 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23091898-02MSD** Units: **mg/L** Analysis Date: **14-Oct-2023 16:20**
Client ID: Run ID: **ICS-Integrion_449124** SeqNo: **7609593** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	11.24	0.500	10	1.316	99.3	80 - 120	11.14	0.938	20	
Sulfate	20.6	0.500	10	11.89	87.1	80 - 120	20.31	1.41	20	

The following samples were analyzed in this batch:

HS23100607-01	HS23100607-02	HS23100607-03	HS23100607-04
HS23100607-05	HS23100607-06	HS23100607-07	

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: R449125 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **14-Oct-2023 22:31**
Client ID: Run ID: **ICS-Integrion_449125** SeqNo: **7609643** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **14-Oct-2023 22:36**
Client ID: Run ID: **ICS-Integrion_449125** SeqNo: **7609644** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.59	0.500	20	0	97.9	90 - 110				
Sulfate	18.24	0.500	20	0	91.2	90 - 110				

MS Sample ID: **HS23100607-19MS** Units: **mg/L** Analysis Date: **15-Oct-2023 00:50**
Client ID: **MW-58** Run ID: **ICS-Integrion_449125** SeqNo: **7609663** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	361.5	5.00	100	259.3	102	80 - 120				
Sulfate	384.9	5.00	100	271.9	113	80 - 120				

MS Sample ID: **HS23100607-12MS** Units: **mg/L** Analysis Date: **14-Oct-2023 22:54**
Client ID: **MW-46R** Run ID: **ICS-Integrion_449125** SeqNo: **7609646** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	169.9	0.500	10	166	38.5	80 - 120				SEO
Sulfate	109.3	0.500	10	99.24	101	80 - 120				EO

MSD Sample ID: **HS23100607-19MSD** Units: **mg/L** Analysis Date: **15-Oct-2023 00:55**
Client ID: **MW-58** Run ID: **ICS-Integrion_449125** SeqNo: **7609664** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	365.5	5.00	100	259.3	106	80 - 120	361.5	1.11	20	
Sulfate	387	5.00	100	271.9	115	80 - 120	384.9	0.534	20	

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: **R449125 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23100607-12MSD** Units: **mg/L** Analysis Date: **14-Oct-2023 23:00**

Client ID: **MW-46R** Run ID: **ICS-Integrion_449125** SeqNo: **7609647** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	170.1	0.500	10	166	41.0	80 - 120	169.9	0.149	20	SEO
Sulfate	109.5	0.500	10	99.24	103	80 - 120	109.3	0.176	20	EO

The following samples were analyzed in this batch:

HS23100607-12	HS23100607-13	HS23100607-14	HS23100607-15
HS23100607-16	HS23100607-17	HS23100607-18	HS23100607-19
HS23100607-20	HS23100607-21	HS23100607-22	HS23100607-23
HS23100607-24	HS23100607-25	HS23100607-26	HS23100607-27
HS23100607-28			

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: R449202 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-10132023** Units: **mg/L** Analysis Date: **13-Oct-2023 13:30**
Client ID: Run ID: **Balance1_449202** SeqNo: **7611368** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **WLCS-10132023** Units: **mg/L** Analysis Date: **13-Oct-2023 13:30**
Client ID: Run ID: **Balance1_449202** SeqNo: **7611367** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1002	10.0	1000	0	100	85 - 115				

DUP Sample ID: **HS23100607-11DUP** Units: **mg/L** Analysis Date: **13-Oct-2023 13:30**
Client ID: **MW-44** Run ID: **Balance1_449202** SeqNo: **7611360** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	810	10.0					808	0.247	20	

DUP Sample ID: **HS23100607-05DUP** Units: **mg/L** Analysis Date: **13-Oct-2023 13:30**
Client ID: **MW-63** Run ID: **Balance1_449202** SeqNo: **7611353** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1492	10.0					1488	0.268	20	

The following samples were analyzed in this batch:

HS23100607-01	HS23100607-02	HS23100607-03	HS23100607-04
HS23100607-05	HS23100607-06	HS23100607-07	HS23100607-08
HS23100607-09	HS23100607-10	HS23100607-11	HS23100607-12
HS23100607-13	HS23100607-14	HS23100607-15	HS23100607-16
HS23100607-17			

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QC BATCH REPORT

Batch ID: R449336 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-10016023** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: Run ID: **Balance1_449336** SeqNo: **7614384** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **WLCS-10162023** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: Run ID: **Balance1_449336** SeqNo: **7614383** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1074	10.0	1000	0	107	85 - 115				

DUP Sample ID: **HS23100630-02DUP** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: Run ID: **Balance1_449336** SeqNo: **7614376** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1378	10.0					1380	0.145	20	

DUP Sample ID: **HS23100607-19DUP** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: **MW-58** Run ID: **Balance1_449336** SeqNo: **7614363** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1152	10.0					1156	0.347	20	

The following samples were analyzed in this batch:

HS23100607-18	HS23100607-19	HS23100607-20	HS23100607-21
HS23100607-22	HS23100607-23	HS23100607-24	HS23100607-25
HS23100607-26	HS23100607-27	HS23100607-28	

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS23100607

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS23100607 **Date/Time Received:** **10-Oct-2023 08:10**
Client Name: TRC-HOU **Received by:** **Malcolm Burleson**

Completed By: */S/ Malcolm Burleson* (eSignature) 10-Oct-2023 15:03 (Date/Time) **Reviewed by:** */S/ Andy C. Neir* (eSignature) 10-Oct-2023 17:53 (Date/Time)

Matrices: **water** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	3 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:305028/305028/3050289
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.8uc2.7c 3.4uc3.3c2.5uc2.4c		ir31
Cooler(s)/Kit(s):	48820/50381/48817		
Date/Time sample(s) sent to storage:	10102023		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
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South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 305031

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206610	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number	528472.0000.0000	B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E F	HS23100607 TRC Corporation WA Parish - State Program
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-39R	10-9-23	810	Water	2,8	3	X	X	X	X							
2	MW-40		920	Water	2,8	3	X	X	X	X							
3	MW-41		1115	Water	2,8	3	X	X	X	X							
4	MW-62		845	Water	2,8	3	X	X	X	X							
5	MW-63		1035	Water	2,8	3	X	X	X	X							
6	MW-64		955	Water	2,8	3	X	X	X	X							
7	MW-23R		1100	Water	2,8	3	X	X	X	X							
8	MW-28D		930	Water	2,8	3	X	X	X	X							
9	MW-42		1015	Water	2,8	3	X	X	X	X							
10	MW-43		1145	Water	2,8	3	X	X	X	X							

Sampler(s) Please Print & Sign: Brian Hilliard HMI Team

Shipment Method: Consult. drop off

Required Turnaround Time: (Check Box) ☐ Other ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 10/9/23	Time: 1506	Received by: 10/09/2023 1506
Relinquished by:	Date:	Time:	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
B. Blue	3.4
48826	2.8uc
B. Blue	1.6uc
B. Blue	2.0uc

50381 3.4uc 8RM31
48817 2.5
CVF-01

QC Package: (Check One Box Below)
- ☒ Level II Std QC
- ☐ Level III Std QC/Raw Date
- ☐ Level IV SW846/CLP
- ☐ Other
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Chain of Custody Form

COC ID: 305030

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206610	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number	528472.0000.0000	B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	
				F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

HS23100607
TRC Corporation
WA Parish - State Program

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-44	10-9-23	1200	Water	2,8	3	X	X	X	X							
2	MW-46R		1245	Water	2,8	3	X	X	X	X							
3	MW-47		1100	Water	2,8	3	X	X	X	X							
4	MW-48		1020	Water	2,8	3	X	X	X	X							
5	MW-50		1150	Water	2,8	3	X	X	X	X							
6	MW-52		1230	Water	2,8	3	X	X	X	X							
7	MW-54		805	Water	2,8	3	X	X	X	X							
8	MW-55R		855	Water	2,8	3	X	X	X	X							
9	MW-58		1330	Water	2,8	3	X	X	X	X							
10	MW-65		935	Water	2,8	3	X	X	X	X							

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Brian Hillin + HMT Team	Consult. drop off	☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour	

Relinquished by:	Date: 10/9/23	Time: 1506	Received by:	Notes: NRG CCR PRIVILEGED & CONFIDENTIAL
Relinquished by:	Date:	Time:	Received by (Laboratory): 10/09/2023 1506	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
		☒ Level II Std QC ☐ TRRP Checklist
		☐ Level III Std QC/Raw Data ☐ TRRP Level IV
		☐ Level IV SW846/CLP
		☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
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Chain of Custody Form

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COC ID: 305029

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206610	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number	528472.0000.0000	B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	
				F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

HS23100607
TRC Corporation
WA Parish - State Program

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-36	10-9-23	1125	Water	2,8	3	X	X	X	X							
2	MW-37	↓	900	Water	2,8	3	X	X	X	X							
3	MW-38R		1040	Water	2,8	3	X	X	X	X							
4	MW-60		815	Water	2,8	3	X	X	X	X							
5	MW-61		950	Water	2,8	3	X	X	X	X							
6	MW-63 MS		1035	Water	2,8	3	X	X	X	X							
7	MW-63 MSD		1035	Water	2,8	3	X	X	X	X							
8	MW-38 MS		1330	Water	2,8	3	X	X	X	X							
9	MW-38 MSD		1330	Water	2,8	3	X	X	X	X							
10	Field Blank	↓	1005	Water	2,8	3	X	X	X	X							

Sampler(s) Please Print & Sign: Brian Hillin + AntTeam

Shipment Method: Consult drop off

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 10/9/23	Time: 1506	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): 10/09/2023 1506
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☒ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Date ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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Chain of Custody Form

Page 4 of 4

COC ID: 305028

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206610	Project Name	WA Parish CCR Program	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number	528472.0000.0000	B	300_W (Cl, SO4)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	
				F	HS23100607 TRC Corporation WA Parish - State Program
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Field Duplicate 1	10-9-23	1200	Water	2,8	3	X	X	X	X							
2	Field Duplicate 2	↓	1000	Water	2,8	3	X	X	X	X							
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Brian Hillin / HMI Team

Shipment Method: Consult. drop off

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other ____

Results Due Date:

Relinquished by:	Date: 10/9/23	Time: 1506	Received by:	Notes: NRG CCR PRIVILEGED & CONFIDENTIAL
Relinquished by:	Date:	Time:	Received by (Laboratory): 10/09/2023 1506	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
		☒ Level II Std QC ☐ TRRP Checklist ☐ Level III Std QC/Raw Date ☐ TRRP Level IV ☐ Level IV SW846/CLP ☐ Other

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS
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Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

48820

CUSTODY SEAL

Date: 10-9-23 Time: 1405
Name: B. Hillin
Company: HMI

Seal Broken By: SM
Date: 10/09/23

48820 OCT 09 2023

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

50381

CUSTODY SEAL

Date: 10-9-23 Time: 1405
Name: B. Hillin
Company: HMI

Seal Broken By: SM
Date: 10/09/23

50381 OCT 09 2023

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

48817

CUSTODY SEAL

Date: 10-9-23 Time: 1405
Name: B. Hillin
Company: HMI

Seal Broken By: SM
Date: 10/09/23

48817 OCT 09 2023

20-Oct-2023

Andrew Neir
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS23100607** Work Order: **23101043**

Dear Andrew,

ALS Environmental received 28 samples on 11-Oct-2023 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 42.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Chelsey Cook

Electronically approved by: Chelsey Cook

Chelsey Cook
Project Manager

Report of Laboratory Analysis

ALS Group, USA

Date: 20-Oct-23

Client: ALS Environmental
Project: HS23100607
Work Order: **23101043**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
23101043-01	MW-39R	Water	HS23100607-01	10/9/2023 08:10	10/11/2023 09:00	☐
23101043-02	MW-40	Water	HS23100607-02	10/9/2023 09:20	10/11/2023 09:00	☐
23101043-03	MW-41	Water	HS23100607-03	10/9/2023 11:15	10/11/2023 09:00	☐
23101043-04	MW-62	Water	HS23100607-04	10/9/2023 08:45	10/11/2023 09:00	☐
23101043-05	MW-63	Water	HS23100607-05	10/9/2023 10:35	10/11/2023 09:00	☐
23101043-06	MW-64	Water	HS23100607-06	10/9/2023 09:55	10/11/2023 09:00	☐
23101043-07	MW-23R	Water	HS23100607-07	10/9/2023 11:00	10/11/2023 09:00	☐
23101043-08	MW-28D	Water	HS23100607-08	10/9/2023 09:30	10/11/2023 09:00	☐
23101043-09	MW-42	Water	HS23100607-09	10/9/2023 10:15	10/11/2023 09:00	☐
23101043-10	MW-43	Water	HS23100607-10	10/9/2023 11:45	10/11/2023 09:00	☐
23101043-11	MW-44	Water	HS23100607-11	10/9/2023 12:00	10/11/2023 09:00	☐
23101043-12	MW-46R	Water	HS23100607-12	10/9/2023 12:45	10/11/2023 09:00	☐
23101043-13	MW-47	Water	HS23100607-13	10/9/2023 11:00	10/11/2023 09:00	☐
23101043-14	MW-48	Water	HS23100607-14	10/9/2023 10:20	10/11/2023 09:00	☐
23101043-15	MW-50	Water	HS23100607-15	10/9/2023 11:50	10/11/2023 09:00	☐
23101043-16	MW-52	Water	HS23100607-16	10/9/2023 12:30	10/11/2023 09:00	☐
23101043-17	MW-54	Water	HS23100607-17	10/9/2023 08:05	10/11/2023 09:00	☐
23101043-18	MW-55R	Water	HS23100607-18	10/9/2023 08:55	10/11/2023 09:00	☐
23101043-19	MW-58	Water	HS23100607-19	10/9/2023 13:30	10/11/2023 09:00	☐
23101043-20	MW-65	Water	HS23100607-20	10/9/2023 09:35	10/11/2023 09:00	☐
23101043-21	MW-36	Water	HS23100607-21	10/9/2023 11:25	10/11/2023 09:00	☐
23101043-22	MW-37	Water	HS23100607-22	10/9/2023 09:00	10/11/2023 09:00	☐
23101043-23	MW-38R	Water	HS23100607-23	10/9/2023 10:40	10/11/2023 09:00	☐
23101043-24	MW-60	Water	HS23100607-24	10/9/2023 08:15	10/11/2023 09:00	☐
23101043-25	MW-61	Water	HS23100607-25	10/9/2023 09:50	10/11/2023 09:00	☐
23101043-26	Field Blank	Water	HS23100607-26	10/9/2023 10:05	10/11/2023 09:00	☐
23101043-27	Field Duplicate 1	Water	HS23100607-27	10/9/2023 12:00	10/11/2023 09:00	☐
23101043-28	Field Duplicate 2	Water	HS23100607-28	10/9/2023 10:00	10/11/2023 09:00	☐

WET CHEMISTRY DATA ASSESSMENT CHECKLIST

Wet Chemistry	Batch Number: TITRATOR1_231019C, TITRATOR1_231016A, TITRATOR1_231013B	Instrument ID: TITRATOR1
Method: FL_4500C_W	Work order Number (s): 23101043	
Analyst Name: QN	Date: 10/19/2022	Reviewer Name: JB — Date: 10/20/23

	A[1]	Description	Yes	No	NA[2]	NR[3]	ER#[4]
R1	I	Chain-of-Custody					
		1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?			X		
		2) Were all departures from standard conditions described in an exception report?			X		
R2	I	**SAMPLE AND QUALITY CONTROL (QC) IDENTIFICATION**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?			X		
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?			X		
R3	I	**TEST REPORTS**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample quantitation limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			X		
		7) Was % moisture (or solids) reported for all soil and sediment samples?			X		
		8) If required for the project, TICs reported?			X		
R4	I	**SURROGATE RECOVERY DATA**					
		1) Were surrogates added prior to extraction?			X		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	I	**TEST REPORTS/SUMMMARY FORMS FOR BLANK SAMPLES**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < ½ MQL?	X				
R6	I	**LABORATORY CONTROL SAMPLES (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS and LCSD %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X				
		6) Was the LCSD RPD within QC limits?	X				
R7	I	**MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD) DATA**					
		1) Were the project or method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS and MSD %Rs within the laboratory QC limits?	X				
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	I	**ANALYTICAL DUPLICATE DATA (IF REQUIRED)**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	I	**METHOD QUANTITATION LIMITS (MQLS):**					
		1) Are the MQLs for each method analyte listed and included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs included in the laboratory data package?			X		
R10	I	**OTHER PROBLEMS/ANOMALIES**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		2) Were all necessary corrective actions performed for the reported data?	X				
		3) If requested, is the justification for elevated SQLs documented?			X		

S1	I	**INITIAL CALIBRATION (ICAL)**					
		1) Were response factors (RFs) and/or relative response factors (RRFs) for each analyte within the QC limits?			X		
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	I	**INITIAL AND CONTINUING CALIBRATION VERIFICATION (ICCV AND CCV) AND**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the organic CCB < MDL?	X				
S3	I	**MASS SPECTRAL TUNING:**					
		1) Was the appropriate compound for the method used for tuning?			X		
		2) Were ion abundance data within the method-required QC limits?			X		
S4	I	**INTERNAL STANDARDS (IS):**					
		Were IS area counts within the method-required QC limits?			X		
S5	I	**RAW DATA**					
		1) Were the raw data (e.g., chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	I	**DUAL COLUMN CONFIRMATION (IF REQUIRED)**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	I	**TENTATIVELY IDENTIFIED COMPOUNDS (TICS):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**INTERFERENCE CHECK SAMPLE (ICS) RESULTS:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**SERIAL DILUTIONS, POST DIGESTION SPIKES, AND METHOD OF STANDARD**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	I	**PROFICIENCY TEST REPORTS:**					
		Are proficiency testing or inter-laboratory comparison results on file?	X				
S11	I	**METHOD DETECTION LIMIT (MDL) STUDIES**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S12	I	**STANDARDS DOCUMENTATION**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	I	**COMPOUND/ANALYTE IDENTIFICATION PROCEDURES**					
		Are the procedures for compound/analyte identification documented?	X				
S14	I	**DEMONSTRATION OF ANALYST COMPETENCY (DOC)**					
		1) Was DOC conducted consistent with NELAC 5C or ISO/IEC 4.2.2?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	I	**VERIFICATION/VALIDATION DOCUMENTATION FOR METHODS**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable, (NELAC 5.10.2 or ISO/IEC 17025 Section 5.4.5)?	X				
S16	I	**LABORATORY STANDARD OPERATING PROCEDURES (SOPS):**					
		Are laboratory SOPs current and on file for each method performed?	X				

1 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
2 NA = Not applicable.
3 NR = Not Reviewed.
4 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

WET CHEMISTRY DATA ASSESSMENT CHECKLIST		
Wet Chemistry	Batch Number:	

ER #[1]	**DESCRIPTION**
1	
2	
3	
4	
5	
6	

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked on the LRC)

ALS Group, USA

Date: 20-Oct-23

Client: ALS Environmental
Project: HS23100607
WorkOrder: **23101043**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

Client: ALS Environmental
Project: HS23100607
Work Order: 23101043

Case Narrative

Samples for the above noted Work Order were received on 10/11/2023. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-39R
Collection Date: 10/9/2023 08:10 AM

Work Order: 23101043
Lab ID: 23101043-01
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.0900**	J	**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-40
Collection Date: 10/9/2023 09:20 AM

Work Order: 23101043
Lab ID: 23101043-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.100**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-41	**Lab ID:**	23101043-03
Collection Date:	10/9/2023 11:15 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.130**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-62	**Lab ID:**	23101043-04
Collection Date:	10/9/2023 08:45 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.170**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-63
Collection Date: 10/9/2023 10:35 AM

Work Order: 23101043
Lab ID: 23101043-05
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **QTN**
Fluoride	**0.100**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-64
Collection Date: 10/9/2023 09:55 AM

Work Order: 23101043
Lab ID: 23101043-06
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.170**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-23R
Collection Date: 10/9/2023 11:00 AM

Work Order: 23101043
Lab ID: 23101043-07
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.280**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-28D
Collection Date: 10/9/2023 09:30 AM

Work Order: 23101043
Lab ID: 23101043-08
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.280**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-42
Collection Date: 10/9/2023 10:15 AM

Work Order: 23101043
Lab ID: 23101043-09
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.540**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA **Date:** *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-43
Collection Date: 10/9/2023 11:45 AM

Work Order: 23101043
Lab ID: 23101043-10
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.530**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-44
Collection Date: 10/9/2023 12:00 PM

Work Order: 23101043
Lab ID: 23101043-11
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **QTN**
Fluoride	**0.410**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-46R	**Lab ID:**	23101043-12
Collection Date:	10/9/2023 12:45 PM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **QTN**
Fluoride	**0.320**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-47	**Lab ID:**	23101043-13
Collection Date:	10/9/2023 11:00 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **QTN**
Fluoride	**0.360**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-48
Collection Date: 10/9/2023 10:20 AM

Work Order: 23101043
Lab ID: 23101043-14
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.660**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-50
Collection Date: 10/9/2023 11:50 AM

Work Order: 23101043
Lab ID: 23101043-15
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.460**		**0.058**	**0.10**	**mg/L**	1	10/16/2023 15:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-52	**Lab ID:**	23101043-16
Collection Date:	10/9/2023 12:30 PM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.550**		**0.058**	**0.10**	**mg/L**	1	10/16/2023 15:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-54	**Lab ID:**	23101043-17
Collection Date:	10/9/2023 08:05 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.480**		**0.058**	**0.10**	**mg/L**	1	10/16/2023 15:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-55R	**Lab ID:**	23101043-18
Collection Date:	10/9/2023 08:55 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.730**		**0.058**	**0.10**	**mg/L**	1	10/16/2023 15:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-58	**Lab ID:**	23101043-19
Collection Date:	10/9/2023 01:30 PM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.440**		**0.058**	**0.10**	**mg/L**	1	10/16/2023 15:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-65	**Lab ID:**	23101043-20
Collection Date:	10/9/2023 09:35 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.350**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-36
Collection Date: 10/9/2023 11:25 AM

Work Order: 23101043
Lab ID: 23101043-21
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.280**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-37
Collection Date: 10/9/2023 09:00 AM
Work Order: 23101043
Lab ID: 23101043-22
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.400**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-38R
Collection Date: 10/9/2023 10:40 AM

Work Order: 23101043
Lab ID: 23101043-23
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.230**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	MW-60	**Lab ID:**	23101043-24
Collection Date:	10/9/2023 08:15 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.150**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: MW-61
Collection Date: 10/9/2023 09:50 AM

Work Order: 23101043
Lab ID: 23101043-25
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.280**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	Field Blank	**Lab ID:**	23101043-26
Collection Date:	10/9/2023 10:05 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **QTN**
Fluoride	U		0.058	0.10	mg/L	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client:	ALS Environmental		
Project:	HS23100607	**Work Order:**	23101043
Sample ID:	Field Duplicate 1	**Lab ID:**	23101043-27
Collection Date:	10/9/2023 12:00 PM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.230**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *20-Oct-23*

Client: ALS Environmental
Project: HS23100607
Sample ID: Field Duplicate 2
Collection Date: 10/9/2023 10:00 AM

Work Order: 23101043
Lab ID: 23101043-28
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.420**		**0.058**	**0.10**	**mg/L**	1	10/19/2023 18:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Client: ALS Environmental
Work Order: 23101043
Project: HS23100607

Date: 20-Oct-23

QC BATCH REPORT

Batch ID: **R385616** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK	Sample ID: **MB-R385616-R385616**				Units: **mg/L**		Analysis Date: **10/13/2023 03:28 PM**			
Client ID:		Run ID: **TITRATOR 1_231013B**			SeqNo: **10086013**		Prep Date:		DF: **1**	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	U	0.10								

LCS	Sample ID: **LCS-R385616-R385616**				Units: **mg/L**		Analysis Date: **10/13/2023 03:28 PM**			
Client ID:		Run ID: **TITRATOR 1_231013B**			SeqNo: **10086014**		Prep Date:		DF: **1**	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.1	0.10	5	0	102	90-111	0			

MS	Sample ID: **23101043-05AMS**				Units: **mg/L**		Analysis Date: **10/13/2023 03:28 PM**			
Client ID: **MW-63**		Run ID: **TITRATOR 1_231013B**			SeqNo: **10086026**		Prep Date:		DF: **1**	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.98	0.10	5	0.1	97.6	90-111	0			

MSD	Sample ID: **23101043-05AMSD**				Units: **mg/L**		Analysis Date: **10/13/2023 03:28 PM**			
Client ID: **MW-63**		Run ID: **TITRATOR 1_231013B**			SeqNo: **10086027**		Prep Date:		DF: **1**	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.1	0.10	5	0.1	100	90-111	4.98	2.38	20	

The following samples were analyzed in this batch:

23101043-01A	23101043-02A	23101043-03A
23101043-04A	23101043-05A	23101043-06A
23101043-07A	23101043-08A	23101043-09A
23101043-10A	23101043-11A	23101043-12A
23101043-13A	23101043-14A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 23101043
Project: HS23100607

QC BATCH REPORT

Batch ID: **R385747** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R385747-R385747** Units: **mg/L** Analysis Date: **10/16/2023 03:54 PM**
Client ID: Run ID: **TITRATOR 1_231016A** SeqNo: **10092076** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	U	0.10								

LCS Sample ID: **LCS-R385747-R385747** Units: **mg/L** Analysis Date: **10/16/2023 03:54 PM**
Client ID: Run ID: **TITRATOR 1_231016A** SeqNo: **10092077** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.17	0.10	5	0	103	90-111	0			

MS Sample ID: **23101043-19AMS** Units: **mg/L** Analysis Date: **10/16/2023 03:54 PM**
Client ID: **MW-58** Run ID: **TITRATOR 1_231016A** SeqNo: **10092083** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.61	0.10	5	0.44	103	90-111	0			

MSD Sample ID: **23101043-19AMSD** Units: **mg/L** Analysis Date: **10/16/2023 03:54 PM**
Client ID: **MW-58** Run ID: **TITRATOR 1_231016A** SeqNo: **10092084** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.72	0.10	5	0.44	106	90-111	5.61	1.94	20	

The following samples were analyzed in this batch:

23101043-15A	23101043-16A	23101043-17A
23101043-18A	23101043-19A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 23101043
Project: HS23100607

QC BATCH REPORT

Batch ID: **R386061** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R386061-R386061** Units: **mg/L** Analysis Date: **10/19/2023 06:39 PM**

Client ID: Run ID: **TITRATOR 1_231019C** SeqNo: **10108228** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	U	0.10								

LCS Sample ID: **LCS-R386061-R386061** Units: **mg/L** Analysis Date: **10/19/2023 06:39 PM**

Client ID: Run ID: **TITRATOR 1_231019C** SeqNo: **10108229** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.02	0.10	5	0	100	90-111	0			

MS Sample ID: **23101043-20A MS** Units: **mg/L** Analysis Date: **10/19/2023 06:39 PM**

Client ID: **MW-65** Run ID: **TITRATOR 1_231019C** SeqNo: **10108237** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.31	0.10	5	0.35	99.2	90-111	0			

MSD Sample ID: **23101043-20A MSD** Units: **mg/L** Analysis Date: **10/19/2023 06:39 PM**

Client ID: **MW-65** Run ID: **TITRATOR 1_231019C** SeqNo: **10108238** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.34	0.10	5	0.35	99.8	90-111	5.31	0.563	20	

The following samples were analyzed in this batch:

23101043-20A	23101043-21A	23101043-22A
23101043-23A	23101043-24A	23101043-25A
23101043-26A	23101043-27A	23101043-28A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

23101043
ALS - HOUSTON: ALS Environmental
Project: HS23100607

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **23476**

SUBCONTRACT TO:

ALS Laboratory Group
3352 128th Ave.
Holland, MI 494249263

Phone: +1 616 399 6070

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: Andy C. Neir
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: Andrew.Neir@ALSGlobal.com
Alternate Contact: Jumoke M. Lawal
Email: jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS23100607
TSR: Ron Martino

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS23100607-01**	**MW-39R**	**Water**	**09 Oct 2023 08:10**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
2.	**HS23100607-02**	**MW-40**	**Water**	**09 Oct 2023 09:20**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
3.	**HS23100607-03**	**MW-41**	**Water**	**09 Oct 2023 11:15**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
4.	**HS23100607-04**	**MW-62**	**Water**	**09 Oct 2023 08:45**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
5.	**HS23100607-05**	**MW-63**	**Water**	**09 Oct 2023 10:35**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
6.	**HS23100607-06**	**MW-64**	**Water**	**09 Oct 2023 09:55**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
7.	**HS23100607-07**	**MW-23R**	**Water**	**09 Oct 2023 11:00**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
8.	**HS23100607-08**	**MW-28D**	**Water**	**09 Oct 2023 09:30**
	Fluoride by ISE 4500. Equis EDD			17 Oct 2023
9.	**HS23100607-09**	**MW-42**	**Water**	**09 Oct 2023 10:15**

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: 23476

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
10.	**HS23100607-10**	**MW-43**	**Water**	**09 Oct 2023 11:45**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
11.	**HS23100607-11**	**MW-44**	**Water**	**09 Oct 2023 12:00**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
12.	**HS23100607-12**	**MW-46R**	**Water**	**09 Oct 2023 12:45**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
13.	**HS23100607-13**	**MW-47**	**Water**	**09 Oct 2023 11:00**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
14.	**HS23100607-14**	**MW-48**	**Water**	**09 Oct 2023 10:20**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
15.	**HS23100607-15**	**MW-50**	**Water**	**09 Oct 2023 11:50**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
16.	**HS23100607-16**	**MW-52**	**Water**	**09 Oct 2023 12:30**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
17.	**HS23100607-17**	**MW-54**	**Water**	**09 Oct 2023 08:05**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
18.	**HS23100607-18**	**MW-55R**	**Water**	**09 Oct 2023 08:55**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
19.	**HS23100607-19**	**MW-58**	**Water**	**09 Oct 2023 13:30**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
20.	**HS23100607-20**	**MW-65**	**Water**	**09 Oct 2023 09:35**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
21.	**HS23100607-21**	**MW-36**	**Water**	**09 Oct 2023 11:25**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
22.	**HS23100607-22**	**MW-37**	**Water**	**09 Oct 2023 09:00**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
23.	**HS23100607-23**	**MW-38R**	**Water**	**09 Oct 2023 10:40**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023
24.	**HS23100607-24**	**MW-60**	**Water**	**09 Oct 2023 08:15**
	Fluoride by ISE 4500, Equis EDD			17 Oct 2023

ALS

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 23476**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
25. HS23100607-25	**MW-61**	**Water**	**09 Oct 2023 09:50**
Fluoride by ISE 4500. Equis EDD			17 Oct 2023
26. HS23100607-26	**Field Blank**	**Water**	**09 Oct 2023 10:05**
Fluoride by ISE 4500. Equis EDD			17 Oct 2023
27. HS23100607-27	**Field Duplicate 1**	**Water**	**09 Oct 2023 12:00**
Fluoride by ISE 4500. Equis EDD			17 Oct 2023
28. HS23100607-28	**Field Duplicate 2**	**Water**	**09 Oct 2023 10:00**
Fluoride by ISE 4500. Equis EDD			17 Oct 2023

Comments: MW-63 (HS23100607-05) & MW-58 (HS23100607-19) MS/MSD

Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: TRRP LRC (TRRP checklist only+Level II (normal))

Relinquished By: [signature] Date/Time: 10-10-23 1300

Received By: [signature] Date/Time: 10-11-23 0900

Cooler ID(s): Temperature(s): 5.1 C [illegible]

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **ALS - HOUSTON**

Date/Time Received: **11-Oct-23 09:00**

Work Order: **23101043**

Received by: **JD**

Checklist completed by	Jason Delinger	11-Oct-23	Reviewed by:	Chelsey Cook	12-Oct-23
	eSignature	Date		eSignature	Date

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.1/3.1 C	DF2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/11/2023 2:53:39 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

November 08, 2023

Lori Burris
TRC
14701 St. Mary's Lane
Suite 500
Houston, TX 77079

Work Order: **HS23110117**

Laboratory Results for: **NRG Parish CCR 4Q23**

Dear Lori Burris,

ALS Environmental received 11 sample(s) on Nov 01, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL

Andy C. Neir

Client:	TRC	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Parish CCR 4Q23	
WorkOrder:	**HS23110117**	

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:
a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:
a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client:	TRC	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Parish CCR 4Q23	
WorkOrder:	**HS23110117**	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _______________ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Andy C. Neir

Laboratory Review Checklist: Reportable Data

Laboratory Name: ALS Laboratory Group	LRC Date: 11/08/2023
Project Name: NRG Parish CCR 4Q23	Laboratory Job Number: HS23110117
Reviewer Name: Andy Neir	Prep Batch Number(s): 203050,R451063,R451064,R451190

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				2
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);NA = Not Applicable; NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 11/08/2023				
Project Name: NRG Parish CCR 4Q23			Laboratory Job Number: HS23110117				
Reviewer Name: Andy Neir			Prep Batch Number(s): 203050,R451063,R451064,R451190				
#[1]	**A[2]**	**Description**	**Yes**	**No**	**NA[3]**	**NR[4]**	**ER#[5]**
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable; NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 11/08/2023
Project Name: NRG Parish CCR 4Q23	Laboratory Job Number: HS23110117
Reviewer Name: Andy Neir	Prep Batch Number(s): 203050,R451063,R451064,R451190

ER#[5]	**Description**
1	Batch 203050, Metals Method SW6020, sample HS23110037-02, MS and MSD were performed on unrelated sample. Batch R451190, Anions Method E300, sample HS23101881-05, MS and MSD were performed on unrelated sample. Batch R451190, Anions Method E300, sample HS23101881-03, MS and MSD were performed on unrelated sample.
2	The analysis for Fluoride was subcontracted to ALS Environmental in Holland, MI. Report and Laboratory Review Checklist are attached to the final report.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Client: TRC
Project: NRG Parish CCR 4Q23
Work Order: HS23110117

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23110117-01	MW-62	Water		01-Nov-2023 08:25	01-Nov-2023 14:14	☐
HS23110117-02	MW-63	Water		01-Nov-2023 08:55	01-Nov-2023 14:14	☐
HS23110117-03	MW-64	Water		01-Nov-2023 09:30	01-Nov-2023 14:14	☐
HS23110117-04	MW-36	Water		01-Nov-2023 11:50	01-Nov-2023 14:14	☐
HS23110117-05	DUP	Water		01-Nov-2023 11:00	01-Nov-2023 14:14	☐
HS23110117-06	MW-37	Water		01-Nov-2023 10:40	01-Nov-2023 14:14	☐
HS23110117-07	MW-38R	Water		01-Nov-2023 10:05	01-Nov-2023 14:14	☐
HS23110117-08	MW-61	Water		01-Nov-2023 11:15	01-Nov-2023 14:14	☐
HS23110117-09	MW-23R	Water		01-Nov-2023 12:15	01-Nov-2023 14:14	☐
HS23110117-10	MW-48	Water		01-Nov-2023 11:45	01-Nov-2023 14:14	☐
HS23110117-11	MW-58	Water		01-Nov-2023 12:55	01-Nov-2023 14:14	☐

Client:	TRC	ANALYTICAL REPORT
Project:	NRG Parish CCR 4Q23	WorkOrder:HS23110117
Sample ID:	MW-62	Lab ID:HS23110117-01
Collection Date:	01-Nov-2023 08:25	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,270**		**5.00**	**10.0**	**mg/L**	1	06-Nov-2023 12:30

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23		WorkOrder:HS23110117
Sample ID:	MW-63		Lab ID:HS23110117-02
Collection Date:	01-Nov-2023 08:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Boron	**0.110**		**0.0110**	**0.0200**	**mg/L**	1	07-Nov-2023 00:14
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**661**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC	ANALYTICAL REPORT
Project:	NRG Parish CCR 4Q23	WorkOrder:HS23110117
Sample ID:	MW-64	Lab ID:HS23110117-03
Collection Date:	01-Nov-2023 09:30	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,620**		**5.00**	**10.0**	**mg/L**	1	06-Nov-2023 12:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23		WorkOrder:HS23110117
Sample ID:	MW-36		Lab ID:HS23110117-04
Collection Date:	01-Nov-2023 11:50		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Boron	**0.0672**		**0.0110**	**0.0200**	**mg/L**	1	07-Nov-2023 00:16
Calcium	**218**		**0.680**	**10.0**	**mg/L**	20	08-Nov-2023 12:15
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**300**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:40
Sulfate	**468**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:40
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,200**		**5.00**	**10.0**	**mg/L**	1	06-Nov-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	07-Nov-2023 09:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23		WorkOrder:HS23110117
Sample ID:	DUP		Lab ID:HS23110117-05
Collection Date:	01-Nov-2023 11:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Boron	**0.0682**		**0.0110**	**0.0200**	**mg/L**	1	07-Nov-2023 00:18
Calcium	**232**		**0.680**	**10.0**	**mg/L**	20	08-Nov-2023 12:17
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**306**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:46
Sulfate	**476**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:46
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**964**		**5.00**	**10.0**	**mg/L**	1	06-Nov-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	07-Nov-2023 09:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23		WorkOrder:HS23110117
Sample ID:	MW-37		Lab ID:HS23110117-06
Collection Date:	01-Nov-2023 10:40		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Boron	**0.401**		**0.0110**	**0.0200**	**mg/L**	1	07-Nov-2023 00:20
Calcium	**252**		**0.680**	**10.0**	**mg/L**	20	08-Nov-2023 12:19
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**273**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:52
Sulfate	**1,130**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:52
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,720**		**5.00**	**10.0**	**mg/L**	1	06-Nov-2023 12:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	07-Nov-2023 09:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23	WorkOrder:	HS23110117
Sample ID:	MW-38R	Lab ID:	HS23110117-07
Collection Date:	01-Nov-2023 10:05	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Boron	**0.406**		**0.0110**	**0.0200**	**mg/L**	1	07-Nov-2023 00:22
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**738**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 16:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23		WorkOrder:HS23110117
Sample ID:	MW-61		Lab ID:HS23110117-08
Collection Date:	01-Nov-2023 11:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Boron	**1.01**		**0.220**	**0.400**	**mg/L**	20	08-Nov-2023 16:54
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**1,190**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 17:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23		WorkOrder:HS23110117
Sample ID:	MW-23R		Lab ID:HS23110117-09
Collection Date:	01-Nov-2023 12:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Calcium	**322**		**3.40**	**50.0**	**mg/L**	100	08-Nov-2023 12:22
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**1,540**		**4.00**	**10.0**	**mg/L**	20	07-Nov-2023 17:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC	ANALYTICAL REPORT
Project:	NRG Parish CCR 4Q23	WorkOrder:HS23110117
Sample ID:	MW-48	Lab ID:HS23110117-10
Collection Date:	01-Nov-2023 11:45	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,140**		**5.00**	**10.0**	**mg/L**	1	06-Nov-2023 12:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client:	TRC		**ANALYTICAL REPORT**
Project:	NRG Parish CCR 4Q23		WorkOrder:HS23110117
Sample ID:	MW-58		Lab ID:HS23110117-11
Collection Date:	01-Nov-2023 12:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 06-Nov-2023		Analyst: MSC
Boron	**0.421**		**0.0110**	**0.0200**	**mg/L**	1	07-Nov-2023 00:28

Weight / Prep Log

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: HS23110117

Batch ID: 203050 **Start Date:** 06 Nov 2023 09:00 **End Date:** 06 Nov 2023 09:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23110117-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23110117-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23110117-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23110117-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23110117-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23110117-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23110117-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23110117-11		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: HS23110117

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 203050 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23110117-02	MW-63	01 Nov 2023 08:55		06 Nov 2023 09:00	07 Nov 2023 00:14	1
HS23110117-04	MW-36	01 Nov 2023 11:50		06 Nov 2023 09:00	08 Nov 2023 12:15	20
HS23110117-04	MW-36	01 Nov 2023 11:50		06 Nov 2023 09:00	07 Nov 2023 00:16	1
HS23110117-05	DUP	01 Nov 2023 11:00		06 Nov 2023 09:00	08 Nov 2023 12:17	20
HS23110117-05	DUP	01 Nov 2023 11:00		06 Nov 2023 09:00	07 Nov 2023 00:18	1
HS23110117-06	MW-37	01 Nov 2023 10:40		06 Nov 2023 09:00	08 Nov 2023 12:19	20
HS23110117-06	MW-37	01 Nov 2023 10:40		06 Nov 2023 09:00	07 Nov 2023 00:20	1
HS23110117-07	MW-38R	01 Nov 2023 10:05		06 Nov 2023 09:00	07 Nov 2023 00:22	1
HS23110117-08	MW-61	01 Nov 2023 11:15		06 Nov 2023 09:00	08 Nov 2023 16:54	20
HS23110117-09	MW-23R	01 Nov 2023 12:15		06 Nov 2023 09:00	08 Nov 2023 12:22	100
HS23110117-11	MW-58	01 Nov 2023 12:55		06 Nov 2023 09:00	07 Nov 2023 00:28	1
Batch ID: R451063 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23110117-01	MW-62	01 Nov 2023 08:25			06 Nov 2023 12:30	1
HS23110117-03	MW-64	01 Nov 2023 09:30			06 Nov 2023 12:30	1
HS23110117-04	MW-36	01 Nov 2023 11:50			06 Nov 2023 12:30	1
HS23110117-05	DUP	01 Nov 2023 11:00			06 Nov 2023 12:30	1
HS23110117-06	MW-37	01 Nov 2023 10:40			06 Nov 2023 12:30	1
HS23110117-10	MW-48	01 Nov 2023 11:45			06 Nov 2023 12:30	1
Batch ID: R451064 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS23110117-04	MW-36	01 Nov 2023 11:50			07 Nov 2023 09:46	1
HS23110117-05	DUP	01 Nov 2023 11:00			07 Nov 2023 09:46	1
HS23110117-06	MW-37	01 Nov 2023 10:40			07 Nov 2023 09:46	1
Batch ID: R451190 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23110117-02	MW-63	01 Nov 2023 08:55			07 Nov 2023 16:34	20
HS23110117-04	MW-36	01 Nov 2023 11:50			07 Nov 2023 16:40	20
HS23110117-05	DUP	01 Nov 2023 11:00			07 Nov 2023 16:46	20
HS23110117-06	MW-37	01 Nov 2023 10:40			07 Nov 2023 16:52	20
HS23110117-07	MW-38R	01 Nov 2023 10:05			07 Nov 2023 16:58	20
HS23110117-08	MW-61	01 Nov 2023 11:15			07 Nov 2023 17:04	20
HS23110117-09	MW-23R	01 Nov 2023 12:15			07 Nov 2023 17:38	20

WorkOrder: HS23110117
InstrumentID: ICPMS06
Test Code: ICP_TW
Test Number: SW6020A
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Boron	7440-42-8	0.0125	0.00438	0.0110	0.0200
A	Calcium	7440-70-2	0.0500	189	0.0340	0.500

WorkOrder: HS23110117
InstrumentID: Subcontract
Test Code: Sub_Flouride
Test Number: NA
Test Name: Subcontract Analysis - Flouride

METHOD DETECTION / REPORTING LIMITS

Matrix: **Units:**

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Subcontract Analysis		0	0	0	0

WorkOrder: HS23110117
InstrumentID: ICS-Integrion
Test Code: 300_W
Test Number: E300
Test Name: Anions by E300.0, Rev 2.1, 1993

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Chloride	16887-00-6	0.500	0.348	0.200	0.500
A	Sulfate	14808-79-8	0.500	0.432	0.200	0.500

WorkOrder: HS23110117
InstrumentID: Balance1
Test Code: TDS_W 2540C
Test Number: M2540C
Test Name: Total Dissolved Solids by SM2540C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Dissolved Solids (Residue, Filterable)	TDS	5.00	4.00	5.00	10.0

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: HS23110117

QC BATCH REPORT

Batch ID: 203050 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-203050** Units: **mg/L** Analysis Date: **06-Nov-2023 23:34**
Client ID: Run ID: **ICPMS06_450949** SeqNo: **7659324** PrepDate: **06-Nov-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	< 0.0340	0.500								

LCS Sample ID: **LCS-203050** Units: **mg/L** Analysis Date: **06-Nov-2023 23:36**
Client ID: Run ID: **ICPMS06_450949** SeqNo: **7659325** PrepDate: **06-Nov-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4765	0.0200	0.5	0	95.3	80 - 120				
Calcium	4.958	0.500	5	0	99.2	80 - 120				

MS Sample ID: **HS23110037-02MS** Units: **mg/L** Analysis Date: **06-Nov-2023 23:42**
Client ID: Run ID: **ICPMS06_450949** SeqNo: **7659328** PrepDate: **06-Nov-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.979	0.0200	0.5	1.468	102	80 - 120				E
Calcium	340.8	0.500	5	322.7	361	80 - 120				SEO

MSD Sample ID: **HS23110037-02MSD** Units: **mg/L** Analysis Date: **06-Nov-2023 23:44**
Client ID: Run ID: **ICPMS06_450949** SeqNo: **7659329** PrepDate: **06-Nov-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.944	0.0200	0.5	1.468	95.3	80 - 120	1.979	1.76	20	E
Calcium	333.9	0.500	5	322.7	223	80 - 120	340.8	2.03	20	SEO

PDS Sample ID: **HS23110037-02PDS** Units: **mg/L** Analysis Date: **08-Nov-2023 12:10**
Client ID: Run ID: **ICPMS06_451242** SeqNo: **7661577** PrepDate: **06-Nov-2023** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	56.4	2.00	50	1.52	110	75 - 125				
Calcium	1291	50.0	1000	313.7	97.7	75 - 125				

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: HS23110117

QC BATCH REPORT

Batch ID: **203050 (0)** **Instrument:** **ICPMS06** **Method:** **ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23110037-02SD** Units: **mg/L** Analysis Date: **08-Nov-2023 12:08**

Client ID: Run ID: **ICPMS06_451242** SeqNo: **7661576** PrepDate: **06-Nov-2023** DF: **500**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 5.50	10.0					1.52	0	10	
Calcium	316.9	250					313.7	1.04	10	

The following samples were analyzed in this batch:

HS23110117-02	HS23110117-04	HS23110117-05	HS23110117-06
HS23110117-07	HS23110117-08	HS23110117-09	HS23110117-11

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: HS23110117

QC BATCH REPORT

Batch ID: R451063 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-11062023** Units: **mg/L** Analysis Date: **06-Nov-2023 12:30**
Client ID: Run ID: **Balance1_451063** SeqNo: **7655822** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **WLCS-11062023** Units: **mg/L** Analysis Date: **06-Nov-2023 12:30**
Client ID: Run ID: **Balance1_451063** SeqNo: **7655821** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1030	10.0	1000	0	103	85 - 115				

DUP Sample ID: **HS23110152-01DUP** Units: **mg/L** Analysis Date: **06-Nov-2023 12:30**
Client ID: Run ID: **Balance1_451063** SeqNo: **7655818** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1205	10.0					1204	0.0664	20	

DUP Sample ID: **HS23110117-10DUP** Units: **mg/L** Analysis Date: **06-Nov-2023 12:30**
Client ID: **MW-48** Run ID: **Balance1_451063** SeqNo: **7655808** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1144	10.0					1140	0.35	20	

The following samples were analyzed in this batch:

HS23110117-01	HS23110117-03	HS23110117-04	HS23110117-05
HS23110117-06	HS23110117-10		

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: HS23110117

QC BATCH REPORT

Batch ID: R451190 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **07-Nov-2023 13:35**
Client ID: Run ID: **ICS-Integrion_451190** SeqNo: **7658087** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **07-Nov-2023 13:41**
Client ID: Run ID: **ICS-Integrion_451190** SeqNo: **7658088** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.75	0.500	20	0	104	90 - 110				
Sulfate	20.97	0.500	20	0	105	90 - 110				

MS Sample ID: **HS23101881-05MS** Units: **mg/L** Analysis Date: **07-Nov-2023 15:25**
Client ID: Run ID: **ICS-Integrion_451190** SeqNo: **7658102** PrepDate: DF: **2**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	44.38	1.00	20	22.52	109	80 - 120				
Sulfate	2284	1.00	20	2243	204	80 - 120				SEO

MS Sample ID: **HS23101881-03MS** Units: **mg/L** Analysis Date: **07-Nov-2023 14:50**
Client ID: Run ID: **ICS-Integrion_451190** SeqNo: **7658096** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	17.3	0.500	10	5.95	114	80 - 120				
Sulfate	1857	0.500	10	1909	-518	80 - 120				SEO

MSD Sample ID: **HS23101881-05MSD** Units: **mg/L** Analysis Date: **07-Nov-2023 15:31**
Client ID: Run ID: **ICS-Integrion_451190** SeqNo: **7658103** PrepDate: DF: **2**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	44.26	1.00	20	22.52	109	80 - 120	44.38	0.284	20	
Sulfate	2282	1.00	20	2243	195	80 - 120	2284	0.0777	20	SEO

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: HS23110117

QC BATCH REPORT

Batch ID: **R451190 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23101881-03MSD** Units: **mg/L** Analysis Date: **07-Nov-2023 14:56**
Client ID: Run ID: **ICS-Integrion_451190** SeqNo: **7658097** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	17.08	0.500	10	5.95	111	80 - 120	17.3	1.31	20	
Sulfate	1856	0.500	10	1909	-527	80 - 120	1857	0.0483	20	SEO

The following samples were analyzed in this batch:

HS23110117-02	HS23110117-04	HS23110117-05	HS23110117-06
HS23110117-07	HS23110117-08	HS23110117-09	

Client: TRC
Project: NRG Parish CCR 4Q23
WorkOrder: **HS23110117**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID:	HS23110117	**Date/Time Received:**	**01-Nov-2023 14:14**
Client Name:	TRC-HOU	**Received by:**	**Corey Grandits**

Completed By:	*/S/ Belinda Gomez*	02-Nov-2023 14:13	**Reviewed by:** */S/ Andy C. Neir*	03-Nov-2023 09:04
	eSignature	Date/Time	eSignature	Date/Time

Matrices: **w** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:309044,309043
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.5uc/1.4c		ir31
Cooler(s)/Kit(s):	blue		
Date/Time sample(s) sent to storage:	11/2/23 1414		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

ALS

Cincinnati, OH +1 513 733 5336
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Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 2

COC ID: 309044

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206610	Project Name	NRG Parish CCR 4Q23	A	ICP_TW (B and Ca)- Appendix III
Work Order		Project Number		B	ICP_TW (B)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	ICP_TW (Ca)- Appendix III
Send Report To	Lori Burris	Invoice Attn	A/P	D	300_W (Cl, SO4)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	300_W (SO4)- Appendix III
				F	TDS_W 2540C (TDS)- Appendix III
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H
1	MW-62	11-1-23	825	Water	8	1						X		
2	MW-63		855	Water	2,8	2		X			X			
3	MW-64		930	Water	8	1						X		
4	MW-36		1150	Water	2,8	3	X			X		X	X	
5	DUP		1100	Water	2,8	3	X			X		X	X	
6	MW-37		1040	Water	2,8	3	X			X		X	X	
7	MW-38R		1005	Water	2,8	2		X			X			
8	MW-61		1115	Water	2,8	2		X			X			
9	MW-23R		1215	Water	2,8	2			X		X			
10	MW-48		1145	Water	2,8	1		X						

HS23110117
TRC
NRG Parish CCR 4Q23

Sampler(s) Please Print & Sign: Brian Hillin + HMI Team

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ Other ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date: 11-1-23	Time: 1414	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): CG 11-1-23 1414
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG CCR PRIVILEGED & CONFIDE...

Cooler ID	Cooler Temp.
	u/c
B1062	1.5
Bme	

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

IR#3 CF-0.1

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 2 of 2

COC ID: 309043

Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206610	Project Name	NRG Parish CCR 4Q23	A	ICP_TW(B and Ca)- Appendix III
Work Order		Project Number		B	ICP_TW(B)- Appendix III
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	ICP_TW(Ca)- Appendix III
Send Report To	Lori Burris	Invoice Attn	A/P	D	300_W(Cl, SO4)- Appendix III
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	300_W(SO4)- Appendix III
				F	TDS_W 2540C (TDS)- Appendix III
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	~~MW-58~~ MW-58	11-1-23	1255	Water	2,8	1		X									
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Brian Hillin/AmITeam [signature]

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other ____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
[signature]	11-1-23	1414	
Relinquished by:	Date:	Time:	Received by (Laboratory): rh 11-1-23 1414
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
	u/c
ALWE	1.5
IR71	

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other ____
☐ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

CVF-0-1

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Privileged and Confidential

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

48662

CUSTODY SEAL

Date: 11-1-23 Time: 1400
Name: Brian Hillin
Company: HMT

Seal Broken By: [signature]
Date: 11/01/23

48662 NOV 0 1 2023

07-Nov-2023

Andrew Neir
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS23110117** Work Order: **23110317**

Dear Andrew,

ALS Environmental received 3 samples on 03-Nov-2023 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 13.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Chelsey Cook

Electronically approved by: Chelsey Cook

Chelsey Cook
Project Manager

Report of Laboratory Analysis

Certificate No: TX: T104704494-23-14

ALS Group, USA

Date: 07-Nov-23

Client: ALS Environmental
Project: HS23110117
Work Order: **23110317**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
23110317-01	MW-36	Water	HS23110117-04	11/1/2023 11:50	11/3/2023 09:00	☐
23110317-02	DUP	Water	HS23110117-05	11/1/2023 11:00	11/3/2023 09:00	☐
23110317-03	MW-37	Water	HS23110117-06	11/1/2023 10:40	11/3/2023 09:00	☐

WET CHEMISTRY DATA ASSESSMENT CHECKLIST			
Wet Chemistry	Batch Number: TITRATOR1_231106A	Instrument ID: TITRATOR1	
Method: FL_4500C_W	Work order Number (s): 23110317		
Analyst Name: QN	Date: 11/6/2022	Reviewer Name: JB	Date: 11/7/23

	A[1]	Description	Yes	No	NA[2]	NR[3]	ER#[4]
R1	I	Chain-of-Custody					
		1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?			X		
		2) Were all departures from standard conditions described in an exception report?			X		
R2	I	**SAMPLE AND QUALITY CONTROL (QC) IDENTIFICATION**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?			X		
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?			X		
R3	I	**TEST REPORTS**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample quantitation limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			X		
		7) Was % moisture (or solids) reported for all soil and sediment samples?			X		
		8) If required for the project, TICs reported?			X		
R4	I	**SURROGATE RECOVERY DATA**					
		1) Were surrogates added prior to extraction?			X		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	I	**TEST REPORTS/SUMMMARY FORMS FOR BLANK SAMPLES**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < ½ MQL?	X				
R6	I	**LABORATORY CONTROL SAMPLES (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS and LCSD %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X				
		6) Was the LCSD RPD within QC limits?	X				
R7	I	**MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD) DATA**					
		1) Were the project or method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS and MSD %Rs within the laboratory QC limits?	X				
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	I	**ANALYTICAL DUPLICATE DATA (IF REQUIRED)**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	I	**METHOD QUANTITATION LIMITS (MQLS):**					
		1) Are the MQLs for each method analyte listed and included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs included in the laboratory data package?			X		
R10	I	**OTHER PROBLEMS/ANOMALIES**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		2) Were all necessary corrective actions performed for the reported data?	X				
		3) If requested, is the justification for elevated SQLs documented?			X		

S1	I	**INITIAL CALIBRATION (ICAL)**					
		1) Were response factors (RFs) and/or relative response factors (RRFs) for each analyte within the QC limits?			X		
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	I	**INITIAL AND CONTINUING CALIBRATION VERIFICATION (ICCV AND CCV) AND**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the organic CCB < MDL?	X				
S3	I	**MASS SPECTRAL TUNING:**					
		1) Was the appropriate compound for the method used for tuning?			X		
		2) Were ion abundance data within the method-required QC limits?			X		
S4	I	**INTERNAL STANDARDS (IS):**					
		Were IS area counts within the method-required QC limits?			X		
S5	I	**RAW DATA**					
		1) Were the raw data (e.g., chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	I	**DUAL COLUMN CONFIRMATION (IF REQUIRED)**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	I	**TENTATIVELY IDENTIFIED COMPOUNDS (TICS):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**INTERFERENCE CHECK SAMPLE (ICS) RESULTS:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**SERIAL DILUTIONS, POST DIGESTION SPIKES, AND METHOD OF STANDARD**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	I	**PROFICIENCY TEST REPORTS:**					
		Are proficiency testing or inter-laboratory comparison results on file?	X				
S11	I	**METHOD DETECTION LIMIT (MDL) STUDIES**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S12	I	**STANDARDS DOCUMENTATION**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	I	**COMPOUND/ANALYTE IDENTIFICATION PROCEDURES**					
		Are the procedures for compound/analyte identification documented?	X				
S14	I	**DEMONSTRATION OF ANALYST COMPETENCY (DOC)**					
		1) Was DOC conducted consistent with NELAC 5C or ISO/IEC 4.2.2?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	I	**VERIFICATION/VALIDATION DOCUMENTATION FOR METHODS**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable, (NELAC 5.10.2 or ISO/IEC 17025 Section 5.4.5)?	X				
S16	I	**LABORATORY STANDARD OPERATING PROCEDURES (SOPS):**					
		Are laboratory SOPs current and on file for each method performed?	X				

1 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
2 NA = Not applicable.
3 NR = Not Reviewed.
4 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

WET CHEMISTRY DATA ASSESSMENT CHECKLIST		
Wet Chemistry	Batch Number:	

ER #[1]	DESCRIPTION
1	
2	
3	
4	
5	
6	

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

Client: ALS Environmental
Project: HS23110117
WorkOrder: **23110317**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

Client: ALS Environmental
Project: HS23110117
Work Order: 23110317

Case Narrative

Samples for the above noted Work Order were received on 11/03/2023. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
No deviations or anomalies were noted.

ALS Group, USA

Date: *07-Nov-2023*

Client: ALS Environmental
Project: HS23110117 **Work Order:** 23110317
Sample ID: MW-36 **Lab ID:** 23110317-01
Collection Date: 11/1/2023 11:50 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.360**		**0.10**	**mg/L**	1	11/6/2023 05:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *07-Nov-2023*

Client:	ALS Environmental		
Project:	HS23110117	**Work Order:**	23110317
Sample ID:	DUP	**Lab ID:**	23110317-02
Collection Date:	11/1/2023 11:00 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.390**		**0.10**	**mg/L**	1	11/6/2023 05:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23110117 **Work Order:** 23110317
Sample ID: MW-37 **Lab ID:** 23110317-03
Collection Date: 11/1/2023 10:40 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.210**		**0.10**	**mg/L**	1	11/6/2023 05:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Work Order: 23110317
Project: HS23110117

QC BATCH REPORT

Batch ID: **R388385** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R388385-R388385** Units: **mg/L** Analysis Date: **11/6/2023 05:00 PM**
Client ID: Run ID: **TITRATOR 1_231106A** SeqNo: **10170470** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	ND	0.10								

LCS Sample ID: **LCS-R388385-R388385** Units: **mg/L** Analysis Date: **11/6/2023 05:00 PM**
Client ID: Run ID: **TITRATOR 1_231106A** SeqNo: **10170471** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.88	0.10	5	0	97.6	90-111	0			

MS Sample ID: **23110317-01A MS** Units: **mg/L** Analysis Date: **11/6/2023 05:00 PM**
Client ID: **MW-36** Run ID: **TITRATOR 1_231106A** SeqNo: **10170478** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.47	0.10	5	0.36	102	90-111	0			

MSD Sample ID: **23110317-01A MSD** Units: **mg/L** Analysis Date: **11/6/2023 05:00 PM**
Client ID: **MW-36** Run ID: **TITRATOR 1_231106A** SeqNo: **10170479** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.39	0.10	5	0.36	101	90-111	5.47	1.47	20	

The following samples were analyzed in this batch: 23110317-01A 23110317-02A 23110317-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

23110317
ALS - HOUSTON: ALS Environmental
Project: HS23110117

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **23694**

SUBCONTRACT TO:

ALS Group USA, Corp.
3352 - 128th Ave
Holland, MI 494249263

Phone: +1 616 399 6070

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Andy C. Neir
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Andrew.Neir@ALSGlobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS23110117
TSR:	Sonia West

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS23110117-04**	**MW-36**	**Water**	**01 Nov 2023 11:50**
	Fluoride by ISE 4500. Equis EDD			08 Nov 2023
2.	**HS23110117-05**	**DUP**	**Water**	**01 Nov 2023 11:00**
	Fluoride by ISE 4500. Equis EDD			08 Nov 2023
3.	**HS23110117-06**	**MW-37**	**Water**	**01 Nov 2023 10:40**
	Fluoride by ISE 4500. Equis EDD			08 Nov 2023

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: TRRP LRC (TRRP checklist only+Level II (normal))

Relinquished By:		Date/Time:	11-2-23 1800
Received By:		Date/Time:	11-3-23 0900
Cooler ID(s):		Temperature(s):	2.9C OFL

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **ALS - HOUSTON**

Date/Time Received: **03-Nov-23 09:00**

Work Order: **23110317**

Received by: **JD**

Checklist completed by	Jason Delinger	03-Nov-23	Reviewed by:	Chelsey Cook	06-Nov-23
	eSignature	Date		eSignature	Date

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.9/2.9 c	DF2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	11/3/2023 11:56:46 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Privileged and Confidential

SRC Page 1 of 1

Appendix C
Laboratory Data Quality Review

DATA USABILITY SUMMARY

Lori Burris of TRC Environmental Corporation (TRC) reviewed one (1) data package from ALS Global Laboratories (ALS) for the analysis of groundwater samples collected April 3, 2023, at the NRG W.A. Parish Generating Station (Parish) in Thompsons, Texas. Data were reviewed for conformance to the requirements of the guidance document, *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13) (TCEQ 2010). Lori Burris verified that at the time the laboratory data were generated for the project, ALS was NELAC-accredited under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analysis requested on the chain-of-custody documentation. ALS's National Environmental Laboratory Accreditation Program (NELAP) certification is included in the laboratory data package.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the property. These data are used for compliance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) Coal Combustion Residuals (CCR) detection monitoring programs. Data are also used for statistical analysis of potential statistically significant increases (SSIs).

Analyses requested included:

- EPA 300.0 – Inorganic Anions (Chloride and Sulfate) by ion chromatography;
- SM A4500-F C-11 – Anions (Fluoride) by ion selective electrode;
- SW-846 6020A – Metals (Boron and Calcium) by inductively coupled plasma-mass spectrometry (ICP/MS); and
- SM2540C – Total Dissolved Solids (TDS) by drying.

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this DUS.

The following laboratory submittals and field data were examined:

- the reportable data,
- the laboratory review checklists, and
- field sampling logs.

The results of supporting quality control (QC) analyses were summarized on the Laboratory Review Checklist (LRC) and Exception Report (ER) in the analytical report which was included in this review.

The LRC, associated ER, and reportable data included in this review are attached to this Data Usability Summary (DUS).

DATA REVIEW/VALIDATION RESULTS

Introduction

Twenty-five (25) groundwater samples, two (2) field duplicate samples and one (1) field blank were analyzed for anions (chloride, sulfate, and fluoride), metals (boron and calcium) and TDS. Table 1 lists the field identifications cross-referenced to laboratory identifications.

Analytical Results

The data package contains a minimum of one (1) quality control batch per analytical method analyzed. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Not-detected results are reported as less than the value of the sample detection limit (SDL) as defined by the TRRP rule. The project Sampling and Analysis Plan (SAP) states that quality control percent recoveries of 70% to 130% indicate sufficient accuracy and a relative percent difference (RPD) of 30% indicates adequate precision. Therefore, these limits were used for comparison during this review for accuracy and precision. Data qualified as part of this review are included in Table 2.

Preservation and Holding Times

The samples were evaluated for agreement with the chain-of-custody. The samples were received in the appropriate containers with the paperwork filled out properly. The laboratory sample receipt checklist stated the samples were received at temperatures of 1.4 and 2.7°C. Samples were prepared and analyzed within holding times.

Calibrations

According to the LRC, initial calibration data met EPA, Standard Method (SM) and SW-846 Method requirements for sulfate, fluoride and TDS.

Low levels of boron were detected in several continuing calibration blanks (CCBs). The Field Blank was qualified as not-detected (U) for boron, due to CCB contamination.

Blanks

Chloride, sulfate, fluoride, boron and TDS were reported as not-detected in the method blanks. Calcium was reported as detected in metals batch 192107 at a concentration of 0.06932 mg/L. Associated samples were reported as detected for calcium greater than 2X the method blank concentration and were not qualified.

The Field Blank was reported as detected for boron (0.0158J mg/L), calcium (0.291J mg/L) and sulfate (0.300J mg/L). The boron detection was determined to be a result of CCB contamination and was not used for qualification purposes. Associated samples were reported as detected for calcium and sulfate greater than 5X the field blank concentration and did not require qualification.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for anions, metals, and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for fluoride analyzed on site samples MW-63 and MW-58 were within acceptance criteria. Chloride/sulfate MS/MSDs analyzed on site samples MW-41, MW-63 and MW-52 were within acceptance criteria. Metals batch 192106 was analyzed on a well that is not part of the CCR monitoring well network and was not evaluated. MS/MSD analysis is not a requirement of TDS method SM2540C.

Metals MS/MSD batch 192107 analyzed on site samples MW-58 and MW-63 had calcium recovery outside acceptance criteria. However, the MS/MSD spike amounts for calcium were less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, data were not qualified.

Chloride/Sulfate MS/MSD batch R431774 analyzed on site sample MW-58 had chloride and sulfate recovery outside acceptance criteria. However, the MS/MSD spike amounts for chloride and sulfate were less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, data were not qualified.

Post Digestion Spike and Serial Dilution

The post digestion spike (PDS) and serial dilution (SD) for metals batch 192106 were analyzed on a well that was not part of the CCR monitoring well network and were not evaluated.

The metals batch 192107 was within acceptance criteria for the PDS and SD analyzed on sample MW-63. A second PDS was analyzed on site sample MW-58 in this batch and had calcium recovery outside acceptance criteria. However, the spike amount for calcium was less than 4X the unspiked parent sample and was not evaluated. The SD analyzed on MW-58 had elevated percent difference for boron (56.1%). Associated samples MW-48 and MW-61 were qualified as estimated (J) for boron, due to elevated SD and results greater than 50X the sample detection limit (SDL).

Laboratory Duplicates

Laboratory duplicates for TDS were within QC acceptance criteria.

Field Precision

Two (2) field duplicate samples were included in this data package (MW-36/Field Duplicate 1 and MW-44/Field Duplicate 2). Both sample and duplicate, MW-36/Field Duplicate 1, were reported as detected for metals, anions, and TDS. The relative percent difference (RPD) between sample and duplicate was within the QC acceptance criteria of 30% for the listed compounds.

Sample and duplicate, MW-44/Field Duplicate 2 were reported as detected for metals, anions, and TDS. The RPD between sample and duplicate was within the QC acceptance criteria of 30% for the listed compounds.

Sample/duplicate precision calculations are included in Table 3.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the Parish site.

The data user is advised that the Field Blank was qualified as not-detected (U) for boron, due to CCB contamination. Samples MW-48 and MW-61 were qualified as estimated (J) for boron, due to elevated SD and results greater than 50X the sample detection limit (SDL).

References:

TCEQ. 2010. TRRP 13: Review and Reporting of COC Concentration Data. Texas Commission for Environmental Quality, Austin, Texas.

Environmental Resources Management (ERM). October 2017. Sampling and Analysis Plan. W.A. Parish Electric Generating Station, Thompsons, Texas.

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23040094-01	MW-39R	Groundwater
HS23040094-02	MW-40	Groundwater
HS23040094-03	MW-41	Groundwater
HS23040094-04	MW-62	Groundwater
HS23040094-05	MW-63	Groundwater
HS23040094-06	MW-64	Groundwater
HS23040094-07	MW-23R	Groundwater
HS23040094-08	MW-28D	Groundwater
HS23040094-09	MW-42	Groundwater
HS23040094-10	MW-43	Groundwater
HS23040094-11	MW-44	Groundwater
HS23040094-12	MW-46R	Groundwater
HS23040094-13	MW-47	Groundwater
HS23040094-14	MW-48	Groundwater
HS23040094-15	MW-50	Groundwater
HS23040094-16	MW-52	Groundwater
HS23040094-17	MW-54	Groundwater
HS23040094-18	MW-55R	Groundwater
HS23040094-19	MW-58	Groundwater
HS23040094-20	MW-65	Groundwater
HS23040094-21	MW-36	Groundwater
HS23040094-22	MW-37	Groundwater
HS23040094-23	MW-38R	Groundwater
HS23040094-24	MW-60	Groundwater
HS23040094-25	MW-61	Groundwater
HS23040094-26	Field Blank	Water
HS23040094-27	Field Duplicate 1	Groundwater

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23040094-28	Field Duplicate 2	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
Field Blank	Boron	U	CCB contamination.
MW-48 MW-61	Boron	J	Elevated serial dilution percent difference.

U – Not-detected

J – Estimated data; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.

UJ – The analyte was analyzed for but was not detected above the reported sample detection limit. The associated value is an estimate and may be inaccurate or imprecise.

L – Bias in sample, likely to be low.

H – Bias in sample likely to be high.

Table 3 – Field Precision

Field Identification	Analyte	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD[a]	Qualified
MW-36 / Field Duplicate 1	Boron	0.0712	0.0772	8	A
	Calcium	231	224	3	A
	Chloride	306	312	2	A
	Sulfate	422	433	3	A
	TDS	1,480	1,770	18	A
	Fluoride	0.360	0.320	12	A
MW-44 / Field Duplicate 2	Boron	0.312	0.264	17	A
	Calcium	138	128	8	A
	Chloride	269	267	1	A
	Sulfate	178	173	3	A
	TDS	1,060	944	12	A
	Fluoride	0.370	0.360	3	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data.
A* - Acceptable Data where results were less than 5X the MQL and the difference between sample and duplicate was less than 2X the MQL.
X – Outside the TRRP-13/SAP acceptance criteria of 30% RPD.
J – Estimated detected.
U – Notdetected.

DATA USABILITY SUMMARY

Lori Burris of TRC Environmental Corporation (TRC) reviewed one (1) data package from ALS Global Laboratories (ALS) for the analysis of groundwater samples collected May 1, 2023, at the NRG W.A. Parish Generating Station (Parish) in Thompsons, Texas. Data were reviewed for conformance to the requirements of the guidance document, *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13) (TCEQ 2010). Lori Burris verified that at the time the laboratory data were generated for the project, ALS was NELAC-accredited under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analysis requested on the chain-of-custody documentation. ALS's National Environmental Laboratory Accreditation Program (NELAP) certification is included in the laboratory data package.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the property. These data are used for compliance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) Coal Combustion Residuals (CCR) detection monitoring programs. Data are also used for statistical analysis of potential statistically significant increases (SSI).

Analyses requested included:

- ◊ EPA 300.0 – Inorganic Anions (Chloride and Sulfate) by ion chromatography;
- ◊ SW-846 6020A – Metals (Boron and Calcium) by inductively coupled plasma-mass spectrometry (ICP/MS);
- ◊ SW-846 9040C – pH by electrometric measurement; and
- ◊ SM2540C – Total Dissolved Solids (TDS) by drying.

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this DUS.

The following laboratory submittals and field data were examined:

- ◊ the reportable data,
- ◊ the laboratory review checklists, and
- ◊ field sampling logs.

The results of supporting quality control (QC) analyses were summarized on the Laboratory Review Checklist (LRC) and Exception Report (ER) in the analytical report which was included in this review.

The LRC, associated ER, and reportable data included in this review are attached to this Data Usability Summary (DUS).

DATA REVIEW/VALIDATION RESULTS

Introduction

Eight (8) groundwater samples were analyzed for one or more of the following: chloride, sulfate, boron, calcium and TDS. Four (4) samples were analyzed for pH as a field check and were not evaluated during this review as pH is a field test. Table 1 lists the field identifications cross-referenced to laboratory identifications.

Analytical Results

The data package contains a minimum of one (1) quality control batch per analytical method analyzed. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Not-detected results are reported as less than the value of the sample detection limit (SDL) as defined by the TRRP rule. The project Sampling and Analysis Plan (SAP) states that quality control percent recoveries of 70% to 130% indicate sufficient accuracy and a relative percent difference (RPD) of 30% indicates adequate precision. Therefore, these limits were used for comparison during this review for accuracy and precision. No data were qualified as part of this review (see Table 2).

Preservation and Holding Times

The samples were evaluated for agreement with the chain-of-custody. The samples were received in the appropriate containers with the paperwork filled out properly. The laboratory sample receipt checklist stated the samples were received at a temperature of 4.7°C. Samples were prepared and analyzed within holding times. pH is an immediate field test and was analyzed out of holding time and qualified by the laboratory.

Calibrations

According to the LRC, initial calibration data and continuing calibration data met EPA, Standard Method (SM) and SW-846 Method requirements for sulfate, calcium and TDS.

Continuing calibration blanks (CCB) for chloride and boron had low level detections. Associated samples were reported as greater than five times the CCB; therefore, data did not require qualification.

Blanks

Chloride, sulfate, boron, calcium and TDS were reported as not-detected in the method blanks.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for sulfate, calcium and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for chloride, sulfate, boron and calcium were analyzed on samples not associated with the project site and were not evaluated. MS/MSD analysis is not a requirement of TDS method SM2540C.

Post Digestion Spike and Serial Dilution

The post digestion spike (PDS) and serial dilution for boron and calcium were analyzed on a sample not associated with the project site and was not evaluated.

Laboratory Duplicates

Laboratory duplicates for TDS were within QC acceptance criteria.

Field Precision

Field duplicates were not included in this data package.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the Parish site.

References:

TCEQ. 2010. TRRP 13: Review and Reporting of COC Concentration Data. Texas Commission for Environmental Quality, Austin, Texas.

Environmental Resources Management (ERM). October 2017. Sampling and Analysis Plan. W.A. Parish Electric Generating Station, Thompsons, Texas.

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23050030-01	MW-41	Groundwater
HS23050030-02	MW-63	Groundwater
HS23050030-03	MW-37	Groundwater
HS23050030-04	MW-38R	Groundwater
HS23050030-05	MW-61	Groundwater
HS23050030-06	MW-23R	Groundwater
HS23050030-07	MW-44	Groundwater
HS23050030-08	MW-46R	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
No data were qualified as part of this review.			

U – Not-detected

J – Estimated data; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.

UJ – The analyte was analyzed for but was not detected above the reported sample detection limit. The associated value is an estimate and may be inaccurate or imprecise.

L – Bias in sample, likely to be low.

H – Bias in sample likely to be high.

DATA USABILITY SUMMARY

Lori Burris of TRC Environmental Corporation (TRC) reviewed one (1) data package from ALS Global Laboratories (ALS) for the analysis of groundwater samples collected October 9, 2023, at the NRG W.A. Parish Generating Station (Parish) in Thompsons, Texas. Data were reviewed for conformance to the requirements of the guidance document, *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13) (TCEQ 2010). Lori Burris verified that at the time the laboratory data were generated for the project, ALS was NELAC-accredited under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analysis requested on the chain-of-custody documentation. ALS's National Environmental Laboratory Accreditation Program (NELAP) certification is included in the laboratory data package.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the property. These data are used for compliance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) Coal Combustion Residuals (CCR) detection monitoring programs. Data are also used for statistical analysis of potential statistically significant increases (SSIs).

Analyses requested included:

- ◊ EPA 300.0 – Inorganic Anions (Chloride and Sulfate) by ion chromatography;
- ◊ SM A4500-F C-11 – Anions (Fluoride) by ion selective electrode;
- ◊ SW-846 6020A – Metals (Boron and Calcium) by inductively coupled plasma-mass spectrometry (ICP/MS); and
- ◊ SM2540C – Total Dissolved Solids (TDS) by drying.

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this DUS.

The following laboratory submittals and field data were examined:

- ◊ the reportable data,
- ◊ the laboratory review checklists, and
- ◊ field sampling logs.

The results of supporting quality control (QC) analyses were summarized on the Laboratory Review Checklist (LRC) and Exception Report (ER) in the analytical report which was included in this review.

The LRC, associated ER, and reportable data included in this review are attached to this Data Usability Summary (DUS).

DATA REVIEW/VALIDATION RESULTS

Introduction

Twenty-five (25) groundwater samples, two (2) field duplicate samples and one (1) field blank were analyzed for anions (chloride, sulfate, and fluoride), metals (boron and calcium) and TDS. Table 1 lists the field identifications cross-referenced to laboratory identifications.

Analytical Results

The data package contains a minimum of one (1) quality control batch per analytical method analyzed. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Not-detected results are reported as less than the value of the sample detection limit (SDL) as defined by the TRRP rule. The project Sampling and Analysis Plan (SAP) states that quality control percent recoveries of 70% to 130% indicate sufficient accuracy and a relative percent difference (RPD) of 30% indicates adequate precision. Therefore, these limits were used for comparison during this review for accuracy and precision. Data qualified as part of this review are included in Table 2.

Preservation and Holding Times

The samples were evaluated for agreement with the chain-of-custody. The samples were received in the appropriate containers with the paperwork filled out properly. The laboratory sample receipt checklist stated the samples were received at temperatures of 2.7, 3.3 and 2.4°C. Samples were prepared and analyzed within holding times.

Calibrations

According to the LRC, initial calibration data met EPA, Standard Method (SM) and SW-846 Method requirements for chloride, sulfate, fluoride and TDS.

Low levels of boron and calcium were detected in several continuing calibration blanks (CCBs). Associated samples were reported as greater than 2X the CCB concentration or calcium and boron; therefore, no data were qualified.

Blanks

Chloride, sulfate, fluoride, boron and TDS were reported as not-detected in the method blanks. Calcium was reported as detected in metals batch 201951 at a concentration of 0.06435J mg/L and in metals batch 201988 at a concentration of 0.0628J mg/L. Associated samples were reported as detected for calcium greater than 2X the method blank concentration and were not qualified.

The Field Blank was reported as detected for calcium (0.879 mg/L). Associated samples were reported as detected for calcium greater than 2X the field blank concentration and did not require qualification.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for anions, metals, and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for chloride/sulfate analyzed on site samples MW-58 and MW-63 were within acceptance criteria. Fluoride analyzed on site samples

MW-63, MW-65 and MW-58 were within acceptance criteria. Metals batch 201948 was analyzed on a sample that is not associated with the project site and was not evaluated. MS/MSD analysis is not a requirement of TDS method SM2540C.

Metals MS/MSD batch 201951 analyzed on site sample MW-63 had boron and calcium recovery outside acceptance criteria. However, the MS/MSD spike amounts for boron and calcium were less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, data were not qualified.

Metals MS/MSD batch 201988 analyzed on site sample MW-58 had boron and calcium recovery outside acceptance criteria. However, the MS/MSD spike amounts for boron and calcium were less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, data were not qualified. Boron was qualified as estimated low (JL) for sample MW-58, due to low MS/MSD recovery.

Chloride/Sulfate MS/MSD batch R449125 analyzed on site sample MW-46R had sulfate recovery outside acceptance criteria. However, the MS/MSD spike amount for sulfate was less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, data were not qualified.

Post Digestion Spike and Serial Dilution

The post digestion spike (PDS) and serial dilution (SD) for metals batch 201948 was analyzed on a sample that is not associated with the project site and was not evaluated.

Metals batches 201951 and 201988 were within acceptance criteria for the PDS and SD analyzed on samples MW-63 and MW-58.

Laboratory Duplicates

Laboratory duplicates for TDS were within QC acceptance criteria.

Field Precision

Two (2) field duplicate samples were included in this data package (MW-36/Field Duplicate 1 and MW-44/Field Duplicate 2). Both sample and duplicate, MW-36/Field Duplicate 1, were reported as detected for metals, anions, and TDS. The relative percent difference (RPD) between sample and duplicate was within the QC acceptance criteria of 30% for the listed compounds.

Sample and duplicate, MW-44/Field Duplicate 2 were reported as detected for metals, anions, and TDS. The RPD between sample and duplicate was within the QC acceptance criteria of 30% for the listed compounds.

Sample/duplicate precision calculations are included in Table 3.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the Parish site.

The data user is advised that sammlle MW-58 was qualified as estimated low (JL) for boron, due to low MS/MSD recovery.

References:

TCEQ. 2010. TRRP 13: Review and Reporting of COC Concentration Data. Texas Commission for Environmental Quality, Austin, Texas.

Environmental Resources Management (ERM). October 2017. Sampling and Analysis Plan. W.A. Parish Electric Generating Station, Thompsons, Texas.

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23100607-01	MW-39R	Groundwater
HS23100607-02	MW-40	Groundwater
HS23100607-03	MW-41	Groundwater
HS23100607-04	MW-62	Groundwater
HS23100607-05	MW-63	Groundwater
HS23100607-06	MW-64	Groundwater
HS23100607-07	MW-23R	Groundwater
HS23100607-08	MW-28D	Groundwater
HS23100607-09	MW-42	Groundwater
HS23100607-10	MW-43	Groundwater
HS23100607-11	MW-44	Groundwater
HS23100607-12	MW-46R	Groundwater
HS23100607-13	MW-47	Groundwater
HS23100607-14	MW-48	Groundwater
HS23100607-15	MW-50	Groundwater
HS23100607-16	MW-52	Groundwater
HS23100607-17	MW-54	Groundwater
HS23100607-18	MW-55R	Groundwater
HS23100607-19	MW-58	Groundwater
HS23100607-20	MW-65	Groundwater
HS23100607-21	MW-36	Groundwater
HS23100607-22	MW-37	Groundwater
HS23100607-23	MW-38R	Groundwater
HS23100607-24	MW-60	Groundwater
HS23100607-25	MW-61	Groundwater
HS23100607-26	Field Blank	Water
HS23100607-27	Field Duplicate 1	Groundwater

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23100607-28	Field Duplicate 2	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
MW-58	Boron	JL	Low MS/MSD recovery.

U – Not-detected

J – Estimated data; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.

UJ – The analyte was analyzed for but was not detected above the reported sample detection limit. The associated value is an estimate and may be inaccurate or imprecise.

L – Bias in sample, likely to be low.

H – Bias in sample likely to be high.

Table 3 – Field Precision

Field Identification	Analyte	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD[a]	Qualified
MW-36 / Field Duplicate 1	Boron	0.385	0.343	12	A
	Calcium	234	219	7	A
	Chloride	244	245	0	A
	Sulfate	954	964	1	A
	TDS	1,750	1,710	2	A
	Fluoride	0.28	0.23	20	A
MW-44 / Field Duplicate 2	Boron	0.217	0.226	4	A
	Calcium	103	98.0	5	A
	Chloride	204	205	1	A
	Sulfate	93.1	93.7	1	A
	TDS	808	748	8	A
	Fluoride	0.41	0.42	2	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data.
A* - Acceptable Data where results were less than 5X the MQL and the difference between sample and duplicate was less than 2X the MQL.
X – Outside the TRRP-13/SAP acceptance criteria of 30% RPD.
J – Estimated detected.
U – Notdetected.

DATA USABILITY SUMMARY

Lori Burris of TRC Environmental Corporation (TRC) reviewed one (1) data package from ALS Global Laboratories (ALS) for the analysis of groundwater samples collected November 1, 2023, at the NRG W.A. Parish Generating Station (Parish) in Thompsons, Texas. Data were reviewed for conformance to the requirements of the guidance document, *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13) (TCEQ 2010). Lori Burris verified that at the time the laboratory data were generated for the project, ALS was NELAC-accredited under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analysis requested on the chain-of-custody documentation. ALS's National Environmental Laboratory Accreditation Program (NELAP) certification is included in the laboratory data package.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the property. These data are used for compliance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) Coal Combustion Residuals (CCR) detection monitoring programs. Data are also used for statistical analysis of potential statistically significant increases (SSI).

Analyses requested included:

- EPA 300.0 – Inorganic Anions (Chloride and Sulfate) by ion chromatography;
- A4500-F C-11 – Fluoride by ion selective electrode;
- SW-846 6020A – Metals (Calcium and Boron) by inductively coupled plasma-mass spectrometry (ICP/MS); and
- SM2540C – Total Dissolved Solids (TDS) by drying.

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this DUS.

The following laboratory submittals and field data were examined:

- the reportable data,
- the laboratory review checklists, and
- field sampling logs.

The results of supporting quality control (QC) analyses were summarized on the Laboratory Review Checklist (LRC) and Exception Report (ER) in the analytical report which was included in this review.

The LRC, associated ER, and reportable data included in this review are attached to this Data Usability Summary (DUS).

DATA REVIEW/VALIDATION RESULTS

Introduction

Ten (10) groundwater samples and one (1) duplicate groundwater sample were analyzed for one or more of the following: chloride, sulfate, fluoride, boron, calcium and TDS. Table 1 lists the field identifications cross-referenced to laboratory identifications.

Analytical Results

The data package contains a minimum of one (1) quality control batch per analytical method analyzed. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Not-detected results are reported as less than the value of the sample detection limit (SDL) as defined by the TRRP rule. The project Sampling and Analysis Plan (SAP) states that quality control percent recoveries of 70% to 130% indicate sufficient accuracy and a relative percent difference (RPD) of 30% indicates adequate precision. Therefore, these limits were used for comparison during this review for accuracy and precision. No data were qualified as part of this review (see Table 2).

Preservation and Holding Times

The samples were evaluated for agreement with the chain-of-custody. The samples were received in the appropriate containers with the paperwork filled out properly. The laboratory sample receipt checklist stated the samples were received at a temperature of 1.4°C. Samples were prepared and analyzed within holding times. pH is an immediate field test and was analyzed out of holding time and qualified by the laboratory.

Calibrations

According to the LRC, initial calibration data and continuing calibration data met EPA, Standard Method (SM) and SW-846 Method requirements for metals, anions and TDS.

Blanks

Chloride, sulfate, fluoride, boron, calcium and TDS were reported as not-detected in the method blanks.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for metals, anions and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) for fluoride analyzed on site sample MW-36 was within acceptance criteria. MS/MSD samples for chloride, sulfate, boron and calcium were analyzed on samples not associated with the project site and were not evaluated. MS/MSD analysis is not a requirement of TDS method SM2540C.

Post Digestion Spike and Serial Dilution

The post digestion spike (PDS) and serial dilution for boron and calcium were analyzed on a sample not associated with the project site and was not evaluated.

Laboratory Duplicates

Laboratory duplicates for TDS were within QC acceptance criteria.

Field Precision

One (1) field duplicate sample was included in this data package (MW-36/DUP). Both sample and duplicate, MW-36 and DUP, were reported as detected for boron, calcium, chloride, sulfate, fluoride and TDS. The relative percent difference (RPD) between sample and duplicate was within the QC acceptance criteria of 30% for the listed compounds.

Sample/duplicate precision calculations are included in Table 3.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the Parish site.

References:

TCEQ. 2010. TRRP 13: Review and Reporting of COC Concentration Data. Texas Commission for Environmental Quality, Austin, Texas.

Environmental Resources Management (ERM). October 2017. Sampling and Analysis Plan. W.A. Parish Electric Generating Station, Thompsons, Texas.

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23110117-01	MW-62	Groundwater
HS23110117-02	MW-63	Groundwater
HS23110117-03	MW-64	Groundwater
HS23110117-04	MW-36	Groundwater
HS23110117-05	DUP	Groundwater
HS23110117-06	MW-37	Groundwater
HS23110117-07	MW-38R	Groundwater
HS23110117-08	MW-61	Groundwater
HS23110117-09	MW-23R	Groundwater
HS23110117-1	MW-48	Groundwater
HS23110117-11	MW-58	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
No data were qualified as part of this review.			

U – Not-detected

J – Estimated data; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.

UJ – The analyte was analyzed for but was not detected above the reported sample detection limit. The associated value is an estimate and may be inaccurate or imprecise.

L – Bias in sample, likely to be low.

H – Bias in sample likely to be high.

Table 3 – Field Precision

Field Identification	Analyte	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD[a]	Qualified
MW-36/DUP	Boron	0.0672	0.0682	2	A
	Calcium	218	232	6	A
	Chloride	300	306	2	A
	Sulfate	468	476	2	A
	TDS	1,200	964	22	A
	Fluoride	0.39	0.36	8	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data.
A* - Acceptable Data where results were less than 5X the MQL and the difference between sample and duplicate was less than 2X the MQL.
X – Outside the TRRP-13/SAP acceptance criteria of 30% RPD.
J – Estimated detected.
U – Not-detected.

Appendix D
Alternative Source Demonstrations

Texas Commission on Environmental Quality
Waste Permits Division Correspondence Cover Sheet

Date: February 27, 2023
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Air Preheater Pond (SWMU 021)

February 2023

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
New Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

STATE OF TEXAS
ANTHONY DWORACZYK
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2-27-23

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Geologist/Project Manager

TRC Environmental Corporation | NRG Texas Power, LLC
Alternate Source Demonstration, W.A. Parish, Air Preheater Pond

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Figure 2 Potentiometric Flow Map – October 2022

Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the Air Preheater Pond (APH) Pond, which is the subject of this Alternative Source Demonstration (ASD).

The 11th semi-annual groundwater detection monitoring event was conducted on October 4, 2022. Verification sampling was performed on November 22, 2022. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Three apparent SSIs: pH, calcium, and sulfate; were identified. TRC, on behalf of NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on December 16, 2022.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results, including the November, 2022 verification sampling results, are the third data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for apparent SSIs at the APH Pond, based on the following lines of reasoning:

- It appears that the construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;

- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters; and
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, since retrofit construction activities have been completed recently and it appears the uppermost aquifer system is continuing to re-equilibrate, NRG will continue performing semi-annual detection monitoring for the APH Pond per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015).

CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The APH Pond receives effluent from air preheater wash and boiler cleaning wash, which consists of fly ash or economizer ash particles and water. The APH Pond is located at the southern portion of the Plant Area as shown on Figure 1 and is the subject of this Alternative Source Demonstration (ASD).

1.1.1 Retrofit Construction Activities

During 2020 and 2021, the APH Pond was removed from service and retrofitted per §257.102(k) of the federal CCR Rule. As part of these activities, the CCR within the impoundment was dewatered, all water and CCR was removed from the impoundment, and the APH Pond area was decontaminated based on over-excavating a minimum of 6-inches of clay liner material after removal of CCR. After CCR removal and decontamination had been confirmed, a federal CCR Rule bottom composite liner system was then installed and the APH Pond was placed back into service as a CCR unit compliant with both the federal and TCEQ CCR programs.

During retrofit construction activities for the APH Pond, upgradient groundwater monitoring well MW-39 was apparently destroyed and could not be located during the April 2021 detection monitoring event. Therefore, MW-39 was replaced by MW-39R that was installed in the approximate location of MW-39 prior to performance of the October 2021 semi-annual detection monitoring event.

Furthermore, during retrofit construction activities, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

1.1.2 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the APH Pond were documented in the *Annual Groundwater Monitoring Report, Landfill (Unit 004)* (ERM 2018a) and the *Annual Groundwater Monitoring Report, APH Pond (Unit 021)* (ERM 2018a) and the March 1, 2018, *Groundwater Monitoring Report, APH Pond* (SWMU Unit 021) (ERM 2018b) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the APH Pond per the federal CCR Rule and 30 TAC Chapter 352. As of the October 2022 sampling event, a total of 11 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results, including the November 22, 2022 verification sampling results, are the third data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD to evaluate apparent SSIs above background levels for the 11 semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the APH Pond.

2.1 Hydrogeology

According to the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA CCR units. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area, which is consistent with this area being located outside of the Brazos River floodplain zone (FBC 2018). The APH Pond and the E Pond are both located at the Plant Area.

The alluvium and the Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the site are under confined conditions (ERM 2017a).

Environmental investigations conducted in May 2016 and November 2016 by ERM identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM 2017b) and are summarized below.

2.1.1 Stratum PA-1 (Upper Confining Unit)

Stratum PA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum PA-1 serves as a confining unit to underlying Stratum PA-2, which comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum PA-1 is 2.03E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum PA-2 (Upper Aquifer)

Stratum PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum PA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum PA-2 is saturated and comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. CCR monitoring wells in the Plant Area are completed within Stratum PA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum PA-3 (Lower Confining Unit)

Stratum PA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing unit (Stratum PA-2). The thickness of Stratum PA-3 has not been defined.

2.1.4 Air Preheater Pond - Certified Monitoring Network

The certified CCR groundwater monitoring well network for the APH Pond consists of six groundwater monitoring wells (MW-39, MW-40, MW-41, MW-62, MW-63, and MW-64) completed into Stratum PA-2. A groundwater potentiometric surface map was prepared by TRC for the April 1, 2022 semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows to the southeast beneath the APH Pond at a gradient ranging from approximately 0.002 feet per foot (ft/ft) to 0.006 ft/ft.

The groundwater monitoring system for the APH Pond was originally certified per the federal CCR Rule on October 17, 2017. The original certified CCR groundwater monitoring well network for the APH Pond designated one upgradient monitoring well (MW-62) and five downgradient monitoring wells (MW-39, MW-40, MW-41, MW-63, and MW-64). However, based on TRC's review of groundwater elevation data measured for the semi-annual detection monitoring events and preparation of potentiometric surface maps, two of the initially designated downgradient monitoring wells (MW-39 and MW-40) were found to be located upgradient of the APH Pond as shown on the October, 2022 groundwater potentiometric surface map (Figure 2). Therefore, the CCR monitoring well system for the APH Pond was revised and consists of three upgradient monitoring wells (MW-39, MW-40, and MW-62) and three downgradient monitoring wells (MW-41, MW-63, and MW-64).

During retrofit construction activities for the APH Pond during 2020 and 2021 per the federal CCR Rule, upgradient groundwater monitoring well MW-39 was apparently destroyed and could not be located during the April 2021 detection monitoring event. A replacement monitoring well (MW-39R) was installed during 2021 in close proximity to the location of former well MW-39 prior to the October 2021 semi-annual detection monitoring event and was monitored during that detection monitoring event.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the hydrogeology of the APH Pond, calcium and sulfate is discussed in the subsection below.

2.2.1 Calcium in Groundwater

Calcium is one of the most important ionic constituents in groundwater (Razowska-jaworek, 2014). Water-rock interaction occurs when water interacts with minerals in soils or rocks, such as limestone, marble, calcite, dolomite, gypsum, fluorite, and apatite. Natural dissolution of carbonate rocks and minerals is the primary source of calcium in groundwater (Jiang et al., 2009). Calcium is an important determinant of water hardness (Ca^{2+}), while magnesium is the other hardness determinant. The most common shallow groundwater type is Ca-HCO_3 dominated and Ca(Mg)-HCO_3 dominated.

A literature review indicates the major factors that may influence the calcium concentration in groundwater include rock weathering, soil pH, electrical conductivity (EC), and anthropogenic activities (mining, concrete material dissolution, fertilizer etc.) (Hájek et al., 2021; Schot & Wassen, 1993; Shi et al., 2018).

Regarding the concentrations of calcium in groundwater, the source of calcium appears to be natural rather than anthropogenic. Therefore, the increase in concentration of calcium may be related to natural variations in groundwater geochemistry associated with rock weathering, soil pH, and EC.

2.2.2 Sulfate in Groundwater

The presence of sulfate is ubiquitous in groundwater, having both natural and anthropogenic sources. There are many potential sources of sulfate in groundwater including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As groundwater moves through soil and rock formations that contain sulfate minerals, a portion of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to elevated concentrations of sulphate in groundwater aquifers. Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and can impact groundwater quality. Multiple investigations have indicated that atmospheric deposition, dissolution of gypsum, and oxidation of sulfide minerals can contribute to the concentrations of sulfate in groundwater.

Regarding the concentration of sulfate in groundwater at the APH Pond, the source of sulfate is more likely natural rather than anthropogenic. Therefore, the increase in concentration of sulfate may be related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.2.3 pH

The one apparent pH SSI identified in MW-41 appears to be related to natural variations in groundwater quality. As a result of the retrofit construction activities, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

Section 3
Alternative Source Demonstration

The 11 semi-annual detection monitoring event was conducted on October 4, 2022 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Three apparent SSIs were initially identified (calcium, pH, and sulfate).

As part of the ASD activities, verification sampling was conducted on November 22, 2022 for the initial three apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. Three apparent SSIs were confirmed for pH, sulfate, and calcium. Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on December 16, 2022 addressing the apparent SSIs for pH, sulfate, and calcium.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 1 SSIs – April 2022 Semi-Annual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
pH	MW-41	NA	6.4-6.9	10/4/2022	9.94	S.U.
Sulfate	MW-63	NA	364	10/4/2022	579	mg/L
Calcium	MW-63	NA	291	10/4/2022	334	Mg/L

Notes: mg/L = milligrams per Liter
S.U. = Standard Units

As discussed previously in subsection 1.1.1 of this ASD, during retrofit construction activities at the APH Pond during 2020 and 2021 per the federal CCR Rule, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;

- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and ORP, are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters, including pH, sulfate, and calcium.

Section 4
Conclusions

Based on statistical evaluation of the October 4, 2022 semi-annual detection monitoring event and the November 22, 2022 verification sampling events analytical results, three apparent SSIs: pH, sulfate, calcium; were identified for the APH Pond. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- It appears that the construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters; and
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the retrofitted APH Pond have been shown to be responsible for the apparent SSIs observed. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the APH Pond per 30 TAC Chapter 352.

Section 5
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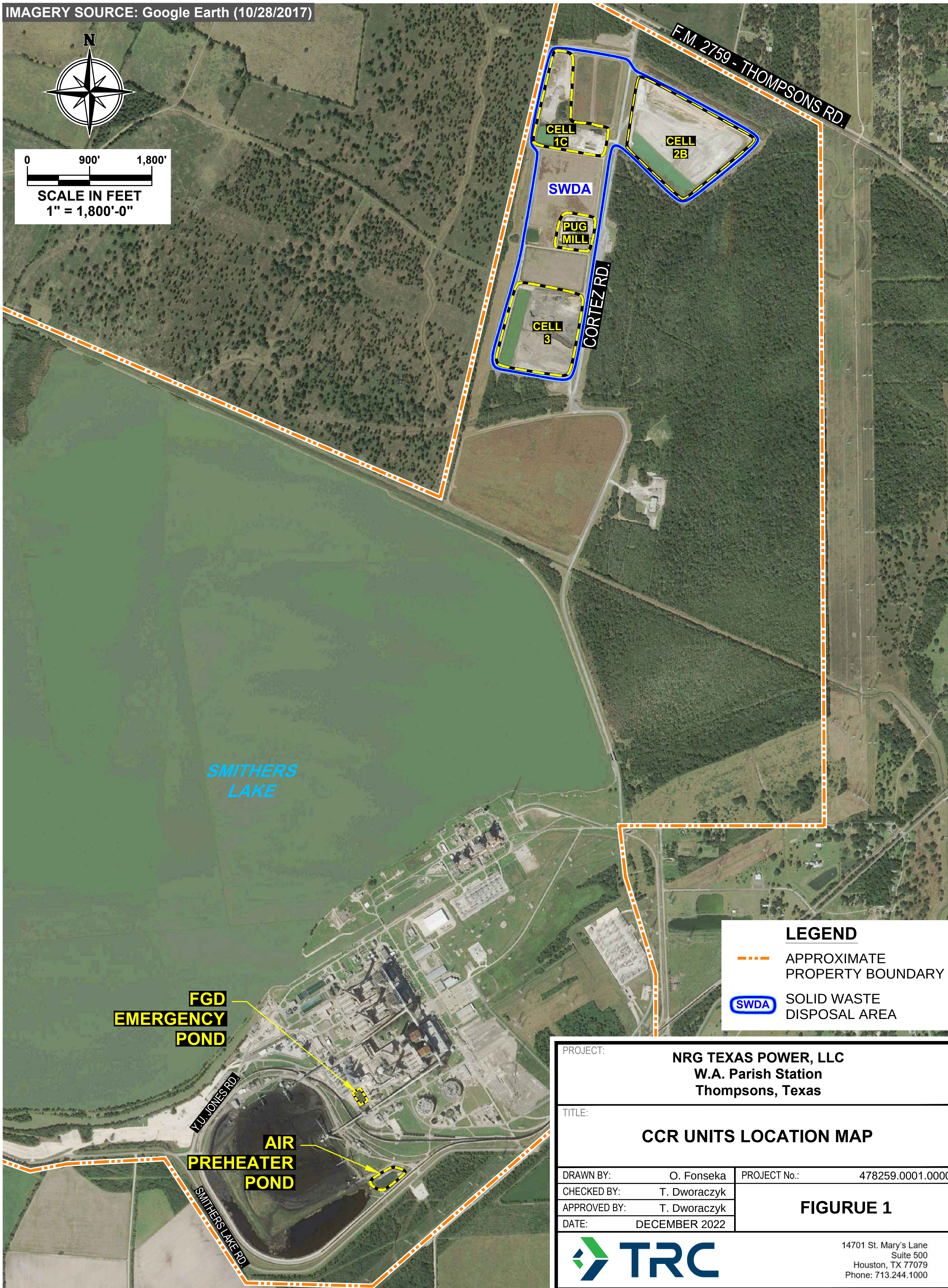
Figures



PROJECT:
NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE:
CCR UNITS LOCATION MAP

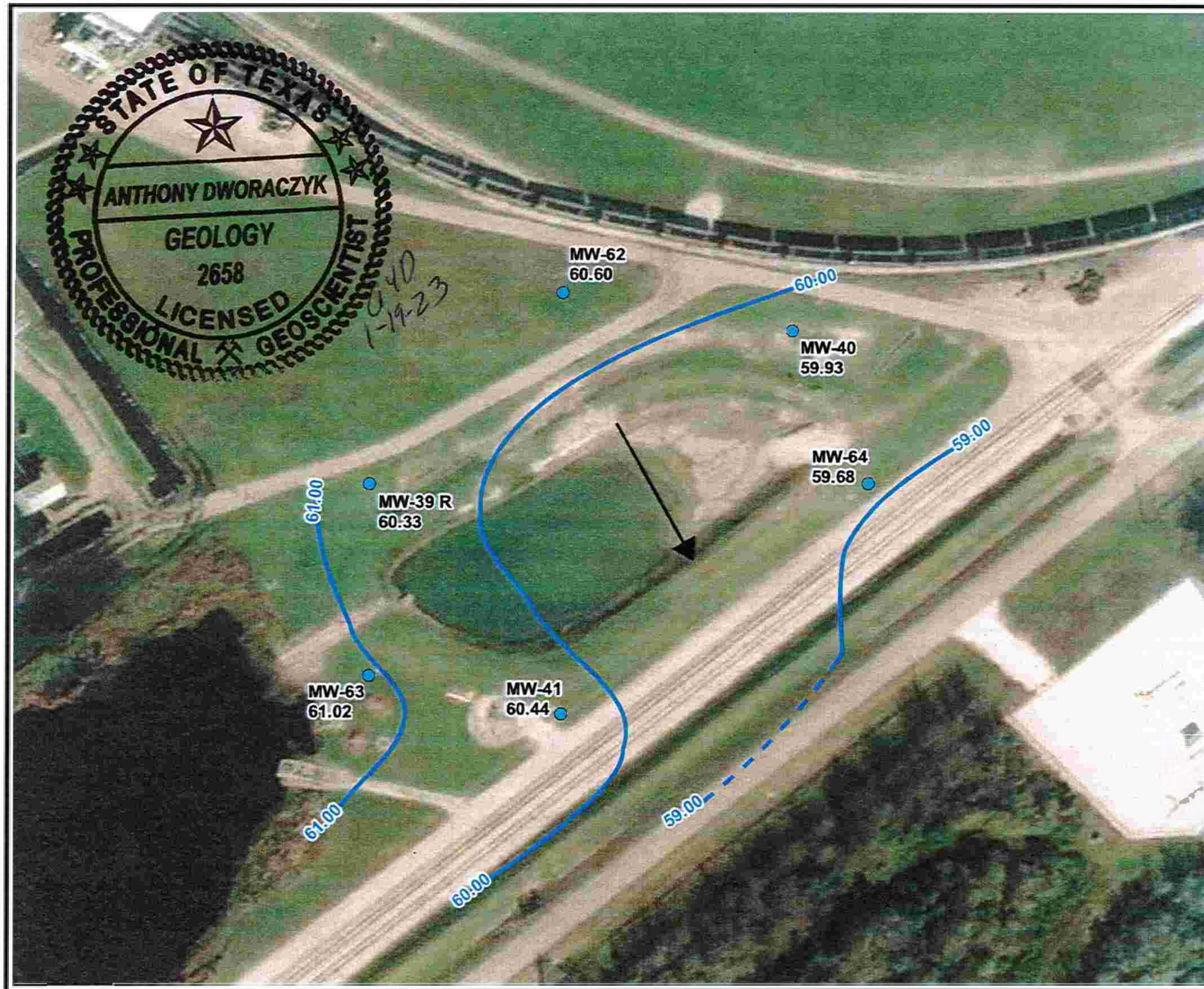
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	**FIGURUE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg 01/30/19



Legend

- Monitoring Well
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR - DASHED WHERE INFERRED (FT MSL)
- 60.60 GROUNDWATER ELEVATION (FT MSL)

* NOTE: MW-62 was not used for potentiometric surface map

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2022.

AERIAL IMAGE SOURCE: GOOGLE EARTH AND THEIR DATA PARTNERS (10/28/2017).

N

0 150 300 FT

1 " = 150 '
1:1,800

TRC
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Houston, TX 77079
713.244.1000
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PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
AIR PREHEATER POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J.ATWELL
APPROVED BY:	
DATE:	JANUARY 2023
PROJ. NO.:	478259.0001.0000
FILE:	478259.0001_2-8.mxd

FIGURE 2

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: February 27, 2023
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
FGD Emergency Pond (SWMU 020)

February 2023

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
New Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

STATE OF TEXAS
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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the FGD Emergency Pond (E Pond), which is the subject of this Alternate Source Demonstration (ASD).

The 11th semi-annual groundwater detection monitoring event was conducted on October 4, 2022. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Eight apparent SSIs were initially identified from the October 4, 2022 sampling event. NRG notified the Texas Commission Environmental Quality (TCEQ) in a letter dated December 16, 2022 of its intent to prepare an ASD.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results are the third data set statistically evaluated using the new background water quality data set.

This ASD has identified alternative sources for all eight apparent SSIs at the E Pond, based on the following lines of reasoning:

- The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
- The presence of CCR materials in the vicinity of the monitoring wells prior to their modification to include risers from the ground surface provided an opportunity for surface materials to inadvertently enter the wells directly from the ground surface.
- Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical date for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.

- It appears that the construction activities that occurred during the retrofit of the E Pond per the federal CCR Rule and the Closure Plan during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters; and
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the E Pond have been shown to be responsible for each of the eight apparent SSIs observed. Based on this successful ASD, NRG will continue performing semi-annual detection monitoring for the E Pond per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015) and the Phase 1, Part1 final rule (July 30, 2018). CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The E pond receives storm water runoff from the FGD dewatering area and blowdown from the FGD system. The E Pond may also receive the contents of an FGD process vessel when the FGD system is not in operation.

1.1.1 Retrofit Construction Activities

During 2020 and 2021, the E Pond was removed from service and retrofitted per §257.102(k) of the federal CCR Rule. As part of these activities, the CCR within the impoundment was dewatered, all water and CCR was removed from the impoundment, and the E Pond area was decontaminated based on over-excavating a minimum of 6-inches of clay liner material after removal of CCR. After CCR removal and decontamination had been confirmed, a federal CCR Rule bottom composite liner system was then installed, and the E Pond was placed back into service as a CCR unit compliant with both the federal and TCEQ CCR programs.

During retrofit construction activities, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

1.1.2 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the E Pond were documented in the *Annual Groundwater Monitoring Report, FGD Emergency Pond (Unit 020)* (ERM 2018a) and the March 1, 2018, *Groundwater Monitoring Report, FGD Emergency Pond (SWMU Unit 020)* (ERM 2018b) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the E Pond per the federal CCR Rule and 30 TAC Chapter 352. As of the October 2022 sampling event, a total of 11 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results are the third data set statistically evaluated using the new background water quality data set.

Since initial installation of the CCR groundwater monitoring network for the E Pond, improvements to the network have been implemented to improve the operation of the network. These improvements are identified below:

- During the second semi-annual detection monitoring, surface CCR may have been inadvertently introduced into the monitoring wells and the laboratory analytical sample containers during the initial background and semi-annual detection monitoring events. To mitigate this potential issue, the flush-mounted monitoring wells at the E Pond were modified before the third semi-annual detection monitoring event was performed with the installation of vertical well casing extensions and protective casings.
- During the third semi-annual detection monitoring event, silt was observed in the monitoring wells at the E Pond. The wells were redeveloped, and accumulated silt was removed from the well casings prior to performance of the fourth semi-annual detection monitoring event.
- In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the location of former MW-38.

1.2 Purpose

TRC prepared this ASD on behalf of NRG to evaluate apparent SSIs above background levels for the eleventh semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the E Pond.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA CCR units. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area which is consistent with this area being located outside of the Brazos River floodplain zone (FBC 2018). The APH Pond and the E Pond are both located at the Plant Area.

The alluvium and the Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the Site are under confined conditions (ERM 2017a).

Environmental site investigations conducted in May 2016 and November 2016 identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM 2017b) and are summarized below.

2.1.1 Stratum PA-1 (Upper Confining Unit)

Stratum PA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum PA-1 serves as a confining unit to underlying Stratum PA-2, which comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum PA-1 is 2.03E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum PA-2 (Upper Aquifer)

Stratum PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum PA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum PA-2 is saturated and comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. CCR monitoring wells in the Plant Area are completed within Stratum PA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum PA-3 (Lower Confining Unit)

Stratum PA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing units (Stratum PA-2). The thicknesses of Stratum PA-3 has not been defined.

2.1.4 E Pond – Certified Monitoring Network

The certified CCR groundwater monitoring well network for the E Pond consists of five groundwater monitoring wells:

- Upgradient monitoring wells MW-36 and MW-60; and
- Downgradient monitoring wells MW-37, MW-38R, and MW-61.

The wells were completed into Stratum PA-2. A groundwater potentiometric surface map was prepared by TRC for the October 4, 2022 semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows to the southwest beneath the E Pond at a gradient ranging from 0.010 feet per foot (ft/ft) to 0.030 ft/ft.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the hydrogeology of the E Pond, potential SSIs in groundwater including boron, sulfate, and total dissolved solids (TDS) are discussed in the subsections below.

2.2.1 Boron in Groundwater

Boron is normally considered to be a minor constituent in groundwater since it is generally present in low concentrations (Palmucci & Rusi, 2014). Apart from a potential boron source area, the primary origin of boron in groundwater is typically associated with the processes of sorption and desorption from mineral surfaces including soil and bedrock (Ravenscroft & McArthur, 2004). Boron is often cited as a contaminant trace chemical and usually occurs as a non-ionized form as H_3BO_3 in soils at pH <8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the concentration of boron in groundwater include weathering, human activity, evaporative concentration, ion-exchange, electrical conductivity (EC), and pH. Ravenscroft & McArthur (2004) investigated the mechanism of regional boron enrichment in groundwater and the results indicated that the main process resulting in boron enrichment in groundwater was flushing by fresh groundwater. The desorption of boron from mineral surfaces could be affected by pH, ionic strength, salinity, and the HCO_3/CO_3 ratio. Decreases in pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH in rocks, soils, and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

Additional investigations confirmed that the presence of boron in groundwater depends on the EC (salinity), such that the concentration of boron increases with increasing EC. Halim et al. (2010) reported that the increae in Cl^- contributes to an increase in EC value since a strong linear correlation ($R^2 = 0.88$) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between elevated concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) determined that the concentration of boron in groundwater was related to SO_4^{2-} and the age affect.

Regarding the concentration of boron in groundwater at the E Pond, the source of boron is more likely natural rather than anthropogenic. Therefore, the increase in concentration of boron may be related to natural variations in groundwater geochemistry, such as pH, ion exchanges, EC, and salinity.

2.2.2 Sulfate in Groundwater

The presence of sulfate is ubiquitous in groundwater, having both natural and anthropogenic sources. There are many potential sources of sulfate in groundwater including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As groundwater moves through soil and rock formations that contain sulfate minerals, a portion of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to elevated concentrations of sulphate in groundwater aquifers. Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and can impact groundwater quality. Multiple investigations have indicated that atmospheric deposition, dissolution of gypsum, and oxidation of sulfide minerals can contribute to the concentrations of sulfate in groundwater.

Regarding the concentration of sulfate in groundwater at the E-Pond, the source of sulfate is more likely natural rather than anthropogenic. Therefore, the increase in concentration of sulfate may be related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.2.3 Total Dissolved Solids (TDS) in Groundwater

Total dissolved solids (TDS) represent the combined total of inorganic and organic substances present in groundwater, and TDS can be a general indicator of water quality. These solids typically consist of minerals, salts, and organic matter, which may originate from sources such as weathering of minerals, storm water runoff, sewage, effluent discharges, agriculture, decaying organisms, and anthropogenic sources. Common salts that contribute to TDS are sodium, chloride, calcium, magnesium, potassium, sulfate, and bicarbonate. (Olumuyiwa I. Ojo, 2012)

TDS concentrations in groundwater is usually higher than surface water due to the longer contact time for groundwater with underlying soil and rocks. Since many minerals are water soluble, high concentrations can accumulate over time through the processes of precipitation and evaporation.

TDS is related to other water quality parameters such as hardness, which may occur if an elevated concentration of TDS is associated with the presence of carbonates. Research investigations have evaluated the relationship between TDS and other groundwater parameters such as EC and salinity (Atekwana et al., 2004; Banadkooki et al., 2020; Poursaeid et al., 2020).

Section 3
Alternative Source Demonstration

The 11th semi-annual detection monitoring event was conducted on October 4, 2022 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352 Subpart H. Eight apparent SSIs were initially identified.

Statistical evaluation to identify SSIs for the sampling event was performed within 60 days of sample collection. Eight apparent SSIs were confirmed for boron, sulfate, and TDS for downgradient monitoring wells. Based on the results of the sampling event and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on December 16, 2022 addressing the apparent SSIs.

The UTLs and sampling results for the for eight apparent SSIs are provided in Table 1 below.

Table 1 SSIs – October 2022 Semiannual Detection Monitoring Event

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	0.12	10/4/2021	0.363	mg/L
Sulfate	MW-37	474	10/4/2021	717	mg/L
Total Dissolved Solids	MW-37	1,826	10/4/2021	1930	mg/L
Boron	MW-38R	0.12	10/4/2021	0.440	mg/L
Sulfate	MW-38R	474	10/4/2021	646	mg/L
Boron	MW-61	0.12	10/4/2021	1.58	mg/L
Sulfate	MW-61	474	10/4/2021	987	mg/L
Total Dissolved Solids	MW-61	1,826	10/4/2021	2010	mg/L

Notes: mg/L = milligrams per Liter

3.1.1 Site-Specific Hydrogeology

Based on site-specific hydrogeology at the E Pond, the following lines of reasoning have been identified that support alternative source(s) for the apparent SSIs:

- The bottom of the E Pond is separated from the upper aquifer system by a confining unit (Stratum PA-1) that hydraulically isolates the bottom of the E Pond from the upper aquifer system (Stratum PA-2). Available data indicate the upper aquifer system is under confined conditions and the confining unit (Stratum PA-1) acts as a vertical hydraulic barrier between the bottom of the E Pond and the upper aquifer system (Stratum PA-2), based on the following lines of reasoning:

- Based on review of the boring logs for the groundwater monitoring wells installed at the E Pond, the upper clay confining unit (Stratum PA-1) was present at each monitoring well from the ground surface to depths ranging from 19 feet bgs to 32 feet bgs [i.e., thickness ranging from 19 feet to 32 feet; corresponding to elevations of about 53 to 49 feet above mean sea level (amsl)]. The bottom of the E Pond is located within Stratum PA-1 with the bottom of the clay liner at an elevation of about 60 feet amsl); therefore, Stratum PA-1 acts as a confining layer between the bottom of the E Pond and the underlying upper aquifer system (Stratum PA-2).
- Based on geotechnical laboratory results for a soil sample collected from Stratum PA-1 at a depth of 10 feet bgs, Stratum PA-1 is a lean clay with a hydraulic conductivity of 2.03E-8 centimeters per second (ERM 2017b), which is consistent with an impervious lithologic unit that exceeds the required specifications per 40 CFR §257.71(a) for a compacted bottom clay liner for a CCR impoundment.

■ The E Pond is located at an active power generating area at the Plant Area and non CCR-related and CCR-related materials are actively managed near the E Pond. For example, the FGD loadout pad immediately adjoins the E Pond. The presence of non CCR-related and CCR-related materials near the E pond monitoring wells may be a potential source for some or all of the apparent SSIs identified in groundwater samples collected from wells located downgradient of the E Pond, as described further below. The E Pond monitoring wells were originally installed as flush-mounted wells, which may have enabled surface materials to incidentally enter the groundwater monitoring wells during sampling activities.

Prior to the third semiannual detection monitoring event, NRG modified the monitoring wells by installing casing extensions and protective casings to protect the wells from the accidental introduction of CCR materials directly into groundwater samples during sample collection. The wells were further redeveloped prior to the fourth sampling event. Although the wells have been improved and sampling collection methods modified, groundwater/groundwater samples may still be affected by the inadvertent introduction of surface CCR into the monitoring wells and/or groundwater samples during sample collection. This may include residual impacts from CCR introduced into the wells prior to their improvement in 2018.

3.1.2 Replacement Well MW-38R

In July 2019, equipment working in the vicinity of the E Pond inadvertently damaged MW-38. The well was replaced by new monitoring well MW-38R in August 2019, which was installed adjacent to the location of former MW-38. Following well development, groundwater samples were collected from the replacement monitoring well on August 5, 2019. Table 2 provides a comparison of the April 30, 2019, Appendix III analytical results for MW-38 and the August 5, 2019 analytical results for MW-38R.

The August samples were analyzed by a different analytical laboratory and by the methods described below. While the results for two analytes remain higher than the UTLs, they indicate improved water quality. These results indicate that technical issues with MW-38 were likely responsible for elevated concentrations of some Appendix III constituents in that well. It is likely that these monitoring well issues and other issues with materials present in the vicinity of the monitoring wells have allowed a pathway for constituents to reach the groundwater by a pathway other than migration directly from the E Pond.

Table 2 Replacement Well Analytical Results

ANALYTE	UTL	UNIT	MW-38 4/29/2019	MW-38R 8/5/2019
Boron	0.16	mg/L	**2.01**	**0.359**
Calcium	301	mg/L	**454**	**323**
Chloride	359	mg/L	**661 JL**	**180**
Fluoride	7	mg/L	**0.817**	**0.52**
Field pH	6.4 – 7.1	S.U.	**6.79**	**6.83**
Sulfate	1,070	mg/L	**855 JL**	**775**
Total Dissolved Solids	1,958	mg/L	**2,710**	**1,870**

Results above detection limits are bolded
Results above the UTL are highlighted
JL Estimated result with a low bias

3.1.3 Historical Laboratory Data Quality Issues

Based on validation of the original background and semi-annual detection monitoring events provided by the analytical laboratory, TRC determined that there are unresolvable issues regarding data quality. These issues have brought into question the accuracy and quality of the data provided by the analytical laboratory to develop the original background water quality data set (see Technical Memos on Laboratory Quality Issues, dated 4-24-19 and Laboratory Change for CCR Sampling Events, dated 7-19-19).

During the April 2019 fourth semi-annual detection monitoring event, a groundwater sample from one well per CCR unit was split between two analytical laboratories to assess the ongoing issues with the analytical laboratory. For the E Pond, MW-37 was selected for split sampling. The split samples for chloride and TDS each had one result that was a potential SSI, and one results that was not. While the TDS results between the two laboratories are relatively close and merely straddle the background UTL concentration, the chloride results are substantially different (a circumstance that was also observed for the other spilt samples). This provides support for the line of reasoning and likelihood that laboratory analytical issues are an alternative source for the chloride UTL exceedance.

3.1.4 E Pond Retrofit Activities

In addition to the site-specific hydrogeology at the E Pond and data quality issues associated with the initial laboratory used for analyses, as discussed previously in subsection 1.1.1 of this ASD, during retrofit construction activities at the E Pond during 2020 and 2021 per the federal CCR Rule, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and ORP, are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters, including pH and sulfate.

Finally, the apparent SSIs are discussed relative to the groundwater monitoring wells for the E Pond in the subsections below:

3.2 MW-37

Total dissolved solids (TDS) were detected in MW-37 at a concentration of 1,880 mg/L in the April 1, 2022 sample, and 1,930 mg/L in the October 4, 2022 sample. Both sample results exceeded the UTL for the E-Pond of 1,826 mg/L, however, TDS concentration decreased by approximately 10% compared to the TDS data in the past two years and has been approaching its UTL. Historical data review indicates TDS increased from 1,870 mg/L in October 2019 to 2,020 mg/L in April 2020, which coincides with when the retrofit construction activities were occurring at the E Pond. TDS concentration in MW-37 remained in the range of 2,020 to 2,160 in 2020 and 2021.

Sulfate was detected in MW-37 at a concentration of 1,030 mg/L in the April 1, 2022 sample and 717 mg/L in the October 4, 2022 sample. Both sample results exceeded the UTL for the E-Pond of 474 mg/L. The sulfate data are consistent with the data collected during the previous two years. The elevated sulfate concentrations are related to the potential impact of reduced surface sulfate sources or mineral dissolution and not related to a release from E-Pond.

Boron was detected in MW-37 at a concentration of 0.367 mg/L in the April 1, 2022 sample and 0.363 mg/L in the October 4, 2022 sample. Both sample results exceeded the UTL for the E-Pond of 0.12 mg/L.

The boron data are consistent with the data collected from 2017 to 2021. The elevated boron concentrations could be related to the potential impact of a new surface source resulting in an elevated EC and high salinity in the groundwater and not related to a release from the E Pond. As discussed in subsection 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer.

Soil disturbance occurred during 2020 and 2021 as part of the retrofit of the E Pond. Construction activities included CCR dewatering, CCR excavation, decontamination, and construction of a composite bottom-liner system. Such activities likely impacted the geochemical stability of the aquifer and impacted groundwater quality in the aquifer, for example, causing additional mineral dissolution into groundwater and/or introducing new carbonate sources such as concrete materials. As the aquifer restabilizes over time after completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize and concentrations of CCR indicator parameters should return to their pre-construction condition.

3.3 MW-38R

Sulfate was detected in MW-38R at a concentration of 572 mg/L in the April 1, 2022 sample and 646 mg/L in the October 4,2022 sample. Both sample results exceeded the UTL for the E Pond of 470 mg/L. A decreasing trend in sulfate concentrations was observed from 2021 to 2022 and the concentration of sulfate has been approaching its UTL. The overall decreasing trend in sulfate concentrations indicates that less surface sulfate sources are present at the E Pond. Dissolution of sulfate from soils and minerals is likely the source of sulfate in groundwater. The elevated sulfate concentrations could be related to the potential impact of reduced surface sulfate sources and not related to a release from E-Pond.

Boron was detected in MW-38R at a concentration of 0.421 mg/L in the April 1, 2022 sample and 0.440 mg/L in the October 4, 2022 verification sample. Both sample results exceeded the UTL for the E Pond of 0.12 mg/L.

The sample results were generally consistent with the data for boron from 2019 through 2021. Similar trends for the boron data were observed in both downgradient monitoring well M-37 and MW-38R at the E Pond. The elevated boron concentration in both sampling events could be related to the potential impact of a new surface source resulting in elevated EC and salinity concentrations in groundwater and surface water flushing and accumulation. As discussed in Section 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer.

As discussed in subsection 3.1, soil disturbance occurred during 2020 and 2021 as part of the retrofit of the E Pond. Construction activities included CCR dewatering, CCR excavation, decontamination, and construction of a composite bottom-liner system. Such activities likely impacted the geochemical stability of the aquifer and impacted groundwater quality in the aquifer, for example, causing additional mineral dissolution into groundwater and/or introducing new carbonate sources such as concrete materials. As the aquifer restabilizes over time after completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize and concentrations of CCR indicator parameters should return to their pre-construction condition.

3.4 MW-61

TDS was detected in MW-61 at a concentration of 1,880 mg/L in the April 1, 2022 sample, and 2,010mg/L in the October 4, 2022 sample. Both sample results exceeded the UTL for the E-Pond of 1,826 mg/L, but the TDS data is close to its UTL. Historical data review indicates TDS decreased from 2017 to 2019 and remained in a consistent data range of 1,800 to 2,000 mg/L from 2019 to 2021. The TDS SSI was likely associated with soil disturbance that occurred during 2020 and 2021 as part of the retrofit of the E Pond.

Sulfate was detected in MW-61 at a concentration of 916 mg/L in the April 1, 2022 sample and 987 mg/L in the October 4, 2022 sample. Both sample results exceeded the UTL for the E Pond of 474 mg/L. Changes in the concentration of sulfate concentration in groundwater may be related to atmospheric deposition or anthropogenic activities, such as new sulfate source with rainwater or surface water flushing. The elevated sulfate concentrations could be related to the potential impact of reduced surface sulfate sources and not related to a release from E-Pond.

Boron was detected in MW-61 at a concentration of 1.29 mg/L in the April 1, 2022 sample and 1.58 mg/L in the October 4, 2022sample. Both sample results exceeded the UTL for the E Pond of (0.12 mg/L. The boron data are consistent with the data collected from 2017 to 2021. As discussed in Section 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer. The concentration of sulfate and chloride in MW-61 further reinforce that elevated concentrations of boron are likely related to elevated EC and salinity in the aquifer.

Section 4
Conclusions

Based on statistical evaluation of the October 4, 2022 semi-annual detection monitoring event, eight apparent SSIs (boron, sulfate, and TDS) for downgradient monitoring wells for the eleventh semi-annual detection monitoring event were identified for the E Pond. This ASD has identified the following lines of reasoning that support alternative sources for these apparent SSIs:

- The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
- The presence of CCR materials in the vicinity of the monitoring wells prior to their modification to include risers from the ground surface provided an opportunity for surface materials to inadvertently enter the wells directly from the ground surface.
- Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical date for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.
- It appears that the construction activities that occurred during the retrofit of the E Pond per the federal CCR Rule and the Closure Plan during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration;
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents;
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters; and

- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the E Pond have been shown to be responsible for each of the eight apparent SSIs observed. Based on this successful ASD, NRG will continue performing semi-annual detection monitoring for the E Pond per 30 TAC Chapter 352.

Section 5
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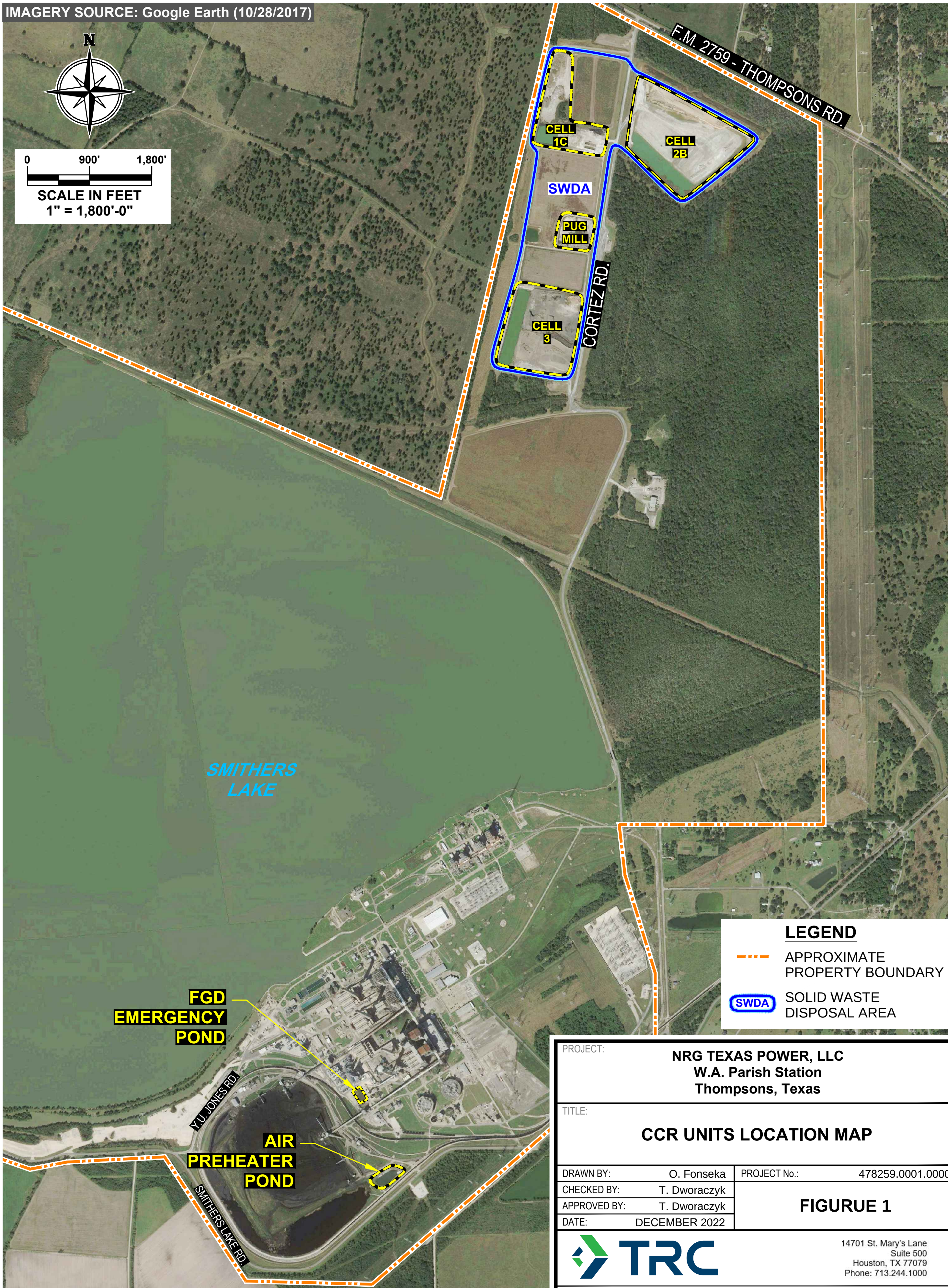
Figures



PROJECT:	NRG TEXAS POWER, LLC W.A. Parish Station Thompsons, Texas
TITLE:	CCR UNITS LOCATION MAP

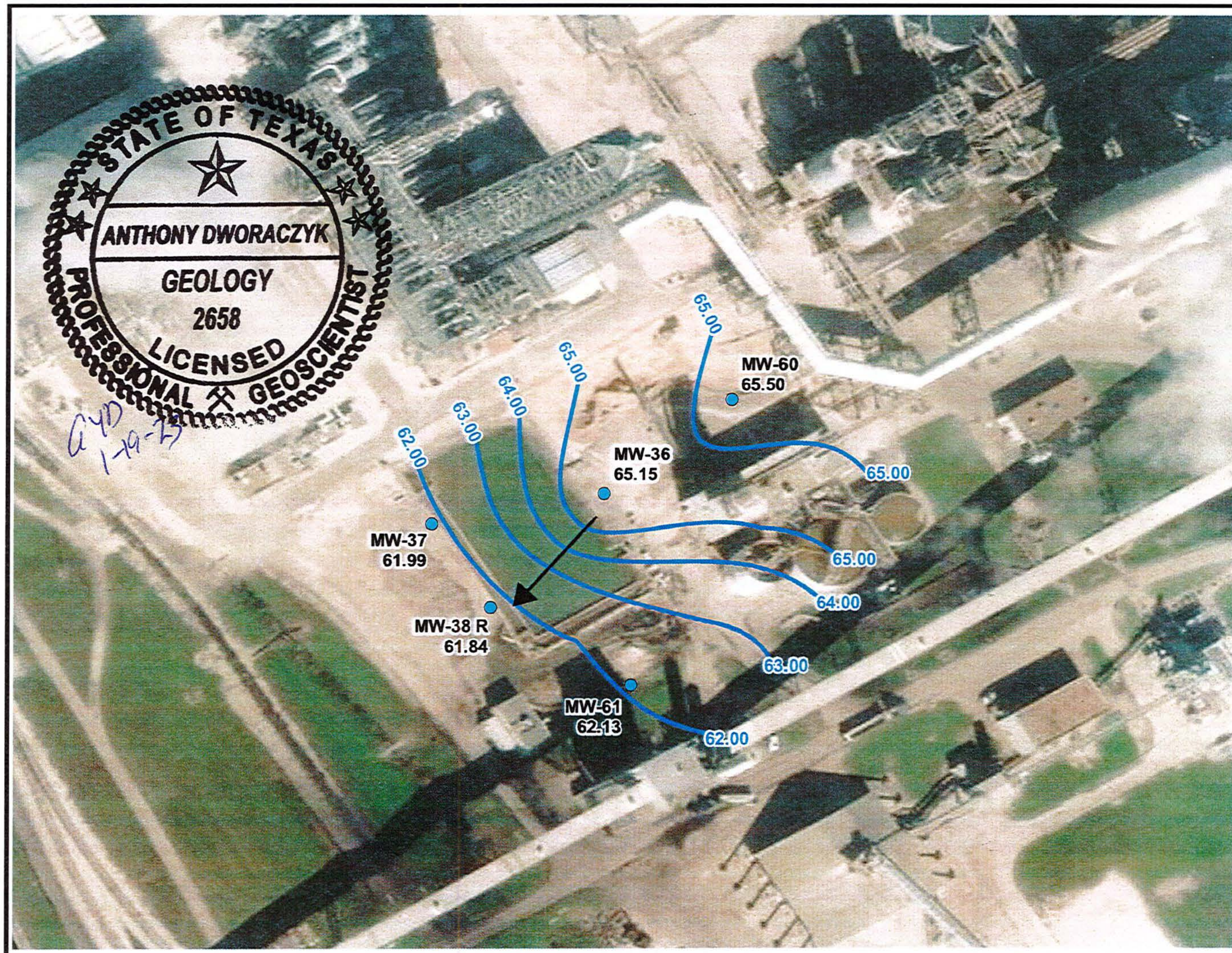
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	FIGURUE 1	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg 01/30/19



Legend

- MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR - DASHED WHERE INFERRED (FT MSL)
- 65.50 GROUNDWATER ELEVATION (FT MSL)

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2022.

N

0 150 300 FT

1 " = 150 '
1:1,800

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX 77079
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PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
FGD EMERGENCY POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	
DATE:	JANUARY 2023
PROJ. NO:	478259.0001.0000

FIGURE 2

Texas Commission on Environmental Quality
Waste Permits Division Correspondence Cover Sheet

Date: February 27, 2023
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Solid Waste Disposal Area (SWMU 001) CCR Multiunit

February 2023

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
New Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

STATE OF TEXAS
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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the Solid Waste Disposal Area (SWDA) multi-unit landfill (Landfill), which is the subject of this Alternate Source Demonstration (ASD).

The 11 semi-annual groundwater detection monitoring event was conducted on October 4, 2022. Verification sampling was performed on November 22, 2022. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Two apparent SSIs: sulfate and TDS; were identified. Both apparent SSIs were identified in an upgradient background monitoring well (MW-23R). NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on December 16, 2022.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results, including the November 22, 2022 verification sampling results, are the third data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for both apparent SSIs at the SWDA Landfill, based on the following lines of reasoning:

- Natural variations in upgradient background groundwater quality; and
- Enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the SWDA Landfill have been shown to be responsible for all the apparent SSIs observed in upgradient background monitoring well MW-23R. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the SWDA Landfill per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015) and the Phase 1, Part1 final rule (July 30, 2018). CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The SWDA Landfill is located to the north of the Plant Area and the APH and E Ponds are located at the southern portion of the Plant Area. The locations of the three CCR units are shown on Figure 1. The SWDA Landfill is the subject of this Alternative Source Demonstration (ASD).

CCR-management activities at the SWDA Landfill are generally described as follows:

- Cell 1C – Receives nonmarketable CCR trucked from the plant;
- Cell 2B – Receives marketable CCR trucked from the plant;
- Cell 3 – Receives CCR bottom ash trucked from the plant; and
- Cell 2A-Pug Mill – Pug mill located at a small portion of Cell 2A and that is not currently being used for CCR management purposes.

1.1.1 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the APH Pond were documented in the *Annual Groundwater Monitoring and Corrective Action Reports* (January 30, 2018) for the individual CCR landfill units (Cell 1C, Cell 2A, Cell 2B, and Cell 3) and the *CCR Groundwater Monitoring Reports* (March 1, 2018) for the individual CCR landfill units pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the SWDA Landfill per the federal CCR Rule and 30 TAC Chapter 352. As of the April 2022 sampling event, a total of 11 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results, including the November 22, 2022 verification sampling results, are the third data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD on behalf of NRG to evaluate apparent SSIs above background levels for the 11th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area surrounding the SWDA landfill.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA Landfill. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area, which is consistent with this area being located outside of the Brazos River floodplain zone (FBC, 2018).

The alluvium and Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the Station are under confined conditions (ERM, 2017a).

Environmental site investigations conducted in May 2016 and November 2016 identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA Landfill and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM, 2017b) and are summarized below.

2.1.1 Stratum DA-1 (Upper Confining Unit)

Stratum DA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum DA-1 is generally present from the ground surface to approximately 30 feet below ground surface (bgs), but this stratum ranges in thickness from 20 to 60 feet throughout the SWDA Landfill.

Stratum DA-1 serves as a confining unit to underlying Stratum DA-2, which comprises the uppermost groundwater-bearing unit at the Station. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum DA-1 is 2.85E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum DA-2 (Upper Aquifer System)

Stratum DA-2 consists of interbedded sand, silty sand, clayey sand, and clayey sandy silt with some gravelly sand. The clay content within Stratum DA-2 varies across the SWDA. Stratum DA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum DA-2 is saturated and comprises the upper aquifer system at the SWDA Landfill. CCR monitoring wells at the SWDA Landfill are completed within Stratum DA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.86E-04 cm/sec to 2.59E-02 cm/sec in Stratum DA-2 (ERM, 2017b). Groundwater primarily flows to the northeast towards the Brazos River beneath the SWDA Landfill.

2.1.3 Stratum DA-3 (Lower Confining Unit)

Stratum DA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing unit (Stratum DA-2). The thickness of Stratum DA-3 has not been determined at the SWDA Landfill.

2.1.4 Solid Waste Disposal Area – Certified Monitored Network

Four separate groundwater monitoring well systems were initially developed in 2016 for each of the four active CCR cells within the SWDA Landfill, which were certified by a Texas P.E. under 257.91(f) of the federal CCR Rule on October 17, 2017. The monitoring wells were completed into Stratum DA-2, the upper aquifer system at the Station.

Following successful preparation of the ASD in July 2018 for the first semi-annual detection monitoring event for the SWDA Landfill, the four individual CCR cells were combined into a single CCR multiunit landfill as allowed for in the federal CCR Rule for groundwater monitoring purposes. A revised groundwater monitoring system and revised statistical method were developed and certified by a Texas professional engineer (P.E.) for the SWDA Landfill. The monitoring wells comprising the revised groundwater monitoring system are shown in Table 1.

Table 1 Groundwater Monitoring System for SWDA CCR-Multiunit

UPGRADIENT WELLS	DOWNGRADIENT WELLS
MW-23R, MW-28D, MW-42, MW-43, MW-47, and MW-48	MW-44, MW-46R, MW-50, MW-52, MW-54, MW-55R, MW-58, and MW-65

Because of potential integrity issues with the construction of background monitoring well MW-23 (potential infiltration of grout into the well screen), it was replaced by MW-23R which was installed in close proximity to MW-23. A groundwater potentiometric surface map was prepared by TRC for the October 4, 2022 semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows primarily to the northeast beneath the SWDA CCR multiunit at a gradient ranging from 0.0007 foot per foot (ft/ft) to 0.003 ft/ft.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the site geological conditions, several groundwater parameters are discussed as follows, including sulfate and total dissolved solids (TDS).

2.2.1 Sulfate in Groundwater

Sulfate is ubiquitous in groundwater, with both natural and anthropogenic sources. Apart from a potential sulfate source area, the primary origin of sulfate includes mineral dissolution, atmospheric deposition, and other anthropogenic sources (Miao et al., 2012). As water moves through soil and rock formations that contain sulfate minerals, some of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to the high levels of sulphate in many aquifers of the world. Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and inputs to soil will impact groundwater. Research investigations indicate that atmospheric deposition, dissolution of gypsum, oxidation of sulfide mineral, and anthropogenic inputs will contribute to elevated sulfate concentrations in groundwater. Based on the hydrogeology at the SWDA Landfill, atmospheric deposition and anthropogenic activities could be impacting sulfate concentrations (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.2.2 TDS in Groundwater

Total dissolved solids (TDS) represent the combined total of inorganic and organic substances present in groundwater, and TDS can be a general indicator of water quality. These solids typically consist of minerals, salts, and organic matter, which may originate from sources such as weathering of minerals, storm water runoff, sewage, effluent discharges, agriculture, decaying organisms, and anthropogenic sources. Common salts that contribute to TDS are sodium, chloride, calcium, magnesium, potassium, sulfate, and bicarbonate. (Olumuyiwa I. Ojo, 2012)

TDS concentrations in groundwater is usually higher than surface water due to the longer contact time for groundwater with underlying soil and rocks. Since many minerals are water soluble, high concentrations can accumulate over time through the processes of precipitation and evaporation.

TDS is related to other water quality parameters such as hardness, which may occur if an elevated concentration of TDS is associated with the presence of carbonates. Research investigations have evaluated the relationship between TDS and other groundwater parameters such as EC and salinity (Atekwana et al., 2004; Banadkooki et al., 2020; Poursaeid et al., 2020).

Section 3
Alternative Source Demonstration

The 11th semi-annual detection monitoring event was conducted on October 4, 2022 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Two apparent SSIs were identified: sulfate and TDS.

As part of the ASD activities, verification sampling was conducted on November 22, 2022 for the apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. Two apparent SSIs were confirmed: sulfate and TDS. Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on December 16, 2022 addressing the apparent SSIs.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 2 SSIs – October 2022 Semiannual Detection Monitoring Event

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-23R (UG)	673	11/22/2022	1,220	mg/L
Total Dissolved Solids	MW-23R (UG)	3,700	11/22/2022	3,760	mg/L

Notes: UG = Upgradient
mg/L = milligrams per Liter

3.1 MW-23R

Both apparent SSIs were identified in upgradient background monitoring well MW-23R. MW-23 had been replaced by MW-23R after the seventh quarterly background monitoring event, which occurred in January 2020 due to the potential presence of grout within the well screen. Because the new background results only included one sampling event for MW-23R, that well isn't sufficiently represented in the background data set. NRG proposes to replace the MW-23 data from the background data set over time, such that the background values for the SWDA Landfill eventually includes representation from MW-23R.

Sulfate was detected in MW-23R at a concentration of 1,200 mg/L in the April 1, 2022 sample and 1,220 mg/L in the November 22, 2022 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 673 mg/L, but is an insufficient change between sampling events. The sulfate data is consistent with the prior sampling events. MW-23R is located hydraulically upgradient and is an upgradient background monitoring location for the SWDA Landfill. Therefore, the sulfate SSI in MW-23R is likely associated with natural variations in the geochemistry of groundwater in the aquifer and are not related to a release from the SWDA Landfill.

TDS was detected in MW-23R at a concentration of 3,960 mg/L in the April 1, 2022 sample and 3,760 mg/L in the November 22, 2022 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 3,720 mg/L but show a slight decrease from the April event to the November 2022 resampling event.

As described in subsection 2.2 of this ASD, minerals dissolution is likely the source of TDS in groundwater. MW-23R is a newly installed monitoring well. Potential disturbance of the aquifer during monitoring well installation could have resulted in more minerals being released into groundwater with associated changes in the geochemical conditions of the aquifer, which would be reflected in the monitoring event. Furthermore, MW-23R is located hydraulically upgradient and is a background monitoring location for the SWDA Landfill. Therefore, the TDS SSI in MW-23R is likely associated with natural variations in the geochemistry of groundwater in the aquifer and is not related to a release from the SWDA Landfill.

Finally, the increasing concentrations of sulfate were consistent with increasing concentrations of TDS, which were likely related to enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Section 4
Conclusions

Based on statistical evaluation of the October 4, 2022 semi-annual detection monitoring event and the November 22, 2022 verification sampling events analytical results, two apparent SSIs: sulfate and TDS; were identified in upgradient background monitoring well MW-23R for the SWDA Landfill. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- Natural variations in upgradient background groundwater quality; and
- Enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the SWDA Landfill have been shown to be responsible for all three apparent SSIs observed in upgradient background monitoring well MW-23R. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the SWDA Landfill per 30 TAC Chapter 352.

Section 5
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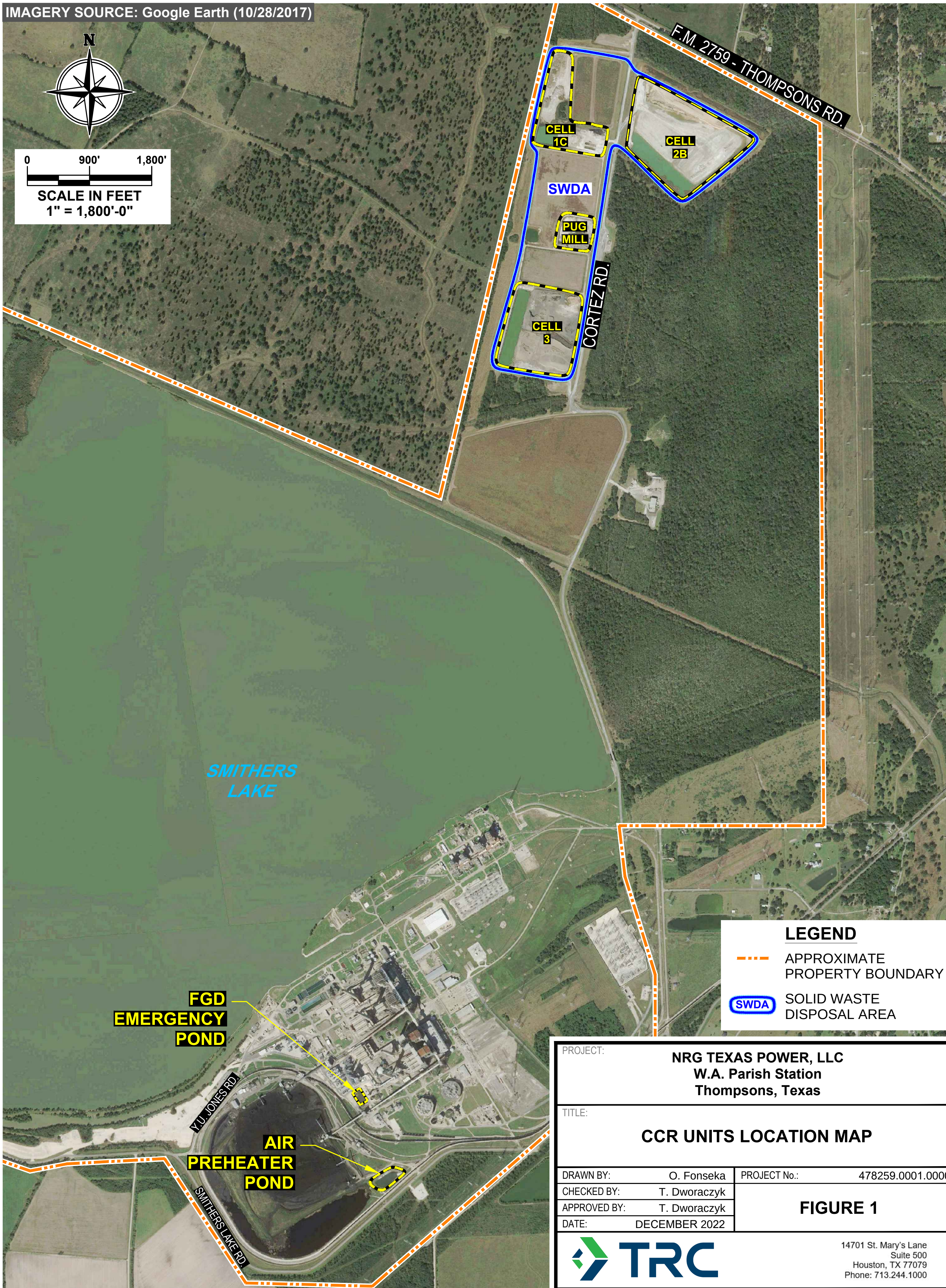
Figures



PROJECT:

NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE:

CCR UNITS LOCATION MAP

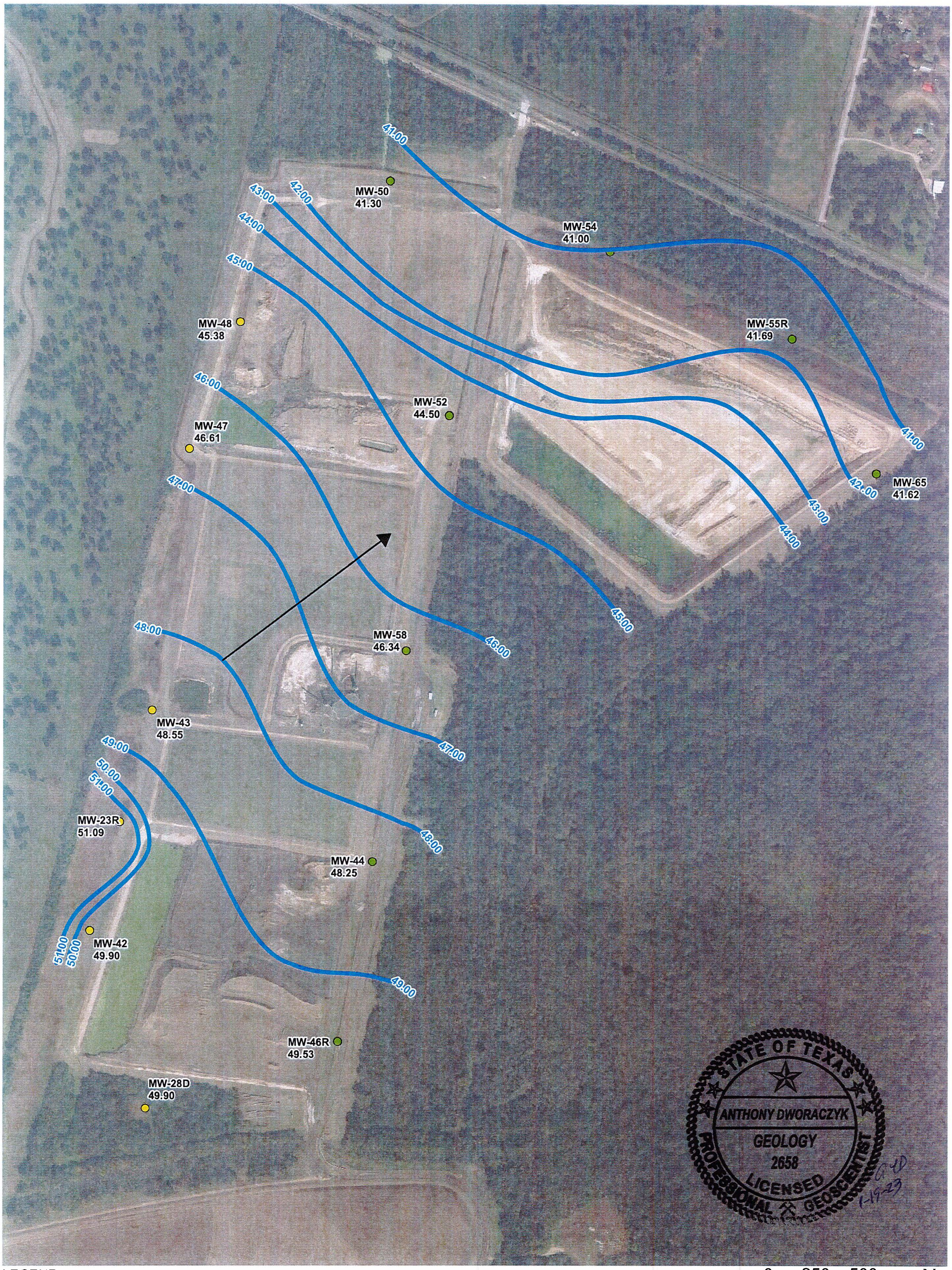
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg 01/30/19



LEGEND

- Multiunit Upgradient Monitoring Well
- Multiunit Downgradient Monitoring Well
- *49.90* Groundwater Elevation (FT MSL)
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- Groundwater Flow Direction

NOTE: GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2022.

0 250 500 Feet

1 " = 500 '

1:6,000

N

TRC

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PROJECT:

NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

SOLID WASTE DISPOSAL AREA
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	
DATE:	DECEMBER 2022
PROJ NO:	478259.0001.0000
FILE:	478259.0001_2-7.mxd

FIGURE 2

Texas Commission on Environmental Quality
Waste Permits Division Correspondence Cover Sheet

Date: August 31, 2023
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Air Preheater Pond (SWMU 021)

August 2023

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
TCEQ Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

STATE OF TEXAS
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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the Air Preheater Pond (APH) Pond, which is the subject of this Alternative Source Demonstration (ASD).

The 12th semi-annual groundwater detection monitoring event was conducted on April 3, 2023. Verification sampling was performed on May 1, 2023. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Two apparent SSIs: calcium and sulfate; were identified. TRC, on behalf of NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on June 12, 2023.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 2023 verification sampling results, are the fourth data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for apparent SSIs at the APH Pond, based on the following lines of reasoning:

- It appears that the construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and

- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, since retrofit construction activities have been completed recently and it appears the uppermost aquifer system is continuing to re-equilibrate, NRG will continue performing semi-annual detection monitoring for the APH Pond per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 19, 2015).

CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The APH Pond receives effluent from air preheater wash and boiler cleaning wash, which consists of fly ash or economizer ash particles and water. The APH Pond is located at the southern portion of the Plant Area as shown on Figure 1 and is the subject of this Alternative Source Demonstration (ASD).

1.1.1 Retrofit Construction Activities

During 2020 and 2021, the APH Pond was removed from service and retrofitted per §257.102(k) of the federal CCR Rule. As part of these activities, the CCR within the impoundment was dewatered, all water and CCR was removed from the impoundment, and the APH Pond area was decontaminated based on over-excavating a minimum of 6-inches of clay liner material after removal of CCR. After CCR removal and decontamination had been confirmed, a federal CCR Rule bottom composite liner system was then installed and the APH Pond was placed back into service as a CCR unit compliant with both the federal and TCEQ CCR programs.

During retrofit construction activities for the APH Pond, upgradient groundwater monitoring well MW-39 was apparently destroyed and could not be located during the April 2021 detection monitoring event. Therefore, MW-39 was replaced by MW-39R that was installed in the approximate location of MW-39 prior to performance of the October 2021 semi-annual detection monitoring event.

Furthermore, during retrofit construction activities, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

1.1.2 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the APH Pond were documented in the *Annual Groundwater Monitoring Report, Landfill (Unit 004)* (ERM 2018a) and the *Annual Groundwater Monitoring Report, APH Pond (Unit 021)* (ERM 2018a) and the March 1, 2018, *Groundwater Monitoring Report, APH Pond* (SWMU Unit 021) (ERM 2018b) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the APH Pond per the federal CCR Rule and 30 TAC Chapter 352. As of the April 2023 sampling event and May 2023 resampling, a total of 12 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The April 3, 2023 semi-annual detection monitoring event analytical results, including the May 1, 2023 verification sampling results, are the fourth data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD to evaluate apparent SSIs above background levels for the 12th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the APH Pond.

2.1 Hydrogeology

According to the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA CCR units. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area, which is consistent with this area being located outside of the Brazos River floodplain zone (FBC 2018). The APH Pond and the E Pond are both located at the Plant Area.

The alluvium and the Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the site are under confined conditions (ERM 2017a).

Environmental investigations conducted in May 2016 and November 2016 by ERM identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM 2017b) and are summarized below.

2.1.1 Stratum PA-1 (Upper Confining Unit)

Stratum PA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum PA-1 serves as a confining unit to underlying Stratum PA-2, which comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum PA-1 is 2.03E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum PA-2 (Upper Aquifer)

Stratum PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum PA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum PA-2 is saturated and comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. CCR monitoring wells in the Plant Area are completed within Stratum PA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum PA-3 (Lower Confining Unit)

Stratum PA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing unit (Stratum PA-2). The thickness of Stratum PA-3 has not been defined.

2.1.4 Air Preheater Pond - Certified Monitoring Network

The certified CCR groundwater monitoring well network for the APH Pond consists of six groundwater monitoring wells (MW-39R, MW-40, MW-41, MW-62, MW-63, and MW-64) completed into Stratum PA-2. A groundwater potentiometric surface map was prepared by TRC for the April 3, 2023 semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows to the southeast beneath the APH Pond at a gradient ranging from approximately 0.002 feet per foot (ft/ft) to 0.006 ft/ft.

The groundwater monitoring system for the APH Pond was originally certified per the federal CCR Rule on October 17, 2017. The original certified CCR groundwater monitoring well network for the APH Pond designated one upgradient monitoring well (MW-62) and five downgradient monitoring wells (MW-39, MW-40, MW-41, MW-63, and MW-64). However, based on TRC's review of groundwater elevation data measured for the semi-annual detection monitoring events and preparation of potentiometric surface maps, two of the initially designated downgradient monitoring wells (MW-39 and MW-40) were found to be located upgradient of the APH Pond as shown on the April 3, 2023 groundwater potentiometric surface map (Figure 2). Therefore, the CCR monitoring well system for the APH Pond was revised and consists of three upgradient monitoring wells (MW-39R, MW-40, and MW-62) and three downgradient monitoring wells (MW-41, MW-63, and MW-64).

During retrofit construction activities for the APH Pond during 2020 and 2021 per the federal CCR Rule, upgradient groundwater monitoring well MW-39 was apparently destroyed and could not be located during the April 2021 detection monitoring event. A replacement monitoring well (MW-39R) was installed during 2021 in close proximity to the location of former well MW-39 prior to the October 2021 semi-annual detection monitoring event and was monitored during that detection monitoring event.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the hydrogeology of the APH Pond, calcium and sulfate is discussed in the subsection below.

2.2.1 Calcium in Groundwater

Calcium is one of the most important ionic constituents in groundwater (Razowska-jaworek, 2014). Water-rock interaction occurs when water interacts with minerals in soils or rocks, such as limestone, marble, calcite, dolomite, gypsum, fluorite, and apatite. Natural dissolution of carbonate rocks and minerals is the primary source of calcium in groundwater (Jiang et al., 2009). Calcium is an important determinant of water hardness (Ca^{2+}), while magnesium is the other hardness determinant. The most common shallow groundwater type is Ca-HCO_3 dominated and Ca(Mg)-HCO_3 dominated.

A literature review indicates the major factors that may influence the calcium concentration in groundwater include rock weathering, soil pH, electrical conductivity (EC), and anthropogenic activities (mining, concrete material dissolution, fertilizer etc.) (Hájek et al., 2021; Schot & Wassen, 1993; Shi et al., 2018).

Regarding the concentrations of calcium in groundwater, the source of calcium appears to be natural rather than anthropogenic. Therefore, the increase in concentration of calcium is related to natural variations in groundwater geochemistry associated with rock weathering, soil pH, and EC.

2.2.2 Sulfate in Groundwater

The presence of sulfate is ubiquitous in groundwater, having both natural and anthropogenic sources. There are many potential sources of sulfate in groundwater including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As groundwater moves through soil and rock formations that contain sulfate minerals, a portion of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to elevated concentrations of sulphate in groundwater aquifers. Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and can impact groundwater quality. Multiple investigations have indicated that atmospheric deposition, dissolution of gypsum, and oxidation of sulfide minerals can contribute to the concentrations of sulfate in groundwater.

Regarding the concentration of sulfate in groundwater at the APH Pond, the source of sulfate is more likely natural rather than anthropogenic. Therefore, the increase in concentration of sulfate is related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

Section 3
Alternative Source Demonstration

The 12th semi-annual detection monitoring event was conducted on April 3, 2023 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Three apparent SSIs were initially identified (calcium, pH, and sulfate).

As part of the ASD activities, verification sampling was conducted on May 1, 2023 for the initial three apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. Two apparent SSIs were confirmed for sulfate and calcium. Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on June12, 2023 addressing the apparent SSIs for sulfate and calcium.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 1 SSIs – April 2023 Semi-Annual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-63	NA	360	05/01/2023	735	mg/L
Calcium	MW-63	NA	290	05/01/2023	335	mg/L

Notes: mg/L = milligrams per Liter
S.U. = Standard Units

As discussed previously in subsection 1.1.1 of this ASD, during retrofit construction activities at the APH Pond during 2020 and 2021 per the federal CCR Rule, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and ORP, are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters, including pH, sulfate, and calcium.

Section 4
Conclusions

Based on statistical evaluation of the April 3, 2023 semi-annual detection monitoring event and the May 1, 2023 verification sampling events analytical results, two apparent SSIs: sulfate and calcium; were identified for the APH Pond. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- It appears that the construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the retrofitted APH Pond have been shown to be responsible for the apparent SSIs observed. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the APH Pond per 30 TAC Chapter 352.

Section 5
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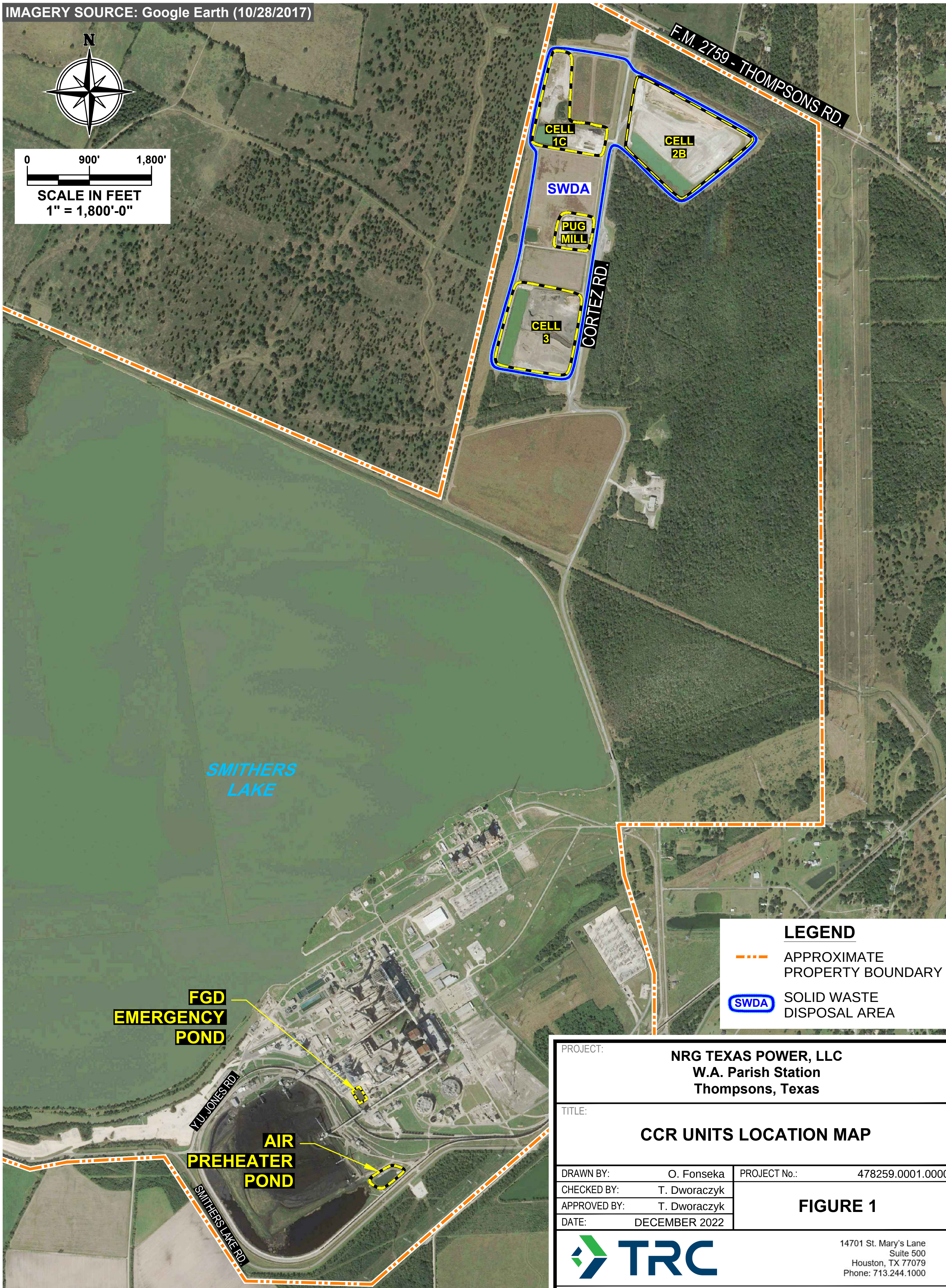
Figures



PROJECT:
NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE:
CCR UNITS LOCATION MAP

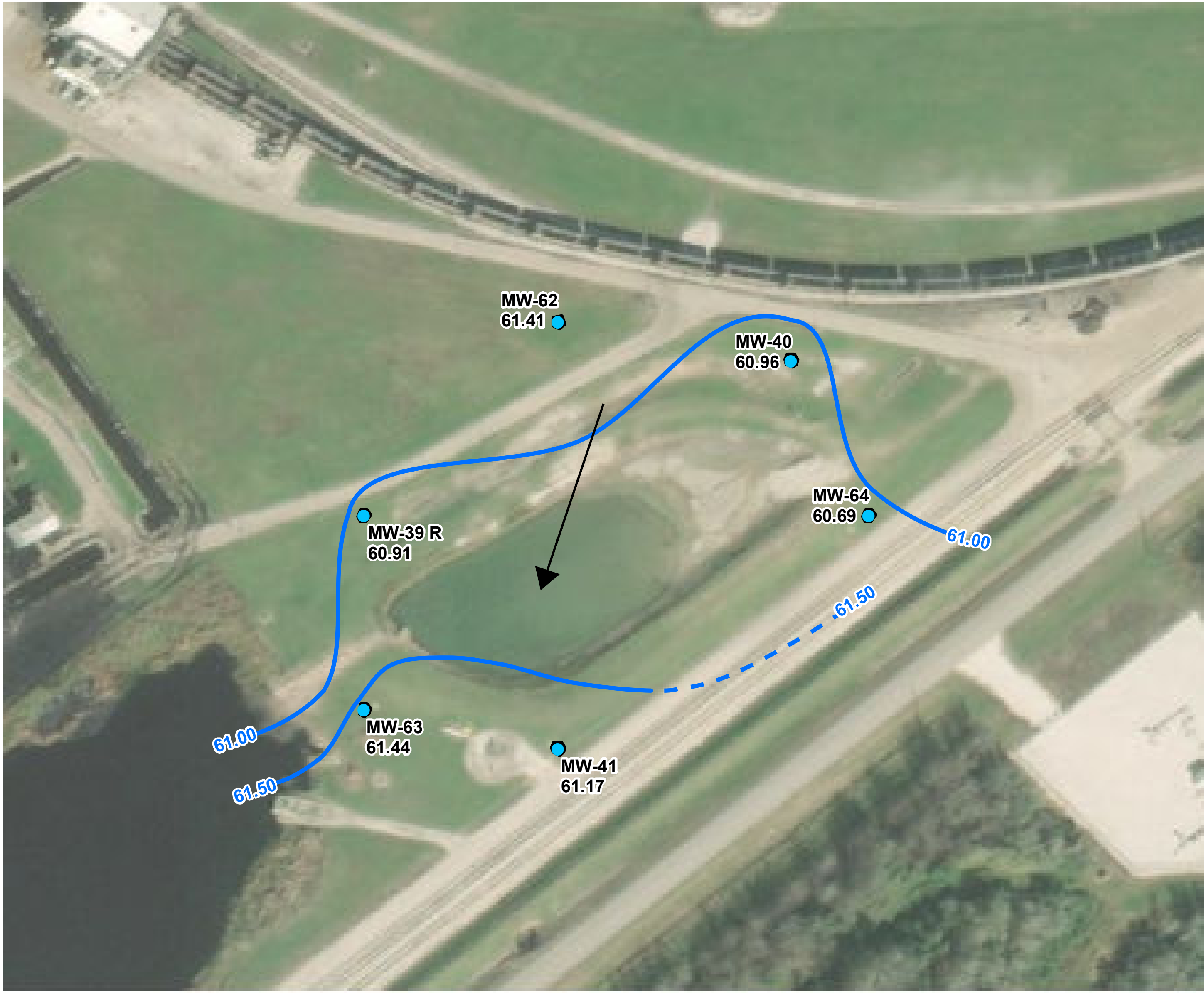
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg 01/30/19



Legend

- MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER ELEVATION CONTOUR - DASHED WHERE INFERRED (FT MSL)
- *61.41* GROUNDWATER ELEVATION (FT MSL)

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST
GAD
8-30-23

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2023.

AERIAL IMAGE SOURCE: GOOGLE EARTH AND THEIR DATA PARTNERS (10/28/2017).

N

0 150 300 FT

1 " = 150 '
1:1,800

TRC

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Houston, TX 77079
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PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
AIR PREHEATER POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	
DATE:	AUGUST 2023
PROJ. NO.:	528472.0000.0000
FILE:	528472.0000_2-5

FIGURE 2-5

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: August 31, 2023
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
FGD Emergency Pond (SWMU 020)

August 2023

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
TCEQ Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the FGD Emergency Pond (E Pond), which is the subject of this Alternate Source Demonstration (ASD).

The 12th semi-annual groundwater detection monitoring event was conducted on April 3, 2023. Verification sampling was performed on May 1, 2023. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Eight apparent SSIs were initially identified from the April 3, 2023, sampling event. NRG notified the Texas Commission Environmental Quality (TCEQ) in a letter dated June 12, 2023, of its intent to prepare an ASD.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 2023 verification sampling results are the fourth data set statistically evaluated using the new background water quality data set.

This ASD has identified alternative sources for all eight apparent SSIs at the E Pond, based on the following lines of reasoning:

- The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
- The former, historical presence of CCR materials in the vicinity of the monitoring wells prior to their modification to include risers from the ground surface provided an opportunity for surface materials to inadvertently enter the wells directly from the ground surface.
- Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical data for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.

- It appears that the construction activities that occurred during the retrofit of the E Pond per the federal CCR Rule and the Closure Plan during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the E Pond have been shown to be responsible for each of the eight apparent SSIs observed. Based on this successful ASD, NRG will continue performing semi-annual detection monitoring for the E Pond per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 19, 2015).

CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The E Pond receives storm water runoff from the FGD dewatering area and blowdown from the FGD system. The E Pond may also receive the contents of an FGD process vessel when the FGD system is not in operation.

1.1.1 Retrofit Construction Activities

During 2020 and 2021, the E Pond was removed from service and retrofitted per §257.102(k) of the federal CCR Rule. As part of these activities, the CCR within the impoundment was dewatered, all water and CCR was removed from the impoundment, and the E Pond area was decontaminated based on over-excavating a minimum of 6-inches of clay liner material after removal of CCR. After CCR removal and decontamination had been confirmed, a federal CCR Rule bottom composite liner system was then installed, and the E Pond was placed back into service as a CCR unit compliant with both the federal and TCEQ CCR programs.

During retrofit construction activities, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

1.1.2 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the E Pond were documented in the *Annual Groundwater Monitoring Report, FGD Emergency Pond (Unit 020)* (ERM 2018a) and the March 1, 2018, *Groundwater Monitoring Report, FGD Emergency Pond (SWMU Unit 020)* (ERM 2018b) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the E Pond per the federal CCR Rule and 30 TAC Chapter 352. As of the April 2023 sampling event and verification sampling in May 2023, a total of 12 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The May 2023 semi-annual detection monitoring event and May 2023 verifications sampling analytical results are the fourth data set statistically evaluated using the new background water quality data set.

Since initial installation of the CCR groundwater monitoring network for the E Pond, improvements to the network have been implemented to improve the operation of the network. These improvements are identified below:

- During the second semi-annual detection monitoring, surface CCR may have been inadvertently introduced into the monitoring wells and the laboratory analytical sample containers during the initial background and semi-annual detection monitoring events. To mitigate this potential issue, the flush-mounted monitoring wells at the E Pond were modified before the third semi-annual detection monitoring event was performed with the installation of vertical well casing extensions and protective casings;
- During the third semi-annual detection monitoring event, silt was observed in the monitoring wells at the E Pond. The wells were redeveloped, and accumulated silt was removed from the well casings prior to performance of the fourth semi-annual detection monitoring event; and
- In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the location of former MW-38.

1.2 Purpose

TRC prepared this ASD on behalf of NRG to evaluate apparent SSIs above background levels for the eleventh semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the E Pond.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA CCR units. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area which is consistent with this area being located outside of the Brazos River floodplain zone (FBC 2018). The APH Pond and the E Pond are both located at the Plant Area.

The alluvium and the Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the Site are under confined conditions (ERM 2017a).

Environmental site investigations conducted in May 2016 and November 2016 identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM 2017b) and are summarized below.

2.1.1 Stratum PA-1 (Upper Confining Unit)

Stratum PA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum PA-1 serves as a confining unit to underlying Stratum PA-2, which comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum PA-1 is 2.03E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum PA-2 (Upper Aquifer)

Stratum PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum PA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum PA-2 is saturated and comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. CCR monitoring wells in the Plant Area are completed within Stratum PA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum PA-3 (Lower Confining Unit)

Stratum PA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing units (Stratum PA-2). The thicknesses of Stratum PA-3 has not been defined.

2.1.4 E Pond – Certified Monitoring Network

The certified CCR groundwater monitoring well network for the E Pond consists of five groundwater monitoring wells:

- Upgradient monitoring wells MW-36 and MW-60; and
- Downgradient monitoring wells MW-37, MW-38R, and MW-61.

The wells were completed into Stratum PA-2. A groundwater potentiometric surface map was prepared by TRC for the April 3, 2023, semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows to the southwest beneath the E Pond at a gradient ranging from 0.010 feet per foot (ft/ft) to 0.030 ft/ft.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the hydrogeology of the E Pond, potential SSIs in groundwater including boron, sulfate, and total dissolved solids (TDS) are discussed in the subsections below.

2.2.1 Boron in Groundwater

□oron is normally considered to be a minor constituent in groundwater since it is generally present in low concentrations (Palmucci & Rusi, 2014). Apart from a potential boron source area, the primary origin of boron in groundwater is typically associated with the processes of sorption and desorption from mineral surfaces including soil and bedrock (Ravenscroft & McArthur, 2004). Boron is often cited as a contaminant trace chemical and usually occurs as a non-ionized form as H_3BO_3 in soils at pH <8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the concentration of boron in groundwater include weathering, human activity, evaporative concentration, ion-exchange, electrical conductivity (EC), and pH. Ravenscroft & McArthur (2004) investigated the mechanism of regional boron enrichment in groundwater and the results indicated that the main process resulting in boron enrichment in groundwater was flushing by fresh groundwater. The desorption of boron from mineral surfaces could be affected by pH, ionic strength, salinity, and the HCO_3/CO_3 ratio. Decreases in pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH in rocks, soils, and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

Additional investigations confirmed that the presence of boron in groundwater depends on the EC (salinity), such that the concentration of boron increases with increasing EC. Halim et al. (2010) reported that the increae in Cl^- contributes to an increase in EC value since a strong linear correlation (R^2 = 0.88) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between elevated concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) determined that the concentration of boron in groundwater was related to SO_4^{2-} and the age affect.

Regarding the concentration of boron in groundwater at the E Pond, the source of boron is natural rather than anthropogenic. Therefore, the increase in concentration of boron is related to natural variations in groundwater geochemistry, such as pH, ion exchanges, EC, and salinity.

2.2.2 Sulfate in Groundwater

The presence of sulfate is ubiquitous in groundwater, having both natural and anthropogenic sources. There are many potential sources of sulfate in groundwater including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As groundwater moves through soil and rock formations that contain sulfate minerals, a portion of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to elevated concentrations of sulphate in groundwater aquifers.

Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and can impact groundwater quality. Multiple investigations have indicated that atmospheric deposition, dissolution of gypsum, and oxidation of sulfide minerals can contribute to the concentrations of sulfate in groundwater.

Regarding the concentration of sulfate in groundwater at the E-Pond, the source of sulfate is natural rather than anthropogenic. Therefore, the increase in concentration of sulfate are related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.2.3 Total Dissolved Solids (TDS) in Groundwater

Total dissolved solids (TDS) represent the combined total of inorganic and organic substances present in groundwater, and TDS can be a general indicator of water quality. These solids typically consist of minerals, salts, and organic matter, which may originate from sources such as weathering of minerals, storm water runoff, sewage, effluent discharges, agriculture, decaying organisms, and anthropogenic sources. Common salts that contribute to TDS are sodium, chloride, calcium, magnesium, potassium, sulfate, and bicarbonate. (Olumuyiwa I. Ojo, 2012)

TDS concentrations in groundwater is usually higher than surface water due to the longer contact time for groundwater with underlying soil and rocks. Since many minerals are water soluble, high concentrations can accumulate over time through the processes of precipitation and evaporation.

TDS is related to other water quality parameters such as hardness, which may occur if an elevated concentration of TDS is associated with the presence of carbonates. Research investigations have evaluated the relationship between TDS and other groundwater parameters such as EC and salinity (Atekwana et al., 2004; Banadkooki et al., 2020; Poursaeid et al., 2020).

Section 3
Alternative Source Demonstration

The 12th semi-annual detection monitoring event was conducted on April 3, 2023, per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352 Subpart H. Eight apparent SSIs were initially identified.

As part of the ASD activities, verification sampling was conducted on May 1, 2023 for the initial eight apparent SSIs. Statistical evaluation to identify SSIs for the sampling event was performed within 60 days of sample collection. Eight apparent SSIs were confirmed for boron, sulfate, and TDS for downgradient monitoring wells. Based on the results of the sampling event and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on June 12, 2023 addressing the apparent SSIs.

The UTLs and sampling results for the eight apparent SSIs are provided in Table 1 below.

Table 1 SSIs – April 2023 Semiannual Detection Monitoring Event and May Verification Samples

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	0.12	05/01/20223	0.329	mg/L
Sulfate	MW-37	474	05/01/20223	1,110	mg/L
Total Dissolved Solids	MW-37	1,800	05/01/20223	1,930	mg/L
Boron	MW-38R	0.12	05/01/20223	0.425	mg/L
Sulfate	MW-38R	470	05/01/20223	860	mg/L
Boron	MW-61	0.12	05/01/20223	1.24	mg/L
Sulfate	MW-61	470	05/01/20223	1,330	mg/L
Total Dissolved Solids	MW-61	1,800	05/01/20223	1,890	mg/L

[illegible]

3.1.1 Site-Specific Hydrogeology

Based on site-specific hydrogeology at the E Pond, the following lines of reasoning have been identified that support alternative source(s) for the apparent SSIs:

- The bottom of the E Pond is separated from the upper aquifer system by a confining unit (Stratum PA-1) that hydraulically isolates the bottom of the E Pond from the upper aquifer system (Stratum PA-2). Available data indicate the upper aquifer system is under confined conditions and the confining unit (Stratum PA-1) acts as a vertical hydraulic barrier between the bottom of the E Pond and the upper aquifer system (Stratum PA-2), based on the following lines of reasoning:

- Based on review of the boring logs for the groundwater monitoring wells installed at the E Pond, the upper clay confining unit (Stratum PA-1) was present at each monitoring well from the ground surface to depths ranging from 19 feet bgs to 32 feet bgs [i.e., thickness ranging from 19 feet to 32 feet; corresponding to elevations of about 53 to 49 feet above mean sea level (amsl)]. The bottom of the E Pond is located within Stratum PA-1 with the bottom of the clay liner at an elevation of about 60 feet amsl); therefore, Stratum PA-1 acts as a confining layer between the bottom of the E Pond and the underlying upper aquifer system (Stratum PA-2); and
- Based on geotechnical laboratory results for a soil sample collected from Stratum PA-1 at a depth of 10 feet bgs, Stratum PA-1 is a lean clay with a hydraulic conductivity of 2.03E-8 centimeters per second (ERM 2017b), which is consistent with an impervious lithologic unit that exceeds the required specifications per 40 CFR §257.71(a) for a compacted bottom clay liner for a CCR impoundment.

■ The E Pond is located at an active power generating area at the Plant Area and non CCR-related and CCR-related materials are actively managed near the E Pond. For example, the FGD loadout pad immediately adjoins the E Pond. The presence of non CCR-related and CCR-related materials near the E pond monitoring wells may be a potential source for some or all of the apparent SSIs identified in groundwater samples collected from wells located downgradient of the E Pond, as described further below. The E Pond monitoring wells were originally installed as flush-mounted wells, which may have enabled surface materials to incidentally enter the groundwater monitoring wells during sampling activities.

■ Prior to the third semiannual detection monitoring event, NRG modified the monitoring wells by installing casing extensions and protective casings to protect the wells from the accidental introduction of CCR materials directly into groundwater samples during sample collection. The wells were further redeveloped prior to the fourth sampling event. Although the wells have been improved and sampling collection methods modified, groundwater/groundwater samples may still be affected by the prior, historical inadvertent introduction of surface CCR into the monitoring wells and/or groundwater samples during sample collection. This may include residual impacts from CCR introduced into the wells prior to their improvement in 2018.

3.1.2 Replacement Well MW-38R

In July 2019, equipment working in the vicinity of the E Pond inadvertently damaged MW-38. The well was replaced by new monitoring well MW-38R in August 2019, which was installed adjacent to the location of former MW-38. Following well development, groundwater samples were collected from the replacement monitoring well on August 5, 2019. Table 2 provides a comparison of the April 30, 2019, Appendix III analytical results for MW-38 and the August 5, 2019, analytical results for MW-38R.

The August samples were analyzed by a different analytical laboratory and by the methods described below. While the results for two analytes remain higher than the UTLs, they indicate improved water quality. These results indicate that technical issues with MW-38 were likely responsible for elevated concentrations of some Appendix III constituents in that well. It is likely that these monitoring well issues and other issues with materials present in the vicinity of the monitoring wells had allowed a pathway for constituents to reach the groundwater by a pathway other than migration directly from the E Pond.

Table 2 Replacement Well Analytical Results

ANALYTE	UTL	UNIT	MW-38 4/29/2019	MW-38R 8/5/2019
Boron	[illegible]	mg/L	2.01	0.359
Calcium	[illegible]	mg/L	454	323
Chloride	[illegible]	mg/L	661 JL	180
Fluoride	[illegible]	mg/L	0.817	0.52
pH	[illegible] – [illegible]	SU	6.79	6.83
Sulfate	[illegible]	mg/L	855 JL	775
Total Dissolved Solids	[illegible]	mg/L	2,710	1,870

[illegible]
[illegible]
[illegible]

3.1.3 Historical Laboratory Data Quality Issues

Based on validation of the original background and semi-annual detection monitoring events provided by the analytical laboratory, TRC determined that there were unresolvable issues regarding data quality. These issues brought into question the accuracy and quality of the data provided by the analytical laboratory to develop the original background water quality data set (see Technical Memos on Laboratory Quality Issues, dated 4-24-19 and Laboratory Change for CCR Sampling Events, dated 7-19-19).

During the April 2019 fourth semi-annual detection monitoring event, a groundwater sample from one well per CCR unit was split between two analytical laboratories to assess the ongoing issues with the analytical laboratory. For the E Pond, MW-37 was selected for split sampling. The split samples for chloride and TDS each had one result that was a potential SSI, and one results that was not. While the TDS results between the two laboratories were relatively close and merely straddle the background UTL concentration, the chloride results were substantially different (a circumstance that was also observed for the other spilt samples). This provides support for the line of reasoning and likelihood that laboratory analytical issues were an alternative source for the chloride UTL exceedance.

3.1.4 E Pond Retrofit Activities

In addition to the site-specific hydrogeology at the E Pond and data quality issues associated with the initial laboratory used for analyses, as discussed previously in subsection 1.1.1 of this ASD, during retrofit construction activities at the E Pond during 2020 and 2021 per the federal CCR Rule, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and ORP, are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters, including pH and sulfate.

Finally, the apparent SSIs are discussed relative to the groundwater monitoring wells for the E Pond in the subsections below:

3.2 MW-37

Total dissolved solids (TDS) were detected in MW-37 at a concentration of 1,930 mg/L in the October 4, 2022, sample and again at 1,930 mg/L in the May 1, 2023, verification sample. Both sample results exceeded the UTL for the E-Pond of 1,800 mg/L; however, TDS concentration decreased by approximately 10% compared to the TDS data in the past two years and the concentrations have been approaching its UTL. Historical data review indicates TDS increased from 1,870 mg/L in October 2019 to 2,020 mg/L in April 2020, which coincides with when the retrofit construction activities were occurring at the E Pond. TDS concentration in MW-37 remained in the range of 2,020 to 2,160 in 2020 and 2021.

Sulfate was detected in MW-37 at a concentration of 717 mg/L in the October 4, 2022 sample and 1,110 mg/L in the May 1, 2023 verification sample. Both sample results exceeded the UTL for the E-Pond of 470 mg/L. The sulfate data are consistent with the data collected during the previous two years. The elevated sulfate concentrations are related to the potential impact of reduced surface sulfate sources or mineral dissolution and not related to a release from E-Pond.

Boron was detected in MW-37 at a concentration of 0.363 mg/L in the October 4, 2022 sample and 0.329 mg/L in the May 1, 2023 verification sample. Both sample results exceeded the UTL for the E-Pond of 0.12

mg/L. The boron data are consistent with the data collected from 2017 to 2021. The elevated boron concentrations could be related to the potential impact of a new surface source resulting in an elevated EC and high salinity in the groundwater and not related to a release from the E Pond. As discussed in subsection 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer.

Soil disturbance occurred during 2020 and 2021 as part of the retrofit of the E Pond. Construction activities included CCR dewatering, CCR excavation, decontamination, and construction of a composite bottom-liner system. Such activities likely impacted the geochemical stability of the aquifer and impacted groundwater quality in the aquifer, for example, causing additional mineral dissolution into groundwater and/or introducing new carbonate sources such as concrete materials. As the aquifer restabilizes over time after completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize and concentrations of CCR indicator parameters should return to their pre-construction condition.

3.3 MW-38R

Sulfate was detected in MW-38R at a concentration of 646 mg/L in the October 4,2022 sample and 860 mg/L in the May 1, 2023, verification sample. Both sample results exceeded the UTL for the E Pond of 470 mg/L. A decreasing trend in sulfate concentrations was observed from 2021 to 2022 and the concentration of sulfate has been approaching its UTL. The overall decreasing trend in sulfate concentrations indicates that less surface sulfate sources are present at the E Pond. Dissolution of sulfate from soils and minerals is likely the source of sulfate in groundwater. The elevated sulfate concentrations could be related to the potential impact of reduced surface sulfate sources and not related to a release from E-Pond.

Boron was detected in MW-38R at a concentration of 0.440 mg/L in the October 4, 2022, verification sample and 0.425 mg/L in the May 1, 2023 verification sample. Both sample results exceeded the UTL for the E Pond of 0.12 mg/L. The sample results were generally consistent with the data for boron from 2019 through 2021. Similar trends for the boron data were observed in both downgradient monitoring well M-37 and MW-38R at the E Pond. The elevated boron concentration in both sampling events could be related to the potential impact of a new surface source resulting in elevated EC and salinity concentrations in groundwater and surface water flushing and accumulation. As discussed in Section 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer.

As discussed in subsection 3.1, soil disturbance occurred during 2020 and 2021 as part of the retrofit of the E Pond. Construction activities included CCR dewatering, CCR excavation, decontamination, and construction of a composite bottom-liner system. Such activities likely impacted the geochemical stability of the aquifer and impacted groundwater quality in the aquifer, for example, causing additional mineral dissolution into groundwater and/or introducing new carbonate sources such as concrete materials. As the aquifer restabilizes over time after completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize and concentrations of CCR indicator parameters should return to their pre-construction condition.

3.4 MW-61

TDS was detected in MW-61 at a concentration of 2,010mg/L in the October 4, 2022 sample and 1890mg/L in the May 3,2023 verification sample. Both sample results exceeded the UTL for the E-Pond of 1,800 mg/L, but the TDS data is close to its UTL. Historical data review indicates TDS decreased from 2017 to 2019 and remained in a consistent data range of 1,800 to 2,000 mg/L from 2019 to 2021. The TDS SSI was likely associated with soil disturbance that occurred during 2020 and 2021 as part of the retrofit of the E Pond.

Sulfate was detected in MW-61 at a concentration of 987 in the October 4, 2022 sample and 1,330 mg/L in the May 1, 2023 verification sample. Both sample results exceeded the UTL for the E Pond of 470 mg/L. Changes in the concentration of sulfate concentration in groundwater may be related to atmospheric deposition or anthropogenic activities, such as new sulfate source with rainwater or surface water flushing. The elevated sulfate concentrations are related to the potential impact of reduced surface sulfate sources and not related to a release from E-Pond.

Boron was detected in MW-61 at a concentration 1.58 mg/L in the October 4, 2022sample and 1.24 mg/L in the May 1, 2023, verification sample. Both sample results exceeded the UTL for the E Pond of 0.12 mg/L. The boron data are consistent with the data collected from 2017 to 2021. As discussed in Section 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer. The concentration of sulfate and chloride in MW-61 further reinforce that elevated concentrations of boron are related to elevated EC and salinity in the aquifer.

Section 4
Conclusions

Based on statistical evaluation of the April 3, 2023, semi-annual detection monitoring event and the May 1, 2023 verification sampling events analytical results, eight apparent SSIs (boron, sulfate, and TDS) for downgradient monitoring wells for the twelfth semi-annual detection monitoring event were identified for the E Pond. This ASD has identified the following lines of reasoning that support alternative sources for these apparent SSIs.

- The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
- The former, historical presence of CCR materials in the vicinity of the monitoring wells prior to their modification to include risers from the ground surface provided an opportunity for surface materials to inadvertently enter the wells directly from the ground surface.
- Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical date for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.
- It appears that the construction activities that occurred during the retrofit of the E Pond per the federal CCR Rule and the Closure Plan during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the E Pond have been shown to be responsible for each of the eight apparent SSIs observed. Based on this successful ASD, NRG will continue performing semi-annual detection monitoring for the E Pond per 30 TAC Chapter 352.

Section 5
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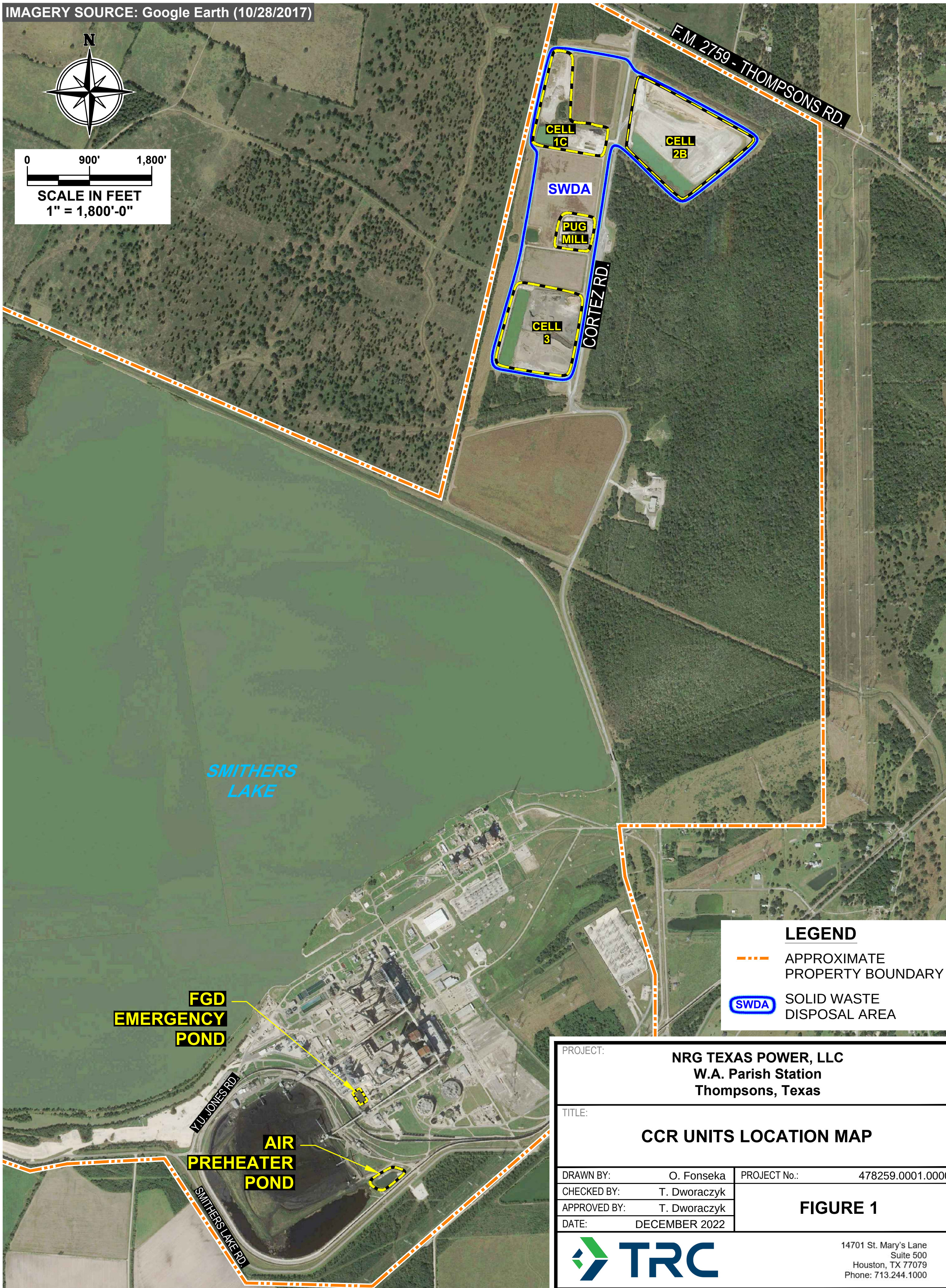
Figures



PROJECT:

NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE:

CCR UNITS LOCATION MAP

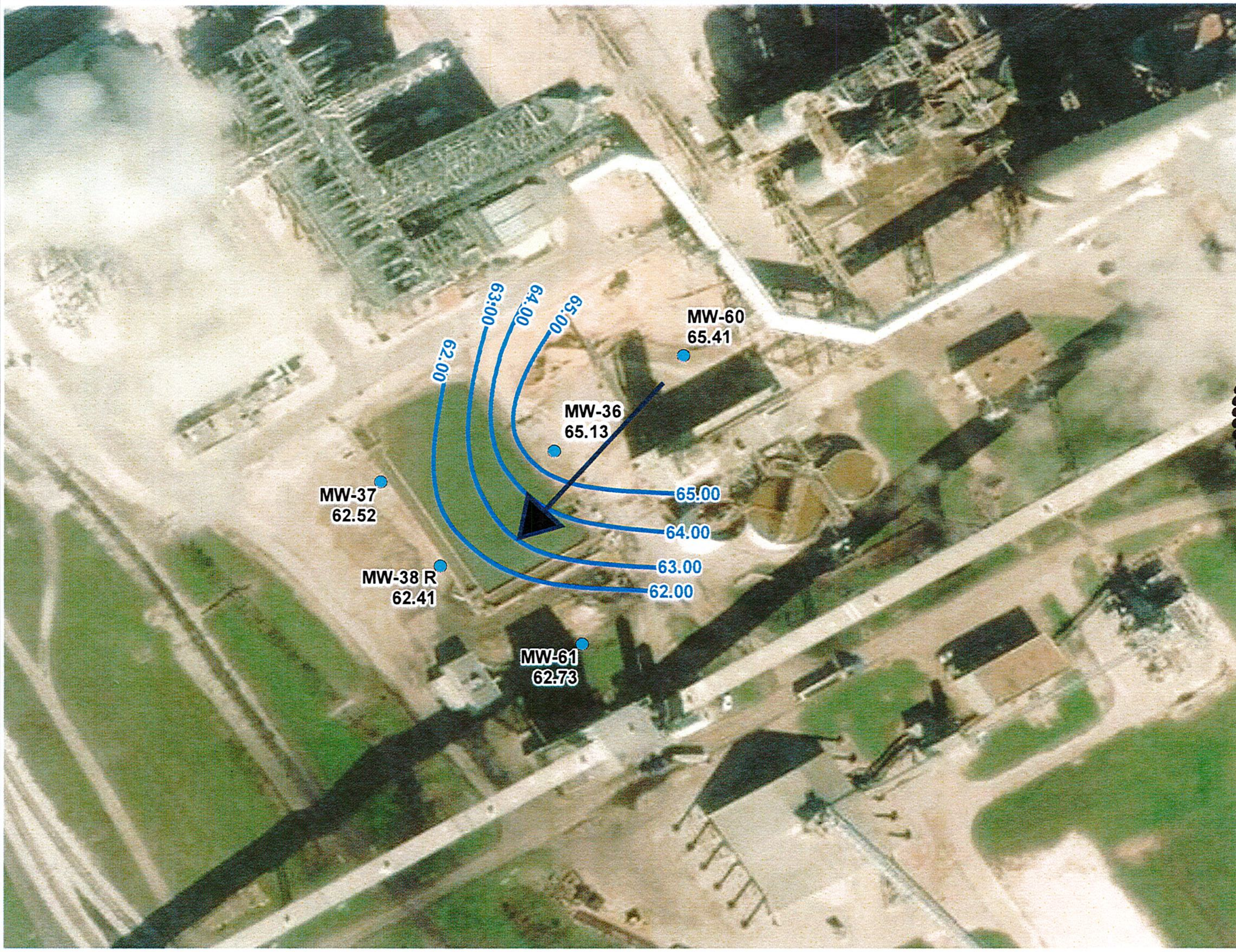
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg 01/30/19



Legend

MONITORING WELL

GROUNDWATER FLOW DIRECTION

GROUNDWATER ELEVATION CONTOUR - DASHED WHERE INFERRED (FT MSL)

65.41 GROUNDWATER ELEVATION (FT MSL)

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST

GD 8-25-23

GROUNDWATER ELEVATION MEASURED BY ... APRIL 2023

N

0 150 300 FT

1 " = 150 '
1:1,800

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX 77079
713.244.1000
www.trcsolutions.com

PROJECT:

NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

FGD EMERGENCY POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	
DATE:	JULY 2023
PROJ. NO:	528472.0000.0000
FILE:	528472.0000_2-6.mxd

FIGURE 2

Texas Commission on Environmental Quality
Waste Permits Division Correspondence Cover Sheet

Date: August 31, 2023
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Solid Waste Disposal Area (SWMU 001) CCR Multiunit

August 2023

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
TCEQ Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

STATE OF TEXAS
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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the Solid Waste Disposal Area (SWDA) multi-unit landfill (Landfill), which is the subject of this Alternate Source Demonstration (ASD).

The 12th semi-annual groundwater detection monitoring event was conducted on April 3, 2023. Verification sampling was performed on May 1, 2023. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Three apparent SSIs: sulfate, calcium, and TDS; were identified. The apparent SSIs were identified in an upgradient background monitoring well (MW-23R). NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on June 12, 2023.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 1, 2023 verification sampling results, are the fourth data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for the apparent SSIs at the SWDA Landfill, based on the following lines of reasoning:

- Natural variations in upgradient background groundwater quality; and
- Enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the SWDA Landfill have been shown to be responsible for all the apparent SSIs observed in upgradient background monitoring well MW-23R. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the SWDA Landfill per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015) and the Phase 1, Part1 final rule (July 30, 2018). CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The SWDA Landfill is located to the north of the Plant Area and the APH and E Ponds are located at the southern portion of the Plant Area. The locations of the three CCR units are shown on Figure 1. The SWDA Landfill is the subject of this Alternative Source Demonstration (ASD).

CCR-management activities at the SWDA Landfill are generally described as follows:

- Cell 1C – Receives nonmarketable CCR trucked from the plant;
- Cell 2B – Receives marketable CCR trucked from the plant;
- Cell 3 – Receives CCR bottom ash trucked from the plant; and
- Cell 2A-Pug Mill – Pug mill located at a small portion of Cell 2A and that is not currently being used for CCR management purposes.

1.1.1 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the APH Pond were documented in the *Annual Groundwater Monitoring and Corrective Action Reports* (January 30, 2018) for the individual CCR landfill units (Cell 1C, Cell 2A, Cell 2B, and Cell 3) and the *CCR Groundwater Monitoring Reports* (March 1, 2018) for the individual CCR landfill units pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the SWDA Landfill per the federal CCR Rule and 30 TAC Chapter 352. As of the April 3, 2023 sampling event, a total of 12 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 1, 2023 verification sampling results, are the fourth data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD on behalf of NRG to evaluate apparent SSIs above background levels for the 12th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area surrounding the SWDA landfill.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA Landfill. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area, which is consistent with this area being located outside of the Brazos River floodplain zone (FBC, 2018).

The alluvium and Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the Station are under confined conditions (ERM, 2017a).

Environmental site investigations conducted in May 2016 and November 2016 identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA Landfill and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM, 2017b) and are summarized below.

2.1.1 Stratum DA-1 (Upper Confining Unit)

Stratum DA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum DA-1 is generally present from the ground surface to approximately 30 feet below ground surface (bgs), but this stratum ranges in thickness from 20 to 60 feet throughout the SWDA Landfill.

Stratum DA-1 serves as a confining unit to underlying Stratum DA-2, which comprises the uppermost groundwater-bearing unit at the Station. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum DA-1 is 2.85E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum DA-2 (Upper Aquifer System)

Stratum DA-2 consists of interbedded sand, silty sand, clayey sand, and clayey sandy silt with some gravelly sand. The clay content within Stratum DA-2 varies across the SWDA. Stratum DA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum DA-2 is saturated and comprises the upper aquifer system at the SWDA Landfill. CCR monitoring wells at the SWDA Landfill are completed within Stratum DA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.86E-04 cm/sec to 2.59E-02 cm/sec in Stratum DA-2 (ERM, 2017b). Groundwater primarily flows to the northeast towards the Brazos River beneath the SWDA Landfill.

2.1.3 Stratum DA-3 (Lower Confining Unit)

Stratum DA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing unit (Stratum DA-2). The thickness of Stratum DA-3 has not been determined at the SWDA Landfill.

2.1.4 Solid Waste Disposal Area – Certified Monitored Network

Four separate groundwater monitoring well systems were initially developed in 2016 for each of the four active CCR cells within the SWDA Landfill, which were certified by a Texas P.E. under 257.91(f) of the federal CCR Rule on October 17, 2017. The monitoring wells were completed into Stratum DA-2, the upper aquifer system at the Station.

Following successful preparation of the ASD in July 2018 for the first semi-annual detection monitoring event for the SWDA Landfill, the four individual CCR cells were combined into a single CCR multiunit landfill as allowed for in the federal CCR Rule for groundwater monitoring purposes. A revised groundwater monitoring system and revised statistical method were developed and certified by a Texas professional engineer (P.E.) for the SWDA Landfill. The monitoring wells comprising the revised groundwater monitoring system are shown in Table 1.

Table 1 Groundwater Monitoring System for SWDA CCR-Multiunit

UPGRADIENT WELLS	DOWNGRADIENT WELLS
MW-23R, MW-28D, MW-42, MW-43, MW-47, and MW-48	MW-44, MW-46R, MW-50, MW-52, MW-54, MW-55R, MW-58, and MW-65

Because of potential integrity issues with the construction of background monitoring well MW-23 (potential infiltration of grout into the well screen), it was replaced by MW-23R which was installed in close proximity to MW-23. A groundwater potentiometric surface map was prepared by TRC for the April 3, 2023 semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows primarily to the northeast beneath the SWDA CCR multiunit at a gradient ranging from 0.0007 foot per foot (ft/ft) to 0.003 ft/ft.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the site geological conditions, several groundwater parameters are discussed as follows, including sulfate and total dissolved solids (TDS).

2.2.1 Sulfate in Groundwater

Sulfate is ubiquitous in groundwater, with both natural and anthropogenic sources. Apart from a potential sulfate source area, the primary origin of sulfate includes mineral dissolution, atmospheric deposition, and other anthropogenic sources (Miao et al., 2012). As water moves through soil and rock formations that contain sulfate minerals, some of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to the high levels of sulphate in many aquifers of the world. Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and inputs to soil will impact groundwater. Research investigations indicate that atmospheric deposition, dissolution of gypsum, oxidation of sulfide mineral, and anthropogenic inputs will contribute to elevated sulfate concentrations in groundwater. Based on the hydrogeology at the SWDA Landfill, atmospheric deposition and anthropogenic activities could be impacting sulfate concentrations (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.2.2 Calcium in Groundwater

Calcium is one of the most important ionic constituents in groundwater (Razowska-jaworek, 2014). Water-rock interaction occurs when water interacts with minerals in soils or rocks, such as limestone, marble, calcite, dolomite, gypsum, fluorite, and apatite. Natural dissolution of carbonate rocks and minerals is the primary source of calcium in groundwater (Jiang et al., 2009). Calcium is an important determinant of water hardness (Ca^{2+}), while magnesium is the other hardness determinant. The most common shallow groundwater type is $Ca\text{-}HCO_3$ dominated and $Ca(Mg)\text{-}HCO_3$ dominated.

A literature review indicates the major factors that may influence the calcium concentration in groundwater include rock weathering, soil pH, electrical conductivity (EC), and anthropogenic activities (mining, concrete material dissolution, fertilizer etc.) (Hájek et al., 2021; Schot & Wassen, 1993; Shi et al., 2018).

Regarding the concentrations of calcium in groundwater, the source of calcium appears to be natural rather than anthropogenic. Therefore, the increase in concentration of calcium is related to natural variations in groundwater geochemistry associated with rock weathering, soil pH, and EC.

2.2.3 TDS in Groundwater

Total dissolved solids (TDS) represent the combined total of inorganic and organic substances present in groundwater, and TDS can be a general indicator of water quality. These solids typically consist of minerals, salts, and organic matter, which may originate from sources such as weathering of minerals, storm water runoff, sewage, effluent discharges, agriculture, decaying organisms, and anthropogenic sources. Common salts that contribute to TDS are sodium, chloride, calcium, magnesium, potassium, sulfate, and bicarbonate. (Olumuyiwa I. Ojo, 2012)

TDS concentrations in groundwater is usually higher than surface water due to the longer contact time for groundwater with underlying soil and rocks. Since many minerals are water soluble, high concentrations can accumulate over time through the processes of precipitation and evaporation.

TDS is related to other water quality parameters such as hardness, which may occur if an elevated concentration of TDS is associated with the presence of carbonates. Research investigations have evaluated the relationship between TDS and other groundwater parameters such as EC and salinity (Atekwana et al., 2004; Banadkooki et al., 2020; Poursaeid et al., 2020).

Section 3
Alternative Source Demonstration

The 12th semi-annual detection monitoring event was conducted on April 3, 2023, per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Three apparent SSIs were identified: sulfate, calcium, and TDS.

As part of the ASD activities, verification sampling was conducted on May 1, 2023, for the apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. Three apparent SSIs were confirmed: sulfate, calcium, and TDS. Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on June 12, 2023, addressing the apparent SSIs.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 2 SSIs – April 2023 Semiannual Detection Monitoring Event

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-23R (UG)	670	05/01/2023	1,670	mg/L
Calcium	MW-23R (UG)	420	05/01/2023	533	mg/L
Total Dissolved Solids	MW-23R (UG)	3,700	05/01/2023	4,390	mg/L

Notes: UG = Upgradient
mg/L = milligrams per Liter

3.1 MW-23R

The apparent SSIs were identified in upgradient background monitoring well MW-23R. MW-23 had been replaced by MW-23R after the seventh quarterly background monitoring event, which occurred in January 2020 due to the potential presence of grout within the well screen. Because the new background results only included one sampling event for MW-23R, that well isn't sufficiently represented in the background data set. NRG proposes to replace the MW-23 data from the background data set over time, such that the background values for the SWDA Landfill eventually includes representation from MW-23R.

Sulfate was detected in MW-23R at a concentration of 1,220 mg/L in the November 22, 2022, verification sample and 1,670 mg/L in the May 1, 2023 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 670 mg/L but is an insufficient change between sampling events. The sulfate data is consistent with the prior sampling events. MW-23R is located hydraulically upgradient and is an upgradient background monitoring location for the SWDA Landfill. Therefore, the sulfate SSI in MW-23R is associated with natural variations in the geochemistry of groundwater in the aquifer and is not related to a release from the SWDA Landfill.

Calcium was detected in MW-23R at a concentration of 405 mg/L in the October 4, 2022, sample and 533 mg/L in the May 1, 2023, verification sample. The May 2023 verification sample exceeded the UTL of 420 mg/L. MW-23R is located hydraulically upgradient and is an upgradient background monitoring location for the SWDA Landfill. Therefore, the calcium in MW-23R is associated with natural variations in the geochemistry of groundwater in the aquifer and is not related to a release from the SWDA Landfill.

TDS was detected in MW-23R at a concentration of 3,760 mg/L in the November 22, 2023, verification sample and 4,390 mg/L in the May 1 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 3,700 mg/L.

As described in subsection 2.2 of this ASD, minerals dissolution is likely the source of TDS in groundwater. MW-23R is a newly installed monitoring well. Potential disturbance of the aquifer during monitoring well installation could have resulted in more minerals being released into groundwater with associated changes in the geochemical conditions of the aquifer, which would be reflected in the monitoring event. Furthermore, MW-23R is located hydraulically upgradient and is a background monitoring location for the SWDA Landfill. Therefore, the TDS SSI in MW-23R is likely associated with natural variations in the geochemistry of groundwater in the aquifer and is not related to a release from the SWDA Landfill.

Finally, the increasing concentrations of sulfate were consistent with increasing concentrations of TDS, which were likely related to enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Section 4
Conclusions

Based on statistical evaluation of the April 3, 2023, semi-annual detection monitoring event and the May 1, 2023 verification sampling events analytical results, Three apparent SSIs: sulfate, calcium, and TDS; were identified in upgradient background monitoring well MW-23R for the SWDA Landfill. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- Natural variations in upgradient background groundwater quality; and
- Enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the SWDA Landfill have been shown to be responsible for all three apparent SSIs observed in upgradient background monitoring well MW-23R. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the SWDA Landfill per 30 TAC Chapter 352.

Section 5
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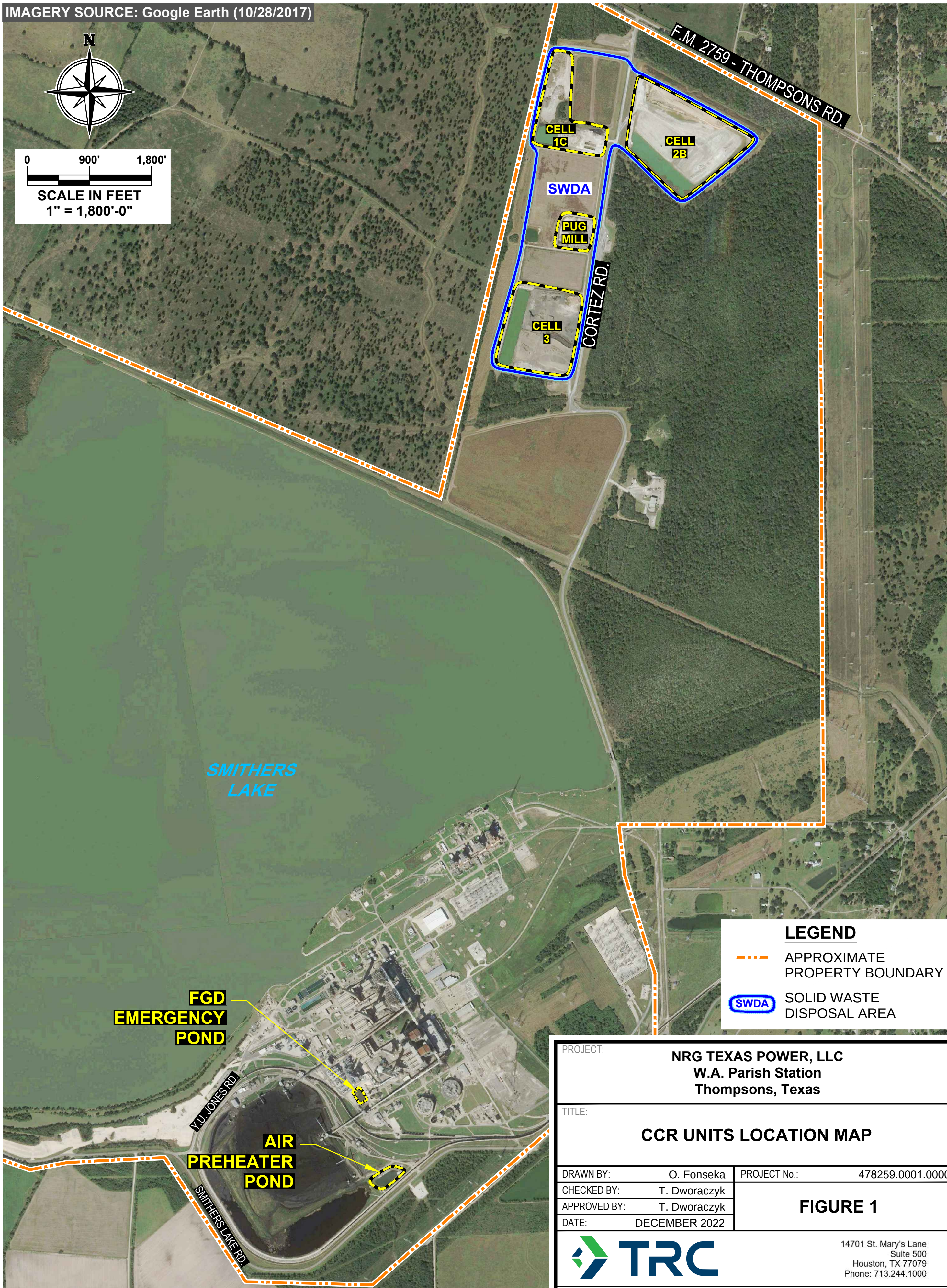
Figures



PROJECT:

NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE:

CCR UNITS LOCATION MAP

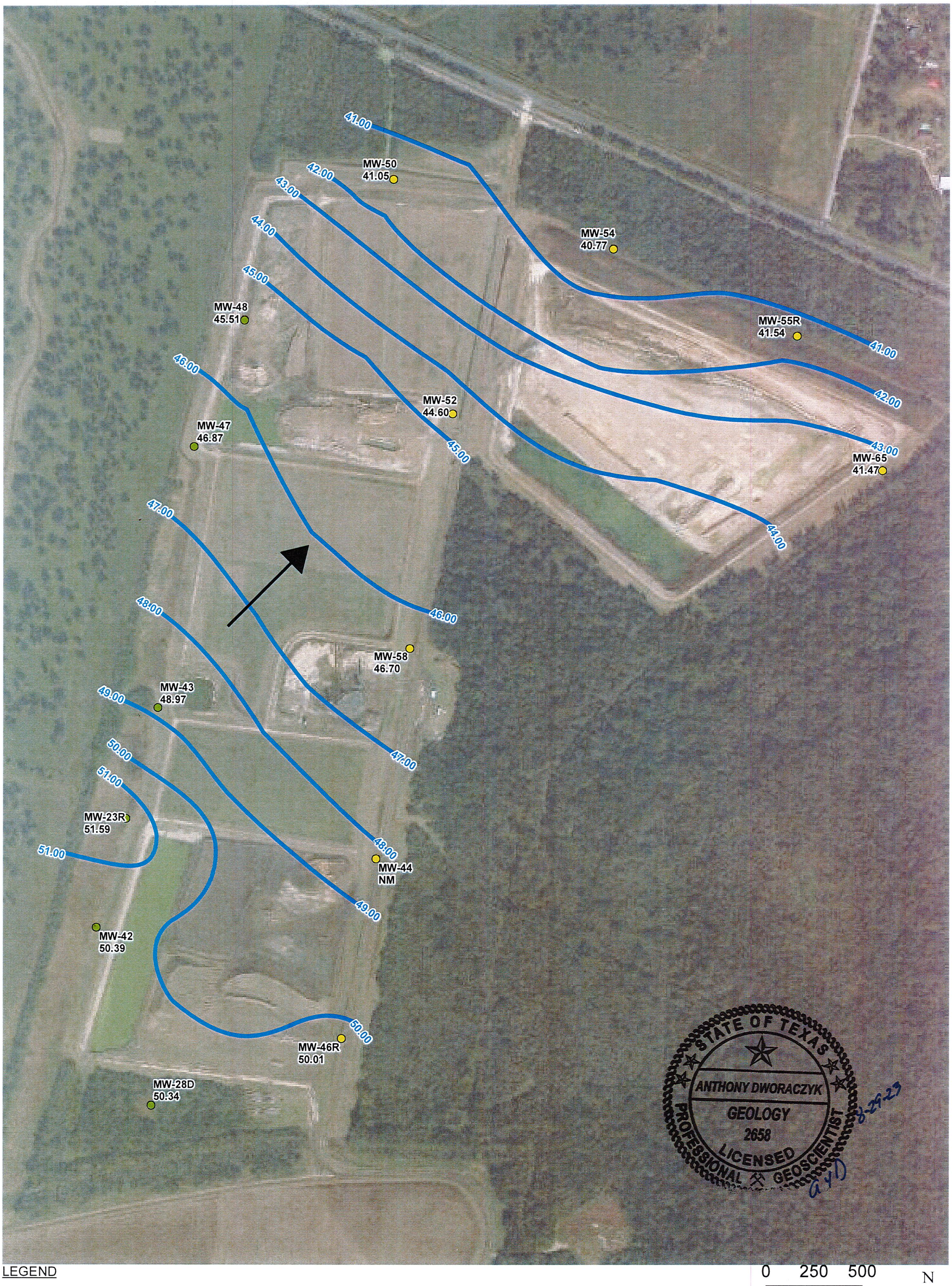
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg 01/30/19



LEGEND

- Multiunit Upgradient Monitoring Well
- Multiunit Downgradient Monitoring Well

50.34 Groundwater Elevation (FT MSL)

* NOTE: MW-52 was not used for potentiometric map

Groundwater Elevation Contour - Dashed where Inferred (FT MSL)

Groundwater Flow Direction

NOTE: GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2023.

0 250 500 Feet
1 " = 500 '
1:6,000

N

TRC 14701 St. Mary's Lane, Suite 500 Houston, TX 77079 713.244.1000 www.trcsolutions.com	PROJECT: **NRG TEXAS POWER, LLC** **W.A. PARISH STATION** **THOMPSONS, TEXAS**	DRAWN BY: F. YARBROUGH CHECKED BY: J. ATWELL APPROVED BY:
	TITLE: **SOLID WASTE DISPOSAL AREA** **GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2023**	DATE: JULY 2023 PROJ NO: 528472.0000.0000 FILE: 528472.0000_2-4.mxd **FIGURE 2**

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: January 31, 2024
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Air Preheater Pond (SWMU 021)

January 2024

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
TCEQ Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

AYD 1-31-24

STATE OF TEXAS
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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the Air Preheater Pond (APH) Pond, which is the subject of this Alternative Source Demonstration (ASD).

The 13th semi-annual groundwater detection monitoring event was conducted on October 9, 2023. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Three apparent SSI, calcium, pH, and sulfate were initially identified . Verification sampling was performed on November 1, 2023.Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. One apparent SSIs was confirmed for sulfate NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on December 8, 2023.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 2023 verification sampling results, are the fourth data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for apparent SSIs at the APH Pond, based on the following lines of reasoning:

- It appears that the construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;

- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

■ As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

■ Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, since retrofit construction activities have been completed recently and it appears the uppermost aquifer system is continuing to re-equilibrate, NRG will continue performing semi-annual detection monitoring for the APH Pond per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 19, 2015).

CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The APH Pond receives effluent from air preheater wash and boiler cleaning wash, which consists of fly ash or economizer ash particles and water. The APH Pond is located at the southern portion of the Plant Area as shown on Figure 1 and is the subject of this Alternative Source Demonstration (ASD).

1.1.1 Retrofit Construction Activities

During 2020 and 2021, the APH Pond was removed from service and retrofitted per §257.102(k) of the federal CCR Rule. As part of these activities, the CCR within the impoundment was dewatered, all water and CCR was removed from the impoundment, and the APH Pond area was decontaminated based on over-excavating a minimum of 6-inches of clay liner material after removal of CCR. After CCR removal and decontamination had been confirmed, a federal CCR Rule bottom composite liner system was then installed and the APH Pond was placed back into service as a CCR unit compliant with both the federal and TCEQ CCR programs.

During retrofit construction activities for the APH Pond, upgradient groundwater monitoring well MW-39 was apparently destroyed and could not be located during the April 2021 detection monitoring event. Therefore, MW-39 was replaced by MW-39R that was installed in the approximate location of MW-39 prior to performance of the October 2021 semi-annual detection monitoring event.

Furthermore, during retrofit construction activities, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

1.1.2 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the APH Pond were documented in the *Annual Groundwater Monitoring Report, Landfill (Unit 004)* (ERM 2018a) and the *Annual Groundwater Monitoring Report, APH Pond (Unit 021)* (ERM 2018a) and the March 1, 2018, *Groundwater Monitoring Report, APH Pond* (SWMU Unit 021) (ERM 2018b) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the APH Pond per the federal CCR Rule and 30 TAC Chapter 352. As of the October 2023 sampling event and November 2023 resampling, a total of 13 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The October 9, 2023 semi-annual detection monitoring event analytical results, including the November 1, 2023 verification sampling results, are the fifth data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD to evaluate apparent SSIs above background levels for the 13th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the APH Pond.

2.1 Hydrogeology

According to the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA CCR units. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area, which is consistent with this area being located outside of the Brazos River floodplain zone (FBC 2018). The APH Pond and the E Pond are both located at the Plant Area.

The alluvium and the Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the site are under confined conditions (ERM 2017a).

Environmental investigations conducted in May 2016 and November 2016 by ERM identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM 2017b) and are summarized below.

2.1.1 Stratum PA-1 (Upper Confining Unit)

Stratum PA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum PA-1 serves as a confining unit to underlying Stratum PA-2, which comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum PA-1 is 2.03E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum PA-2 (Upper Aquifer)

Stratum PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum PA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum PA-2 is saturated and comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. CCR monitoring wells in the Plant Area are completed within Stratum PA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum PA-3 (Lower Confining Unit)

Stratum PA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing unit (Stratum PA-2). The thickness of Stratum PA-3 has not been defined.

2.1.4 Air Preheater Pond - Certified Monitoring Network

The certified CCR groundwater monitoring well network for the APH Pond consists of six groundwater monitoring wells (MW-39R, MW-40, MW-41, MW-62, MW-63, and MW-64) completed into Stratum PA-2. A groundwater potentiometric surface map was prepared by TRC for the October 9, 2023 semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows to the southeast beneath the APH Pond at a gradient ranging from approximately 0.002 feet per foot (ft/ft) to 0.006 ft/ft.

The groundwater monitoring system for the APH Pond was originally certified per the federal CCR Rule on October 17, 2017. The original certified CCR groundwater monitoring well network for the APH Pond designated one upgradient monitoring well (MW-62) and five downgradient monitoring wells (MW-39, MW-40, MW-41, MW-63, and MW-64). However, based on TRC's review of groundwater elevation data measured for the semi-annual detection monitoring events and preparation of potentiometric surface maps, two of the initially designated downgradient monitoring wells (MW-39 and MW-40) were found to be located upgradient of the APH Pond as shown on the April 3, 2023 groundwater potentiometric surface map (Figure 2). Therefore, the CCR monitoring well system for the APH Pond was revised and consists of three upgradient monitoring wells (MW-39R, MW-40, and MW-62) and three downgradient monitoring wells (MW-41, MW-63, and MW-64).

During retrofit construction activities for the APH Pond during 2020 and 2021 per the federal CCR Rule, upgradient groundwater monitoring well MW-39 was apparently destroyed and could not be located during the April 2021 detection monitoring event. A replacement monitoring well (MW-39R) was installed during 2021 in close proximity to the location of former well MW-39 prior to the October 2021 semi-annual detection monitoring event and was monitored during that detection monitoring event.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the hydrogeology of the APH Pond, calcium and sulfate is discussed in the subsection below.

2.2.1 Sulfate in Groundwater

The presence of sulfate is ubiquitous in groundwater, having both natural and anthropogenic sources. There are many potential sources of sulfate in groundwater including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As groundwater moves through soil and rock formations that contain sulfate minerals, a portion of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to elevated concentrations of sulphate in groundwater aquifers. Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and can impact groundwater quality. Multiple investigations have indicated that atmospheric deposition, dissolution of gypsum, and oxidation of sulfide minerals can contribute to the concentrations of sulfate in groundwater.

Regarding the concentration of sulfate in groundwater at the APH Pond, the source of sulfate is more likely natural rather than anthropogenic. Therefore, the increase in concentration of sulfate is related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

Section 3
Alternative Source Demonstration

The 13th semi-annual detection monitoring event was conducted on October 9, 2023 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Three apparent SSIs were initially identified (calcium, pH, and sulfate).

As part of the ASD activities, verification sampling was conducted on November 1, 2023 for the initial three apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. One apparent SSIs were confirmed for sulfate. Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on December 8, 2023 addressing the apparent SSIs for sulfate.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 1 SSIs – October 2023 Semi-Annual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-63	NA	360	11/01/2023	661	mg/L

Notes: mg/L = milligrams per Liter
S.U. = Standard Units

As discussed previously in subsection 1.1.1 of this ASD, during retrofit construction activities at the APH Pond during 2020 and 2021 per the federal CCR Rule, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and ORP, are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

Section 4
Conclusions

Based on statistical evaluation of the October 9, 2023 semi-annual detection monitoring event and the November, 2023 verification sampling events analytical results, one apparent SSI, sulfate was identified for the APH Pond. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSI:

- It appears that the construction activities that occurred during the retrofit of the APH Pond per the federal CCR Rule during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the APH Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the APH Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the retrofitted APH Pond have been shown to be responsible for the apparent SSIs observed. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the APH Pond per 30 TAC Chapter 352.

Section 5
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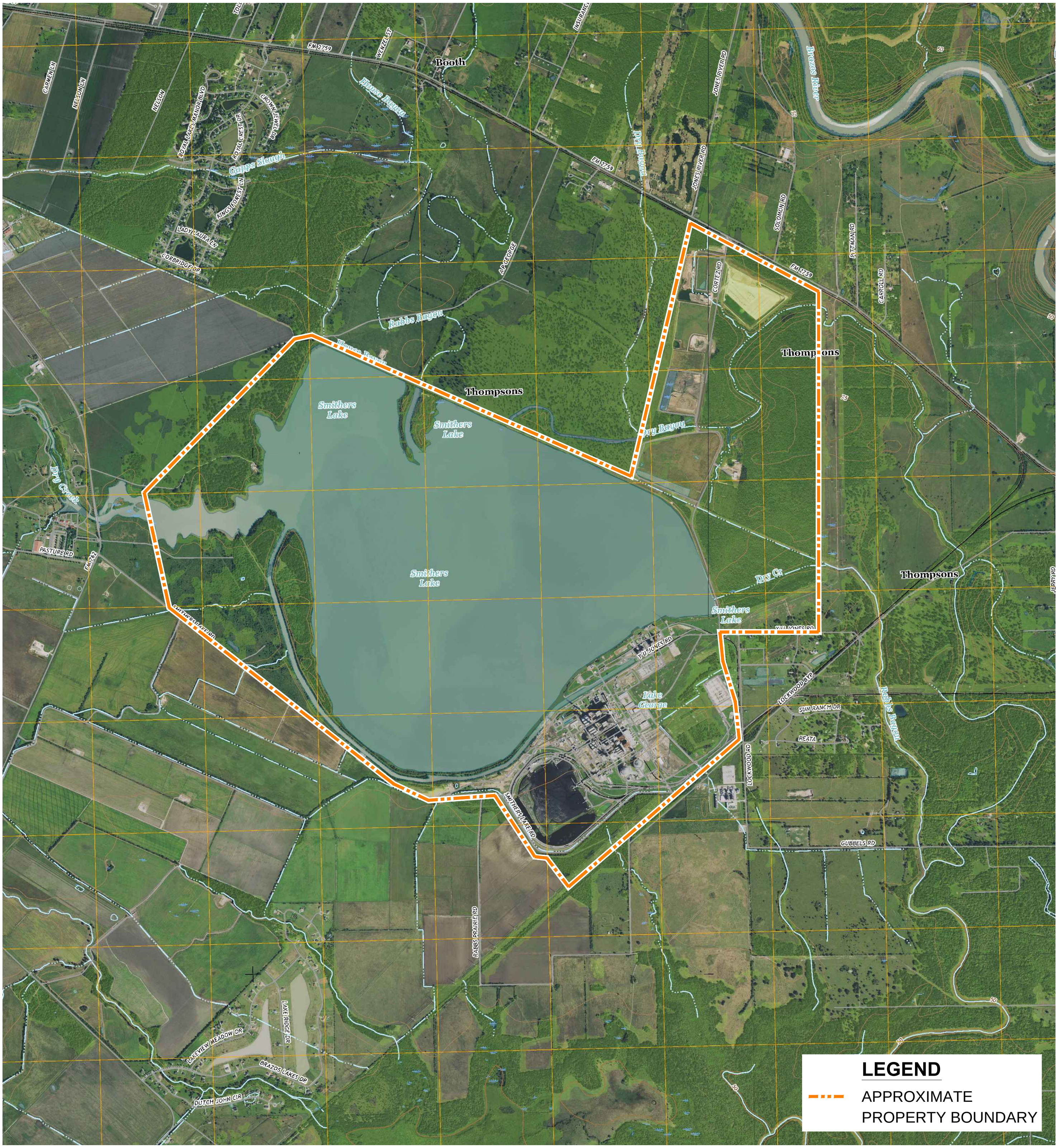
Figures



REFERENCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLES
MISSOURI CITY, TEXAS (2016) / SMITHERS LAKE, TEXAS (2016) / SUGAR LAND, TEXAS (2016) / THOMPSONS, TEXAS (2016)

TEXAS
QUADRANGLE LOCATION

N

0 2,000' 4,000' 8,000'

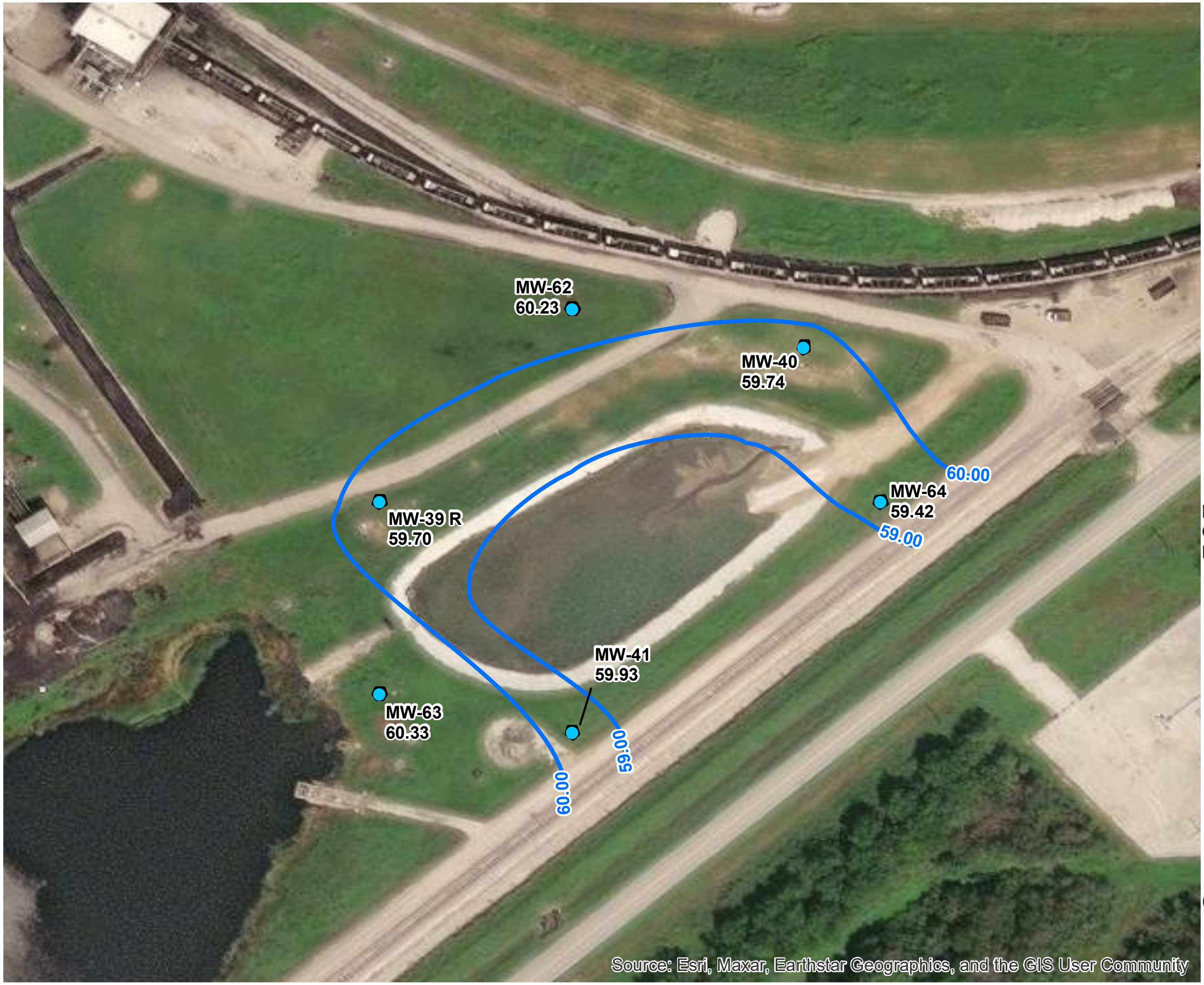
SCALE IN FEET
1" = 4,000'-0"

PROJECT:	**NRG TEXAS POWER, LLC** **W.A. Parish Station** **Thompsons, Texas**
TITLE:	**SITE LOCATION MAP**
DRAWN BY:	O. Fonseka
CHECKED BY:	T. Dworaczyk
APPROVED BY:	T. Dworaczyk
DATE:	DECEMBER 2022
PROJECT No.:	478259.0001.0000
	FIGURE 1

TRC
14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg 01/16/19



Legend

- Monitor Well
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- *59.42* Groundwater Elevation (FT MSL)

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST

AD 1-23-24

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2023.

N

0 150 300 FT

1 " = 150 '
1:1,800

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX 77079
713.244.1000
www.trcsolutions.com

PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
AIR PREHEATER POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ. NO.:	585638.0000.0001
FILE:	585638.0000_2-8

FIGURE 2-8

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: January 31, 2024
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

Alternative Source Demonstration

W.A. Parish Electric Generating Station
FGD Emergency Pond (SWMU 020)

January 2024

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
TCEQ Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the FGD Emergency Pond (E Pond), which is the subject of this Alternate Source Demonstration (ASD).

The 13th semi-annual groundwater detection monitoring event was conducted on October 9, 2023. Verification sampling was performed on November 1, 2023. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Six apparent SSIs were initially identified from the October 9, 2023, sampling event. NRG notified the Texas Commission Environmental Quality (TCEQ) in a letter dated December 8, 2023, of its intent to prepare an ASD.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The October 2023 semi-annual detection monitoring event analytical results, including the November 2023 verification sampling results are the fifth data set statistically evaluated using the new background water quality data set.

This ASD has identified alternative sources for all six apparent SSIs at the E Pond, based on the following lines of reasoning:

- The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
- The former, historical presence of CCR materials in the vicinity of the monitoring wells prior to their modification to include risers from the ground surface provided an opportunity for surface materials to inadvertently enter the wells directly from the ground surface.
- Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical data for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.

- It appears that the construction activities that occurred during the retrofit of the E Pond per the federal CCR Rule and the Closure Plan during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
    - As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
    - Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
    - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
    - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.
- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the E Pond have been shown to be responsible for each of the six apparent SSIs observed. Based on this successful ASD, NRG will continue performing semi-annual detection monitoring for the E Pond per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 19, 2015).

CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The E Pond receives storm water runoff from the FGD dewatering area and blowdown from the FGD system. The E Pond may also receive the contents of an FGD process vessel when the FGD system is not in operation.

1.1.1 Retrofit Construction Activities

During 2020 and 2021, the E Pond was removed from service and retrofitted per §257.102(k) of the federal CCR Rule. As part of these activities, the CCR within the impoundment was dewatered, all water and CCR was removed from the impoundment, and the E Pond area was decontaminated based on over-excavating a minimum of 6-inches of clay liner material after removal of CCR. After CCR removal and decontamination had been confirmed, a federal CCR Rule bottom composite liner system was then installed, and the E Pond was placed back into service as a CCR unit compliant with both the federal and TCEQ CCR programs.

During retrofit construction activities, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

1.1.2 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the E Pond were documented in the *Annual Groundwater Monitoring Report, FGD Emergency Pond (Unit 020)* (ERM 2018a) and the March 1, 2018, *Groundwater Monitoring Report, FGD Emergency Pond (SWMU Unit 020)* (ERM 2018b) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the E Pond per the federal CCR Rule and 30 TAC Chapter 352. As of the April 2023 sampling event and verification sampling in May 2023, a total of 12 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The May 2023 semi-annual detection monitoring event and May 2023 verifications sampling analytical results are the fourth data set statistically evaluated using the new background water quality data set.

Since initial installation of the CCR groundwater monitoring network for the E Pond, improvements to the network have been implemented to improve the operation of the network. These improvements are identified below:

- During the second semi-annual detection monitoring, surface CCR may have been inadvertently introduced into the monitoring wells and the laboratory analytical sample containers during the initial background and semi-annual detection monitoring events. To mitigate this potential issue, the flush-mounted monitoring wells at the E Pond were modified before the third semi-annual detection monitoring event was performed with the installation of vertical well casing extensions and protective casings;
- During the third semi-annual detection monitoring event, silt was observed in the monitoring wells at the E Pond. The wells were redeveloped, and accumulated silt was removed from the well casings prior to performance of the fourth semi-annual detection monitoring event; and
- In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the location of former MW-38.

1.2 Purpose

TRC prepared this ASD on behalf of NRG to evaluate apparent SSIs above background levels for the 13th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the E Pond.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA CCR units. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area which is consistent with this area being located outside of the Brazos River floodplain zone (FBC 2018). The APH Pond and the E Pond are both located at the Plant Area.

The alluvium and the Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the Site are under confined conditions (ERM 2017a).

Environmental site investigations conducted in May 2016 and November 2016 identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM 2017b) and are summarized below.

2.1.1 Stratum PA-1 (Upper Confining Unit)

Stratum PA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum PA-1 serves as a confining unit to underlying Stratum PA-2, which comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum PA-1 is 2.03E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum PA-2 (Upper Aquifer)

Stratum PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum PA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum PA-2 is saturated and comprises the uppermost groundwater-bearing unit at the APH Pond and E Pond. CCR monitoring wells in the Plant Area are completed within Stratum PA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum PA-3 (Lower Confining Unit)

Stratum PA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing units (Stratum PA-2). The thicknesses of Stratum PA-3 has not been defined.

2.1.4 E Pond – Certified Monitoring Network

The certified CCR groundwater monitoring well network for the E Pond consists of five groundwater monitoring wells:

- Upgradient monitoring wells MW-36 and MW-60; and
- Downgradient monitoring wells MW-37, MW-38R, and MW-61.

The wells were completed into Stratum PA-2. A groundwater potentiometric surface map was prepared by TRC for the April 3, 2023, semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows to the southwest beneath the E Pond at a gradient ranging from 0.010 feet per foot (ft/ft) to 0.030 ft/ft.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the hydrogeology of the E Pond, potential SSIs in groundwater including boron, sulfate, and total dissolved solids (TDS) are discussed in the subsections below.

2.2.1 Boron in Groundwater

Boron is normally considered to be a minor constituent in groundwater since it is generally present in low concentrations (Palmucci & Rusi, 2014). Apart from a potential boron source area, the primary origin of boron in groundwater is typically associated with the processes of sorption and desorption from mineral surfaces including soil and bedrock (Ravenscroft & McArthur, 2004). Boron is often cited as a contaminant trace chemical and usually occurs as a non-ionized form as H_3BO_3 in soils at pH <8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the concentration of boron in groundwater include weathering, human activity, evaporative concentration, ion-exchange, electrical conductivity (EC), and pH. Ravenscroft & McArthur (2004) investigated the mechanism of regional boron enrichment in groundwater and the results indicated that the main process resulting in boron enrichment in groundwater was flushing by fresh groundwater. The desorption of boron from mineral surfaces could be affected by pH, ionic strength, salinity, and the HCO_3/CO_3 ratio. Decreases in pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH in rocks, soils, and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

Additional investigations confirmed that the presence of boron in groundwater depends on the EC (salinity), such that the concentration of boron increases with increasing EC. Halim et al. (2010) reported that the increae in Cl^- contributes to an increase in EC value since a strong linear correlation (R^2 = 0.88) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between elevated concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) determined that the concentration of boron in groundwater was related to SO_4^{2-} and the age affect.

Regarding the concentration of boron in groundwater at the E Pond, the source of boron is natural rather than anthropogenic. Therefore, the increase in concentration of boron is related to natural variations in groundwater geochemistry, such as pH, ion exchanges, EC, and salinity.

2.2.2 Sulfate in Groundwater

The presence of sulfate is ubiquitous in groundwater, having both natural and anthropogenic sources. There are many potential sources of sulfate in groundwater including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As groundwater moves through soil and rock formations that contain sulfate minerals, a portion of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to elevated concentrations of sulphate in groundwater aquifers.

Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and can impact groundwater quality. Multiple investigations have indicated that atmospheric deposition, dissolution of gypsum, and oxidation of sulfide minerals can contribute to the concentrations of sulfate in groundwater.

Regarding the concentration of sulfate in groundwater at the E-Pond, the source of sulfate is natural rather than anthropogenic. Therefore, the increase in concentration of sulfate are related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

Section 3
Alternative Source Demonstration

The 13th semi-annual detection monitoring event was conducted on October 9, 2023, per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352 Subpart H. Six apparent SSIs were initially identified.

As part of the ASD activities, verification sampling was conducted on November 1, 2023 for the initial Six apparent SSIs. Statistical evaluation to identify SSIs for the sampling event was performed within 60 days of sample collection. Six apparent SSIs were confirmed for boron and sulfate, for down gradient monitoring wells. Based on the results of the sampling event and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on December 8, 2023 addressing the apparent SSIs.

The UTLs and sampling results for the six apparent SSIs are provided in Table 1 below.

Table 1 SSIs – April 2023 Semiannual Detection Monitoring Event and May Verification Samples

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	0.12	11/01/20223	0.401	mg/L
Sulfate	MW-37	474	11/01/20223	1,130	mg/L
Boron	MW-38R	0.12	11/01/20223	0.406	mg/L
Sulfate	MW-38R	474	11/01/20223	738	mg/L
Boron	MW-61	0.12	11/01/20223	1.01	mg/L
Sulfate	MW-61	474	11/01/20223	1,190	mg/L

Notes: mg/L = milligrams per Liter

3.1.1 Site-Specific Hydrogeology

Based on site-specific hydrogeology at the E Pond, the following lines of reasoning have been identified that support alternative source(s) for the apparent SSIs:

- The bottom of the E Pond is separated from the upper aquifer system by a confining unit (Stratum PA-1) that hydraulically isolates the bottom of the E Pond from the upper aquifer system (Stratum PA-2). Available data indicate the upper aquifer system is under confined conditions and the confining unit (Stratum PA-1) acts as a vertical hydraulic barrier between the bottom of the E Pond and the upper aquifer system (Stratum PA-2), based on the following lines of reasoning:

- Based on review of the boring logs for the groundwater monitoring wells installed at the E Pond, the upper clay confining unit (Stratum PA-1) was present at each monitoring well from the ground surface to depths ranging from 19 feet bgs to 32 feet bgs [i.e., thickness ranging from 19 feet to 32 feet; corresponding to elevations of about 53 to 49 feet above mean sea level (amsl)]. The bottom of the E Pond is located within Stratum PA-1 with the bottom of the clay liner at an elevation of about 60 feet amsl); therefore, Stratum PA-1 acts as a confining layer between the bottom of the E Pond and the underlying upper aquifer system (Stratum PA-2); and

- Based on geotechnical laboratory results for a soil sample collected from Stratum PA-1 at a depth of 10 feet bgs, Stratum PA-1 is a lean clay with a hydraulic conductivity of 2.03E-8 centimeters per second (ERM 2017b), which is consistent with an impervious lithologic unit that exceeds the required specifications per 40 CFR §257.71(a) for a compacted bottom clay liner for a CCR impoundment.

■ The E Pond is located at an active power generating area at the Plant Area and non CCR-related and CCR-related materials are actively managed near the E Pond. For example, the FGD loadout pad immediately adjoins the E Pond. The presence of non CCR-related and CCR-related materials near the E pond monitoring wells may be a potential source for some or all of the apparent SSIs identified in groundwater samples collected from wells located downgradient of the E Pond, as described further below. The E Pond monitoring wells were originally installed as flush-mounted wells, which may have enabled surface materials to incidentally enter the groundwater monitoring wells during sampling activities.

■ Prior to the third semiannual detection monitoring event, NRG modified the monitoring wells by installing casing extensions and protective casings to protect the wells from the accidental introduction of CCR materials directly into groundwater samples during sample collection. The wells were further redeveloped prior to the fourth sampling event. Although the wells have been improved and sampling collection methods modified, groundwater/groundwater samples may still be affected by the prior, historical inadvertent introduction of surface CCR into the monitoring wells and/or groundwater samples during sample collection. This may include residual impacts from CCR introduced into the wells prior to their improvement in 2018.

3.1.2 Replacement Well MW-38R

In July 2019, equipment working in the vicinity of the E Pond inadvertently damaged MW-38. The well was replaced by new monitoring well MW-38R in August 2019, which was installed adjacent to the location of former MW-38. Following well development, groundwater samples were collected from the replacement monitoring well on August 5, 2019. Table 2 provides a comparison of the April 30, 2019, Appendix III analytical results for MW-38 and the August 5, 2019, analytical results for MW-38R.

The August samples were analyzed by a different analytical laboratory and by the methods described below. While the results for two analytes remain higher than the UTLs, they indicate improved water quality. These results indicate that technical issues with MW-38 were likely responsible for elevated concentrations of some Appendix III constituents in that well. It is likely that these monitoring well issues and other issues with materials present in the vicinity of the monitoring wells had allowed a pathway for constituents to reach the groundwater by a pathway other than migration directly from the E Pond.

Table 2 Replacement Well Analytical Results

ANALYTE	UTL	UNIT	MW-38 4/29/2019	MW-38R 8/5/2019
Boron	0.16	mg/L	**2.01**	**0.359**
Calcium	301	mg/L	**454**	**323**
Chloride	359	mg/L	**661 JL**	**180**
Fluoride	7	mg/L	**0.817**	**0.52**
Field pH	6.4 – 7.1	S.U.	**6.79**	**6.83**
Sulfate	1,070	mg/L	**855 JL**	**775**
Total Dissolved Solids	1,958	mg/L	**2,710**	**1,870**

Results above detection limits are bolded
Results above the UTL are highlighted
JL Estimated result with a low bias

3.1.3 Historical Laboratory Data Quality Issues

Based on validation of the original background and semi-annual detection monitoring events provided by the analytical laboratory, TRC determined that there were unresolvable issues regarding data quality. These issues brought into question the accuracy and quality of the data provided by the analytical laboratory to develop the original background water quality data set (see Technical Memos on Laboratory Quality Issues, dated 4-24-19 and Laboratory Change for CCR Sampling Events, dated 7-19-19).

During the April 2019 fourth semi-annual detection monitoring event, a groundwater sample from one well per CCR unit was split between two analytical laboratories to assess the ongoing issues with the analytical laboratory. For the E Pond, MW-37 was selected for split sampling. The split samples for chloride and TDS each had one result that was a potential SSI, and one results that was not. While the TDS results between the two laboratories were relatively close and merely straddle the background UTL concentration, the chloride results were substantially different (a circumstance that was also observed for the other spilt samples). This provides support for the line of reasoning and likelihood that laboratory analytical issues were an alternative source for the chloride UTL exceedance.

3.1.4 E Pond Retrofit Activities

In addition to the site-specific hydrogeology at the E Pond and data quality issues associated with the initial laboratory used for analyses, as discussed previously in subsection 1.1.1 of this ASD, during retrofit construction activities at the E Pond during 2020 and 2021 per the federal CCR Rule, it appears that the geochemistry and hydrogeology of the uppermost aquifer were altered as follows:

- As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
- Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
- Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
- As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and ORP, are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.

As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters, including pH and sulfate.

Finally, the apparent SSIs are discussed relative to the groundwater monitoring wells for the E Pond in the subsections below:

3.2 MW-37

Sulfate was detected in MW-37 at a concentration of 954 mg/L in the October, 2023 sample and 1130 mg/L in the November 1, 2023 verification sample. Both sample results exceeded the UTL for the E-Pond of 474 mg/L. The sulfate data are consistent with the data collected during the previous two years. The elevated sulfate concentrations are related to the potential impact of reduced surface sulfate sources or mineral dissolution and not related to a release from E-Pond.

Boron was detected in MW-37 at a concentration of 0.385 mg/L in the October 9, 2023 sample and 0.401 mg/L in the November 1, 2023 verification sample. Both sample results exceeded the UTL for the E-Pond of 0.12 mg/L. The boron data are consistent with the data collected from 2017 to 2021. The elevated boron concentrations could be related to the potential impact of a new surface source resulting in an elevated EC and high salinity in the groundwater and not related to a release from the E Pond. As discussed in subsection 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer.

Soil disturbance occurred during 2020 and 2021 as part of the retrofit of the E Pond. Construction activities included CCR dewatering, CCR excavation, decontamination, and construction of a composite bottom-liner system. Such activities likely impacted the geochemical stability of the aquifer and impacted groundwater quality in the aquifer, for example, causing additional mineral dissolution into groundwater and/or introducing new carbonate sources such as concrete materials. As the aquifer restabilizes over time after completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize and concentrations of CCR indicator parameters should return to their pre-construction condition.

3.3 MW-38R

Sulfate was detected in MW-38R at a concentration of 650 mg/L in the October 9,2023 sample and 738 mg/L in the November 1, 2023, verification sample. Both sample results exceeded the UTL for the E Pond of 474 mg/L. A decreasing trend in sulfate concentrations was observed from 2021 to 2022 and the concentration of sulfate has been approaching its UTL. The overall decreasing trend in sulfate concentrations indicates that less surface sulfate sources are present at the E Pond. Dissolution of sulfate from soils and minerals is likely the source of sulfate in groundwater. The elevated sulfate concentrations could be related to the potential impact of reduced surface sulfate sources and not related to a release from E-Pond.

Boron was detected in MW-38R at a concentration of 0.416 mg/L in the October 9, 2023, sample and 0.406 mg/L in the November 1, 2023 verification sample. Both sample results exceeded the UTL for the E Pond of 0.12 mg/L. The sample results were generally consistent with the data for boron from 2019 through 2021. Similar trends for the boron data were observed in both downgradient monitoring well M-37 and MW-38R at the E Pond. The elevated boron concentration in both sampling events could be related to the potential impact of a new surface source resulting in elevated EC and salinity concentrations in groundwater and surface water flushing and accumulation. As discussed in Section 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer.

As discussed in subsection 3.1, soil disturbance occurred during 2020 and 2021 as part of the retrofit of the E Pond. Construction activities included CCR dewatering, CCR excavation, decontamination, and construction of a composite bottom-liner system. Such activities likely impacted the geochemical stability of the aquifer and impacted groundwater quality in the aquifer, for example, causing additional mineral dissolution into groundwater and/or introducing new carbonate sources such as concrete materials. As the aquifer restabilizes over time after completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize and concentrations of CCR indicator parameters should return to their pre-construction condition.

3.4 MW-61

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Sulfate was detected in MW-61 at a concentration of 1070 in the October 9, 2023 sample and 1190 mg/L in the November 1, 2023 verification sample. Both sample results exceeded the UTL for the E Pond of 474 mg/L. Changes in the concentration of sulfate concentration in groundwater may be related to atmospheric deposition or anthropogenic activities, such as new sulfate source with rainwater or surface water flushing. The elevated sulfate concentrations are related to the potential impact of reduced surface sulfate sources and not related to a release from E-Pond.

Boron was detected in MW-61 at a concentration 0,987 mg/L in the October 9, 2023 sample and 1.01 mg/L in the November 1, 2023, verification sample. Both sample results exceeded the UTL for the E Pond of 0.12 mg/L. The boron data are consistent with the data collected from 2017 to 2021. As discussed in Section 2.2 of this ASD, boron has a positive correlation to EC and salinity in groundwater, such that the desorption of boron from mineral surfaces favors elevated EC and salinity conditions in the aquifer. The concentration of sulfate and chloride in MW-61 further reinforce that elevated concentrations of boron are related to elevated EC and salinity in the aquifer.

Section 4
Conclusions

Based on statistical evaluation of the October 9, 2023, semi-annual detection monitoring event and the November 1, 2023 verification sampling events analytical results, six apparent SSIs (boron and sulfate) for downgradient monitoring wells for the 13th semi-annual detection monitoring event were identified for the E Pond. This ASD has identified the following lines of reasoning that support alternative sources for these apparent SSIs.

- The bottom of the E Pond clay liner is separated from the upper aquifer system by a confining unit that hydraulically isolates the bottom of the E Pond from the upper aquifer system. Improperly installed or damaged monitoring wells may have historically provided a conduit for CCR constituents to migrate into the upper aquifer system.
- The former, historical presence of CCR materials in the vicinity of the monitoring wells prior to their modification to include risers from the ground surface provided an opportunity for surface materials to inadvertently enter the wells directly from the ground surface.
- Water quality improved incrementally with each improvement to the CCR groundwater monitoring network over time. In July 2019, MW-38 was severely damaged by mobile plant equipment. MW-38 was abandoned and MW-38R was installed adjacent to the former location of MW-38. Analytical date for August 2019 for MW-38R indicates significantly improved overall groundwater quality data.
- It appears that the construction activities that occurred during the retrofit of the E Pond per the federal CCR Rule and the Closure Plan during 2020 and 2021 altered the geochemistry and hydrogeology of the uppermost aquifer as follows:
  - As a result of removal of water from the E Pond during CCR dewatering and retrofit construction, hydraulic loading stopped being a driver for the potential migration of CCR constituents into the uppermost aquifer system;
  - Excavation of all CCR and decontamination of the E Pond area removed CCR as a potential source area for the migration of CCR constituents into the uppermost aquifer system;
  - Installation of the bottom composite liner system minimizes the potential for the migration of CCR constituents into the uppermost aquifer system by acting as a barrier to any such potential migration; and
  - As a result of the retrofit construction activities summarized above, changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP), are anticipated to have occurred which will also be related to changes in the measured concentrations of CCR constituents.
- As the geochemistry and hydrogeology of the aquifer continues to evolve towards a new equilibrium following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will continue to re-equilibrate, which should be reflected in a continued evolution in the concentrations of CCR indicator parameters.

- Natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the E Pond have been shown to be responsible for each of the eight apparent SSIs observed. Based on this successful ASD, NRG will continue performing semi-annual detection monitoring for the E Pond per 30 TAC Chapter 352.

Section 5
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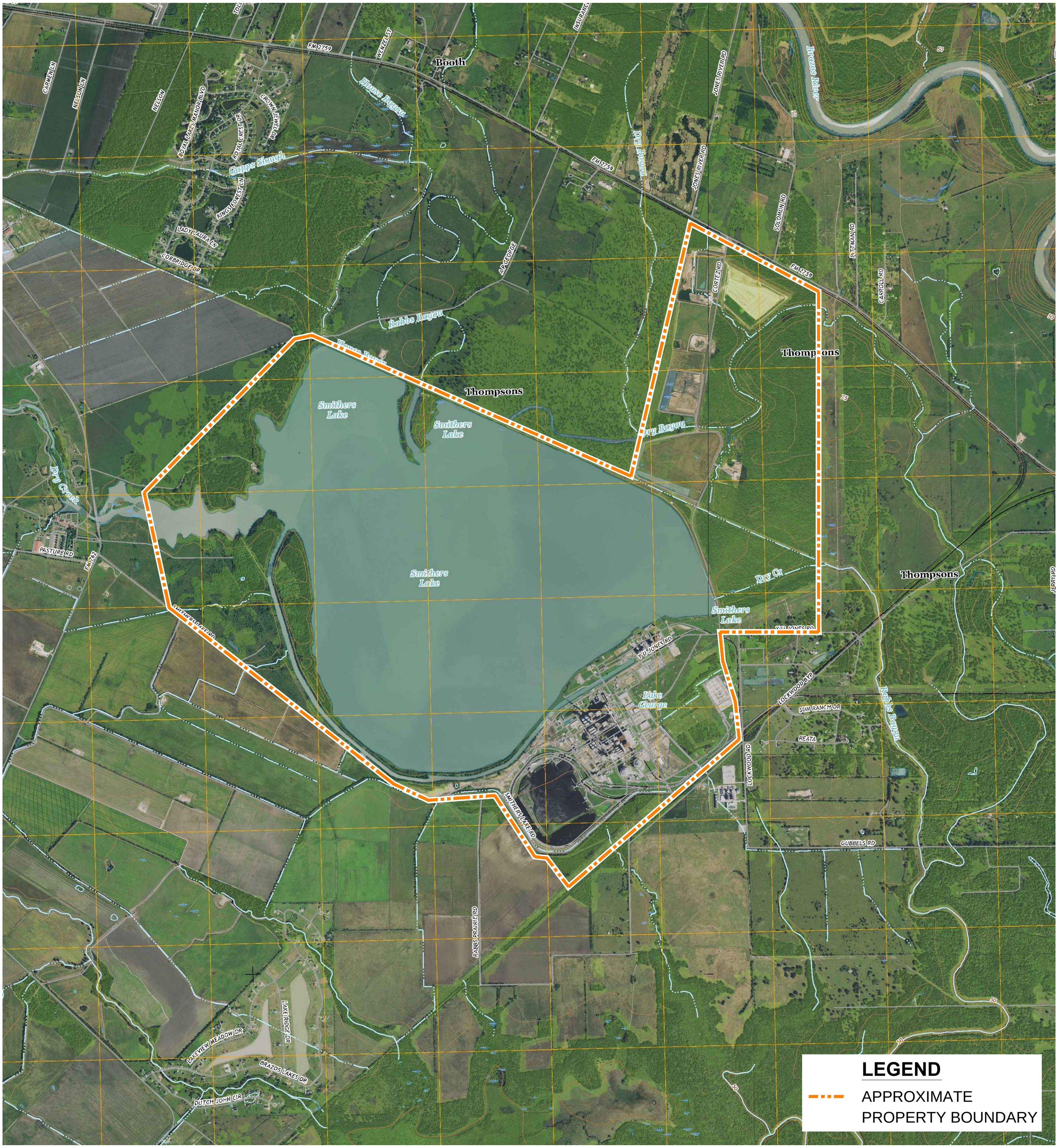
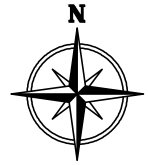
Figures

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg 01/16/19



REFERENCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLES
MISSOURI CITY, TEXAS (2016) / SMITHERS LAKE, TEXAS (2016) / SUGAR LAND, TEXAS (2016) / THOMPSONS, TEXAS (2016)

TEXAS
QUADRANGLE LOCATION

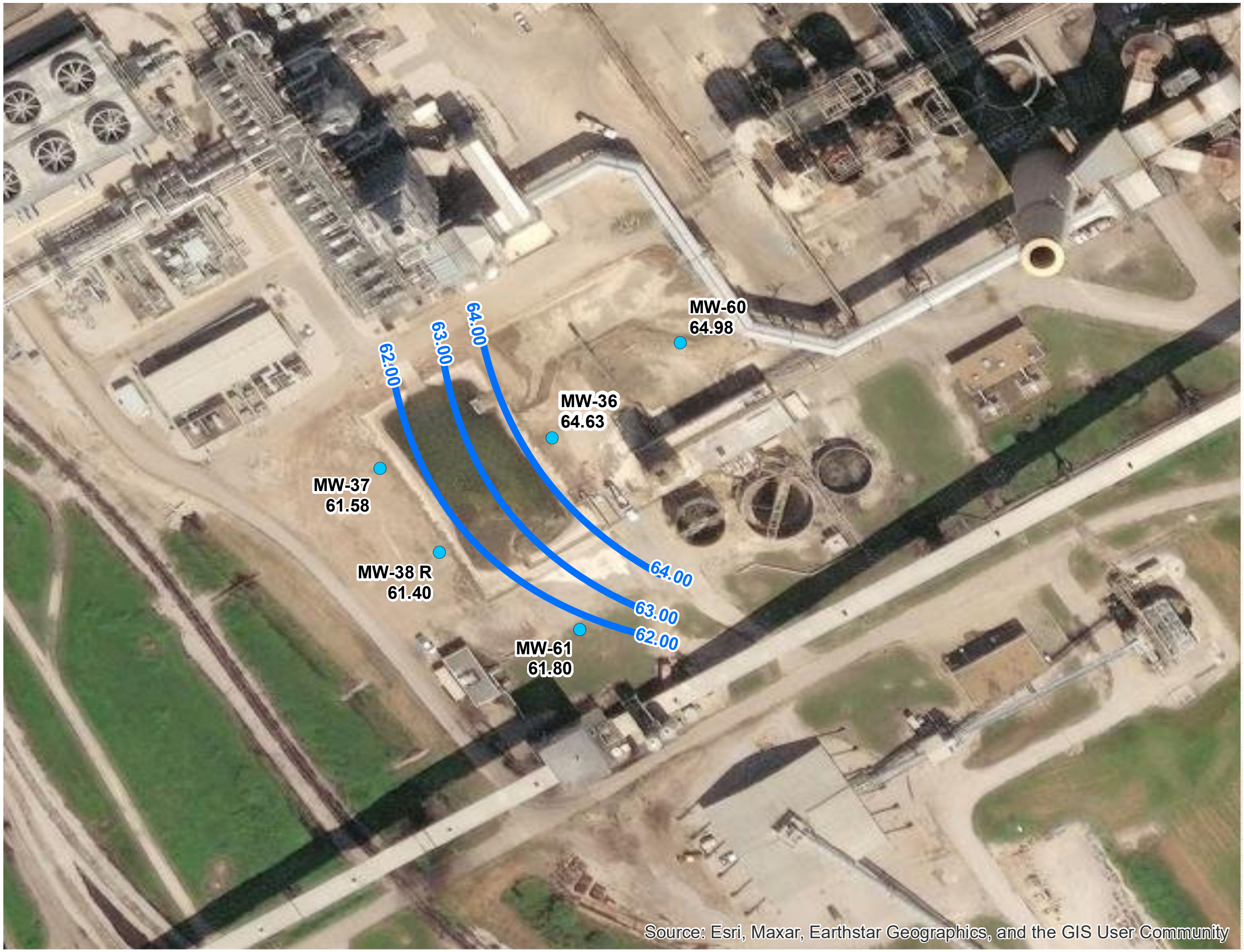


0 2,000' 4,000' 8,000'
SCALE IN FEET
1" = 4,000'-0"

PROJECT:	**NRG TEXAS POWER, LLC** **W.A. Parish Station** **Thompsons, Texas**		
TITLE:	**SITE LOCATION MAP**		
DRAWN BY:	O. Fonseka	PROJECT No.:	478259.0001.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	DECEMBER 2022		

TRC
14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg



Legend

- Monitor Well
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- *64.98* Groundwater Elevation (FT MSL)

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2023.

N

0 150 300 FT

1 " = 150 '
1:1,800

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713.244.1000
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PROJECT:

NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

FGD EMERGENCY POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2023

DRAWN BY:	F. YARBROUGH
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FIGURE 2-9

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: January 31, 2024
Facility Name: NRG-WA Parish Generating Station
Permit or Registration No.: 108

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: ______ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

TRC

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Solid Waste Disposal Area (SWMU 001) CCR Multiunit

January 2024

Prepared For
NRG Texas Power, LLC
Thompsons, Texas
TCEQ Coal Combustion Residuals (CCR) Registration No. CCR108
Industrial Solid Waste Registration No. 31631
EPA Identification No. TXD097311849

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Executive Summary

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Site has three active CCR management units that are subject to regulation under 30 TAC Chapter 32, including the Solid Waste Disposal Area (SWDA) multi-unit landfill (Landfill), which is the subject of this Alternate Source Demonstration (ASD).

The 13th semi-annual groundwater detection monitoring event was conducted on October 9, 2023. Verification sampling was performed on November 1, 2023. Statistical evaluation of the results was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Four apparent SSIs: sulfate, calcium, boron, and pH; were identified. The apparent SSIs were identified in an upgradient background monitoring wells MW-23R and MW-48 and downgradient monitor wells (MW-55 and MW-62). Three apparent SSIs were confirmed: sulfate, boron, pH during the November verification sampling. NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on December 8, 2023.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 1, 2023 verification sampling results, are the fourth data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for the apparent SSIs at the SWDA Landfill, based on the following lines of reasoning:

- Natural variations in upgradient background groundwater quality; and
- Enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the SWDA Landfill have been shown to be responsible for all the apparent SSIs observed in upgradient background monitoring well MW-23R. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the SWDA Landfill per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) W.A. Parish Electric Generating Station (Station) is located in Thompsons, Fort Bend County, Texas, adjacent to Smithers Lake. The electricity generating portion of the Station, or the main Plant Operations Area (Plant Area), is located along the southeastern shore of the lake.

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015) and the Phase 1, Part1 final rule (July 30, 2018). CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has the following three active CCR-management units:

- Solid Waste Disposal Area (SWDA) (SWMU 001), which consists of four active CCR-management cells: Cell 1C, Cell 2A-Pug Mill, Cell 2B, and Cell 3; and is now monitored as a single CCR Multiunit;
- Air Preheater Pond (APH Pond, SWMU 021); and
- FGD Emergency Pond (E Pond, SWMU 020).

The SWDA Landfill is located to the north of the Plant Area and the APH and E Ponds are located at the southern portion of the Plant Area. The locations of the three CCR units are shown on Figure 1. The SWDA Landfill is the subject of this Alternative Source Demonstration (ASD).

CCR-management activities at the SWDA Landfill are generally described as follows:

- Cell 1C – Receives nonmarketable CCR trucked from the plant;
- Cell 2B – Receives marketable CCR trucked from the plant;
- Cell 3 – Receives CCR bottom ash trucked from the plant; and
- Cell 2A-Pug Mill – Pug mill located at a small portion of Cell 2A and that is not currently being used for CCR management purposes.

1.1.1 Groundwater Monitoring Program

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual detection monitoring events for the APH Pond were documented in the *Annual Groundwater Monitoring and Corrective Action Reports* (January 30, 2018) for the individual CCR landfill units (Cell 1C, Cell 2A, Cell 2B, and Cell 3) and the *CCR Groundwater Monitoring Reports* (March 1, 2018) for the individual CCR landfill units pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the SWDA Landfill per the federal CCR Rule and 30 TAC Chapter 352. As of the April 3, 2023 sampling event, a total of 12 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the fourth semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The October 2023 semi-annual detection monitoring event analytical results, including the November 1, 2023 verification sampling results, are the fifth data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD on behalf of NRG to evaluate apparent SSIs above background levels for the 13th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area surrounding the SWDA landfill.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Houston Sheet* (BEG 1982), the Station is underlain by alluvium and the Beaumont formation (also commonly referred to as the Beaumont Clay). The alluvium is present along the Brazos River, which is located approximately 0.9 miles from the northern boundary of the SWDA Landfill. Both the alluvium and the Beaumont formation are composed of clay, silt, and sand; and may include stream channel, point-bar, natural levee, back swamp, coastal marsh, and mud-flat deposits. The thickness of the Beaumont formation is approximately 100 feet. The alluvium is not present at the Plant Area, which is consistent with this area being located outside of the Brazos River floodplain zone (FBC, 2018).

The alluvium and Beaumont Formation are located within the upper unit of the Chicot aquifer system. At most locations throughout Fort Bend County, the Chicot aquifer system is under confined conditions (TWDB 1990). The Chicot aquifer system is primarily recharged by precipitation at locations where it outcrops in Austin, Harris, and Waller Counties; groundwater then flows laterally within Fort Bend County (TWDB 1990). Site investigations performed by others on behalf of NRG also indicate that the uppermost groundwater-bearing units at the Station are under confined conditions (ERM, 2017a).

Environmental site investigations conducted in May 2016 and November 2016 identified three main subsurface strata at the Station, which were designated as Stratum DA-1 through DA-3 at the SWDA Landfill and Stratum PA-1 through PA-3 at the Plant Area (APH Pond and E Pond). The strata are fully described in the October 2017 *CCR Groundwater Monitoring Networks* report (ERM, 2017b) and are summarized below.

2.1.1 Stratum DA-1 (Upper Confining Unit)

Stratum DA-1 is predominately silty clay with some sandy clay, clay, and sandy silt. Stratum DA-1 is generally present from the ground surface to approximately 30 feet below ground surface (bgs), but this stratum ranges in thickness from 20 to 60 feet throughout the SWDA Landfill.

Stratum DA-1 serves as a confining unit to underlying Stratum DA-2, which comprises the uppermost groundwater-bearing unit at the Station. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum DA-1 is 2.85E-08 centimeters per second (cm/sec) (ERM 2017b).

2.1.2 Stratum DA-2 (Upper Aquifer System)

Stratum DA-2 consists of interbedded sand, silty sand, clayey sand, and clayey sandy silt with some gravelly sand. The clay content within Stratum DA-2 varies across the SWDA. Stratum DA-2 is generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Stratum DA-2 is saturated and comprises the upper aquifer system at the SWDA Landfill. CCR monitoring wells at the SWDA Landfill are completed within Stratum DA-2. Slug testing results for CCR monitoring wells indicate hydraulic conductivity ranges from 6.86E-04 cm/sec to 2.59E-02 cm/sec in Stratum DA-2 (ERM, 2017b). Groundwater primarily flows to the northeast towards the Brazos River beneath the SWDA Landfill.

2.1.3 Stratum DA-3 (Lower Confining Unit)

Stratum DA-3 is predominantly clay to silty clay. This stratum appears to be the bottom confining layer to the overlying groundwater-bearing unit (Stratum DA-2). The thickness of Stratum DA-3 has not been determined at the SWDA Landfill.

2.1.4 Solid Waste Disposal Area – Certified Monitored Network

Four separate groundwater monitoring well systems were initially developed in 2016 for each of the four active CCR cells within the SWDA Landfill, which were certified by a Texas P.E. under 257.91(f) of the federal CCR Rule on October 17, 2017. The monitoring wells were completed into Stratum DA-2, the upper aquifer system at the Station.

Following successful preparation of the ASD in July 2018 for the first semi-annual detection monitoring event for the SWDA Landfill, the four individual CCR cells were combined into a single CCR multiunit landfill as allowed for in the federal CCR Rule for groundwater monitoring purposes. A revised groundwater monitoring system and revised statistical method were developed and certified by a Texas professional engineer (P.E.) for the SWDA Landfill. The monitoring wells comprising the revised groundwater monitoring system are shown in Table 1.

Table 1 Groundwater Monitoring System for SWDA CCR-Multiunit

UPGRADIENT WELLS	DOWNGRADIENT WELLS
MW-23R, MW-28D, MW-42, MW-43, MW-47, and MW-48	MW-44, MW-46R, MW-50, MW-52, MW-54, MW-55R, MW-58, and MW-65

Because of potential integrity issues with the construction of background monitoring well MW-23 (potential infiltration of grout into the well screen), it was replaced by MW-23R which was installed in close proximity to MW-23. A groundwater potentiometric surface map was prepared by TRC for the April 3, 2023 semi-annual detection monitoring event and is provided in this ASD as Figure 2. Historically, groundwater flows primarily to the northeast beneath the SWDA CCR multiunit at a gradient ranging from 0.0007 foot per foot (ft/ft) to 0.003 ft/ft.

2.2 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes. Based on the site geological conditions, several groundwater parameters are discussed as follows, including sulfate and boron.

2.2.1 Sulfate in Groundwater

Sulfate is ubiquitous in groundwater, with both natural and anthropogenic sources. Apart from a potential sulfate source area, the primary origin of sulfate includes mineral dissolution, atmospheric deposition, and other anthropogenic sources (Miao et al., 2012). As water moves through soil and rock formations that contain sulfate minerals, some of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to the high levels of sulphate in many aquifers of the world. Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and inputs to soil will impact groundwater. Research investigations indicate that atmospheric deposition, dissolution of gypsum, oxidation of sulfide mineral, and anthropogenic inputs will contribute to elevated sulfate concentrations in groundwater. Based on the hydrogeology at the SWDA Landfill, atmospheric deposition and anthropogenic activities could be impacting sulfate concentrations (Einsiedl & Mayer, 2005; Pu et al., 2012).

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2.2.2 Boron in Groundwater

Boron is normally considered to be a minor constituent in groundwater since it is generally present in low concentrations (Palmucci & Rusi, 2014). Apart from a potential boron source area, the primary origin of boron in groundwater is typically associated with the processes of sorption and desorption from mineral surfaces including soil and bedrock (Ravenscroft & McArthur, 2004). Boron is often cited as a contaminant trace chemical and usually occurs as a non-ionized form as H_3BO_3 in soils at pH <8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the concentration of boron in groundwater include weathering, human activity, evaporative concentration, ion-exchange, electrical conductivity (EC), and pH. Ravenscroft & McArthur (2004) investigated the mechanism of regional boron enrichment in groundwater and the results indicated that the main process resulting in boron enrichment in groundwater was flushing by fresh groundwater. The desorption of boron from mineral surfaces could be affected by pH, ionic strength, salinity, and the HCO_3/CO_3 ratio. Decreases in pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH in rocks, soils, and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

Additional investigations confirmed that the presence of boron in groundwater depends on the EC (salinity), such that the concentration of boron increases with increasing EC. Halim et al. (2010) reported that the increae in Cl^- contributes to an increase in EC value since a strong linear correlation ($R^2 = 0.88$) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between elevated concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) determined that the concentration of boron in groundwater was related to SO_4^{2-} and the age affect.

Regarding the concentration of boron in groundwater at the SWDA, the source of boron is natural rather than anthropogenic. Therefore, the increase in concentration of boron and pH are related to natural variations in groundwater geochemistry, such as pH, ion exchanges, EC, and salinity.

Section 3
Alternative Source Demonstration

The 13th semi-annual detection monitoring event was conducted on October 9, 2023, per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Four apparent SSIs were identified: calcium, sulfate, born, and pH.

As part of the ASD activities, verification sampling was conducted on November 1, 2023, for the apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. Three apparent SSIs were confirmed: sulfate, born, pH Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on December 8, 2023, addressing the apparent SSIs.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 2 SSIs – October 2023 Semiannual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
UPGRADIENT MONITORING WELLS						
Sulfate	MW-23R	N/A	670	11/1/2023	1,540	mg/L
Boron	MW-48	N/A	0.65	10/9/2023	0.735	mg/L
DOWNGRADIENT MONITORING WELLS						
pH	MW-52	6.9		11/1/2023	6.74	SU
pH	MW-65	6.9		11/1/2023	6.84	SU

Notes: UG = Upgradient
mg/L = milligrams per Liter

3.1 MW-23R

One apparent SSIs was identified in upgradient background monitoring well MW-23R. MW-23 had been replaced by MW-23R after the seventh quarterly background monitoring event, which occurred in January 2020 due to the potential presence of grout within the well screen. Because the new background results only included one sampling event for MW-23R, that well isn't sufficiently represented in the background data set. NRG proposes to replace the MW-23 data from the background data set over time, such that the background values for the SWDA Landfill eventually includes representation from MW-23R.

Sulfate was detected in MW-23R at a concentration of 1,1370 mg/L in the October 9, 2023, verification sample and 1,1540mg/L in the November 1, 2023 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 670 mg/L but is an insufficient change between sampling events. The sulfate data is consistent with the prior sampling events. MW-23R is located hydraulically upgradient and is an upgradient background monitoring location for the SWDA Landfill. Therefore, the sulfate SSI in MW-23R is associated with natural variations in the geochemistry of groundwater in the aquifer and is not related to a release from the SWDA Landfill.

3.2 MW-48

One apparent SSIs was identified in upgradient background monitoring well MW-48. Boron was detected in MW-48 at a concentration of 0.735 mg/L in the October 9, 2023, sample. The sample result exceeded the UTL for the SWDA Landfill of 0.735 mg/L but is an insufficient change between previous sampling events.

3.3 MW-52 and MW -65

The apparent pH SSIs identified in MW-52 and MW-65 appears to be related to natural variations in groundwater quality in the subsurface resulting in changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP) and are also related to changes in the measured concentrations of CCR constituents.

Section 4
Conclusions

Based on statistical evaluation of the October 9, 2023, semi-annual detection monitoring event and the November 1, 2023 verification sampling events analytical results, One apparent SSI: sulfate was identified in upgradient background monitor well MW-23R and one apparent SSI; boron was identified in upgradient background monitor well MW-48 for the SWDA Landfill. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- Natural variations in upgradient background groundwater quality; and
- Enhanced minerals dissolution and changes in geochemical conditions within the aquifer.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the SWDA Landfill have been shown to be responsible for all three apparent SSIs observed in upgradient background monitoring well MW-23R. Based on preparation of this successful ASD, NRG will continue semi-annual detection monitoring for the SWDA Landfill per 30 TAC Chapter 352.

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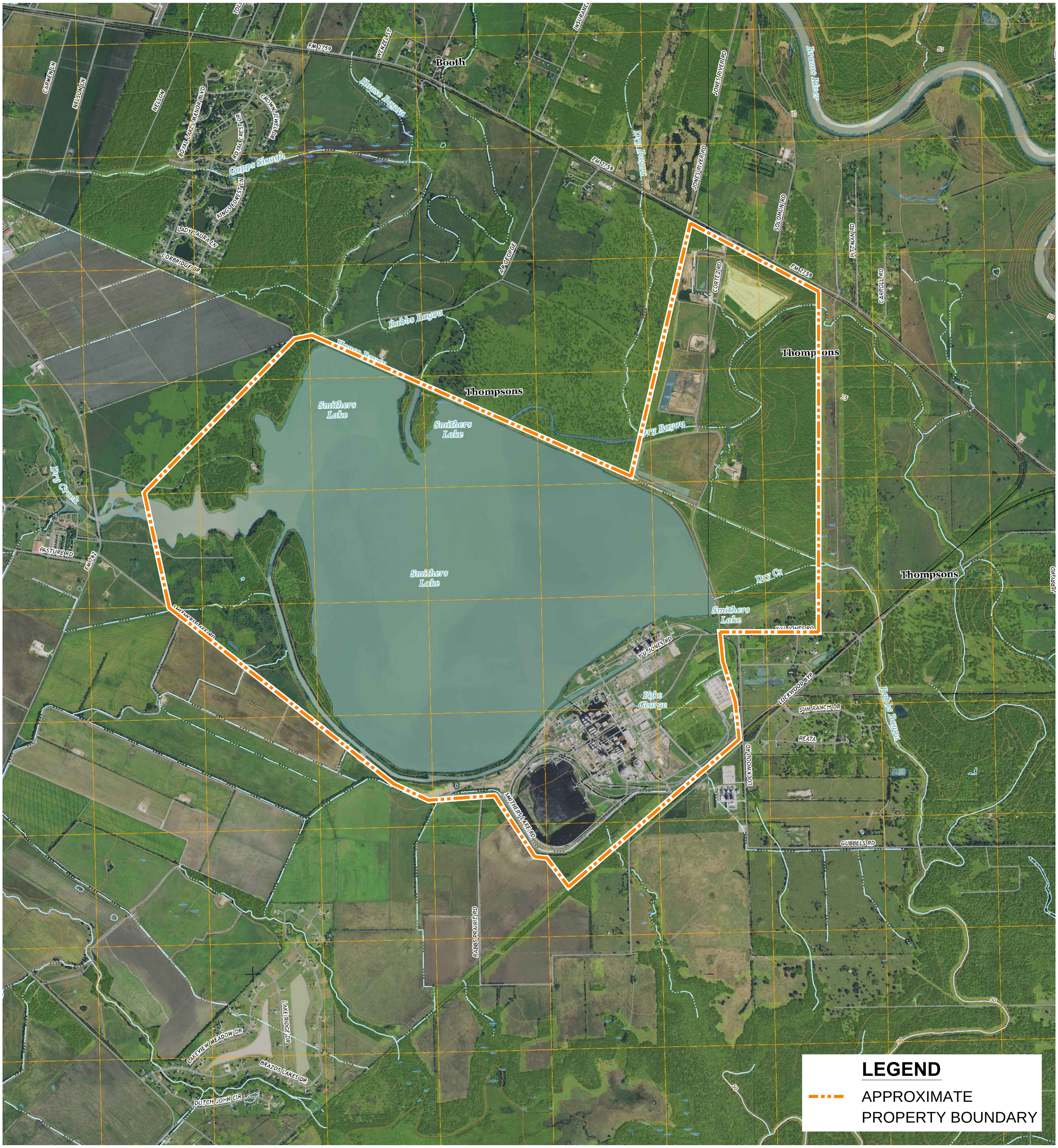
Figures



REFERENCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLES
MISSOURI CITY, TEXAS (2016) / SMITHERS LAKE, TEXAS (2016) / SUGAR LAND, TEXAS (2016) / THOMPSONS, TEXAS (2016)

TEXAS
QUADRANGLE LOCATION

N

0 2,000' 4,000' 8,000'

SCALE IN FEET
1" = 4,000'-0"

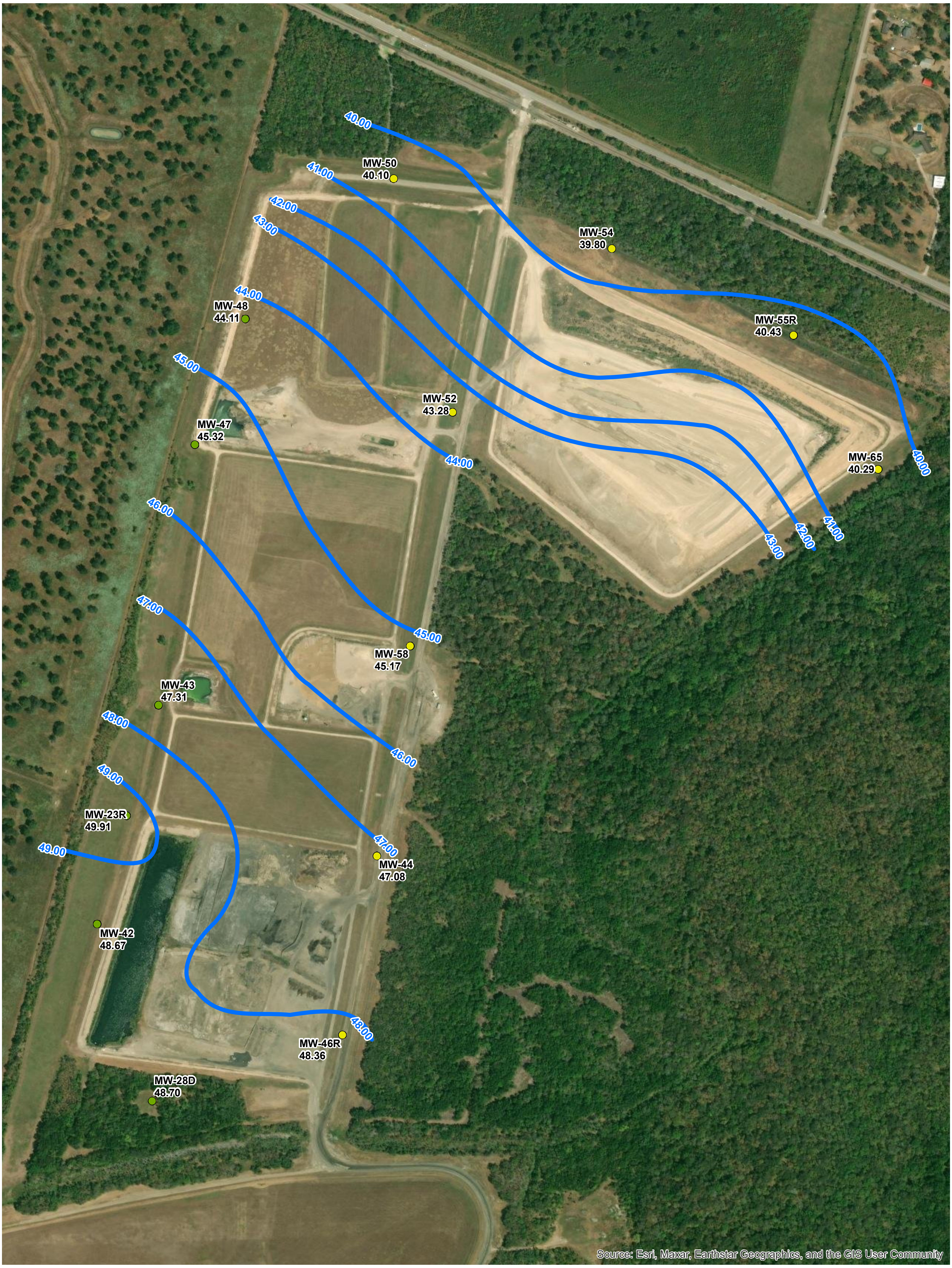
PROJECT:	**NRG TEXAS POWER, LLC** **W.A. Parish Station** **Thompsons, Texas**
TITLE:	**SITE LOCATION MAP**
DRAWN BY:	O. Fonseka
CHECKED BY:	T. Dworaczyk
APPROVED BY:	T. Dworaczyk
DATE:	DECEMBER 2022
PROJECT No.:	478259.0001.0000
	FIGURE 1

TRC

14701 St. Mary's Lane
Suite 500
Houston, TX 77079
Phone: 713.244.1000

FILE: Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg

HOU M:\ACAD-TRC\DRAFTING\CLIENT-Name- K-L-M-N-O\NRG\W.A. Parish Station - Thompsons-TX\2019 - CCR-Report\ Fig 1-1 - NRG-WAParishStation - Site Location Map.dwg 01/16/19



LEGEND

- Multiunit Upgradient Monitor Well
- Multiunit Downgradient Monitor Well
- *48.70* Groundwater Elevation (FT MSL)

Groundwater Elevation Contour - Dashed where Inferred (FT MSL)

Groundwater Flow Direction

NOTE: GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 2023.

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST
1-23-24

0 250 500
Feet
1 " = 500 '
1:6,000
N

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Houston, TX 77079
713.244.1000
www.trcsolutions.com

PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
SOLID WASTE DISPOSAL AREA
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2023

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	A. DWORACZYK
DATE:	JANUARY 2024
PROJ NO:	585638.0000.0001
FILE:	585638.0000_2-7.mxd

FIGURE 2-7