2022 Annual Groundwater Monitoring and Corrective Action Report

W.A Parish Generating Station, Thompsons, Texas

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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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, 2023, 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.

TRC Environmental Corporation (TRC) has prepared the *2022 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 2022; 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 2022.

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. 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 2022, 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 2023:

- The *2022 Annual Report* will be prepared and placed into the Station's Facility Operating Record (FOR) by January 31, 2023, 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, 2023;
- The ASDs for the second half 2022 (October) semi-annual detection monitoring event will be prepared and submitted to the TCEQ during the first quarter 2023;
- Both semi-annual groundwater detection monitoring events for the three CCR units will be performed during the first and second halves of 2023 (April and October) for the Appendix III detection monitoring parameters;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2023 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined;
- Statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2023 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 2023 semi-annual detection monitoring events; and
- ASDs for the first half 2023 (April) semi-annual detection monitoring event will be prepared and submitted to TCEQ for review, if required for the three CCR units.

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 Part257) 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 *2021 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 2022.

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 2022.

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 2022.

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 2022 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 2022. The first half 2021 semi-annual detection monitoring event was performed in April 2022 and a verification sampling event was performed during May 2022 to evaluate select parameters. The second half 2022 semi-annual detection monitoring event was performed during October 2022 and a verification resampling event was performed during November 2022 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 2022.

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 2022 and October 2022 semi-annual detection monitoring event were the second and third 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 2022, 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 2022.

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

2.3 Laboratory Data Quality Review

Upon receipt of the April and October 2022 groundwater monitoring analytical data from the analytical laboratory and the May and November 2022 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 2022 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 2022 detection monitoring sampling events are provided below:

- SWDA CCR Multiunit Landfill. Groundwater is typically encountered at depths ranging from 11.54 (MW-52) to 29.97 (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 0.0021 ft/ft to 0.0040 ft/ft with an average groundwater flow velocity of 26 ft/yr.
- E Pond. Groundwater is typically encountered at depths ranging from 6.49 (MW-60) to 12.36 (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 0.0037 ft/ft to 0.0062 ft/ft with an average groundwater flow velocity of 48 ft/yr.

  - APH Pond. Groundwater is typically encountered at depths ranging from 5.89 (MW-41) to 13.99 (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 0.0021 ft/ft to 0.0059 ft/ft with an average groundwater flow velocity of 39 ft/yr.

2.5 Monitoring Wells Installed or Decommissioned

No groundwater monitoring wells were installed or decommissioned during 2022.

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 2022.

Previous monitoring data were provided in the 2017, 2018, 2019, 2020, and 2021 Annual Reports. Based on the data and results of the monitoring activities during 2022, 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 2022:

- The *2021 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, 2022, and posted to NRG's publicly accessible CCR website by March 2, 2022;
- The first and second half 2022 semi-annual detection monitoring events for the CCR units was performed during April and October 2022 and the samples were analyzed for the Appendix III detection monitoring constituents;
- Resampling monitoring events were performed during May and November 2022 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 2022 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 2021, first half 2022 and second half 2022 semi-annual detection monitoring events;
- Written ASDs were completed during 2022 that successfully demonstrated that potential SSIs above background for the second half 2021 (October) and the first half 2022 (April) semi-annual detection monitoring events were due to alternative sources;
- NRG notified TCEQ in December 2021 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2021 (October) semi-annual detection monitoring event. An ASD was submitted to TCEQ during the first quarter 2022;
- NRG notified TCEQ in June 2022 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the first half 2022 (April) semi-annual detection monitoring event. An ASD was submitted to the TCEQ in the third quarter of 2022; and
- 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 and that NRG intends to prepare and submit ASDs to TCEQ during the first quarter 2023.

Based on the successful completion of written ASDs, all three CCR units remained in detection monitoring during 2022. No corrective action activities were performed for the CCR units pursuant to the TCEQ Permit Program during 2022.

3.3 Problems Encountered and Resolution

During 2022, 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 October 2021, April 2022, and October 2022 semi-annual detection monitoring events.

4.1 October 2021 Semi-annual Detection Monitoring Event

Statistical analysis and identification of potential SSIs for the second half 2021 (October 2021) semi-annual detection monitoring event were completed during December 2021. Select wells and analytes were resampled in December 2021 following receipt of the October 2021 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 October 2021 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 December 2021 for the October 2021 semi-annual detection monitoring event.

The results of the statistical analysis for the October 2021 semi-annual detection monitoring event for the three CCR units are summarized below in Tables 4-1, 4-2, and 4-3. This information was also provided in the 2021 Annual Report. In accordance with 30 TAC Chapter 352, ASDs were successfully performed during 2022 to evaluate the potential SSIs as discussed in Section 5.0, which are provided with the 2022 Annual Report. The ASDs were also submitted to TCEQ during 2022.

4.1.1 SWDA CCR Multiunit Landfill

The results of the statistical analysis for the October 2021 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 – October 2021, Detection Monitoring, SWDA CCR Multiunit Landfill SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
UPGRADIENT MONITORING WELLS						
Calcium	MW-23R	N/A	420	12/7/2021	436	mg/L
Sulfate	MW-23R	N/A	670	12/7/2021	1,060	mg/L
TDS	MW-23R	N/A	3,700	10/15/2021	3,730	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 October 2021 semi-annual detection monitoring event are summarized in the table below. Seven potential SSIs were identified. The seven potential SSIs were identified in downgradient monitoring wells MW-37, MW-38R, and MW-61.

Table 4-2
Potential SSIs – October 2021, Detection Monitoring, E Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	N/A	0.12	12/7/2021	0.585	mg/L
Boron	MW-38R	N/A	0.12	12/7/2021	0.593	mg/L
Boron	MW-61	N/A	0.12	12/7/2021	1.25	mg/L
Sulfate	MW-37	N/A	470	12/7/2021	882	mg/L
Sulfate	MW-38R	N/A	470	12/7/2021	575	mg/L
Sulfate	MW-61	N/A	470	12/7/2021	743	mg/L
TDS	MW-37	N/A	1,800	12/7/2021	2,160	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 October 2021 semi-annual detection monitoring event are summarized in the table below. Four potential SSIs were identified. Once potential SSI was identified in upgradient monitoring well MW-40 and three potential SSIs were identified in downgradient monitoring wells MW-41, MW-63, and MW-64.

Table 4-3
Potential SSIs – October 2021, Detection Monitoring, APH Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Calcium	MW-40	N/A	290	12/8/2021	307	mg/L
Fluoride	MW-41	N/A	0.20	2/9/2021	0.22	mg/L
Sulfate	MW-63	N/A	360	12/7/2021	425	mg/L
Fluoride	MW-64	N/A	0.20	2/9/2021	0.52	mg/L

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

4.2 April 2022 Semi-annual Detection Monitoring Event

Statistical analysis and identification of potential SSIs for the first half 2022 (April) semi-annual detection monitoring event were completed during June 2022. Select wells and analytes were resampled in May 2022 following receipt of the April 2022 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 April 2022 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 2022.

4.2.1 SWDA CCR Multiunit Landfill

The results of the statistical analysis for the April 2022 semi-annual detection monitoring event are summarized in the table below. Three potential SSIs were identified in upgradient monitoring well MW-23R.

Table 4-4
Potential SSIs – April 2022, Detection Monitoring, SWDA CCR Multiunit Landfill SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
UPGRADIENT MONITORING WELLS						
Calcium	MW-23R	N/A	420	4/1/2022	492	mg/L
Sulfate	MW-23R	N/A	670	4/1/2022	1,200	mg/L
TDS	MW-23R	N/A	3,700	4/1/2022	3,960	mg/L

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

4.2.2 E Pond

The results of the statistical analysis for the April 2022 semi-annual detection monitoring event are summarized in the table below. Eight potential SSIs were identified in downgradient monitoring wells MW-37, MW-38R, and MW-61.

Table 4-5
Potential SSIs – April 2022, Detection Monitoring, E Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
DOWNGRADIENT MONITORING WELLS						
Boron	MW-37	N/A	0.12	4/1/2022	0.367	mg/L
Sulfate	MW-37	N/A	470	4/1/2022	1,030	mg/L
TDS	MW-37	N/A	1,800	4/1/2022	1,880	mg/L
Boron	MW-38R	N/A	0.12	4/1/2022	0.421	mg/L
Sulfate	MW-38R	N/A	470	4/1/2022	572	mg/L
Boron	MW-61	N/A	0.12	4/1/2022	1.29	mg/L
Sulfate	MW-61	N/A	470	4/1/2022	916	mg/L
TDS	MW-61	N/A	1,800	4/1/2022	1,880	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 April 2022 semi-annual detection monitoring event are summarized in the table below. Two potential SSIs were identified in downgradient monitoring wells MW-63 and MW-41.

Table 4-6
Potential SSIs – April 2022, Detection Monitoring, APH Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-63	N/A	360	4/1/2022	532	mg/L
pH	MW-41	6.4	6.9	4/1/2022	7.25	S.U.

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

4.3 October 2022 Semi-annual Detection Monitoring Event

Statistical analysis and identification of potential SSIs for the second half 2022 (October) semi-annual detection monitoring event were completed during December 2022. Select wells and analytes were resampled in November 2022 following receipt of the October 2022 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. ASDs will be submitted to TCEQ in the first quarter of 2023 for the October 2022 sampling event.

The results of the statistical analysis for the October 2022 semi-annual detection monitoring event for the Landfill are summarized below in Tables 4-7, 4-8, and 4-9. In accordance with 30 TAC Chapter 352, ASDs will be prepared to evaluate the potential SSIs as discussed in Section 5.0. The ASDs will be submitted to TCEQ in 2023 and will also be included with the 2023 Annual Report

4.3.1 SWDA CCR Multiunit Landfill

The results of the statistical analysis for the October 2022 semi-annual detection monitoring event are summarized in the table below. Two potential SSIs were identified in upgradient monitoring well MW-23R.

Table 4-7
Potential SSIs – October 2022, Detection Monitoring, SWDA CCR Multiunit Landfill SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
UPGRADIENT MONITORING WELLS						
Sulfate	MW-23R	N/A	673	11/22/2022	1,220	mg/L
TDS	MW-23R	N/A	3,720	11/22/2022	3,760	mg/L

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

4.3.2 E Pond

The results of the statistical analysis for the October 2022 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 4-8
Potential SSIs – October 2022, Detection Monitoring, E Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	N/A	0.12	10/4/2022	0.363	mg/L
Boron	MW-38R	N/A	0.12	10/4/2022	0.440	mg/L
Boron	MW-61	N/A	0.12	10/4/2022	1.58	mg/L

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Sulfate	MW-37	N/A	474	10/4/2022	717	mg/L
Sulfate	MW-38R	N/A	474	10/4/2022	646	mg/L
Sulfate	MW-61	N/A	474	10/4/2022	987	mg/L
TDS	MW-37	N/A	1,826	10/4/2022	1,930	mg/L
TDS	MW-61	N/A	1,826	10/4/2022	2,010	mg/L

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

4.3.3 APH Pond

The results of the statistical analysis for the October 2022 semi-annual detection monitoring event are summarized in the table below. Three potential SSIs were identified in downgradient monitoring wells MW-41 and MW-63.

Table 4-9
Potential SSIs – October 2022, Detection Monitoring, APH Pond SSIs

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
pH	MW-41	6.4	6.9	10/4/2022	6.94	S.U
Calcium	MW-63	N/A	291	11/22/2022	334	mg/L
Sulfate	MW-63	N/A	364	11/22/2022	579	mg/L

mg/L= milligrams per liter   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 second half (October) 2021, the first half (April) 2022, and the second half (October) 2022 semi-annual detection monitoring events. ASDs were prepared for the second half (October) 2021 and the first half (April) 2022 monitoring events during 2022 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 during 2022. ASDs for the three CCR units for the second half (October) 2022 monitoring event will be prepared and submitted to TCEQ during the first quarter 2023.

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, ASDs were completed and certified by a qualified Texas P.E. during 2022 per 30 TAC Chapter 352 as follows:

- In March 2022, ASDs were certified for potential SSIs for the three CCR units for the second half (October) 2021 semi-annual detection monitoring sampling event; and
- In August 2022, ASDs were certified for potential SSIs for the three CCR units for the first half (April) 2022 semi-annual detection monitoring sampling event.

The ASDs were submitted to TCEQ pursuant to the TCEQ CCR Permit Program.

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 2022. A total of six ASDs were completed during 2022 for two 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

Two ASDs were successfully completed for the SWDA CCR Multiunit Landfill during 2022. The ASDs are summarized for the second half (October) 2021 and first half (April) 2022 semi-annual detection monitoring sampling events below:

- October 2021. Calcium, sulfate, and TDS were identified for upgradient monitoring well MW-23R. The ASD was completed in March 2022. 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.
- April 2022. Calcium, sulfate, and TDS were identified for upgradient monitoring well MW-23R. The ASD was completed in August 2022. 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.

5.1.2 E Pond

Two ASDs were successfully completed for the E Pond during 2022. The ASDs are summarized for the second half (October) 2021 and first half (April 2022) semi-annual detection monitoring sampling events below:

- October 2021. Seven 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 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;
  2) 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;
  3) 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;
  4) 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;

5) Elevated sulfate data could be related to the potential impact of reduced surface sulfate sources and not related to a release from the E Pond; and
6) Elevated boron concentrations could be related to the potential impact of a new surface source resulting in an elevated electrical conductivity (EC) and high salinity in the groundwater and not related to a release from the E Pond.

- April 2022. Eight potential SSIs were identified at three downgradient monitoring wells (MW-37, MW-38R and MW-61). Boron, sulfate, and TDS were identified as potential SSIs. Five alternative sources were identified for the potential SSIs:

1) 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;
2) 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;
3) 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;
4) 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;
5) 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.

5.1.3 APH Pond

Two ASDs were successfully completed for the APH Pond during 2022. The ASDs are summarized for the second half (October) 2021 and first half (April) 2022 semi-annual detection monitoring sampling events below:

- October 2021. Four potential SSIs were identified in one upgradient monitoring well (MW-40) and three downgradient monitoring wells (MW-41, MW-63, and MW-64). Calcium, fluoride, and sulfate were identified as potential SSIs. Four alternative sources were identified for the potential SSIs:

1) The calcium SSI could be a result of the potential impact of an alternative source during the retrofit construction activities at the APH Pond resulting in an elevated EC in groundwater; and

2) Cation exchange process with low calcium and high sodium can result in the increase of fluoride in groundwater. The increased fluoride and decreased calcium concentrations demonstrate this geochemical process is the likely reason for the fluoride SSI;
3) Evaporation can also cause an increased concentration of fluoride in the shallow groundwater. Evaporation can increase ion concentrations and contribute to the precipitation of major minerals, reducing calcium concentration and favoring the dissolution of fluoride; and
4) Sulfate SSI is likely the result of the impact of construction activities during the retrofit in 2020 and 2021 with impact to the geochemical stability of the aquifer..

- April 2022. Two potential SSIs were identified at two downgradient monitoring wells (MW-63 and MW-41). Sulfate and pH were identified as potential SSIs. Five alternative sources were identified for the potential SSIs:
  1) 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;
  2) 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;
  3) 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;
  4) 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; and
  5) 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 .

5.1.4 Second Half 2022

Per the TCEQ CCR Permit Program, NRG notified the TCEQ in December 2022 that potential SSIs had been determined for the October 2022 semi-annual detection monitoring event and that ASDs will be prepared for the October 2022 semi-annual detection monitoring event. The ASDs will be submitted to the TCEQ during the first quarter 2023.

5.2 Detection Monitoring During 2022

As discussed previously, written ASDs were completed and certified by a qualified Texas P.E. during 2022 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 second half (October 2021) and first half (April 2022) semi-annual detection monitoring events. Therefore, all three CCR units remained in detection monitoring programs at the start and end of 2022.

5.3 Transition Between Monitoring Programs

During 2022, 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 2022.

Section 6
Projected Key Activities and Timelines for 2023

Key activities and project timelines for 2023 will be performed pursuant to TCEQ's CCR Permit Program and are as follows:

- The *2022 Annual Report* will be prepared and placed into the FOR by January 31, 2023, submitted to the TCEQ 30 days after placement in the FOR, and posted to the Station's publicly accessible CCR website by March 2, 2023;
- ASDs for the second half 2022 (October) semi-annual detection monitoring event will be prepared and submitted to the TCEQ during the first quarter 2023;
- The semi-annual groundwater detection monitoring events will be performed during the first and second halves of 2023 (April and October) for the Appendix III detection monitoring parameters;
- Groundwater potentiometric surface maps will be prepared for the first and second halves 2022 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined;
- Using the new background groundwater quality data set, statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2023 semi-annual detection monitoring events;
- NRG will notify TCEQ, if required, if potential SSIs were identified and whether ASDs will be prepared for the first and second halves of 2023 semi-annual detection monitoring events; and
- Written ASDs will be prepared and submitted to TCEQ for review, if required, to evaluate potential SSIs above background for the first and second halves of 2023 semi-annual detection monitoring events for the three CCR units.

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.

Based on the key activities performed during 2022, 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 2023:

- The CCR unit registrations for the three CCR units were submitted to TCEQ during January 2022 per the TCEQ CCR Permit Program;
- The *2022 Annual Report* will be prepared and placed into the Station's FOR by January 31, 2023 and posted to the Station's publicly accessible CCR website by March 1, 2023;
- The ASDs for the second half 2022 (October) semi-annual detection monitoring event will be prepared and submitted to the TCEQ during the first quarter 2023;
- The semi-annual groundwater detection monitoring event for the three CCR units will be performed during the first and second halves of 2023 (April and October) for the Appendix III detection monitoring parameters;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2023 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined;
- Using the new background groundwater quality data set, statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2023 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 2023 semi-annual detection monitoring events; and
- Written ASDs will be prepared and submitted to TCEQ for review, if required, to evaluate potential SSIs above background for the first and second halves of 2023 semi-annual detection monitoring events for the three CCR units.

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.

TRC, 2021 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2022, W.A. Parish Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Thompsons, Texas.TRC, Alternative Source Demonstration, March 2022, W.A. Parish Electric Generating Station, FGD Emergency Pond (SWMU 020), Thompsons, Texas.

TRC, Alternative Source Demonstration, March 2022, W.A. Parish Electric Generating Station, Air Preheater Pond (SWMU 021), Thompsons, Texas.

TRC, Alternative Source Demonstration, March 2022, W.A. Parish Electric Generating Station, Solid Waste Disposal Area (SWMU 001) CCR Multiunit, Jewett, Texas.

TRC, Alternative Source Demonstration, August 2022, W.A. Parish Electric Generating Station, FGD Emergency Pond (SWMU 020), Thompsons, Texas.

TRC, Alternative Source Demonstration, August 2022, W.A. Parish Electric Generating Station, Air Preheater Pond (SWMU 021), Thompsons, Texas.

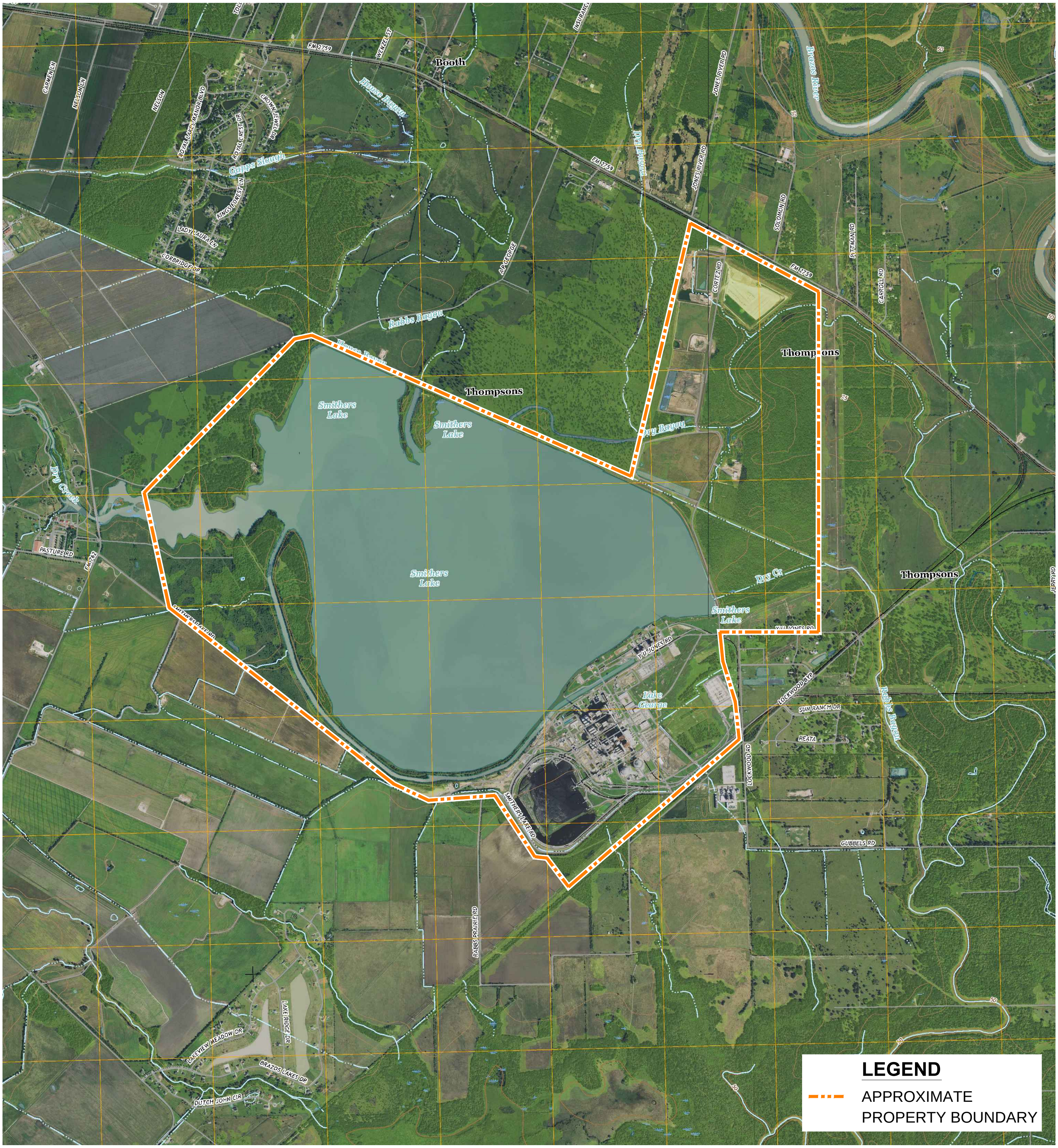
TRC, Alternative Source Demonstration, August 2022, W.A. Parish Electric Generating Station, Solid Waste Disposal Area (SWMU 001), Thompsons, Texas.

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

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

N

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

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

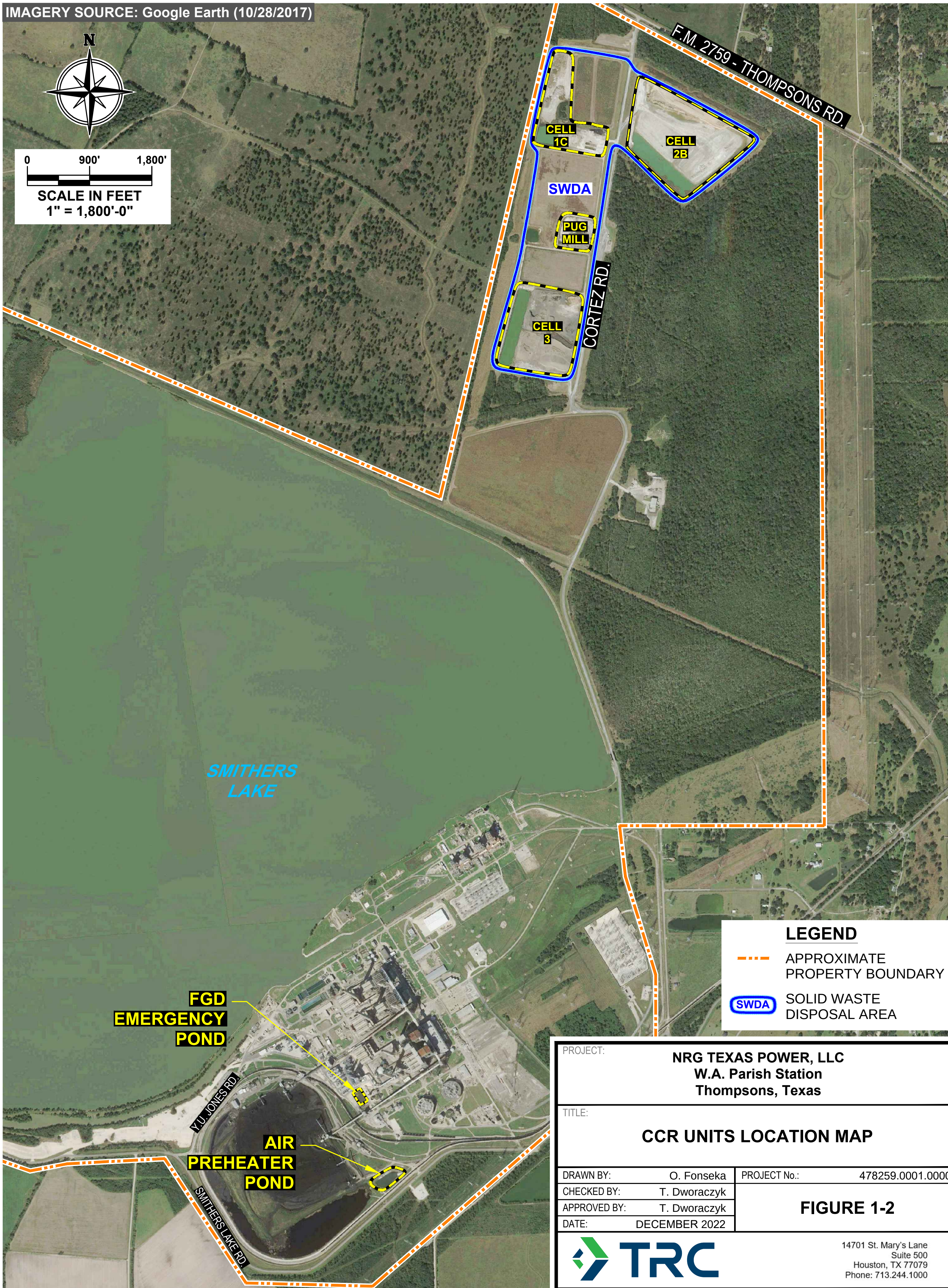
PROJECT:	**NRG TEXAS POWER, LLC** **W.A. Parish Station** **Thompsons, Texas**
TITLE:	**SITE LOCATION MAP**

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



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

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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

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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 MONITORING NETWORK

DRAWN BY:	F. YARBROUGH
CHECKED BY:	J. ATWELL
APPROVED BY:	
DATE:	JANUARY 2023
PROJ NO:	478259.0001.0000
FILE:	478259.0001_2-1.mxd

FIGURE 2-1

Legend

- Upgradient Monitoring Well
- Downgradient Monitoring Well

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2022.

N

0 150 300 FT

1 " = 150 '
1:1,800

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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:

FGD EMERGENCY 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_2-2

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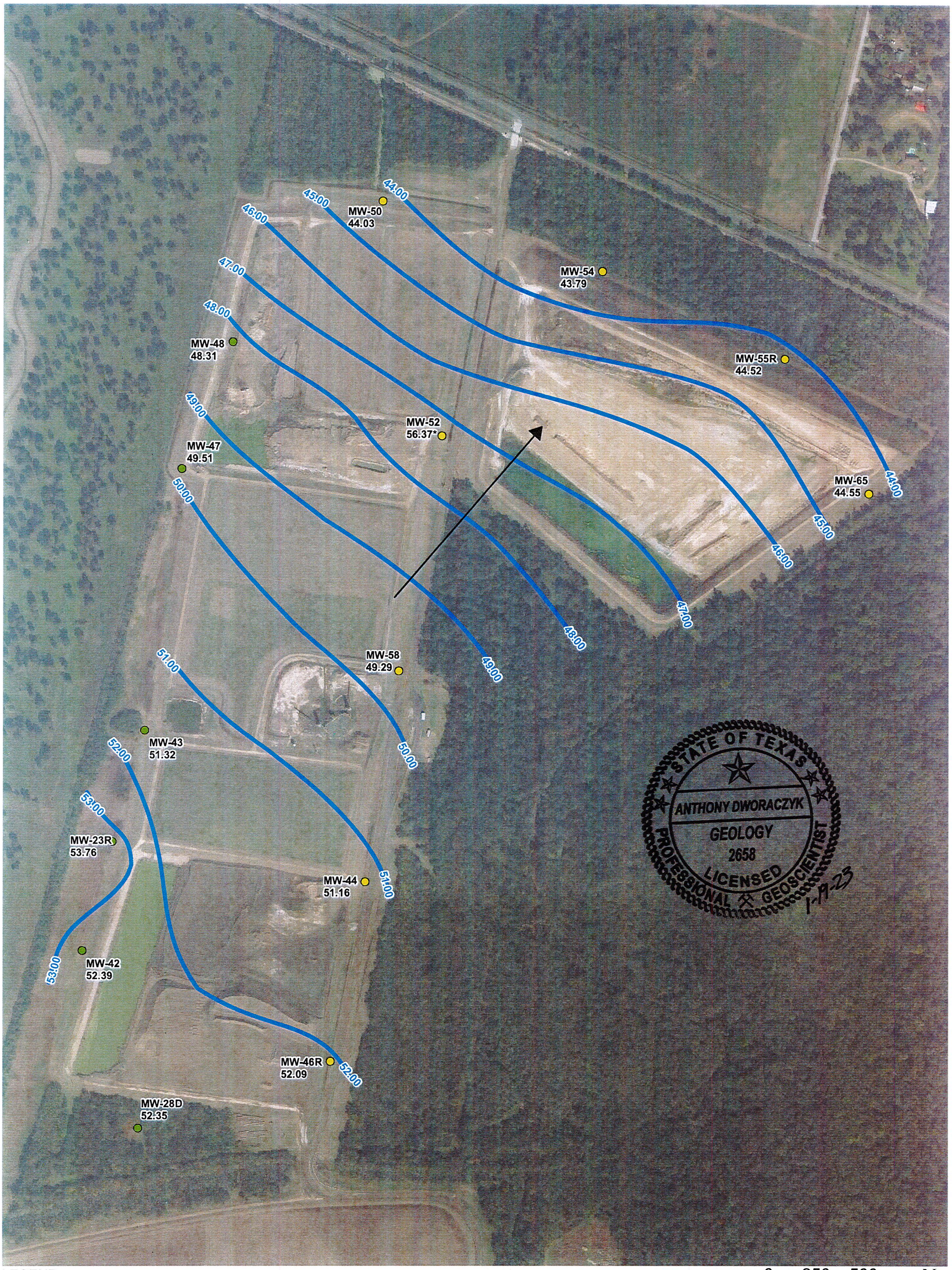
PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

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 Monitoring Well
- Multiunit Downgradient Monitoring Well
- *52.35* 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 2022.

0 250 500 Feet

1 " = 500 '

1:6,000

N

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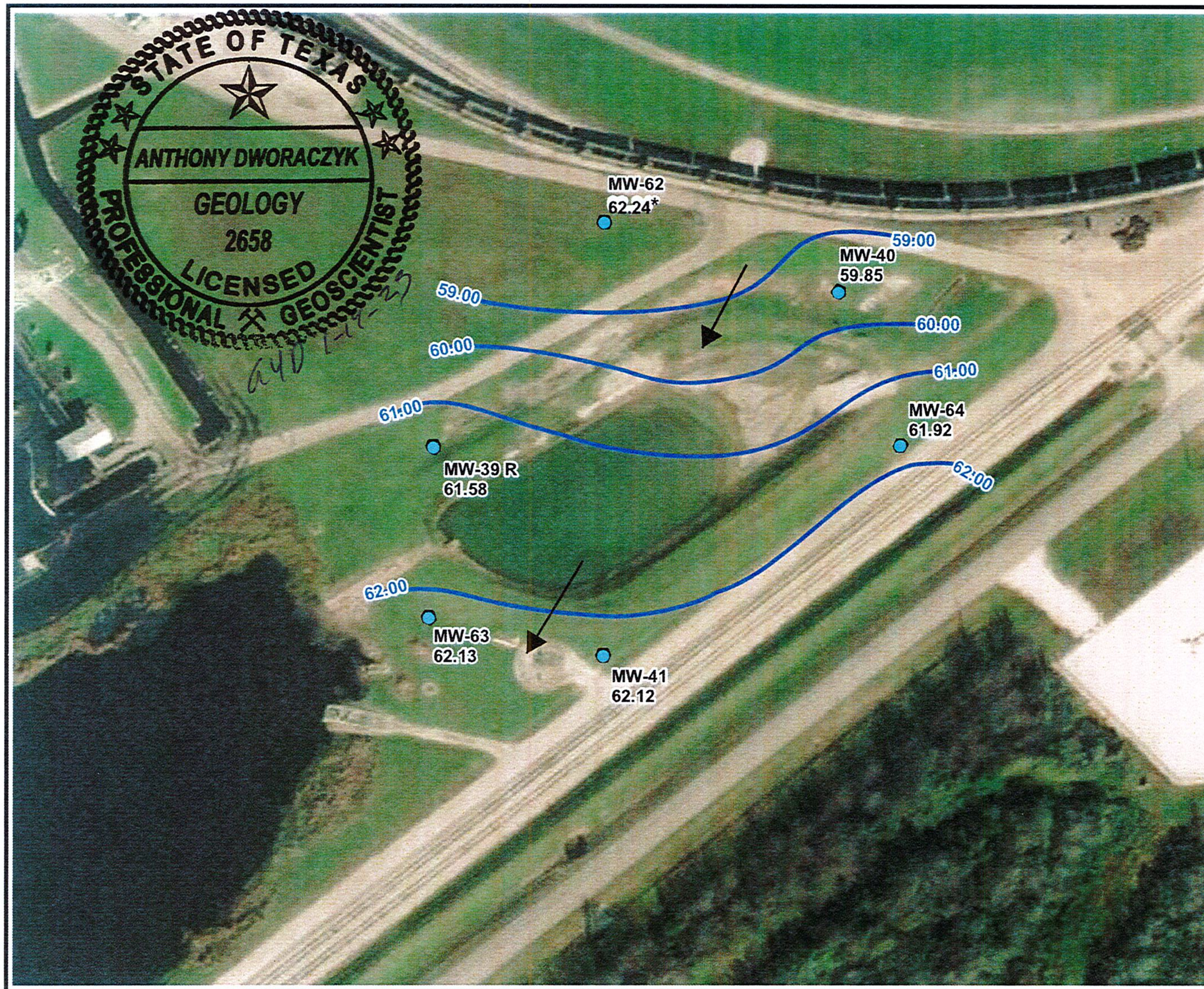
PROJECT:	NRG TEXAS POWER, LLC W.A. PARISH STATION THOMPSONS, TEXAS
TITLE:	SOLID WASTE DISPOSAL AREA GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	
APPROVED BY:	
DATE:	AUGUST 2022
PROJ NO:	478259.0001.0000
FILE:	478259.0001_2-4.mxd

FIGURE 2-4



Legend

MONITORING WELL

GROUNDWATER FLOW DIRECTION

GROUNDWATER ELEVATION CONTOUR - DASHED WHERE INFERRED (FT MSL)

62.71 GROUNDWATER ELEVATION (FT MSL)

* NOTE: MW-62 was not used for potentiometric surface map

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2022.

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:

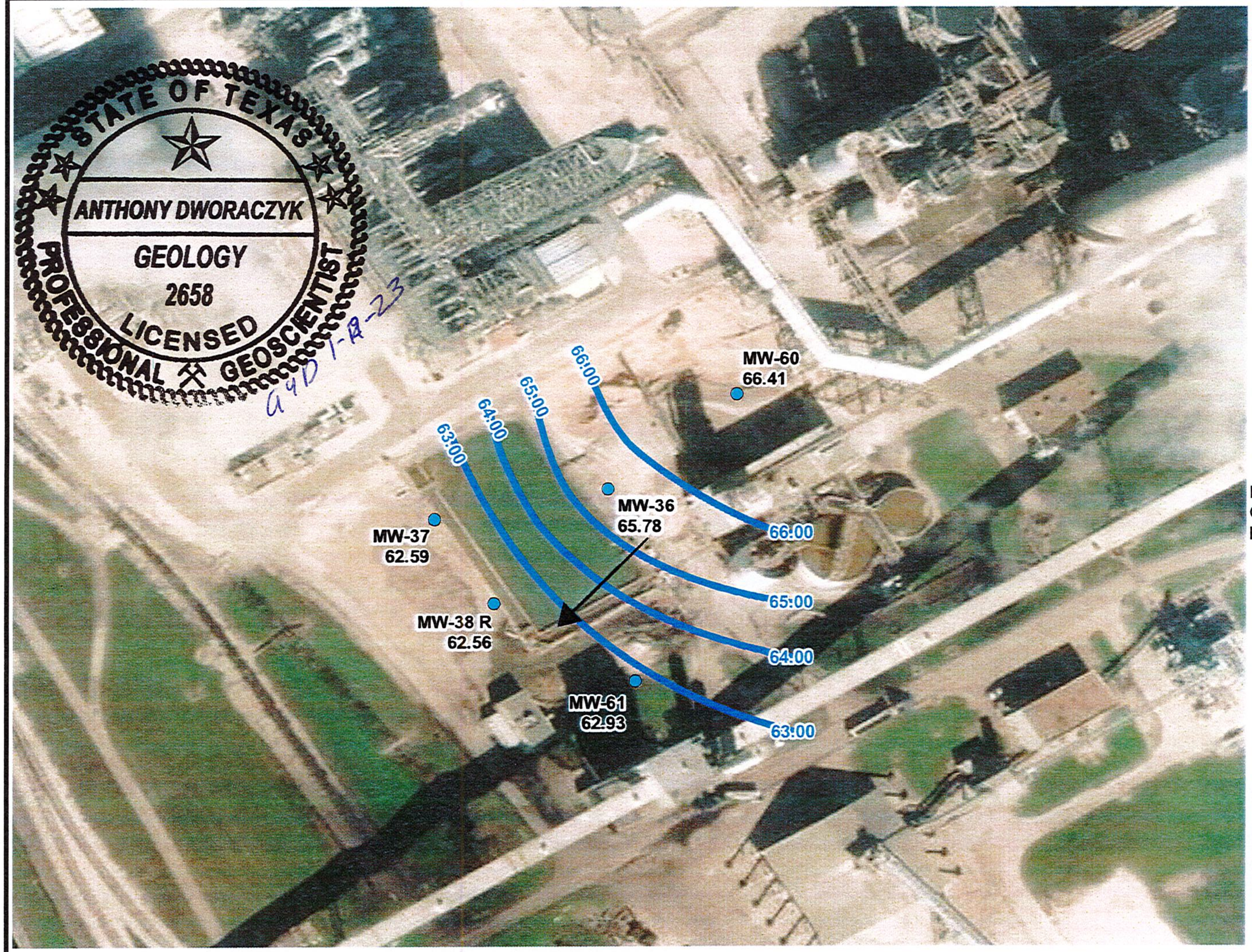
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:

AIR PREHEATER POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	
APPROVED BY:	
DATE:	AUGUST 2022
PROJ. NO.:	478259.0001.0000
FILE:	478259.0001_2-5.mxd

FIGURE 2-5



Legend

- Monitoring Well
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- ***62.59*** Groundwater Elevation (FT MSL)

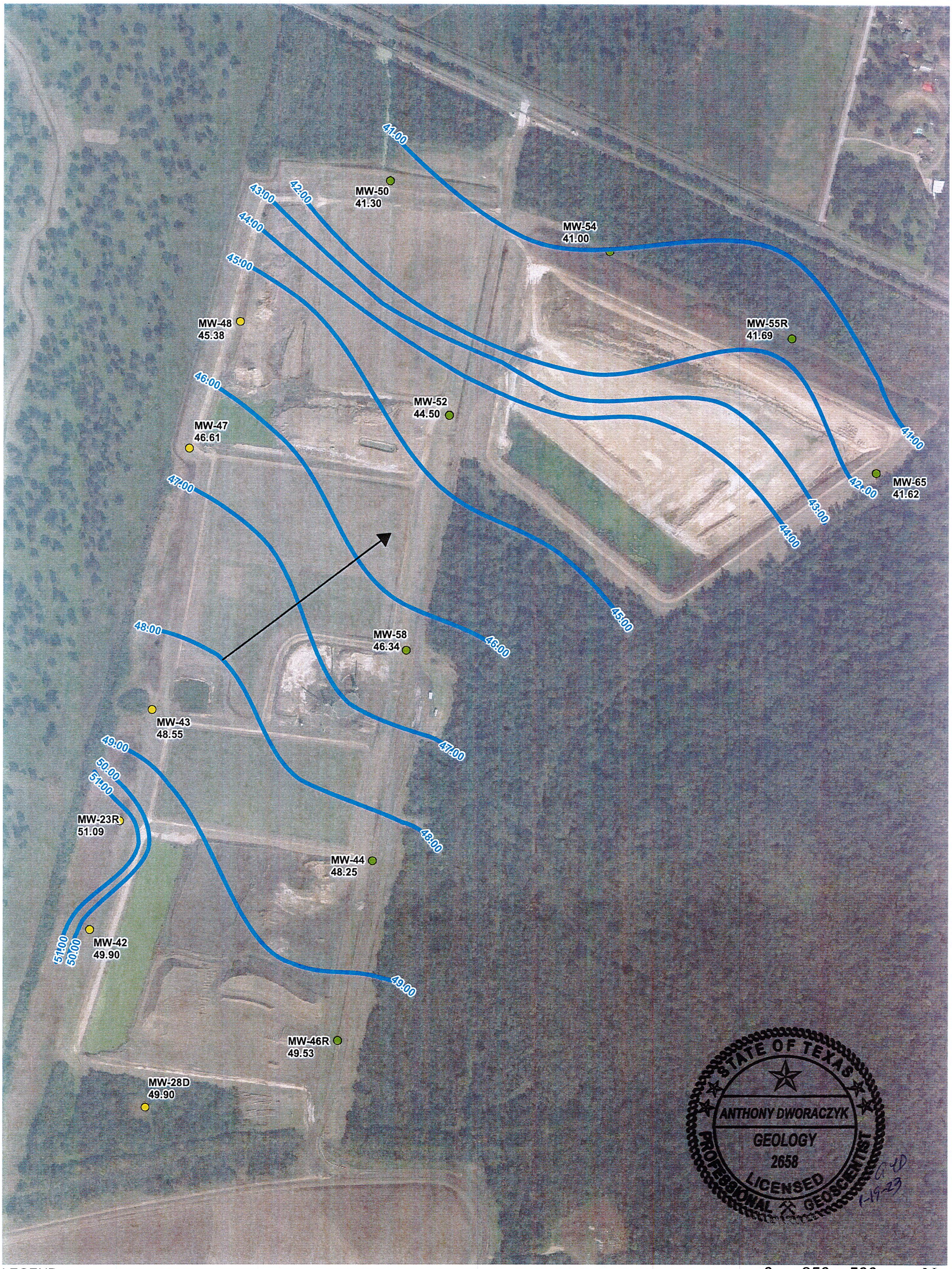
NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2022.

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**	DRAWN BY: F. YARBROUGH CHECKED BY: APPROVED BY: DATE: AUGUST 2022
	TITLE: **FGD EMERGENCY POND** **GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2022**	PROJ. NO: 478259.0001.0000 FILE: 478259.0001_2-6 **FIGURE 2-6**



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

14701 St. Mary's Lane, Suite 500
Houston, TX 77079
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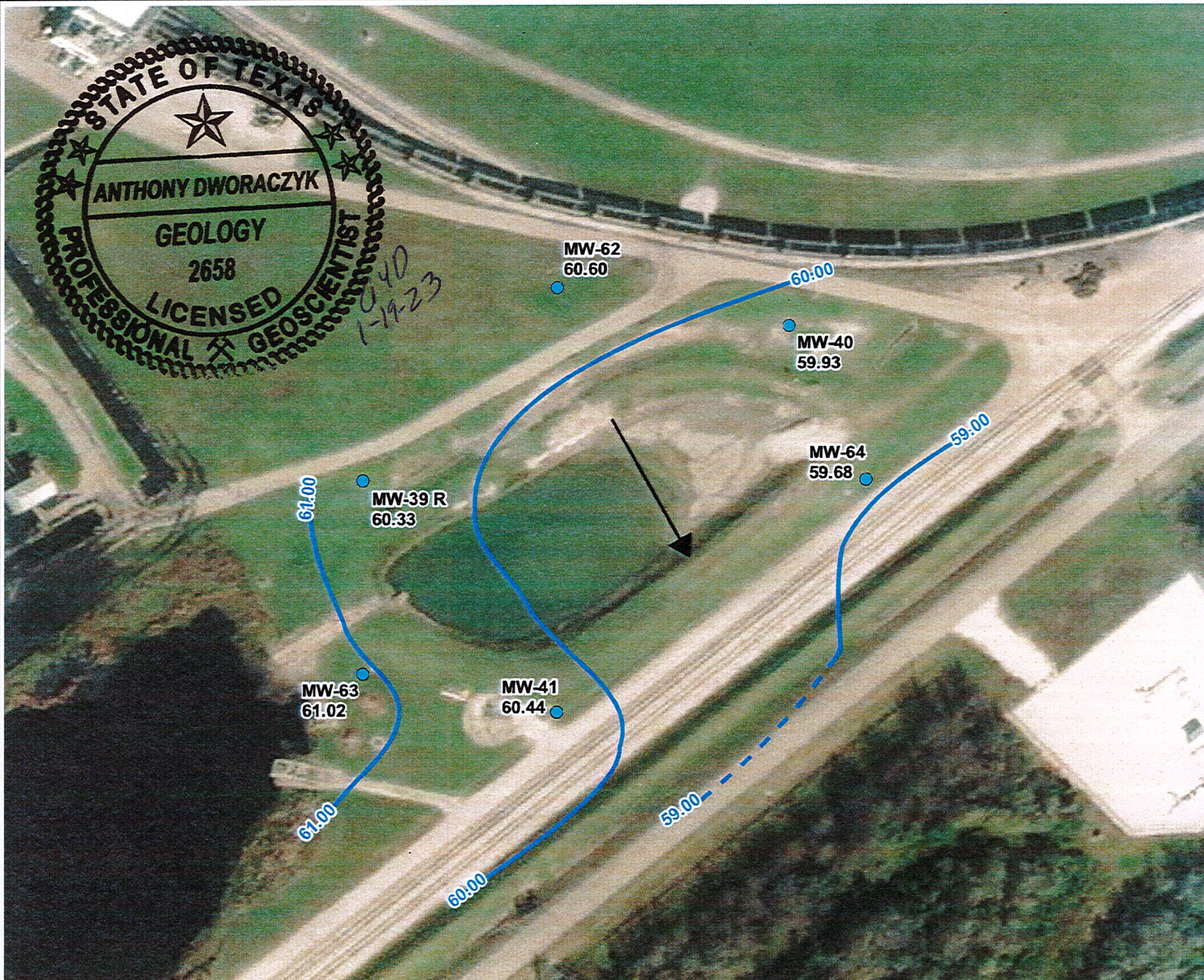
PROJECT: NRG TEXAS POWER, LLC W.A. PARISH STATION THOMPSONS, TEXAS		DRAWN BY:	F. YARBROUGH
		CHECKED BY:	J. ATWELL
		APPROVED BY:	
TITLE: SOLID WASTE DISPOSAL AREA GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2022		DATE:	DECEMBER 2022
		PROJ NO:	478259.0001.0000
		FILE:	478259.0001_2-7.mxd
		FIGURE 2-7	



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

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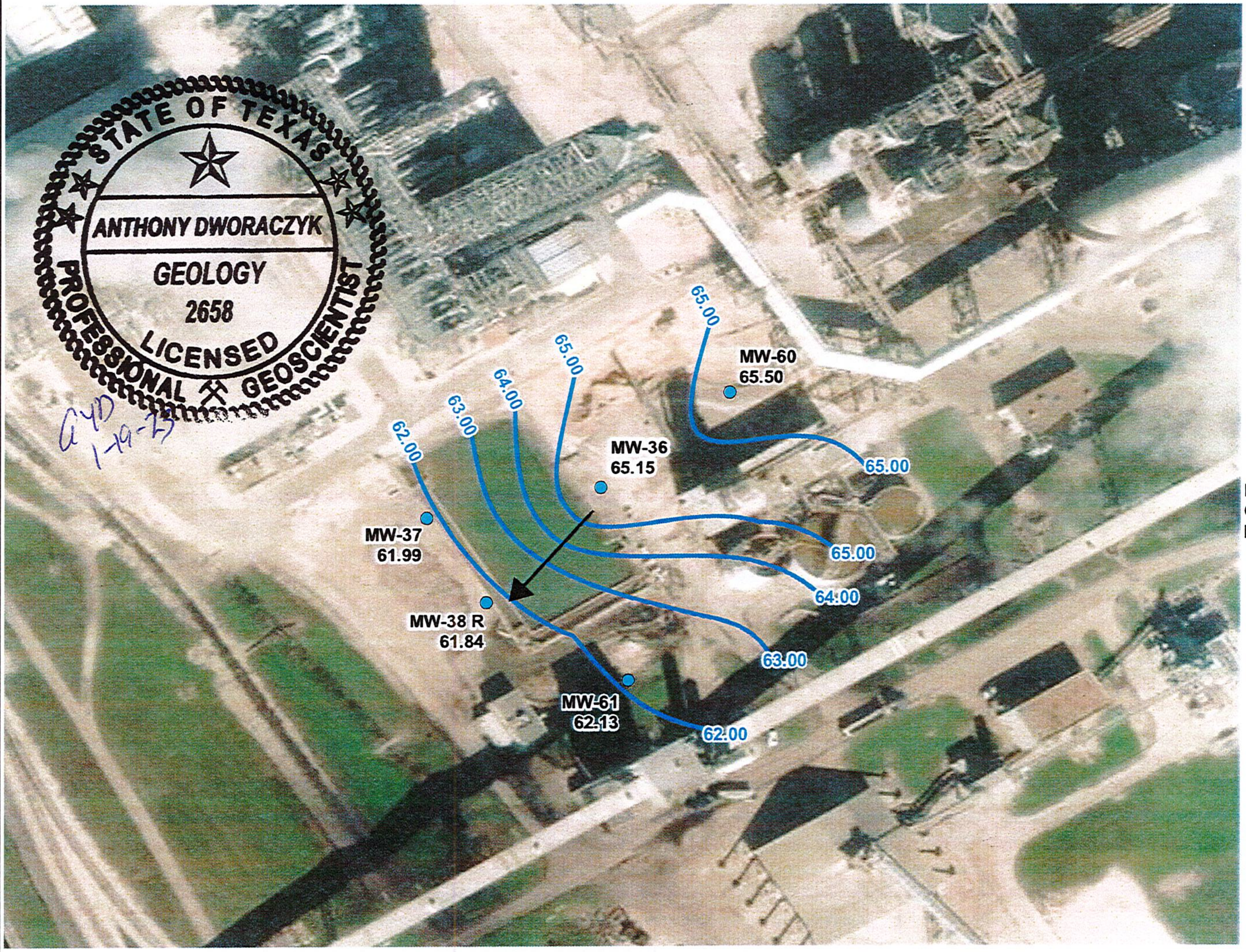
PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

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 2-8



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

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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
FILE:	478259.0001_2-9.mxd

FIGURE 2-9

Tables

Table 2-1
Summary of Groundwater Elevation Data
January - December 2022
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 Heater Pond					
Downgradient	MW-41	2/9/2022	69.18	5.89	63.29
	MW-41	4/1/2022	69.18	7.06	62.12
	MW-41	5/20/2022	69.18	8.49	60.69
	MW-41	10/4/2022	69.18	8.74	60.44
	MW-63	2/9/2022	70.35	7.03	63.32
	MW-63	4/1/2022	70.35	8.22	62.13
	MW-63	5/20/2022	70.35	9.52	60.83
	MW-63	10/4/2022	70.35	9.33	61.02
	MW-63	11/22/2022	70.35	8.42	61.93
	MW-64	2/9/2022	70.00	6.75	63.25
	MW-64	4/1/2022	70.00	8.08	61.92
	MW-64	10/4/2022	70.00	10.32	59.68
Upgradient	MW-40	4/1/2022	73.92	11.82	62.10
	MW-40	10/4/2022	73.92	13.99	59.93
	MW-62	4/1/2022	72.59	10.35	62.24
	MW-62	10/4/2022	72.59	11.99	60.60
	MW-39R	4/1/2022	73.50	11.92	61.58
	MW-39R	10/4/2022	73.50	13.17	60.33
CCR - SWDA					
Downgradient	MW-44	4/1/2022	64.42	13.26	51.16
	MW-44	10/4/2022	64.42	16.17	48.25
	MW-46R	4/1/2022	67.92	15.83	52.09
	MW-46R	10/4/2022	67.92	18.39	49.53
	MW-50	4/1/2022	71.27	27.24	44.03
	MW-50	10/4/2022	71.27	29.97	41.30
	MW-52	4/1/2022	67.91	11.54	56.37
	MW-52	10/4/2022	67.91	23.41	44.50
	MW-54	4/1/2022	68.29	24.50	43.79
	MW-54	10/4/2022	68.29	27.29	41.00
	MW-55R	4/1/2022	69.82	25.30	44.52
	MW-55R	10/4/2022	69.82	28.13	41.69
	MW-58	2/9/2022	65.40	15.57	49.83
	MW-58	2/10/2022	65.40	15.58	49.82
	MW-58	4/1/2022	65.40	16.11	49.29
	MW-58	10/4/2022	65.40	19.06	46.34
	MW-65	4/1/2022	66.65	22.10	44.55
	MW-65	10/4/2022	66.65	25.03	41.62
Upgradient	MW-28D	4/1/2022	70.37	18.02	52.35
	MW-28D	5/20/2022	70.37	18.90	51.47
	MW-28D	10/4/2022	70.37	20.47	49.90
	MW-42	4/1/2022	65.88	13.49	52.39
	MW-42	10/4/2022	65.88	15.98	49.90
	MW-43	4/1/2022	66.67	15.35	51.32
	MW-43	10/4/2022	66.67	18.12	48.55

Table 2-1
Summary of Groundwater Elevation Data
January - December 2022
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-47	4/1/2022	70.40	20.89	49.51
	MW-47	10/4/2022	70.40	23.79	46.61
	MW-48	4/1/2022	65.89	17.58	48.31
	MW-48	10/4/2022	65.89	20.51	45.38
	MW-23R	4/1/2022	67.01	13.25	53.76
	MW-23R	5/20/2022	67.01	14.30	52.71
	MW-23R	10/4/2022	67.01	15.92	51.09
	MW-23R	11/22/2022	67.01	15.66	51.35
E Pond					
Downgradient	MW-37	2/9/2022	74.17	10.80	63.37
	MW-37	4/1/2022	74.17	11.58	62.59
	MW-37	5/20/2022	74.17	12.08	62.09
	MW-37	10/4/2022	74.17	12.18	61.99
	MW-38R	4/1/2022	73.68	11.12	62.56
	MW-38R	5/20/2022	73.68	11.68	62.00
	MW-38R	10/4/2022	73.68	11.84	61.84
	MW-61	4/1/2022	74.49	11.56	62.93
	MW-61	5/20/2022	74.49	12.13	62.36
	MW-61	10/4/2022	74.49	12.36	62.13
Upgradient	MW-36	4/1/2022	73.81	8.03	65.78
	MW-36	10/4/2022	73.81	8.66	65.15
	MW-60	4/1/2022	72.90	6.49	66.41
	MW-60	10/4/2022	72.90	7.40	65.50

Table 2-2
Summary of Groundwater Monitoring Data
January - December 2022
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**
Well Description	**Well ID**	**Sample Date**	**Duplicate**							
Air Heater Pond										
Upgradient	MW-40	04/01/2022	N	0.133	265	515	< 0.10 U	137	1660	6.71
	MW-40	10/04/2022	N	0.107 [J]	271	461	0.100	121	1740	6.75
	MW-62	04/01/2022	N	0.0922	209	556	< 0.10 U	119	1500	6.48
	MW-62	10/04/2022	N	0.0946 [J]	177	436	0.150	202	1520	6.73
	MW-39R	04/01/2022	N	0.217	210	470	< 0.10 U	82.7	1280	6.77
	MW-39R	10/04/2022	N	0.137	172	429	0.0900 J	87.9	1470	6.80
Downgradient	MW-41	02/09/2022	N	n/a	n/a	n/a	0.22	n/a	n/a	6.79
	MW-41	04/01/2022	N	0.0878	196	465	< 0.10 U	54.7	1250	7.25
	MW-41	05/20/2022	N	n/a	n/a	n/a	n/a	n/a	n/a	7.39
	MW-41	10/04/2022	N	0.0840 [J]	171	449	0.140	54.6	1420	6.94
	MW-63	02/09/2022	N	0.137	n/a	n/a	n/a	n/a	n/a	6.53
	MW-63	04/01/2022	N	0.133	306	376 [JL]	< 0.10 U	532 [JL]	1710	6.68
	MW-63	05/20/2022	N	n/a	287	329	n/a	490	n/a	6.56
	MW-63	10/04/2022	N	0.124	335	331	0.0900 J	581	1950	6.75
	MW-63	11/22/2022	N	n/a	334	n/a	n/a	579	n/a	6.59
	MW-64	02/09/2022	N	n/a	n/a	n/a	0.52	n/a	n/a	6.79
	MW-64	04/01/2022	N	0.102	234	522	0.070 J	49.8	1440	6.72
	MW-64	10/04/2022	N	0.103 [J]	230	540	0.200	47.8	1990	6.81
Solid Waste Disposal Area										
Upgradient	MW-28D	04/01/2022	N	0.163	116	163	0.090 J	92.4	774	6.80
	MW-28D	05/20/2022	N	n/a	n/a	n/a	n/a	89.2	n/a	7.20
	MW-28D	10/04/2022	N	0.147	134	216	0.240	85.3	900	7.23
	MW-42	04/01/2022	N	0.501	156	333	0.61	504	1590	7.32
	MW-42	10/04/2022	N	0.533	163	320	0.530	456	1660	7.06
	MW-43	04/01/2022	N	0.381	89.5	236	0.65	70.2	836	7.43
	MW-43	10/04/2022	N	0.385	93.3	226	0.500	68.4	1000	7.18
	MW-47	04/01/2022	N	0.237	130	343	0.38	71.2	1030	7.19
	MW-47	10/04/2022	N	0.263	122	298	0.370	73.9	1050	7.12
	MW-48	04/01/2022	N	0.603	79.3	404	0.73	94.0	1180	7.14
	MW-48	10/04/2022	N	0.601	78.7	362	0.710	89.1	1210	7.16
	MW-23R	04/01/2022	N	0.270	492	1050	0.10	1200	3960	7.03
	MW-23R	05/20/2022	N	n/a	509	n/a	n/a	1220	4070	6.94
	MW-23R	10/04/2022	N	0.272	405	1010	0.270	1170	4200	6.87
	MW-23R	11/22/2022	N	n/a	n/a	n/a	n/a	1220	3760	6.79

Table 2-2
Summary of Groundwater Monitoring Data
January - December 2022
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
Well Description	Well ID	Sample Date	Duplicate							
Solid Waste Disposal Area										
Downgradient	MW-44	04/01/2022	FD	0.269	131	323	0.47	206	1280	n/a
	MW-44	04/01/2022	N	0.263	138	320	0.41	197	1170	7.00
	MW-44	10/04/2022	FD	0.359	148	315	0.350	223	1290	n/a
	MW-44	10/04/2022	N	0.340	145	309	0.360	217	1340	7.03
	MW-46R	04/01/2022	N	0.169	105	165	0.36	90.7	792	7.27
	MW-46R	10/04/2022	N	0.190	118	162	0.320	90.9	830	7.01
	MW-50	04/01/2022	N	0.295	138	404	0.47	126	1240	7.11
	MW-50	10/04/2022	N	0.318	147	386	0.440	119	1330	7.04
	MW-52	04/01/2022	N	0.344	240	608	0.53	420	1930	7.02
	MW-52	10/04/2022	N	0.386	192	565	0.530	395	2190	6.96
	MW-54	04/01/2022	N	0.271	93.5	257	0.51	74.2	868	7.17
	MW-54	10/04/2022	N	0.269	93.8	242	0.480	71.7	920	7.07
	MW-55R	04/01/2022	N	0.456	115	325	0.73	99.1	1060	7.08
	MW-55R	10/04/2022	N	0.472	116	300	0.720	93.3	1100	7.06
	MW-58	02/09/2022	N	0.313	n/a	n/a	n/a	n/a	n/a	7.11
	MW-58	02/10/2022	N	n/a	n/a	353	n/a	n/a	n/a	7.04
	MW-58	04/01/2022	N	0.309	114	354	0.47	115	1180	7.23
	MW-58	10/04/2022	N	0.530	132	314	0.400	172	1200	7.01
	MW-65	04/01/2022	N	0.348	239	308	0.37	635	1940	6.98
	MW-65	10/04/2022	N	0.373	207	300	0.350	556	1850	6.98
FGD Emergency Pond										
Upgradient	MW-36	04/01/2022	N	0.0811	250	325	0.42	410	1590	6.85
	MW-36	04/01/2022	FD	0.0956	226	327	0.44	414	1600	n/a
	MW-36	10/04/2022	FD	0.0779 [J]	212	314	0.330	402	1540	n/a
	MW-36	10/04/2022	N	0.0858 [J]	237	313	0.360	400	1560	6.81
	MW-60	04/01/2022	N	0.117	208	314	0.15 [JH]	242	1400	6.83
	MW-60	10/04/2022	N	0.111	252	300	0.120	254	1380	6.52
Downgradient	MW-37	02/09/2022	N	n/a	n/a	n/a	n/a	n/a	2040	6.83
	MW-37	04/01/2022	N	0.367	234	321	0.32	1030	1880	7.03
	MW-37	05/20/2022	N	0.366	n/a	n/a	n/a	716	1840	6.61
	MW-37	10/04/2022	N	0.363	173	260	0.230	717	1930	6.72
	MW-38R	04/01/2022	N	0.421	237	286	0.21 [JH]	572	1720	7.15
	MW-38R	05/20/2022	N	0.412	n/a	n/a	n/a	531	n/a	6.82
	MW-38R	10/04/2022	N	0.440	235	242	0.200	646	1740	6.71

Table 2-2
Summary of Groundwater Monitoring Data
January - December 2022
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**
Well Description	**Well ID**	**Sample Date**	**Duplicate**							
FGD Emergency Pond										
Downgradient	MW-61	04/01/2022	N	1.29	207	130	0.33	916	1880	6.84
	MW-61	05/20/2022	N	1.32	n/a	n/a	n/a	958	1850	6.25
	MW-61	10/04/2022	N	1.58	289	123	0.250	987	2010	6.87

Notes

N	Normal sample
FD	Field duplicate
J	Concentration is an estimated value. Result is less than the method quantittion 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 requi
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 requi
n/a	Not analyzed

Appendix A
Detection Monitoring Data (April 2022)

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Houston, TX 77099
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February 21, 2022

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

Work Order: **HS22020441**

Laboratory Results for: **WA Parish CCR Program Re-Sampling Event**

Dear Lori Burris,

ALS Environmental received 6 sample(s) on Feb 09, 2022 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: COREY.GRANDITS

Corey Grandits
Project Manager

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	WA Parish CCR Program Re-Sampling Event	
WorkOrder:	**HS22020441**	

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:	WA Parish CCR Program Re-Sampling Event	
WorkOrder:	**HS22020441**	

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.

Corey Grandits
Project Manager

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 02/21/2022				
Project Name: NRG WA Parish - State Program			Laboratory Job Number: HS22020441				
Reviewer Name: Corey Grandits			Prep Batch Number(s): 175290,R402283,R402346,R402474				
#[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: 02/21/2022				
Project Name: NRG WA Parish - State Program			Laboratory Job Number: HS22020441				
Reviewer Name: Corey Grandits			Prep Batch Number(s): 175290,R402283,R402346,R402474				
#[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: 02/21/2022
Project Name: NRG WA Parish - State Program	Laboratory Job Number: HS22020441
Reviewer Name: Corey Grandits	Prep Batch Number(s): 175290,R402283,R402346,R402474

ER#[5]	Description
1	Batch 175290, Metals Method SW6020, sample HS22020226-03, MSD was performed on unrelated sample.
2	The analysis for Fluoride was subcontracted to ALS Holland, MI. Final report attached. Revision I – This report was revised to update the project name to WA Parish CCR Program Re-Sampling Event.
3	See Run Log and CCB Exceptions Report.
4	Batch 175290, Metals Method SW6020, sample HS22020226-03, PDS is 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 Re-Sampling Event
WorkOrder: HS22020441
Start Date: 14-Feb-2022 End Date: 15-Feb-2022

Run ID:ICPMS06_402173
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	14-Feb-2022 11:58	026_ICV.d	B NA
LLICV2	1	14-Feb-2022 12:00	027LCV2.d	B NA
LLICV5	1	14-Feb-2022 12:02	028LCV5.d	B NA
ICB	1	14-Feb-2022 12:03	029_ICB.d	B NA
ICSA	1	14-Feb-2022 12:09	031ICSA.d	B NA
ICSAB	1	14-Feb-2022 12:11	032ICSB.d	B NA
CCV 1	1	14-Feb-2022 12:19	034_CCV.d	B NA
CCB 1	1	14-Feb-2022 12:21	035_CCB.d	B NA
CCV 2	1	14-Feb-2022 12:42	046_CCV.d	B NA
CCB 2	1	14-Feb-2022 12:44	047_CCB.d	B NA
CCV 3	1	14-Feb-2022 13:06	058_CCV.d	B NA
CCB 3	1	14-Feb-2022 13:08	059_CCB.d	B NA
CCV 4	1	14-Feb-2022 13:29	070_CCV.d	B NA
CCB 4	1	14-Feb-2022 13:31	071_CCB.d	B NA
ICCV 5	1	14-Feb-2022 15:11	103_ICV.d	B NA
LLICCV2	1	14-Feb-2022 15:13	104LCV2.d	B NA
LLICCV5	1	14-Feb-2022 15:15	105LCV5.d	B NA
ICCB 5	1	14-Feb-2022 15:17	106_ICB.d	B NA
CCV 6	1	14-Feb-2022 15:19	107_CCV.d	B NA
CCB 6	1	14-Feb-2022 15:21	108_CCB.d	B NA
MBLK-175290	1	14-Feb-2022 15:24	109SMPL.d	B NA
LCS-175290	1	14-Feb-2022 15:26	110SMPL.d	B NA
ZZZZZZSD	5	14-Feb-2022 15:30	112SMPL.d	B NA
ZZZZZZMS	1	14-Feb-2022 15:32	113SMPL.d	B NA
ZZZZZZMSD	1	14-Feb-2022 15:34	114SMPL.d	B NA
ZZZZZZPDS	1	14-Feb-2022 15:35	115SMPL.d	B NA
CCV 7	1	14-Feb-2022 15:46	119_CCV.d	B NA
CCB 7	1	14-Feb-2022 15:48	120_CCB.d	B NA
CCV 8	1	14-Feb-2022 16:11	131_CCV.d	B NA
CCB 8	1	14-Feb-2022 16:13	132_CCB.d	B NA
MW-58	5	14-Feb-2022 16:25	138SMPL.d	B NA
MW-63	1	14-Feb-2022 16:32	141SMPL.d	B
CCV 9	1	14-Feb-2022 16:37	143_CCV.d	B NA
CCB 9	1	14-Feb-2022 16:39	144_CCB.d	B NA
CCV 10	1	14-Feb-2022 17:02	155_CCV.d	B NA
CCB 10	1	14-Feb-2022 17:04	156_CCB.d	B NA
CCV 11	1	14-Feb-2022 17:18	163_CCV.d	B NA
CCB 11	1	14-Feb-2022 17:19	164_CCB.d	B NA
CCV 12	1	14-Feb-2022 20:40	168_CCV.d	B NA
CCB 12	1	14-Feb-2022 20:42	169_CCB.d	B NA
CCV 13	1	14-Feb-2022 21:20	177_CCV.d	B NA
CCB 13	1	14-Feb-2022 21:22	178_CCB.d	B NA
CCV 14	1	14-Feb-2022 21:34	184_CCV.d	B NA
CCB 14	1	14-Feb-2022 21:36	185_CCB.d	B NA
CCV 15	1	14-Feb-2022 21:58	196_CCV.d	B NA
CCB 15	1	14-Feb-2022 22:00	197_CCB.d	B NA
CCV 16	1	14-Feb-2022 22:16	205_CCV.d	B NA
CCB 16	1	14-Feb-2022 22:18	206_CCB.d	B NA
ICCV 17	1	14-Feb-2022 23:40	238_ICV.d	B NA
LLICCV2	1	14-Feb-2022 23:42	239LCV2.d	B NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441
Start Date: 14-Feb-2022 End Date: 15-Feb-2022

Run ID:ICPMS06_402173
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
LLICCV5	1	14-Feb-2022 23:44	240LCV5.d	B NA
ICCB 17	1	14-Feb-2022 23:46	241_ICB.d	B NA
CCV 18	1	14-Feb-2022 23:50	243_CCV.d	B NA
CCB 18	1	14-Feb-2022 23:52	244_CCB.d	B NA
CCV 19	1	15-Feb-2022 00:11	254_CCV.d	B NA
CCB 19	1	15-Feb-2022 00:13	255_CCB.d	B NA
CCV 20	1	15-Feb-2022 00:35	266_CCV.d	B NA
CCB 20	1	15-Feb-2022 00:37	267_CCB.d	B NA
CCV 21	1	15-Feb-2022 00:59	278_CCV.d	B NA
CCB 21	1	15-Feb-2022 01:01	279_CCB.d	B NA
CCV 22	1	15-Feb-2022 01:05	281_CCV.d	B NA
CCB 22	1	15-Feb-2022 01:07	282_CCB.d	B NA
LLCCV2	1	15-Feb-2022 01:09	283LCV2.d	B NA
LLCCV5	1	15-Feb-2022 01:11	284LCV5.d	B NA
ICSA	1	15-Feb-2022 01:13	285ICSA.d	B NA
ICSAB	1	15-Feb-2022 01:15	286ICSB.d	B NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441
Start Date: 15-Feb-2022 End Date: 15-Feb-2022

Run ID:ICPMS06_402299
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICB	1	15-Feb-2022 13:55	031_ICB.d	B NA
ICV	1	15-Feb-2022 13:57	032_ICV.d	B NA
CCV 1	1	15-Feb-2022 14:12	038_CCV.d	B NA
CCB 1	1	15-Feb-2022 14:14	039_CCB.d	B NA
LCS-175290	1	15-Feb-2022 14:16	040SMPL.d	
ZZZZZZMS	1	15-Feb-2022 14:21	042SMPL.d	
ZZZZZZMSD	1	15-Feb-2022 14:23	043SMPL.d	
CCV 2	1	15-Feb-2022 14:37	050_CCV.d	B NA
CCB 2	1	15-Feb-2022 14:39	051_CCB.d	B NA
CCV 3	1	15-Feb-2022 15:11	062_CCV.d	B NA
CCB 3	1	15-Feb-2022 15:13	063_CCB.d	B NA
CCV 4	1	15-Feb-2022 15:38	074_CCV.d	B NA
CCB 4	1	15-Feb-2022 15:40	075_CCB.d	B NA
CCV 5	1	15-Feb-2022 19:22	078_CCV.d	B NA
CCB 5	1	15-Feb-2022 19:24	079_CCB.d	B NA
CCV 6	1	15-Feb-2022 19:40	087_CCV.d	B NA
CCB 6	1	15-Feb-2022 19:42	088_CCB.d	B NA
ICCV 7	1	15-Feb-2022 20:03	099_ICV.d	B NA
ICCB 7	1	15-Feb-2022 20:09	102_ICB.d	B NA
CCV 8	1	15-Feb-2022 20:13	104_CCV.d	B NA
CCB 8	1	15-Feb-2022 20:14	105_CCB.d	B NA
CCV 9	1	15-Feb-2022 20:26	111_CCV.d	B NA
CCB 9	1	15-Feb-2022 20:28	112_CCB.d	B NA
ICCV 10	1	15-Feb-2022 22:41	169_ICV.d	B NA
ICCB 10	1	15-Feb-2022 22:43	170_ICB.d	B NA
CCV 11	1	15-Feb-2022 23:01	179_CCV.d	B NA
CCB 11	1	15-Feb-2022 23:02	180_CCB.d	B NA
CCV 12	1	15-Feb-2022 23:36	183_CCV.d	B NA
CCB 12	1	15-Feb-2022 23:37	184_CCB.d	B NA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

Run ID:ICPMS06_402173
Instrument:ICPMS06
Method:SW6020A

CCB 7 Date: 14-Feb-2022 15:48 Seq: 6502143 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	14.1	14	200

CCB 8 Date: 14-Feb-2022 16:13 Seq: 6502155 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	92.75	14	200

CCB 9 Date: 14-Feb-2022 16:39 Seq: 6502167 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	81.41	14	200

CCB 10 Date: 14-Feb-2022 17:04 Seq: 6502179 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	84.25	14	200

CCB 11 Date: 14-Feb-2022 17:19 Seq: 6502187 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	96.47	14	200

CCB 12 Date: 14-Feb-2022 20:42 Seq: 6502211 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	39.49	14	200

CCB 13 Date: 14-Feb-2022 21:22 Seq: 6502218 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	82.12	14	200

CCB 14 Date: 14-Feb-2022 21:36 Seq: 6502225 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	151.8	14	200

CCB 15 Date: 14-Feb-2022 22:00 Seq: 6502236 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	285.1	14	200

CCB 16 Date: 14-Feb-2022 22:18 Seq: 6502245 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	292.3	14	200

ICCB 17 Date: 14-Feb-2022 23:46 Seq: 6502362 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	-21.79	14	200

CCB 18 Date: 14-Feb-2022 23:52 Seq: 6502365 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	-21.83	14	200

CCB 19 Date: 15-Feb-2022 00:13 Seq: 6502384 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Sodium	53.79	14	200

CCB 20 Date: 15-Feb-2022 00:37 Seq: 6502396 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

Run ID:ICPMS06_402173
Instrument:ICPMS06
Method:SW6020A

	Analyte	Result	MDL	Report Limit
	Sodium	61.35	14	200

CCB 21	Date: 15-Feb-2022 01:01	Seq: 6502369	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Sodium	21.55	14	200

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
Work Order: HS22020441

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22020441-01	MW-37	Water		09-Feb-2022 09:45	09-Feb-2022 12:30	☐
HS22020441-02	MW-41	Water		09-Feb-2022 09:20	09-Feb-2022 12:30	☐
HS22020441-03	MW-58	Water		09-Feb-2022 10:30	09-Feb-2022 12:30	☐
HS22020441-04	MW-63	Water		09-Feb-2022 08:30	09-Feb-2022 12:30	☐
HS22020441-05	MW-64	Water		09-Feb-2022 08:45	09-Feb-2022 12:30	☐
HS22020441-06	MW-58	Water		10-Feb-2022 12:45	10-Feb-2022 13:48	☐

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish CCR Program Re-Sampling Event		WorkOrder:HS22020441
Sample ID:	MW-37		Lab ID:HS22020441-01
Collection Date:	09-Feb-2022 09:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**2,040**		**5.00**	**10.0**	**mg/L**	1	16-Feb-2022 16:14

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish CCR Program Re-Sampling Event		WorkOrder:HS22020441
Sample ID:	MW-41		Lab ID:HS22020441-02
Collection Date:	09-Feb-2022 09:20		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Feb-2022 11:12

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish CCR Program Re-Sampling Event		WorkOrder:HS22020441
Sample ID:	MW-58		Lab ID:HS22020441-03
Collection Date:	09-Feb-2022 10:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Feb-2022		Analyst: JC
Boron	**0.313**		**0.0550**	**0.100**	**mg/L**	5	14-Feb-2022 16:25
Sodium	**227**		**0.0700**	**1.00**	**mg/L**	5	14-Feb-2022 16:25

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish CCR Program Re-Sampling Event		WorkOrder:HS22020441
Sample ID:	MW-63		Lab ID:HS22020441-04
Collection Date:	09-Feb-2022 08:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Feb-2022		Analyst: JC
Boron	**0.137**		**0.0110**	**0.0200**	**mg/L**	1	14-Feb-2022 16:32

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish CCR Program Re-Sampling Event		WorkOrder:HS22020441
Sample ID:	MW-64		Lab ID:HS22020441-05
Collection Date:	09-Feb-2022 08:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Feb-2022 11:12

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish CCR Program Re-Sampling Event		WorkOrder:HS22020441
Sample ID:	MW-58		Lab ID:HS22020441-06
Collection Date:	10-Feb-2022 12:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**353**		**4.00**	**10.0**	**mg/L**	20	14-Feb-2022 18:16

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

Weight / Prep Log

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

Batch ID: 175290 **Start Date:** 11 Feb 2022 11:30 **End Date:** 11 Feb 2022 15:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22020441-03		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2
HS22020441-04		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 175290 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS22020441-03	MW-58	09 Feb 2022 10:30		11 Feb 2022 15:30	14 Feb 2022 16:25	5
HS22020441-04	MW-63	09 Feb 2022 08:30		11 Feb 2022 15:30	14 Feb 2022 16:32	1
Batch ID: R402283 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS22020441-06	MW-58	10 Feb 2022 12:45			14 Feb 2022 18:16	20
Batch ID: R402346 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS22020441-02	MW-41	09 Feb 2022 09:20			16 Feb 2022 11:12	1
HS22020441-05	MW-64	09 Feb 2022 08:45			16 Feb 2022 11:12	1
Batch ID: R402474 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS22020441-01	MW-37	09 Feb 2022 09:45			16 Feb 2022 16:14	1

WorkOrder:	HS22020441
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	0.0106	0.0110	0.0200
A	Sodium	7440-23-5	0.0500	0.0338	0.0140	0.200

WorkOrder:	HS22020441
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: HS22020441
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	0.531	0.200	0.500

WorkOrder: HS22020441
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	6.00	5.00	10.0

Revision: 1

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

QC BATCH REPORT

Batch ID: 175290 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-175290** Units: **mg/L** Analysis Date: **14-Feb-2022 15:24**
Client ID: Run ID: **ICPMS06_402173** SeqNo: **6502132** PrepDate: **11-Feb-2022** 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								
Sodium	< 0.0140	0.200								

LCS Sample ID: **LCS-175290** Units: **mg/L** Analysis Date: **14-Feb-2022 15:26**
Client ID: Run ID: **ICPMS06_402173** SeqNo: **6502133** PrepDate: **11-Feb-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5052	0.0200	0.5	0	101	80 - 120				
Sodium	5.386	0.200	5	0	108	80 - 120				

MS Sample ID: **HS22020226-03MS** Units: **mg/L** Analysis Date: **14-Feb-2022 15:32**
Client ID: Run ID: **ICPMS06_402173** SeqNo: **6502136** PrepDate: **11-Feb-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5592	0.0200	0.5	0.03582	105	80 - 120				
Sodium	55.65	0.200	5	51.41	84.7	80 - 120				O

MSD Sample ID: **HS22020226-03MSD** Units: **mg/L** Analysis Date: **14-Feb-2022 15:34**
Client ID: Run ID: **ICPMS06_402173** SeqNo: **6502137** PrepDate: **11-Feb-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5392	0.0200	0.5	0.03582	101	80 - 120	0.5719	5.88	20	
Sodium	55.08	0.200	5	51.41	73.4	80 - 120	55.72	1.16	20	SO

PDS Sample ID: **HS22020226-03PDS** Units: **mg/L** Analysis Date: **14-Feb-2022 15:35**
Client ID: Run ID: **ICPMS06_402173** SeqNo: **6502138** PrepDate: **11-Feb-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5359	0.0200	0.5	0.03582	100	75 - 125				
Sodium	56.51	0.200	10	51.41	50.9	75 - 125				SO

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

QC BATCH REPORT

Batch ID: **175290 (0)** **Instrument:** **ICPMS06** **Method:** **ICP-MS METALS BY SW6020A**

SD Sample ID: **HS22020226-03SD** Units: **mg/L** Analysis Date: **14-Feb-2022 15:30**

Client ID: Run ID: **ICPMS06_402173** SeqNo: **6502135** PrepDate: **11-Feb-2022** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 0.0550	0.100					0.03582	0	10	
Sodium	52.01	1.00					51.41	1.16	10	

The following samples were analyzed in this batch: HS22020441-03 HS22020441-04

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

QC BATCH REPORT

Batch ID: R402283 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **14-Feb-2022 13:43**
Client ID: Run ID: **ICS-Integrion_402283** SeqNo: **6504216** 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								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **14-Feb-2022 13:48**
Client ID: Run ID: **ICS-Integrion_402283** SeqNo: **6504217** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.92	0.500	20	0	99.6	90 - 110				

MS Sample ID: **HS22020668-02MS** Units: **mg/L** Analysis Date: **14-Feb-2022 15:15**
Client ID: Run ID: **ICS-Integrion_402283** SeqNo: **6504220** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	488.2	5.00	100	401.6	86.6	80 - 120				O

MSD Sample ID: **HS22020668-02MSD** Units: **mg/L** Analysis Date: **14-Feb-2022 15:21**
Client ID: Run ID: **ICS-Integrion_402283** SeqNo: **6504221** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	488.2	5.00	100	401.6	86.6	80 - 120	488.2	0.00205	20	O

The following samples were analyzed in this batch: HS22020441-06

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

QC BATCH REPORT

Batch ID: R402474 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-021622** Units: **mg/L** Analysis Date: **16-Feb-2022 16:14**
Client ID: Run ID: **Balance1_402474** SeqNo: **6508108** 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-021622** Units: **mg/L** Analysis Date: **16-Feb-2022 16:14**
Client ID: Run ID: **Balance1_402474** SeqNo: **6508109** 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)	1084	10.0	1000	0	108	85 - 115				

DUP Sample ID: **HS22020514-01DUP** Units: **mg/L** Analysis Date: **16-Feb-2022 16:14**
Client ID: Run ID: **Balance1_402474** SeqNo: **6508099** 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)	640	10.0					632	1.26	5	

DUP Sample ID: **HS22020444-01DUP** Units: **mg/L** Analysis Date: **16-Feb-2022 16:14**
Client ID: Run ID: **Balance1_402474** SeqNo: **6508094** 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)	606	10.0					614	1.31	5	

The following samples were analyzed in this batch: HS22020441-01

Client: TRC Corporation
Project: WA Parish CCR Program Re-Sampling Event
WorkOrder: HS22020441

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	21-022-0	26-Mar-2022
Florida	E87611-34	30-Jun-2022
Illinois	2000322021-7	09-May-2022
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2021-2022	30-Jun-2022
Texas	T104704231-21-28	30-Apr-2022

Sample Receipt Checklist

Work Order ID: HS22020441
Client Name: TRC-HOU
Date/Time Received: 09-Feb-2022 12:30
Received by: Paresh M. Giga

Completed By: *[S/ Paresh M. Giga*	09-Feb-2022 16:35	**Reviewed by:** */S/ Corey Grandits*	11-Feb-2022 10:03
eSignature	Date/Time	eSignature	Date/Time

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

	Yes	No	Not Present / Other
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:255983
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):	2.8C/3.3C U/C	IR31
Cooler(s)/Kit(s):	47993	
Date/Time sample(s) sent to storage:	2/9/2022 16:45	

	Yes	No	Other
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:

Sample Receipt Checklist

Work Order ID:	HS22020441	**Date/Time Received:**	**09-Feb-2022 12:30**
Client Name:	TRC-HOU	**Received by:**	**Paresh M. Giga**

Completed By:	*/S/ Nilesh D. Ranchod*	10-Feb-2022 18:16	**Reviewed by:** */S/ Corey Grandits*	11-Feb-2022 10:03
	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 ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:253589
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):	2.3c/2.8c UC/C		IR #31
Cooler(s)/Kit(s):	47759		
Date/Time sample(s) sent to storage:	02/10/2022 19:00		
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:

ALS

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
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Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 255983

HS22020441

TRC Corporation

NRG WA Parish - State Program

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	161254	Project Name	NRG WA Parish	A	300_W (SO4)
Work Order		Project Number		B	ICP_TW (Boron)
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	ICP_TW (Calcium)
Send Report To	Lori Burris	Invoice Attn	A/P	D	Sub Fluoride SM4500F-C to ALS Michigan
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	TDS_W 2540C (TDS)
				F	300_W (Chloride)
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-37	2/9/22	945	water	8	1					X						
2	MW-41		920		8	1				X							
3	MW-58		1030		2	1		X									
4	MW-63		830		2	1		X									
5	MW-64		845		8	1				X							
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Rudy Mueller & HMI Team Rudy Mueller

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: Rudy Mueller	Date: 2/9/22	Time: 1230	Received by: —
Relinquished by: —	Date:	Time:	Received by (Laboratory): X 2/9/2022 12:30
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG WA Parish - State Program

Cooler ID	Cooler Temp.
	U°C
47993	2.8°

-4.3°
CIF 0.3°

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.

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

Chain of Custody Form

Page 1 of 1

COC ID: 253589

HS22020441

TRC Corporation

NRG WA Parish - State Program

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	161254	Project Name	NRG WA Parish - Appendix III	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	Chloride only
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-58	2-10-22	1245	GW	8	1						X					
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Oscar DeLeon ODJ

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: Oscar | Date: 2-10-22 | Time: 1348 | Received by:

Relinquished by: | Date: | Time: | Received by (Laboratory): 2/10/2022 13:48

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

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
47759	2.3°C
	#31
	e(r.o.)

QC Package: (Check One Box Below)
☒ Level II Std QC
☐ Level III Std QC/Raw Data
☐ 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.

Privileged and Confidential

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

47983.

CUSTOD 'Y SEAL

Date: 2/9/22 Ti

Name: Ryan [illegible]

Company: HMI

ne:

Seal Broken By:

Date: 2/9/2022

ALS

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

47759

CUSTODY SEAL

Date: 2-10-22 Time: [illegible]
Name: Oscar Bolea
Company: HMI

Seal Broken By: SM
Date: 02/10/22

47759 FEB 10 2022

18-Feb-2022

Corey Grandits
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS22020441** Work Order: **22020731**

Dear Corey,

ALS Environmental received 2 samples on 10-Feb-2022 11:00 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 15.

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,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS Group, USA

Date: *18-Feb-22*

Client: ALS Environmental
Project: HS22020441
Work Order: 22020731

TRRP Laboratory Data Package Cover Page

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

This signature page, the laboratory case narrative, 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) for each analyte for each method and matrix;
R10 Other problems or anomalies:
  See Case Narrative.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached Case Narrative and QC Summaries. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified, and no information affecting the quality of the data has been knowingly withheld.

Chad Whelton

Chad Whelton
Project Manager

WET CHEMISTRY DATA ASSESSMENT CHECKLIST

Wet Chemistry		Batch Number: TITRATOR1_220214B		Instrument ID: Titrator 1				
Method: FL_4500C_W		Work order Number (s): 22020731						
Analyst Name: KC		Date 2/14/22	Reviewer Name: CAC		Date: 2-18-22			
	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	No exceptions

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: 18-Feb-22

Client: ALS Environmental
Project: HS22020441
Work Order: **22020731**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
22020731-01	MW-41	Water	HS22020441-02	2/9/2022 09:20	2/10/2022 11:00	☐
22020731-02	MW-64	Water	HS22020441-05	2/9/2022 08:45	2/10/2022 11:00	☐

ALS Group, USA *Date: 18-Feb-22*

Client: ALS Environmental
Project: HS22020441
Work Order: 22020731

Case Narrative

Samples for the above noted Work Order were received on 02/10/2022. 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 other deviations or anomalies were noted.

Client:	ALS Environmental	**QUALIFIERS, ACRONYMS, UNITS**
Project:	HS22020441	
WorkOrder:	**22020731**	

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
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

Work Order: 22020731
Client: ALS Environmental
Project: HS22020441

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R338158	**Test Name:** Fluoride					
22020731-01A	MW-41	Water	2/9/2022 9:20:00 AM			2/14/2022 12:30 PM
22020731-02A	MW-64		2/9/2022 8:45:00 AM			2/14/2022 12:30 PM

ALS Group, USA

Date: *18-Feb-22*

Client:	ALS Environmental		
Project:	HS22020441	**Work Order:**	22020731
Sample ID:	MW-41	**Lab ID:**	22020731-01
Collection Date:	2/9/2022 09:20 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **KNC**
Fluoride	**0.22**		**0.058**	**0.10**	**mg/L**	1	2/14/2022 12:30

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

ALS Group, USA

Date: *18-Feb-22*

Client:	ALS Environmental		
Project:	HS22020441	**Work Order:**	22020731
Sample ID:	MW-64	**Lab ID:**	22020731-02
Collection Date:	2/9/2022 08:45 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **KNC**
Fluoride	**0.52**		**0.058**	**0.10**	**mg/L**	1	2/14/2022 12:30

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

ALS Group, USA

Date: 18-Feb-22

WorkOrder: 22020731
InstrumentID: Titrator 1
Test Code: FL_4500C_W
Test Number: A4500-F C-11
Test Name: Fluoride

METHOD DETECTION / REPORTING LIMITS

Matrix: Water **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	Unadjusted MQL
A	Fluoride	16984-48-8	0.080	0.080	0.058	0.10

ALS Group, USA

Date: 21-Feb-22

Client: ALS Environmental
Work Order: 22020731
Project: HS22020441

QC BATCH REPORT

Batch ID: **R338158** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R338158-R338158** Units: **mg/L** Analysis Date: **2/14/2022 12:30 PM**

Client ID: Run ID: **TITRATOR 1_220214B** SeqNo: **8172233** 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-R338158-R338158** Units: **mg/L** Analysis Date: **2/14/2022 12:30 PM**

Client ID: Run ID: **TITRATOR 1_220214B** SeqNo: **8172234** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5	0.10	5	0	100	80-120	0			

MS Sample ID: **22020468-13A MS** Units: **mg/L** Analysis Date: **2/14/2022 12:30 PM**

Client ID: Run ID: **TITRATOR 1_220214B** SeqNo: **8172239** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.58	0.10	5	0.11	109	75-125	0			

MSD Sample ID: **22020468-13A MSD** Units: **mg/L** Analysis Date: **2/14/2022 12:30 PM**

Client ID: Run ID: **TITRATOR 1_220214B** SeqNo: **8172240** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.66	0.10	5	0.11	111	75-125	5.58	1.42	20	

The following samples were analyzed in this batch: 22020731-01A 22020731-02A

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

2202073)

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:** **18120**

SUBCONTRACT TO:

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

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: Corey Grandits
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: Corey.Grandits@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: HS22020441
TSR: Ron Martino

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS22020441-02**	**MW-41**	**Water**	**09 Feb 2022 09:20**
	Fluoride by ISE 4500. Equis EDD			16 Feb 2022
2.	**HS22020441-05**	**MW-64**	**Water**	**09 Feb 2022 08:45**
	Fluoride by ISE 4500. Equis EDD			16 Feb 2022

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: [signature] Date/Time: 2/9/2022 1800.

Received By: [signature] Date/Time: 2/10/22 1100

Cooler ID(s): Temperature(s):

RIGHT SOLUTIONS | RIGHT PARTNER

09 Feb 2022 2.8°C Page 1 of 1

IR3
PH31

ALS Group, USA

Sample Receipt Checklist

Client Name:	**ALS - HOUSTON**	Date/Time Received:	**10-Feb-22 11:00**
Work Order:	**22020731**	Received by:	**KRW**

Checklist completed by	Keith Wierenga	10-Feb-22	Reviewed by:	Chad Whelton	11-Feb-22
	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):	2.8/3.8 C	IR3	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	2/10/2022 2:35:50 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

April 13, 2022

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

Work Order: **HS22040081**

Laboratory Results for: **WA Parish - CCR Program**

Dear Lori Burris,

ALS Environmental received 28 sample(s) on Apr 01, 2022 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
Corey Grandits
Project Manager

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	WA Parish - CCR Program	
WorkOrder:	**HS22040081**	

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:	WA Parish - CCR Program	
WorkOrder:	**HS22040081**	

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.

Corey Grandits
Project Manager

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 04/14/2022				
Project Name: WA Parish - CCR Program			Laboratory Job Number: HS22040081				
Reviewer Name: Corey Grandits			Prep Batch Number(s): 177317,177376,177388,R405904,R405915,R406044,R406172,R406342				
#[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: 04/14/2022					
Project Name: WA Parish - CCR Program			Laboratory Job Number: HS22040081					
Reviewer Name: Corey Grandits			Prep Batch Number(s): 177317,177376,177388,R405904,R405915,R406044,R406172,R406342					
#[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: 04/14/2022
Project Name: WA Parish - CCR Program	Laboratory Job Number: HS22040081
Reviewer Name: Corey Grandits	Prep Batch Number(s): 177317,177376,177388,R405904,R405915,R406044,R406172,R406342

ER#[5]	Description
1	Batch 177317, Metals Method SW6020, samples HS22040046-03 and HS22040080-07, MS and MSD were performed on unrelated samples. Batch 177376, Meals Method SW6020, sample MW-63, MS and MSD recovered outside the control limit for Calcium, however, the result in the parent sample is greater than 4x the spike amount. Batch 177388, Meals Method SW6020, sample MW-58, MSD recovered outside the control limit for Calcium, however, the result in the parent sample is greater than 4x the spike amount. Batch R405904, Anions Method E300, sample MW-63, MS recovered outside the control limit for Chloride and Sulfate. Batch R405915, Anions Method E300, sample MW-58, MS and or MSD recovered outside the control limit for Chloride and Sulfate, 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. . Report and Laboratory Review Checklist are attached to the final report.
3	See Run Log and CCB Exceptions Report.
4	Batch 177317, Metals Method SW6020, sample HS 22040080-07, PDS was performed on unrelated sample. Batch 177317, Metals Method SW6020, sample HS 22040080-07, Serial Dilution was performed on unrelated sample. Batch 177388, Meals Method SW6020, sample MW-58, PDS recovered outside the control limit for Calcium, however, the result in te parent sample is greater than 4x the spike amount.

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: HS22040081
Start Date: 06-Apr-2022 End Date: 07-Apr-2022

Run ID:ICS-Integrion_405904
Instrument:ICS-Integrion
Method:E300

Sample No.	D/F	Time	FileID	Analytes
CCV 1	1	06-Apr-2022 21:57		CL SO4
CCB 1	1	06-Apr-2022 22:07		CL SO4
MBLK	1	06-Apr-2022 22:13		CL SO4
LCS	1	06-Apr-2022 22:18		CL SO4
MW-39R	1	06-Apr-2022 22:44		SO4
MW-39R	20	06-Apr-2022 22:50		CL
MW-40	20	06-Apr-2022 23:00		CL SO4
CCB 2	1	06-Apr-2022 23:16		CL SO4
MW-41	1	06-Apr-2022 23:21		SO4
MW-41	20	06-Apr-2022 23:27		CL
MW-62	20	06-Apr-2022 23:37		CL SO4
MW-63	20	06-Apr-2022 23:42		CL SO4
MW-63MS	20	06-Apr-2022 23:48		CL SO4
MW-63MSD	20	06-Apr-2022 23:53		CL SO4
MW-64	1	06-Apr-2022 23:58		SO4
MW-64	20	07-Apr-2022 00:04		CL
MW-23R	50	07-Apr-2022 00:09		CL SO4
CCV 2	1	07-Apr-2022 00:14		CL SO4
CCB 3	1	07-Apr-2022 00:25		CL SO4
MW-28D	20	07-Apr-2022 00:35		CL SO4
MW-42	20	07-Apr-2022 00:56		CL SO4
MW-43	1	07-Apr-2022 01:02		SO4
MW-43	20	07-Apr-2022 01:07		CL
MW-44	20	07-Apr-2022 01:18		CL SO4
CCB 4	1	07-Apr-2022 01:34		CL SO4
MW-46R	1	07-Apr-2022 01:39		SO4
MW-46R	20	07-Apr-2022 01:44		CL
MW-47	1	07-Apr-2022 01:49		SO4
MW-47	20	07-Apr-2022 01:55		CL
MW-48	20	07-Apr-2022 02:05		CL SO4
MW-50	20	07-Apr-2022 02:16		CL SO4
MW-52	20	07-Apr-2022 02:26		CL SO4
CCV 3	1	07-Apr-2022 02:32		CL SO4
CCB 5	1	07-Apr-2022 02:42		CL SO4
MW-54	1	07-Apr-2022 03:09		SO4
MW-54	20	07-Apr-2022 03:14		CL
MW-55R	20	07-Apr-2022 03:24		CL SO4
CCB 6	1	07-Apr-2022 03:51		CL SO4
MW-65	10	07-Apr-2022 04:12		CL SO4
MW-36	10	07-Apr-2022 04:17		CL SO4
MW-36MS	10	07-Apr-2022 04:23		CL SO4
MW-36MSD	10	07-Apr-2022 04:28		CL SO4
CCV 4	1	07-Apr-2022 04:49		CL SO4
CCB 7	1	07-Apr-2022 04:59		CL SO4

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081
Start Date: 07-Apr-2022 End Date: 07-Apr-2022

Run ID:ICS-Integrion_405915
Instrument:ICS-Integrion
Method:E300

Sample No.	D/F	Time	FileID	Analytes
CCV 1	1	07-Apr-2022 02:32		CL SO4
CCB 1	1	07-Apr-2022 02:42		CL SO4
MW-58MS	1	07-Apr-2022 03:35		CL SO4
CCB 2	1	07-Apr-2022 03:51		CL SO4
MW-58MSD	1	07-Apr-2022 03:56		CL SO4
MW-58	20	07-Apr-2022 04:01		CL SO4
MW-37	20	07-Apr-2022 04:33		CL SO4
MW-38R	20	07-Apr-2022 04:44		CL SO4
CCV 2	1	07-Apr-2022 04:49		CL SO4
CCB 3	1	07-Apr-2022 04:59		CL SO4
MBLK	1	07-Apr-2022 05:05		CL SO4
LCS	1	07-Apr-2022 05:10		CL SO4
MW-60	20	07-Apr-2022 05:21		CL SO4
MW-61	20	07-Apr-2022 05:26		CL SO4
Field Blank 1	1	07-Apr-2022 05:31		CL SO4
Field Duplicate 1	20	07-Apr-2022 05:42		CL SO4
Field Duplicate 2	20	07-Apr-2022 05:52		CL SO4
CCB 4	1	07-Apr-2022 06:08		CL SO4

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

Run ID:ICS-Integrion_405904
Instrument:ICS-Integrion
Method:E300

CCB 5 Date: 07-Apr-2022 02:42 Seq: 6584987 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Chloride	232	200	500

CCB 6 Date: 07-Apr-2022 03:51 Seq: 6584991 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Chloride	243	200	500

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

Run ID:ICS-Integrion_405915
Instrument:ICS-Integrion
Method:E300

CCB 1	Date: 07-Apr-2022 02:42	Seq: 6585261	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Chloride	232	200	500	

CCB 2	Date: 07-Apr-2022 03:51	Seq: 6585265	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Chloride	243	200	500	

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081
Start Date: 08-Apr-2022 End Date: 09-Apr-2022

Run ID:ICPMS06_406031
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	08-Apr-2022 11:27	033_ICV.d	B CA
ICB	1	08-Apr-2022 11:29	034_ICB.d	B CA
LLICV2	1	08-Apr-2022 11:31	035LCV2.d	B CA
LLICV5	1	08-Apr-2022 11:33	036LCV5.d	B CA
ICSA	1	08-Apr-2022 11:49	038ICSA.d	B CA
ICSAB	1	08-Apr-2022 11:51	039ICSB.d	B CA
CCV 1	1	08-Apr-2022 12:00	042_CCV.d	B CA
CCB 1	1	08-Apr-2022 12:01	043_CCB.d	B CA
CCV 2	1	08-Apr-2022 12:27	054_CCV.d	B CA
CCB 2	1	08-Apr-2022 12:29	055_CCB.d	B CA
CCV 3	1	08-Apr-2022 13:17	078_CCV.d	B CA
CCB 3	1	08-Apr-2022 13:19	079_CCB.d	B CA
CCV 4	1	08-Apr-2022 13:53	090_CCV.d	B CA
CCB 4	1	08-Apr-2022 13:55	091_CCB.d	B CA
CCV 5	1	08-Apr-2022 14:28	102_CCV.d	B CA
CCB 5	1	08-Apr-2022 14:29	103_CCB.d	B CA
CCV 6	1	08-Apr-2022 14:55	114_CCV.d	B CA
CCV 7	1	08-Apr-2022 14:55	114_CCV.d	B CA
CCB 6	1	08-Apr-2022 14:57	115_CCB.d	B CA
CCB 7	1	08-Apr-2022 15:01	116_CCB.d	B CA
CCV 8	1	08-Apr-2022 15:22	127_CCV.d	B CA
CCB 8	1	08-Apr-2022 15:24	128_CCB.d	B CA
CCB 9	1	08-Apr-2022 15:46	130_CCB.d	B CA
MBLK-177317	1	08-Apr-2022 15:49	131SMPL.d	B CA
LCS-177317	1	08-Apr-2022 15:50	132SMPL.d	B CA
ZZZZZZZSD	5	08-Apr-2022 15:54	134SMPL.d	B CA
ZZZZZZZMS	1	08-Apr-2022 15:56	135SMPL.d	B CA
ZZZZZZZMSD	1	08-Apr-2022 15:58	136SMPL.d	B CA
ZZZZZZZPDS	1	08-Apr-2022 16:00	137SMPL.d	B CA
CCV 9	1	08-Apr-2022 16:08	141_CCV.d	B CA
CCB 10	1	08-Apr-2022 16:10	142_CCB.d	B CA
CCV 10	1	08-Apr-2022 16:35	153_CCV.d	B CA
CCB 11	1	08-Apr-2022 16:37	154_CCB.d	B CA
CCV 11	1	08-Apr-2022 17:15	165_CCV.d	B CA
CCB 12	1	08-Apr-2022 17:17	166_CCB.d	B CA
CCV 12	1	08-Apr-2022 17:25	169_CCV.d	B CA
CCB 13	1	08-Apr-2022 17:26	170_CCB.d	B CA
ZZZZZZZSD	5	08-Apr-2022 17:37	173SMPL.d	B CA
ZZZZZZZMS	1	08-Apr-2022 17:38	174SMPL.d	B CA
ZZZZZZZMSD	1	08-Apr-2022 17:40	175SMPL.d	B CA
ZZZZZZZPDS	1	08-Apr-2022 17:42	176SMPL.d	CA
ZZZZZZZSD	5	08-Apr-2022 17:44	177SMPL.d	
ZZZZZZZSD	250	08-Apr-2022 17:52	179SMPL.d	B
ZZZZZZZPDS	50	08-Apr-2022 17:54	180SMPL.d	
CCV 13	1	08-Apr-2022 17:56	181_CCV.d	B CA
CCB 14	1	08-Apr-2022 17:58	182_CCB.d	B CA
CCV 14	1	08-Apr-2022 18:29	193_CCV.d	B CA
CCB 15	1	08-Apr-2022 18:31	194_CCB.d	B CA
MW-39R	2	08-Apr-2022 18:47	202SMPL.d	B CA
MW-40	2	08-Apr-2022 18:49	203SMPL.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081
Start Date: 08-Apr-2022 End Date: 09-Apr-2022

Run ID:ICPMS06_406031
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCV 15	1	08-Apr-2022 18:53	205_CCV.d	B CA
CCB 16	1	08-Apr-2022 18:55	206_CCB.d	B CA
CCV 16	1	08-Apr-2022 20:21	219_CCV.d	B CA
CCB 17	1	08-Apr-2022 20:23	220_CCB.d	B CA
CCV 17	1	08-Apr-2022 20:45	229_CCV.d	B CA
CCB 18	1	08-Apr-2022 20:47	230_CCB.d	B CA
CCV 18	1	08-Apr-2022 21:09	241_CCV.d	B CA
CCB 19	1	08-Apr-2022 21:11	242_CCB.d	B CA
CCV 19	1	08-Apr-2022 21:54	249_CCV.d	B CA
CCB 20	1	08-Apr-2022 21:56	250_CCB.d	B CA
CCV 20	1	08-Apr-2022 22:12	258_CCV.d	B CA
CCB 21	1	08-Apr-2022 22:14	259_CCB.d	B CA
CCV 21	1	08-Apr-2022 22:34	269_CCV.d	B CA
CCB 22	1	08-Apr-2022 22:36	270_CCB.d	B CA
CCB 23	1	08-Apr-2022 22:58	281_CCB.d	B CA
CCV 22	1	08-Apr-2022 23:04	284_CCV.d	B CA
ICCV 23	1	08-Apr-2022 23:27	296_ICV.d	B CA
LLICCV2	1	08-Apr-2022 23:29	297LCV2.d	B CA
LLICCV5	1	08-Apr-2022 23:30	298LCV5.d	B CA
ICCB 24	1	08-Apr-2022 23:32	299_ICB.d	B CA
CCV 24	1	08-Apr-2022 23:36	301_CCV.d	B CA
CCB 25	1	08-Apr-2022 23:38	302_CCB.d	B CA
CCV 25	1	08-Apr-2022 23:52	309_CCV.d	B CA
CCB 26	1	08-Apr-2022 23:54	310_CCB.d	B CA
ICSA	1	09-Apr-2022 00:06	316ICSA.d	B CA
ICSAB	1	09-Apr-2022 00:08	317ICSB.d	B CA
CCV 26	1	09-Apr-2022 00:16	321_CCV.d	B CA
CCB 27	1	09-Apr-2022 00:18	322_CCB.d	B CA
LCS-177388	1	09-Apr-2022 00:22	324SMPL.d	B CA
MW-58	1	09-Apr-2022 00:24	325SMPL.d	B CA
MW-58SD	5	09-Apr-2022 00:26	326SMPL.d	B CA
MW-58MS	1	09-Apr-2022 00:28	327SMPL.d	B CA
MW-58MSD	1	09-Apr-2022 00:30	328SMPL.d	B CA
MW-58PDS	1	09-Apr-2022 00:32	329SMPL.d	CA
CCV 27	1	09-Apr-2022 00:34	330_CCV.d	B CA
CCB 28	1	09-Apr-2022 00:36	331_CCB.d	B CA
Field Blank 1	1	09-Apr-2022 00:42	334SMPL.d	B CA
Field Duplicate 2	1	09-Apr-2022 00:46	336SMPL.d	B CA
CCV 28	1	09-Apr-2022 00:58	342_CCV.d	B CA
CCB 29	1	09-Apr-2022 01:00	343_CCB.d	B CA
CCV 29	1	09-Apr-2022 01:22	354_CCV.d	B CA
CCB 30	1	09-Apr-2022 01:24	355_CCB.d	B CA
CCV 30	1	09-Apr-2022 01:28	357_CCV.d	B CA
CCB 31	1	09-Apr-2022 01:30	358_CCB.d	B CA
LLCCV2	1	09-Apr-2022 01:34	360LCV2.d	B CA
LLCCV5	1	09-Apr-2022 01:36	361LCV5.d	B CA
ICSA	1	09-Apr-2022 01:38	362ICSA.d	B CA
ICSAB	1	09-Apr-2022 01:40	363ICSB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081
Start Date: 09-Apr-2022 End Date: 09-Apr-2022

Run ID:ICPMS06_406097
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	09-Apr-2022 12:17	019_ICV.d	B CA
ICB	1	09-Apr-2022 12:19	020_ICB.d	B CA
LLICV2	1	09-Apr-2022 12:21	021LCV2.d	B CA
LLICV5	1	09-Apr-2022 12:23	022LCV5.d	B CA
ICSA	1	09-Apr-2022 12:30	024ICSA.d	B CA
ICSAB	1	09-Apr-2022 12:32	025ICSB.d	B CA
CCV 1	1	09-Apr-2022 13:55	063_CCV.d	B CA
CCB 1	1	09-Apr-2022 13:57	064_CCB.d	B CA
ZZZZZZSD	5	09-Apr-2022 13:59	065SMPL.d	
ZZZZZZPDS	50	09-Apr-2022 14:01	066SMPL.d	B
CCV 2	1	09-Apr-2022 14:18	075_CCV.d	B CA
CCB 2	1	09-Apr-2022 14:20	076_CCB.d	B CA
CCV 3	1	09-Apr-2022 14:43	087_CCV.d	B CA
CCB 3	1	09-Apr-2022 14:45	088_CCB.d	B CA
CCV 4	1	09-Apr-2022 15:07	099_CCV.d	B CA
CCB 4	1	09-Apr-2022 15:14	102_CCB.d	B CA
CCV 5	1	09-Apr-2022 15:39	113_CCV.d	B CA
CCB 5	1	09-Apr-2022 15:41	114_CCB.d	B CA
CCV 6	1	09-Apr-2022 16:05	125_CCV.d	B CA
CCB 6	1	09-Apr-2022 16:07	126_CCB.d	B CA
MBLK-177388	1	09-Apr-2022 16:09	127SMPL.d	B CA
MW-58SD	50	09-Apr-2022 16:13	129SMPL.d	
MW-58PDS	10	09-Apr-2022 16:15	130SMPL.d	
MW-60	10	09-Apr-2022 16:17	131SMPL.d	CA
MW-61	10	09-Apr-2022 16:19	132SMPL.d	B CA
Field Duplicate 1	10	09-Apr-2022 16:21	133SMPL.d	CA
CCB 7	1	09-Apr-2022 16:35	138_CCB.d	B CA
CCV 7	1	09-Apr-2022 16:43	140_CCV.d	B CA
MW-60	2	09-Apr-2022 16:45	141SMPL.d	B
Field Duplicate 1	2	09-Apr-2022 16:47	142SMPL.d	B
CCB 8	1	09-Apr-2022 17:06	152_CCB.d	B CA
CCV 8	1	09-Apr-2022 17:14	155_CCV.d	B CA
CCV 9	1	09-Apr-2022 17:30	163_CCV.d	B CA
CCB 9	1	09-Apr-2022 17:32	164_CCB.d	B CA
CCV 10	1	09-Apr-2022 17:36	166_CCV.d	B CA
CCB 10	1	09-Apr-2022 17:38	167_CCB.d	B CA
LLCCV2	1	09-Apr-2022 17:41	169LCV2.d	B CA
LLCCV5	1	09-Apr-2022 17:43	170LCV5.d	B CA
ICSA	1	09-Apr-2022 17:45	171ICSA.d	B CA
ICSAB	1	09-Apr-2022 17:47	172ICSB.d	B CA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

Run ID:ICPMS06_406031
Instrument:ICPMS06
Method:SW6020A

CCB 12	Date: 08-Apr-2022 17:17	Seq: 6588858	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Calcium	52	34	500

CCB 16	Date: 08-Apr-2022 18:55	Seq: 6589033	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	14.75	11	20

CCB 21	Date: 08-Apr-2022 22:14	Seq: 6589121	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	16.75	11	20
	Calcium	56.41	34	500

CCB 22	Date: 08-Apr-2022 22:36	Seq: 6589132	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	25.26	11	20
	Calcium	53.38	34	500

CCB 23	Date: 08-Apr-2022 22:58	Seq: 6589143	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	12.51	11	20

CCB 28	Date: 09-Apr-2022 00:36	Seq: 6589270	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Calcium	34.29	34	500

CCB 30	Date: 09-Apr-2022 01:24	Seq: 6589293	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Calcium	43	34	500

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

Run ID:ICPMS06_406097
Instrument:ICPMS06
Method:SW6020A

CCB	Date	Seq	D/F	Units	Analyte	Result	MDL	Report Limit
CCB 2	09-Apr-2022 14:20	6590128	1	ug/L	Boron	11.07	11	20
CCB 3	09-Apr-2022 14:45	6590141	1	ug/L	Boron	19.85	11	20
CCB 4	09-Apr-2022 15:14	6590155	1	ug/L	Boron	17.33	11	20
CCB 5	09-Apr-2022 15:41	6590167	1	ug/L	Boron	17.48	11	20
CCB 6	09-Apr-2022 16:07	6590179	1	ug/L	Boron	18.06	11	20
CCB 7	09-Apr-2022 16:35	6590191	1	ug/L	Boron	15.36	11	20
CCB 8	09-Apr-2022 17:06	6590205	1	ug/L	Boron	15.33	11	20
CCB 9	09-Apr-2022 17:32	6590625	1	ug/L	Boron	13.02	11	20
CCB 10	09-Apr-2022 17:38	6590628	1	ug/L	Boron	13.18	11	20

Client: TRC Corporation
Project: WA Parish - CCR Program
Work Order: HS22040081

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22040081-01	MW-39R	Water		01-Apr-2022 09:15	01-Apr-2022 14:35	☐
HS22040081-02	MW-40	Water		01-Apr-2022 12:25	01-Apr-2022 14:35	☐
HS22040081-03	MW-41	Water		01-Apr-2022 10:55	01-Apr-2022 14:35	☐
HS22040081-04	MW-62	Water		01-Apr-2022 08:30	01-Apr-2022 14:35	☐
HS22040081-05	MW-63	Water		01-Apr-2022 10:00	01-Apr-2022 14:35	☐
HS22040081-06	MW-64	Water		01-Apr-2022 11:40	01-Apr-2022 14:35	☐
HS22040081-07	MW-23R	Water		01-Apr-2022 11:45	01-Apr-2022 14:35	☐
HS22040081-08	MW-28D	Water		01-Apr-2022 11:50	01-Apr-2022 14:35	☐
HS22040081-09	MW-42	Water		01-Apr-2022 11:05	01-Apr-2022 14:35	☐
HS22040081-10	MW-43	Water		01-Apr-2022 12:25	01-Apr-2022 14:35	☐
HS22040081-11	MW-44	Water		01-Apr-2022 09:15	01-Apr-2022 14:35	☐
HS22040081-12	MW-46R	Water		01-Apr-2022 08:35	01-Apr-2022 14:35	☐
HS22040081-13	MW-47	Water		01-Apr-2022 09:00	01-Apr-2022 14:35	☐
HS22040081-14	MW-48	Water		01-Apr-2022 09:50	01-Apr-2022 14:35	☐
HS22040081-15	MW-50	Water		01-Apr-2022 13:05	01-Apr-2022 14:35	☐
HS22040081-16	MW-52	Water		01-Apr-2022 12:45	01-Apr-2022 14:35	☐
HS22040081-17	MW-54	Water		01-Apr-2022 10:40	01-Apr-2022 14:35	☐
HS22040081-18	MW-55R	Water		01-Apr-2022 12:30	01-Apr-2022 14:35	☐
HS22040081-19	MW-58	Water		01-Apr-2022 10:05	01-Apr-2022 14:35	☐
HS22040081-20	MW-65	Water		01-Apr-2022 11:30	01-Apr-2022 14:35	☐
HS22040081-21	MW-36	Water		01-Apr-2022 08:40	01-Apr-2022 14:35	☐
HS22040081-22	MW-37	Water		01-Apr-2022 10:55	01-Apr-2022 14:35	☐
HS22040081-23	MW-38R	Water		01-Apr-2022 10:15	01-Apr-2022 14:35	☐
HS22040081-24	MW-60	Water		01-Apr-2022 08:10	01-Apr-2022 14:35	☐
HS22040081-25	MW-61	Water		01-Apr-2022 09:25	01-Apr-2022 14:35	☐
HS22040081-26	Field Blank 1	Water		01-Apr-2022 09:35	01-Apr-2022 14:35	☐

Client: TRC Corporation
Project: WA Parish - CCR Program
Work Order: HS22040081

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22040081-27	Field Duplicate 1	Water		01-Apr-2022 12:00	01-Apr-2022 14:35	☐
HS22040081-28	Field Duplicate 2	Water		01-Apr-2022 09:00	01-Apr-2022 14:35	☐

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-39R		Lab ID:HS22040081-01
Collection Date:	01-Apr-2022 09:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Apr-2022		Analyst: JHD
Boron	**0.217**		**0.0220**	**0.0400**	**mg/L**	2	08-Apr-2022 18:47
Calcium	**210**		**0.0680**	**1.00**	**mg/L**	2	08-Apr-2022 18:47
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**470**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 22:50
Sulfate	**82.7**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2022 22:44
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,280**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-40		Lab ID:HS22040081-02
Collection Date:	01-Apr-2022 12:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Apr-2022		Analyst: JHD
Boron	**0.133**		**0.0220**	**0.0400**	**mg/L**	2	08-Apr-2022 18:49
Calcium	**265**		**0.0680**	**1.00**	**mg/L**	2	08-Apr-2022 18:49
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**515**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 23:00
Sulfate	**137**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 23:00
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,660**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-41		Lab ID:HS22040081-03
Collection Date:	01-Apr-2022 10:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.0878**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 16:45
Calcium	**196**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:03
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**465**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 23:27
Sulfate	**54.7**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2022 23:21
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,250**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-62		Lab ID:HS22040081-04
Collection Date:	01-Apr-2022 08:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.0922**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 16:47
Calcium	**209**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:05
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**556**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 23:37
Sulfate	**119**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 23:37
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,500**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-63		Lab ID:HS22040081-05
Collection Date:	01-Apr-2022 10:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.133**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 16:35
Calcium	**306**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 17:57
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**376**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 23:42
Sulfate	**532**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2022 23:42
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,710**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-64		Lab ID:HS22040081-06
Collection Date:	01-Apr-2022 11:40		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.102**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:01
Calcium	**234**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:07
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**522**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 00:04
Sulfate	**49.8**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2022 23:58
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,440**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-23R		Lab ID:HS22040081-07
Collection Date:	01-Apr-2022 11:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.270**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:03
Calcium	**492**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:09
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**1,050**		**10.0**	**25.0**	**mg/L**	50	07-Apr-2022 00:09
Sulfate	**1,200**		**10.0**	**25.0**	**mg/L**	50	07-Apr-2022 00:09
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**3,960**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-28D		Lab ID:HS22040081-08
Collection Date:	01-Apr-2022 11:50		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.163**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:05
Calcium	**116**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:05
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**163**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 00:35
Sulfate	**92.4**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 00:35
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**774**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-42		Lab ID:HS22040081-09
Collection Date:	01-Apr-2022 11:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.501**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:07
Calcium	**156**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:07
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**333**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 00:56
Sulfate	**504**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 00:56
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,590**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-43		Lab ID:HS22040081-10
Collection Date:	01-Apr-2022 12:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.381**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:09
Calcium	**89.5**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:09
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**236**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 01:07
Sulfate	**70.2**		**0.200**	**0.500**	**mg/L**	1	07-Apr-2022 01:02
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**836**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-44		Lab ID:HS22040081-11
Collection Date:	01-Apr-2022 09:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.263**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:11
Calcium	**138**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:11
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**320**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 01:18
Sulfate	**197**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 01:18
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,170**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-46R		Lab ID:HS22040081-12
Collection Date:	01-Apr-2022 08:35		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.169**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:13
Calcium	**105**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:13
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**165**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 01:44
Sulfate	**90.7**		**0.200**	**0.500**	**mg/L**	1	07-Apr-2022 01:39
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**792**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-47		Lab ID:HS22040081-13
Collection Date:	01-Apr-2022 09:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.237**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:15
Calcium	**130**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:15
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**343**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 01:55
Sulfate	**71.2**		**0.200**	**0.500**	**mg/L**	1	07-Apr-2022 01:49
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,030**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-48		Lab ID:HS22040081-14
Collection Date:	01-Apr-2022 09:50		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.603**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:23
Calcium	**79.3**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:23
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**404**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 02:05
Sulfate	**94.0**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 02:05
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,180**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-50		Lab ID:HS22040081-15
Collection Date:	01-Apr-2022 13:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		Method:SW6020A			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.295**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:25
Calcium	**138**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:25
ANIONS BY E300.0, REV 2.1, 1993		Method:E300					Analyst: YP
Chloride	**404**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 02:16
Sulfate	**126**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 02:16
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		Method:M2540C					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,240**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		Method:NA					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-52		Lab ID:HS22040081-16
Collection Date:	01-Apr-2022 12:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.344**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:27
Calcium	**240**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:11
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**608**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 02:26
Sulfate	**420**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 02:26
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,930**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-54		Lab ID:HS22040081-17
Collection Date:	01-Apr-2022 10:40		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.271**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:29
Calcium	**93.5**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:29
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**257**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 03:14
Sulfate	**74.2**		**0.200**	**0.500**	**mg/L**	1	07-Apr-2022 03:09
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**868**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-55R		Lab ID:HS22040081-18
Collection Date:	01-Apr-2022 12:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.456**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:31
Calcium	**115**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2022 17:31
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**325**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 03:24
Sulfate	**99.1**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 03:24
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,060**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2022 15:21
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-58		Lab ID:HS22040081-19
Collection Date:	01-Apr-2022 10:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JHD
Boron	**0.309**		**0.0110**	**0.0200**	**mg/L**	1	09-Apr-2022 00:24
Calcium	**114**		**0.0340**	**0.500**	**mg/L**	1	09-Apr-2022 00:24
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**354**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 04:01
Sulfate	**115**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 04:01
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,180**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		ANALYTICAL REPORT
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-65		Lab ID:HS22040081-20
Collection Date:	01-Apr-2022 11:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.348**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:33
Calcium	**239**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:13
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**308**		**2.00**	**5.00**	**mg/L**	10	07-Apr-2022 04:12
Sulfate	**635**		**2.00**	**5.00**	**mg/L**	10	07-Apr-2022 04:12
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,940**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-36		Lab ID:HS22040081-21
Collection Date:	01-Apr-2022 08:40		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.0811**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:35
Calcium	**250**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:19
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**325**		**2.00**	**5.00**	**mg/L**	10	07-Apr-2022 04:17
Sulfate	**410**		**2.00**	**5.00**	**mg/L**	10	07-Apr-2022 04:17
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,590**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program	WorkOrder:	HS22040081
Sample ID:	MW-37	Lab ID:	HS22040081-22
Collection Date:	01-Apr-2022 10:55	Matrix:	Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.367**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:37
Calcium	**234**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:21
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**321**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 04:33
Sulfate	**1,030**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 04:33
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,880**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-38R		Lab ID:HS22040081-23
Collection Date:	01-Apr-2022 10:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.421**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2022 17:39
Calcium	**237**		**0.340**	**5.00**	**mg/L**	10	11-Apr-2022 18:23
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**286**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 04:44
Sulfate	**572**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 04:44
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,720**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-60		Lab ID:HS22040081-24
Collection Date:	01-Apr-2022 08:10		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.117**		**0.0220**	**0.0400**	**mg/L**	2	09-Apr-2022 16:45
Calcium	**208**		**0.340**	**5.00**	**mg/L**	10	09-Apr-2022 16:17
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**314**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:21
Sulfate	**242**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:21
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,400**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	MW-61		Lab ID:HS22040081-25
Collection Date:	01-Apr-2022 09:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**1.29**		**0.110**	**0.200**	**mg/L**	10	09-Apr-2022 16:19
Calcium	**207**		**0.340**	**5.00**	**mg/L**	10	09-Apr-2022 16:19
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**130**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:26
Sulfate	**916**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:26
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,880**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	Field Blank 1		Lab ID:HS22040081-26
Collection Date:	01-Apr-2022 09:35		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JHD
Boron	**0.0131**	J	**0.0110**	**0.0200**	**mg/L**	1	09-Apr-2022 00:42
Calcium	**0.185**	J	**0.0340**	**0.500**	**mg/L**	1	09-Apr-2022 00:42
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	< 0.200		0.200	0.500	mg/L	1	07-Apr-2022 05:31
Sulfate	< 0.200		0.200	0.500	mg/L	1	07-Apr-2022 05:31
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	< 5.00		5.00	10.0	mg/L	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	Field Duplicate 1		Lab ID:HS22040081-27
Collection Date:	01-Apr-2022 12:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JC
Boron	**0.0956**		**0.0220**	**0.0400**	**mg/L**	2	09-Apr-2022 16:47
Calcium	**226**		**0.340**	**5.00**	**mg/L**	10	09-Apr-2022 16:21
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**327**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:42
Sulfate	**414**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:42
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,600**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22040081
Sample ID:	Field Duplicate 2		Lab ID:HS22040081-28
Collection Date:	01-Apr-2022 09:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 08-Apr-2022		Analyst: JHD
Boron	**0.269**		**0.0110**	**0.0200**	**mg/L**	1	09-Apr-2022 00:46
Calcium	**131**		**0.0340**	**0.500**	**mg/L**	1	09-Apr-2022 00:46
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**323**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:52
Sulfate	**206**		**4.00**	**10.0**	**mg/L**	20	07-Apr-2022 05:52
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,280**		**5.00**	**10.0**	**mg/L**	1	08-Apr-2022 14:31
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	13-Apr-2022 10:10

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

Weight / Prep Log

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

Batch ID: 177317 **Start Date:** 07 Apr 2022 09:30 **End Date:** 07 Apr 2022 13:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22040081-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 177376 **Start Date:** 08 Apr 2022 10:00 **End Date:** 08 Apr 2022 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22040081-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-12		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-20		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-21		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-22		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-23		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 177388 **Start Date:** 08 Apr 2022 12:00 **End Date:** 08 Apr 2022 16:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22040081-19		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-24		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-25		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-26		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-27		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22040081-28		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 177317 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS22040081-01	MW-39R	01 Apr 2022 09:15		07 Apr 2022 09:30	08 Apr 2022 18:47	2
HS22040081-02	MW-40	01 Apr 2022 12:25		07 Apr 2022 09:30	08 Apr 2022 18:49	2
Batch ID: 177376 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS22040081-03	MW-41	01 Apr 2022 10:55		08 Apr 2022 10:00	11 Apr 2022 18:03	10
HS22040081-03	MW-41	01 Apr 2022 10:55		08 Apr 2022 10:00	11 Apr 2022 16:45	1
HS22040081-04	MW-62	01 Apr 2022 08:30		08 Apr 2022 10:00	11 Apr 2022 18:05	10
HS22040081-04	MW-62	01 Apr 2022 08:30		08 Apr 2022 10:00	11 Apr 2022 16:47	1
HS22040081-05	MW-63	01 Apr 2022 10:00		08 Apr 2022 10:00	11 Apr 2022 17:57	10
HS22040081-05	MW-63	01 Apr 2022 10:00		08 Apr 2022 10:00	11 Apr 2022 16:35	1
HS22040081-06	MW-64	01 Apr 2022 11:40		08 Apr 2022 10:00	11 Apr 2022 18:07	10
HS22040081-06	MW-64	01 Apr 2022 11:40		08 Apr 2022 10:00	11 Apr 2022 17:01	1
HS22040081-07	MW-23R	01 Apr 2022 11:45		08 Apr 2022 10:00	11 Apr 2022 18:09	10
HS22040081-07	MW-23R	01 Apr 2022 11:45		08 Apr 2022 10:00	11 Apr 2022 17:03	1
HS22040081-08	MW-28D	01 Apr 2022 11:50		08 Apr 2022 10:00	11 Apr 2022 17:05	1
HS22040081-09	MW-42	01 Apr 2022 11:05		08 Apr 2022 10:00	11 Apr 2022 17:07	1
HS22040081-10	MW-43	01 Apr 2022 12:25		08 Apr 2022 10:00	11 Apr 2022 17:09	1
HS22040081-11	MW-44	01 Apr 2022 09:15		08 Apr 2022 10:00	11 Apr 2022 17:11	1
HS22040081-12	MW-46R	01 Apr 2022 08:35		08 Apr 2022 10:00	11 Apr 2022 17:13	1
HS22040081-13	MW-47	01 Apr 2022 09:00		08 Apr 2022 10:00	11 Apr 2022 17:15	1
HS22040081-14	MW-48	01 Apr 2022 09:50		08 Apr 2022 10:00	11 Apr 2022 17:23	1
HS22040081-15	MW-50	01 Apr 2022 13:05		08 Apr 2022 10:00	11 Apr 2022 17:25	1
HS22040081-16	MW-52	01 Apr 2022 12:45		08 Apr 2022 10:00	11 Apr 2022 18:11	10
HS22040081-16	MW-52	01 Apr 2022 12:45		08 Apr 2022 10:00	11 Apr 2022 17:27	1
HS22040081-17	MW-54	01 Apr 2022 10:40		08 Apr 2022 10:00	11 Apr 2022 17:29	1
HS22040081-18	MW-55R	01 Apr 2022 12:30		08 Apr 2022 10:00	11 Apr 2022 17:31	1
HS22040081-20	MW-65	01 Apr 2022 11:30		08 Apr 2022 10:00	11 Apr 2022 18:13	10
HS22040081-20	MW-65	01 Apr 2022 11:30		08 Apr 2022 10:00	11 Apr 2022 17:33	1
HS22040081-21	MW-36	01 Apr 2022 08:40		08 Apr 2022 10:00	11 Apr 2022 18:19	10
HS22040081-21	MW-36	01 Apr 2022 08:40		08 Apr 2022 10:00	11 Apr 2022 17:35	1
HS22040081-22	MW-37	01 Apr 2022 10:55		08 Apr 2022 10:00	11 Apr 2022 18:21	10
HS22040081-22	MW-37	01 Apr 2022 10:55		08 Apr 2022 10:00	11 Apr 2022 17:37	1
HS22040081-23	MW-38R	01 Apr 2022 10:15		08 Apr 2022 10:00	11 Apr 2022 18:23	10
HS22040081-23	MW-38R	01 Apr 2022 10:15		08 Apr 2022 10:00	11 Apr 2022 17:39	1

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 177388 (0)		**Test Name :** ICP-MS METALS BY SW6020A			**Matrix:** Water	
HS22040081-19	MW-58	01 Apr 2022 10:05		08 Apr 2022 12:00	09 Apr 2022 00:24	1
HS22040081-24	MW-60	01 Apr 2022 08:10		08 Apr 2022 12:00	09 Apr 2022 16:45	2
HS22040081-24	MW-60	01 Apr 2022 08:10		08 Apr 2022 12:00	09 Apr 2022 16:17	10
HS22040081-25	MW-61	01 Apr 2022 09:25		08 Apr 2022 12:00	09 Apr 2022 16:19	10
HS22040081-26	Field Blank 1	01 Apr 2022 09:35		08 Apr 2022 12:00	09 Apr 2022 00:42	1
HS22040081-27	Field Duplicate 1	01 Apr 2022 12:00		08 Apr 2022 12:00	09 Apr 2022 16:47	2
HS22040081-27	Field Duplicate 1	01 Apr 2022 12:00		08 Apr 2022 12:00	09 Apr 2022 16:21	10
HS22040081-28	Field Duplicate 2	01 Apr 2022 09:00		08 Apr 2022 12:00	09 Apr 2022 00:46	1
Batch ID: R405904 (0)		**Test Name :** ANIONS BY E300.0, REV 2.1, 1993			**Matrix:** Water	
HS22040081-01	MW-39R	01 Apr 2022 09:15			06 Apr 2022 22:50	20
HS22040081-01	MW-39R	01 Apr 2022 09:15			06 Apr 2022 22:44	1
HS22040081-02	MW-40	01 Apr 2022 12:25			06 Apr 2022 23:00	20
HS22040081-03	MW-41	01 Apr 2022 10:55			06 Apr 2022 23:27	20
HS22040081-03	MW-41	01 Apr 2022 10:55			06 Apr 2022 23:21	1
HS22040081-04	MW-62	01 Apr 2022 08:30			06 Apr 2022 23:37	20
HS22040081-05	MW-63	01 Apr 2022 10:00			06 Apr 2022 23:42	20
HS22040081-06	MW-64	01 Apr 2022 11:40			07 Apr 2022 00:04	20
HS22040081-06	MW-64	01 Apr 2022 11:40			06 Apr 2022 23:58	1
HS22040081-07	MW-23R	01 Apr 2022 11:45			07 Apr 2022 00:09	50
HS22040081-08	MW-28D	01 Apr 2022 11:50			07 Apr 2022 00:35	20
HS22040081-09	MW-42	01 Apr 2022 11:05			07 Apr 2022 00:56	20
HS22040081-10	MW-43	01 Apr 2022 12:25			07 Apr 2022 01:07	20
HS22040081-10	MW-43	01 Apr 2022 12:25			07 Apr 2022 01:02	1
HS22040081-11	MW-44	01 Apr 2022 09:15			07 Apr 2022 01:18	20
HS22040081-12	MW-46R	01 Apr 2022 08:35			07 Apr 2022 01:44	20
HS22040081-12	MW-46R	01 Apr 2022 08:35			07 Apr 2022 01:39	1
HS22040081-13	MW-47	01 Apr 2022 09:00			07 Apr 2022 01:55	20
HS22040081-13	MW-47	01 Apr 2022 09:00			07 Apr 2022 01:49	1
HS22040081-14	MW-48	01 Apr 2022 09:50			07 Apr 2022 02:05	20
HS22040081-15	MW-50	01 Apr 2022 13:05			07 Apr 2022 02:16	20
HS22040081-16	MW-52	01 Apr 2022 12:45			07 Apr 2022 02:26	20
HS22040081-17	MW-54	01 Apr 2022 10:40			07 Apr 2022 03:14	20
HS22040081-17	MW-54	01 Apr 2022 10:40			07 Apr 2022 03:09	1
HS22040081-18	MW-55R	01 Apr 2022 12:30			07 Apr 2022 03:24	20
HS22040081-20	MW-65	01 Apr 2022 11:30			07 Apr 2022 04:12	10
HS22040081-21	MW-36	01 Apr 2022 08:40			07 Apr 2022 04:17	10

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R405915 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS22040081-19	MW-58	01 Apr 2022 10:05			07 Apr 2022 04:01	20
HS22040081-22	MW-37	01 Apr 2022 10:55			07 Apr 2022 04:33	20
HS22040081-23	MW-38R	01 Apr 2022 10:15			07 Apr 2022 04:44	20
HS22040081-24	MW-60	01 Apr 2022 08:10			07 Apr 2022 05:21	20
HS22040081-25	MW-61	01 Apr 2022 09:25			07 Apr 2022 05:26	20
HS22040081-26	Field Blank 1	01 Apr 2022 09:35			07 Apr 2022 05:31	1
HS22040081-27	Field Duplicate 1	01 Apr 2022 12:00			07 Apr 2022 05:42	20
HS22040081-28	Field Duplicate 2	01 Apr 2022 09:00			07 Apr 2022 05:52	20
Batch ID: R406044 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS22040081-01	MW-39R	01 Apr 2022 09:15			07 Apr 2022 15:21	1
HS22040081-02	MW-40	01 Apr 2022 12:25			07 Apr 2022 15:21	1
HS22040081-03	MW-41	01 Apr 2022 10:55			07 Apr 2022 15:21	1
HS22040081-04	MW-62	01 Apr 2022 08:30			07 Apr 2022 15:21	1
HS22040081-05	MW-63	01 Apr 2022 10:00			07 Apr 2022 15:21	1
HS22040081-06	MW-64	01 Apr 2022 11:40			07 Apr 2022 15:21	1
HS22040081-07	MW-23R	01 Apr 2022 11:45			07 Apr 2022 15:21	1
HS22040081-08	MW-28D	01 Apr 2022 11:50			07 Apr 2022 15:21	1
HS22040081-09	MW-42	01 Apr 2022 11:05			07 Apr 2022 15:21	1
HS22040081-10	MW-43	01 Apr 2022 12:25			07 Apr 2022 15:21	1
HS22040081-11	MW-44	01 Apr 2022 09:15			07 Apr 2022 15:21	1
HS22040081-12	MW-46R	01 Apr 2022 08:35			07 Apr 2022 15:21	1
HS22040081-13	MW-47	01 Apr 2022 09:00			07 Apr 2022 15:21	1
HS22040081-14	MW-48	01 Apr 2022 09:50			07 Apr 2022 15:21	1
HS22040081-15	MW-50	01 Apr 2022 13:05			07 Apr 2022 15:21	1
HS22040081-16	MW-52	01 Apr 2022 12:45			07 Apr 2022 15:21	1
HS22040081-17	MW-54	01 Apr 2022 10:40			07 Apr 2022 15:21	1
HS22040081-18	MW-55R	01 Apr 2022 12:30			07 Apr 2022 15:21	1
Batch ID: R406172 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS22040081-19	MW-58	01 Apr 2022 10:05			08 Apr 2022 14:31	1
HS22040081-20	MW-65	01 Apr 2022 11:30			08 Apr 2022 14:31	1
HS22040081-21	MW-36	01 Apr 2022 08:40			08 Apr 2022 14:31	1
HS22040081-22	MW-37	01 Apr 2022 10:55			08 Apr 2022 14:31	1
HS22040081-23	MW-38R	01 Apr 2022 10:15			08 Apr 2022 14:31	1
HS22040081-24	MW-60	01 Apr 2022 08:10			08 Apr 2022 14:31	1
HS22040081-25	MW-61	01 Apr 2022 09:25			08 Apr 2022 14:31	1
HS22040081-26	Field Blank 1	01 Apr 2022 09:35			08 Apr 2022 14:31	1
HS22040081-27	Field Duplicate 1	01 Apr 2022 12:00			08 Apr 2022 14:31	1
HS22040081-28	Field Duplicate 2	01 Apr 2022 09:00			08 Apr 2022 14:31	1

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R406342 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS22040081-01	MW-39R	01 Apr 2022 09:15			13 Apr 2022 10:10	1
HS22040081-02	MW-40	01 Apr 2022 12:25			13 Apr 2022 10:10	1
HS22040081-03	MW-41	01 Apr 2022 10:55			13 Apr 2022 10:10	1
HS22040081-04	MW-62	01 Apr 2022 08:30			13 Apr 2022 10:10	1
HS22040081-05	MW-63	01 Apr 2022 10:00			13 Apr 2022 10:10	1
HS22040081-06	MW-64	01 Apr 2022 11:40			13 Apr 2022 10:10	1
HS22040081-07	MW-23R	01 Apr 2022 11:45			13 Apr 2022 10:10	1
HS22040081-08	MW-28D	01 Apr 2022 11:50			13 Apr 2022 10:10	1
HS22040081-09	MW-42	01 Apr 2022 11:05			13 Apr 2022 10:10	1
HS22040081-10	MW-43	01 Apr 2022 12:25			13 Apr 2022 10:10	1
HS22040081-11	MW-44	01 Apr 2022 09:15			13 Apr 2022 10:10	1
HS22040081-12	MW-46R	01 Apr 2022 08:35			13 Apr 2022 10:10	1
HS22040081-13	MW-47	01 Apr 2022 09:00			13 Apr 2022 10:10	1
HS22040081-14	MW-48	01 Apr 2022 09:50			13 Apr 2022 10:10	1
HS22040081-15	MW-50	01 Apr 2022 13:05			13 Apr 2022 10:10	1
HS22040081-16	MW-52	01 Apr 2022 12:45			13 Apr 2022 10:10	1
HS22040081-17	MW-54	01 Apr 2022 10:40			13 Apr 2022 10:10	1
HS22040081-18	MW-55R	01 Apr 2022 12:30			13 Apr 2022 10:10	1
HS22040081-19	MW-58	01 Apr 2022 10:05			13 Apr 2022 10:10	1
HS22040081-20	MW-65	01 Apr 2022 11:30			13 Apr 2022 10:10	1
HS22040081-21	MW-36	01 Apr 2022 08:40			13 Apr 2022 10:10	1
HS22040081-22	MW-37	01 Apr 2022 10:55			13 Apr 2022 10:10	1
HS22040081-23	MW-38R	01 Apr 2022 10:15			13 Apr 2022 10:10	1
HS22040081-24	MW-60	01 Apr 2022 08:10			13 Apr 2022 10:10	1
HS22040081-25	MW-61	01 Apr 2022 09:25			13 Apr 2022 10:10	1
HS22040081-26	Field Blank 1	01 Apr 2022 09:35			13 Apr 2022 10:10	1
HS22040081-27	Field Duplicate 1	01 Apr 2022 12:00			13 Apr 2022 10:10	1
HS22040081-28	Field Duplicate 2	01 Apr 2022 09:00			13 Apr 2022 10:10	1

WorkOrder:	HS22040081
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	0.0106	0.0110	0.0200
A	Calcium	7440-70-2	0.0500	0.0394	0.0340	0.500

WorkOrder: HS22040081
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	0.531	0.200	0.500
A	Sulfate	14808-79-8	0.500	0.518	0.200	0.500

WorkOrder:	HS22040081
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	12.0	5.00	10.0

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: 177317 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-177317** Units: **mg/L** Analysis Date: **08-Apr-2022 15:49**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6588734** PrepDate: **07-Apr-2022** 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-177317** Units: **mg/L** Analysis Date: **08-Apr-2022 15:50**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6588735** PrepDate: **07-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.471	0.0200	0.5	0	94.2	80 - 120				
Calcium	4.928	0.500	5	0	98.6	80 - 120				

MS Sample ID: **HS22040080-07MS** Units: **mg/L** Analysis Date: **08-Apr-2022 17:38**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6589003** PrepDate: **07-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.288	0.0200	0.5	0.8075	96.2	80 - 120				E
Calcium	153.7	0.500	5	156.1	-48.2	80 - 120				SO

MS Sample ID: **HS22040046-03MS** Units: **mg/L** Analysis Date: **08-Apr-2022 15:56**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6588738** PrepDate: **07-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5354	0.0200	0.5	0.03472	100	80 - 120				
Calcium	23.42	0.500	5	15.02	168	80 - 120				S

MSD Sample ID: **HS22040080-07MSD** Units: **mg/L** Analysis Date: **08-Apr-2022 17:40**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6589004** PrepDate: **07-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.286	0.0200	0.5	0.8075	95.7	80 - 120	1.288	0.176	20	E
Calcium	155.9	0.500	5	156.1	-3.96	80 - 120	153.7	1.43	20	SO

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: 177317 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MSD Sample ID: **HS22040046-03MSD** Units: **mg/L** Analysis Date: **08-Apr-2022 15:58**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6588739** PrepDate: **07-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.549	0.0200	0.5	0.03472	103	80 - 120	0.5354	2.5	20	
Calcium	22.6	0.500	5	15.02	152	80 - 120	23.42	3.56	20	S

PDS Sample ID: **HS22040080-07PDS** Units: **mg/L** Analysis Date: **09-Apr-2022 14:01**
Client ID: Run ID: **ICPMS06_406097** SeqNo: **6590119** PrepDate: **07-Apr-2022** DF: **50**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	52.47	1.00	50	1.099	103	75 - 125				E

PDS Sample ID: **HS22040046-03PDS** Units: **mg/L** Analysis Date: **08-Apr-2022 16:00**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6588740** PrepDate: **07-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5178	0.0200	0.5	0.03472	96.6	75 - 125				
Calcium	25.44	0.500	10	15.02	104	75 - 125				

PDS Sample ID: **HS22040080-07PDS** Units: **mg/L** Analysis Date: **08-Apr-2022 17:42**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6589005** PrepDate: **07-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	152.3	0.500	10	156.1	-37.4	75 - 125				SO

SD Sample ID: **HS22040080-07SD** Units: **mg/L** Analysis Date: **08-Apr-2022 17:37**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6589002** PrepDate: **07-Apr-2022** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.9309	0.100					0.8075	15.3	10	R
Calcium	161.4	2.50					156.1	3.39	10	

SD Sample ID: **HS22040080-07SD** Units: **mg/L** Analysis Date: **08-Apr-2022 17:52**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6589008** PrepDate: **07-Apr-2022** DF: **250**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 2.75	5.00					1.099	0	10	

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: **177317 (0)** **Instrument:** **ICPMS06** **Method:** **ICP-MS METALS BY SW6020A**

SD Sample ID: **HS22040046-03SD** Units: **mg/L** Analysis Date: **08-Apr-2022 15:54**

Client ID: Run ID: **ICPMS06_406031** SeqNo: **6588737** PrepDate: **07-Apr-2022** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 0.0550	0.100					0.03472	0	10	
Calcium	14.92	2.50					15.02	0.661	10	

The following samples were analyzed in this batch: HS22040081-01 HS22040081-02

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: 177376 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-177376** Units: **mg/L** Analysis Date: **11-Apr-2022 16:31**
Client ID: Run ID: **ICPMS06_406141** SeqNo: **6592252** PrepDate: **08-Apr-2022** 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-177376** Units: **mg/L** Analysis Date: **11-Apr-2022 16:33**
Client ID: Run ID: **ICPMS06_406141** SeqNo: **6592253** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.46	0.0200	0.5	0	92.0	80 - 120				
Calcium	4.854	0.500	5	0	97.1	80 - 120				

MS Sample ID: **HS22040081-05MS** Units: **mg/L** Analysis Date: **11-Apr-2022 16:39**
Client ID: **MW-63** Run ID: **ICPMS06_406141** SeqNo: **6592256** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6095	0.0200	0.5	0.1334	95.2	80 - 120				
Calcium	313	0.500	5	297.5	309	80 - 120				SEO

MSD Sample ID: **HS22040081-05MSD** Units: **mg/L** Analysis Date: **11-Apr-2022 16:41**
Client ID: **MW-63** Run ID: **ICPMS06_406141** SeqNo: **6592257** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6068	0.0200	0.5	0.1334	94.7	80 - 120	0.6095	0.448	20	
Calcium	307.9	0.500	5	297.5	207	80 - 120	313	1.64	20	SEO

PDS Sample ID: **HS22040081-05PDS** Units: **mg/L** Analysis Date: **11-Apr-2022 16:43**
Client ID: **MW-63** Run ID: **ICPMS06_406141** SeqNo: **6592258** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6564	0.0200	0.5	0.1334	105	75 - 125				

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: 177376 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

PDS Sample ID: **HS22040081-05PDS** Units: **mg/L** Analysis Date: **11-Apr-2022 18:01**
Client ID: **MW-63** Run ID: **ICPMS06_406141** SeqNo: **6592362** PrepDate: **08-Apr-2022** DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	393.3	5.00	100	306.4	86.8	75 - 125				

SD Sample ID: **HS22040081-05SD** Units: **mg/L** Analysis Date: **11-Apr-2022 16:37**
Client ID: **MW-63** Run ID: **ICPMS06_406141** SeqNo: **6592255** PrepDate: **08-Apr-2022** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.1416	0.100					0.1334	6.16	10	

SD Sample ID: **HS22040081-05SD** Units: **mg/L** Analysis Date: **11-Apr-2022 17:59**
Client ID: **MW-63** Run ID: **ICPMS06_406141** SeqNo: **6592361** PrepDate: **08-Apr-2022** DF: **50**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	317.3	25.0					306.4	3.54	10	

The following samples were analyzed in this batch:

HS22040081-03	HS22040081-04	HS22040081-05	HS22040081-06
HS22040081-07	HS22040081-08	HS22040081-09	HS22040081-10
HS22040081-11	HS22040081-12	HS22040081-13	HS22040081-14
HS22040081-15	HS22040081-16	HS22040081-17	HS22040081-18
HS22040081-20	HS22040081-21	HS22040081-22	HS22040081-23

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: 177388 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-177388** Units: **mg/L** Analysis Date: **09-Apr-2022 16:09**
Client ID: Run ID: **ICPMS06_406097** SeqNo: **6590180** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.0116	0.0200								J
Calcium	< 0.0340	0.500								

LCS Sample ID: **LCS-177388** Units: **mg/L** Analysis Date: **09-Apr-2022 00:22**
Client ID: Run ID: **ICPMS06_406031** SeqNo: **6589263** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4662	0.0200	0.5	0	93.2	80 - 120				
Calcium	4.551	0.500	5	0	91.0	80 - 120				

MS Sample ID: **HS22040081-19MS** Units: **mg/L** Analysis Date: **09-Apr-2022 00:28**
Client ID: **MW-58** Run ID: **ICPMS06_406031** SeqNo: **6589266** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.7862	0.0200	0.5	0.3093	95.4	80 - 120				
Calcium	117.7	0.500	5	113.5	84.4	80 - 120				O

MSD Sample ID: **HS22040081-19MSD** Units: **mg/L** Analysis Date: **09-Apr-2022 00:30**
Client ID: **MW-58** Run ID: **ICPMS06_406031** SeqNo: **6589267** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.7956	0.0200	0.5	0.3093	97.3	80 - 120	0.7862	1.19	20	
Calcium	119.6	0.500	5	113.5	121	80 - 120	117.7	1.53	20	SO

PDS Sample ID: **HS22040081-19PDS** Units: **mg/L** Analysis Date: **09-Apr-2022 00:32**
Client ID: **MW-58** Run ID: **ICPMS06_406031** SeqNo: **6589268** PrepDate: **08-Apr-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	118.4	0.500	10	113.5	48.6	75 - 125				SO

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: 177388 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

SD Sample ID: **HS22040081-19SD** Units: **mg/L** Analysis Date: **09-Apr-2022 00:26**

Client ID: **MW-58** Run ID: **ICPMS06_406031** SeqNo: **6589265** PrepDate: **08-Apr-2022** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.3268	0.100					0.3093	5.64	10	
Calcium	114.1	2.50					113.5	0.49	10	

The following samples were analyzed in this batch:

HS22040081-19	HS22040081-24	HS22040081-25	HS22040081-26
HS22040081-27	HS22040081-28		

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: R405904 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **06-Apr-2022 22:13**
Client ID: Run ID: **ICS-Integrion_405904** SeqNo: **6584944** 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: **06-Apr-2022 22:18**
Client ID: Run ID: **ICS-Integrion_405904** SeqNo: **6584945** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	18.37	0.500	20	0	91.9	90 - 110				
Sulfate	18.37	0.500	20	0	91.9	90 - 110				

MS Sample ID: **HS22040081-21MS** Units: **mg/L** Analysis Date: **07-Apr-2022 04:23**
Client ID: **MW-36** Run ID: **ICS-Integrion_405904** SeqNo: **6584998** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	411.9	5.00	100	324.8	87.0	80 - 120				
Sulfate	494.8	5.00	100	410.3	84.5	80 - 120				O

MS Sample ID: **HS22040081-05MS** Units: **mg/L** Analysis Date: **06-Apr-2022 23:48**
Client ID: **MW-63** Run ID: **ICS-Integrion_405904** SeqNo: **6584957** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	463.8	10.0	200	376.3	43.8	80 - 120				S
Sulfate	628.2	10.0	200	532	48.1	80 - 120				S

MSD Sample ID: **HS22040081-21MSD** Units: **mg/L** Analysis Date: **07-Apr-2022 04:28**
Client ID: **MW-36** Run ID: **ICS-Integrion_405904** SeqNo: **6584999** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	411.3	5.00	100	324.8	86.4	80 - 120	411.9	0.146	20	
Sulfate	491.1	5.00	100	410.3	80.8	80 - 120	494.8	0.736	20	O

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: **R405904 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS22040081-05MSD** Units: **mg/L** Analysis Date: **06-Apr-2022 23:53**

Client ID: **MW-63** Run ID: **ICS-Integrion_405904** SeqNo: **6584958** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	561	10.0	200	376.3	92.4	80 - 120	463.8	19	20	
Sulfate	701	10.0	200	532	84.5	80 - 120	628.2	10.9	20	

The following samples were analyzed in this batch:

HS22040081-01	HS22040081-02	HS22040081-03	HS22040081-04
HS22040081-05	HS22040081-06	HS22040081-07	HS22040081-08
HS22040081-09	HS22040081-10	HS22040081-11	HS22040081-12
HS22040081-13	HS22040081-14	HS22040081-15	HS22040081-16
HS22040081-17	HS22040081-18	HS22040081-20	HS22040081-21

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: R405915 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **07-Apr-2022 05:05**
Client ID: Run ID: **ICS-Integrion_405915** SeqNo: **6585273** 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-Apr-2022 05:10**
Client ID: Run ID: **ICS-Integrion_405915** SeqNo: **6585274** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	18.49	0.500	20	0	92.5	90 - 110				
Sulfate	18.55	0.500	20	0	92.8	90 - 110				

MS Sample ID: **HS22040081-19MS** Units: **mg/L** Analysis Date: **07-Apr-2022 03:35**
Client ID: **MW-58** Run ID: **ICS-Integrion_405915** SeqNo: **6585263** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	343.8	0.500	10	342.7	10.3	80 - 120				SEO
Sulfate	122	0.500	10	115	70.4	80 - 120				SEO

MSD Sample ID: **HS22040081-19MSD** Units: **mg/L** Analysis Date: **07-Apr-2022 03:56**
Client ID: **MW-58** Run ID: **ICS-Integrion_405915** SeqNo: **6585266** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	344.4	0.500	10	342.7	17.0	80 - 120	343.8	0.194	20	SEO
Sulfate	122.4	0.500	10	115	74.3	80 - 120	122	0.319	20	SEO

The following samples were analyzed in this batch:

HS22040081-19	HS22040081-22	HS22040081-23	HS22040081-24
HS22040081-25	HS22040081-26	HS22040081-27	HS22040081-28

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: R406044 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-040722** Units: **mg/L** Analysis Date: **07-Apr-2022 15:21**
Client ID: Run ID: **Balance1_406044** SeqNo: **6588416** 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-040722** Units: **mg/L** Analysis Date: **07-Apr-2022 15:21**
Client ID: Run ID: **Balance1_406044** SeqNo: **6588417** 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)	1052	10.0	1000	0	105	85 - 115				

DUP Sample ID: **HS22040081-14DUP** Units: **mg/L** Analysis Date: **07-Apr-2022 15:21**
Client ID: **MW-48** Run ID: **Balance1_406044** SeqNo: **6588409** 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)	1204	10.0					1184	1.68	5	

DUP Sample ID: **HS22040081-05DUP** Units: **mg/L** Analysis Date: **07-Apr-2022 15:21**
Client ID: **MW-63** Run ID: **Balance1_406044** SeqNo: **6588399** 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)	1728	10.0					1708	1.16	5	

The following samples were analyzed in this batch:

HS22040081-01	HS22040081-02	HS22040081-03	HS22040081-04
HS22040081-05	HS22040081-06	HS22040081-07	HS22040081-08
HS22040081-09	HS22040081-10	HS22040081-11	HS22040081-12
HS22040081-13	HS22040081-14	HS22040081-15	HS22040081-16
HS22040081-17	HS22040081-18		

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22040081

QC BATCH REPORT

Batch ID: R406172 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-040822** Units: **mg/L** Analysis Date: **08-Apr-2022 14:31**
Client ID: Run ID: **Balance1_406172** SeqNo: **6591628** 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-040822** Units: **mg/L** Analysis Date: **08-Apr-2022 14:31**
Client ID: Run ID: **Balance1_406172** SeqNo: **6591629** 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)	1050	10.0	1000	0	105	85 - 115				

DUP Sample ID: **HS22040081-19DUP** Units: **mg/L** Analysis Date: **08-Apr-2022 14:31**
Client ID: **MW-58** Run ID: **Balance1_406172** SeqNo: **6591618** 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)	1206	10.0					1176	2.52	5	

DUP Sample ID: **HS22040080-19DUP** Units: **mg/L** Analysis Date: **08-Apr-2022 14:31**
Client ID: Run ID: **Balance1_406172** SeqNo: **6591609** 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)	1376	10.0					1352	1.76	5	

The following samples were analyzed in this batch:

HS22040081-19	HS22040081-20	HS22040081-21	HS22040081-22
HS22040081-23	HS22040081-24	HS22040081-25	HS22040081-26
HS22040081-27	HS22040081-28		

Client:	TRC Corporation	**QUALIFIERS, ACRONYMS, UNITS**
Project:	WA Parish - CCR Program	
WorkOrder:	**HS22040081**	

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
Florida	E87611-34	30-Jun-2022
Illinois	2000322021-7	09-May-2022
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2021-2022	30-Jun-2022
Texas	T104704231-21-28	30-Apr-2022

Sample Receipt Checklist

Work Order ID: HS22040081 **Date/Time Received:** **01-Apr-2022 14:35**

Client Name: TRC-HOU **Received by:** **Desmond Wacasey**

Completed By: /S/ Nelson D. Dusara	02-Apr-2022 14:09	**Reviewed by:** /S/ Corey Grandits	04-Apr-2022 13:41
eSignature	Date/Time	eSignature	Date/Time

Matrices: **Water** 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?	☑	☐	4 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:262956/955/954/953
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):	0.6/1.1,0.8/1.3 UC/C	IR 31
Cooler(s)/Kit(s):	48604,48467	
Date/Time sample(s) sent to storage:	04/02/2022 08:45	

	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:

Chain of Custody Form

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
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

Page 1 of 4

COC ID: 262956

ALS Project Manager:
ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	478259.0000.0000 Phase	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	

HS22040081
TRC Corporation
NRG 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-39R	4-1-22	915	Water	2,8	3	X	X	X								
2	MW-40		1225	Water	2,8	3	X	X	X								
3	MW-41		1055	Water	2,8	3	X	X	X								
4	MW-62		830	Water	2,8	3	X	X	X								
5	MW-63		1000	Water	2,8	3	X	X	X								
6	MW-64		1140	Water	2,8	3	X	X	X								
7	MW-23R		1145	Water	2,8	3	X	X	X								
8	MW-28D		1150	Water	2,8	3	X	X	X								
9	MW-42		1105	Water	2,8	3	X	X	X								
10	MW-43		1225	Water	2,8	3	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: Alex Musolla	Date: 4/1/22	Time: 1435	Received by:
Relinquished by:	Date: 4/1/22	Time: 1435	Received by (Laboratory): DW
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 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.

Privileged and Confidential

Cincinnati, OH +1 513 733 5336
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Chain of Custody Form

Page 2 of 4

COC ID: 262955

ALS Project Manager: ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	478259.0000.0000 Phase	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	

HS22040081
TRC Corporation
NRG 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	4-1-22	915	Water	2,8	3	X	X	X								
2	MW-46R		835	Water	2,8	3	X	X	X								
3	MW-47		900	Water	2,8	3	X	X	X								
4	MW-48		950	Water	2,8	3	X	X	X								
5	MW-50		1305	Water	2,8	3	X	X	X								
6	MW-52		1245	Water	2,8	3	X	X	X								
7	MW-54		1040	Water	2,8	3	X	X	X								
8	MW-55R		1230	Water	2,8	3	X	X	X								
9	MW-58		1005	Water	2,8	3	X	X	X								
10	MW-65		1130	Water	2,8	3	X	X	X								

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

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: Alex Musella	Date: 4/1/22	Time: 1435	Received by:
Relinquished by:	Date: 4/1/22	Time: 1435	Received by (Laboratory): DW
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 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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South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information	
Purchase Order	478259.0000.0000 Phase	Project Name	WA Parish CCR Program
Work Order		Project Number	
Company Name	TRC Corporation	Bill To Company	TRC Corporation
Send Report To	Lori Burris	Invoice Attn	A/P
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079
Phone	(713) 244-1000	Phone	(713) 244-1000
Fax	(713) 244-1099	Fax	(713) 244-1099
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com

Parameter/Method Request for Analysis

A	ICP_TW (B and Ca)- Appendix III
B	300_W (Cl, SO4)- Appendix III
C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
D	TDS_W 2540C (TDS)- Appendix III
E	
F	
G	
H	
I	
J	

HS22040081
TRC Corporation
NRG 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	4-1-22	840	Water	2,8	3	X	X	X								
2	MW-37	↓	1055	Water	2,8	3	X	X	X								
3	MW-38R		1015	Water	2,8	3	X	X	X								
4	MW-60		810	Water	2,8	3	X	X	X								
5	MW-61		925	Water	2,8	3	X	X	X								
6	MW-63 MS		1000	Water	2,8	3	X	X	X								
7	MW-63 MSD		1000	Water	2,8	3	X	X	X								
8	MW-58 MS		1005	Water	2,8	3	X	X	X								
9	MW-58 MSD		1005	Water	2,8	3	X	X	X								
10	Field Blank 1	↓	935	Water	2,8	3	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: Alex Musella	Date: 4/1/22	Time: 1435	Received by:
Relinquished by:	Date: 4/1/22	Time: 1435	Received by (Laboratory): DW
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 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

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COC ID: 262953

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	478259.0000.0000 Phase	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	HS22040081 TRC Corporation NRG 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	4-1-22	1200	Water	2,8	3	X	X	X								
2	Field Duplicate 2	↓	900	Water	2,8	3	X	X	X								
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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: Alex Musella Date: 4/1/22 Time: 1435 Received by:

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Relinquished by: Date: 4/1/22 Time: 1435 Received by (Laboratory): DW

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

CUSTODY SEAL

Date: 4-1-22	Time: 1400	Seal Broken By:	DW
Name: B. Hillin		Date:	4/1/22
Company: HMT			

Privileged and Confidential

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

Date
Nam
Com

CUSTODY SEAL

: 4-1-22 Time: 1400
e: B. Hillin
pany: HmI

Seal Broken By: Dl

Date: 4/1/22

13-Apr-2022

Corey Grandits
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS22040081** Work Order: **22040311**

Dear Corey,

ALS Environmental received 28 samples on 05-Apr-2022 08:30 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 45.

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,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

Client:	ALS Environmental
Project:	HS22040081
Work Order:	22040311

TRRP Laboratory Data Package Cover Page

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

This signature page, the laboratory case narrative, 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) for each analyte for each method and matrix;
R10 Other problems or anomalies:
See Case Narrative.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached Case Narrative and QC Summaries. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified, and no information affecting the quality of the data has been knowingly withheld.

Chad Whelton

Chad Whelton
Project Manager

WET CHEMISTRY DATA ASSESSMENT CHECKLIST

Wet Chemistry	Batch Number: TITRATOR1_220408A, TITRATOR1_220413A	Instrument ID: Titration	
Method: FL_4500C_W	Work order Number (s): 22040311		
Analyst Name: KC/JB	Date 4/13/22	Reviewer Name: JB/RM	Date: 4/13/22

	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	No exceptions

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: HS22040081
Work Order: **22040311**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
22040311-01	MW-39R	Water	HS22040081-01	4/1/2022 09:15	4/5/2022 08:30	☐
22040311-02	MW-40	Water	HS22040081-02	4/1/2022 12:25	4/5/2022 08:30	☐
22040311-03	MW-41	Water	HS22040081-03	4/1/2022 10:55	4/5/2022 08:30	☐
22040311-04	MW-62	Water	HS22040081-04	4/1/2022 08:30	4/5/2022 08:30	☐
22040311-05	MW-63	Water	HS22040081-05	4/1/2022 10:00	4/5/2022 08:30	☐
22040311-06	MW-64	Water	HS22040081-06	4/1/2022 11:40	4/5/2022 08:30	☐
22040311-07	MW-23R	Water	HS22040081-07	4/1/2022 11:45	4/5/2022 08:30	☐
22040311-08	MW-28D	Water	HS22040081-08	4/1/2022 11:50	4/5/2022 08:30	☐
22040311-09	MW-42	Water	HS22040081-09	4/1/2022 11:05	4/5/2022 08:30	☐
22040311-10	MW-43	Water	HS22040081-10	4/1/2022 12:25	4/5/2022 08:30	☐
22040311-11	MW-44	Water	HS22040081-11	4/1/2022 09:15	4/5/2022 08:30	☐
22040311-12	MW-46R	Water	HS22040081-12	4/1/2022 08:35	4/5/2022 08:30	☐
22040311-13	MW-47	Water	HS22040081-13	4/1/2022 09:00	4/5/2022 08:30	☐
22040311-14	MW-48	Water	HS22040081-14	4/1/2022 09:50	4/5/2022 08:30	☐
22040311-15	MW-50	Water	HS22040081-15	4/1/2022 13:05	4/5/2022 08:30	☐
22040311-16	MW-52	Water	HS22040081-16	4/1/2022 12:45	4/5/2022 08:30	☐
22040311-17	MW-54	Water	HS22040081-17	4/1/2022 10:40	4/5/2022 08:30	☐
22040311-18	MW-55R	Water	HS22040081-18	4/1/2022 12:30	4/5/2022 08:30	☐
22040311-19	MW-58	Water	HS22040081-19	4/1/2022 10:05	4/5/2022 08:30	☐
22040311-20	MW-65	Water	HS22040081-20	4/1/2022 11:30	4/5/2022 08:30	☐
22040311-21	MW-36	Water	HS22040081-21	4/1/2022 08:40	4/5/2022 08:30	☐
22040311-22	MW-37	Water	HS22040081-22	4/1/2022 10:55	4/5/2022 08:30	☐
22040311-23	MW-38R	Water	HS22040081-23	4/1/2022 10:15	4/5/2022 08:30	☐
22040311-24	MW-60	Water	HS22040081-24	4/1/2022 08:10	4/5/2022 08:30	☐
22040311-25	MW-61	Water	HS22040081-25	4/1/2022 09:25	4/5/2022 08:30	☐
22040311-26	Field Blank 1	Water	HS22040081-26	4/1/2022 09:35	4/5/2022 08:30	☐
22040311-27	Field Duplicate 1	Water	HS22040081-27	4/1/2022 12:00	4/5/2022 08:30	☐
22040311-28	Field Duplicate 2	Water	HS22040081-28	4/1/2022 09:00	4/5/2022 08:30	☐

Client:	ALS Environmental
Project:	HS22040081
Work Order:	22040311

Case Narrative

Samples for the above noted Work Order were received on 04/05/2022. 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 other deviations or anomalies were noted.

Client:	ALS Environmental
Project:	HS22040081
WorkOrder:	**22040311**

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

Work Order: 22040311
Client: ALS Environmental
Project: HS22040081

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R341784	**Test Name:** Fluoride					
22040311-01 ^	MW-39R	Water	4/1/2022 9:15:00 AM			4/8/2022 12:07 PM
22040311-02 ^	MW-40		4/1/2022 12:25:00 PM			4/8/2022 12:07 PM
22040311-03 ^	MW-41		4/1/2022 10:55:00 AM			4/8/2022 12:07 PM
22040311-04 ^	MW-62		4/1/2022 8:30:00 AM			4/8/2022 12:07 PM
22040311-05 ^	MW-63		4/1/2022 10:00:00 AM			4/8/2022 12:07 PM
22040311-06 ^	MW-64		4/1/2022 11:40:00 AM			4/8/2022 12:07 PM
22040311-07 ^	MW-23R		4/1/2022 11:45:00 AM			4/8/2022 12:07 PM
22040311-08 ^	MW-28D		4/1/2022 11:50:00 AM			4/8/2022 12:07 PM

Work Order: 22040311
Client: ALS Environmental
Project: HS22040081

DATES REPORT

Batch ID R342054 **Test Name:** Fluoride

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
22040311-09 ^	MW-42	Water	4/1/2022 11:05:00 AM			4/13/2022 11:30 AM
22040311-10 ^	MW-43		4/1/2022 12:25:00 PM			4/13/2022 11:30 AM
22040311-11 ^	MW-44		4/1/2022 9:15:00 AM			4/13/2022 11:30 AM
22040311-12 ^	MW-46R		4/1/2022 8:35:00 AM			4/13/2022 11:30 AM
22040311-13 ^	MW-47		4/1/2022 9:00:00 AM			4/13/2022 11:30 AM
22040311-14 ^	MW-48		4/1/2022 9:50:00 AM			4/13/2022 11:30 AM
22040311-15 ^	MW-50		4/1/2022 1:05:00 PM			4/13/2022 11:30 AM
22040311-16 ^	MW-52		4/1/2022 12:45:00 PM			4/13/2022 11:30 AM
22040311-17 ^	MW-54		4/1/2022 10:40:00 AM			4/13/2022 11:30 AM
22040311-18 ^	MW-55R		4/1/2022 12:30:00 PM			4/13/2022 11:30 AM
22040311-19 ^	MW-58		4/1/2022 10:05:00 AM			4/13/2022 11:30 AM
22040311-20 ^	MW-65		4/1/2022 11:30:00 AM			4/13/2022 11:30 AM
22040311-21 ^	MW-36		4/1/2022 8:40:00 AM			4/13/2022 11:30 AM
22040311-22 ^	MW-37		4/1/2022 10:55:00 AM			4/13/2022 11:30 AM
22040311-23 ^	MW-38R		4/1/2022 10:15:00 AM			4/13/2022 11:30 AM
22040311-24 ^	MW-60		4/1/2022 8:10:00 AM			4/13/2022 11:30 AM
22040311-25 ^	MW-61		4/1/2022 9:25:00 AM			4/13/2022 11:30 AM
22040311-26 ^	Field Blank 1		4/1/2022 9:35:00 AM			4/13/2022 11:30 AM
22040311-27 ^	Field Duplicate 1		4/1/2022 12:00:00 PM			4/13/2022 11:30 AM
22040311-28 ^	Field Duplicate 2		4/1/2022 9:00:00 AM			4/13/2022 11:30 AM

ALS Group, USA

Date: *13-Apr-22*

Client:	ALS Environmental		
Project:	HS22040081	**Work Order:**	22040311
Sample ID:	MW-39R	**Lab ID:**	22040311-01
Collection Date:	4/1/2022 09:15 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **KNC**
Fluoride	U		0.058	0.10	mg/L	1	4/8/2022 12:07

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-40
Collection Date: 4/1/2022 12:25 PM

Work Order: 22040311
Lab ID: 22040311-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **KNC**
Fluoride	U		0.058	0.10	mg/L	1	4/8/2022 12:07

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-41
Collection Date: 4/1/2022 10:55 AM

Work Order: 22040311
Lab ID: 22040311-03
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **KNC**
Fluoride	U		0.058	0.10	mg/L	1	4/8/2022 12:07

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-62
Collection Date: 4/1/2022 08:30 AM

Work Order: 22040311
Lab ID: 22040311-04
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **KNC**
Fluoride	U		0.058	0.10	mg/L	1	4/8/2022 12:07

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

Client:	ALS Environmental		
Project:	HS22040081	**Work Order:**	22040311
Sample ID:	MW-63	**Lab ID:**	22040311-05
Collection Date:	4/1/2022 10:00 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **KNC**
Fluoride	U		0.058	0.10	mg/L	1	4/8/2022 12:07

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

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-64
Collection Date: 4/1/2022 11:40 AM

Work Order: 22040311
Lab ID: 22040311-06
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **KNC**
Fluoride	**0.070**	J	**0.058**	**0.10**	**mg/L**	1	4/8/2022 12:07

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-23R
Collection Date: 4/1/2022 11:45 AM

Work Order: 22040311
Lab ID: 22040311-07
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **KNC**
Fluoride	**0.10**		**0.058**	**0.10**	**mg/L**	1	4/8/2022 12:07

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-28D
Collection Date: 4/1/2022 11:50 AM

Work Order: 22040311
Lab ID: 22040311-08
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **KNC**
Fluoride	**0.090**	J	**0.058**	**0.10**	**mg/L**	1	4/8/2022 12:07

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-42
Collection Date: 4/1/2022 11:05 AM

Work Order: 22040311
Lab ID: 22040311-09
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.61**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-43
Collection Date: 4/1/2022 12:25 PM

Work Order: 22040311
Lab ID: 22040311-10
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.65**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-44
Collection Date: 4/1/2022 09:15 AM

Work Order: 22040311
Lab ID: 22040311-11
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.41**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

Date: *13-Apr-22*

Client:	ALS Environmental		
Project:	HS22040081	**Work Order:**	22040311
Sample ID:	MW-46R	**Lab ID:**	22040311-12
Collection Date:	4/1/2022 08:35 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.36**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-47
Collection Date: 4/1/2022 09:00 AM

Work Order: 22040311
Lab ID: 22040311-13
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.38**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-48
Collection Date: 4/1/2022 09:50 AM

Work Order: 22040311
Lab ID: 22040311-14
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.73**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-50
Collection Date: 4/1/2022 01:05 PM

Work Order: 22040311
Lab ID: 22040311-15
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.47**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-52
Collection Date: 4/1/2022 12:45 PM

Work Order: 22040311
Lab ID: 22040311-16
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.53**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-54
Collection Date: 4/1/2022 10:40 AM

Work Order: 22040311
Lab ID: 22040311-17
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.51**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

Client:	ALS Environmental		
Project:	HS22040081	**Work Order:**	22040311
Sample ID:	MW-55R	**Lab ID:**	22040311-18
Collection Date:	4/1/2022 12:30 PM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.73**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-58
Collection Date: 4/1/2022 10:05 AM

Work Order: 22040311
Lab ID: 22040311-19
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.47**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-65
Collection Date: 4/1/2022 11:30 AM

Work Order: 22040311
Lab ID: 22040311-20
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.37**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-36
Collection Date: 4/1/2022 08:40 AM

Work Order: 22040311
Lab ID: 22040311-21
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.42**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-37
Collection Date: 4/1/2022 10:55 AM

Work Order: 22040311
Lab ID: 22040311-22
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.32**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client:	ALS Environmental		
Project:	HS22040081	**Work Order:**	22040311
Sample ID:	MW-38R	**Lab ID:**	22040311-23
Collection Date:	4/1/2022 10:15 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **JB**
Fluoride	**0.21**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client:	ALS Environmental		
Project:	HS22040081	**Work Order:**	22040311
Sample ID:	MW-60	**Lab ID:**	22040311-24
Collection Date:	4/1/2022 08:10 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.15**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

Client: ALS Environmental
Project: HS22040081
Sample ID: MW-61
Collection Date: 4/1/2022 09:25 AM

Work Order: 22040311
Lab ID: 22040311-25
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.33**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: Field Blank 1
Collection Date: 4/1/2022 09:35 AM

Work Order: 22040311
Lab ID: 22040311-26
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	U		0.058	0.10	mg/L	1	4/13/2022 11:30

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

ALS Group, USA

Date: *13-Apr-22*

Client: ALS Environmental
Project: HS22040081
Sample ID: Field Duplicate 1
Collection Date: 4/1/2022 12:00 PM

Work Order: 22040311
Lab ID: 22040311-27
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.44**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

Client: ALS Environmental
Project: HS22040081
Sample ID: Field Duplicate 2
Collection Date: 4/1/2022 09:00 AM

Work Order: 22040311
Lab ID: 22040311-28
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **JB**
Fluoride	**0.47**		**0.058**	**0.10**	**mg/L**	1	4/13/2022 11:30

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

ALS Group, USA

Date: 13-Apr-22

WorkOrder: 22040311
InstrumentID: Titrator 1
Test Code: FL_4500C_W
Test Number: A4500-F C-11
Test Name: Fluoride

METHOD DETECTION / REPORTING LIMITS

Matrix: Water **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	Unadjusted MQL
A	Fluoride	16984-48-8	0.08	0.08	0.058	0.10

Client: ALS Environmental
Work Order: 22040311
Project: HS22040081

QC BATCH REPORT

Batch ID: **R341784** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R341784-R341784** Units: **mg/L** Analysis Date: **4/8/2022 12:07 PM**
Client ID: Run ID: **TITRATOR 1_220408A** SeqNo: **8312199** 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-R341784-R341784** Units: **mg/L** Analysis Date: **4/8/2022 12:07 PM**
Client ID: Run ID: **TITRATOR 1_220408A** SeqNo: **8312200** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5	0.10	5	0	100	80-120	0			

MS Sample ID: **22040215-01B MS** Units: **mg/L** Analysis Date: **4/8/2022 12:07 PM**
Client ID: Run ID: **TITRATOR 1_220408A** SeqNo: **8312202** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.85	0.10	5	0.94	98.2	75-125	0			

MS Sample ID: **22040311-05AMS** Units: **mg/L** Analysis Date: **4/8/2022 12:07 PM**
Client ID: **MW-63** Run ID: **TITRATOR 1_220408A** SeqNo: **8312220** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.33	0.10	5	0.01	106	75-125	0			

MSD Sample ID: **22040215-01B MSD** Units: **mg/L** Analysis Date: **4/8/2022 12:07 PM**
Client ID: Run ID: **TITRATOR 1_220408A** SeqNo: **8312203** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.85	0.10	5	0.94	98.2	75-125	5.85	0	20	

MSD Sample ID: **22040311-05AMSD** Units: **mg/L** Analysis Date: **4/8/2022 12:07 PM**
Client ID: **MW-63** Run ID: **TITRATOR 1_220408A** SeqNo: **8312221** 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	0.01	106	75-125	5.33	0.376	20	

The following samples were analyzed in this batch:

22040311-01A	22040311-02A	22040311-03A
22040311-04A	22040311-05A	22040311-06A
22040311-07A	22040311-08A	

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

Client: ALS Environmental
Work Order: 22040311
Project: HS22040081

QC BATCH REPORT

Batch ID: **R342054** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R342054-R342054** Units: **mg/L** Analysis Date: **4/13/2022 11:30 AM**
Client ID: Run ID: **TITRATOR 1_220413A** SeqNo: **8321885** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	0.058	0.10								J

LCS Sample ID: **LCS-R342054-R342054** Units: **mg/L** Analysis Date: **4/13/2022 11:30 AM**
Client ID: Run ID: **TITRATOR 1_220413A** SeqNo: **8321886** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.854	0.10	5	0	97.1	80-120	0			

MS Sample ID: **22040311-19AMS** Units: **mg/L** Analysis Date: **4/13/2022 11:30 AM**
Client ID: **MW-58** Run ID: **TITRATOR 1_220413A** SeqNo: **8321898** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.612	0.10	5	0.468	103	75-125	0			

MS Sample ID: **22040311-21A MS** Units: **mg/L** Analysis Date: **4/13/2022 11:30 AM**
Client ID: **MW-36** Run ID: **TITRATOR 1_220413A** SeqNo: **8321902** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.323	0.10	5	0.425	98	75-125	0			

MSD Sample ID: **22040311-19AMSD** Units: **mg/L** Analysis Date: **4/13/2022 11:30 AM**
Client ID: **MW-58** Run ID: **TITRATOR 1_220413A** SeqNo: **8321899** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	6.24	0.10	5	0.468	115	75-125	5.612	10.6	20	

MSD Sample ID: **22040311-21A MSD** Units: **mg/L** Analysis Date: **4/13/2022 11:30 AM**
Client ID: **MW-36** Run ID: **TITRATOR 1_220413A** SeqNo: **8321903** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.533	0.10	5	0.425	102	75-125	5.323	3.87	20	

The following samples were analyzed in this batch:

22040311-09A	22040311-10A	22040311-11A
22040311-12A	22040311-13A	22040311-14A
22040311-15A	22040311-16A	22040311-17A
22040311-18A	22040311-19A	22040311-20A
22040311-21A	22040311-22A	22040311-23A
22040311-24A	22040311-25A	22040311-26A
22040311-27A	22040311-28A	

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

22040311
ALS - HOUSTON: ALS Environmental
Project: HS22040081

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:** 18475

SUBCONTRACT TO:

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

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: Corey Grandits
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: Corey.Grandits@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: HS22040081
TSR: Ron Martino

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS22040081-01**	**MW-39R**	**Water**	**01 Apr 2022 09:15**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
2.	**HS22040081-02**	**MW-40**	**Water**	**01 Apr 2022 12:25**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
3.	**HS22040081-03**	**MW-41**	**Water**	**01 Apr 2022 10:55**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
4.	**HS22040081-04**	**MW-62**	**Water**	**01 Apr 2022 08:30**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
MS/MSD 5.	**HS22040081-05**	**MW-63**	**Water**	**01 Apr 2022 10:00**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
6.	**HS22040081-06**	**MW-64**	**Water**	**01 Apr 2022 11:40**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
7.	**HS22040081-07**	**MW-23R**	**Water**	**01 Apr 2022 11:45**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
8.	**HS22040081-08**	**MW-28D**	**Water**	**01 Apr 2022 11:50**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
9.	**HS22040081-09**	**MW-42**	**Water**	**01 Apr 2022 11:05**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 18475**

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
10.	**HS22040081-10**	**MW-43**	**Water**	**01 Apr 2022 12:25**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
11.	**HS22040081-11**	**MW-44**	**Water**	**01 Apr 2022 09:15**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
12.	**HS22040081-12**	**MW-46R**	**Water**	**01 Apr 2022 08:35**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
13.	**HS22040081-13**	**MW-47**	**Water**	**01 Apr 2022 09:00**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
14.	**HS22040081-14**	**MW-48**	**Water**	**01 Apr 2022 09:50**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
15.	**HS22040081-15**	**MW-50**	**Water**	**01 Apr 2022 13:05**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
16.	**HS22040081-16**	**MW-52**	**Water**	**01 Apr 2022 12:45**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
17.	**HS22040081-17**	**MW-54**	**Water**	**01 Apr 2022 10:40**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
18.	**HS22040081-18**	**MW-55R**	**Water**	**01 Apr 2022 12:30**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
MS/MSD **19.**	**HS22040081-19**	**MW-58**	**Water**	**01 Apr 2022 10:05**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
20.	**HS22040081-20**	**MW-65**	**Water**	**01 Apr 2022 11:30**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
21.	**HS22040081-21**	**MW-36**	**Water**	**01 Apr 2022 08:40**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
22.	**HS22040081-22**	**MW-37**	**Water**	**01 Apr 2022 10:55**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
23.	**HS22040081-23**	**MW-38R**	**Water**	**01 Apr 2022 10:15**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
24.	**HS22040081-24**	**MW-60**	**Water**	**01 Apr 2022 08:10**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID: 18475**

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
25.	**HS22040081-25**	**MW-61**	**Water**	**01 Apr 2022 09:25**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
26.	**HS22040081-26**	**Field Blank 1**	**Water**	**01 Apr 2022 09:35**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
27.	**HS22040081-27**	**Field Duplicate 1**	**Water**	**01 Apr 2022 12:00**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022
28.	**HS22040081-28**	**Field Duplicate 2**	**Water**	**01 Apr 2022 09:00**
	Fluoride by ISE 4500. TRC Equis EDD			12 Apr 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS22040081-05-MS/MSD
HS22040081-19-MS/MSD

Batch client samples together, only 1 MS/MSD per batch

QC Level: TRRP LRC (TRRP checklist only+Level II (normal))

Relinquished By:	NA	Date/Time:	4.4.22 18.00
Received By:	FedEx	Date/Time:	4/5/22 0830
Cooler ID(s):		Temperature(s):	IR1 4.8°C pH/32

ALS Group, USA

Sample Receipt Checklist

Client Name: **ALS - HOUSTON**
Date/Time Received: **05-Apr-22 08:30**

Work Order: **22040311**
Received by: **LYS**

Checklist completed by	Lydia Sweet	05-Apr-22	Reviewed by:	Chad Whelton	08-Apr-22
	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): 4.8/4.8C IR1

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 4/5/2022 4:25:35 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:

Privileged and Confidential

SRC Page 1 of 1

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

May 27, 2022

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

Work Order: **HS22050955**

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

Dear Lori Burris,

ALS Environmental received 6 sample(s) on May 20, 2022 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

Corey Grandits
Project Manager

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Parish - CCR Re-sample	
WorkOrder:	**HS22050955**	

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
Project:	NRG Parish - CCR Re-sample
WorkOrder:	**HS22050955**

TRRP Laboratory Data Package Cover Page

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.

Corey Grandits
Project Manager

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 05/27/2022				
Project Name: NRG Parish - CCR Re-sample			Laboratory Job Number: HS22050955				
Reviewer Name: Corey Grandits			Prep Batch Number(s): 179158,R409392,R409436,R409483				

#[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				
		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: 05/27/2022
Project Name: NRG Parish - CCR Re-sample	Laboratory Job Number: HS22050955
Reviewer Name: Corey Grandits	Prep Batch Number(s): 179158,R409392,R409436,R409483

#[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			2
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: 05/27/2022
Project Name: NRG Parish - CCR Re-sample	Laboratory Job Number: HS22050955
Reviewer Name: Corey Grandits	Prep Batch Number(s): 179158,R409392,R409436,R409483

ER#[5]	Description
1	Batch 179158, Metals Method SW6020, sample HS22050876-07, MS and MSD were performed on unrelated sample. Batch R409392, Anions Method E300, sample MW-63, MS and MSD recovered outside the control limit for Chloride and Sulfated, however, the result in the parent sample is greater than 4x the spike amount. Batch R409483, Anions Method E300, sample HS22051195-01/HS22051174-01, MS and MSD were performed on unrelated sample.
2	See Run Log and CCB Exceptions 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).

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955
Start Date: 25-May-2022 End Date: 26-May-2022

Run ID:ICPMS06_409331
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	25-May-2022 11:46	023_ICV.d	B CA NA
ICB	1	25-May-2022 11:48	024_ICB.d	B CA NA
LLICV2	1	25-May-2022 11:50	025LCV2.d	B CA NA
LLICV5	1	25-May-2022 11:51	026LCV5.d	B CA NA
ICSA	1	25-May-2022 11:54	027ICSA.d	B CA NA
ICSAB	1	25-May-2022 11:56	028ICSB.d	B CA NA
CCV 1	1	25-May-2022 12:10	030_CCV.d	B CA NA
CCB 1	1	25-May-2022 12:12	031_CCB.d	B CA NA
CCV 2	1	25-May-2022 12:34	042_CCV.d	B CA NA
CCB 2	1	25-May-2022 12:36	043_CCB.d	B CA NA
CCV 3	1	25-May-2022 12:57	054_CCV.d	B CA NA
CCB 3	1	25-May-2022 12:59	055_CCB.d	B CA NA
CCV 4	1	25-May-2022 13:53	066_CCV.d	B CA NA
CCB 4	1	25-May-2022 13:55	067_CCB.d	B CA NA
CCV 5	1	25-May-2022 15:01	090_CCV.d	B CA NA
CCB 5	1	25-May-2022 15:02	091_CCB.d	B CA NA
CCV 6	1	25-May-2022 15:50	105_CCV.d	B CA NA
CCB 6	1	25-May-2022 15:52	106_CCB.d	B CA NA
CCV 7	1	25-May-2022 16:19	117_CCV.d	B CA NA
CCB 7	1	25-May-2022 16:21	118_CCB.d	B CA NA
CCV 8	1	25-May-2022 16:44	129_CCV.d	B CA NA
CCB 8	1	25-May-2022 16:46	130_CCB.d	B CA NA
CCV 9	1	25-May-2022 17:07	141_CCV.d	B CA NA
CCB 9	1	25-May-2022 17:09	142_CCB.d	B CA NA
CCV 10	1	25-May-2022 21:58	230_CCV.d	B CA NA
CCB 10	1	25-May-2022 22:00	231_CCB.d	B CA NA
CCV 11	1	25-May-2022 22:20	241_CCV.d	B CA NA
CCB 11	1	25-May-2022 22:21	242_CCB.d	B CA NA
CCV 12	1	25-May-2022 22:41	252_CCV.d	B CA NA
CCB 12	1	25-May-2022 22:43	253_CCB.d	B CA NA
MBLK-179158	1	25-May-2022 22:45	254SMPL.d	B CA NA
LCS-179158	1	25-May-2022 22:47	255SMPL.d	B CA NA
ZZZZZZSD	5	25-May-2022 22:51	257SMPL.d	B NA
ZZZZZZMS	1	25-May-2022 22:53	258SMPL.d	B CA NA
ZZZZZZMSD	1	25-May-2022 22:55	259SMPL.d	B CA NA
ZZZZZZPDS	1	25-May-2022 22:57	260SMPL.d	B NA
CCV 13	1	25-May-2022 22:59	261_CCV.d	B CA NA
CCB 13	1	25-May-2022 23:01	262_CCB.d	B CA NA
CCV 14	1	25-May-2022 23:23	273_CCV.d	B CA NA
CCB 14	1	25-May-2022 23:25	274_CCB.d	B CA NA
CCV 15	1	25-May-2022 23:42	277_CCV.d	B CA NA
ICCV 16	1	26-May-2022 00:01	287_ICV.d	B CA NA
ICCB 15	1	26-May-2022 00:03	288_ICB.d	B CA NA
LLICCV2	1	26-May-2022 00:05	289LCV2.d	B CA NA
LLICCV5	1	26-May-2022 00:07	290LCV5.d	B CA NA
ICSA	1	26-May-2022 00:09	291ICSA.d	B CA NA
ICSAB	1	26-May-2022 00:11	292ICSB.d	B CA NA
CCV 17	1	26-May-2022 00:17	295_CCV.d	B CA NA
CCB 16	1	26-May-2022 00:19	296_CCB.d	B CA NA
MW-63	10	26-May-2022 00:25	299SMPL.d	CA NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955
Start Date: 25-May-2022 End Date: 26-May-2022

Run ID:ICPMS06_409331
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
MW-37	10	26-May-2022 00:27	300SMPL.d	B NA
MW-38R	10	26-May-2022 00:29	301SMPL.d	B NA
MW-61	10	26-May-2022 00:31	302SMPL.d	B NA
MW-23R	10	26-May-2022 00:33	303SMPL.d	CA
CCV 18	1	26-May-2022 00:37	305_CCV.d	B CA NA
CCB 17	1	26-May-2022 00:39	306_CCB.d	B CA NA
CCV 19	1	26-May-2022 00:55	314_CCV.d	B CA NA
CCB 18	1	26-May-2022 00:56	315_CCB.d	B CA NA
CCV 20	1	26-May-2022 01:18	326_CCV.d	B CA NA
CCB 19	1	26-May-2022 01:20	327_CCB.d	B CA NA
CCV 21	1	26-May-2022 01:41	338_CCV.d	B CA NA
CCB 20	1	26-May-2022 01:43	339_CCB.d	B CA NA
CCV 22	1	26-May-2022 01:47	341_CCV.d	B CA NA
CCB 21	1	26-May-2022 01:49	342_CCB.d	B CA NA
LLCCV2	1	26-May-2022 01:53	344LCV2.d	B CA NA
LLCCV5	1	26-May-2022 01:55	345LCV5.d	B CA NA
ICSA	1	26-May-2022 01:57	346ICSA.d	B CA NA
ICSAB	1	26-May-2022 01:59	347ICSB.d	B CA NA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

Run ID:ICPMS06_409331
Instrument:ICPMS06
Method:SW6020A

ICB	Date: 25-May-2022 11:48	Seq: 6663310	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.44	11	20	
CCB 2	Date: 25-May-2022 12:36	Seq: 6663475	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12	11	20	
CCB 4	Date: 25-May-2022 13:55	Seq: 6663537	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	278.1	11	20	
Sodium	28.17	14	200	
CCB 5	Date: 25-May-2022 15:02	Seq: 6663762	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	34.68	11	20	
CCB 6	Date: 25-May-2022 15:52	Seq: 6663770	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	20.48	11	20	
Sodium	22.33	14	200	
CCB 7	Date: 25-May-2022 16:21	Seq: 6663782	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	19.31	11	20	
Sodium	23.97	14	200	
CCB 8	Date: 25-May-2022 16:46	Seq: 6663856	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	18.97	11	20	
Sodium	47.01	14	200	
CCB 9	Date: 25-May-2022 17:09	Seq: 6663981	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	18.49	11	20	
Sodium	26.51	14	200	
CCB 10	Date: 25-May-2022 22:00	Seq: 6664746	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	29.74	11	20	
Sodium	58.14	14	200	
CCB 11	Date: 25-May-2022 22:21	Seq: 6664757	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	23.27	11	20	
Sodium	20.92	14	200	
CCB 12	Date: 25-May-2022 22:43	Seq: 6664768	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.86	11	20	
CCB 13	Date: 25-May-2022 23:01	Seq: 6664778	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

Run ID:ICPMS06_409331
Instrument:ICPMS06
Method:SW6020A

	Boron	15.94	11	20

CCB 14	Date: 25-May-2022 23:25	Seq: 6664790	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Boron	11.16	11	20

ICCB 15	Date: 26-May-2022 00:03	Seq: 6664803	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Sodium	-17.88	14	200

CCB 16	Date: 26-May-2022 00:19	Seq: 6664811	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Sodium	-20.46	14	200

CCB 17	Date: 26-May-2022 00:39	Seq: 6664821	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Sodium	-20.21	14	200

CCB 18	Date: 26-May-2022 00:56	Seq: 6664861	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Calcium	59.69	34	500
	Sodium	-34.62	14	200

CCB 19	Date: 26-May-2022 01:20	Seq: 6664832	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Calcium	94.92	34	500
	Sodium	-22.18	14	200

CCB 20	Date: 26-May-2022 01:43	Seq: 6664844	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Sodium	-50.46	14	200

CCB 21	Date: 26-May-2022 01:49	Seq: 6664847	D/F: 1	Units: ug/L
	Analyte	**Result**	**MDL**	**Report Limit**
	Sodium	-46.1	14	200

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
Work Order: HS22050955

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22050955-01	MW-63	Water		20-May-2022 08:55	20-May-2022 11:08	☐
HS22050955-02	MW-37	Water		20-May-2022 09:45	20-May-2022 11:08	☐
HS22050955-03	MW-38R	Water		20-May-2022 08:00	20-May-2022 11:08	☐
HS22050955-04	MW-61	Water		20-May-2022 08:15	20-May-2022 11:08	☐
HS22050955-05	MW-23R	Water		20-May-2022 10:10	20-May-2022 11:08	☐
HS22050955-06	MW-28D	Water		20-May-2022 09:30	20-May-2022 11:08	☐

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-sample		WorkOrder:HS22050955
Sample ID:	MW-63		Lab ID:HS22050955-01
Collection Date:	20-May-2022 08:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 24-May-2022		Analyst: JHD
Calcium	**287**		**0.340**	**5.00**	**mg/L**	10	26-May-2022 00:25
Sodium	**196**		**0.140**	**2.00**	**mg/L**	10	26-May-2022 00:25
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Chloride	**329**		**2.00**	**5.00**	**mg/L**	10	25-May-2022 18:12
Sulfate	**490**		**2.00**	**5.00**	**mg/L**	10	25-May-2022 18:12

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

Client:	TRC Corporation	**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-sample	WorkOrder:HS22050955
Sample ID:	MW-37	Lab ID:HS22050955-02
Collection Date:	20-May-2022 09:45	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 24-May-2022		Analyst: JHD
Boron	**0.366**		**0.110**	**0.200**	**mg/L**	10	26-May-2022 00:27
Sodium	**318**		**0.140**	**2.00**	**mg/L**	10	26-May-2022 00:27
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Sulfate	**716**		**4.00**	**10.0**	**mg/L**	20	25-May-2022 18:17
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,840**		**5.00**	**10.0**	**mg/L**	1	25-May-2022 16:21

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-sample		WorkOrder:HS22050955
Sample ID:	MW-38R		Lab ID:HS22050955-03
Collection Date:	20-May-2022 08:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 24-May-2022		Analyst: JHD
Boron	**0.412**		**0.110**	**0.200**	**mg/L**	10	26-May-2022 00:29
Sodium	**231**		**0.140**	**2.00**	**mg/L**	10	26-May-2022 00:29
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Sulfate	**531**		**10.0**	**25.0**	**mg/L**	50	26-May-2022 12:42

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG Parish - CCR Re-sample		WorkOrder:HS22050955
Sample ID:	MW-61		Lab ID:HS22050955-04
Collection Date:	20-May-2022 08:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 24-May-2022		Analyst: JHD
Boron	**1.32**		**0.110**	**0.200**	**mg/L**	10	26-May-2022 00:31
Sodium	**290**		**0.140**	**2.00**	**mg/L**	10	26-May-2022 00:31
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Sulfate	**958**		**4.00**	**10.0**	**mg/L**	20	25-May-2022 18:27
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,850**		**5.00**	**10.0**	**mg/L**	1	25-May-2022 16:21

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

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	NRG Parish - CCR Re-sample	WorkOrder:HS22050955
Sample ID:	MW-23R	Lab ID:HS22050955-05
Collection Date:	20-May-2022 10:10	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 24-May-2022		Analyst: JHD
Calcium	**509**		**0.340**	**5.00**	**mg/L**	10	26-May-2022 00:33
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Sulfate	**1,220**		**4.00**	**10.0**	**mg/L**	20	25-May-2022 19:04
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**4,070**		**5.00**	**10.0**	**mg/L**	1	25-May-2022 16:21

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

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	NRG Parish - CCR Re-sample	WorkOrder:HS22050955
Sample ID:	MW-28D	Lab ID:HS22050955-06
Collection Date:	20-May-2022 09:30	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: YP
Sulfate	**89.2**		**0.200**	**0.500**	**mg/L**	1	25-May-2022 19:10

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: HS22050955

Batch ID: 179158 **Start Date:** 24 May 2022 10:00 **End Date:** 24 May 2022 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22050955-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22050955-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22050955-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22050955-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22050955-05		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 179158 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS22050955-01	MW-63	20 May 2022 08:55		24 May 2022 10:00	26 May 2022 00:25	10
HS22050955-02	MW-37	20 May 2022 09:45		24 May 2022 10:00	26 May 2022 00:27	10
HS22050955-03	MW-38R	20 May 2022 08:00		24 May 2022 10:00	26 May 2022 00:29	10
HS22050955-04	MW-61	20 May 2022 08:15		24 May 2022 10:00	26 May 2022 00:31	10
HS22050955-05	MW-23R	20 May 2022 10:10		24 May 2022 10:00	26 May 2022 00:33	10
Batch ID: R409392 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS22050955-01	MW-63	20 May 2022 08:55			25 May 2022 18:12	10
HS22050955-02	MW-37	20 May 2022 09:45			25 May 2022 18:17	20
HS22050955-04	MW-61	20 May 2022 08:15			25 May 2022 18:27	20
HS22050955-05	MW-23R	20 May 2022 10:10			25 May 2022 19:04	20
HS22050955-06	MW-28D	20 May 2022 09:30			25 May 2022 19:10	1
Batch ID: R409436 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS22050955-02	MW-37	20 May 2022 09:45			25 May 2022 16:21	1
HS22050955-04	MW-61	20 May 2022 08:15			25 May 2022 16:21	1
HS22050955-05	MW-23R	20 May 2022 10:10			25 May 2022 16:21	1
Batch ID: R409483 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS22050955-03	MW-38R	20 May 2022 08:00			26 May 2022 12:42	50

WorkOrder: HS22050955
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	0.0106	0.0110	0.0200
A	Calcium	7440-70-2	0.0500	0.0394	0.0340	0.500
A	Sodium	7440-23-5	0.0500	0.0338	0.0140	0.200

WorkOrder: HS22050955
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	0.531	0.200	0.500
A	Sulfate	14808-79-8	0.500	0.518	0.200	0.500

WorkOrder:	HS22050955
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	12.0	5.00	10.0

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

QC BATCH REPORT

Batch ID: 179158 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-179158** Units: **mg/L** Analysis Date: **25-May-2022 22:45**
Client ID: Run ID: **ICPMS06_409331** SeqNo: **6664770** PrepDate: **24-May-2022** 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								
Sodium	< 0.0140	0.200								

LCS Sample ID: **LCS-179158** Units: **mg/L** Analysis Date: **25-May-2022 22:47**
Client ID: Run ID: **ICPMS06_409331** SeqNo: **6664771** PrepDate: **24-May-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4758	0.0200	0.5	0	95.2	80 - 120				
Calcium	4.746	0.500	5	0	94.9	80 - 120				
Sodium	4.751	0.200	5	0	95.0	80 - 120				

MS Sample ID: **HS22050876-07MS** Units: **mg/L** Analysis Date: **25-May-2022 22:53**
Client ID: Run ID: **ICPMS06_409331** SeqNo: **6664774** PrepDate: **24-May-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4902	0.0200	0.5	0.0241	93.2	80 - 120				
Calcium	197.9	0.500	5	188.8	183	80 - 120				SEO
Sodium	9.835	0.200	5	4.865	99.4	80 - 120				

MSD Sample ID: **HS22050876-07MSD** Units: **mg/L** Analysis Date: **25-May-2022 22:55**
Client ID: Run ID: **ICPMS06_409331** SeqNo: **6664775** PrepDate: **24-May-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4778	0.0200	0.5	0.0241	90.7	80 - 120	0.4902	2.56	20	
Calcium	192.3	0.500	5	188.8	70.3	80 - 120	197.9	2.88	20	SEO
Sodium	9.588	0.200	5	4.865	94.4	80 - 120	9.835	2.55	20	

PDS Sample ID: **HS22050876-07PDS** Units: **mg/L** Analysis Date: **25-May-2022 22:57**
Client ID: Run ID: **ICPMS06_409331** SeqNo: **6664776** PrepDate: **24-May-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5059	0.0200	0.5	0.0241	96.4	75 - 125				
Sodium	16.35	0.200	10	4.865	115	75 - 125				

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

QC BATCH REPORT

Batch ID: 179158 (0) **Instrument:** ICPMS06 **Method:** ICP-MS METALS BY SW6020A

PDS Sample ID: **HS22050876-07PDS** Units: **mg/L** Analysis Date: **26-May-2022 13:42**
Client ID: Run ID: **ICPMS06_409429** SeqNo: **6665622** PrepDate: **24-May-2022** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	382.7	10.0	200	182.8	99.9	75 - 125				

SD Sample ID: **HS22050876-07SD** Units: **mg/L** Analysis Date: **25-May-2022 22:51**
Client ID: Run ID: **ICPMS06_409331** SeqNo: **6664773** PrepDate: **24-May-2022** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.06842	0.100					0.0241	0	10	J
Sodium	4.741	1.00					4.865	2.55	10	

SD Sample ID: **HS22050876-07SD** Units: **mg/L** Analysis Date: **26-May-2022 13:40**
Client ID: Run ID: **ICPMS06_409429** SeqNo: **6665621** PrepDate: **24-May-2022** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	199.9	50.0					182.8	9.36	10	

The following samples were analyzed in this batch: HS22050955-01 HS22050955-02 HS22050955-03 HS22050955-04 HS22050955-05

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

QC BATCH REPORT

Batch ID: R409392 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **25-May-2022 12:24**
Client ID: Run ID: **ICS-Integrion_409392** SeqNo: **6664598** 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: **25-May-2022 12:29**
Client ID: Run ID: **ICS-Integrion_409392** SeqNo: **6664647** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.18	0.500	20	0	101	90 - 110				
Sulfate	19.99	0.500	20	0	99.9	90 - 110				

LCSD Sample ID: **LCSD** Units: **mg/L** Analysis Date: **25-May-2022 12:34**
Client ID: Run ID: **ICS-Integrion_409392** SeqNo: **6664653** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.23	0.500	20	0	101	90 - 110	20.18	0.208	20	
Sulfate	20.02	0.500	20	0	100	90 - 110	19.99	0.172	20	

MS Sample ID: **HS22051124-01MS** Units: **mg/L** Analysis Date: **25-May-2022 19:20**
Client ID: Run ID: **ICS-Integrion_409392** SeqNo: **6664638** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.08	0.500	10	9.312	108	80 - 120				
Sulfate	59.43	0.500	10	49.79	96.5	80 - 120				O

MS Sample ID: **HS22051080-01MS** Units: **mg/L** Analysis Date: **25-May-2022 13:01**
Client ID: Run ID: **ICS-Integrion_409392** SeqNo: **6664603** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	38.62	0.500	10	28.29	103	80 - 120				
Sulfate	17.54	0.500	10	6.957	106	80 - 120				

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

QC BATCH REPORT

Batch ID: R409392 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MS Sample ID: **HS22050955-01MS** Units: **mg/L** Analysis Date: **25-May-2022 18:01**
Client ID: **MW-63** Run ID: **ICS-Integrion_409392** SeqNo: **6664627** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	330.7	0.500	10	325.4	53.5	80 - 120				SEO
Sulfate	469	0.500	10	465.5	35.2	80 - 120				SEO

MSD Sample ID: **HS22051124-01MSD** Units: **mg/L** Analysis Date: **25-May-2022 19:25**
Client ID: Run ID: **ICS-Integrion_409392** SeqNo: **6664639** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.98	0.500	10	9.312	107	80 - 120	20.08	0.474	20	
Sulfate	59.1	0.500	10	49.79	93.2	80 - 120	59.43	0.561	20	O

MSD Sample ID: **HS22051080-01MSD** Units: **mg/L** Analysis Date: **25-May-2022 13:06**
Client ID: Run ID: **ICS-Integrion_409392** SeqNo: **6664604** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	38.63	0.500	10	28.29	103	80 - 120	38.62	0.00777	20	
Sulfate	17.58	0.500	10	6.957	106	80 - 120	17.54	0.229	20	

MSD Sample ID: **HS22050955-01MSD** Units: **mg/L** Analysis Date: **25-May-2022 18:06**
Client ID: **MW-63** Run ID: **ICS-Integrion_409392** SeqNo: **6664628** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	329.7	0.500	10	325.4	43.9	80 - 120	330.7	0.288	20	SEO
Sulfate	467.7	0.500	10	465.5	21.5	80 - 120	469	0.291	20	SEO

The following samples were analyzed in this batch: HS22050955-01 HS22050955-02 HS22050955-04 HS22050955-05 HS22050955-06

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

QC BATCH REPORT

Batch ID: R409436 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-052522** Units: **mg/L** Analysis Date: **25-May-2022 16:21**
Client ID: Run ID: **Balance1_409436** SeqNo: **6665771** 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-052522** Units: **mg/L** Analysis Date: **25-May-2022 16:21**
Client ID: Run ID: **Balance1_409436** SeqNo: **6665772** 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)	1000	10.0	1000	0	100.0	85 - 115				

DUP Sample ID: **HS22050934-03DUP** Units: **mg/L** Analysis Date: **25-May-2022 16:21**
Client ID: Run ID: **Balance1_409436** SeqNo: **6665761** 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)	1090	10.0					1092	0.183	5	

DUP Sample ID: **HS22050929-02DUP** Units: **mg/L** Analysis Date: **25-May-2022 16:21**
Client ID: Run ID: **Balance1_409436** SeqNo: **6665759** 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)	1702	10.0					1696	0.353	5	

The following samples were analyzed in this batch: HS22050955-02 HS22050955-04 HS22050955-05

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

QC BATCH REPORT

Batch ID: R409483 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **26-May-2022 10:24**
Client ID: Run ID: **ICS-Integrion_409483** SeqNo: **6666862** PrepDate: DF: **1**

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

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **26-May-2022 10:29**
Client ID: Run ID: **ICS-Integrion_409483** SeqNo: **6666863** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	20.27	0.500	20	0	101	90 - 110				

LCSD Sample ID: **LCSD** Units: **mg/L** Analysis Date: **26-May-2022 10:34**
Client ID: Run ID: **ICS-Integrion_409483** SeqNo: **6666864** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	20.34	0.500	20	0	102	90 - 110	20.27	0.381	20	

MS Sample ID: **HS22051195-01MS** Units: **mg/L** Analysis Date: **26-May-2022 15:41**
Client ID: Run ID: **ICS-Integrion_409483** SeqNo: **6666883** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	240.2	0.500	10	235.6	46.2	80 - 120				SEO

MS Sample ID: **HS22051174-01MS** Units: **mg/L** Analysis Date: **26-May-2022 13:08**
Client ID: Run ID: **ICS-Integrion_409483** SeqNo: **6666870** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	271.4	0.500	10	268.1	32.1	80 - 120				SEO

MSD Sample ID: **HS22051195-01MSD** Units: **mg/L** Analysis Date: **26-May-2022 15:46**
Client ID: Run ID: **ICS-Integrion_409483** SeqNo: **6666884** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	240	0.500	10	235.6	44.6	80 - 120	240.2	0.0692	20	SEO

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

QC BATCH REPORT

Batch ID: **R409483 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS22051174-01MSD** Units: **mg/L** Analysis Date: **26-May-2022 13:13**

Client ID: Run ID: **ICS-Integrion_409483** SeqNo: **6666871** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	271.9	0.500	10	268.1	37.5	80 - 120	271.4	0.198	20	SEO

The following samples were analyzed in this batch: HS22050955-03

Client: TRC Corporation
Project: NRG Parish - CCR Re-sample
WorkOrder: HS22050955

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
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-34	30-Jun-2022
Illinois	2000322022-9	09-May-2023
Kansas	E-10352 2021-2022	31-Jul-2022
Louisiana	03087, 2021-2022	30-Jun-2022
Maryland	343, 2021-2022	30-Jun-2022
North Carolina	624-2022	31-Dec-2022
Oklahoma	2021-080	31-Aug-2022
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932021-12	30-Jul-2022

Sample Receipt Checklist

Work Order ID:	HS22050955	**Date/Time Received:**	**20-May-2022 11:08**
Client Name:	TRC-HOU	**Received by:**	**Pablo Marinez**

Completed By: /S/ Corey Grandits (eSignature) 20-May-2022 15:54 (Date/Time)

Reviewed by: /S/ Corey Grandits (eSignature) 23-May-2022 11:42 (Date/Time)

Matrices: **W** Carrier name: **Client**

	Yes	No	Not Present
Shipping container/cooler in good condition?	☑	☐	☐
Custody seals intact on shipping container/cooler?	☑	☐	☐
Custody seals intact on sample bottles?	☐	☐	☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐	☐	☑
Chain of custody present?	☑	☐	1 Page(s)
Chain of custody signed when relinquished and received?	☑	☐	COC IDs:269937
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):	0.5uc/1.0c	IR31
Cooler(s)/Kit(s):	48876	
Date/Time sample(s) sent to storage:	5/20/2022	

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

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 1

COC ID: 269937

HS22050955

TRC Corporation

NRG Parish - CCR Re-sample

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	179965	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 & Sodium)
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-63	5-20-22	855	Water	2,8	2	X				X						
2	MW-37	↓	945	Water	2,8	2		X	X			X					
3	MW-38R		800	Water	2,8	2		X				X					
4	MW-61		815	Water	2,8	2		X	X			X					
5	MW-23R		1010	Water	2,8	2		X	X	X							
6	MW-28D		930	Water	8	1		X									
7																	
8																	
9																	
10																	

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: 5-20-22	Time: 1108	Received by:
Relinquished by:	Date: 5-20-22	Time: 1108	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG WA Parish - State Program

Cooler ID	Cooler Temp.
48876	U/C 0.9/1.0
	IR# 51

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.

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

48876

CUSTODY SEAL

Date: 5-20-22 Time: 1030
Name: B. Hillin
Company: HMI

Seal Broken By: SM
Date: 05/20/22

48876 MAY 20 2022

Appendix B
Detection Monitoring Data (October 2022)

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

October 17, 2022

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

Work Order: **HS22100158**

Laboratory Results for: **WA Parish - CCR Program**

Dear Lori Burris,

ALS Environmental received 28 sample(s) on Oct 04, 2022 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:	**HS22100158**	

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.

ALS Houston, US Date: 17-Oct-22

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	WA Parish - CCR Program	
WorkOrder:	**HS22100158**	

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: 10/17/2022
Project Name: WA Parish - CCR Program	Laboratory Job Number: HS22100158
Reviewer Name: Andy Neir	Prep Batch Number(s): 184533,184594,R418695,R418735,R419120,R419121,R419526

#[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 effects 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: 10/17/2022				
Project Name: WA Parish - CCR Program			Laboratory Job Number: HS22100158				
Reviewer Name: Andy Neir			Prep Batch Number(s): 184533,184594,R418695,R418735,R419120,R419121,R419526				
#[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: 10/17/2022
Project Name: WA Parish - CCR Program	Laboratory Job Number: HS22100158
Reviewer Name: Andy Neir	Prep Batch Number(s): 184533,184594,R418695,R418735,R419120,R419121,R419526

ER#[5]	Description
1	Batch 184533, Calcium Method SW6020, sample MW-63, MS and MSD recovered outside the control limit for Calcium, however, the result in the parent sample is grater than 4x the spike amount. Batch 184594, Metals Method SW6020, sample MW-58, MS and MSD recovered outside the control limit for Calcium, however, the result in the parent sample is greater than 4x the spike amount. Batch R418695, Anions Method E300, sample MW-63, MS and or MSD recovered outside the control limit for Sulfate, however, the result in the parent sample is greater than 4x the spike amount. Batch R418695, Anions Method E300, sample HS22100133-01, MS and MSD were performed on unrelated sample Batch R418735, Anions Method E300, sample HS22100159-02, 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
3	See Run Log and CCB Exceptions Report.
4	Batch 184594, Metals Method SW6020, sample MW-58, PDS recovered outside the control limit however, the result in the parent sample is greater than 4x the spike amount.

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: HS22100158
Start Date: 10-Oct-2022 End Date: 10-Oct-2022

Run ID:ICPMS07_419024
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
LLICV2	1	10-Oct-2022 13:56	016LCV2.d	B CA
LLICV5	1	10-Oct-2022 13:58	017LCV5.d	B CA
ICB	1	10-Oct-2022 14:00	018_ICB.d	B CA
ICV	1	10-Oct-2022 14:10	020_ICV.d	B CA
ICSA	1	10-Oct-2022 14:19	021ICSA.d	B CA
ICSAB	1	10-Oct-2022 14:21	022ICSB.d	B CA
CCV 1	1	10-Oct-2022 14:34	024_CCV.d	B CA
CCB 1	1	10-Oct-2022 14:36	025_CCB.d	B CA
CCV 2	1	10-Oct-2022 15:13	036_CCV.d	B CA
CCB 2	1	10-Oct-2022 15:15	037_CCB.d	B CA
CCV 3	1	10-Oct-2022 15:45	048_CCV.d	B CA
CCB 3	1	10-Oct-2022 15:47	049_CCB.d	B CA
CCV 4	1	10-Oct-2022 16:11	060_CCV.d	B CA
CCB 4	1	10-Oct-2022 16:13	061_CCB.d	B CA
CCV 5	1	10-Oct-2022 16:40	072_CCV.d	B CA
CCB 5	1	10-Oct-2022 16:42	073_CCB.d	B CA
CCV 6	1	10-Oct-2022 17:03	083_CCV.d	B CA
CCB 6	1	10-Oct-2022 17:04	084_CCB.d	B CA
CCB 7	1	10-Oct-2022 17:07	085_CCB.d	B CA
MBLK-184533	1	10-Oct-2022 17:09	086SMPL.d	B CA
LCS-184533	1	10-Oct-2022 17:11	087SMPL.d	B CA
MW-63	1	10-Oct-2022 17:13	088SMPL.d	B
MW-63MS	1	10-Oct-2022 17:16	090SMPL.d	B CA
MW-63MSD	1	10-Oct-2022 17:18	091SMPL.d	B CA
MW-63PDS	1	10-Oct-2022 17:20	092SMPL.d	B
MW-39R	1	10-Oct-2022 17:22	093SMPL.d	B
MW-40	1	10-Oct-2022 17:24	094SMPL.d	B
CCV 7	1	10-Oct-2022 17:30	096_CCV.d	B CA
CCB 8	1	10-Oct-2022 17:31	097_CCB.d	B CA
MW-41	1	10-Oct-2022 17:33	098SMPL.d	B
MW-62	1	10-Oct-2022 17:35	099SMPL.d	B
MW-64	1	10-Oct-2022 17:37	100SMPL.d	B
MW-23R	1	10-Oct-2022 17:39	101SMPL.d	B
MW-28D	1	10-Oct-2022 17:43	103SMPL.d	B CA
MW-42	1	10-Oct-2022 17:45	104SMPL.d	B CA
MW-43	1	10-Oct-2022 17:46	105SMPL.d	B CA
MW-44	1	10-Oct-2022 17:48	106SMPL.d	B CA
CCV 8	1	10-Oct-2022 17:52	108_CCV.d	B CA
CCB 9	1	10-Oct-2022 17:54	109_CCB.d	B CA
MW-46R	1	10-Oct-2022 17:56	110SMPL.d	B CA
MW-47	1	10-Oct-2022 17:58	111SMPL.d	B CA
MW-48	1	10-Oct-2022 17:59	112SMPL.d	B CA
MW-50	1	10-Oct-2022 18:01	113SMPL.d	B CA
MW-52	1	10-Oct-2022 18:03	114SMPL.d	B
MW-54	1	10-Oct-2022 18:05	115SMPL.d	B CA
MW-55R	1	10-Oct-2022 18:07	116SMPL.d	B CA
MW-65	1	10-Oct-2022 18:09	117SMPL.d	B
MW-36	1	10-Oct-2022 18:11	118SMPL.d	B
CCV 9	1	10-Oct-2022 18:14	120_CCV.d	B CA
CCB 10	1	10-Oct-2022 18:16	121_CCB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158
Start Date: 10-Oct-2022 End Date: 10-Oct-2022

Run ID:ICPMS07_419024
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCV 10	1	10-Oct-2022 19:08	128_CCV.d	B CA
CCB 11	1	10-Oct-2022 19:10	129_CCB.d	B CA
CCV 11	1	10-Oct-2022 19:25	137_CCV.d	B CA
CCB 12	1	10-Oct-2022 19:26	138_CCB.d	B CA
CCB 13	1	10-Oct-2022 19:49	150_CCB.d	B CA
CCV 12	1	10-Oct-2022 20:03	153_CCV.d	B CA
CCV 13	1	10-Oct-2022 20:16	160_CCV.d	B CA
CCB 14	1	10-Oct-2022 20:18	161_CCB.d	B CA
MBLK-184594	1	10-Oct-2022 20:20	162SMPL.d	B CA
LCS-184594	1	10-Oct-2022 20:22	163SMPL.d	B CA
MW-58	1	10-Oct-2022 20:24	164SMPL.d	B CA
MW-58SD	5	10-Oct-2022 20:26	165SMPL.d	B CA
MW-58MS	1	10-Oct-2022 20:28	166SMPL.d	B CA
MW-58MSD	1	10-Oct-2022 20:30	167SMPL.d	B CA
MW-58PDS	1	10-Oct-2022 20:31	168SMPL.d	CA
CCV 14	1	10-Oct-2022 20:35	170_CCV.d	B CA
CCB 15	1	10-Oct-2022 20:37	171_CCB.d	B CA
MW-37	1	10-Oct-2022 20:39	172SMPL.d	B
MW-38R	1	10-Oct-2022 20:41	173SMPL.d	B
MW-60	1	10-Oct-2022 20:43	174SMPL.d	B
Field Blank-01	1	10-Oct-2022 20:47	176SMPL.d	B CA
Field Duplicate 1	1	10-Oct-2022 20:48	177SMPL.d	B
Field Duplicate 2	1	10-Oct-2022 20:50	178SMPL.d	B CA
CCV 15	1	10-Oct-2022 20:54	180_CCV.d	B CA
CCB 16	1	10-Oct-2022 20:56	181_CCB.d	B CA
CCB 17	1	10-Oct-2022 21:13	190_CCB.d	B CA
CCV 16	1	10-Oct-2022 21:39	192_CCV.d	B CA
CCV 17	1	10-Oct-2022 21:58	200_CCV.d	B CA
CCB 18	1	10-Oct-2022 21:59	201_CCB.d	B CA
CCB 19	1	10-Oct-2022 22:18	211_CCB.d	B CA
CCV 18	1	10-Oct-2022 22:31	214_CCV.d	B CA
CCV 19	1	10-Oct-2022 22:49	221_CCV.d	B CA
CCB 20	1	10-Oct-2022 22:51	222_CCB.d	B CA
CCV 20	1	10-Oct-2022 23:04	229_CCV.d	B CA
CCB 21	1	10-Oct-2022 23:06	230_CCB.d	B CA
CCV 21	1	10-Oct-2022 23:25	239_CCV.d	B CA
CCB 22	1	10-Oct-2022 23:27	240_CCB.d	B CA
LLCCV2	1	10-Oct-2022 23:31	242LCV2.d	B CA
LLCCV5	1	10-Oct-2022 23:33	243LCV5.d	B CA
ICSA	1	10-Oct-2022 23:35	244ICSA.d	B CA
ICSAB	1	10-Oct-2022 23:37	245ICSB.d	B CA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158
Start Date: 11-Oct-2022 End Date: 11-Oct-2022

Run ID:ICPMS07_419110
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
LLICV2	1	11-Oct-2022 12:03	016LCV2.d	B CA
LLICV5	1	11-Oct-2022 12:05	017LCV5.d	B CA
ICB	1	11-Oct-2022 12:07	018_ICB.d	B CA
ICV	1	11-Oct-2022 12:09	019_ICV.d	B CA
ICSA	1	11-Oct-2022 12:11	020ICSA.d	B CA
ICSAB	1	11-Oct-2022 12:13	021ICSB.d	B CA
CCV 1	1	11-Oct-2022 12:19	024_CCV.d	B CA
CCB 1	1	11-Oct-2022 12:21	025_CCB.d	B CA
MW-63	20	11-Oct-2022 12:28	028SMPL.d	CA
MW-63SD	100	11-Oct-2022 12:30	029SMPL.d	CA
MW-63PDS	20	11-Oct-2022 12:32	030SMPL.d	CA
MW-39R	20	11-Oct-2022 12:34	031SMPL.d	CA
MW-40	20	11-Oct-2022 12:36	032SMPL.d	CA
MW-41	20	11-Oct-2022 12:38	033SMPL.d	CA
MW-62	20	11-Oct-2022 12:40	034SMPL.d	CA
CCV 2	1	11-Oct-2022 12:44	036_CCV.d	B CA
CCB 2	1	11-Oct-2022 12:45	037_CCB.d	B CA
MW-64	20	11-Oct-2022 12:47	038SMPL.d	CA
MW-23R	20	11-Oct-2022 12:49	039SMPL.d	CA
MW-52	20	11-Oct-2022 12:51	040SMPL.d	CA
MW-65	20	11-Oct-2022 12:53	041SMPL.d	CA
MW-36	20	11-Oct-2022 12:55	042SMPL.d	CA
MW-58SD	100	11-Oct-2022 12:59	044SMPL.d	
MW-58PDS	20	11-Oct-2022 13:00	045SMPL.d	
MW-37	20	11-Oct-2022 13:02	046SMPL.d	CA
MW-38R	20	11-Oct-2022 13:04	047SMPL.d	CA
CCV 3	1	11-Oct-2022 13:06	048_CCV.d	B CA
CCB 3	1	11-Oct-2022 13:08	049_CCB.d	B CA
MW-60	20	11-Oct-2022 13:33	056SMPL.d	CA
MW-61	2	11-Oct-2022 13:35	057SMPL.d	B CA
Field Duplicate 1	20	11-Oct-2022 13:36	058SMPL.d	CA
CCV 4	1	11-Oct-2022 13:40	060_CCV.d	B CA
CCB 4	1	11-Oct-2022 13:42	061_CCB.d	B CA
CCV 5	1	11-Oct-2022 14:19	072_CCV.d	B CA
CCB 5	1	11-Oct-2022 14:21	073_CCB.d	B CA
CCB 6	1	11-Oct-2022 15:06	087_CCB.d	B CA
CCV 6	1	11-Oct-2022 15:16	089_CCV.d	B CA
CCB 7	1	11-Oct-2022 15:42	101_CCB.d	B CA
CCV 7	1	11-Oct-2022 15:48	102_CCV.d	B CA
CCB 8	1	11-Oct-2022 16:20	114_CCB.d	B CA
CCV 8	1	11-Oct-2022 16:25	115_CCV.d	B CA
CCV 9	1	11-Oct-2022 16:51	126_CCV.d	B CA
CCB 9	1	11-Oct-2022 16:53	127_CCB.d	B CA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

Run ID:ICPMS07_419024
Instrument:ICPMS07
Method:SW6020A

CCB	Date	Seq	D/F	Units	Analyte	Result	MDL	Report Limit
CCB 6	10-Oct-2022 17:04	6910766	1	ug/L	Boron	24.26	11	20
CCB 8	10-Oct-2022 17:31	6910868	1	ug/L	Boron	23.31	11	20
CCB 9	10-Oct-2022 17:54	6910880	1	ug/L	Boron	21.69	11	20
CCB 10	10-Oct-2022 18:16	6910892	1	ug/L	Boron	21.76	11	20
CCB 12	10-Oct-2022 19:26	6910963	1	ug/L	Boron	15.83	11	20
CCB 13	10-Oct-2022 19:49	6910975	1	ug/L	Boron	13.26	11	20
CCB 14	10-Oct-2022 20:18	6910985	1	ug/L	Boron	11.86	11	20
CCB 15	10-Oct-2022 20:37	6911027	1	ug/L	Boron	26.12	11	20
CCB 16	10-Oct-2022 20:56	6911037	1	ug/L	Boron	21.79	11	20
CCB 17	10-Oct-2022 21:13	6911046	1	ug/L	Boron	63.72	11	20
CCB 18	10-Oct-2022 21:59	6911068	1	ug/L	Boron	27.41	11	20
CCB 19	10-Oct-2022 22:18	6911078	1	ug/L	Boron	65.24	11	20
CCB 20	10-Oct-2022 22:51	6911137	1	ug/L	Boron	58.34	11	20
CCB 21	10-Oct-2022 23:06	6911145	1	ug/L				

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

Run ID:ICPMS07_419024
Instrument:ICPMS07
Method:SW6020A

	Analyte	Result	MDL	Report Limit
	Boron	41.91	11	20

CCB 22 Date: 10-Oct-2022 23:27 Seq: 6911155 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	37.92	11	20

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

Run ID:ICPMS07_419110
Instrument:ICPMS07
Method:SW6020A

CCB 1 Date: 11-Oct-2022 12:21 Seq: 6912700 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	18.34	11	20

CCB 2 Date: 11-Oct-2022 12:45 Seq: 6912712 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	14.61	11	20

CCB 3 Date: 11-Oct-2022 13:08 Seq: 6912724 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	14.84	11	20

CCB 4 Date: 11-Oct-2022 13:42 Seq: 6912799 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	120.8	11	20

CCB 5 Date: 11-Oct-2022 14:21 Seq: 6912811 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	72.12	11	20

CCB 6 Date: 11-Oct-2022 15:06 Seq: 6912936 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	52.88	11	20

CCB 7 Date: 11-Oct-2022 15:42 Seq: 6912950 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	47.56	11	20

CCB 8 Date: 11-Oct-2022 16:20 Seq: 6913157 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	62.01	11	20

CCB 9 Date: 11-Oct-2022 16:53 Seq: 6913170 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	69.44	11	20

Client: TRC Corporation
Project: WA Parish - CCR Program
Work Order: HS22100158

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22100158-01	MW-39R	Water		04-Oct-2022 09:15	04-Oct-2022 14:20	☐
HS22100158-02	MW-40	Water		04-Oct-2022 12:05	04-Oct-2022 14:20	☐
HS22100158-03	MW-41	Water		04-Oct-2022 10:45	04-Oct-2022 14:20	☐
HS22100158-04	MW-62	Water		04-Oct-2022 08:35	04-Oct-2022 14:20	☐
HS22100158-05	MW-63	Water		04-Oct-2022 09:55	04-Oct-2022 14:20	☐
HS22100158-06	MW-64	Water		04-Oct-2022 11:25	04-Oct-2022 14:20	☐
HS22100158-07	MW-23R	Water		04-Oct-2022 11:45	04-Oct-2022 14:20	☐
HS22100158-08	MW-28D	Water		04-Oct-2022 13:45	04-Oct-2022 14:20	☐
HS22100158-09	MW-42	Water		04-Oct-2022 10:55	04-Oct-2022 14:20	☐
HS22100158-10	MW-43	Water		04-Oct-2022 12:25	04-Oct-2022 14:20	☐
HS22100158-11	MW-44	Water		04-Oct-2022 10:05	04-Oct-2022 14:20	☐
HS22100158-12	MW-46R	Water		04-Oct-2022 08:25	04-Oct-2022 14:20	☐
HS22100158-13	MW-47	Water		04-Oct-2022 11:25	04-Oct-2022 14:20	☐
HS22100158-14	MW-48	Water		04-Oct-2022 10:45	04-Oct-2022 14:20	☐
HS22100158-15	MW-50	Water		04-Oct-2022 12:05	04-Oct-2022 14:20	☐
HS22100158-16	MW-52	Water		04-Oct-2022 12:45	04-Oct-2022 14:20	☐
HS22100158-17	MW-54	Water		04-Oct-2022 08:35	04-Oct-2022 14:20	☐
HS22100158-18	MW-55R	Water		04-Oct-2022 09:25	04-Oct-2022 14:20	☐
HS22100158-19	MW-58	Water		04-Oct-2022 09:15	04-Oct-2022 14:20	☐
HS22100158-20	MW-65	Water		04-Oct-2022 10:05	04-Oct-2022 14:20	☐
HS22100158-21	MW-36	Water		04-Oct-2022 10:35	04-Oct-2022 14:20	☐
HS22100158-22	MW-37	Water		04-Oct-2022 10:00	04-Oct-2022 14:20	☐
HS22100158-23	MW-38R	Water		04-Oct-2022 09:25	04-Oct-2022 14:20	☐
HS22100158-24	MW-60	Water		04-Oct-2022 11:50	04-Oct-2022 14:20	☐
HS22100158-25	MW-61	Water		04-Oct-2022 11:10	04-Oct-2022 14:20	☐
HS22100158-26	Field Blank-01	Water		04-Oct-2022 11:15	04-Oct-2022 14:20	☐

Client: TRC Corporation
Project: WA Parish - CCR Program
Work Order: HS22100158

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22100158-27	Field Duplicate 1	Water		04-Oct-2022 08:00	04-Oct-2022 14:20	☐
HS22100158-28	Field Duplicate 2	Water		04-Oct-2022 09:00	04-Oct-2022 14:20	☐

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-39R		Lab ID:HS22100158-01
Collection Date:	04-Oct-2022 09:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.137**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:22
Calcium	**172**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:34
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**429**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 10:51
Sulfate	**87.9**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2022 10:46
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,470**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-40		Lab ID:HS22100158-02
Collection Date:	04-Oct-2022 12:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.107**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:24
Calcium	**271**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:36
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**461**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 11:01
Sulfate	**121**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 11:01
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,740**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-41		Lab ID:HS22100158-03
Collection Date:	04-Oct-2022 10:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.0840**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:33
Calcium	**171**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:38
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**449**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 11:12
Sulfate	**54.6**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2022 11:07
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,420**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-62		Lab ID:HS22100158-04
Collection Date:	04-Oct-2022 08:35		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.0946**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:35
Calcium	**177**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:40
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**436**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 11:23
Sulfate	**202**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 11:23
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,520**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation	ANALYTICAL REPORT
Project:	WA Parish - CCR Program	WorkOrder:HS22100158
Sample ID:	MW-63	Lab ID:HS22100158-05
Collection Date:	04-Oct-2022 09:55	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.124**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:13
Calcium	**335**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:28
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**331**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 10:03
Sulfate	**581**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 10:03
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,950**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-64		Lab ID:HS22100158-06
Collection Date:	04-Oct-2022 11:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.103**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:37
Calcium	**230**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:47
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**540**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 11:33
Sulfate	**47.8**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2022 11:28
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,990**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-23R		Lab ID:HS22100158-07
Collection Date:	04-Oct-2022 11:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.272**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:39
Calcium	**405**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:49
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**1,010**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2022 12:10
Sulfate	**1,170**		**4.00**	**10.0**	**mg/L**	20	05-Oct-2022 12:10
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**4,200**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-28D		Lab ID:HS22100158-08
Collection Date:	04-Oct-2022 13:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.147**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:43
Calcium	**134**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 17:43
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**216**		**1.00**	**2.50**	**mg/L**	5	05-Oct-2022 12:21
Sulfate	**85.3**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2022 12:16
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**900**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-42		Lab ID:HS22100158-09
Collection Date:	04-Oct-2022 10:55		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.533**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:45
Calcium	**163**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 17:45
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**320**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 12:26
Sulfate	**456**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 12:26
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,660**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-43		Lab ID:HS22100158-10
Collection Date:	04-Oct-2022 12:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.385**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:46
Calcium	**93.3**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 17:46
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**226**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 12:37
Sulfate	**68.4**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2022 12:31
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,000**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-44		Lab ID:HS22100158-11
Collection Date:	04-Oct-2022 10:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.340**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:48
Calcium	**145**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 17:48
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**309**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 12:47
Sulfate	**217**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 12:47
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,340**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-46R		Lab ID:HS22100158-12
Collection Date:	04-Oct-2022 08:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.190**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:56
Calcium	**118**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 17:56
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**162**		**0.400**	**1.00**	**mg/L**	2	05-Oct-2022 12:53
Sulfate	**90.9**		**0.400**	**1.00**	**mg/L**	2	05-Oct-2022 12:53
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**830**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-47		Lab ID:HS22100158-13
Collection Date:	04-Oct-2022 11:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.263**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:58
Calcium	**122**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 17:58
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**298**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 13:30
Sulfate	**73.9**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2022 13:24
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,050**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation	**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program	WorkOrder:HS22100158
Sample ID:	MW-48	Lab ID:HS22100158-14
Collection Date:	04-Oct-2022 10:45	Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.601**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 17:59
Calcium	**78.7**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 17:59
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**362**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 13:40
Sulfate	**89.1**		**0.200**	**0.500**	**mg/L**	1	05-Oct-2022 13:35
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,210**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-50		Lab ID:HS22100158-15
Collection Date:	04-Oct-2022 12:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.318**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 18:01
Calcium	**147**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 18:01
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**386**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 13:51
Sulfate	**119**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 13:51
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,330**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-52		Lab ID:HS22100158-16
Collection Date:	04-Oct-2022 12:45		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.386**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 18:03
Calcium	**192**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:51
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**565**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 13:56
Sulfate	**395**		**2.00**	**5.00**	**mg/L**	10	05-Oct-2022 13:56
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**2,190**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-54		Lab ID:HS22100158-17
Collection Date:	04-Oct-2022 08:35		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.269**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 18:05
Calcium	**93.8**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 18:05
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**242**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:20
Sulfate	**71.7**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:20
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**920**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-55R		Lab ID:HS22100158-18
Collection Date:	04-Oct-2022 09:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.472**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 18:07
Calcium	**116**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 18:07
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**300**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:26
Sulfate	**93.3**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:26
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,100**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-58		Lab ID:HS22100158-19
Collection Date:	04-Oct-2022 09:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**0.530**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 20:24
Calcium	**132**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 20:24
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**314**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:08
Sulfate	**172**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:08
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,200**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-65		Lab ID:HS22100158-20
Collection Date:	04-Oct-2022 10:05		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.373**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 18:09
Calcium	**207**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:53
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**300**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:31
Sulfate	**556**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:31
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,850**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:23
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-36		Lab ID:HS22100158-21
Collection Date:	04-Oct-2022 10:35		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 07-Oct-2022		Analyst: JHD
Boron	**0.0858**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 18:11
Calcium	**237**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 12:55
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**313**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:36
Sulfate	**400**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 08:36
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,560**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-37		Lab ID:HS22100158-22
Collection Date:	04-Oct-2022 10:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**0.363**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 20:39
Calcium	**173**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 13:02
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**260**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:24
Sulfate	**717**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:24
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,930**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-38R		Lab ID:HS22100158-23
Collection Date:	04-Oct-2022 09:25		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**0.440**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 20:41
Calcium	**235**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 13:04
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**242**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:29
Sulfate	**646**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:29
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,740**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-60		Lab ID:HS22100158-24
Collection Date:	04-Oct-2022 11:50		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**0.111**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 20:43
Calcium	**252**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 13:33
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**300**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:34
Sulfate	**254**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:34
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,380**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	MW-61		Lab ID:HS22100158-25
Collection Date:	04-Oct-2022 11:10		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**1.58**		**0.0220**	**0.0400**	**mg/L**	2	11-Oct-2022 13:35
Calcium	**289**		**0.0680**	**1.00**	**mg/L**	2	11-Oct-2022 13:35
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**123**		**0.400**	**1.00**	**mg/L**	2	06-Oct-2022 09:40
Sulfate	**987**		**4.00**	**10.0**	**mg/L**	20	06-Oct-2022 11:04
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**2,010**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	Field Blank-01		Lab ID:HS22100158-26
Collection Date:	04-Oct-2022 11:15		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**0.0434**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 20:47
Calcium	**0.0702**	J	**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 20:47
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	< 0.200		0.200	0.500	mg/L	1	06-Oct-2022 09:45
Sulfate	**0.318**	J	**0.200**	**0.500**	**mg/L**	1	06-Oct-2022 09:45
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	< 5.00		5.00	10.0	mg/L	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	Field Duplicate 1		Lab ID:HS22100158-27
Collection Date:	04-Oct-2022 08:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**0.0779**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 20:48
Calcium	**212**		**0.680**	**10.0**	**mg/L**	20	11-Oct-2022 13:36
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**314**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:50
Sulfate	**402**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:50
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,540**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	WA Parish - CCR Program		WorkOrder:HS22100158
Sample ID:	Field Duplicate 2		Lab ID:HS22100158-28
Collection Date:	04-Oct-2022 09:00		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Oct-2022		Analyst: JHD
Boron	**0.359**		**0.0110**	**0.0200**	**mg/L**	1	10-Oct-2022 20:50
Calcium	**148**		**0.0340**	**0.500**	**mg/L**	1	10-Oct-2022 20:50
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**315**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:56
Sulfate	**223**		**2.00**	**5.00**	**mg/L**	10	06-Oct-2022 09:56
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**1,290**		**5.00**	**10.0**	**mg/L**	1	10-Oct-2022 16:27
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	17-Oct-2022 10:19

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

Weight / Prep Log

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

Batch ID: 184533 **Start Date:** 07 Oct 2022 09:30 **End Date:** 07 Oct 2022 13:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22100158-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-12		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-13		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-14		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-15		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-16		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-17		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-18		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-20		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-21		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 184594 **Start Date:** 10 Oct 2022 10:00 **End Date:** 10 Oct 2022 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22100158-19		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-22		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-23		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-24		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-25		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-26		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-27		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22100158-28		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 184533 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS22100158-01	MW-39R	04 Oct 2022 09:15		07 Oct 2022 09:30	11 Oct 2022 12:34	20
HS22100158-01	MW-39R	04 Oct 2022 09:15		07 Oct 2022 09:30	10 Oct 2022 17:22	1
HS22100158-02	MW-40	04 Oct 2022 12:05		07 Oct 2022 09:30	11 Oct 2022 12:36	20
HS22100158-02	MW-40	04 Oct 2022 12:05		07 Oct 2022 09:30	10 Oct 2022 17:24	1
HS22100158-03	MW-41	04 Oct 2022 10:45		07 Oct 2022 09:30	11 Oct 2022 12:38	20
HS22100158-03	MW-41	04 Oct 2022 10:45		07 Oct 2022 09:30	10 Oct 2022 17:33	1
HS22100158-04	MW-62	04 Oct 2022 08:35		07 Oct 2022 09:30	11 Oct 2022 12:40	20
HS22100158-04	MW-62	04 Oct 2022 08:35		07 Oct 2022 09:30	10 Oct 2022 17:35	1
HS22100158-05	MW-63	04 Oct 2022 09:55		07 Oct 2022 09:30	11 Oct 2022 12:28	20
HS22100158-05	MW-63	04 Oct 2022 09:55		07 Oct 2022 09:30	10 Oct 2022 17:13	1
HS22100158-06	MW-64	04 Oct 2022 11:25		07 Oct 2022 09:30	11 Oct 2022 12:47	20
HS22100158-06	MW-64	04 Oct 2022 11:25		07 Oct 2022 09:30	10 Oct 2022 17:37	1
HS22100158-07	MW-23R	04 Oct 2022 11:45		07 Oct 2022 09:30	11 Oct 2022 12:49	20
HS22100158-07	MW-23R	04 Oct 2022 11:45		07 Oct 2022 09:30	10 Oct 2022 17:39	1
HS22100158-08	MW-28D	04 Oct 2022 13:45		07 Oct 2022 09:30	10 Oct 2022 17:43	1
HS22100158-09	MW-42	04 Oct 2022 10:55		07 Oct 2022 09:30	10 Oct 2022 17:45	1
HS22100158-10	MW-43	04 Oct 2022 12:25		07 Oct 2022 09:30	10 Oct 2022 17:46	1
HS22100158-11	MW-44	04 Oct 2022 10:05		07 Oct 2022 09:30	10 Oct 2022 17:48	1
HS22100158-12	MW-46R	04 Oct 2022 08:25		07 Oct 2022 09:30	10 Oct 2022 17:56	1
HS22100158-13	MW-47	04 Oct 2022 11:25		07 Oct 2022 09:30	10 Oct 2022 17:58	1
HS22100158-14	MW-48	04 Oct 2022 10:45		07 Oct 2022 09:30	10 Oct 2022 17:59	1
HS22100158-15	MW-50	04 Oct 2022 12:05		07 Oct 2022 09:30	10 Oct 2022 18:01	1
HS22100158-16	MW-52	04 Oct 2022 12:45		07 Oct 2022 09:30	11 Oct 2022 12:51	20
HS22100158-16	MW-52	04 Oct 2022 12:45		07 Oct 2022 09:30	10 Oct 2022 18:03	1
HS22100158-17	MW-54	04 Oct 2022 08:35		07 Oct 2022 09:30	10 Oct 2022 18:05	1
HS22100158-18	MW-55R	04 Oct 2022 09:25		07 Oct 2022 09:30	10 Oct 2022 18:07	1
HS22100158-20	MW-65	04 Oct 2022 10:05		07 Oct 2022 09:30	11 Oct 2022 12:53	20
HS22100158-20	MW-65	04 Oct 2022 10:05		07 Oct 2022 09:30	10 Oct 2022 18:09	1
HS22100158-21	MW-36	04 Oct 2022 10:35		07 Oct 2022 09:30	11 Oct 2022 12:55	20
HS22100158-21	MW-36	04 Oct 2022 10:35		07 Oct 2022 09:30	10 Oct 2022 18:11	1

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 184594 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS22100158-19	MW-58	04 Oct 2022 09:15		10 Oct 2022 10:00	10 Oct 2022 20:24	1
HS22100158-22	MW-37	04 Oct 2022 10:00		10 Oct 2022 10:00	11 Oct 2022 13:02	20
HS22100158-22	MW-37	04 Oct 2022 10:00		10 Oct 2022 10:00	10 Oct 2022 20:39	1
HS22100158-23	MW-38R	04 Oct 2022 09:25		10 Oct 2022 10:00	11 Oct 2022 13:04	20
HS22100158-23	MW-38R	04 Oct 2022 09:25		10 Oct 2022 10:00	10 Oct 2022 20:41	1
HS22100158-24	MW-60	04 Oct 2022 11:50		10 Oct 2022 10:00	11 Oct 2022 13:33	20
HS22100158-24	MW-60	04 Oct 2022 11:50		10 Oct 2022 10:00	10 Oct 2022 20:43	1
HS22100158-25	MW-61	04 Oct 2022 11:10		10 Oct 2022 10:00	11 Oct 2022 13:35	2
HS22100158-26	Field Blank-01	04 Oct 2022 11:15		10 Oct 2022 10:00	10 Oct 2022 20:47	1
HS22100158-27	Field Duplicate 1	04 Oct 2022 08:00		10 Oct 2022 10:00	11 Oct 2022 13:36	20
HS22100158-27	Field Duplicate 1	04 Oct 2022 08:00		10 Oct 2022 10:00	10 Oct 2022 20:48	1
HS22100158-28	Field Duplicate 2	04 Oct 2022 09:00		10 Oct 2022 10:00	10 Oct 2022 20:50	1
Batch ID: R418695 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS22100158-01	MW-39R	04 Oct 2022 09:15			05 Oct 2022 10:51	10
HS22100158-01	MW-39R	04 Oct 2022 09:15			05 Oct 2022 10:46	1
HS22100158-02	MW-40	04 Oct 2022 12:05			05 Oct 2022 11:01	10
HS22100158-03	MW-41	04 Oct 2022 10:45			05 Oct 2022 11:12	10
HS22100158-03	MW-41	04 Oct 2022 10:45			05 Oct 2022 11:07	1
HS22100158-04	MW-62	04 Oct 2022 08:35			05 Oct 2022 11:23	10
HS22100158-05	MW-63	04 Oct 2022 09:55			05 Oct 2022 10:03	10
HS22100158-06	MW-64	04 Oct 2022 11:25			05 Oct 2022 11:33	10
HS22100158-06	MW-64	04 Oct 2022 11:25			05 Oct 2022 11:28	1
HS22100158-07	MW-23R	04 Oct 2022 11:45			05 Oct 2022 12:10	20
HS22100158-08	MW-28D	04 Oct 2022 13:45			05 Oct 2022 12:21	5
HS22100158-08	MW-28D	04 Oct 2022 13:45			05 Oct 2022 12:16	1
HS22100158-09	MW-42	04 Oct 2022 10:55			05 Oct 2022 12:26	10
HS22100158-10	MW-43	04 Oct 2022 12:25			05 Oct 2022 12:37	10
HS22100158-10	MW-43	04 Oct 2022 12:25			05 Oct 2022 12:31	1
HS22100158-11	MW-44	04 Oct 2022 10:05			05 Oct 2022 12:47	10
HS22100158-12	MW-46R	04 Oct 2022 08:25			05 Oct 2022 12:53	2
HS22100158-13	MW-47	04 Oct 2022 11:25			05 Oct 2022 13:30	10
HS22100158-13	MW-47	04 Oct 2022 11:25			05 Oct 2022 13:24	1
HS22100158-14	MW-48	04 Oct 2022 10:45			05 Oct 2022 13:40	10
HS22100158-14	MW-48	04 Oct 2022 10:45			05 Oct 2022 13:35	1
HS22100158-15	MW-50	04 Oct 2022 12:05			05 Oct 2022 13:51	10
HS22100158-16	MW-52	04 Oct 2022 12:45			05 Oct 2022 13:56	10

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R418735 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS22100158-17	MW-54	04 Oct 2022 08:35			06 Oct 2022 08:20	10
HS22100158-18	MW-55R	04 Oct 2022 09:25			06 Oct 2022 08:26	10
HS22100158-19	MW-58	04 Oct 2022 09:15			06 Oct 2022 09:08	10
HS22100158-20	MW-65	04 Oct 2022 10:05			06 Oct 2022 08:31	10
HS22100158-21	MW-36	04 Oct 2022 10:35			06 Oct 2022 08:36	10
HS22100158-22	MW-37	04 Oct 2022 10:00			06 Oct 2022 09:24	10
HS22100158-23	MW-38R	04 Oct 2022 09:25			06 Oct 2022 09:29	10
HS22100158-24	MW-60	04 Oct 2022 11:50			06 Oct 2022 09:34	10
HS22100158-25	MW-61	04 Oct 2022 11:10			06 Oct 2022 11:04	20
HS22100158-25	MW-61	04 Oct 2022 11:10			06 Oct 2022 09:40	2
HS22100158-26	Field Blank-01	04 Oct 2022 11:15			06 Oct 2022 09:45	1
HS22100158-27	Field Duplicate 1	04 Oct 2022 08:00			06 Oct 2022 09:50	10
HS22100158-28	Field Duplicate 2	04 Oct 2022 09:00			06 Oct 2022 09:56	10
Batch ID: R419120 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS22100158-01	MW-39R	04 Oct 2022 09:15			10 Oct 2022 16:23	1
HS22100158-02	MW-40	04 Oct 2022 12:05			10 Oct 2022 16:23	1
HS22100158-03	MW-41	04 Oct 2022 10:45			10 Oct 2022 16:23	1
HS22100158-04	MW-62	04 Oct 2022 08:35			10 Oct 2022 16:23	1
HS22100158-05	MW-63	04 Oct 2022 09:55			10 Oct 2022 16:23	1
HS22100158-06	MW-64	04 Oct 2022 11:25			10 Oct 2022 16:23	1
HS22100158-07	MW-23R	04 Oct 2022 11:45			10 Oct 2022 16:23	1
HS22100158-08	MW-28D	04 Oct 2022 13:45			10 Oct 2022 16:23	1
HS22100158-09	MW-42	04 Oct 2022 10:55			10 Oct 2022 16:23	1
HS22100158-10	MW-43	04 Oct 2022 12:25			10 Oct 2022 16:23	1
HS22100158-11	MW-44	04 Oct 2022 10:05			10 Oct 2022 16:23	1
HS22100158-12	MW-46R	04 Oct 2022 08:25			10 Oct 2022 16:23	1
HS22100158-13	MW-47	04 Oct 2022 11:25			10 Oct 2022 16:23	1
HS22100158-14	MW-48	04 Oct 2022 10:45			10 Oct 2022 16:23	1
HS22100158-15	MW-50	04 Oct 2022 12:05			10 Oct 2022 16:23	1
HS22100158-16	MW-52	04 Oct 2022 12:45			10 Oct 2022 16:23	1
HS22100158-17	MW-54	04 Oct 2022 08:35			10 Oct 2022 16:23	1
HS22100158-18	MW-55R	04 Oct 2022 09:25			10 Oct 2022 16:23	1
HS22100158-19	MW-58	04 Oct 2022 09:15			10 Oct 2022 16:23	1
HS22100158-20	MW-65	04 Oct 2022 10:05			10 Oct 2022 16:23	1

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R419121 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS22100158-21	MW-36	04 Oct 2022 10:35			10 Oct 2022 16:27	1
HS22100158-22	MW-37	04 Oct 2022 10:00			10 Oct 2022 16:27	1
HS22100158-23	MW-38R	04 Oct 2022 09:25			10 Oct 2022 16:27	1
HS22100158-24	MW-60	04 Oct 2022 11:50			10 Oct 2022 16:27	1
HS22100158-25	MW-61	04 Oct 2022 11:10			10 Oct 2022 16:27	1
HS22100158-26	Field Blank-01	04 Oct 2022 11:15			10 Oct 2022 16:27	1
HS22100158-27	Field Duplicate 1	04 Oct 2022 08:00			10 Oct 2022 16:27	1
HS22100158-28	Field Duplicate 2	04 Oct 2022 09:00			10 Oct 2022 16:27	1
Batch ID: R419526 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS22100158-01	MW-39R	04 Oct 2022 09:15			17 Oct 2022 10:19	1
HS22100158-02	MW-40	04 Oct 2022 12:05			17 Oct 2022 10:19	1
HS22100158-03	MW-41	04 Oct 2022 10:45			17 Oct 2022 10:19	1
HS22100158-04	MW-62	04 Oct 2022 08:35			17 Oct 2022 10:19	1
HS22100158-05	MW-63	04 Oct 2022 09:55			17 Oct 2022 10:19	1
HS22100158-06	MW-64	04 Oct 2022 11:25			17 Oct 2022 10:19	1
HS22100158-07	MW-23R	04 Oct 2022 11:45			17 Oct 2022 10:19	1
HS22100158-08	MW-28D	04 Oct 2022 13:45			17 Oct 2022 10:19	1
HS22100158-09	MW-42	04 Oct 2022 10:55			17 Oct 2022 10:19	1
HS22100158-10	MW-43	04 Oct 2022 12:25			17 Oct 2022 10:19	1
HS22100158-11	MW-44	04 Oct 2022 10:05			17 Oct 2022 10:19	1
HS22100158-12	MW-46R	04 Oct 2022 08:25			17 Oct 2022 10:19	1
HS22100158-13	MW-47	04 Oct 2022 11:25			17 Oct 2022 10:19	1
HS22100158-14	MW-48	04 Oct 2022 10:45			17 Oct 2022 10:19	1
HS22100158-15	MW-50	04 Oct 2022 12:05			17 Oct 2022 10:19	1
HS22100158-16	MW-52	04 Oct 2022 12:45			17 Oct 2022 10:19	1
HS22100158-17	MW-54	04 Oct 2022 08:35			17 Oct 2022 10:19	1
HS22100158-18	MW-55R	04 Oct 2022 09:25			17 Oct 2022 10:19	1
HS22100158-19	MW-58	04 Oct 2022 09:15			17 Oct 2022 10:19	1
HS22100158-20	MW-65	04 Oct 2022 10:05			17 Oct 2022 10:19	1
HS22100158-21	MW-36	04 Oct 2022 10:35			17 Oct 2022 10:19	1
HS22100158-22	MW-37	04 Oct 2022 10:00			17 Oct 2022 10:19	1
HS22100158-23	MW-38R	04 Oct 2022 09:25			17 Oct 2022 10:19	1
HS22100158-24	MW-60	04 Oct 2022 11:50			17 Oct 2022 10:19	1
HS22100158-25	MW-61	04 Oct 2022 11:10			17 Oct 2022 10:19	1
HS22100158-26	Field Blank-01	04 Oct 2022 11:15			17 Oct 2022 10:19	1
HS22100158-27	Field Duplicate 1	04 Oct 2022 08:00			17 Oct 2022 10:19	1
HS22100158-28	Field Duplicate 2	04 Oct 2022 09:00			17 Oct 2022 10:19	1

WorkOrder: HS22100158
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	0.0172	0.0110	0.0200
A	Calcium	7440-70-2	1.00	1.01	0.0340	0.500

WorkOrder: HS22100158
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	0.341	0.200	0.500
A	Sulfate	14808-79-8	0.250	0.324	0.200	0.500

WorkOrder:	HS22100158
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: HS22100158

QC BATCH REPORT

Batch ID: 184533 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-184533** Units: **mg/L** Analysis Date: **10-Oct-2022 17:09**
Client ID: Run ID: **ICPMS07_419024** SeqNo: **6910857** PrepDate: **07-Oct-2022** 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-184533** Units: **mg/L** Analysis Date: **10-Oct-2022 17:11**
Client ID: Run ID: **ICPMS07_419024** SeqNo: **6910858** PrepDate: **07-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5023	0.0200	0.5	0	100	80 - 120				
Calcium	5.189	0.500	5	0	104	80 - 120				

MS Sample ID: **HS22100158-05MS** Units: **mg/L** Analysis Date: **10-Oct-2022 17:16**
Client ID: **MW-63** Run ID: **ICPMS07_419024** SeqNo: **6910861** PrepDate: **07-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6228	0.0200	0.5	0.1242	99.7	80 - 120				
Calcium	332.1	0.500	5	333.6	-31.5	80 - 120				SEO

MSD Sample ID: **HS22100158-05MSD** Units: **mg/L** Analysis Date: **10-Oct-2022 17:18**
Client ID: **MW-63** Run ID: **ICPMS07_419024** SeqNo: **6910862** PrepDate: **07-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6439	0.0200	0.5	0.1242	104	80 - 120	0.6228	3.32	20	
Calcium	332.8	0.500	5	333.6	-17.7	80 - 120	332.1	0.208	20	SEO

PDS Sample ID: **HS22100158-05PDS** Units: **mg/L** Analysis Date: **10-Oct-2022 17:20**
Client ID: **MW-63** Run ID: **ICPMS07_419024** SeqNo: **6910863** PrepDate: **07-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6094	0.0200	0.5	0.1242	97.0	75 - 125				

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: 184533 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

PDS Sample ID: **HS22100158-05PDS** Units: **mg/L** Analysis Date: **11-Oct-2022 12:32**
Client ID: **MW-63** Run ID: **ICPMS07_419110** SeqNo: **6912705** PrepDate: **07-Oct-2022** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	531.4	10.0	200	335.2	98.1	75 - 125				

SD Sample ID: **HS22100158-05SD** Units: **mg/L** Analysis Date: **11-Oct-2022 12:30**
Client ID: **MW-63** Run ID: **ICPMS07_419110** SeqNo: **6912704** PrepDate: **07-Oct-2022** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	336.7	50.0					335.2	0.43	10	

The following samples were analyzed in this batch:

HS22100158-01	HS22100158-02	HS22100158-03	HS22100158-04
HS22100158-05	HS22100158-06	HS22100158-07	HS22100158-08
HS22100158-09	HS22100158-10	HS22100158-11	HS22100158-12
HS22100158-13	HS22100158-14	HS22100158-15	HS22100158-16
HS22100158-17	HS22100158-18	HS22100158-20	HS22100158-21

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: 184594 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-184594** Units: **mg/L** Analysis Date: **10-Oct-2022 20:20**
Client ID: Run ID: **ICPMS07_419024** SeqNo: **6911018** PrepDate: **10-Oct-2022** 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-184594** Units: **mg/L** Analysis Date: **10-Oct-2022 20:22**
Client ID: Run ID: **ICPMS07_419024** SeqNo: **6911019** PrepDate: **10-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.48	0.0200	0.5	0	96.0	80 - 120				
Calcium	5.081	0.500	5	0	102	80 - 120				

MS Sample ID: **HS22100158-19MS** Units: **mg/L** Analysis Date: **10-Oct-2022 20:28**
Client ID: **MW-58** Run ID: **ICPMS07_419024** SeqNo: **6911022** PrepDate: **10-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.056	0.0200	0.5	0.53	105	80 - 120				E
Calcium	135.6	0.500	5	132.1	70.5	80 - 120				SO

MSD Sample ID: **HS22100158-19MSD** Units: **mg/L** Analysis Date: **10-Oct-2022 20:30**
Client ID: **MW-58** Run ID: **ICPMS07_419024** SeqNo: **6911023** PrepDate: **10-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.099	0.0200	0.5	0.53	114	80 - 120	1.056	3.94	20	E
Calcium	138.7	0.500	5	132.1	131	80 - 120	135.6	2.21	20	SO

PDS Sample ID: **HS22100158-19PDS** Units: **mg/L** Analysis Date: **10-Oct-2022 20:31**
Client ID: **MW-58** Run ID: **ICPMS07_419024** SeqNo: **6911024** PrepDate: **10-Oct-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	133.5	0.500	10	132.1	14.1	75 - 125				SO

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: 184594 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

SD Sample ID: **HS22100158-19SD** Units: **mg/L** Analysis Date: **10-Oct-2022 20:26**
Client ID: **MW-58** Run ID: **ICPMS07_419024** SeqNo: **6911021** PrepDate: **10-Oct-2022** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.5606	0.100					0.53	5.77	10	
Calcium	121	2.50					132.1	8.39	10	

The following samples were analyzed in this batch:

HS22100158-19	HS22100158-22	HS22100158-23	HS22100158-24
HS22100158-25	HS22100158-26	HS22100158-27	HS22100158-28

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: R418695 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **05-Oct-2022 09:26**
Client ID: Run ID: **ICS-Integrion_418695** SeqNo: **6902989** 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: **05-Oct-2022 09:31**
Client ID: Run ID: **ICS-Integrion_418695** SeqNo: **6902990** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.91	0.500	20	0	99.6	90 - 110				
Sulfate	19.81	0.500	20	0	99.1	90 - 110				

MS Sample ID: **HS22100158-05MS** Units: **mg/L** Analysis Date: **05-Oct-2022 10:09**
Client ID: **MW-63** Run ID: **ICS-Integrion_418695** SeqNo: **6902997** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	416.1	5.00	100	331.3	84.8	80 - 120				
Sulfate	652.6	5.00	100	581.1	71.5	80 - 120				SO

MS Sample ID: **HS22100133-01MS** Units: **mg/L** Analysis Date: **05-Oct-2022 09:42**
Client ID: Run ID: **ICS-Integrion_418695** SeqNo: **6902992** PrepDate: DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	2398	2.50	50	2381	34.9	80 - 120				SEO
Sulfate	586.8	2.50	50	545.6	82.4	80 - 120				EO

MSD Sample ID: **HS22100158-05MSD** Units: **mg/L** Analysis Date: **05-Oct-2022 10:14**
Client ID: **MW-63** Run ID: **ICS-Integrion_418695** SeqNo: **6902998** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	415.3	5.00	100	331.3	84.0	80 - 120	416.1	0.2	20	
Sulfate	652	5.00	100	581.1	70.9	80 - 120	652.6	0.0998	20	SO

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: R418695 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MSD Sample ID: **HS22100133-01MSD** Units: **mg/L** Analysis Date: **05-Oct-2022 09:47**
Client ID: Run ID: **ICS-Integrion_418695** SeqNo: **6902993** PrepDate: DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	2414	2.50	50	2381	66.6	80 - 120	2398	0.659	20	SEO
Sulfate	590.1	2.50	50	545.6	89.0	80 - 120	586.8	0.561	20	EO

The following samples were analyzed in this batch:

HS22100158-01	HS22100158-02	HS22100158-03	HS22100158-04
HS22100158-05	HS22100158-06	HS22100158-07	HS22100158-08
HS22100158-09	HS22100158-10	HS22100158-11	HS22100158-12
HS22100158-13	HS22100158-14	HS22100158-15	HS22100158-16

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: R418735 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **06-Oct-2022 07:10**
Client ID: Run ID: **ICS-Integrion_418735** SeqNo: **6903971** 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: **06-Oct-2022 07:15**
Client ID: Run ID: **ICS-Integrion_418735** SeqNo: **6903972** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.96	0.500	20	0	99.8	90 - 110				
Sulfate	19.93	0.500	20	0	99.6	90 - 110				

MS Sample ID: **HS22100159-02MS** Units: **mg/L** Analysis Date: **06-Oct-2022 10:48**
Client ID: Run ID: **ICS-Integrion_418735** SeqNo: **6903997** PrepDate: DF: **50**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	2272	25.0	500	1881	78.2	80 - 120				S
Sulfate	2860	25.0	500	2520	68.0	80 - 120				SO

MS Sample ID: **HS22100158-19MS** Units: **mg/L** Analysis Date: **06-Oct-2022 09:13**
Client ID: **MW-58** Run ID: **ICS-Integrion_418735** SeqNo: **6903984** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	395.8	5.00	100	313.9	81.9	80 - 120				
Sulfate	261.4	5.00	100	171.6	89.9	80 - 120				

MSD Sample ID: **HS22100159-02MSD** Units: **mg/L** Analysis Date: **06-Oct-2022 10:54**
Client ID: Run ID: **ICS-Integrion_418735** SeqNo: **6903998** PrepDate: DF: **50**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	2279	25.0	500	1881	79.5	80 - 120	2272	0.286	20	S
Sulfate	2873	25.0	500	2520	70.7	80 - 120	2860	0.463	20	SO

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: R418735 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MSD Sample ID: **HS22100158-19MSD** Units: **mg/L** Analysis Date: **06-Oct-2022 09:19**

Client ID: **MW-58** Run ID: **ICS-Integrion_418735** SeqNo: **6903985** PrepDate: DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	394.4	5.00	100	313.9	80.4	80 - 120	395.8	0.372	20	
Sulfate	260.3	5.00	100	171.6	88.7	80 - 120	261.4	0.454	20	

The following samples were analyzed in this batch:

HS22100158-17	HS22100158-18	HS22100158-19	HS22100158-20
HS22100158-21	HS22100158-22	HS22100158-23	HS22100158-24
HS22100158-25	HS22100158-26	HS22100158-27	HS22100158-28

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: R419120 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-101022** Units: **mg/L** Analysis Date: **10-Oct-2022 16:23**
Client ID: Run ID: **Balance1_419120** SeqNo: **6913048** 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-101022** Units: **mg/L** Analysis Date: **10-Oct-2022 16:23**
Client ID: Run ID: **Balance1_419120** SeqNo: **6913049** 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)	1048	10.0	1000	0	105	85 - 115				

DUP Sample ID: **HS22100158-19DUP** Units: **mg/L** Analysis Date: **10-Oct-2022 16:23**
Client ID: **MW-58** Run ID: **Balance1_419120** SeqNo: **6913046** 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)	1210	10.0					1200	0.83	5	

DUP Sample ID: **HS22100158-05DUP** Units: **mg/L** Analysis Date: **10-Oct-2022 16:23**
Client ID: **MW-63** Run ID: **Balance1_419120** SeqNo: **6913031** 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)	1950	10.0					1950	0	5	

The following samples were analyzed in this batch:

HS22100158-01	HS22100158-02	HS22100158-03	HS22100158-04
HS22100158-05	HS22100158-06	HS22100158-07	HS22100158-08
HS22100158-09	HS22100158-10	HS22100158-11	HS22100158-12
HS22100158-13	HS22100158-14	HS22100158-15	HS22100158-16
HS22100158-17	HS22100158-18	HS22100158-19	HS22100158-20

Client: TRC Corporation
Project: WA Parish - CCR Program
WorkOrder: HS22100158

QC BATCH REPORT

Batch ID: R419121 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-101022** Units: **mg/L** Analysis Date: **10-Oct-2022 16:27**
Client ID: Run ID: **Balance1_419121** SeqNo: **6913081** 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-101022** Units: **mg/L** Analysis Date: **10-Oct-2022 16:27**
Client ID: Run ID: **Balance1_419121** SeqNo: **6913082** 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)	1056	10.0	1000	0	106	85 - 115				

DUP Sample ID: **HS22100159-07DUP** Units: **mg/L** Analysis Date: **10-Oct-2022 16:27**
Client ID: Run ID: **Balance1_419121** SeqNo: **6913075** 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)	950	10.0					940	1.06	5	

DUP Sample ID: **HS22100159-02DUP** Units: **mg/L** Analysis Date: **10-Oct-2022 16:27**
Client ID: Run ID: **Balance1_419121** SeqNo: **6913069** 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)	7700	10.0					7740	0.518	5	

The following samples were analyzed in this batch:

HS22100158-21	HS22100158-22	HS22100158-23	HS22100158-24
HS22100158-25	HS22100158-26	HS22100158-27	HS22100158-28

Client:	TRC Corporation	**QUALIFIERS, ACRONYMS, UNITS**
Project:	WA Parish - CCR Program	
WorkOrder:	**HS22100158**	

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

Sample Receipt Checklist

Work Order ID: HS22100158
Client Name: TRC-HOU

Date/Time Received: 04-Oct-2022 14:20
Received by: Malcolm Burleson

Completed By:	/S/ Malcolm Burleson	04-Oct-2022 17:34	**Reviewed by:**	/S/ Kori Bagsby	05-Oct-2022 09:33
	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 ☐	4 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:283454/283453/283452/283451
	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):	4.0UC/3.8C /2.3UC/2.1C		IR31
Cooler(s)/Kit(s):	49379/46063		
Date/Time sample(s) sent to storage:	10042022/1420		
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:

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Chain of Custody Form

COC ID: 283454

ALS Project Manager: | ALS Work Order #:

HS22100158
TRC Corporation
WA Parish - CCR Program

Customer Information		Project Information		Parameter/Method Request for Analysis	
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						ld
1	MW-39R	10/4/22	915	Water	2,8	3	X	X	X	X							
2	MW-40		1205	Water	2,8	3	X	X	X	X							
3	MW-41		1045	Water	2,8	3	X	X	X	X							
4	MW-62		835	Water	2,8	3	X	X	X	X							
5	MW-63		955	Water	2,8	3	X	X	X	X							
6	MW-64		1125	Water	2,8	3	X	X	X	X							
7	MW-23R		1145	Water	2,8	3	X	X	X	X							
8	MW-28D		1345	Water	2,8	3	X	X	X	X							
9	MW-42		1055	Water	2,8	3	X	X	X	X							
10	MW-43		1225	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 [X] 5 Wk Days [ ] 2 Wk Days [ ] 24 Hour

Results Due Date:

Relinquished by:	Date: 10/4/22	Time: 1420	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): CURE7 9 10/4/22 1426
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
49379	4.0
46063	2.3
IR31	

LF=-0.2

QC Package: (Check One Box Below)
[X] 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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York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 283453

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
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	

HS22100158
TRC Corporation
WA Parish - CCR Program

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-44	10/4/22	1005	Water	2,8	3	X	X	X	X							
2	MW-46R	↓	825	Water	2,8	3	X	X	X	X							
3	MW-47		1125	Water	2,8	3	X	X	X	X							
4	MW-48		1045	Water	2,8	3	X	X	X	X							
5	MW-50		1205	Water	2,8	3	X	X	X	X							
6	MW-52		1245	Water	2,8	3	X	X	X	X							
7	MW-54		835	Water	2,8	3	X	X	X	X							
8	MW-55R		925	Water	2,8	3	X	X	X	X							
9	MW-58		915	Water	2,8	3	X	X	X	X							
10	MW-65	↓	1005	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: 10/4/22	Time: 1420	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): CG2874 10/4/22 1420
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 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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South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 283452

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information	
Purchase Order	179965	Project Name	WA Parish CCR Program
Work Order		Project Number	
Company Name	TRC Corporation	Bill To Company	TRC Corporation
Send Report To	Lori Burris	Invoice Attn	A/P
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079
Phone	(713) 244-1000	Phone	(713) 244-1000
Fax	(713) 244-1099	Fax	(713) 244-1099
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com

Parameter/Method Request for Analysis

A	ICP_TW (B and Ca)- Appendix III
B	300_W (Cl, SO4)- Appendix III
C	Sub_Fluoride (Sub Fluoride to ALS Michigan)- App III
D	TDS_W 2540C (TDS)- Appendix III
E	
F	
G	
H	
I	
J	

HS22100158
TRC Corporation
WA Parish - CCR Program

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-36	10/4/22	1035	Water	2,8	3	X	X	X	X							
2	MW-37		1000	Water	2,8	3	X	X	X	X							
3	MW-38R		925	Water	2,8	3	X	X	X	X							
4	MW-60		1150	Water	2,8	3	X	X	X	X							
5	MW-61		1110	Water	2,8	3	X	X	X	X							
6	MW-63-MS		955	Water	2,8	3	X	X	X	X							
7	MW-63-MSD		955	Water	2,8	3	X	X	X	X							
8	MW-58 MS		915	Water	2,8	3	X	X	X	X							
9	MW-58 MSD		915	Water	2,8	3	X	X	X	X							
10	Field Blank -01		1115	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: 10/4/22	Time: 1420	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): LORETTA 10/4/22 1420
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 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.

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 | Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 283451

ALS Project Manager: | ALS Work Order #:

HS22100158
TRC Corporation
WA Parish - CCR Program

Customer Information		Project Information		Parameter/Method Request for Analysis	
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
1	Field Duplicate 1	10/4/22	800	Water	2,8	3	X	X	X	X						
2	Field Duplicate 2	↓	900	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: 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: 10/4/22	Time: 1420	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): Corey G 10/4/22 1426
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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3. The Chain of Custody is a legal document. All information must be completed accurately.

17-Oct-2022

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

Re: **HS22100158** Work Order: **22100463**

Dear Andrew,

ALS Environmental received 28 samples on 05-Oct-2022 09:30 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 ZZ.

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,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental
Project:	HS22100158
Work Order:	22100463

TRRP Laboratory Data Package Cover Page

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

This signature page, the laboratory case narrative, 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) for each analyte for each method and matrix;
R10 Other problems or anomalies:
See Case Narrative.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached Case Narrative and QC Summaries. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified, and no information affecting the quality of the data has been knowingly withheld.

Chad Whelton

Chad Whelton
Project Manager

WET CHEMISTRY DATA ASSESSMENT CHECKLIST

Wet Chemistry		Batch Number: TITRATOR1_221012B, TITRATOR1_221013C		Instrument ID: Mantech Autotitrator			
Method: FL_4500C_W		Work order Number (s): 22100463					
Analyst Name: QN		Date 10/13/2022	Reviewer Name: JB		Date: 10/14/22		

	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: 17-Oct-22

Client: ALS Environmental
Project: HS22100158
Work Order: **22100463**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
22100463-01	MW-39R	Water	HS22100158-01	10/4/2022 09:15	10/5/2022 09:30	☐
22100463-02	MW-40	Water	HS22100158-02	10/4/2022 12:05	10/5/2022 09:30	☐
22100463-03	MW-41	Water	HS22100158-03	10/4/2022 10:45	10/5/2022 09:30	☐
22100463-04	MW-62	Water	HS22100158-04	10/4/2022 08:35	10/5/2022 09:30	☐
22100463-05	MW-63	Water	HS22100158-05	10/4/2022 09:55	10/5/2022 09:30	☐
22100463-06	MW-64	Water	HS22100158-06	10/4/2022 11:25	10/5/2022 09:30	☐
22100463-07	MW-23R	Water	HS22100158-07	10/4/2022 11:45	10/5/2022 09:30	☐
22100463-08	MW-28D	Water	HS22100158-08	10/4/2022 13:45	10/5/2022 09:30	☐
22100463-09	MW-42	Water	HS22100158-09	10/4/2022 10:55	10/5/2022 09:30	☐
22100463-10	MW-43	Water	HS22100158-10	10/4/2022 12:25	10/5/2022 09:30	☐
22100463-11	MW-44	Water	HS22100158-11	10/4/2022 10:05	10/5/2022 09:30	☐
22100463-12	MW-46R	Water	HS22100158-12	10/4/2022 08:25	10/5/2022 09:30	☐
22100463-13	MW-47	Water	HS22100158-13	10/4/2022 11:25	10/5/2022 09:30	☐
22100463-14	MW-48	Water	HS22100158-14	10/4/2022 10:45	10/5/2022 09:30	☐
22100463-15	MW-50	Water	HS22100158-15	10/4/2022 12:05	10/5/2022 09:30	☐
22100463-16	MW-52	Water	HS22100158-16	10/4/2022 12:45	10/5/2022 09:30	☐
22100463-17	MW-54	Water	HS22100158-17	10/4/2022 08:35	10/5/2022 09:30	☐
22100463-18	MW-55R	Water	HS22100158-18	10/4/2022 09:25	10/5/2022 09:30	☐
22100463-19	MW-58	Water	HS22100158-19	10/4/2022 09:15	10/5/2022 09:30	☐
22100463-20	MW-65	Water	HS22100158-20	10/4/2022 10:05	10/5/2022 09:30	☐
22100463-21	MW-36	Water	HS22100158-21	10/4/2022 10:35	10/5/2022 09:30	☐
22100463-22	MW-37	Water	HS22100158-22	10/4/2022 10:00	10/5/2022 09:30	☐
22100463-23	MW-38R	Water	HS22100158-23	10/4/2022 09:25	10/5/2022 09:30	☐
22100463-24	MW-60	Water	HS22100158-24	10/4/2022 11:50	10/5/2022 09:30	☐
22100463-25	MW-61	Water	HS22100158-25	10/4/2022 11:10	10/5/2022 09:30	☐
22100463-26	Field Blank-01	Water	HS22100158-26	10/4/2022 11:15	10/5/2022 09:30	☐
22100463-27	Field Duplicate 1	Water	HS22100158-27	10/4/2022 08:00	10/5/2022 09:30	☐
22100463-28	Field Duplicate 2	Water	HS22100158-28	10/4/2022 09:00	10/5/2022 09:30	☐

Client:	ALS Environmental
Project:	HS22100158
Work Order:	22100463

Case Narrative

Samples for the above noted Work Order were received on 10/05/2022. 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 other deviations or anomalies were noted.

ALS Group, USA

Date: 17-Oct-22

Client: ALS Environmental
Project: HS22100158
WorkOrder: **22100463**

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

Work Order: 22100463
Client: ALS Environmental
Project: HS22100158

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R355548	**Test Name:** Fluoride					
22100463-01 ^	MW-39R	Water	10/4/2022 9:15:00 AM			10/12/2022 11:37 AM
22100463-02 ^	MW-40		10/4/2022 12:05:00 PM			10/12/2022 11:37 AM
22100463-03 ^	MW-41		10/4/2022 10:45:00 AM			10/12/2022 11:37 AM
22100463-04 ^	MW-62		10/4/2022 8:35:00 AM			10/12/2022 11:37 AM
22100463-05 ^	MW-63		10/4/2022 9:55:00 AM			10/12/2022 11:37 AM
22100463-06 ^	MW-64		10/4/2022 11:25:00 AM			10/12/2022 11:37 AM
22100463-07 ^	MW-23R		10/4/2022 11:45:00 AM			10/12/2022 11:37 AM
22100463-08 ^	MW-28D		10/4/2022 1:45:00 PM			10/12/2022 11:37 AM
22100463-09 ^	MW-42		10/4/2022 10:55:00 AM			10/12/2022 11:37 AM
22100463-10 ^	MW-43		10/4/2022 12:25:00 PM			10/12/2022 11:37 AM
22100463-11 ^	MW-44		10/4/2022 10:05:00 AM			10/12/2022 11:37 AM
22100463-12 ^	MW-46R		10/4/2022 8:25:00 AM			10/12/2022 11:37 AM

Work Order: 22100463
Client: ALS Environmental
Project: HS22100158

DATES REPORT

Batch ID R355659 **Test Name:** Fluoride

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
22100463-13 ^	MW-47	Water	10/4/2022 11:25:00 AM			10/13/2022 08:40 PM
22100463-14 ^	MW-48		10/4/2022 10:45:00 AM			10/13/2022 08:40 PM
22100463-15 ^	MW-50		10/4/2022 12:05:00 PM			10/13/2022 08:40 PM
22100463-16 ^	MW-52		10/4/2022 12:45:00 PM			10/13/2022 08:40 PM
22100463-17 ^	MW-54		10/4/2022 8:35:00 AM			10/13/2022 08:40 PM
22100463-18 ^	MW-55R		10/4/2022 9:25:00 AM			10/13/2022 08:40 PM
22100463-19 ^	MW-58		10/4/2022 9:15:00 AM			10/13/2022 08:40 PM
22100463-20 ^	MW-65		10/4/2022 10:05:00 AM			10/13/2022 08:40 PM
22100463-21 ^	MW-36		10/4/2022 10:35:00 AM			10/13/2022 08:40 PM
22100463-22 ^	MW-37		10/4/2022 10:00:00 AM			10/13/2022 08:40 PM
22100463-23 ^	MW-38R		10/4/2022 9:25:00 AM			10/13/2022 08:40 PM
22100463-24 ^	MW-60		10/4/2022 11:50:00 AM			10/13/2022 08:40 PM
22100463-25 ^	MW-61		10/4/2022 11:10:00 AM			10/13/2022 08:40 PM
22100463-26 ^	Field Blank-01		10/4/2022 11:15:00 AM			10/13/2022 08:40 PM
22100463-27 ^	Field Duplicate 1		10/4/2022 8:00:00 AM			10/13/2022 08:40 PM
22100463-28 ^	Field Duplicate 2		10/4/2022 9:00:00 AM			10/13/2022 08:40 PM

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-39R
Collection Date: 10/4/2022 09:15 AM

Work Order: 22100463
Lab ID: 22100463-01
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	10/12/2022 11:37

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

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-40	**Lab ID:**	22100463-02
Collection Date:	10/4/2022 12:05 PM	**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	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-41	**Lab ID:**	22100463-03
Collection Date:	10/4/2022 10:45 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.140**		**0.058**	**0.10**	**mg/L**	1	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-62
Collection Date: 10/4/2022 08:35 AM

Work Order: 22100463
Lab ID: 22100463-04
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	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-63
Collection Date: 10/4/2022 09:55 AM

Work Order: 22100463
Lab ID: 22100463-05
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	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-64	**Lab ID:**	22100463-06
Collection Date:	10/4/2022 11:25 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.200**		**0.058**	**0.10**	**mg/L**	1	10/12/2022 11:37

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

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-23R	**Lab ID:**	22100463-07
Collection Date:	10/4/2022 11:45 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.270**		**0.058**	**0.10**	**mg/L**	1	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-28D
Collection Date: 10/4/2022 01:45 PM

Work Order: 22100463
Lab ID: 22100463-08
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.240**		**0.058**	**0.10**	**mg/L**	1	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-42	**Lab ID:**	22100463-09
Collection Date:	10/4/2022 10:55 AM	**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	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-43	**Lab ID:**	22100463-10
Collection Date:	10/4/2022 12:25 PM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.500**		**0.058**	**0.10**	**mg/L**	1	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-44
Collection Date: 10/4/2022 10:05 AM

Work Order: 22100463
Lab ID: 22100463-11
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	10/12/2022 11:37

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

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-46R	**Lab ID:**	22100463-12
Collection Date:	10/4/2022 08:25 AM	**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	10/12/2022 11:37

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-47
Collection Date: 10/4/2022 11:25 AM

Work Order: 22100463
Lab ID: 22100463-13
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **QTN**
Fluoride	**0.370**		**0.058**	**0.10**	**mg/L**	1	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-48
Collection Date: 10/4/2022 10:45 AM

Work Order: 22100463
Lab ID: 22100463-14
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.710**		**0.058**	**0.10**	**mg/L**	1	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-50
Collection Date: 10/4/2022 12:05 PM

Work Order: 22100463
Lab ID: 22100463-15
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	10/13/2022 20:40

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

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-52
Collection Date: 10/4/2022 12:45 PM

Work Order: 22100463
Lab ID: 22100463-16
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	10/13/2022 20:40

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

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-54
Collection Date: 10/4/2022 08:35 AM

Work Order: 22100463
Lab ID: 22100463-17
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	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-55R	**Lab ID:**	22100463-18
Collection Date:	10/4/2022 09:25 AM	**Matrix:**	WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.720**		**0.058**	**0.10**	**mg/L**	1	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-58	**Lab ID:**	22100463-19
Collection Date:	10/4/2022 09:15 AM	**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	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-65	**Lab ID:**	22100463-20
Collection Date:	10/4/2022 10:05 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	10/13/2022 20:40

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

Client:	ALS Environmental		
Project:	HS22100158	**Work Order:**	22100463
Sample ID:	MW-36	**Lab ID:**	22100463-21
Collection Date:	10/4/2022 10:35 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	10/13/2022 20:40

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

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-37
Collection Date: 10/4/2022 10:00 AM

Work Order: 22100463
Lab ID: 22100463-22
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	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-38R
Collection Date: 10/4/2022 09:25 AM

Work Order: 22100463
Lab ID: 22100463-23
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.200**		**0.058**	**0.10**	**mg/L**	1	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-60
Collection Date: 10/4/2022 11:50 AM

Work Order: 22100463
Lab ID: 22100463-24
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.120**		**0.058**	**0.10**	**mg/L**	1	10/13/2022 20:40

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

Client: ALS Environmental
Project: HS22100158
Sample ID: MW-61
Collection Date: 10/4/2022 11:10 AM

Work Order: 22100463
Lab ID: 22100463-25
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE			Method: **A4500-F C-11**				Analyst: **QTN**
Fluoride	**0.250**		**0.058**	**0.10**	**mg/L**	1	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: Field Blank-01
Collection Date: 10/4/2022 11:15 AM

Work Order: 22100463
Lab ID: 22100463-26
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	10/13/2022 20:40

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

Client: ALS Environmental
Project: HS22100158
Sample ID: Field Duplicate 1
Collection Date: 10/4/2022 08:00 AM

Work Order: 22100463
Lab ID: 22100463-27
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.330**		**0.058**	**0.10**	**mg/L**	1	10/13/2022 20:40

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

ALS Group, USA

Date: *17-Oct-22*

Client: ALS Environmental
Project: HS22100158
Sample ID: Field Duplicate 2
Collection Date: 10/4/2022 09:00 AM

Work Order: 22100463
Lab ID: 22100463-28
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	10/13/2022 20:40

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

ALS Group, USA

Date: 17-Oct-22

METHOD DETECTION / REPORTING LIMITS

WorkOrder: 22100463
InstrumentID: Titrator 1
Test Code: FL_4500C_W
Test Number: A4500-F C-11
Test Name: Fluoride

Matrix: Water **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	Unadjusted MQL
A	Fluoride	16984-48-8	0.08	0.06	0.058	0.10

ALS Group, USA

Client: ALS Environmental
Work Order: 22100463
Project: HS22100158

Date: 17-Oct-22

QC BATCH REPORT

Batch ID: **R355548B** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R355548-R355548B** Units: **mg/L** Analysis Date: **10/12/2022 11:37 AM**
Client ID: Run ID: **TITRATOR 1_221012B** SeqNo: **8891955** 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-R355548-R355548B** Units: **mg/L** Analysis Date: **10/12/2022 11:37 AM**
Client ID: Run ID: **TITRATOR 1_221012B** SeqNo: **8891956** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.58	0.10	5	0	91.6	90-110	0			

MS Sample ID: **22100457-07AMS** Units: **mg/L** Analysis Date: **10/12/2022 11:37 AM**
Client ID: Run ID: **TITRATOR 1_221012B** SeqNo: **8891958** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.8	0.10	5	0.16	92.8	90-110	0			

MS Sample ID: **22100463-05AMS** Units: **mg/L** Analysis Date: **10/12/2022 11:37 AM**
Client ID: **MW-63** Run ID: **TITRATOR 1_221012B** SeqNo: **8891970** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.67	0.10	5	0.09	91.6	90-110	0			

MSD Sample ID: **22100457-07AMSD** Units: **mg/L** Analysis Date: **10/12/2022 11:37 AM**
Client ID: Run ID: **TITRATOR 1_221012B** SeqNo: **8891959** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.73	0.10	5	0.16	91.4	90-110	4.8	1.47	20	

MSD Sample ID: **22100463-05AMSD** Units: **mg/L** Analysis Date: **10/12/2022 11:37 AM**
Client ID: **MW-63** Run ID: **TITRATOR 1_221012B** SeqNo: **8891971** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.71	0.10	5	0.09	92.4	90-110	4.67	0.853	20	

The following samples were analyzed in this batch:

22100463-01A	22100463-02A	22100463-03A
22100463-04A	22100463-05A	22100463-06A
22100463-07A	22100463-08A	22100463-09A
22100463-10A	22100463-11A	22100463-12A

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

Client: ALS Environmental
Work Order: 22100463
Project: HS22100158

QC BATCH REPORT

Batch ID: **R355659A** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK	Sample ID: **MB-R355659-R355659A**				Units: **mg/L**		Analysis Date: **10/13/2022 08:40 PM**			
Client ID:	Run ID: **TITRATOR 1_221013C**				SeqNo: **8896934**		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-R355659-R355659A**				Units: **mg/L**		Analysis Date: **10/13/2022 08:40 PM**			
Client ID:	Run ID: **TITRATOR 1_221013C**				SeqNo: **8896935**		Prep Date:		DF: **1**	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.84	0.10	5	0	96.8	90-110	0			

MS	Sample ID: **22100463-19AMS**				Units: **mg/L**		Analysis Date: **10/13/2022 08:40 PM**			
Client ID: **MW-58**	Run ID: **TITRATOR 1_221013C**				SeqNo: **8896943**		Prep Date:		DF: **1**	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.35	0.10	5	0.4	99	90-110	0			

MSD	Sample ID: **22100463-19AMSD**				Units: **mg/L**		Analysis Date: **10/13/2022 08:40 PM**			
Client ID: **MW-58**	Run ID: **TITRATOR 1_221013C**				SeqNo: **8896944**		Prep Date:		DF: **1**	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.3	0.10	5	0.4	98	90-110	5.35	0.939	20	

The following samples were analyzed in this batch:

22100463-13A	22100463-14A	22100463-15A
22100463-16A	22100463-17A	22100463-18A
22100463-19A	22100463-20A	22100463-21A
22100463-22A	22100463-23A	22100463-24A
22100463-25A	22100463-26A	22100463-27A
22100463-28A		

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

22100463
ALS - HOUSTON: ALS Environmental
Project: HS22100158

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Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **20021**

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: HS22100158
TSR: Ron Martino

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS22100158-01**	**MW-39R**	**Water**	**04 Oct 2022 09:15**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
2.	**HS22100158-02**	**MW-40**	**Water**	**04 Oct 2022 12:05**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
3.	**HS22100158-03**	**MW-41**	**Water**	**04 Oct 2022 10:45**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
4.	**HS22100158-04**	**MW-62**	**Water**	**04 Oct 2022 08:35**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
5.	**HS22100158-05**	**MW-63**	**Water**	**04 Oct 2022 09:55**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
6.	**HS22100158-06**	**MW-64**	**Water**	**04 Oct 2022 11:25**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
7.	**HS22100158-07**	**MW-23R**	**Water**	**04 Oct 2022 11:45**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
8.	**HS22100158-08**	**MW-28D**	**Water**	**04 Oct 2022 13:45**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
9.	**HS22100158-09**	**MW-42**	**Water**	**04 Oct 2022 10:55**

22100463

ALS - HOUSTON: ALS Environmental

Project: HS22100158

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 20021**

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
10.	**HS22100158-10**	**MW-43**	**Water**	**04 Oct 2022 12:25**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
11.	**HS22100158-11**	**MW-44**	**Water**	**04 Oct 2022 10:05**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
12.	**HS22100158-12**	**MW-46R**	**Water**	**04 Oct 2022 08:25**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
13.	**HS22100158-13**	**MW-47**	**Water**	**04 Oct 2022 11:25**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
14.	**HS22100158-14**	**MW-48**	**Water**	**04 Oct 2022 10:45**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
15.	**HS22100158-15**	**MW-50**	**Water**	**04 Oct 2022 12:05**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
16.	**HS22100158-16**	**MW-52**	**Water**	**04 Oct 2022 12:45**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
17.	**HS22100158-17**	**MW-54**	**Water**	**04 Oct 2022 08:35**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
18.	**HS22100158-18**	**MW-55R**	**Water**	**04 Oct 2022 09:25**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
19.	**HS22100158-19**	**MW-58**	**Water**	**04 Oct 2022 09:15**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
20.	**HS22100158-20**	**MW-65**	**Water**	**04 Oct 2022 10:05**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
21.	**HS22100158-21**	**MW-36**	**Water**	**04 Oct 2022 10:35**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
22.	**HS22100158-22**	**MW-37**	**Water**	**04 Oct 2022 10:00**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
23.	**HS22100158-23**	**MW-38R**	**Water**	**04 Oct 2022 09:25**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
24.	**HS22100158-24**	**MW-60**	**Water**	**04 Oct 2022 11:50**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022

22100463
ALS - HOUSTON: ALS Environmental
Project: HS22100158

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 20021**

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
25.	**HS22100158-25**	**MW-61**	**Water**	**04 Oct 2022 11:10**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
26.	**HS22100158-26**	**Field Blank-01**	**Water**	**04 Oct 2022 11:15**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
27.	**HS22100158-27**	**Field Duplicate 1**	**Water**	**04 Oct 2022 08:00**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022
28.	**HS22100158-28**	**Field Duplicate 2**	**Water**	**04 Oct 2022 09:00**
	Fluoride by ISE 4500. Equis EDD			13 Oct 2022

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

Batch client samples together. MS/MSD must be performed on client sample.
HS22100158-05 & HS22100158-19 = MS/MSD

QC Level: TRRP LRC (TRRP checklist only+Level II (normal))

Relinquished By: M Date/Time: 10.4.22 18:20

Received By: Date/Time: 10/5/22 0930

Cooler ID(s): Temperature(s): IR3 4.2°c

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **ALS - HOUSTON** Date/Time Received: **05-Oct-22 09:30**

Work Order: **22100463** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 06-Oct-22 (Date) Reviewed by: Chad Whelton (eSignature) 07-Oct-22 (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):	4.2/5.2 c	IR3	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/6/2022 10:46:13 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:

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

December 06, 2022

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

Work Order: **HS22111329**

Laboratory Results for: **NRG WA Parish - Appedix III**

Dear Lori Burris,

ALS Environmental received 2 sample(s) on Nov 22, 2022 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:	NRG WA Parish - Appedix III	
WorkOrder:	**HS22111329**	

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 WA Parish - Appedix III	
WorkOrder:	**HS22111329**	

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: 12/06/2022				
Project Name: NRG WA Parish - Appedix III			Laboratory Job Number: HS22111329				
Reviewer Andy Neir			Prep Batch Number(s): 186767,R422853,R423318				
#[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				
		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 effects 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: 12/06/2022				
Project Name: NRG WA Parish - Appedix III			Laboratory Job Number: HS22111329				
Reviewer Name: Andy Neir			Prep Batch Number(s): 186767,R422853,R423318				
#[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: 12/06/2022
Project Name: NRG WA Parish - Appedix III	Laboratory Job Number: HS22111329
Reviewer Name: Andy Neir	Prep Batch Number(s): 186767,R422853,R423318

ER#[5]	Description
1	Batch 186767, Metals Method SW6020, sample MW-63, MS and MSD recovered outside the control limit for Calcium, however, the result in the parent sample is greater than 4x the spike amount.

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 Corporation
Project: NRG WA Parish - Appedix III
Work Order: HS22111329

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22111329-01	MW-23R	Water		22-Nov-2022 10:30	22-Nov-2022 13:28	☐
HS22111329-02	MW-63	Water		22-Nov-2022 09:30	22-Nov-2022 13:28	☐

Client: TRC Corporation

Project: NRG WA Parish - Appedix III

Sample ID: MW-23R

Collection Date: 22-Nov-2022 10:30

ANALYTICAL REPORT

WorkOrder:HS22111329

Lab ID:HS22111329-01

Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**1,220**		**4.00**	**10.0**	**mg/L**	20	06-Dec-2022 12:25
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: CWG
Total Dissolved Solids (Residue, Filterable)	**3,760**		**5.00**	**10.0**	**mg/L**	1	29-Nov-2022 14:32

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

Client:	TRC Corporation		**ANALYTICAL REPORT**
Project:	NRG WA Parish - Appedix III		WorkOrder:HS22111329
Sample ID:	MW-63		Lab ID:HS22111329-02
Collection Date:	22-Nov-2022 09:30		Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 30-Nov-2022		Analyst: JHD
Calcium	**334**		**0.680**	**10.0**	**mg/L**	20	01-Dec-2022 11:24
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**579**		**4.00**	**10.0**	**mg/L**	20	06-Dec-2022 12:31

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

Weight / Prep Log

Client: TRC Corporation
Project: NRG WA Parish - Appedix III
WorkOrder: HS22111329

Batch ID: 186767 **Start Date:** 30 Nov 2022 10:00 **End Date:** 30 Nov 2022 14:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22111329-02		10 (mL)	10 (mL)	1	250 mL plastic, HNO3 to pH <2

Client: TRC Corporation
Project: NRG WA Parish - Appedix III
WorkOrder: HS22111329

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 186767 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS22111329-02	MW-63	22 Nov 2022 09:30		30 Nov 2022 10:00	01 Dec 2022 11:24	20
Batch ID: R422853 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS22111329-01	MW-23R	22 Nov 2022 10:30			29 Nov 2022 14:32	1
Batch ID: R423318 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS22111329-01	MW-23R	22 Nov 2022 10:30			06 Dec 2022 12:25	20
HS22111329-02	MW-63	22 Nov 2022 09:30			06 Dec 2022 12:31	20

WorkOrder:	HS22111329
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	Calcium	7440-70-2	1.00	1.01	0.0340	0.500

WorkOrder: HS22111329
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	Sulfate	14808-79-8	0.250	0.324	0.200	0.500

WorkOrder:	HS22111329
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 WA Parish - Appedix III
WorkOrder: HS22111329

QC BATCH REPORT

Batch ID: 186767 (0) **Instrument:** ICPMS07 **Method:** ICP-MS METALS BY SW6020A

MBLK Sample ID: **MBLK-186767** Units: **mg/L** Analysis Date: **30-Nov-2022 19:56**
Client ID: Run ID: **ICPMS07_422847** SeqNo: **7007295** PrepDate: **30-Nov-2022** DF: **1**

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

LCS Sample ID: **LCS-186767** Units: **mg/L** Analysis Date: **30-Nov-2022 19:58**
Client ID: Run ID: **ICPMS07_422847** SeqNo: **7007296** PrepDate: **30-Nov-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	5.116	0.500	5	0	102	80 - 120				

MS Sample ID: **HS22111329-02MS** Units: **mg/L** Analysis Date: **30-Nov-2022 20:03**
Client ID: **MW-63** Run ID: **ICPMS07_422847** SeqNo: **7007299** PrepDate: **30-Nov-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	333.5	0.500	5	311.2	446	80 - 120				SEO

MSD Sample ID: **HS22111329-02MSD** Units: **mg/L** Analysis Date: **30-Nov-2022 20:05**
Client ID: **MW-63** Run ID: **ICPMS07_422847** SeqNo: **7007300** PrepDate: **30-Nov-2022** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	331.6	0.500	5	311.2	407	80 - 120	333.5	0.584	20	SEO

PDS Sample ID: **HS22111329-02PDS** Units: **mg/L** Analysis Date: **01-Dec-2022 11:28**
Client ID: **MW-63** Run ID: **ICPMS07_422941** SeqNo: **7008603** PrepDate: **30-Nov-2022** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	536.8	10.0	200	334.4	101	75 - 125				

SD Sample ID: **HS22111329-02SD** Units: **mg/L** Analysis Date: **01-Dec-2022 11:26**
Client ID: **MW-63** Run ID: **ICPMS07_422941** SeqNo: **7008602** PrepDate: **30-Nov-2022** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	345.2	50.0					334.4	3.24	10	

The following samples were analyzed in this batch: HS22111329-02

Client: TRC Corporation
Project: NRG WA Parish - Appedix III
WorkOrder: HS22111329

QC BATCH REPORT

Batch ID: R422853 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-112922** Units: **mg/L** Analysis Date: **29-Nov-2022 14:32**
Client ID: Run ID: **Balance1_422853** SeqNo: **7006389** 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-112922** Units: **mg/L** Analysis Date: **29-Nov-2022 14:32**
Client ID: Run ID: **Balance1_422853** SeqNo: **7006390** 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)	1068	10.0	1000	0	107	85 - 115				

DUP Sample ID: **HS22111408-03DUP** Units: **mg/L** Analysis Date: **29-Nov-2022 14:32**
Client ID: Run ID: **Balance1_422853** SeqNo: **7006388** 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)	800	10.0					792	1.01	5	

DUP Sample ID: **HS22111329-01DUP** Units: **mg/L** Analysis Date: **29-Nov-2022 14:32**
Client ID: **MW-23R** Run ID: **Balance1_422853** SeqNo: **7006368** 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)	3740	10.0					3760	0.533	5	

The following samples were analyzed in this batch: HS22111329-01

Client: TRC Corporation
Project: NRG WA Parish - Appedix III
WorkOrder: HS22111329

QC BATCH REPORT

Batch ID: R423318 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **06-Dec-2022 11:54**
Client ID: Run ID: **ICS-Integrion_423318** SeqNo: **7016994** PrepDate: DF: **1**

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

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **06-Dec-2022 11:59**
Client ID: Run ID: **ICS-Integrion_423318** SeqNo: **7016995** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	20.2	0.500	20	0	101	90 - 110				

MS Sample ID: **HS22111367-01MS** Units: **mg/L** Analysis Date: **06-Dec-2022 14:42**
Client ID: Run ID: **ICS-Integrion_423318** SeqNo: **7017022** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	9.689	0.500	10	0	96.9	80 - 120				

MS Sample ID: **HS22111342-02MS** Units: **mg/L** Analysis Date: **06-Dec-2022 12:10**
Client ID: Run ID: **ICS-Integrion_423318** SeqNo: **7016997** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	29.96	0.500	10	20.42	95.4	80 - 120				

MSD Sample ID: **HS22111367-01MSD** Units: **mg/L** Analysis Date: **06-Dec-2022 14:47**
Client ID: Run ID: **ICS-Integrion_423318** SeqNo: **7017023** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	9.815	0.500	10	0	98.1	80 - 120	9.689	1.29	20	

MSD Sample ID: **HS22111342-02MSD** Units: **mg/L** Analysis Date: **06-Dec-2022 12:15**
Client ID: Run ID: **ICS-Integrion_423318** SeqNo: **7016998** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	29.85	0.500	10	20.42	94.4	80 - 120	29.96	0.362	20	

The following samples were analyzed in this batch: HS22111329-01 HS22111329-02

Client: TRC Corporation
Project: NRG WA Parish - Appedix III
WorkOrder: HS22111329

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	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2022	31-Dec-2022
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

Sample Receipt Checklist

Work Order ID: HS22111329 **Date/Time Received:** 22-Nov-2022 13:28
Client Name: TRC-HOU **Received by:** Paresh M. Giga

Completed By: /S/ Corey Grandits	22-Nov-2022 14:31	**Reviewed by:** /S/ Andy C. Neir	22-Nov-2022 21:27
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:253591
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):	1.6UC/1.1C	IR31
Cooler(s)/Kit(s):	Blue	
Date/Time sample(s) sent to storage:	11/22/2022	

	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:

ALS

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168
Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 253591

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	161254	Project Name	NRG WA Parish - Appendix III	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	300_W (SO4 only) - App III
				F	ICP_TW (Ca only) - App III
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-23R	11-22-22	1030	W	8	2				X	X						
2	MW-63	↓	930	↓	2,8	2					X	X					
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

HS22111329
TRC Corporation
NRG WA Parish - Appedix III

Sampler(s) Please Print & Sign: Brian Hillin [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]	11-22-22	1328	[signature]
Relinquished by:	Date:	Time:	Received by (Laboratory): [signature] 11/22/22 13:28
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG CCR PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
Blue	1.6°C / +.3 / 1.9 (c-f·s)

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

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 BMil	**CUSTODY SEAL** Date: 11-22-22 Time: 1310 Name: B Hillin Company: HMI	Seal Broken By: SM Date: 11/22/22

BMil NOV 2 2 2022

Privileged and Confidential

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 February 9 and 10, 2022 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) by ion chromatography;
- A4500-F C-11 – Fluoride by ion selective electrode;
- SW-846 6020A – Metals (Sodium 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

Five (5) groundwater samples were analyzed for one or more of the following analytes: chloride, fluoride, boron, sodium, 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 temperatures of 2.8 and 3.3°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, fluoride, boron and TDS.

Sodium was detected in several CCBs. Associated samples were reported as detected greater than 5X the CCB concentrations and were not qualified.

Blanks

Chloride, fluoride, boron, sodium and TDS were reported as not-detected in the method blanks.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for chloride, fluoride, boron, sodium, and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for chloride, fluoride, boron, and sodium were analyzed on samples not associated with the project site and were not evaluated. TDS method does not require MS/MSD analysis.

Post Digestion Spike and Serial Dilution

The post digestion spike (PDS) for boron and sodium was analyzed on a sample not associated with the project site and was not evaluated. The serial dilutions for boron and sodium were within acceptance criteria.

Laboratory Duplicates
Laboratory duplicates for TDS were within QC acceptance criteria.

Field Precision
Field duplicate samples 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
HS22020441-01	MW-37	Groundwater
HS22020441-02	MW-41	Groundwater
HS22020441-03	MW-58	Groundwater
HS22020441-04	MW-63	Groundwater
HS22020441-05	MW-64	Groundwater
HS22020441-06	MW-58	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
No Data Were Qualifed.			
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 April 1, 2022, 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;
- 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 1.1 and 1.3°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.

Chloride, boron and calcium were detected in several continuing calibration blanks (CCBs). Associated samples were reported as detected for the listed compounds at greater than 5X the CCB concentration and were not qualified.

Blanks

Chloride, sulfate, calcium and TDS were reported as not-detected in the method blanks. Boron was reported as detected at 0.0116J mg/L in metals batch 177388. Associated samples were reported as greater than 5X the method blank concentration for boron, except Field Blank 1, which was qualified as not-detected (U), due to method blank contamination. Fluoride was reported as detected at 0.058J mg/L in batch R342054. Based on professional judgement, samples MW-38R and MW-60 were qualified as estimated high (JH) for fluoride, due to method blank contamination.

Field Blank 1 was reported as detected for boron (0.0131J mg/L) and calcium (0.185J mg/L). The boron detection was determined to be a result of method blank contamination and was not used for qualification purposes. Associated samples were reported as detected for calcium 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 chloride, sulfate, metals, and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for fluoride analyzed on site samples MW-63, MW-36 and MW-58 and metals batch 177388 were within acceptance criteria. Metals batch 177317 MS/MSD was analyzed on a sample not associated with the project set and was not evaluated. MS/MSD analysis is not a requirement of TDS method SM2540C.

Metals batch 177376 MS/MSD analyzed on site sample MW-63 hac calcium recovery outside acceptance criteria. However, the MS/MSD spike amount for calcium was less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, data were not qualified.

Chloride/Sulfate batch R405904 MS/MSD analyzed on site sample MW-63 had low recovery for chloride and sulfate. Sample MW-63 was qualified as estimated low (JL) for chloride and sulfate, due to low MS/MSD recovery. This batch had an additional MS/MSD analyzed on site sample MW-36 that was within acceptance criteria.

Chloride/Sulfate batch R405915 MS/MSD analyzed on site sample MW-58 had low recovery outside acceptance criteria for chloride. However, the MS/MSD spike amount for chloride 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 metals batch 177317 were analyzed on a sample not associated with the project site and were not evaluated. PDS and serial dilution for metals batch 177376 were within acceptance criteria. Metals batch 177388 PDS analyzed on site sample MW-58 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 serial dilution for metals batch 177388 was within acceptance criteria.

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 sample Field Blank 1 was qualified as not-detected (U) for boron, due to method blank contamination. Based on professional judgement, samples MW-38R and MW-60 were qualified as estimated high (JH) for fluoride, due to method blank contamination. Sample MW-63 was qualified as estimated low (JL) for chloride and sulfate, 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
HS22040081-01	MW-39R	Groundwater
HS22040081-02	MW-40	Groundwater
HS22040081-03	MW-41	Groundwater
HS22040081-04	MW-62	Groundwater
HS22040081-05	MW-63	Groundwater
HS22040081-06	MW-64	Groundwater
HS22040081-07	MW-23R	Groundwater
HS22040081-08	MW-28D	Groundwater
HS22040081-09	MW-42	Groundwater
HS22040081-10	MW-43	Groundwater
HS22040081-11	MW-44	Groundwater
HS22040081-12	MW-46R	Groundwater
HS22040081-13	MW-47	Groundwater
HS22040081-14	MW-48	Groundwater
HS22040081-15	MW-50	Groundwater
HS22040081-16	MW-52	Groundwater
HS22040081-17	MW-54	Groundwater
HS22040081-18	MW-55R	Groundwater
HS22040081-19	MW-58	Groundwater
HS22040081-20	MW-65	Groundwater
HS22040081-21	MW-36	Groundwater
HS22040081-22	MW-37	Groundwater
HS22040081-23	MW-38R	Groundwater
HS22040081-24	MW-60	Groundwater
HS22040081-25	MW-61	Groundwater
HS22040081-26	Field Blank 1	Water
HS22040081-27	Field Duplicate 1	Groundwater

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS22040081-28	Field Duplicate 2	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
Field Blank 1	Boron	U	Method Blank contamination.
MW-38R MW-60	Fluoride	JH	Method Blank contamination.
MW-63	Chloride Sulfate	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	0.0811	0.0956	16	A
	Calcium	250	226	10	A
	Chloride	325	327	1	A
	Sulfate	410	414	1	A
	TDS	1,590	1,600	1	A
	Fluoride	0.42	0.44	5	A
MW-44 / Field Duplicate 2	Boron	0.263	0.269	2	A
	Calcium	138	131	5	A
	Chloride	320	323	1	A
	Sulfate	197	206	4	A
	TDS	1,170	1,280	9	A
	Fluoride	0.41	0.47	14	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 resamples collected May 20, 2022, 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, Calcium and Sodium) 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

Six (6) groundwater samples were resampled and analyzed for one or more of the following analytes: chloride, sulfate, boron, calcium, sodium, 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 based on 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 1.0°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, boron, calcium and TDS.

Sodium was detected in several CCBs. Associated samples were reported as detected for sodium greater than 5X the CCB concentration and were not qualified.

Blanks

Chloride, sulfate, metals and TDS were reported as not-detected in the method blanks.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for chloride, sulfate, metals, and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for metals batch 179158 and sulfate batch R409483 were analyzed on samples not associated with the project site and were not evaluated or used for qualification purpose. MS/MSD analysis is not a requirement of TDS method SM2540C.

Chloride/Sulfate batch R409392 MS/MSD analyzed on site sample MW-63 had recovery outside acceptance criteria for chloride and sulfate. However, the MS/MSD spike amount for chloride and 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 metals batch 179158 were analyzed on a sample not associated with the project site and were not evaluated.

Laboratory Duplicates

Laboratory duplicates for TDS were within QC acceptance criteria.

Field Precision

Field duplicate samples 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
HS22050955-01	MW-63	Groundwater
HS22050955-02	MW-37	Groundwater
HS22050955-03	MW-38R	Groundwater
HS22050955-04	MW-61	Groundwater
HS22050955-05	MW-23R	Groundwater
HS22050955-06	MW-28D	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
No Data Were Qualified Based On 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 4, 2022, 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;
- ◊ 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 3.8 and 2.1°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.

Boron was detected in several continuing calibration blanks (CCBs). Samples MW-40, MW-41, MW-62, MW-64, MW-36, and Field Duplicate 1 were qualified as estimated (J), due to CCB contamination. Field Blank-01 was qualified as not-detected (U) due to CCB contamination.

Blanks

Chloride, sulfate, fluoride, metals and TDS were reported as not-detected in the method blanks.

Field Blank-01 was reported as detected for boron (0.0434 mg/L), calcium (0.0702J mg/L) and sulfate (0.318J 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 chloride, sulfate, 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. MS/MSD analysis is not a requirement of TDS method SM2540C.

Metals MS/MSD batch 184533 analyzed on site sample MW-63 and batch 184594 analyzed on site sample MW-58 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 R418695 analyzed on site sample MW-63 and batch R418735 analyzed on site sample MW-58 had sulfate recovery outside acceptance criteria. However, the MS/MSD spike amounts for 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 for metals batch 184533 analyzed on site sample MW-63 were within acceptance criteria. Metals batch 184594 PDS analyzed on site sample MW-58 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 serial dilution for metals batch 184594 was within acceptance criteria.

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 samples MW-40, MW-41, MW-62, MW-64, MW-36, and Field Duplicate 1 were qualified as estimated (J), due to CCB contamination. Field Blank 1 was qualified as not-detected (U) due to CCB contamination.

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
HS22100158-01	MW-39R	Groundwater
HS22100158-02	MW-40	Groundwater
HS22100158-03	MW-41	Groundwater
HS22100158-04	MW-62	Groundwater
HS22100158-05	MW-63	Groundwater
HS22100158-06	MW-64	Groundwater
HS22100158-07	MW-23R	Groundwater
HS22100158-08	MW-28D	Groundwater
HS22100158-09	MW-42	Groundwater
HS22100158-10	MW-43	Groundwater
HS22100158-11	MW-44	Groundwater
HS22100158-12	MW-46R	Groundwater
HS22100158-13	MW-47	Groundwater
HS22100158-14	MW-48	Groundwater
HS22100158-15	MW-50	Groundwater
HS22100158-16	MW-52	Groundwater
HS22100158-17	MW-54	Groundwater
HS22100158-18	MW-55R	Groundwater
HS22100158-19	MW-58	Groundwater
HS22100158-20	MW-65	Groundwater
HS22100158-21	MW-36	Groundwater
HS22100158-22	MW-37	Groundwater
HS22100158-23	MW-38R	Groundwater
HS22100158-24	MW-60	Groundwater
HS22100158-25	MW-61	Groundwater
HS22100158-26	Field Blank-01	Water
HS22100158-27	Field Duplicate 1	Groundwater

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS22100158-28	Field Duplicate 2	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
Field Blank-01	Boron	U	CCB contamination.
MW-40 MW-41 MW-62 MW-64 MW-36 Field Duplicate 1	Boron	J	CCB contamination.

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	0.0858	0.0779	10	A
	Calcium	237	212	11	A
	Chloride	313	314	0	A
	Sulfate	400	402	0	A
	TDS	1,560	1,540	1	A
	Fluoride	0.360	0.330	9	A
MW-44 / Field Duplicate 2	Boron	0.340	0.359	5	A
	Calcium	145	148	2	A
	Chloride	309	315	2	A
	Sulfate	217	223	3	A
	TDS	1,340	1,290	4	A
	Fluoride	0.360	0.350	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 November 22, 2022, 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 (Sulfate) by ion chromatography;
- ◊ SW-846 6020A – Metals (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

Two (2) groundwater samples (MW-23R and MW-63, were analyzed for one or more of the following: sulfate, 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 1.1°C. Samples were prepared and analyzed within holding times.

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.

Blanks

Sulfate, 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 sulfate were analyzed on a sample not associated with the project site and were not evaluated. MS/MSD analysis is not a requirement of TDS method SM2540C.

Calcium MS/MSD analyzed on site sample MW-63 had calcium recovery outside acceptance criteria. However, the MS/MSD spike amount for calcium 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 for calcium analyzed on site sample MW-63 were within acceptance criteria.

Laboratory Duplicates

Laboratory duplicates for TDS were within QC acceptance criteria.

Field Precision

Field duplicate 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
HS22111329-01	MW-23R	Groundwater
HS22111329-02	MW-63	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.

Appendix D
Alternative Source Demonstrations

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Solid Waste Disposal Area (SWMU 001) CCR Multiunit

March 2022

Prepared For
NRG Texas Power, LLC
Thompsons, 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 and Title 40 Code of Federal Regulations (CFR §257.94(e). 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 ninth semi-annual groundwater detection monitoring event was conducted on October 15, 2021. One verification sampling event was performed on December 7, 2019 for four apparent SSIs, three of which were observed for an upgradient background monitoring well. Statistical evaluation of the results was performed to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Three apparent SSIs were identified, which were observed for an upgradient background monitoring well. NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD by December 28, 2021.

This ASD successfully identified alternative sources for the three apparent SSIs for the upgradient background monitoring well at the Landfill. Therefore, semi-annual detection monitoring will be continued for the Landfill.

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 2021 semi-annual detection monitoring sampling event results are the first data set statistically evaluated using the new background water quality data set.

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 multiunit is the subject of this Alternative Source Demonstration (ASD).

CCR-management activities at the SWDA 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.

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater monitoring events for both the Appendix III and IV CCR constituents between

April 2015 and August 2017 per §257.94(b) of the 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 E Pond. Following each sampling event, the results have been evaluated for SSIs, and ASDs have been prepared as needed. These activities have been included in 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.

1.2 Purpose

TRC prepared this ASD on behalf of NRG to evaluate apparent SSIs above background levels for the ninth 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 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 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 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.

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. 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 and Stratum PA-1 (Upper Confining Unit)

Stratum DA-1 and Stratum PA-1 are both 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. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum DA-1 and Stratum PA-1 both serve as confining units to underlying Stratum DA-2 and Stratum PA-2, respectively, which comprise the uppermost groundwater-bearing unit at the Station. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum

DA-1 and Stratum PA-1 is 2.85E-08 centimeters per second (cm/sec) and 2.03E-08 cm/sec, respectively (ERM 2017b).

2.1.2 Stratum DA-2 and Stratum PA-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 PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum DA-2 and Stratum PA-2 are generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Both Stratum DA-2 and Stratum PA-2 are saturated and comprise the upper aquifer system at the CCR units. CCR monitoring wells in the SWDA, and Plant Area are completed within Stratum DA-2 and Stratum PA-2, respectively. 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; and from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the northeast towards the Brazos River beneath the SWDA; to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum DA-3 and Stratum PA-3 (Lower Confining Unit)

Stratum DA-3 and Stratum PA-3 are both predominantly clay to silty clay. These strata appear to be bottom confining layers to the overlying groundwater-bearing units (Stratum DA-2 and Stratum PA-2). The thicknesses of Stratum DA-3 and Stratum PA-3 have not been defined.

2.1.4 Solid Waste Disposal Area – Hydrogeology

Four separate groundwater monitoring well systems were initially developed in 2016 for each of the four active CCR-management cells, which were certified by a Texas P.E. under 257.91(f) on October 17, 2017. The monitoring wells were completed into Stratum DA-2, the upper aquifer system at the Station.

Following successful completion of the first semi-annual detection monitoring ASD in July 2018, the four individual CCR-management units were combined into a single CCR multiunit. A revised groundwater monitoring system and revised statistical method were developed and certified by a Texas professional engineer (P.E.) for the SWDA CCR multiunit. The monitoring wells comprising the revised groundwater monitoring system is summarized in Table 1.

Because of potential integrity issues with the construction of background monitoring well MW-23 (recent high pH values), it was replaced by MW-23R in close proximity to MW-23. A groundwater potentiometric surface map was prepared by TRC for the October 15, 2021 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.

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

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 the site geological conditions, several groundwater parameters are discussed as follows, including calcium, sulfate, and total dissolved solids (TDS).

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 $Ca\text{-}HCO_3$ 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, 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 at the APH Pond, the source of calcium is more likely 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 electrical conductivity (EC).

2.2.2 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 E Pond area, atmospheric deposition and anthropogenic activities could impacting sulfate concentrations (Einsiedl & Mayer, 2005; Pu et al., 2012).

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 ninth semi-annual detection monitoring event was conducted on October 15, 2021. Laboratory analytical data were received by NRG on October 27, 2021. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed to identify apparent SSIs above background pursuant to 30 TAC 352 Subpart H. Four apparent SSIs were identified. NRG notified the TCEQ of its intent to prepare an ASD on December 16, 2021.

As part of the ASD activities, verification sampling was conducted on December 7, 2021 for the four apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was completed during December 2021. Additional verification sampling was conducted on February 9, 2022. Three apparent SSIs were confirmed by the verification sampling. The UTLs and sampling results for the apparent SSIs are provided in Table 2 below. The verification sampling results for the December 7, 2021 and February 9, 2022 verification sampling event were still greater than their UTLs for three of the four apparent SSIs.

Table 2 SSIs – October 2021 Semiannual Detection Monitoring Event

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Calcium	MW-23R (UG)	420	12/7/2021	436	mg/L
Sulfate	MW-23R (UG)	670	12/7/2021	1,060	mg/L
Total Dissolved Solids	MW-23R (UG)	3,700	10/15/2021	3,730	mg/L

Notes: UG = Upgradient
mg/L = milligrams per Liter

3.1 MW-23R

All three apparent SSIs were identified for upgradient monitoring well MW-23R. MW-23 had been replaced by MW-23R after the seventh quarterly background monitoring event, which occurred in January 2020. 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 eventually include representation from MW-23R.

Calcium was detected in MW-23R at a concentration of 446 mg/L in the October 15, 2021 sample and 436 mg/L in the December 7, 2021 verification sample. Both sample results exceeded the UTL for the SWDA of 418 mg/L. Sulfate was detected in MW-23R at a concentration of 1,250 mg/L in the October 15, 2021 sample and 1,060 mg/L in the December 7, 2021 verification sample. Both sample results exceeded the UTL for the SWDA of 673 mg/L. MW-23R is located hydraulically upgradient and is a background monitoring location for the SWDA landfill. Therefore, the calcium and sulfate SSIs in MW-23R are 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 3,730 mg/L in the October 15, 2021 sample. This concentration was close to the UTL for the SWDA of 3,720 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. The new baseline event could have resulted in more minerals being released into groundwater with associated changes in the geochemical conditions of the aquifer. Furthermore, MW-23R is located hydraulically upgradient and is a background monitoring location for the SWDA multiunit 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 calcium and 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

All three apparent SSIs were identified in upgradient groundwater monitoring well MW-23R. Based on this location being hydraulically upgradient of the SWDA multiunit landfill, the apparent SSIs are associated with natural variations in geochemical conditions within the aquifer upgradient of the SWDA multiunit landfill. Therefore, all three apparent SSIs are related to the natural background groundwater quality within the aquifer.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the SWDA multiunit landfill have been shown to be responsible for all three apparent SSIs observed in upgradient background monitoring well MW-23R. Based on this successful ASD, NRG will continue semi-annual detection monitoring for the SWDA multiunit landfill.

Section 5
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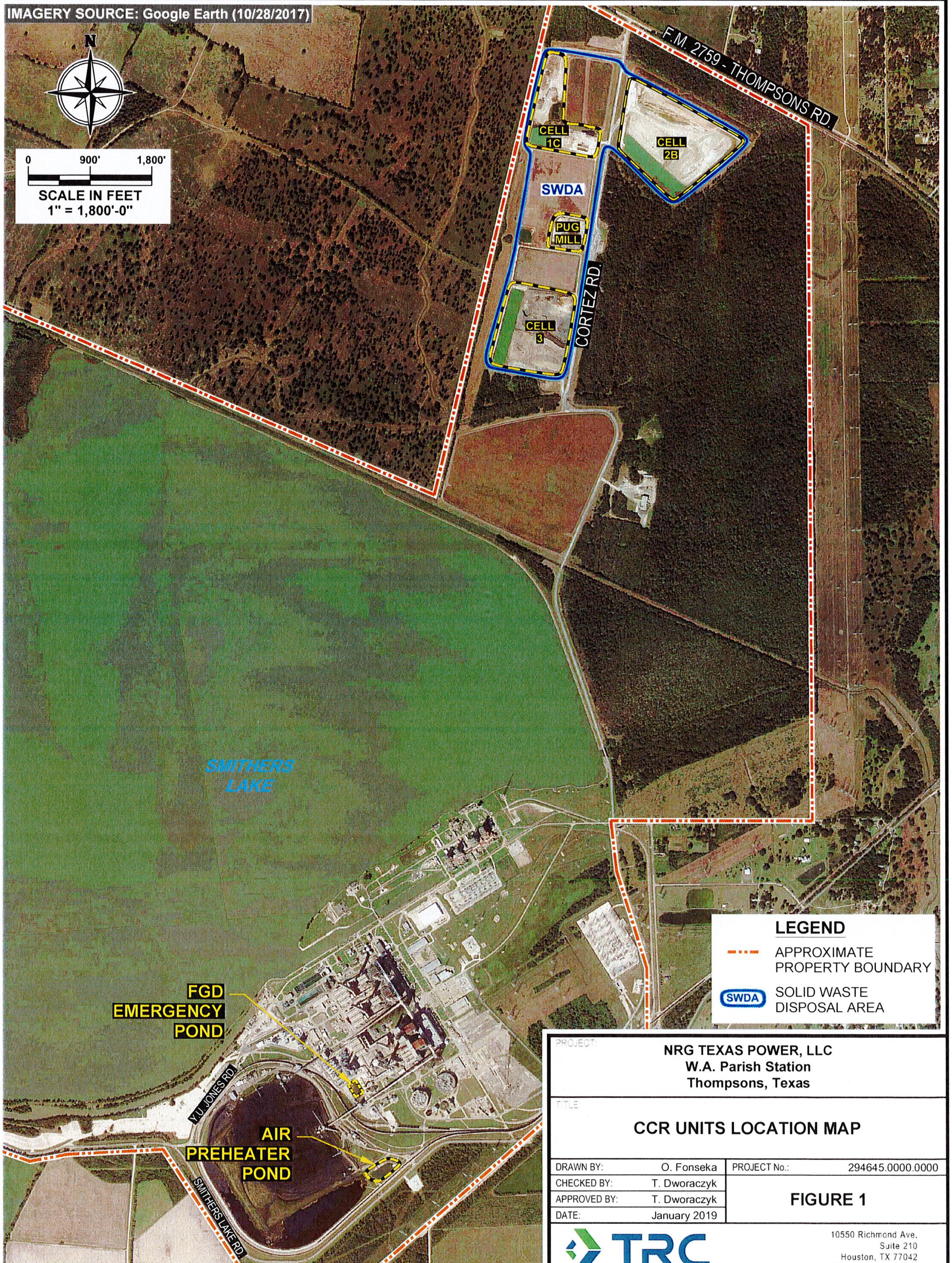
Figures



PROJECT:

NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE:

CCR UNITS LOCATION MAP

DRAWN BY:	O. Fonseka	PROJECT No.:	294645.0000.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	January 2019		

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

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Alternative Source Demonstration

W.A. Parish Electric Generating Station
FGD Emergency Pond (SWMU 020)

March 2022

Prepared For
NRG Texas Power, LLC
Thompsons, 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 and Title 40 Code of Federal Regulations (CFR §257.94(e). 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 ninth semi-annual groundwater detection monitoring event was conducted on October 15, 2021. One verification sampling event was performed on December 7, 2019. Statistical evaluation of the results was performed to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Seven apparent SSIs were identified. NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD by December 28, 2021.

This ASD successfully identified alternative sources for the seven apparent SSIs at the E Pond. Therefore, semi-annual detection monitoring will be continued for the Landfill.

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 2021 semi-annual detection monitoring sampling event results are the first data set statistically evaluated using the new background water quality data set.

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.

During 2021, the E Pond was being retrofitted per the CCR Rule. The E Pond was taken out of service, all CCR was removed, and the E Pond was decontaminated. A CCR Rule bottom composite liner system has been installed and the E Pond has been placed back into service as a CCR unit.

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the 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,* *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. Following each sampling event, the results have been evaluated for SSIs, and ASDs have been prepared as needed. These activities have been included in 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.

Since 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 ninth 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 area 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 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 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 Site are under confined conditions (ERM, 2017).

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. 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 and Stratum PA-1 (Upper Confining Unit)

Stratum DA-1 and Stratum PA-1 are both 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. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum DA-1 and Stratum PA-1 both serve as confining units to underlying Stratum DA-2 and Stratum PA-2, respectively, which comprise the uppermost groundwater-bearing unit at the Site. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum DA-1 and Stratum PA-1 is 2.85E-08 centimeters per second (cm/sec) and 2.03E-08 cm/sec, respectively (ERM 2017b).

2.1.2 Stratum DA-2 and Stratum PA-2 (Upper Aquifer)

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 PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum DA-2 and Stratum PA-2 are generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Both Stratum DA-2 and Stratum PA-2 are saturated and comprise the uppermost groundwater-bearing unit at the CCR units. CCR monitoring wells in the SWDA, and Plant Area are completed within Stratum DA-2 and Stratum PA-2, respectively. 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; and from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the northeast towards the Brazos River beneath the SWDA; to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum DA-3 and Stratum PA-3 (Lower Confining Unit)

Stratum DA-3 and Stratum PA-3 are both predominantly clay to silty clay. These strata appear to be bottom confining layers to the overlying groundwater-bearing units (Stratum DA-2 and Stratum PA-2). The thicknesses of Stratum DA-3 and Stratum PA-3 have not been defined.

2.1.4 E Pond – Hydrogeology

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 15, 2021 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 the site geological conditions, several groundwater parameters are discussed as follows, including boron, sulfate, and total dissolved solids (TDS).

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 Landfill, the source of boron is more likely natural rather than anthropogenic. Therefore, the increase in concentration of boron at MW-21 may be related to natural variations in groundwater geochemistry, such as pH, ion exchanges, EC, and salinity.

2.2.2 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 E Pond area, atmospheric deposition and anthropogenic activities could impacting sulfate concentrations (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 ninth semi-annual detection monitoring event was conducted on October 15, 2021. Laboratory analytical data were received by NRG on October 27, 2021. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed to identify apparent SSIs above background pursuant to 30 TAC 352 Subpart H. Eight apparent SSIs were identified. NRG notified the TCEQ of its intent to prepare an ASD on December 16, 2021.

As part of the ASD activities, verification sampling was conducted on December 7, 2021 for the eight apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was completed during December 2021. Additional verification sampling was conducted on February 9, 2022. Seven apparent SSIs were confirmed by the verification sampling. The UTLs and sampling results for the for apparent SSIs are provided in Table 1 below. Although, the sampling verification results for the December 7, 2021 sampling event were less than the October 15, 2021 results, the results were greater than their UTLs.

Table 1 SSIs – October 2021 Semiannual Detection Monitoring Event

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	0.12	12/7/2021	0.585	mg/L
Sulfate	MW-37	470	12/7/2021	882	mg/L
Total Dissolved Solids	MW-37	1,800	12/7/2021	2,160	mg/L
Boron	MW-38R	0.12	12/7/2021	0.593	mg/L
Sulfate	MW-38R	470	12/7/2021	575	mg/L
Boron	MW-61	0.12	12/7/2021	1.25	mg/L
Sulfate	MW-61	470	12/7/2021	743	mg/L

Notes: mg/L = milligrams per Liter

The apparent SSIs are discussed relative to the groundwater monitoring wells for the E Pond in the subsections below:

- 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.

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

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 MW-37

Total dissolved solids (TDS) were detected in MW-37 at a concentration of 2,020 mg/L in the October 15, 2021 sample, 2,160 mg/L in the December 2021 verification sample, and 2,040 mg/L in the February 2022 second verification sample. All three sample results exceeded the UTL for the E-Pond of 1,800 mg/L. The TDS data are consistent with the data collected during the previous two years. 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.

Sulfate was detected in MW-37 at a concentration of 862 mg/L in the October 15, 2021 sample and 882 mg/L in the December 7, 2021 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 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-37 at a concentration of 0.414 mg/L in the October 15, 2021 sample and 0.585 mg/L in the December 7, 2021 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.

3.2 MW-38R

Sulfate was detected in MW-38R at a concentration of 667 mg/L in the October 15, 2021 sample and 575 mg/L in the December 7, 2021 verification sample. Both sample results exceeded the UTL for the E Pond of 470 mg/L. A decreasing trend in sulfate concentrations was observed during 2021 and the concentration of sulfate has been approaching its UTL. The 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 0.401 mg/L in the October 15, 2021 sample and 0.593 mg/L in the December 7, 2021 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 increased concentration for boron in the December 7, 2021 verification sampling event 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.

3.3 MW-61

Sulfate was detected in MW-61 at a concentration of 1,640 mg/L in the October 15, 2021 sample and 743 mg/L in the December 7, 2021 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 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 0.826 mg/L in the October 15, 2021 sample and 1.25 mg/L in the December 7, 2021 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 likely related to elevated EC and salinity in the aquifer.

As discussed in subsections 3.1 and 3.2, 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.

Section 4
Conclusions

Statistical evaluation identified seven apparent SSIs for the ninth semi-annual detection monitoring event. 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.
- TDS was an apparent SSI for MW-37. A TDS increase was detected for the April 2020 sampling event and the TDS data was consistent from April 2020 to December 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 SSIs were identified in all three downgradient monitoring wells. The sulfate concentration trend was decreasing in both MW-37 and MW-38R, and both of these SSIs could be due to reduced surface sulfate sources and geochemical changes in the aquifer not related to a release from the E Pond. The sulfate SSI observed for MW-61 could be a result of the potential impact of alternative sources such as soil disturbance associated with the retrofit of the E Pond.
- Boron SSIs were identified in all three downgradient monitoring wells. Changes in boron concentrations were similar in all three downgradient monitoring wells and were detected at a consistent data range from October 2019 through October 2021, with an increase in the December 2021 verification sampling event. The boron SSIs could be a result of the potential impact of alternative leading elevated EC and salinity in the aquifer, or the potential impact of soil disturbance associated with the retrofit of the E Pond.

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.

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 likely be responsible for each of the seven apparent SSIs observed. Based on this successful ASD, NRG will continue semi-annual detection monitoring for the E Pond.

Section 5
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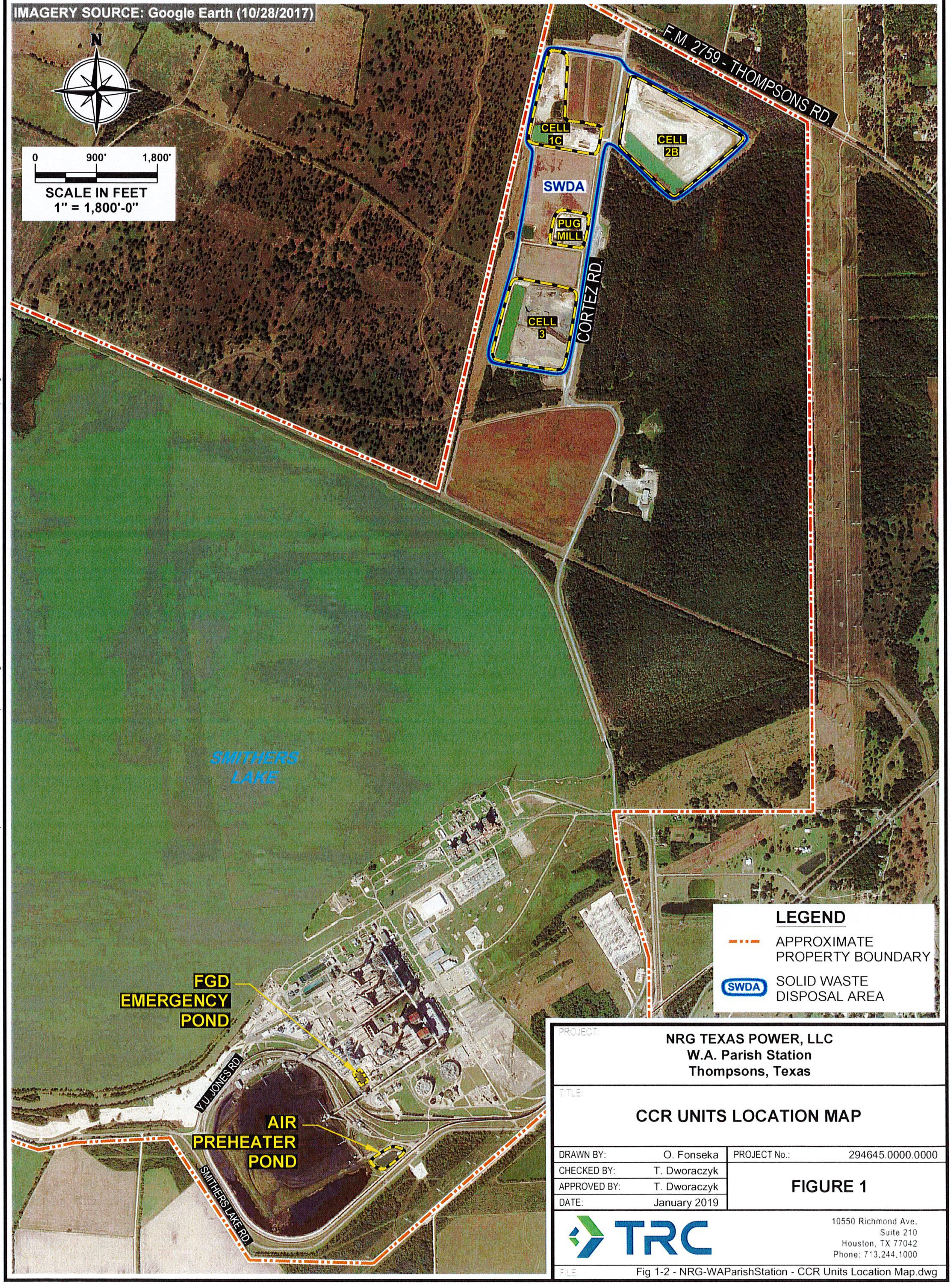
Figures



PROJECT:

NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE:

CCR UNITS LOCATION MAP

DRAWN BY:	O. Fonseka	PROJECT No.:	294645.0000.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1**	
APPROVED BY:	T. Dworaczyk		
DATE:	January 2019		

TRC

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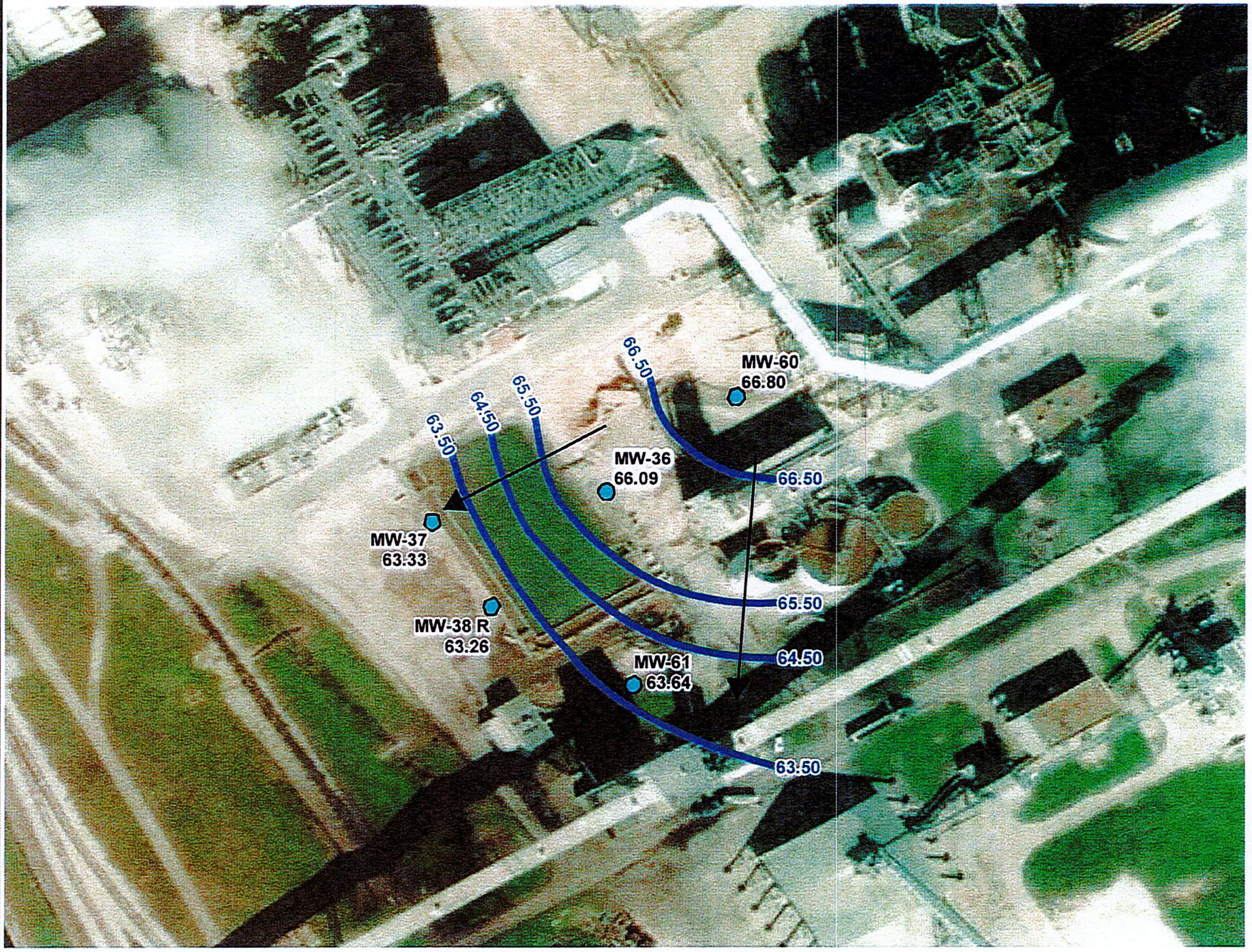
Houston, TX 77042
Phone: 713.244.1000

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)
- *66.80* GROUNDWATER ELEVATION (FT MSL)

STATE OF TEXAS
ANTHONY DWORACZYK
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PROFESSIONAL GEOSCIENTIST

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

TITLE:
FGD EMERGENCY POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2021

DRAWN BY:	F. YARBROUGH
CHECKED BY:	
APPROVED BY:	
DATE:	DECEMBER 2021
PROJ. NO:	423023.0000.0000
FILE:	423023.0000_2-12

FIGURE 2

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Air Preheater Pond (SWMU 021)

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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 and Title 40 Code of Federal Regulations (CFR §257.94(e). 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 Alternate Source Demonstration (ASD).

The ninth semi-annual groundwater detection monitoring event was conducted on October 15, 2021. Two verification sampling events were performed on December 7, 2019 and February 9, 2022. Statistical evaluation of the results was performed to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Four apparent SSIs were identified, one of which was associated with an upgradient groundwater monitoring well. NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD by December 28, 2021.

This ASD successfully identified alternative sources for the four apparent SSIs at the APH Pond. Therefore, semi-annual detection monitoring will be continued for the Landfill.

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 2021 semi-annual detection monitoring sampling event results are the first data set statistically evaluated using the new background water quality data set.

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 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).

During 2020 and 2021, the APH Pond was removed from service and retrofitted per the CCR Rule. As part of these activities, the CCR was dewatered, all CCR was removed from the impoundment, and the APH Pond was decontaminated. A CCR Rule bottom composite liner system was then installed and the APH Pond was placed back into service as a CCR unit. 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.

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the 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. Following each sampling event, the results have been evaluated for SSIs, and ASDs have been prepared as needed. These activities have been included in 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.

1.2 Purpose

TRC prepared this ASD to evaluate apparent SSIs above background levels for the ninth 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 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 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 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.

Site 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. 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 and Stratum PA-1 (Upper Confining Unit)

Stratum DA-1 and Stratum PA-1 are both 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. Stratum PA-1 is present from the ground surface to depths ranging from 15 feet bgs to 32 feet bgs.

Stratum DA-1 and Stratum PA-1 both serve as confining units to underlying Stratum DA-2 and Stratum PA-2, respectively, which comprise the uppermost groundwater-bearing unit at the Site. Geotechnical laboratory testing indicates that the hydraulic conductivity of Stratum DA-1 and Stratum PA-1 is 2.8SE-08 centimeters per second (cm/sec) and 2.03E-08 cm/sec, respectively (ERM 2017b).

2.1.2 Stratum DA-2 and Stratum PA-2 (Upper Aquifer)

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 PA-2 is predominantly silty sand with varying sand and silt content and trace clay. Stratum DA-2 and Stratum PA-2 are generally greater than 10 feet in thickness with bottom depths ranging from 60 to 80 feet bgs.

Both Stratum DA-2 and Stratum PA-2 are saturated and comprise the uppermost groundwater-bearing unit at the CCR units. CCR monitoring wells in the SWDA, and Plant Area are completed within Stratum DA-2 and Stratum PA-2, respectively. 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; and from 6.68E-04 cm/sec to 4.26E-02 cm/sec in Stratum PA-2 (ERM 2017b). Groundwater primarily flows to the northeast towards the Brazos River beneath the SWDA; to the southwest beneath the E Pond, and to the southeast beneath the APH Pond.

2.1.3 Stratum DA-3 and Stratum PA-3 (Lower Confining Unit)

Stratum DA-3 and Stratum PA-3 are both predominantly clay to silty clay. These strata appear to be bottom confining layers to the overlying groundwater-bearing units (Stratum DA-2 and Stratum PA-2). The thicknesses of Stratum DA-3 and Stratum PA-3 have not been defined.

2.1.4 Air Preheater Pond - Hydrogeology

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 October 15, 2021 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 257.91(f) of the 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 elevations measured during semi-annual detection monitoring events and development of revised potentiometric surface maps, two of the initially designated downgradient monitoring wells (MW-39 and MW-40) are located upgradient of the APH Pond as shown on the October 2021 groundwater potentiometric surface map. Therefore, the CCR monitoring well system for the APH Pond has been 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, 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.

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 the hydrogeology of the APH Pond, potential SSIs in groundwater including calcium, fluoride, and sulfate are discussed in the subsections 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, 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 at the APH Pond, the source of calcium is more likely 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 electrical conductivity.

2.2.2 Fluoride in Groundwater

The common natural source of fluoride in groundwater is the dissolution of natural fluoride-bearing minerals, such as fluorspar, fluorapatite, amphiboles, hornblende, tremolite, and biotite (Luo et al., 2018). The natural concentration of fluoride in groundwater depends on the geological, chemical, and physical characteristics of the aquifer, the porosity and acidity of the soils and rock, temperature, interaction with other chemical elements, depth of the aquifer, and intensity of weathering (Brindha &

Elango, 2011). Reflecting the range in concentrations of fluoride in groundwater for the Station, it is likely that geochemical processes are the primary variable controlling the concentrations of fluoride in groundwater.

A range of natural and anthropogenic geochemical processes including Ion exchange, evaporation, adsorption-desorption, ion competition, mixing, and salinization can occur resulting in an increase in fluoride concentrations in groundwater (Luo et al., 2018). In particular, alkaline pH, elevated concentrations of sodium and bicarbonate, and decreased concentrations of calcium are geochemical variables.

Alkaline pH can increase the fluoride dissolution from mineral surfaces into groundwater. Saxena & Ahmed (2001) observed that alkaline conditions with pH ranging between 7.6 and 8.6 are favorable for dissolution of fluorite mineral from the host rocks.

Sodium bicarbonate-type waters are typical of high fluoride waters. Multiple investigations have demonstrated positive correlations between fluoride and both bicarbonate and sodium as well as an inverse relation between fluoride and calcium (Mondal et al., 2014; Guo et al., 2012; Chen et al., 2020). The chemical reactions for the dissolution of fluoride in the presence of high bicarbonate and sodium, and low calcium content is described as follows (Kimambo et al., 2019):

$$Na^{+} + +HCO_3^{-} \dashrightarrow NaHCO_3$$

$$CaF_2 + +2NaHCO_3 \rightarrow CaCO_3 + 2Na^{+} + 2F^{-} + H_2O + CO_2$$

Luo et al. (2018) reported that cation exchange can increase the concentration of fluoride when increasing the Na/Ca molar ratio via ion complexation, and salt affect can further increase the fluoride dissolution from mineral surfaces.

In addition, evaporation is another potential reason that can result in an increased concentration of fluoride in shallow groundwater. Evaporation may directly remove water from shallow aquifers and result in an elevated fluoride concentration. Evaporation can increase ion concentrations, leading to the precipitation of some major minerals, reducing the calcium concentration, and favoring the dissolution of fluoride.

2.2.3 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).

Section 3
Alternative Source Demonstration

The ninth semi-annual detection monitoring event was conducted on October 15, 2021. Laboratory analytical data were received by NRG on October 27, 2021. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed to identify apparent SSIs above background pursuant to 30 TAC 352 Subpart H. Five apparent SSIs were identified. NRG notified the TCEQ of its intent to prepare an ASD on December 16, 2021.

As part of the ASD activities, verification sampling was conducted on December 7, 2021 for the five apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was completed during December 2021 and the five apparent SSIs were confirmed. Additional verification sampling was conducted on February 9, 2022. Four apparent SSIs were confirmed (the concentration of born for MW-63 was less than the UTL; therefore, it was no longer considered to be an apparent SSI). The UTLs and sampling results for the for apparent SSIs are provided in Table 1 below. Although, the sampling verification results for the December 7, 2021 sampling event were less than the October 15, 2021 results, the results were greater than their UTLs.

Table 1 SSIs – October 2021 Semiannual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Calcium	MW-40 (UG)	NA	290	12/8/2021	307	mg/L
Fluoride	MW-41	NA	0.20	2/9/2022	0.22	mg/L
Sulfate	MW-63	NA	360	12/7/2021	425	mg/L
Fluoride	MW-64	NA	0.20	2/9/2022	0.52	mg/L

Notes: UG = Upgradient
mg/L = milligrams per Liter

The apparent SSIs are discussed relative to the groundwater monitoring wells for the APH Pond in the subsections below.

3.1.1 MW-40 (Upgradient) - Calcium

Calcium was identified as an apparent SSI for upgradient monitoring well MW-40. Calcium was detected in MW-40 at a concentration of 313 mg/L for the October 15, 2021 sampling event and 307 mg/Lin the December 7, 2021 verification sampling event. Both concentrations exceeded the UTL of 290 mg/L.

Historical data review shows that pH for MW-40 remained relative steady in a range of 6.41 to 6.62, which indicates there were no significant changes in soil pH. The concentration of sulfate increased to 140 mg/L for the October 15, 2021 from 82 mg/L for the October 1, 2020 sampling events, while no significant changes were detected for other parameters.

The apparent calcium SSI could be a result of the potential impact of an alternative source during the retrofit construction activities at the APH Pond resulting in an elevated EC in groundwater. As discussed in subsection 2.2, rock weathering is not considered to be a likely line of reasoning for apparent SSIs at the Station. An alternative source containing sodium or potassium could result in an elevated EC in groundwater resulting in an increased calcium concentration. Therefore, analysis of sodium is recommended for future monitoring events to evaluate this line of reasoning.

Soil disturbance occurred during 2020 and 2021 as part of the retrofit of the APH 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.

3.1.2 MW-41 (Downgradient) - Fluoride

Fluoride was identified as an apparent SSI in MW-41. Fluoride was detected in MW-41 at a concentration of 0.35 mg/Lin the October 15, 2021 sampling event, 0.29 mg/Lin the December 7, 2021 verification sampling event, and 0.22 mg/Lin the February 9, 2022 verification sampling event. All three concentrations exceed the UTL of 0.20 mg/L. Based on review of the historical data, these fluoride concentrations were consistent with the April 9, 2021 result, which was 0.32 mg/L.

It should be noted that the concentrations of fluoride in the upgradient groundwater monitoring well (MW-36) at the E Pond, which is located in close proximity to the APH Pond, were also elevated during the October 15, 2021 sampling event. The concentration of fluoride was 0.39 mg/L for MW-36, which is comparable to the fluoride concentrations observed at MW-41 at the APH Pond. The concentration of fluoride at the E Pond indicates that natural variation in water quality at the Station likely accounts for the apparent fluoride SSI at MW-41.

As discussed in Section 2, fluoride has a positive correlation with both bicarbonate and sodium, and an inverse relation with calcium. Cation exchange process with low calcium and high sodium can result in the increase of fluoride in groundwater. The increased fluoride and decreased calcium concentrations demonstrate this geochemical process is the likely reason for the apparent fluoride SSI.

Evaporation is another potential line of reasoning for the increased concentration of fluoride in groundwater. Evaporation can directly remove water from shallow aquifers resulting in elevated fluoride concentrations. Evaporation can also increase ion concentrations and contribute to the precipitation of major minerals, reducing the calcium concentration and favoring the dissolution of fluoride.

As discussed previously, soil disturbance occurred during 2020 and 2021 as part of the retrofit of the APH 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. 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.

3.1.3 MW-64 (Downgradient) - Fluoride

Fluoride was also identified as an apparent SSI in MW-64. Fluoride was detected in MW-64 at a concentration of 0.23 mg/Lin the April 9, 2021 sampling event, 0.26 mg/Lin the October 15, 2021 semi-annual detection monitoring sampling event, 0.24 mg/L in the December 7, 2021 verification sampling event, and 0.52 mg/Lin the February 9, 2022 verification sampling event. These fluoride concentrations all exceeded the UTL of 0.20 mg/L.

It should be noted that the concentrations of fluoride in the upgradient groundwater monitoring well (MW-36) at the E Pond, which is located in close proximity to the APH Pond, were also elevated during the October 15, 2021 sampling event. The concentration of fluoride was 0.39 mg/L, which is comparable to the fluoride concentrations observed at MW-64 at the APH Pond. The concentration of fluoride at the E Pond indicates that natural variation in water quality at the Station may likely account for the apparent fluoride SSI at MW-64.

Therefore, as discussed in this subsection, the apparent fluoride SSI in MW-64 is likely a result of the impact of the construction activities during the retrofit in 2020 and 2021 and impact to the geochemical stability of the aquifer. Such activities likely impacted the geochemical stability of the aquifer and resulted in a near-term impact on groundwater quality in the aquifer. As the aquifer restabilizes over time following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize over time and concentrations of CCR indicator parameters will return to their pre-construction condition.

3.1.4 MW-63 (Downgradient) – Sulfate

Sulfate was identified as an apparent SSI in MW-63. Sulfate was detected in MW-63 at a concentration of 455 mg/Lin the October 15, 2021 sampling event and 425 mg/Lin the December 7, 2021 verification sampling event. These sulfate concentrations exceeded the UTL of 360 mg/L.

Therefore, as discussed in this subsection, the apparent sulfate SSI in MW-63 is likely a result of the impact of the construction activities during the retrofit in 2020 and 2021 and impact to the geochemical stability of the aquifer. Such activities likely impacted the geochemical stability of the aquifer and resulted in a near-term impact on groundwater quality in the aquifer. As the aquifer restabilizes over time following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize over time and concentrations of CCR indicator parameters will return to their pre-construction condition.

Section 4
Conclusions

Based on statistical evaluation of the October 15, 2021 semi-annual detection monitoring event, and both verification sampling events, four apparent SSIs were identified for the APH Pond. One of the apparent SSIs was identified in an upgradient monitoring wells. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- Calcium was an apparent SSI for upgradient monitoring well MW-40, which may be a result of the impact of an alternative source(s) resulting in elevated EC in the groundwater, or enhanced minerals dissolution in response to disturbance of aquifer geochemistry in response to retrofit construction activities and not a release from the APH Pond;
- Fluoride was an apparent SSI for downgradient monitoring wells MW-41, which may be a result of changes to the geochemistry of the aquifer related to the retrofit construction activities, based on decreasing concentrations of calcium;
- Fluoride was an apparent SSI for MW-64, which may be a result of the impact of alternative source(s) containing sodium and bicarbonate and not a release from the APH Pond;
- Sulfate was an apparent SSI for MW-63, which may be a result of the impact of alternative source(s) resulting in elevated EC and/or salinity in the groundwater in response to disturbance of the aquifer geochemistry in response to retrofit construction activities and not a release from the APH Pond; and
- Apparent natural variations in groundwater quality at the Station, based on the concentration of fluoride for upgradient monitoring well MW-36 at the E Pond.

As the aquifer restabilizes over time following completion of the retrofit construction activities, it is anticipated that aquifer geochemistry will restabilize over time and concentrations of CCR indicator parameters will return to their pre-construction condition.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources other than a release from the APH Pond have been shown to likely 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.

Section 5
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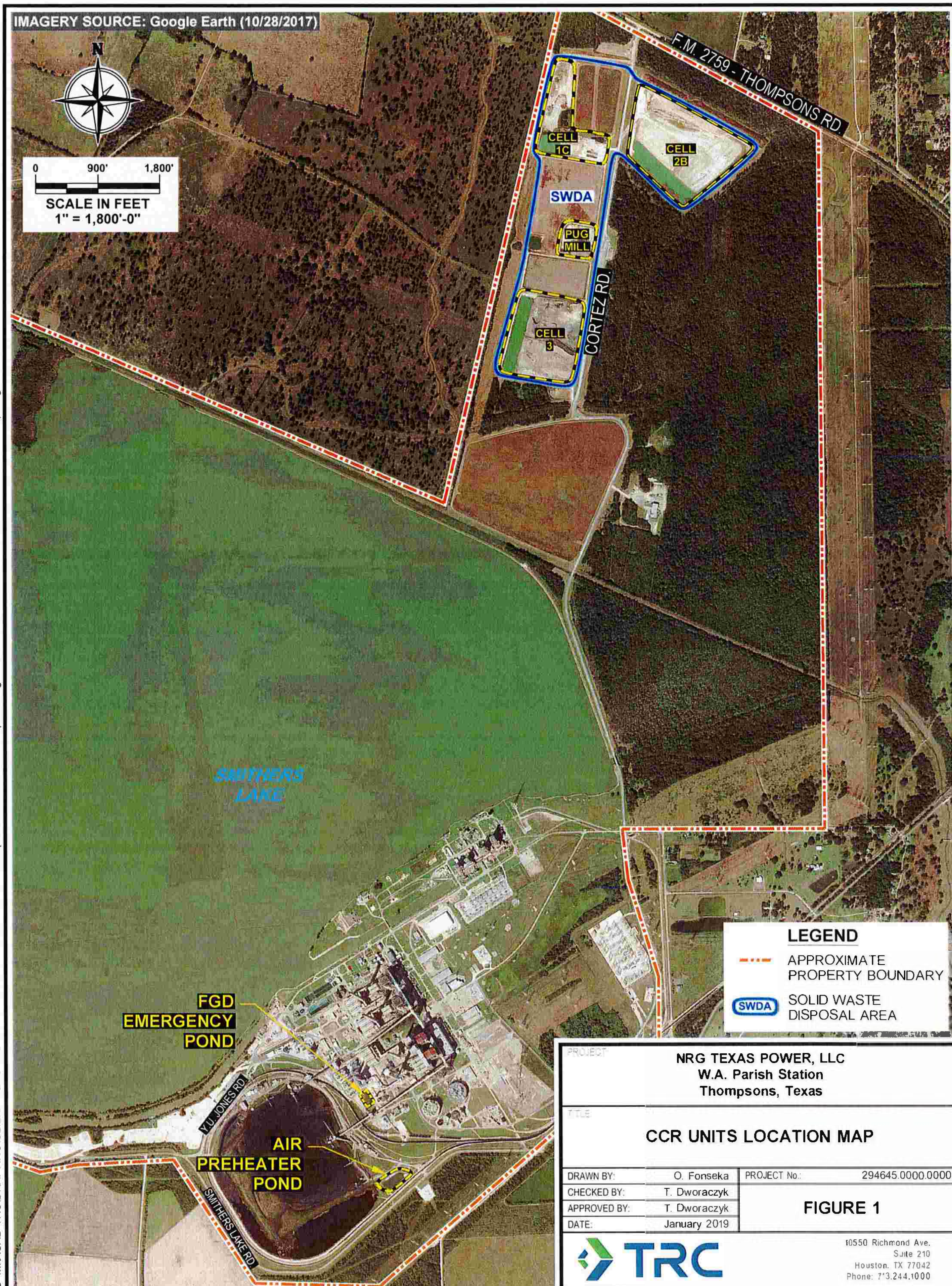
Figures



PROJECT

NRG TEXAS POWER, LLC
W.A. Parish Station
Thompsons, Texas

TITLE

CCR UNITS LOCATION MAP

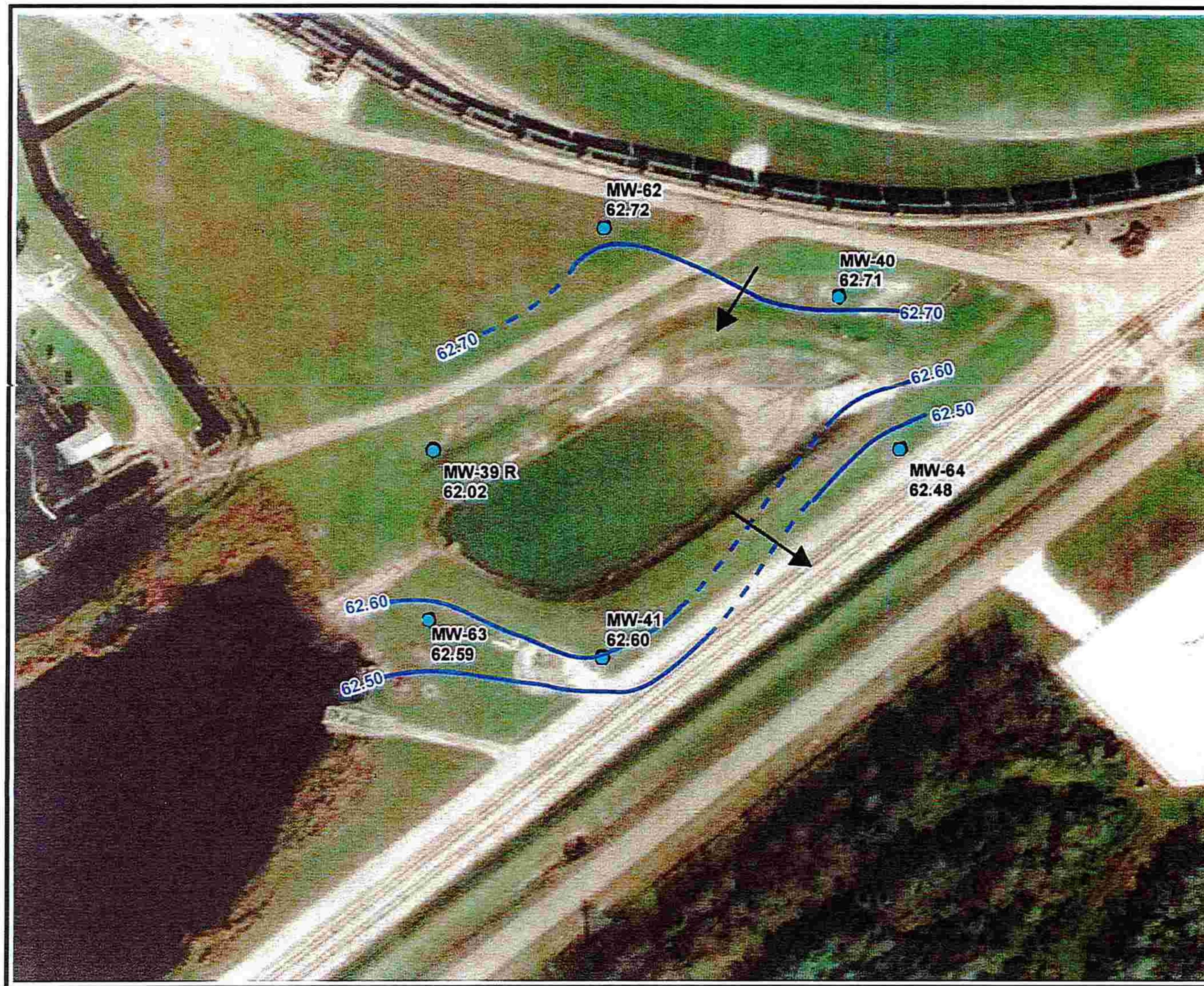
DRAWN BY:	O. Fonseka	PROJECT No.:	294645.0000.0000
CHECKED BY:	T. Dworaczyk	FIGURE 1	
APPROVED BY:	T. Dworaczyk		
DATE:	January 2019		

TRC

10550 Richmond Ave.
Suite 210
Houston, TX 77042
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)
- 6271 GROUNDWATER ELEVATION (FT MSL)

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST

AWD 1-7-22

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON OCTOBER 15TH, 2021.

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

N

0 150 300 FT

1 " = 150 '
1:1,800

TRC

14701 St. Mary's Lane, Suite 500
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 2021

DRAWN BY:	F. YARBROUGH
CHECKED BY:	
APPROVED BY:	
DATE:	DECEMBER 2021
PROJ. NO.:	294645.2001.0000
FILE:	294645.2001 2-11

FIGURE 2

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Solid Waste Disposal Area (SWMU 001) CCR Multiunit

August 2022

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

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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 tenth semi-annual groundwater detection monitoring event was conducted on April 1, 2022. Verification sampling was performed on May 20, 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: calcium, sulfate, and TDS; were identified. All three 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 13, 2022.

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 April 2022 semi-annual detection monitoring event analytical results, including the May 20, 2022 verification sampling results, are the second data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for the three 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 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 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 10 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 April 2022 semi-annual detection monitoring event analytical results, including the May 20, 2022 verification sampling results, are the second 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 tenth 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) 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 1, 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 calcium, sulfate, and total dissolved solids (TDS).

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 at the SWDA Landfill area, the source of calcium is more likely 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

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).

2.2.3 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 tenth semi-annual detection monitoring event was conducted on April 1, 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 identified: calcium, sulfate, and TDS.

As part of the ASD activities, verification sampling was conducted on May 20, 2022 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: calcium, 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 June 13, 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 – April 2022 Semiannual Detection Monitoring Event

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Calcium	MW-23R (UG)	420	4/1/2022	492	mg/L
Sulfate	MW-23R (UG)	670	4/1/2022	1,200	mg/L
Total Dissolved Solids	MW-23R (UG)	3,700	4/1/2022	3,960	mg/L

Notes: UG = Upgradient
mg/L = milligrams per Liter

3.1 MW-23R

All three 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.

Calcium was detected in MW-23R at a concentration of 492 mg/L in the April 1, 2022 sample and 509 mg/L in the May 20, 2022 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 418 mg/L. 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 May 20, 2022 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 673 mg/L. The calcium and sulfate data are consistent with the sampling event performed during October 2021. MW-23R is located hydraulically upgradient and is an upgradient background monitoring location for the SWDA Landfill. Therefore, the calcium and sulfate SSIs in MW-23R are 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 3960 mg/L in the April 1, 2022 sample and 4,070 mg/L in the May 20, 2022 verification sample. Both sample results exceeded the UTL for the SWDA Landfill of 3,720 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 calcium and 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 1, 2022 semi-annual detection monitoring event and the May 20, 2022 verification sampling events analytical results, three apparent SSIs: calcium, 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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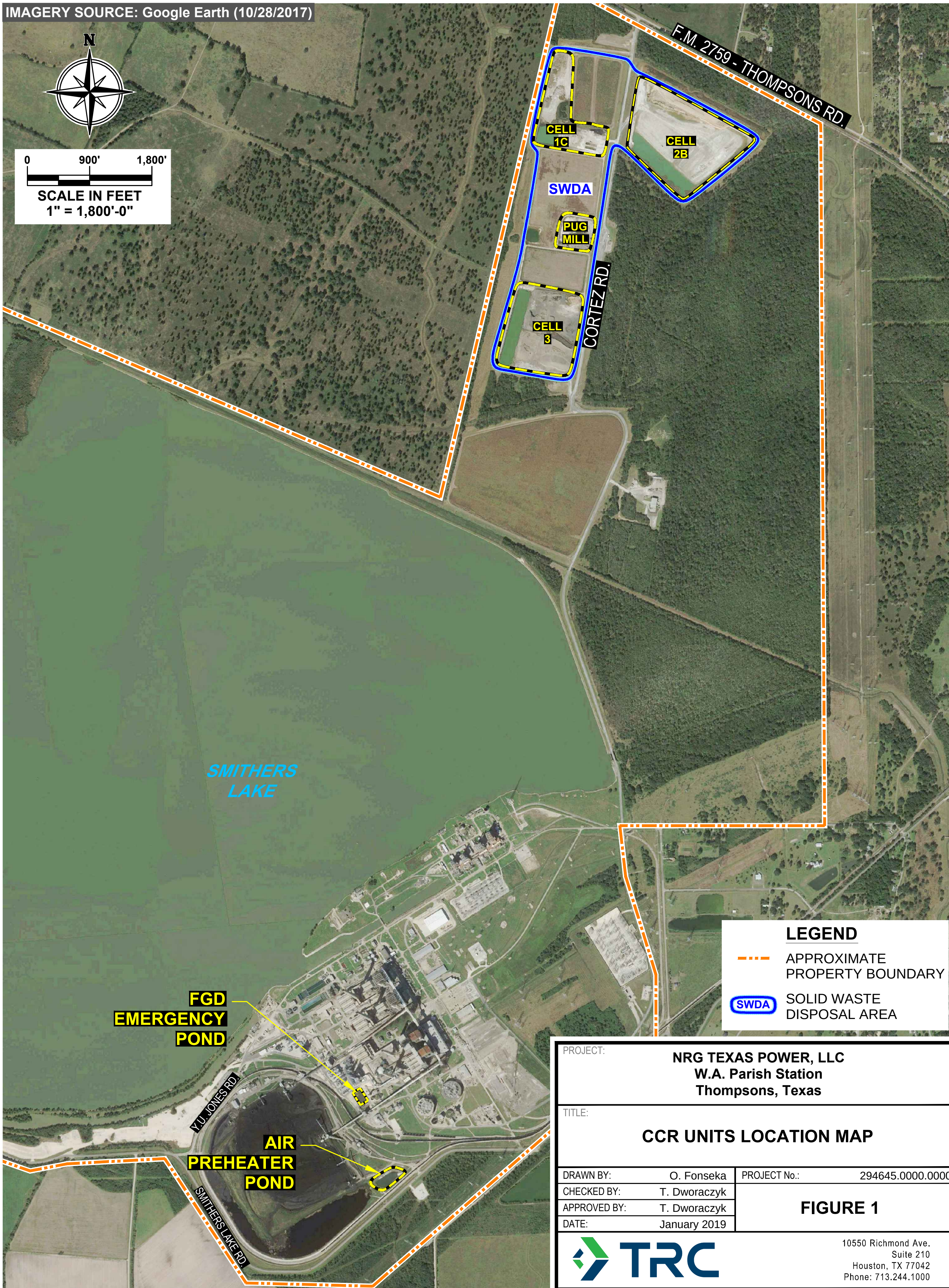
Figures

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



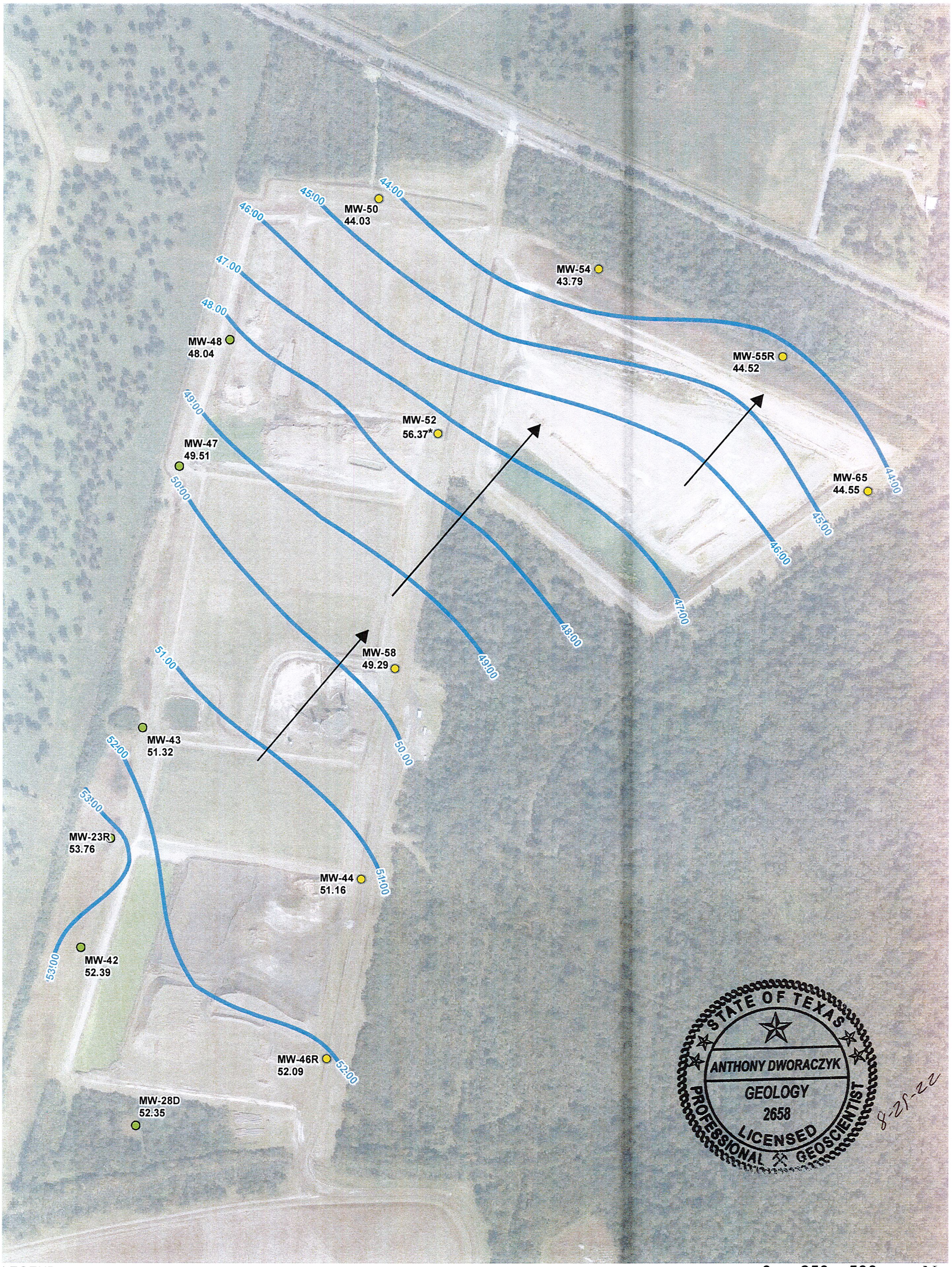
PROJECT:	NRG TEXAS POWER, LLC W.A. Parish Station Thompsons, Texas
TITLE:	CCR UNITS LOCATION MAP

DRAWN BY:	O. Fonseka	PROJECT No.:	294645.0000.0000
CHECKED BY:	T. Dworaczyk	FIGURE 1	
APPROVED BY:	T. Dworaczyk		
DATE:	January 2019		

TRC

10550 Richmond Ave.
Suite 210
Houston, TX 77042
Phone: 713.244.1000

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



LEGEND

- MULTIUNIT DOWNGRADIENT MONITORING WELL
- MULTIUNIT UPGRADIENT MONITORING WELL
- *52.35* GROUNDWATER ELEVATION (FT MSL)
- GROUNDWATER ELEVATION CONTOUR - DASHED WHERE INFERRED (FT MSL)
- GROUNDWATER FLOW DIRECTION

* NOTE: MW-52 was not used for potentiometric map

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2022.

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 APRIL 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	
APPROVED BY:	
DATE:	AUGUST 2022
PROJ NO:	478259.0001.0000
FILE:	478259.0001_2-10.mxd

FIGURE 2

Alternative Source Demonstration

W.A. Parish Electric Generating Station
FGD Emergency Pond (SWMU 020)

August 2022

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

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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 tenth semi-annual groundwater detection monitoring event was conducted on April 1, 2022. Verification sampling was performed on May 20, 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. Nine apparent SSIs were initially identified, and eight apparent SSIs were confirmed based on the results of verification sampling performed on May 20, 2022. NRG notified the Texas Commission Environmental Quality (TCEQ) in a letter dated June 10th, 2022 of its intent to prepare an ASD on June 13, 2022.

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 April 2022 semi-annual detection monitoring event analytical results, including the May 20, 2022 verification sampling results, are the second 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 likely 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 APH 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 2022 sampling event, a total of 10 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 April 2022 semi-annual detection monitoring event analytical results, including the May 20, 2022 verification sampling results, are the second 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 tenth 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 1, 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 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 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 tenth semi-annual detection monitoring event was conducted on April 1, 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. Nine apparent SSIs were initially identified.

As part of the ASD activities, verification sampling was conducted on May 20, 2022 for the nine initial apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling 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 verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on June 13, 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 – April 2022 Semiannual Detection Monitoring Event

ANALYTE	WELL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-37	0.12	4/1/2021	0.367	mg/L
Sulfate	MW-37	470	4/1/2021	1,030	mg/L
Total Dissolved Solids	MW-37	1,800	4/1/2021	1,880	mg/L
Boron	MW-38R	0.12	4/1/2021	0.421	mg/L
Sulfate	MW-38R	470	4/1/2021	572	mg/L
Boron	MW-61	0.12	4/1/2021	1.29	mg/L
Sulfate	MW-61	470	4/1/2021	916	mg/L
Total Dissolved Solids	MW-61	470	4/1/2021	1,880	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 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 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 1,840 mg/L in the May 20, 2020 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 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 716 mg/L in the May 20, 2020 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 could be 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 0.366 mg/L in the May 20, 2020 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 572 mg/L in the April 1, 2022 sample and 531 mg/L in the May 20, 2020 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 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 0.412 mg/L in the May 20, 2020 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 1,850 mg/L in the May 20, 2020 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 916 mg/L in the April 1, 2022 sample and 958 mg/L in the May 20, 2020 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 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 1.32 mg/L in the May 20, 2020 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 likely related to elevated EC and salinity in the aquifer.

Section 4
Conclusions

Based on statistical evaluation of the April 1, 2020 semi-annual detection monitoring event and the May 20, 2022 verification sampling event analytical results, eight apparent SSIs (boron, sulfate, and TDS) for downgradient monitoring wells for the tenth 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 likely be responsible for each of the nine 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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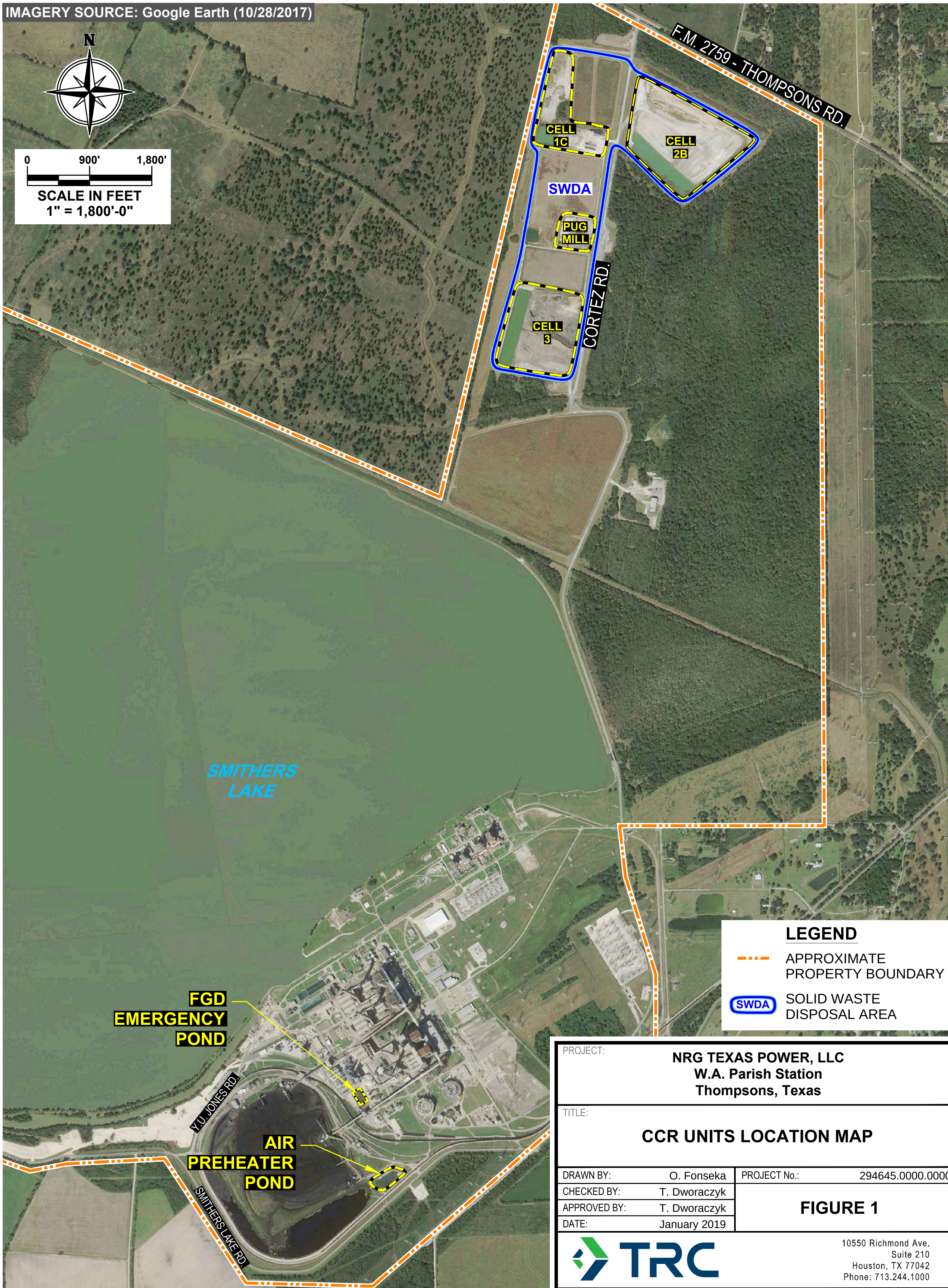
Figures



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TITLE:	CCR UNITS LOCATION MAP
DRAWN BY: O. Fonseka	PROJECT No.: 294645.0000.0000
CHECKED BY: T. Dworaczyk	FIGURE 1
APPROVED BY: T. Dworaczyk	
DATE: January 2019	
TRC	10550 Richmond Ave. Suite 210 Houston, TX 77042 Phone: 713.244.1000
FILE:	Fig 1-2 - NRG-WAParishStation - CCR Units Location Map.dwg

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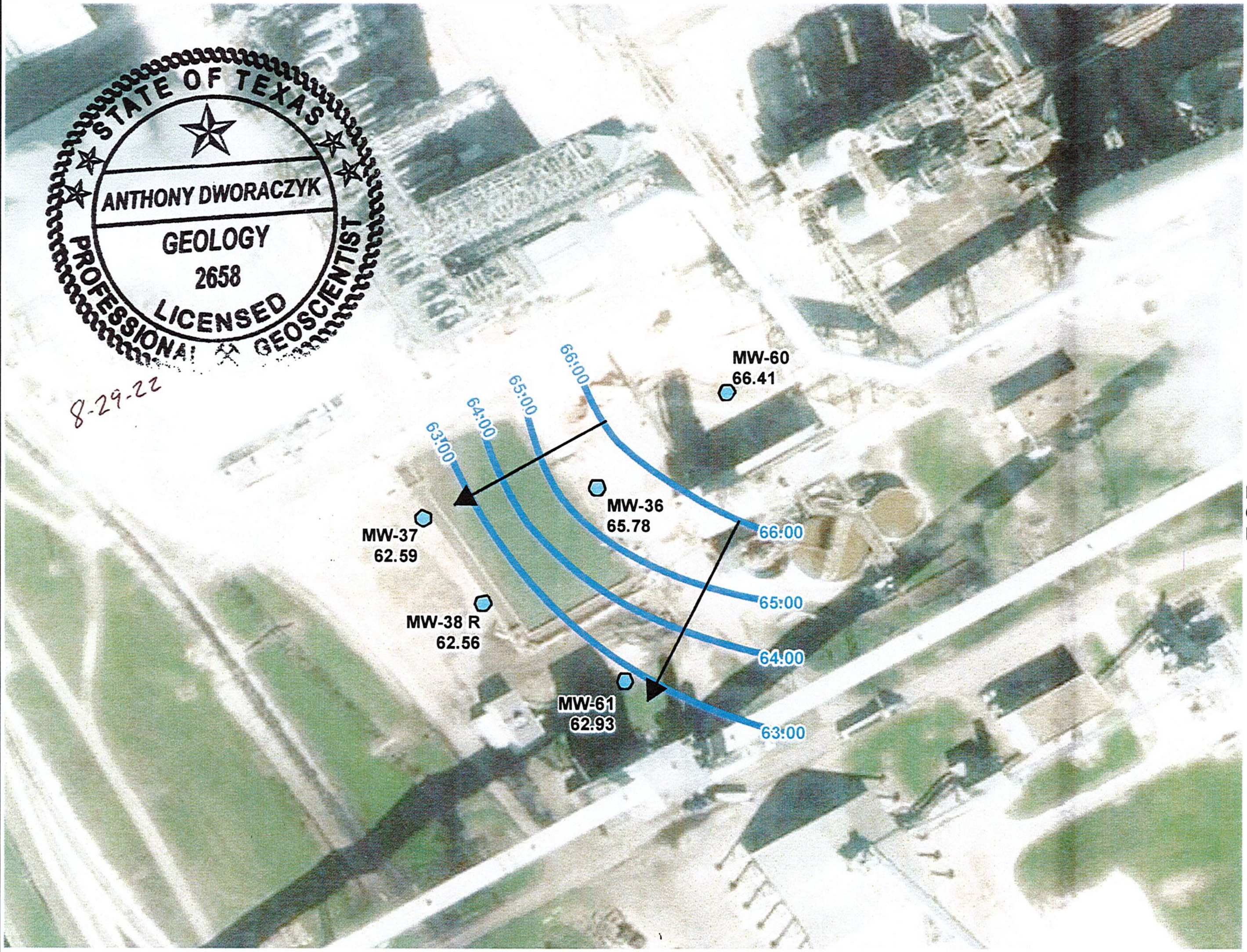

Legend

MONITORING WELL

GROUNDWATER FLOW DIRECTION

GROUNDWATER ELEVATION CONTOUR - DASHED WHERE INFERRED (FT MSL)

62.59 GROUNDWATER ELEVATION (FT MSL)

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 2022.

N

0 150 300 FT

1 " = 150 '
1:1,800

TRC

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PROJECT:

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

TITLE:

FGD EMERGENCY POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	
APPROVED BY:	
DATE:	AUGUST 2022
PROJ. NO:	478259.0001.0000
FILE:	478259.0001_2-12

FIGURE 2

Alternative Source Demonstration

W.A. Parish Electric Generating Station
Air Preheater Pond (SWMU 021)

August 2022

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

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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 tenth semi-annual groundwater detection monitoring event was conducted on April 1, 2022. Verification sampling was performed on May 20, 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: pH and sulfate; were identified. NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on June 13, 2022.

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 April 2022 semi-annual detection monitoring event analytical results, including the May 20, 2022 verification sampling results, are the second data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for both 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) 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 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 April 2022 sampling event, a total of 10 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 April 2022 semi-annual detection monitoring event analytical results, including the May 20, 2022 verification sampling results, are the second 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 tenth 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 April 1, 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, 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 may be 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 tenth semi-annual detection monitoring event was conducted on April 1, 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 May 20, 2022 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 pH and sulfate. The concentration of calcium for MW-63 was less than the UTL; therefore, it was no longer considered to be an apparent SSI. Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on June 13, 2022 addressing both apparent SSIs (pH and sulfate).

The UTLs and sampling results for the for both 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	4/1/2022	7.25	S.U.
Sulfate	MW-63	NA	360	4/1/2022	532	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 and sulfate.

Section 4
Conclusions

Based on statistical evaluation of the April 1, 2022 semi-annual detection monitoring event and the May 20, 2022 verification sampling events analytical results, two apparent SSIs: pH and sulfate; 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 likely 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 References

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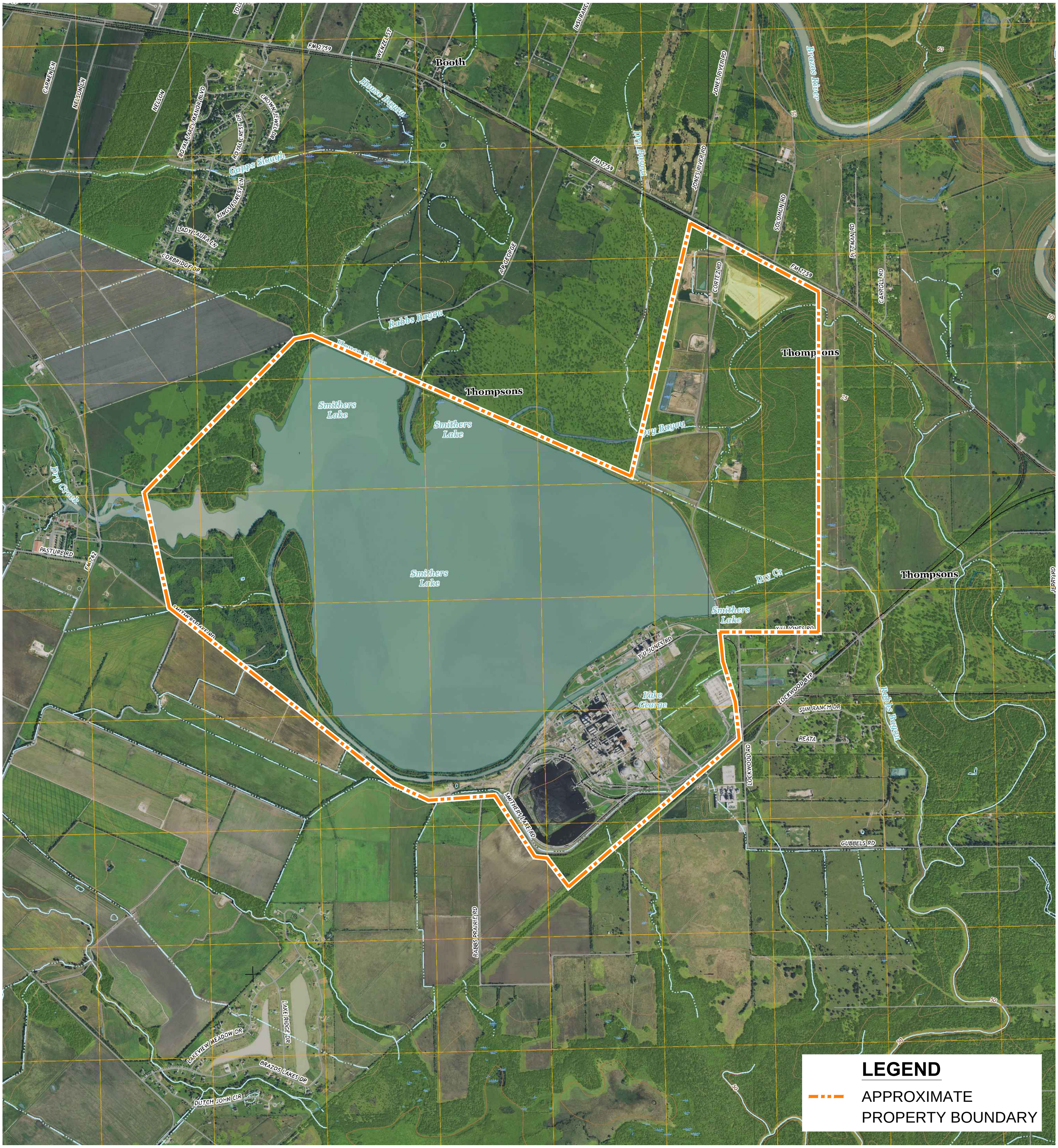
Figures



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"

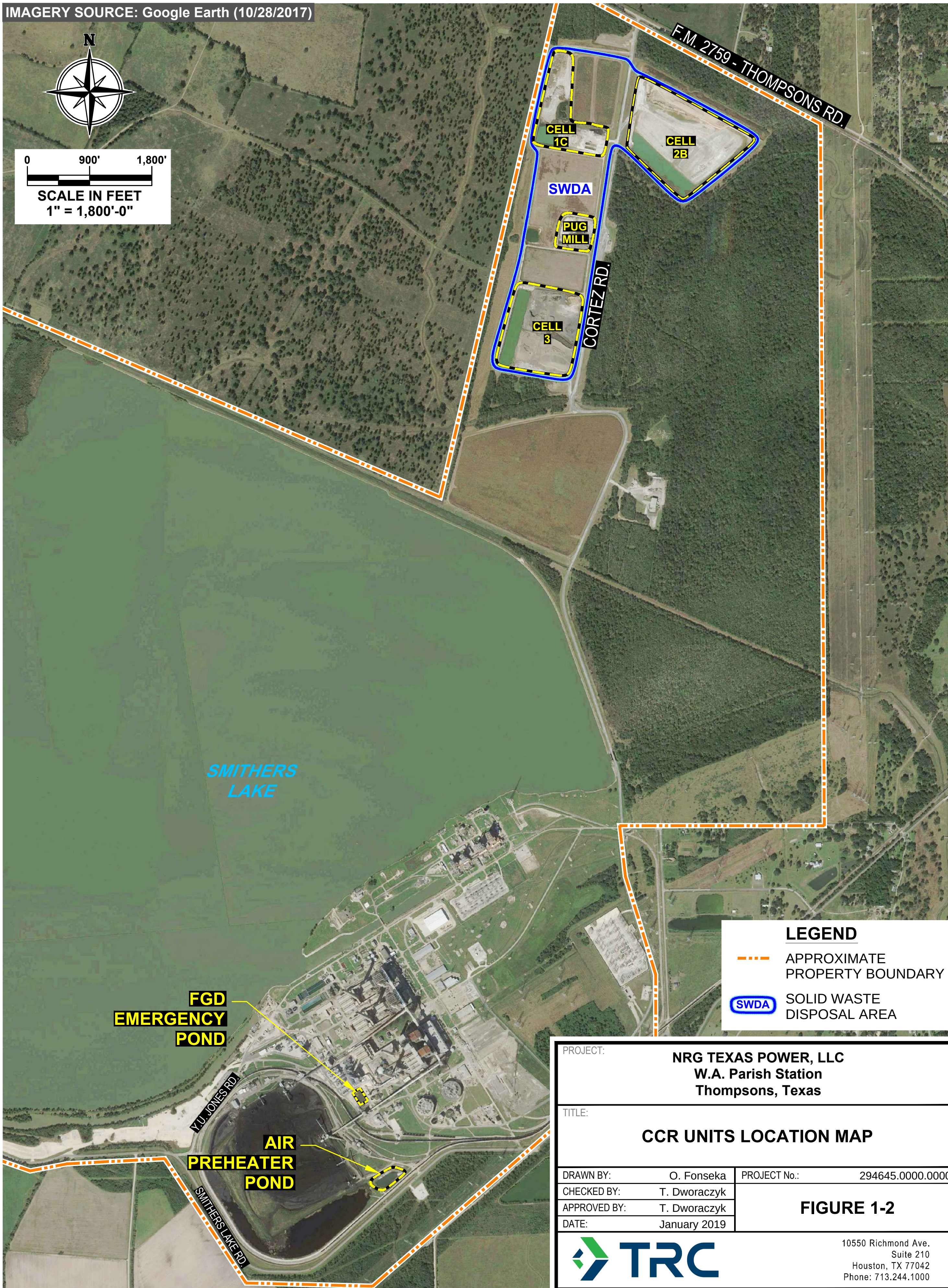
PROJECT:	**NRG TEXAS POWER, LLC** **W.A. Parish Station** **Thompsons, Texas**
TITLE:	**SITE LOCATION MAP**

DRAWN BY:	O. Fonseka	PROJECT No.:	294645.0000.0000
CHECKED BY:	T. Dworaczyk	**FIGURE 1-1**	
APPROVED BY:	T. Dworaczyk		
DATE:	January 2019		

TRC
10550 Richmond Ave.
Suite 210
Houston, TX 77042
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

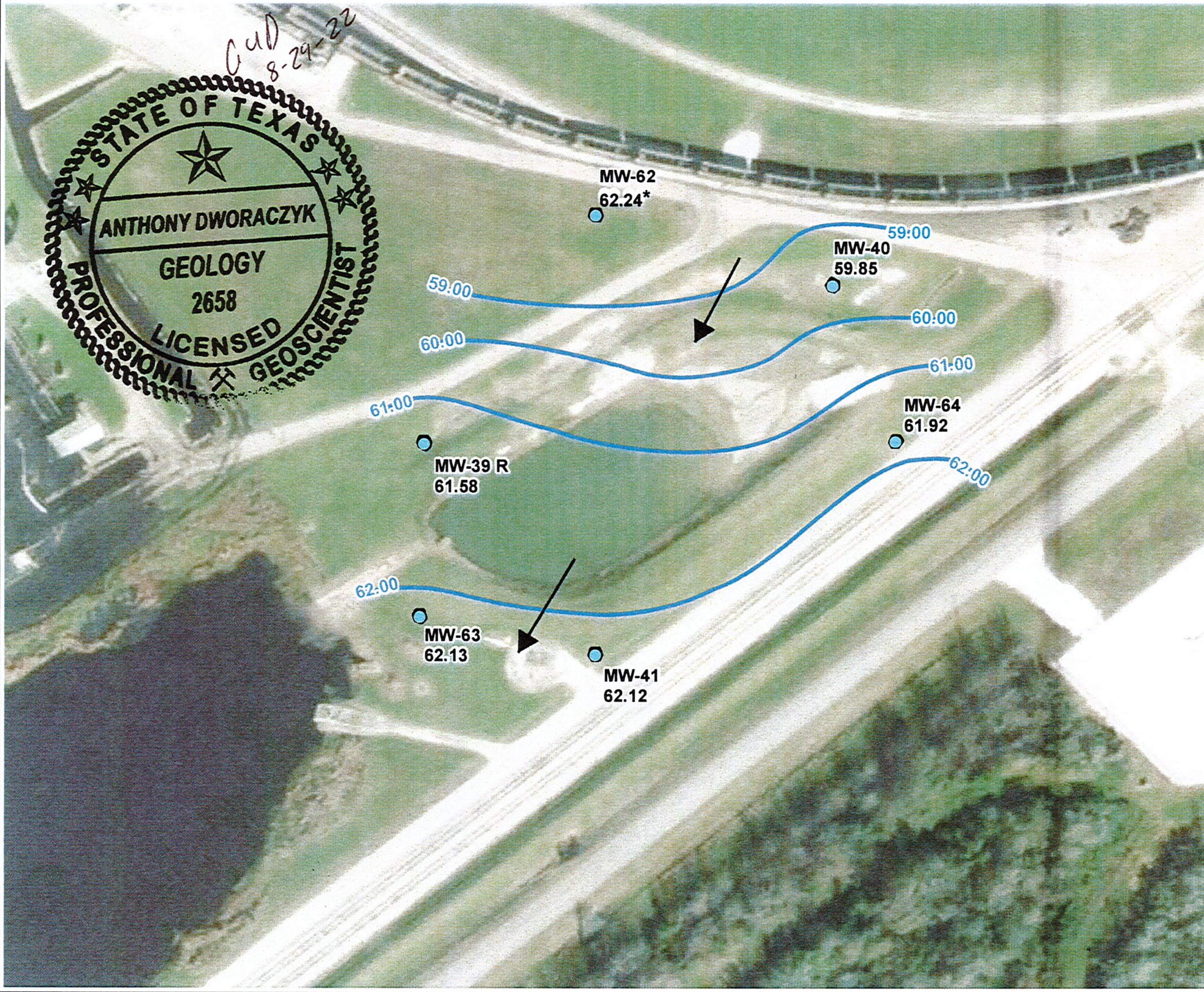
DRAWN BY:	O. Fonseka	PROJECT No.:	294645.0000.0000
CHECKED BY:	T. Dworaczyk	FIGURE 1-2	
APPROVED BY:	T. Dworaczyk		
DATE:	January 2019		

TRC

10550 Richmond Ave.
Suite 210
Houston, TX 77042
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)
- *62.71* GROUNDWATER ELEVATION (FT MSL)

* NOTE: MW-62 was not used for potentiometric surface map

NOTE:
GROUNDWATER ELEVATION MEASURED BY HMI ON APRIL 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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PROJECT:
NRG TEXAS POWER, LLC
W.A. PARISH STATION
THOMPSONS, TEXAS

TITLE:
AIR PREHEATER POND
GROUNDWATER POTENTIOMETRIC SURFACE MAP APRIL 2022

DRAWN BY:	F. YARBROUGH
CHECKED BY:	
APPROVED BY:	
DATE:	AUGUST 2022
PROJ. NO.:	478259.0001.0000
FILE:	478259.0001_2-11

FIGURE 2