REPORT

Assessment of Corrective Measures - Semi-Annual Report

Great River Energy, Stanton Station, Closed Bottom Ash Landfill

Submitted to:

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GL21509219.000-022-RPT-0

July 31, 2024

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1.0 INTRODUCTION

WSP USA Inc. (WSP) prepared this semi-annual report for the ongoing evaluation of corrective measures for the Bottom Ash Landfill at Great River Energy's (GRE) Stanton Station in accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rules in 40 Code of Federal Regulations (CFR) Part 257 (the Federal rule) and the North Dakota Department of Environmental Quality (NDDEQ) CCR Rule found in North Dakota Administrative Code (NDAC) Title 33.1, Article 20, Chapter 08 (the State rule). This semi-annual report was prepared to document progress towards selection and design of a remedy as part of the groundwater corrective measures addressing the statistically significant level (SSL) of arsenic above the site groundwater protection standards (GWPS) in groundwater at monitoring well MW-103 downgradient of the Bottom Ash Landfill. The GWPS for arsenic at the Bottom Ash Landfill is set at the USEPA maximum contaminant level (MCL) of 0.01 milligrams per liter (mg/L).

The SSL for arsenic at MW-103 was originally identified on March 28, 2022, when assessment monitoring statistics were completed following the fourth quarter (Q4) 2021 sampling and testing event. A notification identifying the SSL for arsenic was posted online and submitted to the NDDEQ on April 27, 2022 (within 30 days of identifying the SSL). The Assessment of Corrective Measures (ACM) was initiated on June 24, 2022, within 90 days of identifying the SSL for arsenic. A 60-day extension approved by the NDDEQ on September 16, 2022 (NDDEQ 2022) altered the deadline for completion of the ACM to November 21, 2022, on which date the ACM was finalized and submitted to the NDDEQ (GAUSA 2022). The NDDEQ approved the ACM on February 21, 2023 (NDDEQ 2023). This semi-annual report covers activities conducted since January 2024, following completion of the 2023 Annual Groundwater Monitoring and Corrective Action Report (WSP 2024a).

In the 1.5 years since completion of the ACM, extensive field, laboratory, and modeling investigations have been conducted in support of final remedy selection. Based on the data evaluated to date, items have been identified that are necessary to resolve prior to remedy selection, including issues with sample turbidity and final plume delineation. Section 3.0 (including Figure 4) describes both the efforts taken to date and anticipated work to be completed for final remedy selection based on the requirements of 40 CFR 257.97 and NDAC 33.1-20-08-08(7).

1.1 Purpose

The purpose of the ACM was to identify potential corrective measures to prevent further releases and to remediate any identified releases to groundwater at the Bottom Ash Landfill. In particular, the ACM evaluated corrective measure alternatives for groundwater corrective action at the site given the specific site conditions and constituent(s) of concern. Based on the findings of the ACM, further evaluation is being performed, site-specific studies completed, and a final long-term corrective action plan developed pursuant to 40 CFR 257.97 and -98 and NDAC 33.1-20-08-06(6) and (7). This process is typically iterative and composed of multiple steps to analyze the effectiveness of corrective measures to address the migration of CCR constituents in groundwater downgradient of the Bottom Ash Landfill.

1.2 Evaluation of Corrective Measures

Pursuant to 40 CFRF 257.97 and NDAC 33.1-20-08-06(6), WSP, on behalf of GRE, is further evaluating the potential corrective measures identified in the ACM Report (GAUSA 2022) to identify a remedy or combination of remedies as soon as feasible.

1.2.1 Source Control Corrective Measures

Prior to the initiation of assessment monitoring and the ACM, the Bottom Ash Landfill was closed with an engineered final cover placed over CCR left in place. Closure in place was completed in accordance with the closure plan (GAI 2019) and was documented in the Construction Quality Assurance (CQA) Report provided to the NDDEQ (GAUSA 2021). The cover system was designed to minimize infiltration and erosion and to meet or exceed the requirements of 40 CFR 257.102(d)(3) and NDAC 33.1-20-08-07(3)(d)(3). The previously completed closure in place of the Bottom Ash Landfill and installation of the final cover system provides a source control measure that reduces the potential for migration of CCR constituents to groundwater. Due to the reduced infiltration through the final cover, and the lack of contact between CCR and groundwater, the closure of the Bottom Ash Landfill is anticipated to perform well as a source control. Other source control corrective measures can be considered in the future, if required in conjunction with the chosen groundwater remediation corrective measures(s).

1.2.2 Groundwater Remediation Corrective Measures

In addition to the source control corrective measures, the following groundwater remediation corrective measures were identified in the ACM as potentially feasible for use at the Bottom Ash Landfill:

- Monitored Natural Attenuation (MNA) and Enhanced Monitored Natural Attenuation (Enhanced MNA)
- Hydraulic Containment (Groundwater Pump and Treat)
- Geochemical Approaches (In Situ Injection)
- Permeable Reactive Barriers
- Phytoremediation

At present, the following groundwater remediation corrective measures are still being evaluated for implementation at the Bottom Ash Landfill:

- MNA and Enhanced MNA
- Geochemical Approaches (In situ Injection)

MNA and Enhanced MNA using in-situ injection are continuing to be evaluated based on the findings from the MNA Tier I, II, and III reports indicating MNA is occurring and effective at the site, and preliminary findings that in-situ injection may be able to enhance MNA and reduce the time to attain the GWPS.

The other options are not currently being evaluated for several reasons. Phytoremediation is not currently being evaluated as a corrective measure for the site due to the groundwater depth in the area of concern being deeper than can typically be affected by phytoremediation. Depending on plant type, many root systems for plants used in traditional phytoremediation approaches focus on the upper 1 to 2 feet from the ground surface (Interstate Technology Regulatory Council ([ITRC] 2009), while groundwater downgradient of the Bottom Ash Landfill is 20 feet below the ground surface.

Permeable reactive barriers are not currently being evaluated due to the to the depth between bedrock versus the uppermost encountered groundwater. Critically, for a permeable reactive barrier to be effective, it should ideally “extend to and be keyed into a competent bedrock layer or aquitard” to prevent circumvention of groundwater around the installed barrier (ITRC 2011). Downgradient of the Bottom Ash Landfill, materials have been mixed through both natural deposition and alteration to the conditions through closure and removal of the industrial site, making identification of a continuous material suitable for keying a barrier difficult.

Hydraulic containment (groundwater pump and treat) is not currently being evaluated as a stand-alone remedy. Pump and treat extraction technologies tend to be more efficient for constituents that are not readily attenuated by mechanisms such as adsorption. Chemical testing, similar to that for in situ injection, is necessary to determine the extraction potential for arsenic with different treatment technologies and can be executed concurrently with testing for other alternatives.

However, if the currently pursued corrective measures prove not to be adequate, these or other potential corrective measures may be considered in the future.

2.0 SUMMARY OF WORK COMPLETED

The following sections summarize field activities, desktop analyses, and supplemental data collected between January and July 2024, following completion of the 2023 annual report (WSP 2024a). This work improves site characterization, further delineates the nature and extent of the SSL, and continues the evaluation of the potential groundwater remediation corrective measures presented in the ACM Report (GAUSA 2022) and subsequent reporting.

The collected data continue to be used to evaluate the feasibility, mechanisms, rates, and stability of identified potential corrective measure alternatives to address the SSL for arsenic in groundwater downgradient of the Bottom Ash Landfill. Evaluations of the data as they relate to remedy selection alternatives are ongoing and will be presented in future report(s).

2.1 Groundwater Monitoring Activities

CCR compliance groundwater monitoring related activities have been conducted at the Bottom Ash Landfill since June 2016. An assessment monitoring program was initiated for the Bottom Ash Landfill in first quarter (Q1) 2021 following identification of a statistically significant increase (SSI) for boron at MW-103. Following the transition to assessment monitoring, samples have been collected and analyzed for the assessment monitoring and detection monitoring parameter lists.

Following the transition to assessment monitoring, an SSL above the GWPS was identified for arsenic at MW-103 in March 2022. Details are provided in the 2022 annual report (WSP 2023a). Since completion of the most recent annual report (WSP 2024), additional samples as required by the assessment monitoring program have been collected in March 2024 and June 2024. Statistical analysis of the March 2024 sampling results indicated that the SSL for arsenic at MW-103 continues. At MW-103, arsenic displays a statistically significant decreasing trend from the beginning of the baseline period in July 2016 through March 2024; however, arsenic data collected at MW-103 from the beginning of assessment monitoring in March 2021 through March 2024 show no statistically significant trend and the continued identification of an SSL based on the confidence interval approach. A notification of the continued SSL was posted to GRE's publicly-accessible website and provided to the NDDEQ. Evaluation and statistical analysis of the June 2024 data is ongoing and will be addressed within the required timeframes stipulated by the Federal and State rules.

2.2 Continued Nature and Extent Delineation

The locations of the site monitoring wells (network wells and wells installed in May 2022 and February 2023 for determining the nature and extent) and a potentiometric surface contour map showing the March 2024 groundwater contours are shown in Figure 1. Table 1 provides a summary of the construction details for the site monitoring wells.

2.2.1 Groundwater Flow Direction and Gradient

Depth to groundwater measured in March 2024 at the site wells was used to estimate groundwater contours around the Bottom Ash Landfill (Figure 1). Depths to groundwater were measured at sampled wells during the Q1 2024 sampling event prior to purging. Groundwater elevations are shown on Figure 1. Based on the Q1 2024 groundwater elevations, the shallow groundwater at the Bottom Ash Landfill generally flows to the north and northeast towards the Missouri River.

The groundwater flow rate across each facility was estimated with the equation:

$$V_s = k \times {}^{i}/_{n_e}, \qquad \textit{Equation 1}$$

where:

- V_s = the groundwater flow rate in feet per day (ft/day)
- k = the hydraulic conductivity in ft/day, estimated from slug testing results from system wells
- i = the hydraulic gradient in feet per feet (ft/ft), calculated based on groundwater elevations for the presented monitoring events
- n_e = the effective porosity, a unitless parameter, estimated to be 0.25 for a silt/sand (Duffield 2007), reflective of site soils

The average gradient used in the velocity calculation and associated calculated range of horizontal groundwater flow velocities estimated for the Bottom Ash Landfill during the Q1 2024 monitoring event are shown below. Hydraulic conductivity (k) values measured on site ranged from 0.023 ft/day to 21.9 ft/day based on recently analyzed site-specific values (see Section 2.3.1).

- March (Q1) 2024
  - Average gradient = 0.006 ft/ft
  - Range of groundwater flow velocities: 0.0006 ft/day to 0.57 ft/day

2.2.2 Groundwater Sampling

Groundwater was sampled in March 2024 and June 2024 from the monitoring network wells and the nature and extent wells. Collected samples have been analyzed for both the detection monitoring and assessment monitoring parameter lists.

2.2.3 Efforts to Address Well Turbidity and Plume Delineation

At Stanton Station, samples collected from MW-103 and most of the dedicated monitoring network wells have had low turbidity measurements over numerous sampling events. However, several of the newer nature and extent wells have either intermittently or continuously had high turbidity and correspondingly high total arsenic concentrations, as discussed in the most recent annual report (WSP 2024). Determination of the true extent of arsenic downgradient of the Bottom Ash Landfill based on the results collected to date has been difficult, as the variability in turbidity and total arsenic measurements has resulted in plume delineation varying between events.

The presence of the excess turbidity leads to the question of whether the measured metals concentrations represent solely the dissolved and naturally suspended particles (i.e., the total groundwater as intended for the monitoring program), or solids entering the water column due to the sampling activity. Puls and Barcelona (1996) note that "[s]ampling-induced turbidity problems can often be mitigated by using low-flow purging and sampling techniques." Low-flow sampling techniques are intended to "not artificially bias *naturally* suspended particle concentrations," as opposed to the introduction of artificially suspended particles like those introduced through purging under a high-speed or high-volume purging and sampling method (Puls and Barcelona 1996). Samples with high turbidity levels may include "otherwise immobile artifactual particles which produce an overestimation of certain analytes of interest," such as the Appendix IV metals or hydrous iron, aluminum, and manganese oxides (primary components of most soils). Where monitoring of total metals (i.e., both the dissolved and naturally suspended particles) is required, such as required under the CCR program, excess turbidity may result in samples that are not representative of site groundwater conditions.

In an effort to reduce sample turbidity across the nature and extent wells, a number of actions have been taken to date. Following installation, the nature and extent wells were developed prior to the initial sampling events. Low-flow sampling methods have been used at each of the nature and extent wells throughout the course of sampling. Upon initial identification of the issues with sample turbidity, a subset of the wells was redeveloped in October 2023 in an effort to address the high turbidity.

Nature and extent wells were sampled with non-dedicated pumps, which has potential to cause excess turbidity as the pumps are placed in the wells. To eliminate this potential, dedicated low-flow pumps were installed in April 2024 at the nature and extent wells, similar to those previously installed in the dedicated monitoring network wells.

In addition to these measures, both dissolved and total analysis was conducted for a subset of parameters during the Q4 2023, March 2024, and June 2024 sampling events. Total analysis captures both the dissolved aqueous concentrations present in samples, as well as the insoluble particulate concentrations. Dissolved concentrations are determined by filtering samples prior to analysis, to remove insoluble particulates greater than 0.45 microns in diameter. During the Q1 2024 sampling event, the parameters that were tested with both dissolved and total analysis included the Appendix IV metals, and aluminum, iron, and manganese (primary components of most soils).

Comparison of dissolved results to total results for aluminum, iron, and manganese, when made in the context of samples with high turbidity, can help to determine if the associated total results are representative of site groundwater, or if the results indicate the presence of excessive artificially mobilized particles (i.e., site soil particles that have entered the water column as a result of the sampling methods). Initial analysis of the aluminum, iron, and manganese total and dissolved data, in conjunction with the site turbidity measurements, suggests that the total results reflect artificially suspended soil particles and are not representative samples of the groundwater, based on the reported concentrations and the magnitude of the difference between the total and dissolved concentrations.

Review of the total and dissolved arsenic concentrations also suggest that the total concentrations from the Q1 2024 monitoring event may not be representative of the site groundwater, based on the presence of excess turbidity. Figure 2 presents the total arsenic concentrations measured during Q1 2024, while Figure 3 presents the dissolved arsenic concentrations measured during the same Q1 2024 event. In both Figure 2 and Figure 3, locations that are color-coded orange had concentrations that are greater than the GWPS (0.01 mg/L) but less than twice the GWPS (0.02 mg/L), while locations in red had concentrations that are more than twice the GWPS (0.02 mg/L). Color-coding of the figures was used as part of the plume delineation effort to narrow in upon and bound the highest site concentrations.

Samples with low turbidity, which include MW-103, MW-9N and MW-102 as the other Bottom Ash Landfill dedicated downgradient monitoring wells, and the upgradient and side-gradient background locations, have total and dissolved metal concentrations that are similar in magnitude. These locations have been monitored using dedicated sampling equipment throughout the CCR monitoring program. While naturally suspended particles are likely present in the total analysis, the comparison of the total and dissolved concentrations suggest that the results of the total analysis are representative of the groundwater within each of these monitoring wells.

Locations with total arsenic concentrations that differ significantly from the concurrent dissolved concentrations, including nature and extent wells MW-215, MW-219, MW-300, and MW-PB1, also have high turbidity measurements for the Q1 2024 sampling event. The difference in the measured total and dissolved results suggests that a significant portion of the total arsenic may be particle-bound and a consequence of the mobilization of site soil particles during sampling. Based on the identified differences, at present, the extent of the delineated plume will be reviewed in context of the comparison between the total and dissolved analysis until the turbidity issue is resolved.

Results of the June 2024 sampling, collected following installation of the dedicated low-flow pumps, will be used for final analysis and determination of the need for further action to address the impacts of turbidity on delineation of the arsenic plume. Depending on the subsequent analytical results, this may include scoping of the installed wells to determine if there are defects in the well casings leading to the excessive turbidity measurements, abandonment or additional redevelopment of certain wells, or other alternatives.

2.3 Supplemental Data Collection and Analysis

Additional field investigation activities and data analyses have been performed to evaluate potential corrective measures.

2.3.1 Hydraulic Conductivity Testing Analysis

WSP performed in situ hydraulic conductivity testing (slug testing) for a subset of the site wells in 2023, with analysis of the testing completed in 2024. Appendix A details the field activities and analysis of the collected results. Wells selected for testing included both network wells and nature and extent wells. The purpose of the testing was to further investigate the hydraulic conductivity of materials encountered in the selected monitoring well screened intervals at the site in support of the evaluation of corrective measure alternatives. Results of the testing will supplement past in situ hydraulic conductivity analysis and further refine the understanding of groundwater movement downgradient of the Bottom Ash Landfill, along with constraining arsenic movement within groundwater. A refined understanding of downgradient groundwater will support selection of an effective corrective measure.

2.3.2 Monitored Natural Attenuation Analysis

WSP conducted evaluations of groundwater and solid materials to determine the effectiveness of MNA as a potential corrective measure for arsenic at Stanton Station. The structure of the effectiveness evaluations follows guidance from the USEPA on using MNA as a remedial strategy (USEPA 2007a, 2007b, and 2015) and considers best practices from the ITRC document “A Decision Framework for Applying Monitored Natural Attenuation Process to Metals and Radionuclides in Groundwater” (ITRC 2010).

Based on USEPA guidance (USEPA 2007a, 2007b, and 2015), an evaluation of the constituent of interest’s (in this case, arsenic) potential for successful remediation by MNA is conducted utilizing the following phased approach:

1) Tier I: Demonstrate active constituent removal from groundwater and plume stability.
2) Tier II: Determine the mechanisms and rates of the operative attenuation processes.
3) Tier III: Determine the long-term capacity for attenuation and the stability of immobilized constituents.
4) Tier IV: Following completion of the multi-tier MNA evaluation, the fourth and final tier of an MNA program includes design of a performance monitoring program and development of a contingency plan.

2.3.2.1 Tier I MNA Evaluation

A Tier I MNA evaluation for the Bottom Ash Landfill was completed in 2023 (WSP 2023b) and was included in the July 2023 ACM semi-annual report (WSP 2023c). This evaluation concluded that MNA has the potential to be a viable corrective measure for arsenic at the Bottom Ash Landfill.

According to USEPA (USEPA 2007a), the purpose of the Tier I Evaluation is to “Demonstrate that the groundwater plume is not expanding and that sorption of the contaminant onto aquifer solids is occurring where immobilization is the predominant attenuation process.” Based on this definition, the Tier I evaluation supported MNA as a viable corrective measure based on the following items.

- Plume Stability: The Tier I MNA findings indicate groundwater concentrations of arsenic in wells downgradient of the Bottom Ash Landfill are stable or decreasing.
- Magnitude of Exceedances: Arsenic concentrations at MW-103 had generally exceeded the GWPS (0.010 mg/L), with one point (June 2022) below the GWPS, indicating an SSL. At the time of publication of the Tier I report (WSP 2023b), exceedances of the GWPS had also been identified at MW-PB1 and MW-211. The measured total arsenic concentrations at MW-PB1 and MW-211 exceed the GWPS but are not required to be evaluated statistically and are therefore not considered SSLs. The magnitude of each of the exceedances was near the GWPS value.
- Groundwater Chemistry: Groundwater monitoring results and geochemical modeling from the Tier I MNA effort support the potential for natural attenuation of arsenic. Equilibrium of groundwater with iron (hydr)oxides, aluminosilicates, and calcite was indicated in groundwater samples. Modeling results are consistent with the results from sequential extraction procedure (SEP) analysis, which indicates the presence of amorphous and metal hydroxide fractions which sequester arsenic.
- Confirmation of Attenuation/Immobilization: Based on both mineralogical and chemical analysis, there is evidence that attenuation of arsenic by aquifer materials is occurring, with increasing attenuation occurring further downgradient from the Bottom Ash Landfill.

2.3.2.2 Tier II and III MNA Evaluation

Following the Tier I MNA evaluation, WSP undertook both a Tier II evaluation and a Tier III evaluation, the results of which are included as Appendix B of this report (WSP 2024b). The purpose of the Tier II evaluation is to identify mechanisms and rates of the operative attenuation process (USEPA 2007a). The Tier II evaluation supports MNA as a viable corrective measure for arsenic at the Bottom Ash Landfill based on the following items:

- PHREEQC modeling results supported by SEP data indicate that adsorption is likely attenuating arsenic downgradient of the Bottom Ash Landfill via sorption onto metal hydroxides, sorption onto organic matter, and mineral precipitation.
- One-dimensional reactive transport modeling indicates that arsenic is expected to remain below the GWPS in the direction of groundwater flow farther than 50 feet from MW-103 (the well of interest at the Bottom Ash Landfill unit boundary). The modeling also indicates that arsenic concentrations around MW-103 will decrease but may take a significant amount of time to drop below the GWPS.

Per the USEPA (USEPA 2007a), the purpose of the Tier III evaluation is to eliminate MNA as a remedy at sites where (1) “there is insufficient capacity in the aquifer to attenuate" the Constituent of Concern (COC) mass to regulatory standards and/or (2) stability of the immobilized COC is “insufficient to prevent re-mobilization due to future changes in ground-water chemistry”.

The Tier III evaluation supports MNA as a viable corrective measure for arsenic at this site based on the following items:

- The modeled scenarios indicate adequate adsorption capacity is present at the site to attenuate arsenic at concentrations two orders of magnitude higher than those measured in Bottom Ash Impoundment sump water. These values were used within the modeling as an estimate for porewater concentrations within the Bottom Ash Landfill.
- Stability modeling indicates that based on the pH, redox, and total dissolved solids ranges observed in downgradient wells, arsenic is unlikely to be remobilized in groundwater following attenuation.

Based on the findings of the Tier II and Tier III MNA evaluation, MNA is occurring for arsenic downgradient of the Bottom Ash Landfill. However, the time to attain the GWPS near MW-103 is estimated to be significant (more than the 100-year model period) based on the modeled results. The actual time to attain the GWPS may be quicker than modeled based on:

- The impact of the engineered soil cover to reduce infiltration, which in turn is expected to reduce the quantity of leachate and/or concentration of arsenic in leachate coming from the Bottom Ash Landfill. This may result in a lower source than currently modeled which would allow for attain the GWPS more quickly.
- The potential for natural attenuation to occur laterally and vertically which is not captured in the one-dimensional model. Natural attenuation in three dimensions may allow for attain the GWPS to occur quicker.
- Monitoring of the total arsenic concentrations at MW-103 is indicating a statistically significant downward trend since the well was installed in 2016. This trend may be indicative of the items listed above and other variables that may also allow for attain the GWPS more quickly.

Despite these potential conditions, which may decrease the time to attain the GWPS, other options are being evaluated to decrease the amount of time necessary to meet the GWPS. In particular, geochemical injection to enhance MNA is being considered. Enhancements may include increasing the amount of attenuation capacity through the addition of iron or aluminum particles, the addition of oxidation mechanisms (such as air sparging) to alter the redox conditions of the system, or other alternatives. Analysis of enhancement alternatives is ongoing.

3.0 SUMMARY OF REMEDY SELECTION PROCESS ACTIVITIES

3.1 Work Competed to Date

Following the initial identification of the SSL for arsenic at MW-103 in Q1 2022, steps have been taken to delineate the plume and progress towards final remedy selection. This includes:

- Completion of the Assessment of Corrective Measures report in 2022.
- Installation, development, and sampling of 15 nature and extent wells and 2 property boundary wells in 2022 and 2023.
- Geochemical and geotechnical testing of materials collected during drilling in 2022 and 2023.
- In situ hydraulic conductivity testing and analysis in 2023 and 2024.
- Installation of dedicated low-flow pumps in the new wells in 2024.
- Geochemical modeling and evaluation of monitored natural attenuation per the EPA's guidance including Tiers I, II, and III in 2023 and 2024.
- Groundwater sampling and analysis from the Bottom Ash Landfill network wells and nature and extent wells to further understand the extent and magnitude of arsenic above the GWPS.

Figure 4 presents a simplified Gantt chart of the work conducted to date and planned activities over the next 6 months (until the next semi-annual report), with the intent of holding the public meeting and selecting a remedy as soon as feasible.

3.2 Remedy Selection

At present, selection of a final remedy is expected to be based on the following information:

- Plume Delineation
  - Based on ongoing analysis at the downgradient Bottom Ash Landfill wells and nature and extent wells coupled with the results of the MNA evaluations, the arsenic plume downgradient of the Bottom Ash Landfill appears to be small (based on dissolved arsenic the plume is less than 400 feet wide and not extending downgradient beyond the CCR unit boundary by more than 50 to 100 feet).
  - However, with the ongoing identified issues with turbidity at certain nature and extent wells, final delineation of the plume has been difficult. Analysis conducted following installation of dedicated pumps at the nature and extent wells will be used to determine if additional actions are necessary to further reduce turbidity.
  - Results of analysis conducted after installation of additional dedicated pumps will also be used to confirm the extent of the arsenic plume which is needed in evaluating corrective action such as enhanced MNA through chemical injection.

- GWPS Attainment
  - Downgradient of the Bottom Ash Landfill, attainment of the GWPS via MNA is occurring. Expansion of the plume and re-mobilization of arsenic are not expected based on modeling, aquifer solids testing, and monitoring data collected to date. This is supported by the successful completion of MNA Tier I, II, and III reports in alignment with the USEPA guidance.
  - At MW-103 and the unit boundary of the Bottom Ash Landfill, the modeled amount of time needed to attain the GWPS was significant (more than the 100-year modeled period). Various conditions not reflected in the modeling may decrease the time to attain the GWPS. Enhanced MNA utilizing geochemical injection will likely reduce this time frame even further.
  - Initial modeling suggests chemical injection with iron will speed up attainment of the GWPS at MW-103. The next steps are focused on determining the viability and suitability of chemical injection, as a standalone remedy or an enhancement to the monitored attenuation.

Based on the evaluations and conclusions to-date, the goal of ongoing effort is to have gathered sufficient additional information to hold the public meeting in 2025 and to make a remedy selection as soon as feasible.

4.0 PLANNED ACTIVITIES

On behalf of GRE, WSP initiated activities as outlined in the ACM Report (GAUSA 2022) to support the corrective action remedy selection process. In particular, an evaluation of geochemical injection is being completed to ensure that other parameters are not mobilized by the chosen injectate, resulting in additional issues downgradient of the Bottom Ash Landfill. Selection and implementation of corrective measures can be iterative, and GRE will continue data collection efforts, as necessary, to further refine the site conceptual model and evaluate the feasibility of remedies identified in the ACM Report (GAUSA 2022) in order to select a final remedy as soon as feasible.

Supplementary data collection and evaluation activities proposed to be completed in the next 6 months and reported on in the 2024 annual groundwater monitoring and corrective action report by January 31, 2025, include:

- Arsenic Delineation
  - Complete evaluation of data collected in June 2024 to refine delineation of the area with arsenic above the GWPS downgradient of the Bottom Ash Landfill. In particular, evaluate if the dedicated low-flow pumps are reducing turbidity levels, and continue to evaluate the influence of turbidity on measured total arsenic concentrations. This will help determine if the reported total arsenic concentration results are reflective of soil particles mobilized due to the sampling methods or the groundwater. This information will be used to better delineate the extent of arsenic above the GWPS around MW-103.
- MNA
  - Begin preparation of the Tier IV monitoring plan to support MNA as a potential remedy. Final completion of this plan will likely be delayed until geochemical injection is evaluated, due to the implications of additions to the system on monitored parameters and monitoring outcomes.

- Further Evaluation of Geochemical Injection
  - Perform geochemical modeling to evaluate the impact of increasing the amount of sorption sites through injection of iron or aluminum particles and/or air sparging on the modeled concentration of arsenic around MW-103, and the timeframe for those changes.
  - Develop and execute a work plan for drilling in the area downgradient of the Bottom Ash Landfill to:
    - Collect aquifer solids and groundwater samples for testing the viability of chemical injection.
    - Perform additional hydraulic testing to evaluate flow features to support potential injection designs.
  - Perform jar testing of the site groundwater and aquifer solids with the addition of reactant (potentially iron and/or aluminum) to evaluate reaction time, and response to different dosage rates. This will provide confirmation of geochemical modeling that concentrations can be lowered with the reactant addition.
- Groundwater Monitoring
  - Collect samples in Q4 2024 for the detection monitoring and assessment monitoring parameters list.

GRE will continue to prepare semi-annual progress reports to document the progress in selecting and designing a groundwater remedy in accordance with 40 CFR 257.97 and -98 and NDAC 33.1-20-08-06(6) and (7) until a final remedy is selected. Prior to the final selection of a corrective measure, a public meeting will be scheduled a minimum of 30 days before the selection of the remedy to present the results of the corrective measures assessment, including additional information still to be gathered. The next semi-annual report will be included in the 2024 annual groundwater monitoring report, due January 31, 2025. GRE will include future semi-annual progress reports with the routine groundwater monitoring and corrective action reports to meet the requirements of 40 CFR 157.105(h)(12), 40 CFR 257.106(h)(9), and 40 CFR 257.107(h)(9) and NDAC 33.1-20-08-08(1)(h)(12), 33.1-20-08-08(2), and 33.1-20-08-08(3).

Upon selection of a remedy, a final report will be prepared describing the selected remedy and how the remedy meets the standards in 40 CFR 257.97 and -98 and NDAC 33.1-20-08-06(6) and (7). The final remedy selection report must be certified by a qualified professional engineer licensed in the state of North Dakota per 40 CFR 257.97(a), and approved by the NDDEQ per NDAC 33.1-20-08-06(7)(a). Once the remedy has been selected and approved by the NDDEQ, the implementation of the remedy will be initiated in accordance with 40 CFR 257.98 and NDAC 33.1-20-08-06(8).

Signature Page

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https://golderassociates.sharepoint.com/sites/170737/project files/6 deliverables/gl21509219.000/reports/022-rpt-2024_acm_semi_annual/rev0/gl21509219.000-022-rpt-0_2024_acm_semi_annual_31jul24.docx

5.0 REFERENCES

Bouwer H, and Rice RC. 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells. Water Resources Research 12(3): 423-428.

Bouwer H. 1989. The Bouwer and Rice slug test – an update. Ground Water 27(3): 304-309.

GAI (Golder Associates Inc.). 2019. Closure and Post-Closure Plan, Revision 1, Bottom Ash CCR Landfill – Stanton Station. September 2019.

GAUSA (Golder Associates USA Inc.). 2021. Construction Quality Assurance Documentation and Certification, Bottom Ash Impoundment and Landfill – Great River Energy – Stanton Station. December 17, 2021.

GAUSA. 2022. Assessment of Corrective Measures, Great River Energy, Stanton Station, Closed Bottom Ash Landfill. November 21, 2022.

ITRC (Interstate Technology & Regulatory Council). 2009. Phytotechnology Technical and Regulatory Guidance and Decision Trees, Revised. ITRC Phytotechnologies Team. Tech Reg Update, February 2009.

ITRC. 2010. A Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater. Technical/Regulatory Guidance.

ITRC. 2011. Permeable Reactive Barrier: Technology Update. PRB-5. PRB: Technology Update Team. June 2011.

NDDEQ (North Dakota Department of Environmental Quality). 2022. Letter from Diana A. Trussell to Cassie Johnston RE: Great River Energy – Stanton (0043), ACM Extension Request. September 16, 2022.

NDDEQ. 2023. Letter from Diana A. Trussell to Cassie Johnston RE: Great River Energy – Stanton (0043), ACM Approval. February 21, 2023.

Puls, R.W. and Barcelona, M.J. 1996. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, USEPA Office of Research and Development and Office of Solid Waste and Emergency Response, EAP/540/S-95/504. April 1996.

USEPA. 2007a. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 1. Technical Basis for Assessment. EPA/600/R-07/139.

USEPA. 2007b. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 2. Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium. EPA/600/R-07/140.

USEPA. 2015. Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites. OSWER Directive 9283.1-36.

WSP (WSP USA Inc.). 2023a. Annual Groundwater Report – 2022, Great River Energy, Stanton Station. January 31, 2023.

WSP. 2023b. Tier I MNA Evaluation for Arsenic – Bottom Ash Landfill – Stanton Station. April 13, 2023.

WSP. 2023c. Assessment of Corrective Measures – Semi-Annual Report, Great River Energy, Stanton Station, Closed Bottom Ash Landfill. July 31, 2023.

WSP. 2024a. Annual Coal Combustion Residuals Groundwater Monitoring and Corrective Action Report – 2023, Great River Energy, Stanton station. January 31, 2024.

WSP. 2024b. Tier II and III MNA Evaluation for Arsenic, Bottom Ash Landfill – Stanton Station. July 31, 2024.

Table

Table 1: Stanton Station Monitoring Well Summary

Location	Well ID	Date Constructed	TOC Elevation ft AMSL	Ground Surface Elevation ft AMSL	Screen Interval ft bgs	Top of Screen Elevation ft AMSL	Bottom of Screen Elevation ft AMSL	Sand Pack Interval ft bgs	Material(s) Completed In
Upgradient/Side-gradient	MW-6B	9/8/1992	1711.5	1709.4	28.4-38.4	1681	1671	19.0-38.5	Outwash
	MW-7A	8/27/1992	1713.7	1711.3	7.0-17.0	1704	1694	5.0-18.0	Silty Sand/Clay
	MW-7B	9/9/1992	1712.9	1711.2	28.1-38.1	1683	1673	23.0-38.5	Silty Sand/Outwash
	MW-8B	9/3/1992	1749.8	1747.6	54.0-64.0	1694	1684	49.0-64.5	Outwash
	MW-105	11/18/2015	1717.0	1714.0	9.0-19.0	1705	1695	7.0-19.0	Clay/Outwash
Bottom Ash Landfill Downgradient	MW-9N	7/19/2010	*1703.5*	*1701.0*	*11.5-21.5*	1690	1680	*9.5-21.5*	Sand, Clayey Sand, Gravel
	MW-102	11/17/2015	1712.1	1708.8	14.0-24.0	1695	1685	12.0-24.0	Silty Sand/Clay
	MW-103	11/17/2015	1709.5	1706.2	14.0-24.0	1692	1682	12.0-24.0	Outwash
Bottom Ash Impoundment Downgradient	MW-201	8/10/2020	1704.9	1701.9	9.5-19.5	1692	1682	7.0-19.5	Fat Clay, Sand w/Silt
	MW-202	8/10/2020	1703.7	1701.6	8.0 - 18.0	1694	1684	6.0-18.0	Fat Clay, Lean Clay w/Sand
	MW-203	8/10/2020	1705.8	1702.7	6.0 -16.0	1697	1687	5.0-16.0	Sand w/Silt, Fat Clay
Bottom Ash Landfill Nature and Extent Delineation Wells	MW-1R	11/8/1995	*1706.7*	*1703.5*	*23.7-32.7*	1680	1671	*21.7-34.7*	Gravel, Fat Clay
	MW-104	11/17/2015	1712.0	1709.0	14.0-24.0	1695	1685	12.0-24.0	Outwash
	MW-210	5/9/2022	1703.1	1699.9	12.0 - 22.0	1688	1678	12.0 - 22.0	Sand w/Silt
	MW-211	5/10/2022	1708.7	1705.4	12.0 - 22.0	1693	1683	10.0 - 22.0	Lean Clay, Sand w/Silt
	MW-212	5/10/2022	1709.6	1706.4	13.5 - 23.5	1693	1683	10.0 - 23.5	Fat Clay, Lean Clay Silty Sand
	MW-213	5/12/2022	1706.0	1702.7	19.5 - 29.5	1683	1673	19.5 - 29.5	Fat Clay, Lean Clay Silty Sand
	MW-214	5/12/2022	1709.2	1705.8	5.0 - 15.0	1701	1691	4.0 - 15.0	Fat Clay, Silty Sand
	MW-215	2/7/2023	1702.0	1699.0	9.0 - 19.0	1690	1680	6.0 - 19.0	Silty Sand with Gravel, Poorly Graded Sand with Gravel
	MW-216	2/8/2023	1702.9	1699.7	10.0 - 20.0	1690	1680	7.0 - 20.0	Silty Sand, Poorly Graded Sand with Gravel
	MW-217	2/9/2023	1700.0	1697.0	9.5 - 19.5	1688	1678	7.0-19.5	Poorly Graded Sand with Silt and Gravel
	MW-218	2/9/2023	1701.1	1698.1	9.5 - 19.5	1689	1679	7.0 - 19.5	Silty Sand, Poorly Graded Gravel with Sand
	MW-219	2/6/2023	1705.1	1702.2	10.0 - 20.0	1692	1682	8.0 - 20.0	Silty Sand, Clayey Sand
	MW-220	2/8/2023	1702.4	1699.7	25.0 - 35.0	1675	1665	22.0 - 35.0	Poorly Graded Sand, Clayey Sand
	MW-221	2/10/2023	1705.0	1701.8	22.0 - 32.0	1680	1670	18.0 - 32.0	Poorly Graded Sand with Silt and Gravel
	MW-222	2/6/2023	1721.9	1719.0	26.0 - 36.0	1693	1683	23.0 - 36.0	Lean Clay with Sand, Poorly Graded Sand with Silt and Gravel
	MW-300	2/9/2023	1700.1	1696.9	9.0 - 19.0	1688	1678	7.0 - 19.0	Silty Sand, Poorly Graded Sand with Silt and Gravel
	MW-301	2/10/2023	1698.6	1695.5	20.0 - 35.0	1676	1661	18.0 - 35.0	Lean Clay, Lean Clay with Sand, Clayey Sand
Property Boundary	MW-PB1	8/11/2020	1698.8	1695.9	15.0 - 25.0	1681	1671	13.0 - 25.0	Silt w/Sand, Silty Sand
	MW-PB3	2/9/2023	1701.6	1698.5	24.0 - 39.0	1675	1660	18.0 - 39.0	Sandy Lean Clay

Notes:
ft AMSL: feet above mean sea level
ft bgs: feet below ground surface
GW: groundwater

Top of casing (TOC) and ground surface elevations surveyed by Interstate Engineering, Inc. in September 2020, October 2022, and April 2023.

Well construction measurements are from the original bore log, well data sheet, or well construction form.

Well construction information for MW-9N and MW-1R shown in italics are estimates based on the original well logs, accounting for the casing reductions completed in June 2020.

Figures

LEGEND

NATURE AND EXTENT DOWNGRADIENT

BOTTOM ASH LANDFILL DOWNGRADIENT

UPGRADIENT / SIDE-GRADIENT

CLOSED BOTTOM ASH LANDFILL/IMPOUNDMENT FOOTPRINT

GENERAL DIRECTION OF GROUNDWATER FLOW

GROUNDWATER CONTOURS AND ELEVATIONS

NOTE(S)

1. AERIAL IMAGERY OBTAINED FROM UNITED STATES DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURE IMAGERY PROGRAM, 2023.
2. GROUNDWATER CONTOURS ARE BASED ON MARCH 2024 ELEVATION INFORMATION FROM THE SHOWN MONITORING WELLS, AS WELL AS MONITORING WELLS AND PIEZOMETERS NOT SHOWN.
3. THE NORTH AND CENTER CELLS OF THE BOTTOM ASH IMPOUNDMENT WERE CLOSED BY REMOVAL OF WASTE AND LINER.
4. THE SOUTH CELL OF THE BOTTOM ASH IMPOUNDMENT WAS CLOSED WITH A FINAL COVER OVER PLACED WASTE.
5. THE BOTTOM ASH LANDFILL WAS CLOSED BY CONSOLIDATION OF PLACED WASTE INTO A SMALLER FOOTPRINT AND CONSTRUCTION OF A FINAL COVER.

N

0 200 400

1" = 200' FEET

Path: \\corp.pbwan.net\US\Central\Data\USLK200\acad\GREAT RIVER ENERGY\STANTON\99_PROJECTS\21509219\Annual Monitoring Reports\ | File Name: 21509219_2024_WQ-StantonNDDEQ_Q1_Total Arsenic_Figure 1.dwg

MONITORING WELL LOCATIONS AND Q1 2024 GROUND WATER ELEVATIONS GREAT RIVER ENERGY - STANTON STATION

FIGURE 1

LEGEND - Q1 2024 TOTAL ARSENIC

- RESULT ND < 0.002
- RESULT 0.002 TO <0.01
- RESULT 0.01 TO < 0.02
- RESULT > 0.02
- CLOSED BOTTOM ASH LANDFILL/IMPOUNDMENT FOOTPRINT
- GENERAL DIRECTION OF GROUNDWATER FLOW
- GROUNDWATER CONTOURS AND ELEVATIONS

NOTE(S)

1. AERIAL IMAGERY OBTAINED FROM UNITED STATES DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURE IMAGERY PROGRAM, 2023.
2. GROUNDWATER CONTOURS ARE BASED ON MARCH 2024 ELEVATION INFORMATION FROM THE SHOWN MONITORING WELLS, AS WELL AS MONITORING WELLS AND PIEZOMETERS NOT SHOWN.
3. THE NORTH AND CENTER CELLS OF THE BOTTOM ASH IMPOUNDMENT WERE CLOSED BY REMOVAL OF WASTE AND LINER.
4. THE SOUTH CELL OF THE BOTTOM ASH IMPOUNDMENT WAS CLOSED WITH A FINAL COVER OVER PLACED WASTE.
5. THE BOTTOM ASH LANDFILL WAS CLOSED BY CONSOLIDATION OF PLACED WASTE INTO A SMALLER FOOTPRINT AND CONSTRUCTION OF A FINAL COVER.
6. TOTAL ARSENIC RESULTS ARE FROM Q1 2024 SAMPLING EVENT.
7. ALL CONCENTRATION AREAS ARE FOR VISUAL PURPOSES. THESE ARE ESTIMATIONS BASED ON THE Q1 2024 SAMPLING EVENT.

0 200 400
1" = 200' FEET

Q1 2024 TOTAL ARSENIC CONCENTRATIONS
GREAT RIVER ENERGY - STANTON STATION

FIGURE 2

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LEGEND - Q1 2024 DISSOLVED ARSENIC

- RESULT ND < 0.002
- RESULT 0.002 TO < 0.01
- RESULT 0.01 TO < 0.02
- CLOSED BOTTOM ASH LANDFILL/IMPOUNDMENT FOOTPRINT
- GENERAL DIRECTION OF GROUNDWATER FLOW
- GROUNDWATER CONTOURS AND ELEVATIONS

NOTE(S)

1. AERIAL IMAGERY OBTAINED FROM UNITED STATES DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURE IMAGERY PROGRAM, 2023.
2. GROUNDWATER CONTOURS ARE BASED ON MARCH 2024 ELEVATION INFORMATION FROM THE SHOWN MONITORING WELLS, AS WELL AS MONITORING WELLS AND PIEZOMETERS NOT SHOWN.
3. THE NORTH AND CENTER CELLS OF THE BOTTOM ASH IMPOUNDMENT WERE CLOSED BY REMOVAL OF WASTE AND LINER.
4. THE SOUTH CELL OF THE BOTTOM ASH IMPOUNDMENT WAS CLOSED WITH A FINAL COVER OVER PLACED WASTE.
5. THE BOTTOM ASH LANDFILL WAS CLOSED BY CONSOLIDATION OF PLACED WASTE INTO A SMALLER FOOTPRINT AND CONSTRUCTION OF A FINAL COVER.
6. DISSOLVED ARSENIC RESULTS ARE FROM Q1 2024 SAMPLING EVENT.
7. ALL CONCENTRATION AREAS ARE FOR VISUAL PURPOSES. THESE ARE ESTIMATIONS BASED ON THE Q1 2024 SAMPLING EVENT.

0 200 400
1" = 200' FEET

Q1 2024 DISSOLVED ARSENIC CONCENTRATIONS
GREAT RIVER ENERGY - STANTON STATION

FIGURE 3

Path: \\corp.pbwan.net\US\CentralData\USLJK200\acad\GREAT RIVER ENERGY\STANTON\99_PROJECTS\21509219\Annual Monitoring Reports\ | File Name: 21509219_2024_WQ-StantonNDDEQ_Q1_DissolvedArsenic_Figure 3.dwg

Figure 4 - Great River Energy - Stanton Station - Bottom Ash Landfill - Assessment of Corrective Measures and Remedy Selection Timeline

Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Well Sampling and Analysis											
SSL											
	ASD										
	Drilling, Well Installation, Well Development - Initial Nature and Extent Wells										
		ACM									
			Geochemical and Geotechnical Lab Testing								
				Drilling, Well Installation, Well Development - Additional Nature and Extent Wells							
				MNA Tier I							
						Geochemical and Geotechnical Lab Testing					
						Slug Testing					
						MNA Tier II/III					
						Modeling of Additional Geochemical Processes					
								Slug Testing Analysis			
									Dedicated Pumps for Nature and Extent Wells		
										MNA Tier IV	
										Modeling of Geochemical Injection	
										Drilling and Collection of Samples for Testing	
										Geochemical Injection Lab Testing	

APPENDIX A

In Situ Hydraulic Conductivity Analysis Memo

TECHNICAL MEMORANDUM

DATE	July 26, 2024	**Reference No.** GL21509219.000-21-TM-0
TO	Erik Heinen and Cassie Johnston Great River Energy	
CC	Todd Stong, Brittany Bradley, Ben Sieren, Brittany Meucci	
FROM	Erin Hunter	**EMAIL erin.hunter@wsp.com**

SITE HYDRAULIC CONDUCTIVITY – STANTON STATION BOTTOM ASH LANDFILL

WSP USA Inc. (WSP) has prepared the following information to summarize the hydraulic conductivity testing conducted as part of the additional site characterization in support of remedy selection for the assessment of corrective measures at Great River Energy's Stanton Station Bottom Ash Landfill. A summary of the hydraulic conductivity testing procedures and results is included in this memo.

1.0 SITE HYDRAULIC CONDUCTIVITY

In support of the site characterization, in situ variable-head hydraulic conductivity (i.e., slug) testing was performed at selected monitoring wells installed at Stanton Station between July 20 and July 24, 2023.

1.1 In Situ Testing Equipment and Procedures

Prior to slug test, the static water level and total depth was measured at each monitoring well with an electronic water level meter. These measurements were used to determine the maximum available water column length. The maximum available water column length is an important consideration for the hydraulic test design. Custom polyvinyl chloride (PVC) slugs were designed and constructed at various lengths to maximize the displacement of the water column within a given well based on the available water column length and the length of the other down-hole testing equipment. Slugs were constructed of 1.25-inch Schedule 40 PVC pipe and end caps affixed with stainless steel screws. The PVC slugs were fully filled with sand to eliminate the buoyancy potential of the empty slugs. Each slug was completed at the top with stainless steel eye bolts and bonded washers to allow the slug to be deployed and retrieved on a length of new nylon rope at each monitoring well.

Slug testing was performed by the nearly instantaneous insertion or withdrawal of the PVC slug into the water column of the monitoring well. Both falling head (i.e., slug injection) and rising head (i.e., slug withdrawal) tests were performed at each monitoring well.

Each monitoring well was tested multiple times. During slug injection or slug withdrawal, changes in the water level were monitored with an In-Situ Leveltroll 700 electronic pressure transducer and data logger. The logger was set to set to record water levels at a rapid interval (approximately every 0.25 seconds) until the monitoring well had recovered to at least 70 percent of its initial static level. The rate of water level recovery to the static condition was analyzed to estimate the in situ hydraulic conductivity of the geologic materials isolated by the screened intervals of the wells.

1.2 In Situ Testing Analysis Approach

Formational hydraulic conductivities were estimated using the AQTESOLV ™ software package (Duffield 2007) to evaluate the data collected in situ. Data were fit with either the Hvorslev (1951) or Bouwer and Rice (Bouwer and Rice 1976; Bouwer 1989) analytical methods within the software. This method of analysis involves fitting a straight line to the linear portion of water level recovery test data plotted on a semi-log scale. During review of the data, some tests were identified as displaying curvature (concave behavior) or having the double straight-line effect (DSLE). These tests were adjusted to the best fit lines. For each test analysis, a straight line was fit to the recommended normalized head range (NHR, between 0.15 and 0.25) in general accordance with guidelines described in Butler (1998). The NHR is the recommended range of data to match a best fit line when using a straight-line method (such as Bouwer and Rice) to remove any ambiguity within the analysis and enhance the reliability of the data, per Butler (1998). Hydraulic conductivity was then estimated from the slope of this line.

1.3 In Situ Test Results

In general, the AQTESOLV™ analysis of the 2023 slug testing data for each of the wells tested shows a concave-upward curvature in the semi-log test response data. Based on Butler (1998), this effect is indicative of varying storage mechanisms and is likely due to well screen intervals that span variable lithologies. The variable lithologies within well screen intervals was confirmed by review of the borehole logs and well completion diagrams for each monitoring well that was tested. The presence of variable lithologies within a well screen interval, and between wells, resulted in hydraulic conductivities ranging from 8 x 10^{-6} centimeters per second (cm/sec) to 3 x 10^{-2} cm/sec. With wells screened across multiple lithologies, each resulting conductivity is considered a bulk value and is most representative of the lithology with the highest hydraulic conductivity. The AQTESOLV™ analysis reports for each test analyzed are presented in Attachment 1 and the slug test results, including the lithology of the well screen interval, are summarized in Table 1.

Table 1: In Situ Hydraulic Conductivity Test Results

Location	Lithologies Within Well Screen Intervals	Hydraulic Conductivity (Geometric Mean)
MW-7A	Lean-fat clay, silty sand, silty lean clay	8.0 x 10^{-6} cm/sec
MW-7B	Fat clay, lean clay, poorly graded sand	1.4 x 10^{-3} cm/sec
MW-9N	Well-graded sand, clayey sand, well graded gravel	5.4 x 10^{-4} cm/sec
MW-102	Fat clay, silty sand	1.2 x 10^{-3} cm/sec
MW-103	Poorly graded sand with clay, poorly graded sand, poorly graded sand with silt and gravel	*1.1 x 10^{-2} cm/sec*
MW-104	Sandy lean clay, poorly graded sand with silt and gravel	*1.3 x 10^{-2} cm/sec*
MW-105	Fat clay, clayey sand	3.1 x 10^{-4} cm/sec
MW-210	Poorly graded sand with silt and gravel, poorly graded sand with silt	*1.2 x 10^{-2} cm/sec*

Location	Lithologies Within Well Screen Intervals	Hydraulic Conductivity (Geometric Mean)
MW-211	Silty sand, lean clay with sand, poorly graded sand with silt and gravel	2.7×10^{-3} cm/sec
MW-213	Silty sand, fat clay, sandy fat clay	5.9×10^{-3} cm/sec
MW-217	Silty sand, coal inclusions at 14.5’	9.1×10^{-3} cm/sec
MW-219	Silty sand, clayey sand	6.8×10^{-4} cm/sec
MW-221	Silty sand	*2.6×10^{-2} cm/sec*
MW-300	Clayey sand, silty sand	7.6×10^{-4} cm/sec
MW-PB1	Silt with sand, silty sand	1.2×10^{-5} cm/sec
MW-PB3	Fat clay	4.0×10^{-5} cm/sec

Italicized data in Table 1 (MW-103, MW-104, MW-210, MW-221) represent locations where rapid recovery occurred during data collection. Results of the analysis are presented for completeness; however, these conductivity values may not be representative and their use for additional analysis is not recommended. When recovery is particularly rapid, data collection from the transducer can be insufficient to accurately capture the associated data. Based on internal review, italicized results are considered unreliable for use in modeling the subsurface groundwater flow. The remaining data in the table are considered representative and appropriate for use in additional analysis.

The complete set of results presented in Table 1 are consistent with the expected hydraulic conductivity of materials encountered within the near-surface geology at the site and with prior in situ hydraulic conductivity testing conducted at the site by Braun Intertec (1993). Within the Braun Intertec report, literature results were provided for silty sand ranging from roughly 1×10^{-5} cm/sec to 1×10^{-2} cm/sec, while tested results ranged from roughly 2×10^{-5} cm/sec to 1×10^{-3} cm/sec.

These conductivity values will be used to support the corrective measure remedy selection and enhance the understanding of the behavior of groundwater onsite.

Attachments: Attachment 1 – AQTESOLV Analysis Reports

2.0 REFERENCES

Bouwer H and Rice RC. 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells. Water Resources Research 12(3): 423:428.

Bouwer H. 1989. The Bouwer and Rice slug test – an update. Ground Water 27(3): 304-309.

Braun Intertec (Braun Intertec Environmental Inc.). 1993. Hydrogeologic Assessment Report for the United Power Association Stanton Station Ash Ponds, Stanton, North Dakota. February 3, 1993.

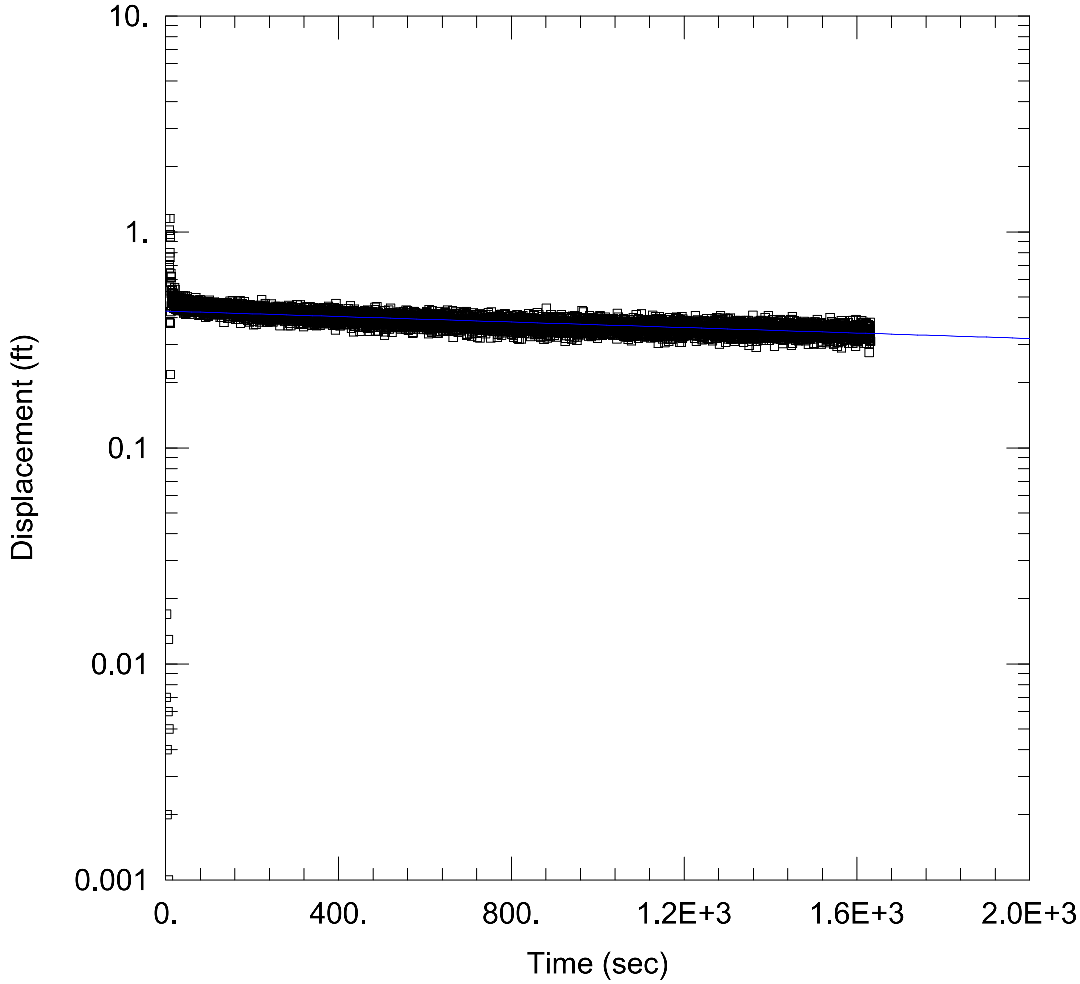
Butler JJ Jr. 1998. The Design, Performance, and Analysis of Slug Tests. Lewis Publishers, Boca Raton, Florid, 252 p.

Duffield GM. 2007. AQTESOLV for Windows – Version 4.5 User's Guide. Copyright 2004-2007.

Hvorselv MJ. 1951. Time Lag and Soil Permeability in Ground-Water Observations, Bull. No. 36, Waterways Exper. Sta. Corps of Engrs, U.S. Army, Vicksburg, Mississippi, pp. 1-50.

ATTACHMENT 1

AQTESOLV Analysis Reports



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7A-D1.aqt
Date: 11/13/23 Time: 09:31:08

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7A
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.186 ft
Anisotropy Ratio (Kz/Kr): 1.

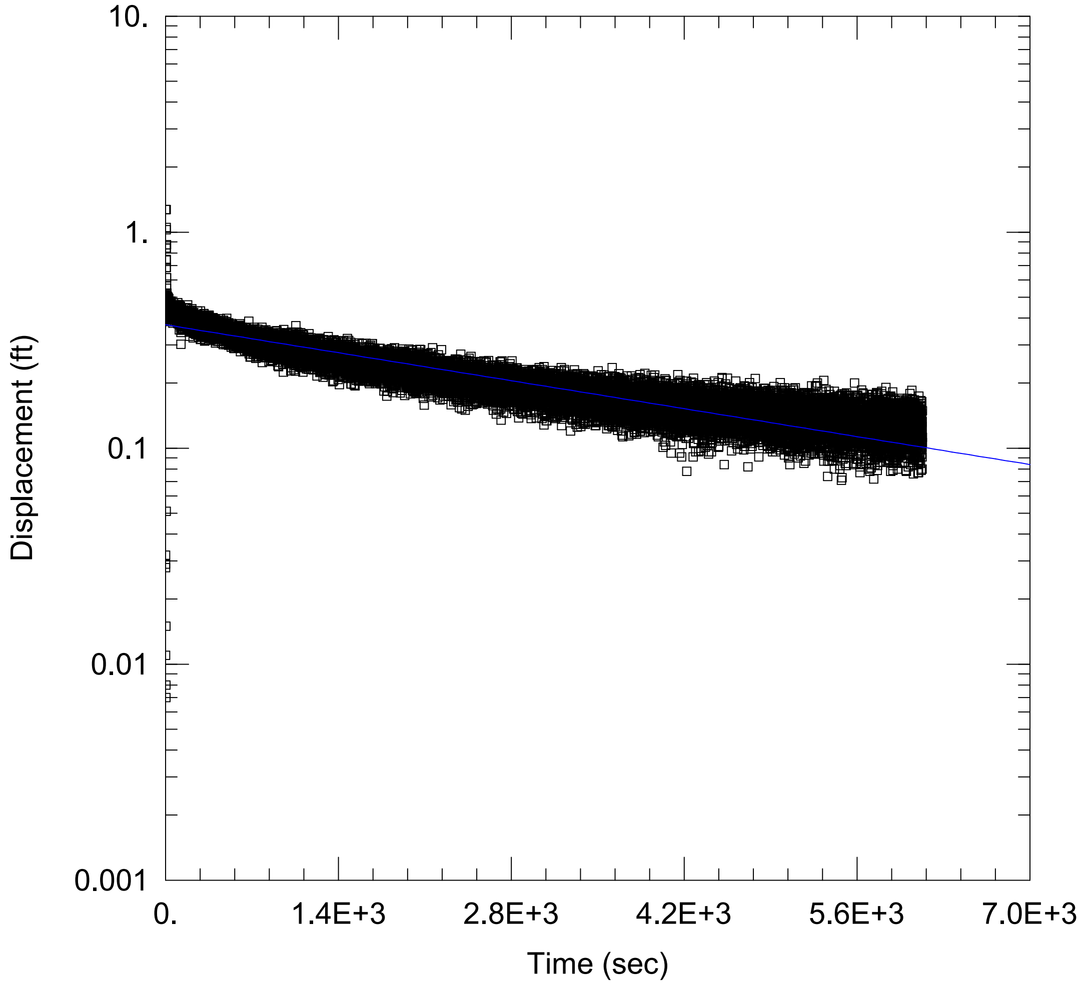
WELL DATA (MW-7A)

Initial Displacement: 1.154 ft
Total Well Penetration Depth: 8.186 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.19 ft
Screen Length: 8.186 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.01377 ft/day
y0 = 0.4299 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7A-D2.aqt
Date: 11/13/23 Time: 09:31:46

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7A
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.186 ft Anisotropy Ratio (Kz/Kr): 1.

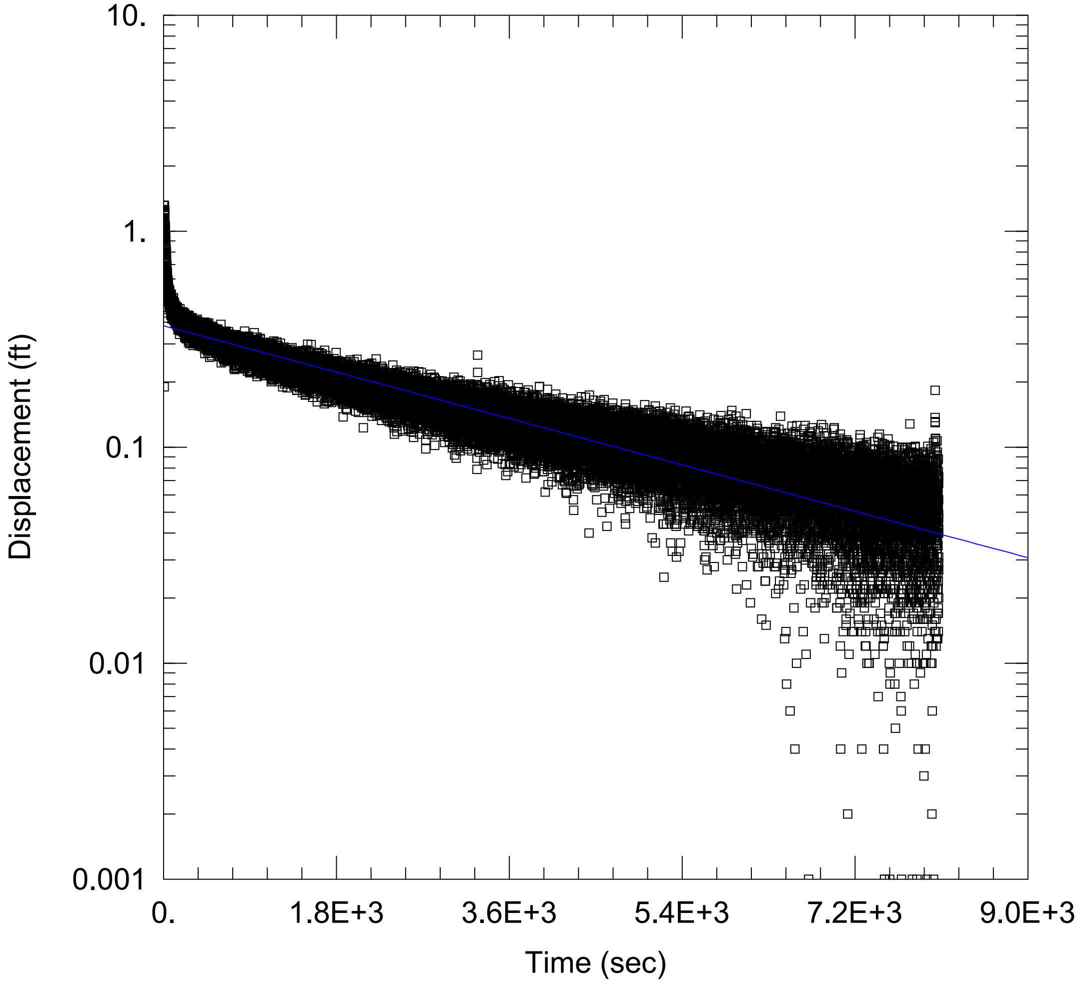
WELL DATA (MW-7A)

Initial Displacement: 1.274 ft Static Water Column Height: 8.19 ft
Total Well Penetration Depth: 8.186 ft Screen Length: 8.186 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02004 ft/day y0 = 0.3723 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7A-U1.aqt
Date: 11/13/23 Time: 09:32:08

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7A
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.186 ft
Anisotropy Ratio (Kz/Kr): 1.

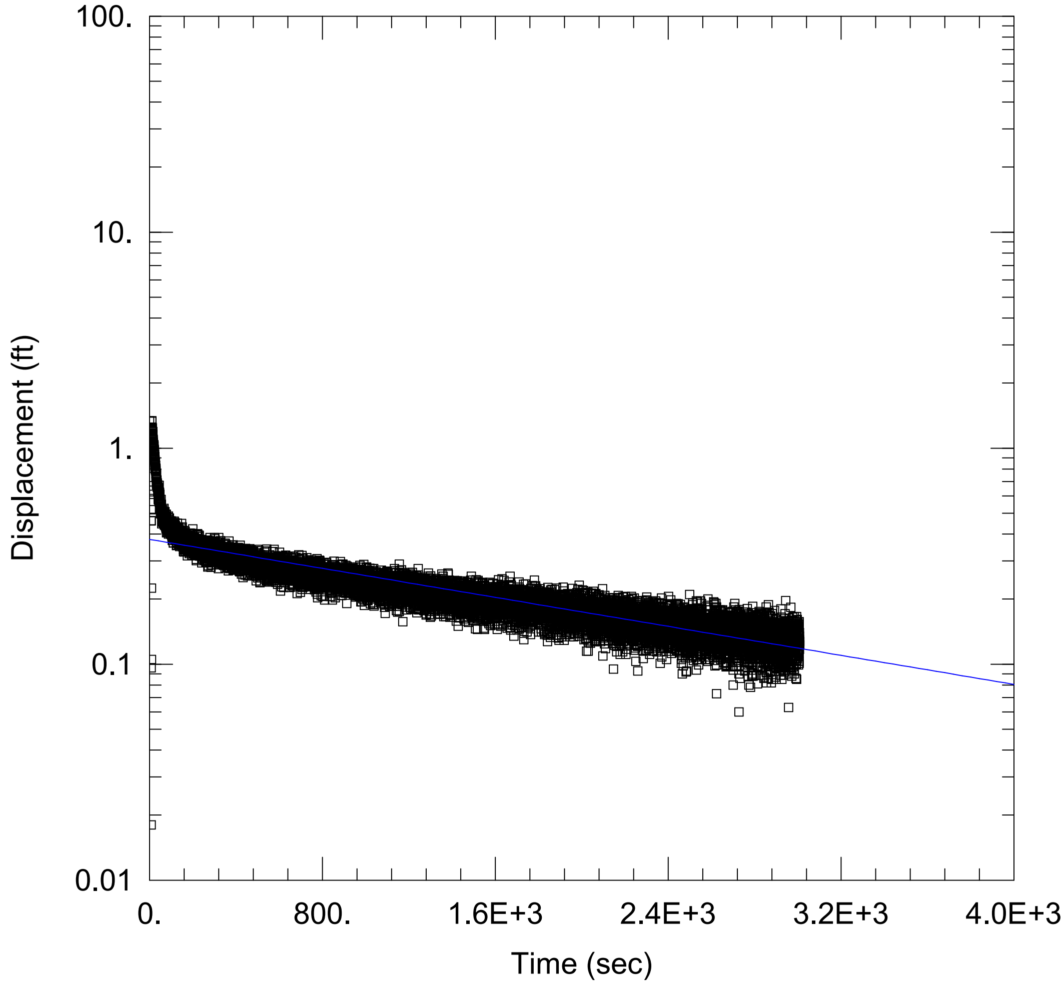
WELL DATA (MW-7A)

Initial Displacement: 1.315 ft
Total Well Penetration Depth: 8.186 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.19 ft
Screen Length: 8.186 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.02586 ft/day
y0 = 0.3645 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7A-U2.aqt
Date: 11/13/23 Time: 09:32:31

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7A
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.186 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7A)

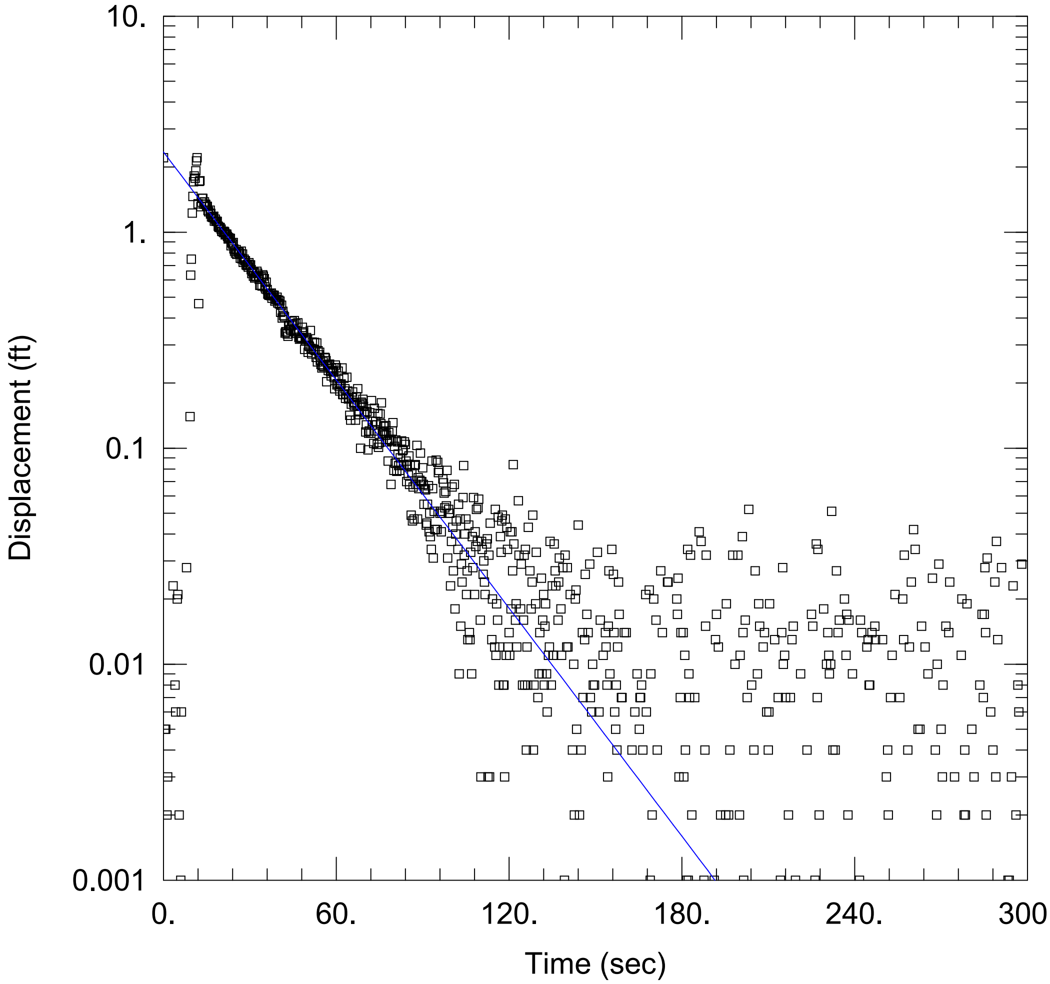
Initial Displacement: 1.337 ft
Total Well Penetration Depth: 8.186 ft
Casing Radius: 0.08333 ft

Static Water Column Height: 8.19 ft
Screen Length: 8.186 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03638 ft/day y0 = 0.3781 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7B-D1.aqt
Date: 11/13/23 | Time: 09:34:19

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7B
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 28.07 ft
Anisotropy Ratio (Kz/Kr): 1.

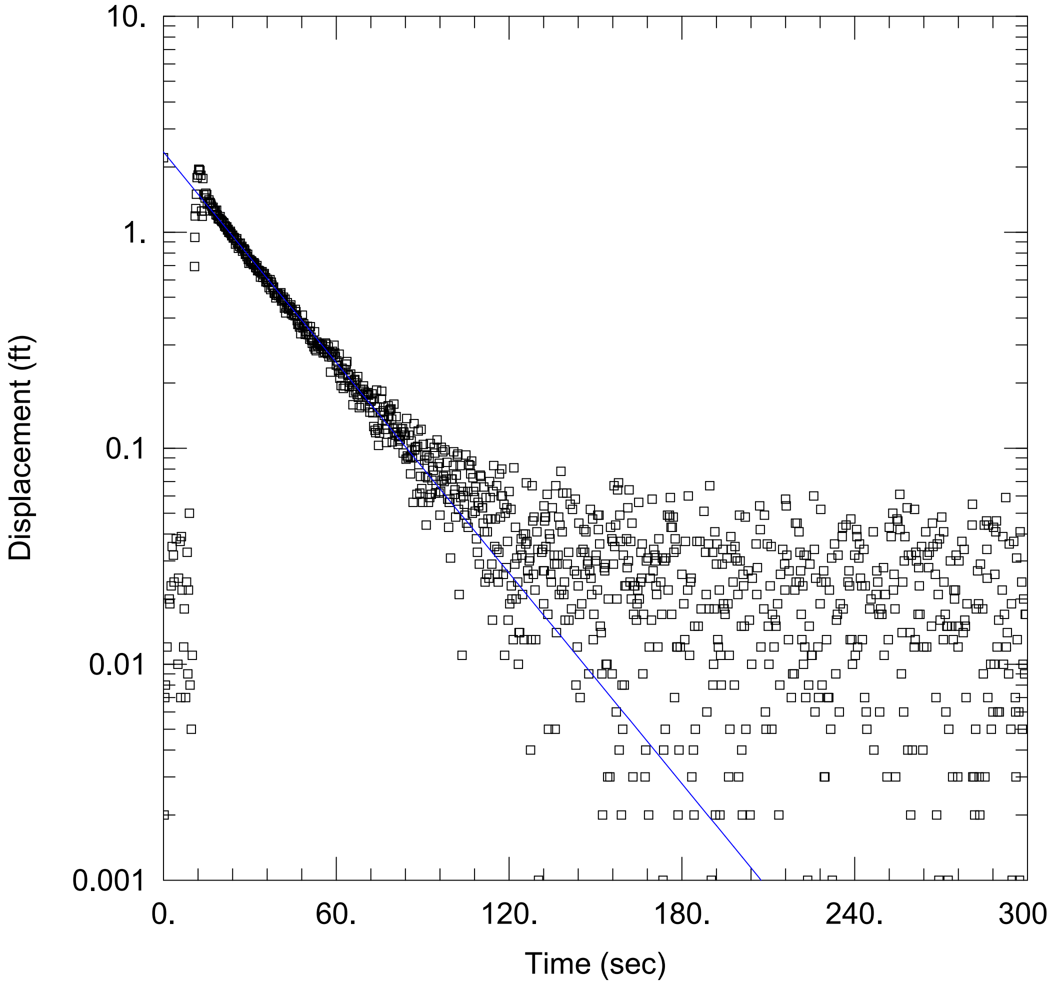
WELL DATA (MW-7B)

Initial Displacement: 2.212 ft
Total Well Penetration Depth: 28.07 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 28.07 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 4.078 ft/day
y0 = 2.35 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7B-D2.aqt
Date: 11/13/23 Time: 09:34:34

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7B
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 28.07 ft Anisotropy Ratio (Kz/Kr): 1.

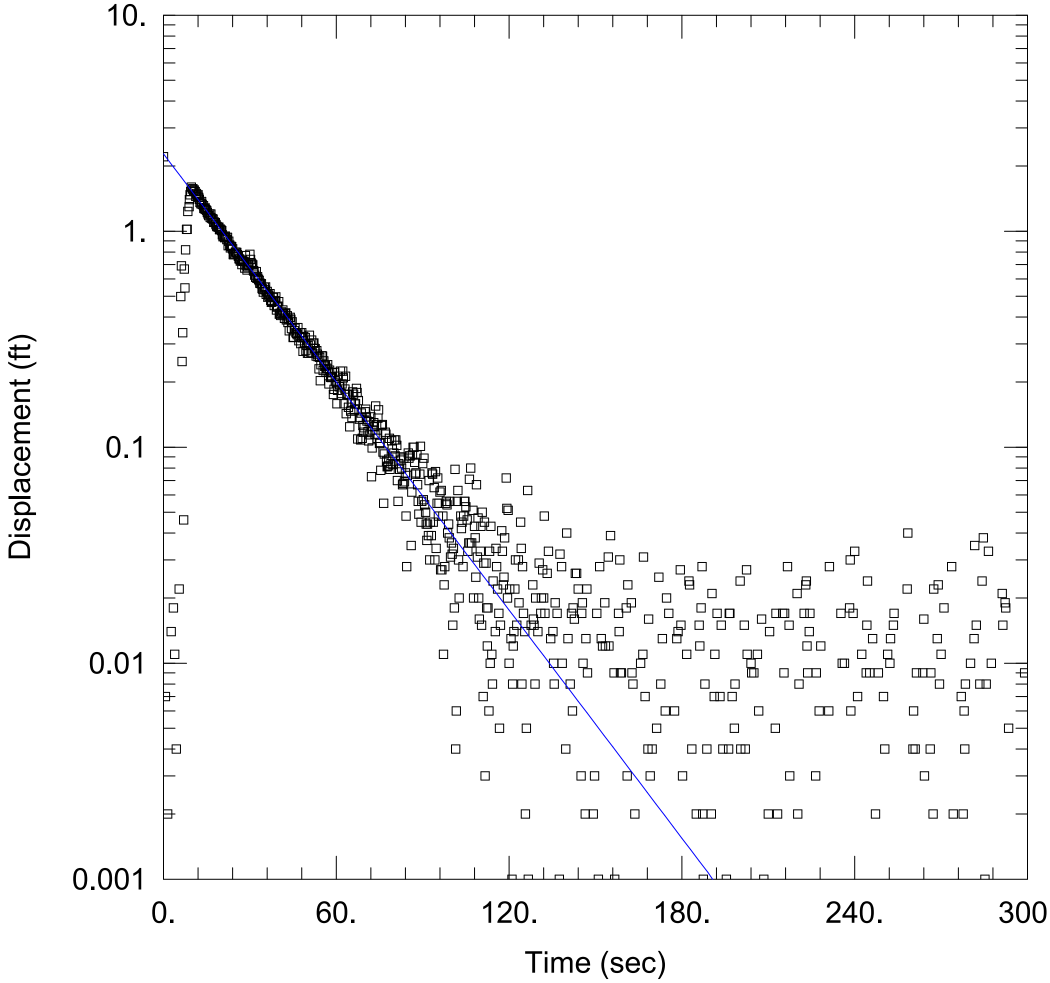
WELL DATA (MW-7B)

Initial Displacement: 2.212 ft Static Water Column Height: 28.07 ft
Total Well Penetration Depth: 28.07 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 3.765 ft/day y0 = 2.35 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7B-U1.aqt
Date: 11/13/23 Time: 09:34:58

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7B
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 28.07 ft
Anisotropy Ratio (Kz/Kr): 1.

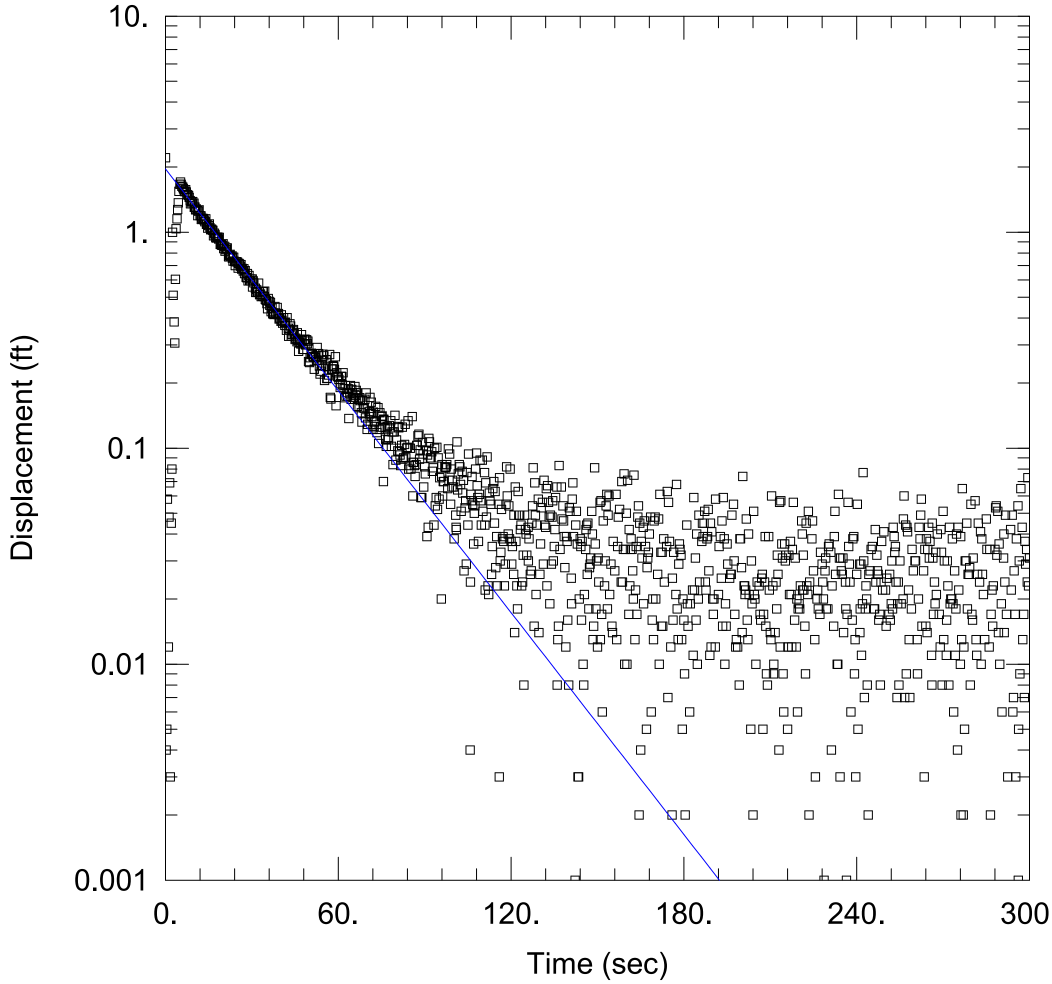
WELL DATA (MW-7B)

Initial Displacement: 2.212 ft
Total Well Penetration Depth: 28.07 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 28.07 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 4.078 ft/day
y0 = 2.278 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-7B-U2.aqt
Date: 11/13/23 Time: 09:35:10

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-7B
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 28.07 ft Anisotropy Ratio (Kz/Kr): 1.

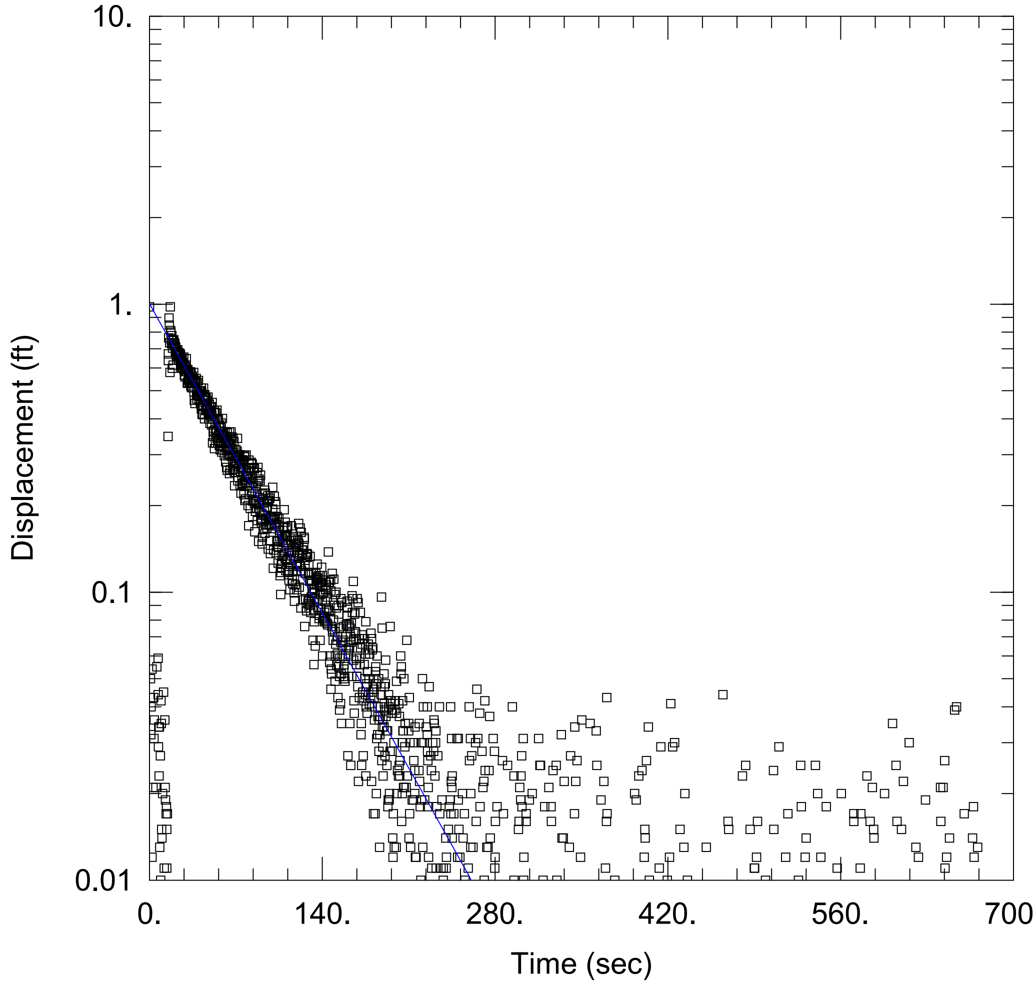
WELL DATA (MW-7B)

Initial Displacement: 2.212 ft Static Water Column Height: 28.07 ft
Total Well Penetration Depth: 28.07 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 3.967 ft/day y0 = 1.961 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-9N-D1.aqt
Date: 11/13/23 Time: 09:36:37

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-9N
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 14.84 ft Anisotropy Ratio (Kz/Kr): 1.

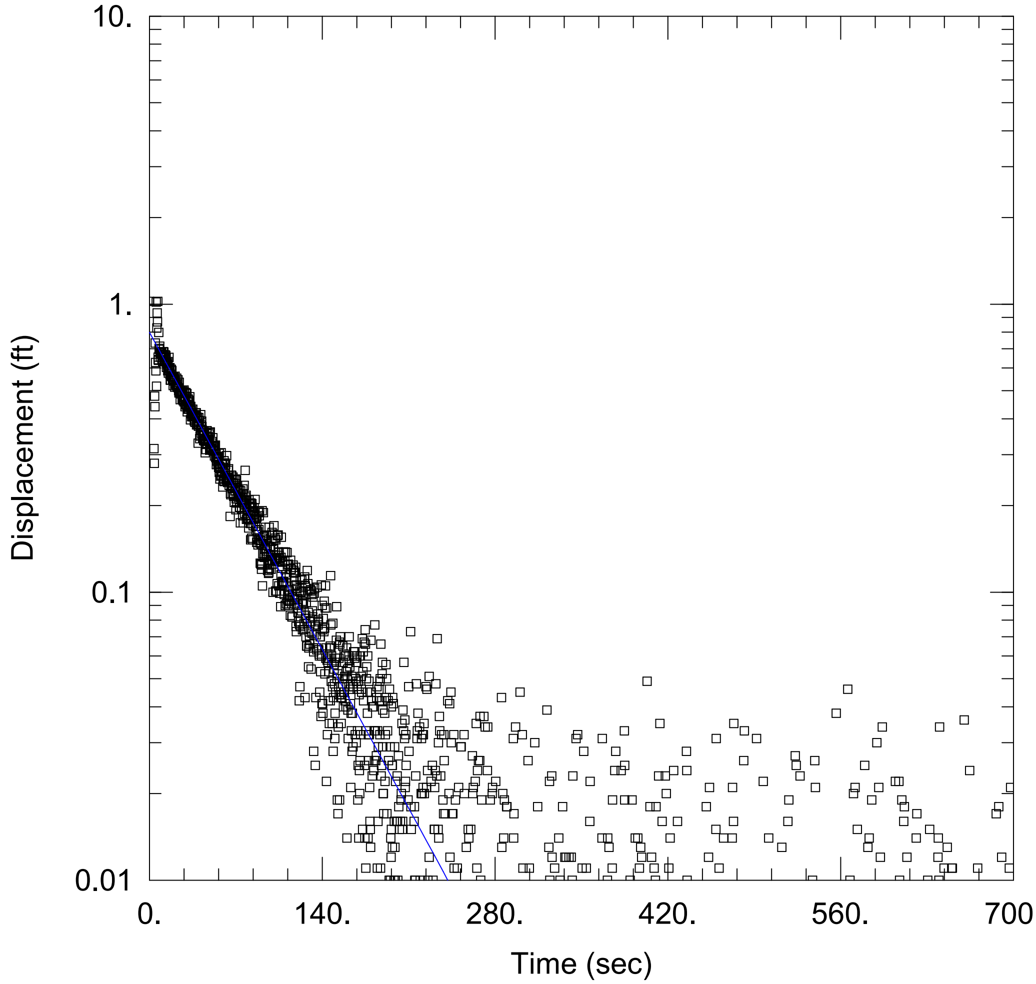
WELL DATA (MW-9N)

Initial Displacement: 0.978 ft Static Water Column Height: 14.84 ft
Total Well Penetration Depth: 14.84 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.579 ft/day y0 = 1.003 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-9N-D2.aqt
Date: 11/13/23
Time: 09:36:50

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-9N
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 14.84 ft
Anisotropy Ratio (Kz/Kr): 1.

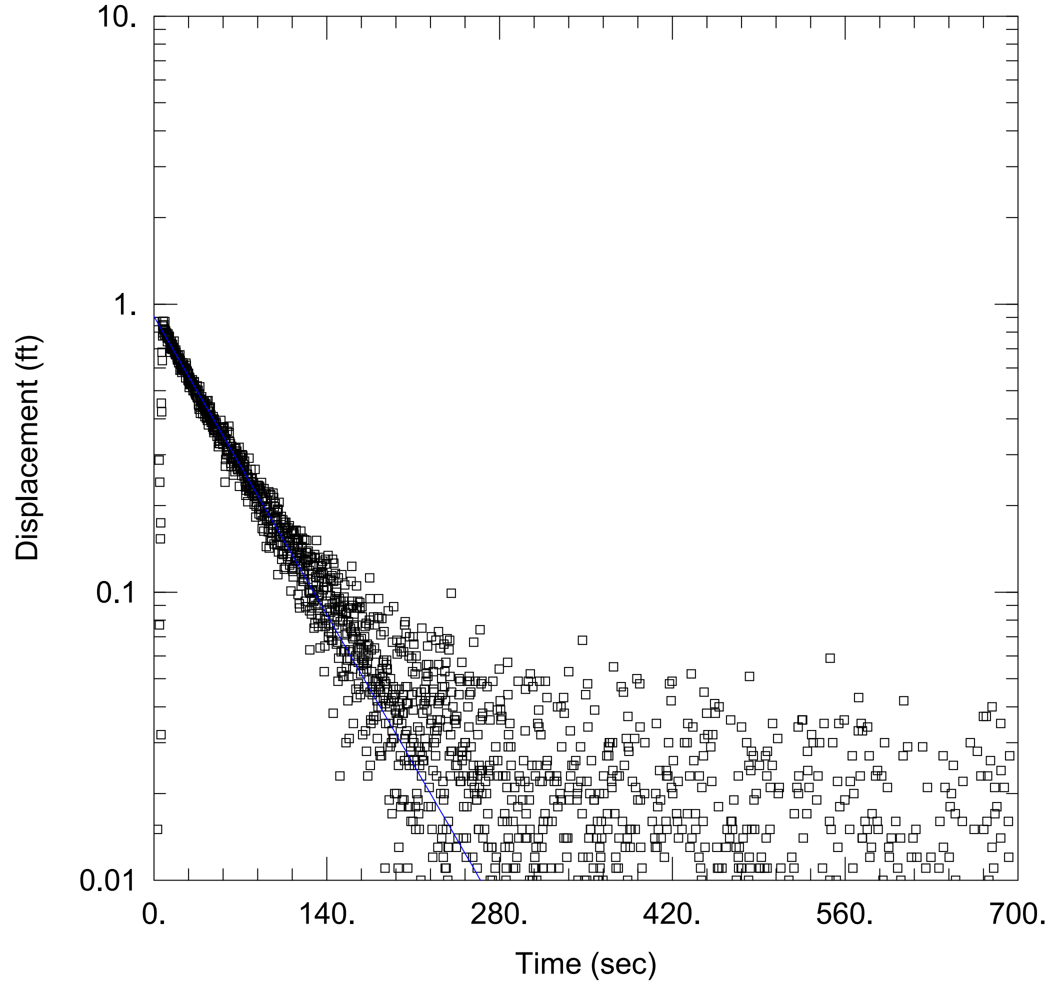
WELL DATA (MW-9N)

Initial Displacement: 1.022 ft
Static Water Column Height: 14.84 ft
Total Well Penetration Depth: 14.84 ft
Screen Length: 10. ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.619 ft/day
y0 = 0.7982 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-9N-U1.aqt
Date: 11/13/23 Time: 09:37:03

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-9N
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 14.84 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-9N)

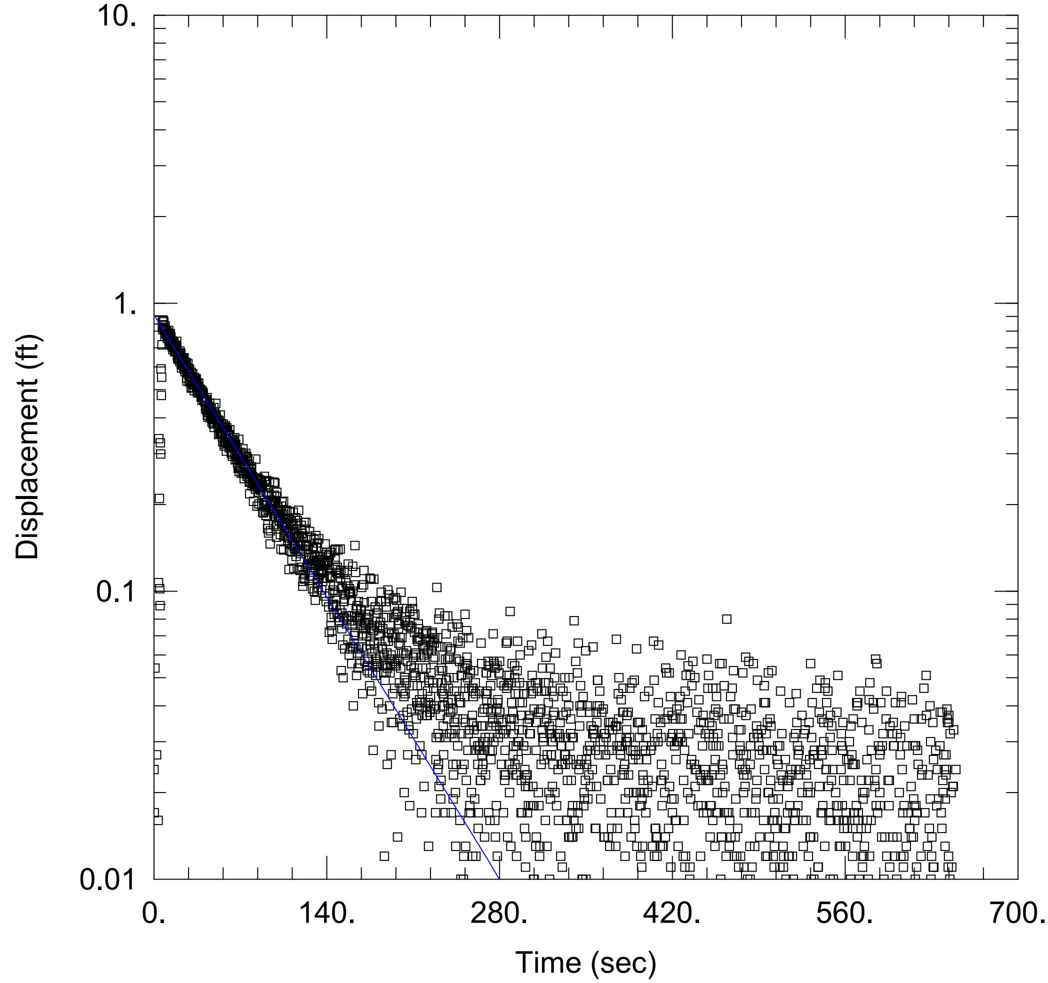
Initial Displacement: 0.87 ft
Total Well Penetration Depth: 14.84 ft
Casing Radius: 0.08333 ft

Static Water Column Height: 14.84 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.522 ft/day y0 = 0.9059 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-9N-U2.aqt
Date: 11/13/23 Time: 09:37:15

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Underwood, ND
Test Well: MW-9N
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 14.84 ft Anisotropy Ratio (Kz/Kr): 1.

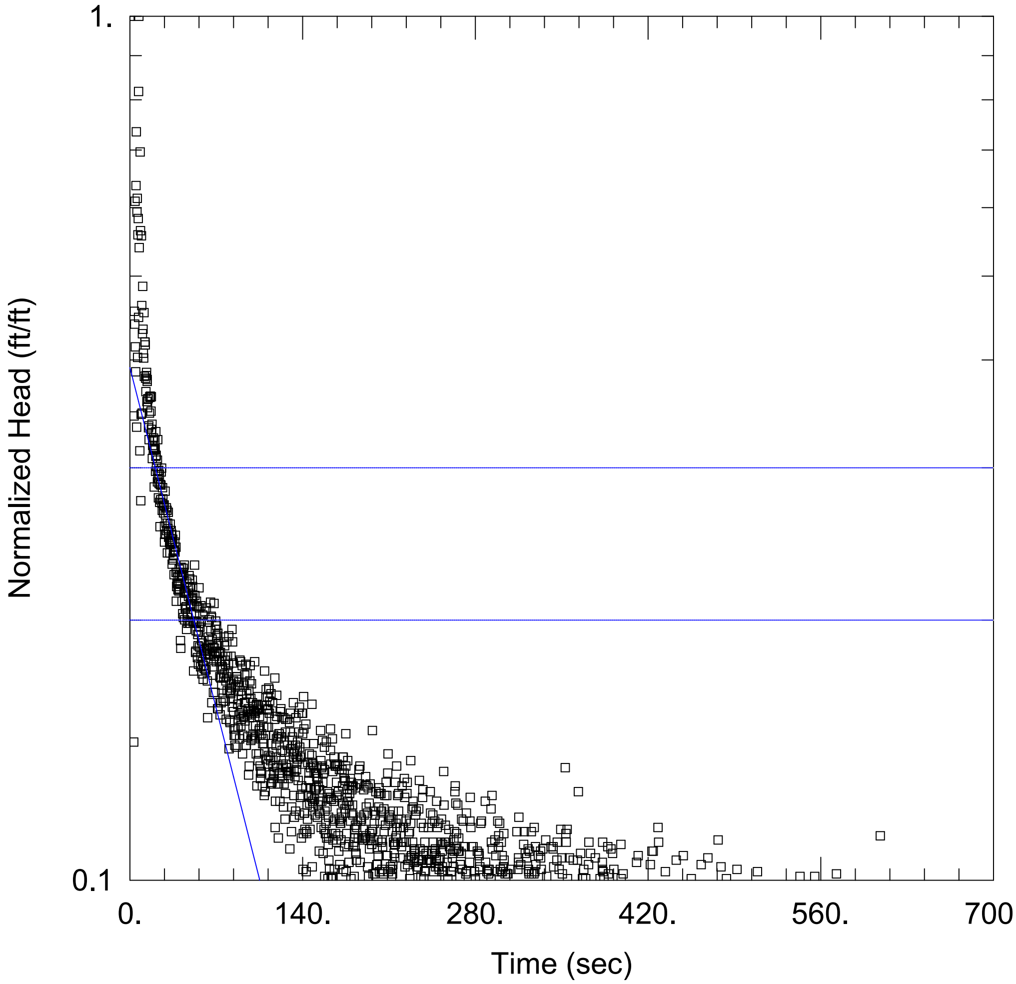
WELL DATA (MW-9N)

Initial Displacement: 0.875 ft Static Water Column Height: 14.84 ft
Total Well Penetration Depth: 14.84 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.44 ft/day y0 = 0.912 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-102-D1_BM.aqt
Date: 04/16/24 Time: 14:28:36

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-102
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 9.237 ft Anisotropy Ratio (Kz/Kr): 1.

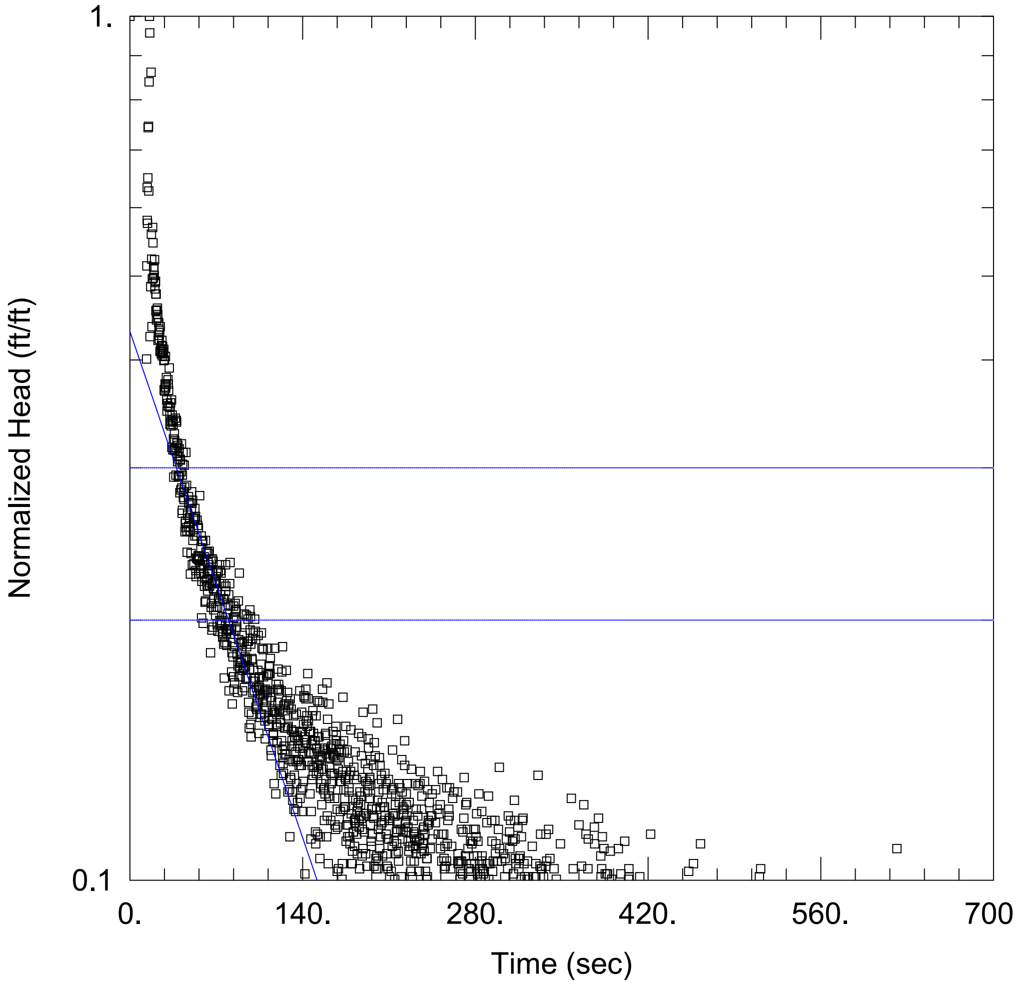
WELL DATA (MW-102)

Initial Displacement: 1.564 ft
Total Well Penetration Depth: 9.237 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.24 ft
Screen Length: 9.237 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.126 ft/day y0 = 0.6131 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-102-D2_BM.aqt
Date: 04/16/24 Time: 15:04:22

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-102
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 9.237 ft Anisotropy Ratio (Kz/Kr): 1.

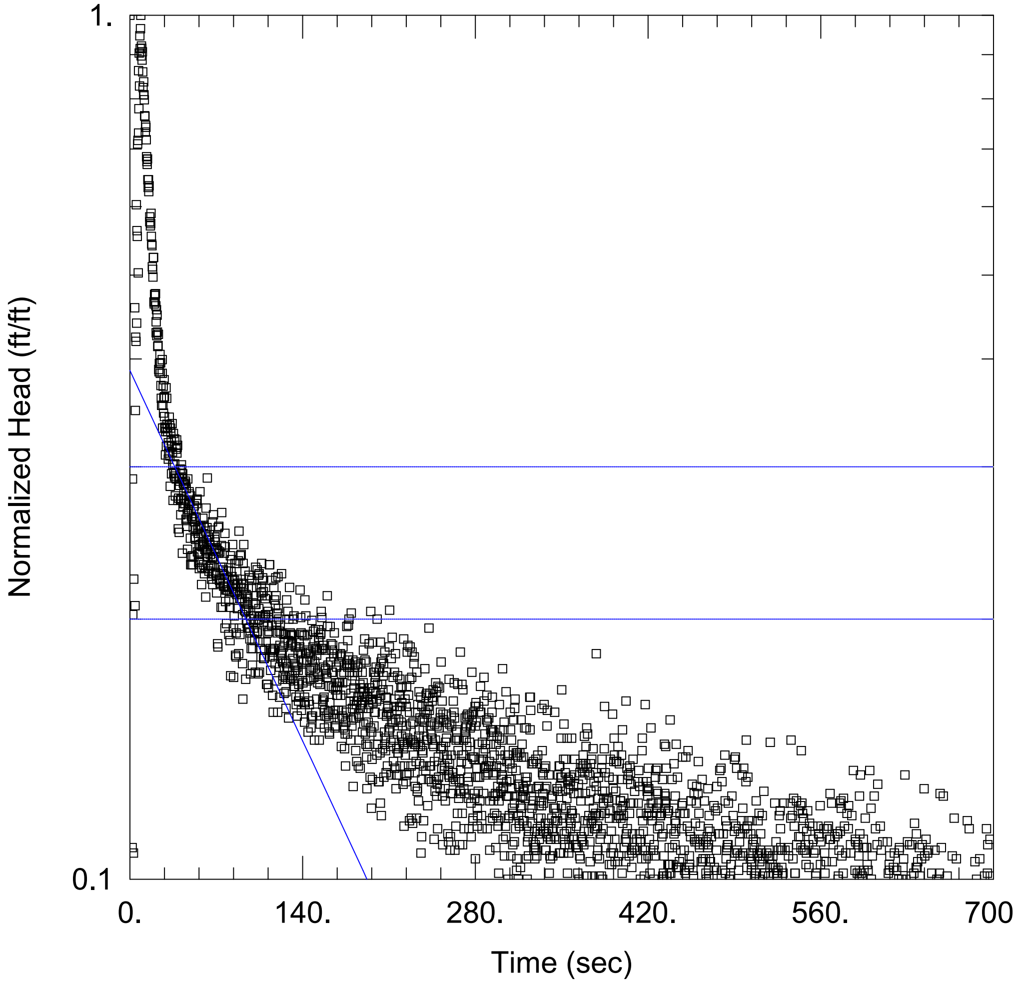
WELL DATA (MW-102)

Initial Displacement: 1.407 ft
Total Well Penetration Depth: 9.237 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.24 ft
Screen Length: 9.237 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.8354 ft/day y0 = 0.607 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-102-U1_BM.aqt
Date: 04/16/24 Time: 14:25:36

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-102
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 9.237 ft Anisotropy Ratio (Kz/Kr): 1.

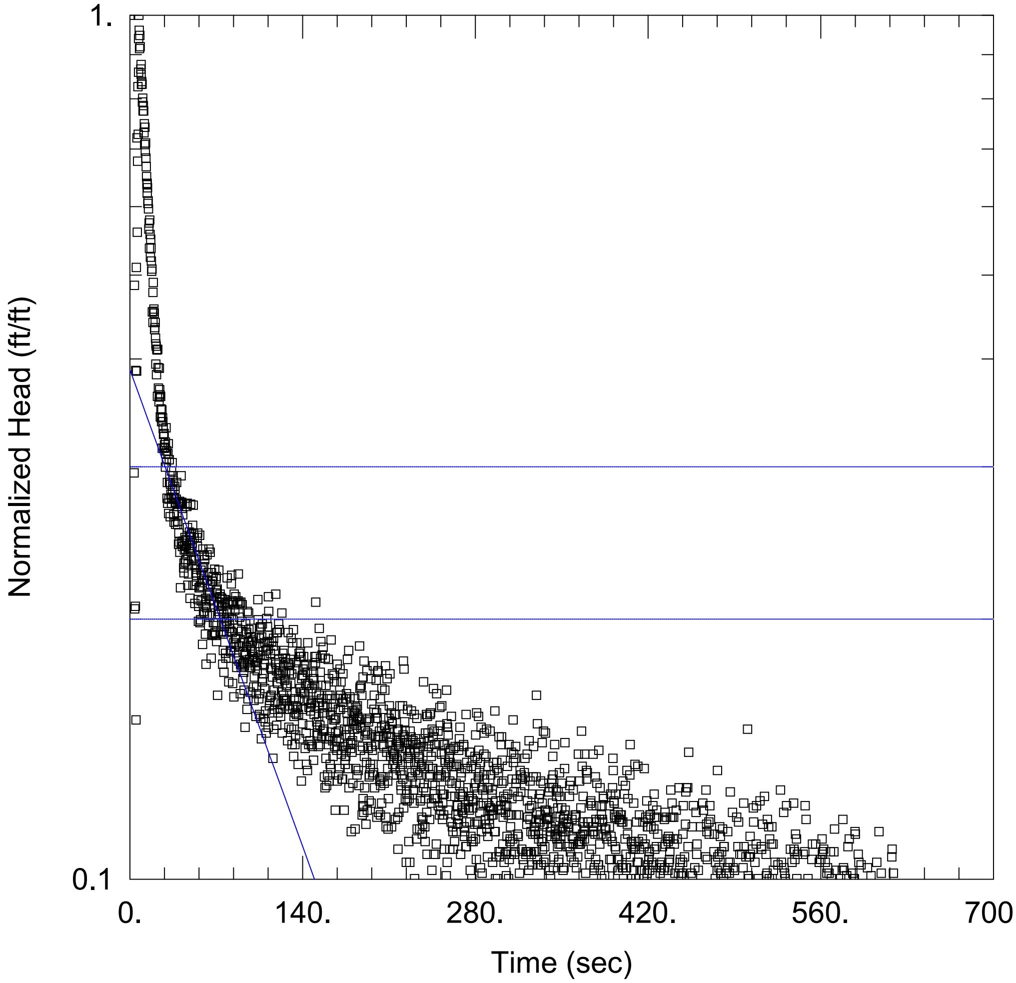
WELL DATA (MW-102)

Initial Displacement: 1.25 ft Static Water Column Height: 9.24 ft
Total Well Penetration Depth: 9.237 ft Screen Length: 9.237 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.6113 ft/day y0 = 0.4848 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-102-U2_BM.aqt
Date: 04/16/24 Time: 15:05:58

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-102
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 9.237 ft Anisotropy Ratio (Kz/Kr): 1.

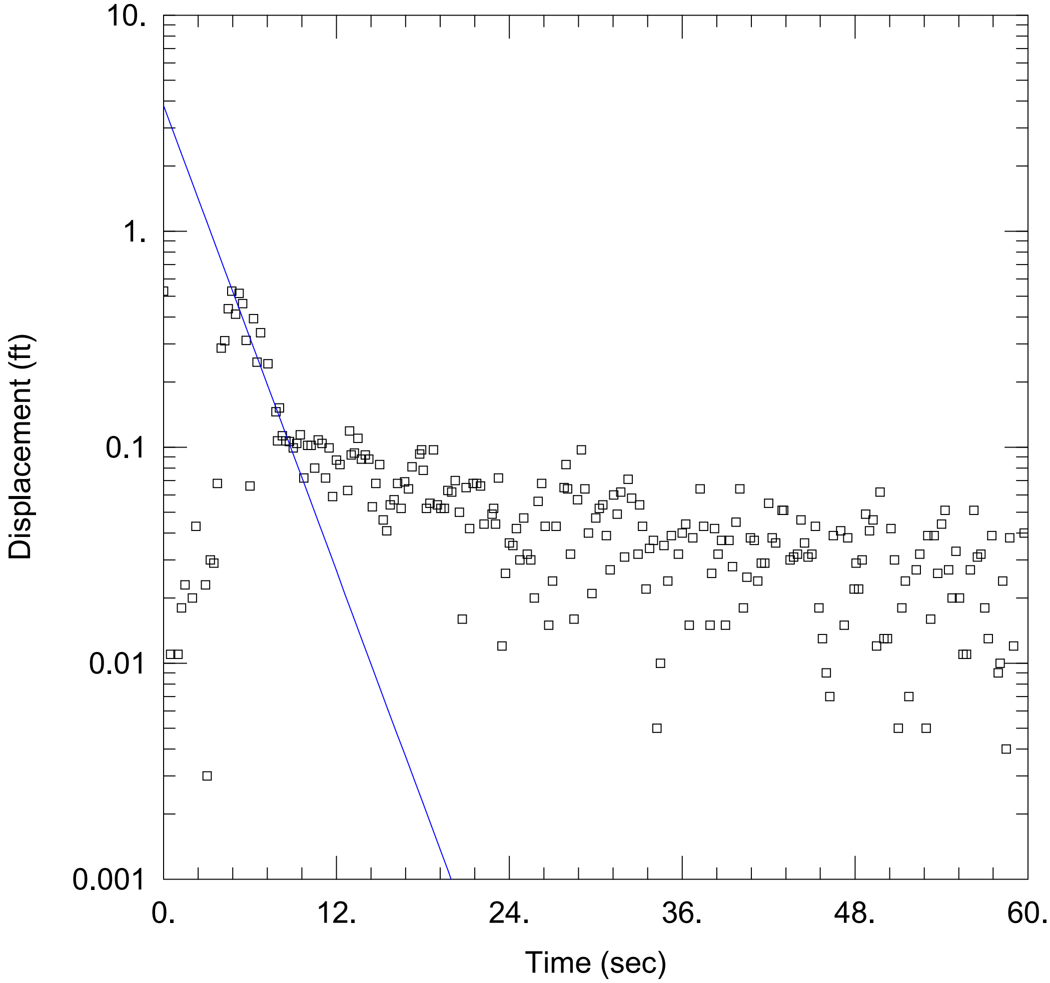
WELL DATA (MW-102)

Initial Displacement: 1.348 ft Static Water Column Height: 9.24 ft
Total Well Penetration Depth: 9.237 ft Screen Length: 9.237 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.7866 ft/day y0 = 0.5238 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-103-D1.aqt
Date: 11/13/23 Time: 09:58:10

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-103
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.219 ft
Anisotropy Ratio (Kz/Kr): 1.

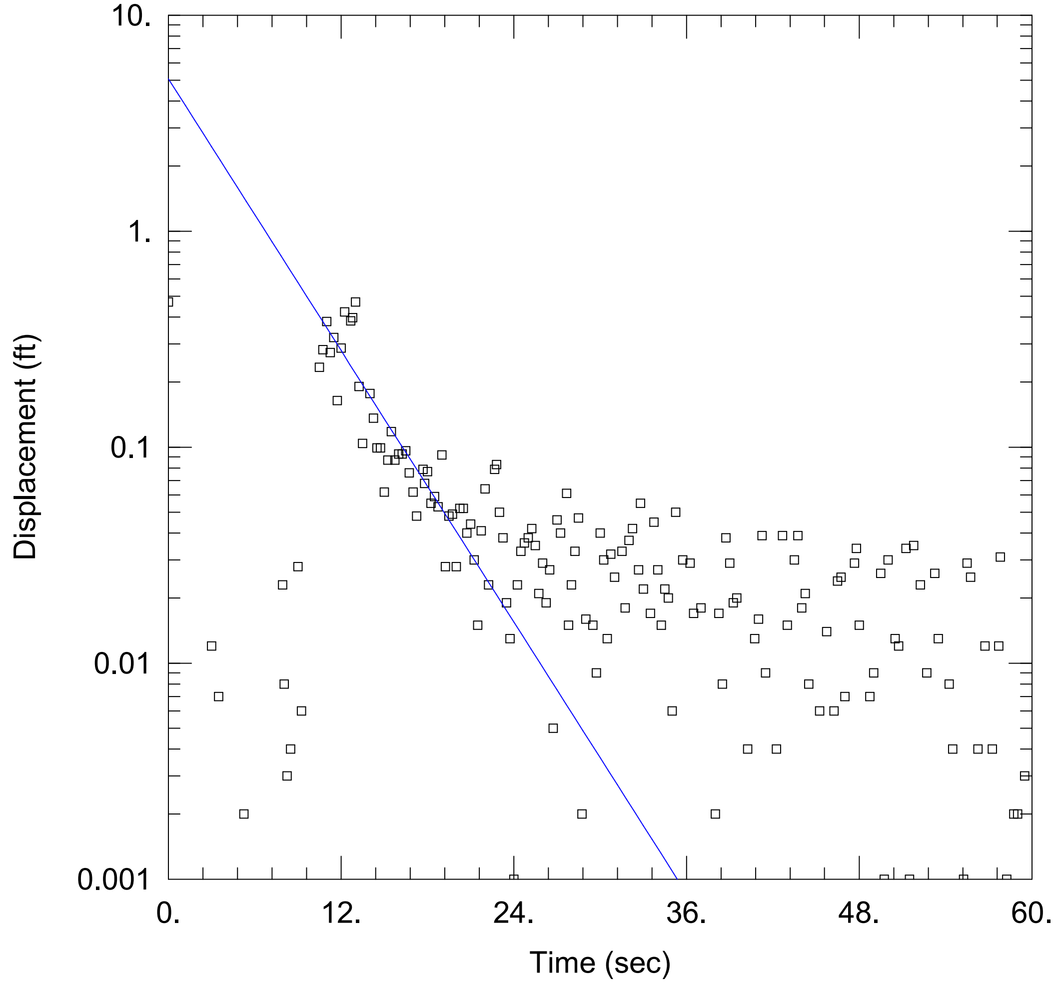
WELL DATA (MW-103)

Initial Displacement: 0.527 ft
Total Well Penetration Depth: 8.219 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.219 ft
Screen Length: 8.219 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 38.78 ft/day
y0 = 3.812 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-103-D2.aqt
Date: 11/13/23 Time: 09:58:31

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-103
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.219 ft
Anisotropy Ratio (Kz/Kr): 1.

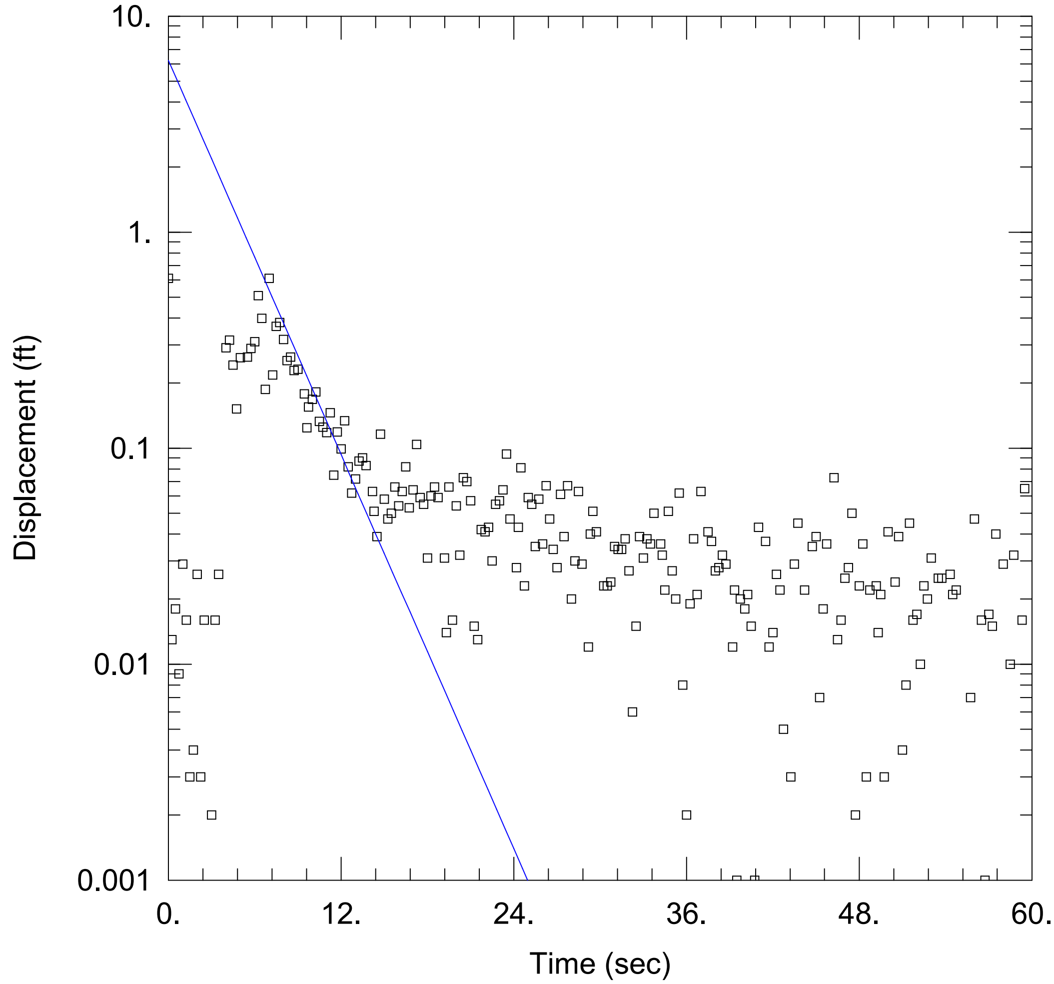
WELL DATA (MW-103)

Initial Displacement: 0.47 ft
Static Water Column Height: 8.219 ft
Total Well Penetration Depth: 8.219 ft
Screen Length: 8.219 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 22.66 ft/day
y0 = 5.07 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-103-U1.aqt
Date: 11/13/23 Time: 09:58:42

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-103
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.219 ft Anisotropy Ratio (Kz/Kr): 1.

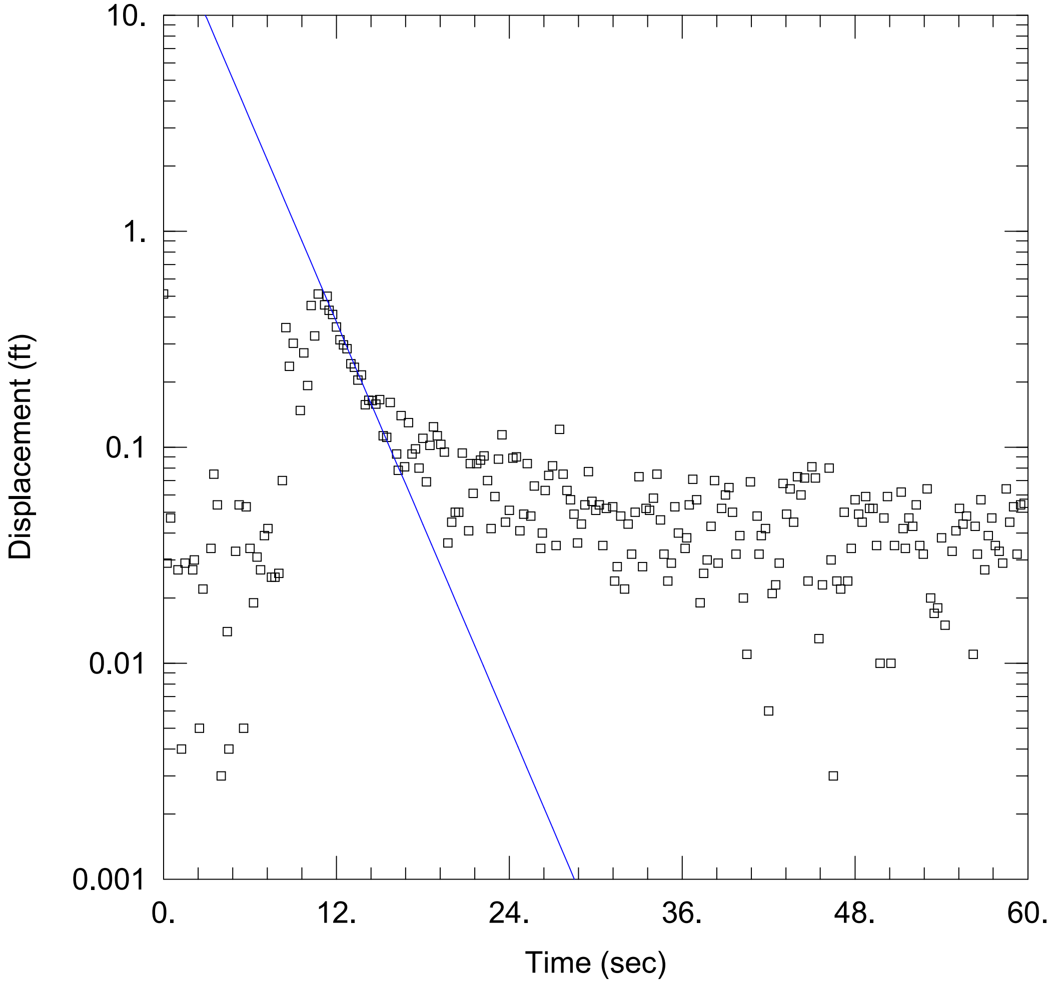
WELL DATA (MW-103)

Initial Displacement: 0.611 ft
Total Well Penetration Depth: 8.219 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.219 ft
Screen Length: 8.219 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 32.88 ft/day y0 = 6.244 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-103-U2.aqt
Date: 11/13/23 Time: 09:58:59

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-103
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 8.219 ft Anisotropy Ratio (Kz/Kr): 1.

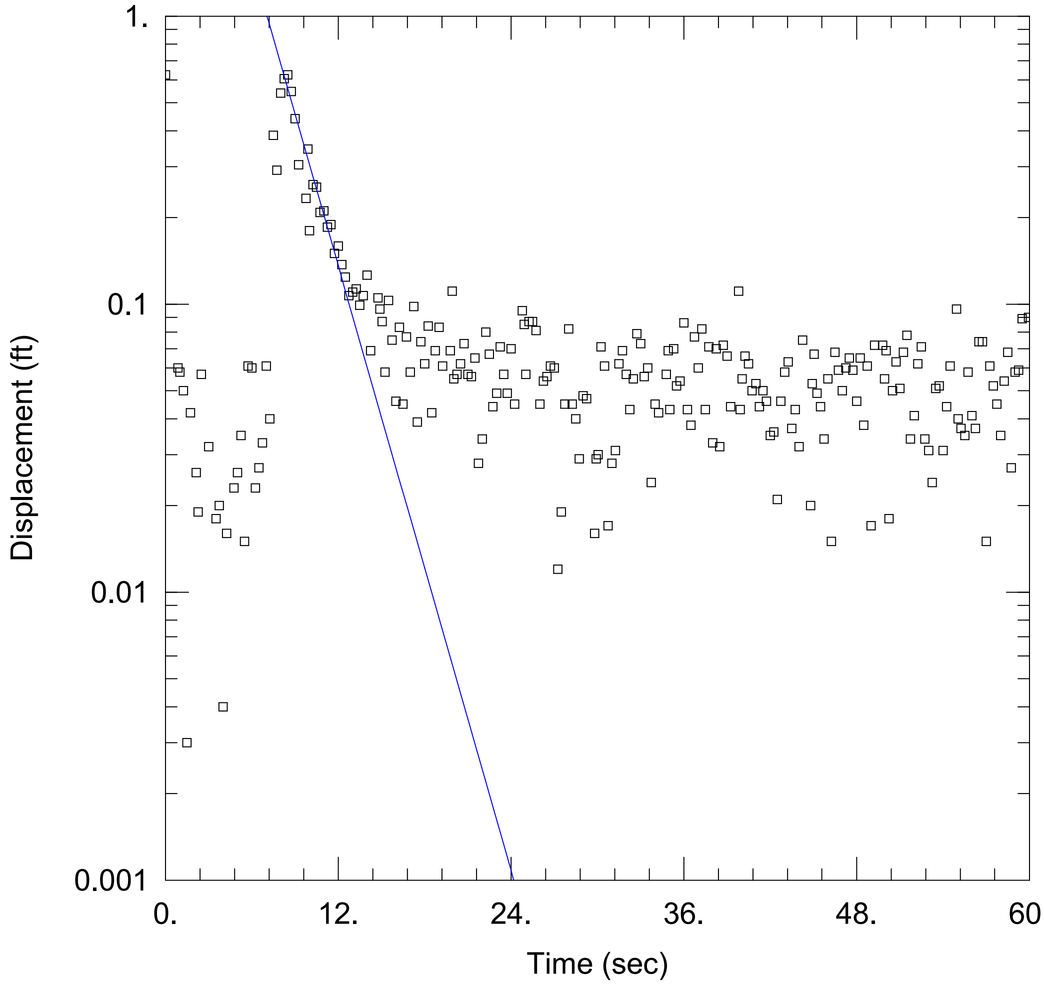
WELL DATA (MW-103)

Initial Displacement: 0.511 ft
Total Well Penetration Depth: 8.219 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.219 ft
Screen Length: 8.219 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 33.77 ft/day y0 = 28.44 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-104-D1.aqt
Date: 11/13/23 Time: 09:59:25

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-104
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 5.314 ft
Anisotropy Ratio (Kz/Kr): 1.

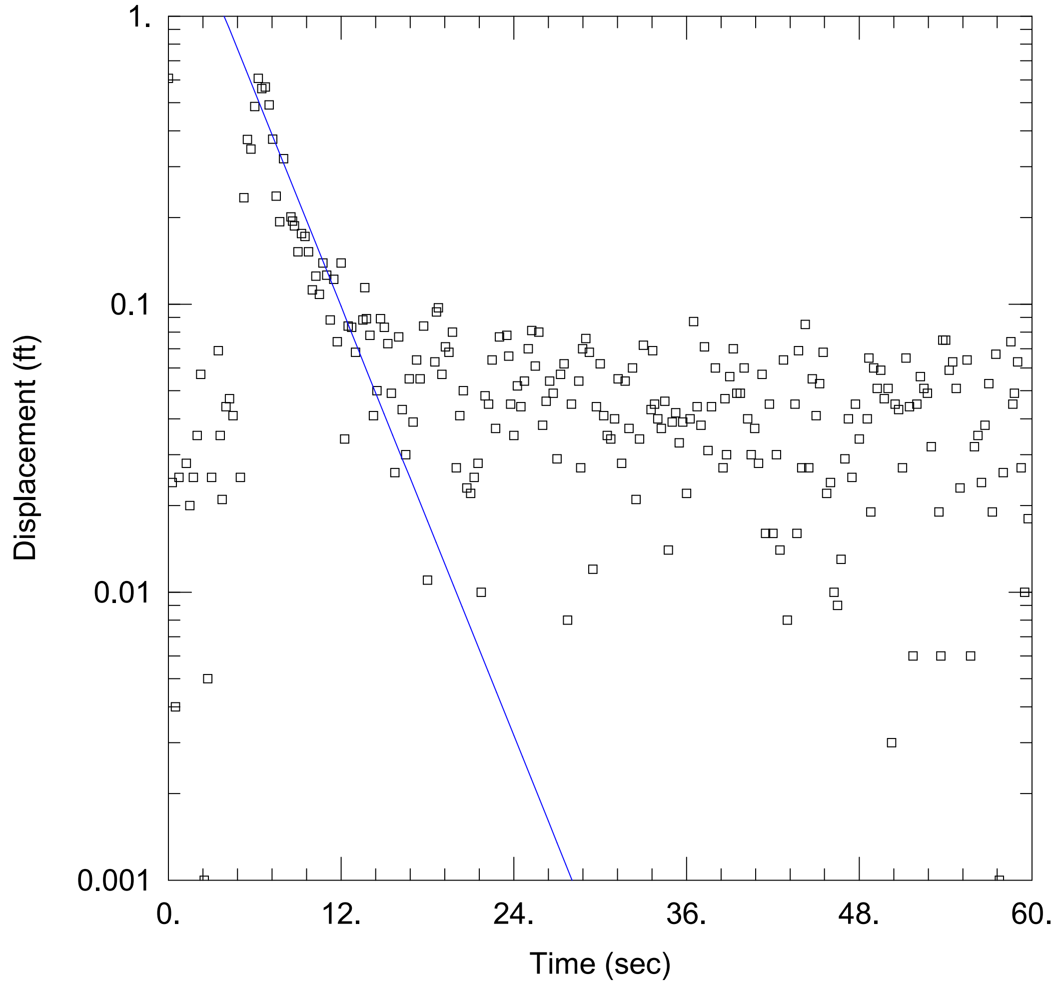
WELL DATA (MW-104)

Initial Displacement: 0.625 ft
Static Water Column Height: 5.314 ft
Total Well Penetration Depth: 5.314 ft
Screen Length: 5.314 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 50.13 ft/day
y0 = 17.18 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-104-D2.aqt
Date: 11/13/23 Time: 09:59:39

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-104
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 5.314 ft Anisotropy Ratio (Kz/Kr): 1.

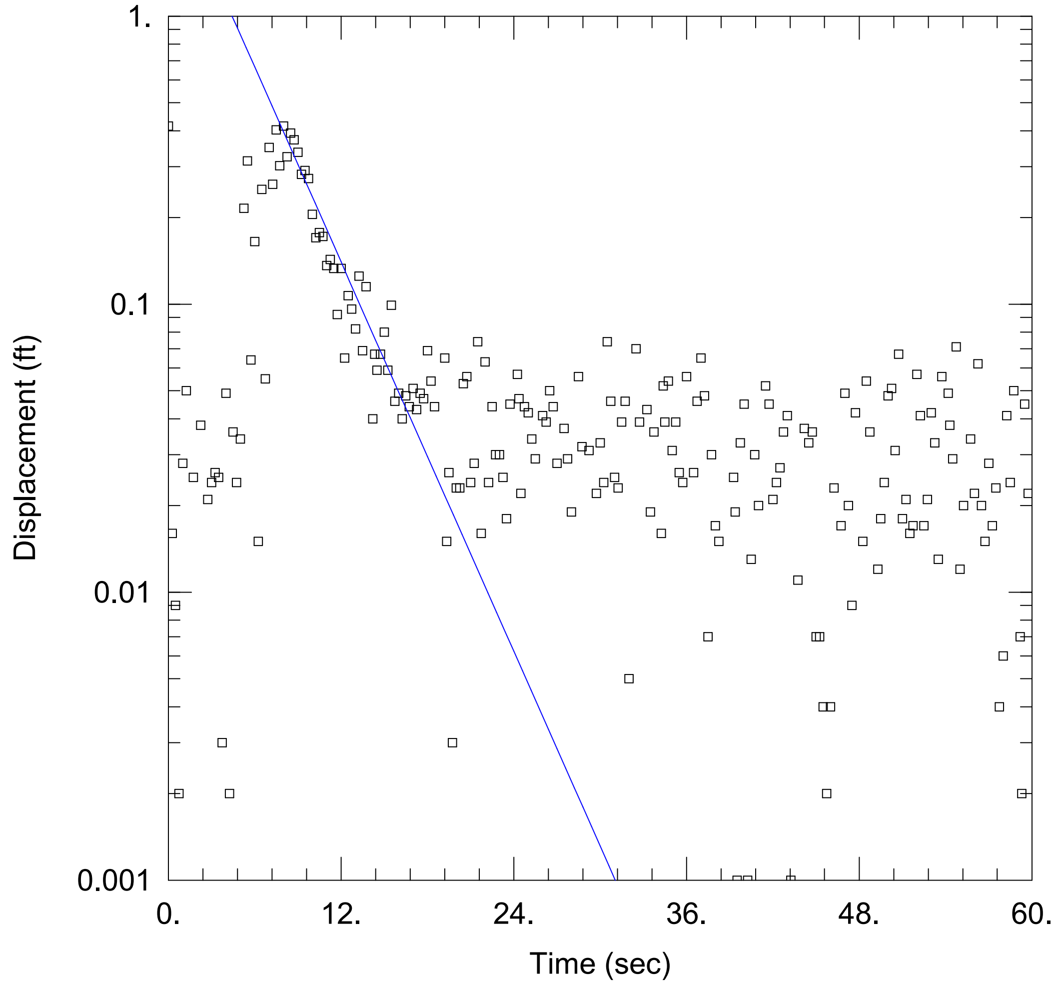
WELL DATA (MW-104)

Initial Displacement: 0.608 ft Static Water Column Height: 5.314 ft
Total Well Penetration Depth: 5.314 ft Screen Length: 5.314 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 35.56 ft/day y0 = 3.036 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-104-U1.aqt
Date: 11/13/23 Time: 09:59:52

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-104
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 5.314 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-104)

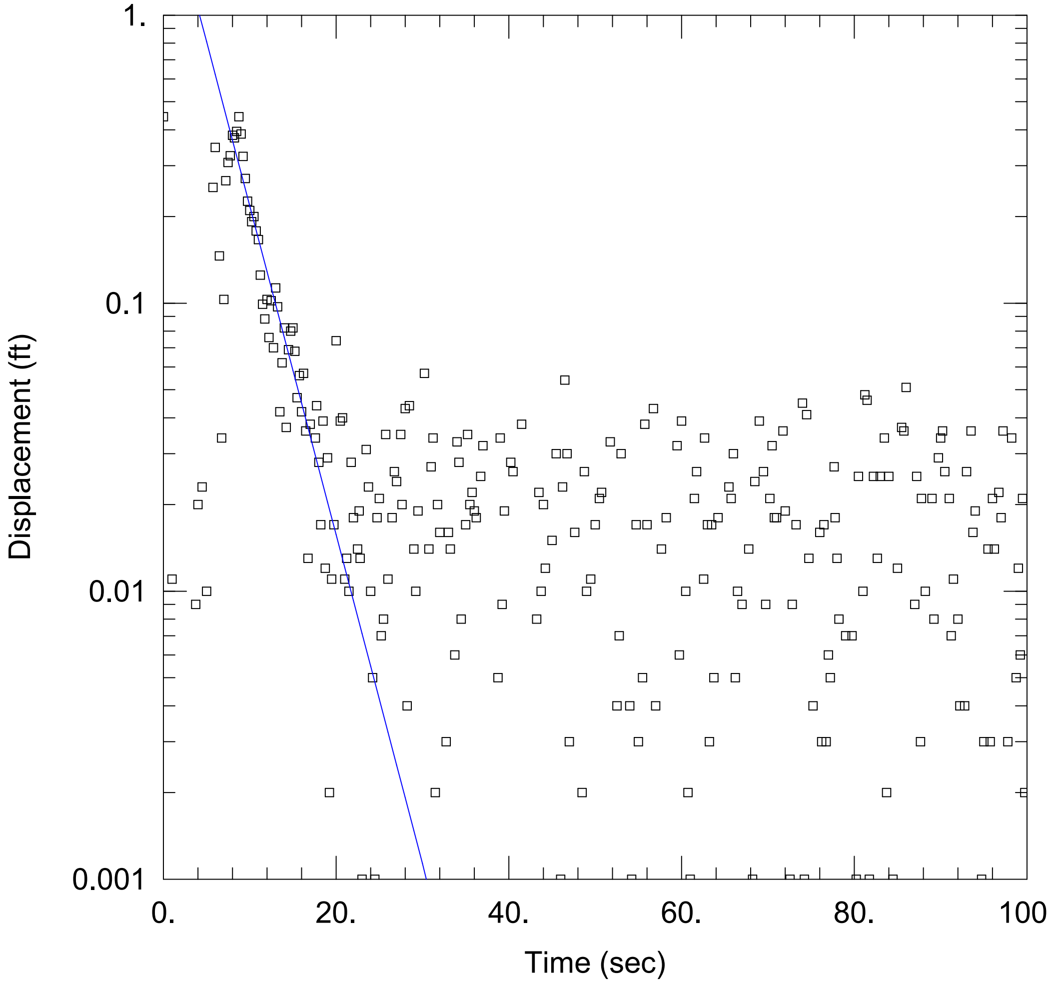
Initial Displacement: 0.415 ft
Total Well Penetration Depth: 5.314 ft
Casing Radius: 0.08333 ft

Static Water Column Height: 5.314 ft
Screen Length: 5.314 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 32.29 ft/day y0 = 3.161 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-104-U2.aqt
Date: 11/13/23 Time: 10:00:04

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-104
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 5.314 ft Anisotropy Ratio (Kz/Kr): 1.

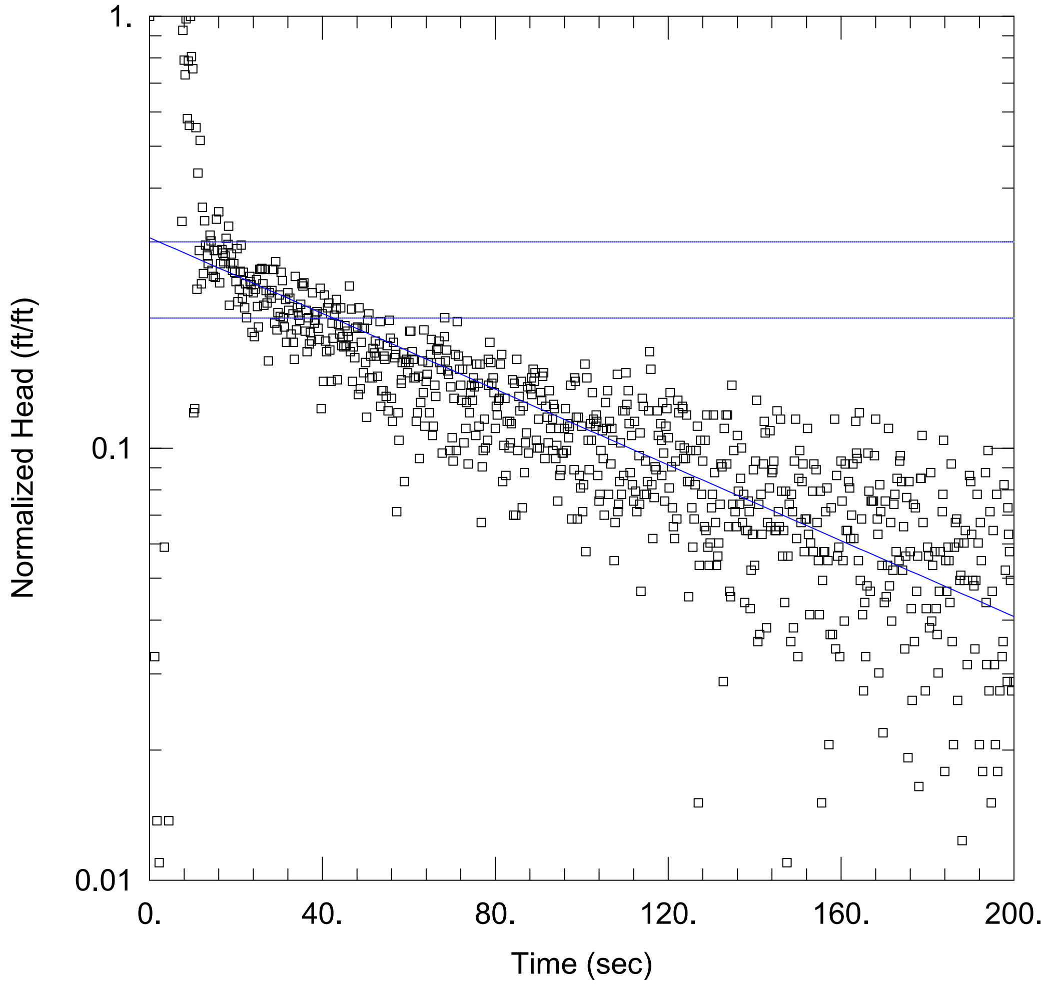
WELL DATA (MW-104)

Initial Displacement: 0.444 ft Static Water Column Height: 5.314 ft
Total Well Penetration Depth: 5.314 ft Screen Length: 5.314 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 32.7 ft/day y0 = 3.011 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-105-D1_BM.aqt
Date: 04/17/24 Time: 11:10:59

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-105
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 6.757 ft Anisotropy Ratio (Kz/Kr): 1.

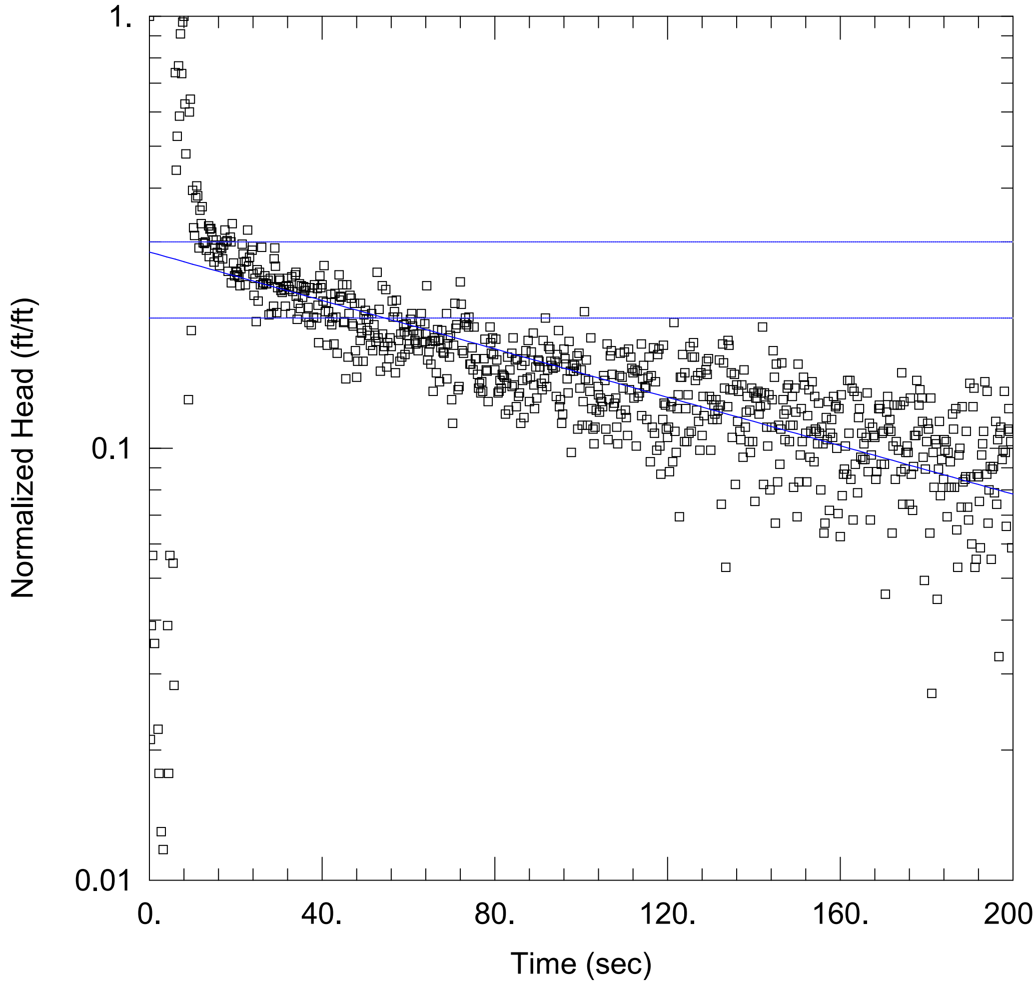
WELL DATA (MW-105)

Initial Displacement: 0.729 ft Static Water Column Height: 6.757 ft
Total Well Penetration Depth: 6.757 ft Screen Length: 6.757 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.079 ft/day y0 = 0.2238 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-105-D2_BM.aqt
Date: 04/17/24 Time: 11:10:32

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-105
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 6.757 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-105)

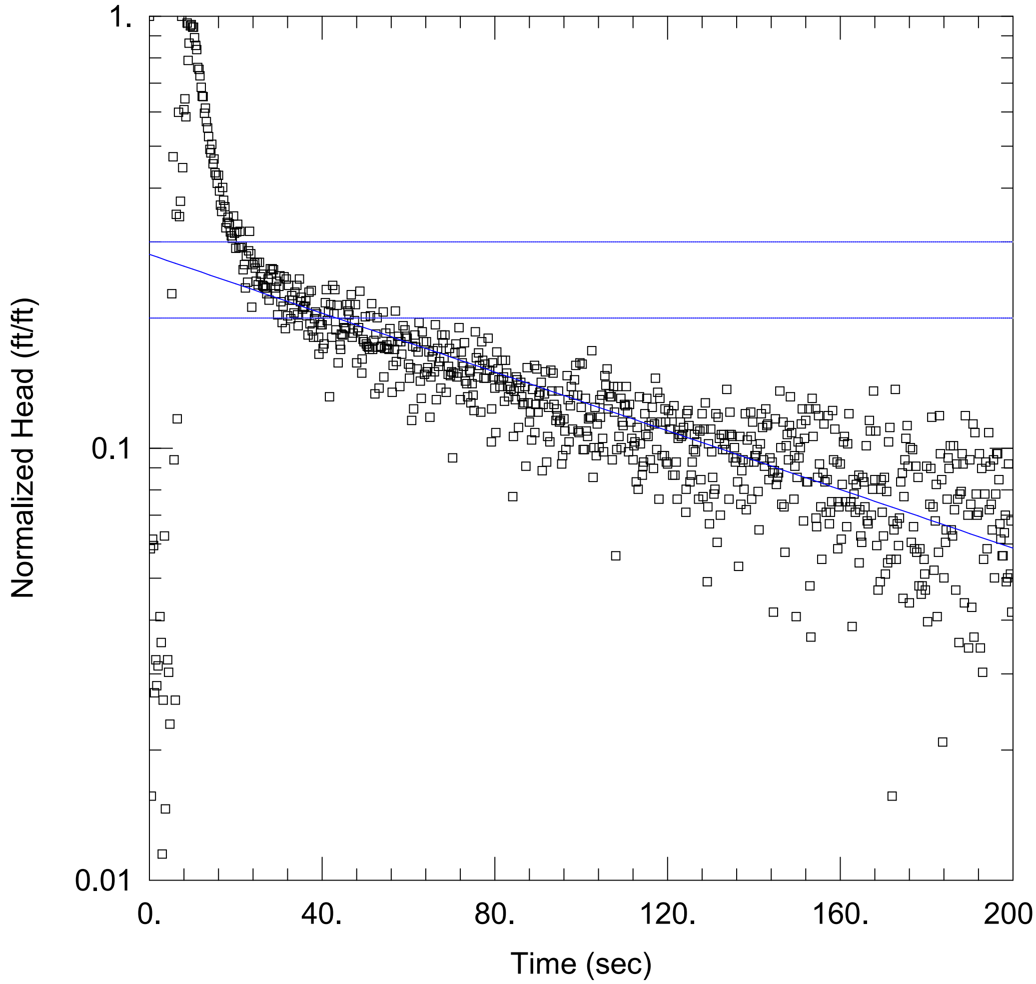
Initial Displacement: 0.85 ft
Total Well Penetration Depth: 6.757 ft
Casing Radius: 0.08333 ft

Static Water Column Height: 6.757 ft
Screen Length: 6.757 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.6898 ft/day y0 = 0.2417 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-105-U1_BM.aqt
Date: 04/17/24 Time: 10:10:22

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-105
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 6.757 ft Anisotropy Ratio (Kz/Kr): 1.

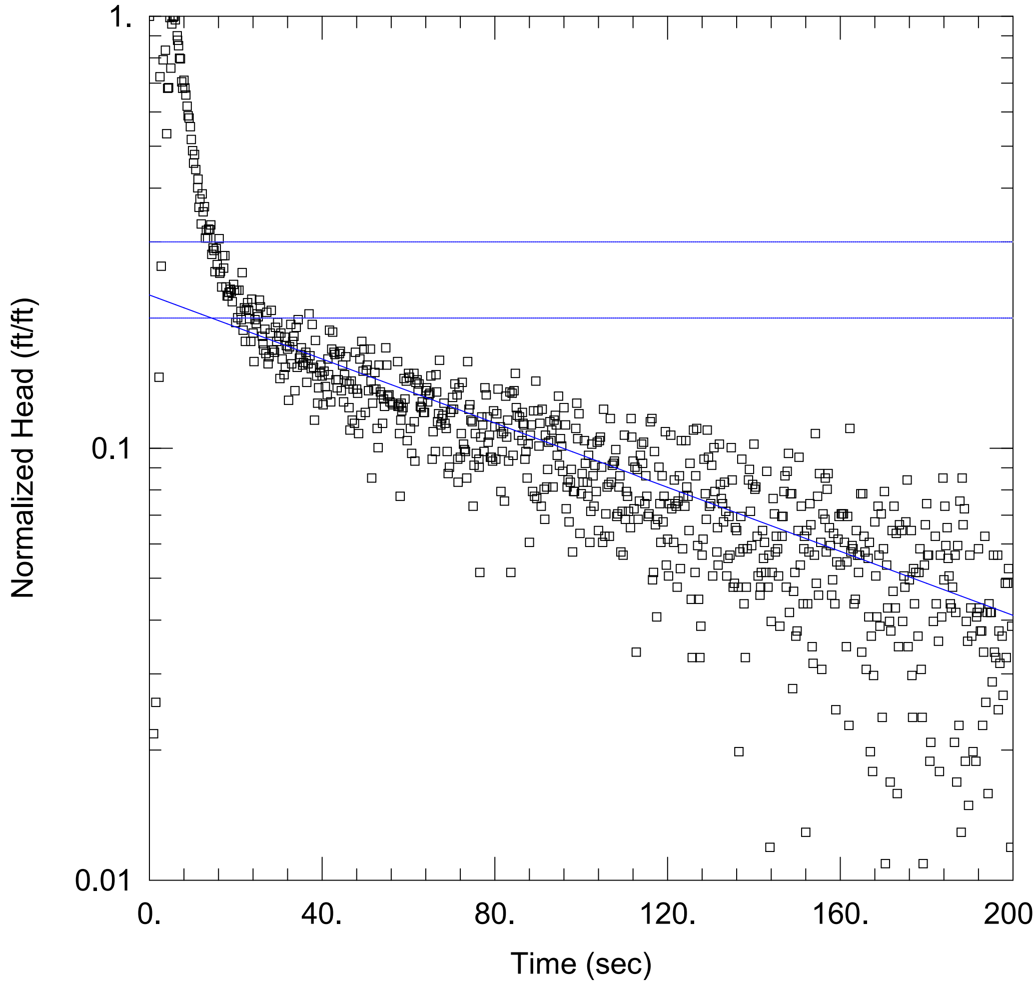
WELL DATA (MW-105)

Initial Displacement: 0.958 ft
Total Well Penetration Depth: 6.757 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 6.757 ft
Screen Length: 6.757 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.837 ft/day
y0 = 0.269 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-105-U2_BM.aqt
Date: 04/17/24 Time: 10:13:00

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-105
Test Date: 7/22/2023

AQUIFER DATA

Saturated Thickness: 6.757 ft Anisotropy Ratio (Kz/Kr): 1.

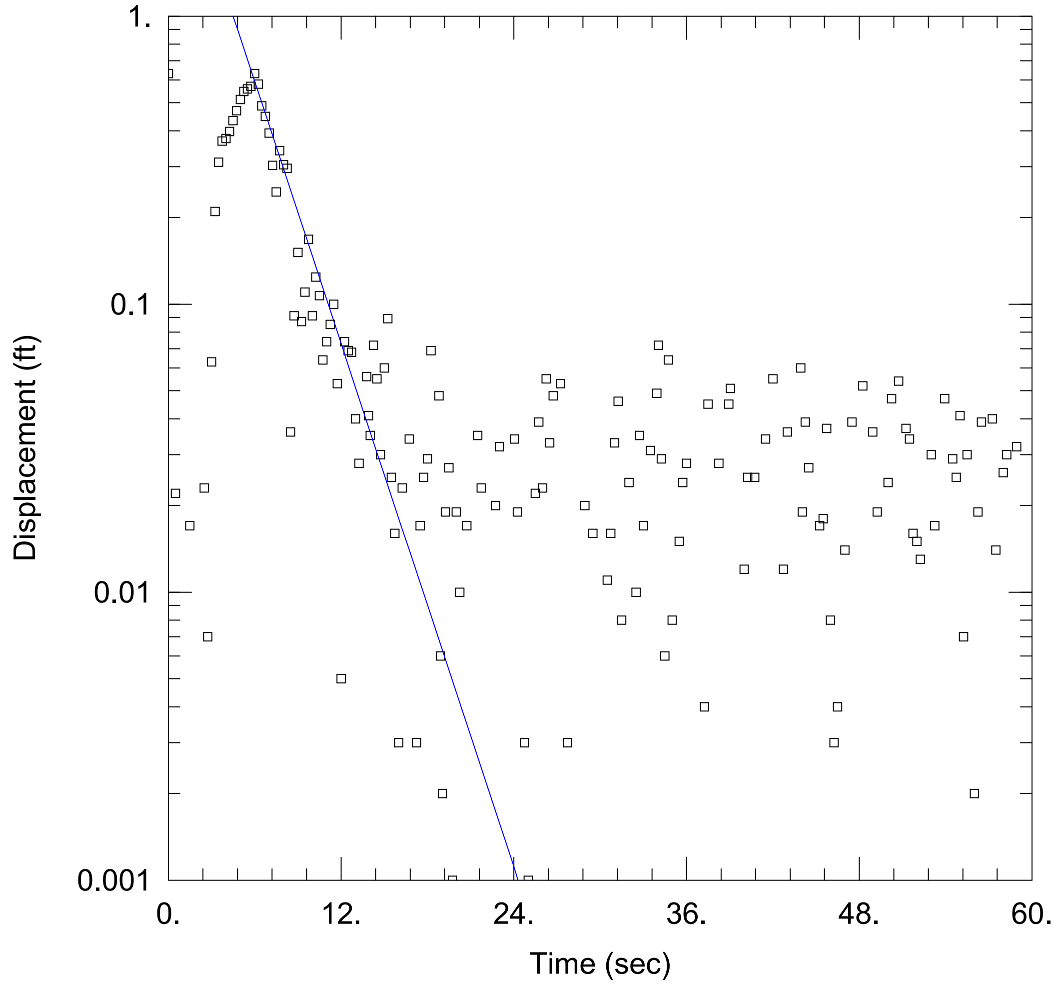
WELL DATA (MW-105)

Initial Displacement: 1.008 ft
Total Well Penetration Depth: 6.757 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 6.757 ft
Screen Length: 6.757 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.9125 ft/day y0 = 0.228 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-210-D1.aqt
Date: 11/13/23 Time: 10:02:13

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-210
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 11.96 ft Anisotropy Ratio (Kz/Kr): 1.

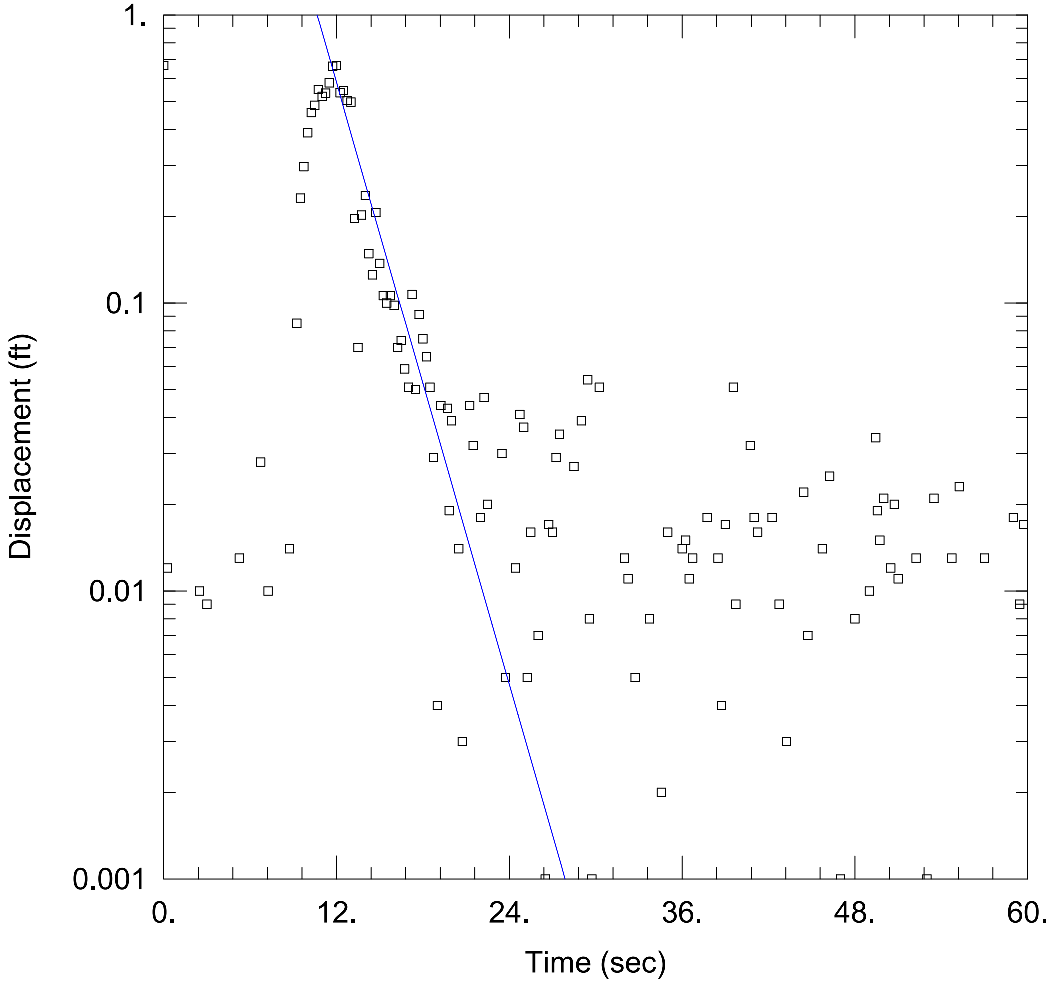
WELL DATA (MW-210)

Initial Displacement: 0.632 ft
Total Well Penetration Depth: 11.96 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 11.96 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 29.78 ft/day y0 = 4.807 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-210-D2.aqt
Date: 11/13/23 Time: 10:02:24

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-210
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 11.96 ft Anisotropy Ratio (Kz/Kr): 1.

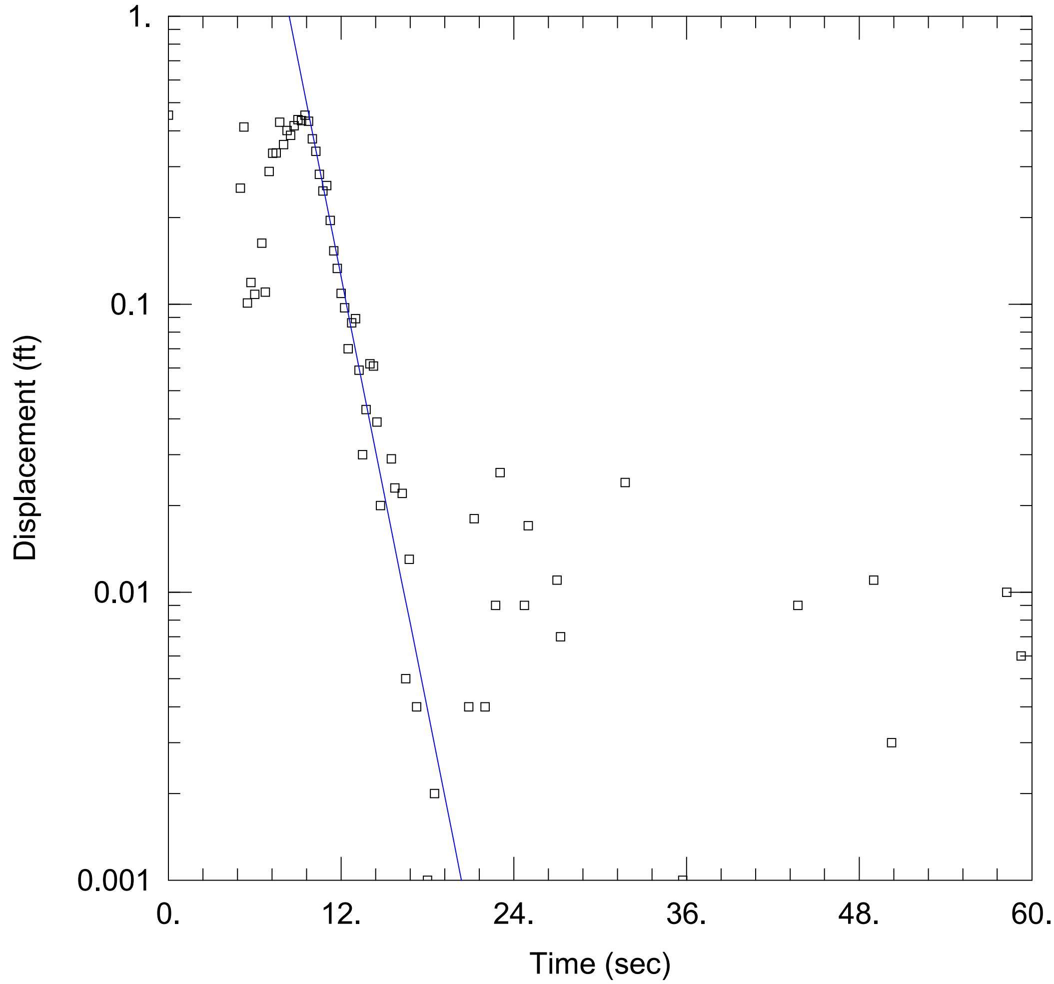
WELL DATA (MW-210)

Initial Displacement: 0.667 ft Static Water Column Height: 11.96 ft
Total Well Penetration Depth: 11.96 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 34.25 ft/day y0 = 71.85 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-210-U1.aqt
Date: 11/13/23 Time: 10:02:38

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-210
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 11.96 ft Anisotropy Ratio (Kz/Kr): 1.

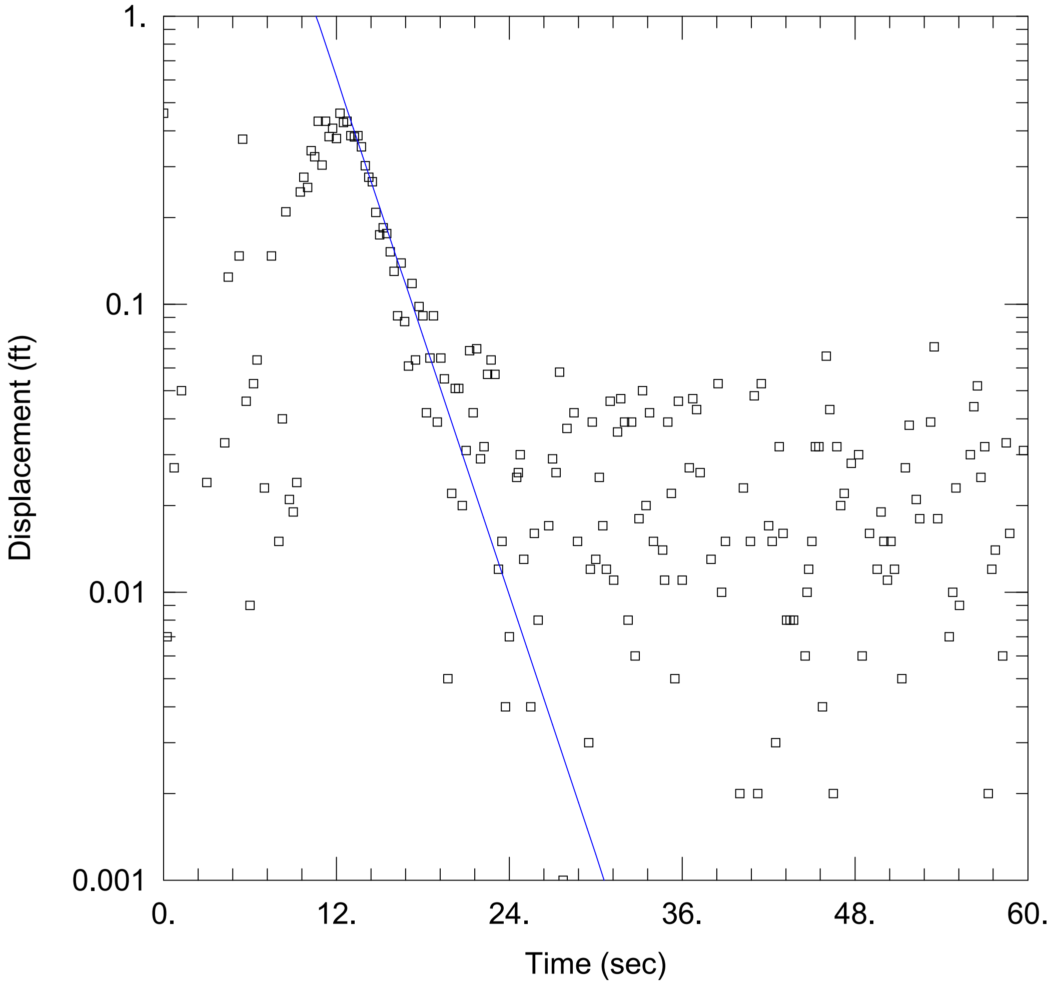
WELL DATA (MW-210)

Initial Displacement: 0.453 ft
Total Well Penetration Depth: 11.96 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 11.96 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 49.26 ft/day y0 = 126.5 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-210-U2.aqt
Date: 11/13/23 Time: 10:02:50

PROJECT INFORMATION

Company: WSP
Client: GRE Stanton Station
Project: GL21509219.000
Location: Stanton, ND
Test Well: MW-210
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 11.96 ft Anisotropy Ratio (Kz/Kr): 1.

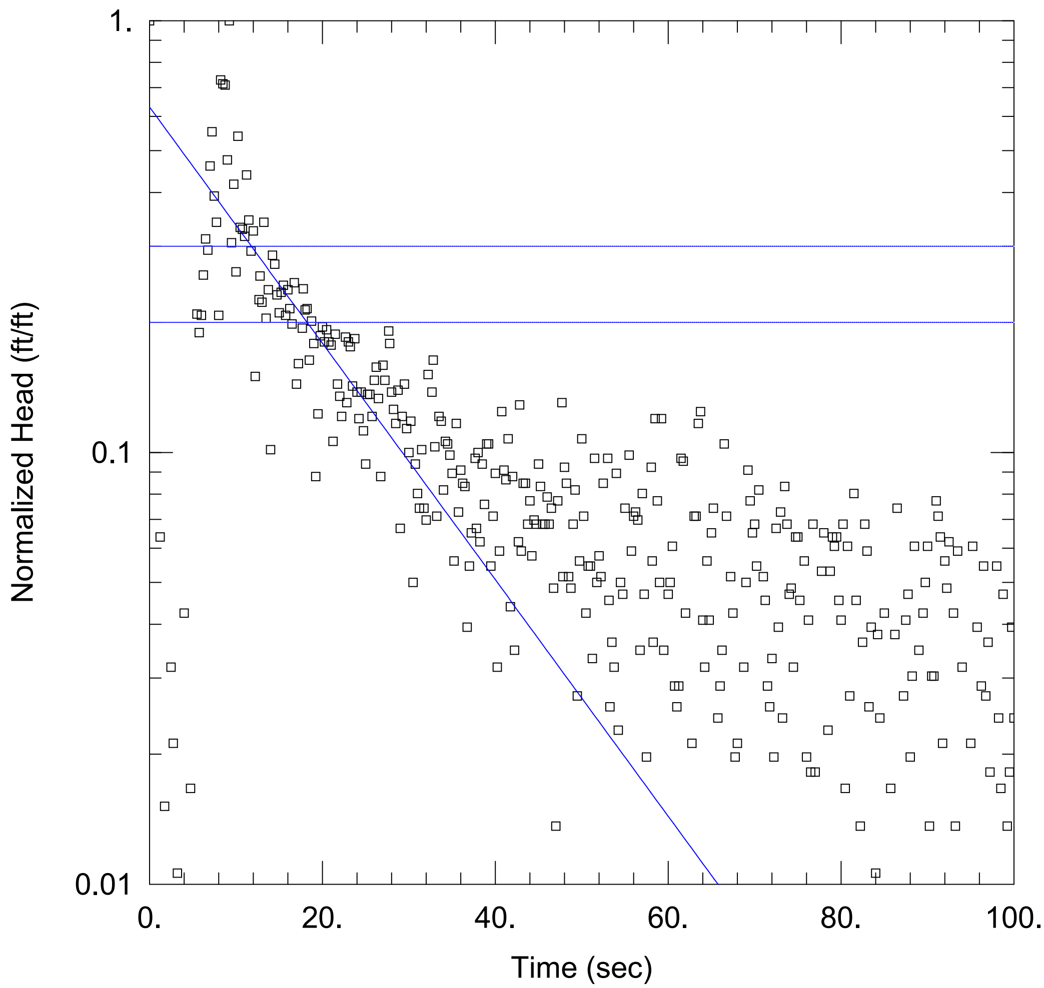
WELL DATA (MW-210)

Initial Displacement: 0.46 ft Static Water Column Height: 11.96 ft
Total Well Penetration Depth: 11.96 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 29.5 ft/day y0 = 38.93 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-211-D1_BM.aqt
Date: 04/17/24 Time: 11:26:42

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-211
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 6.687 ft Anisotropy Ratio (Kz/Kr): 1.

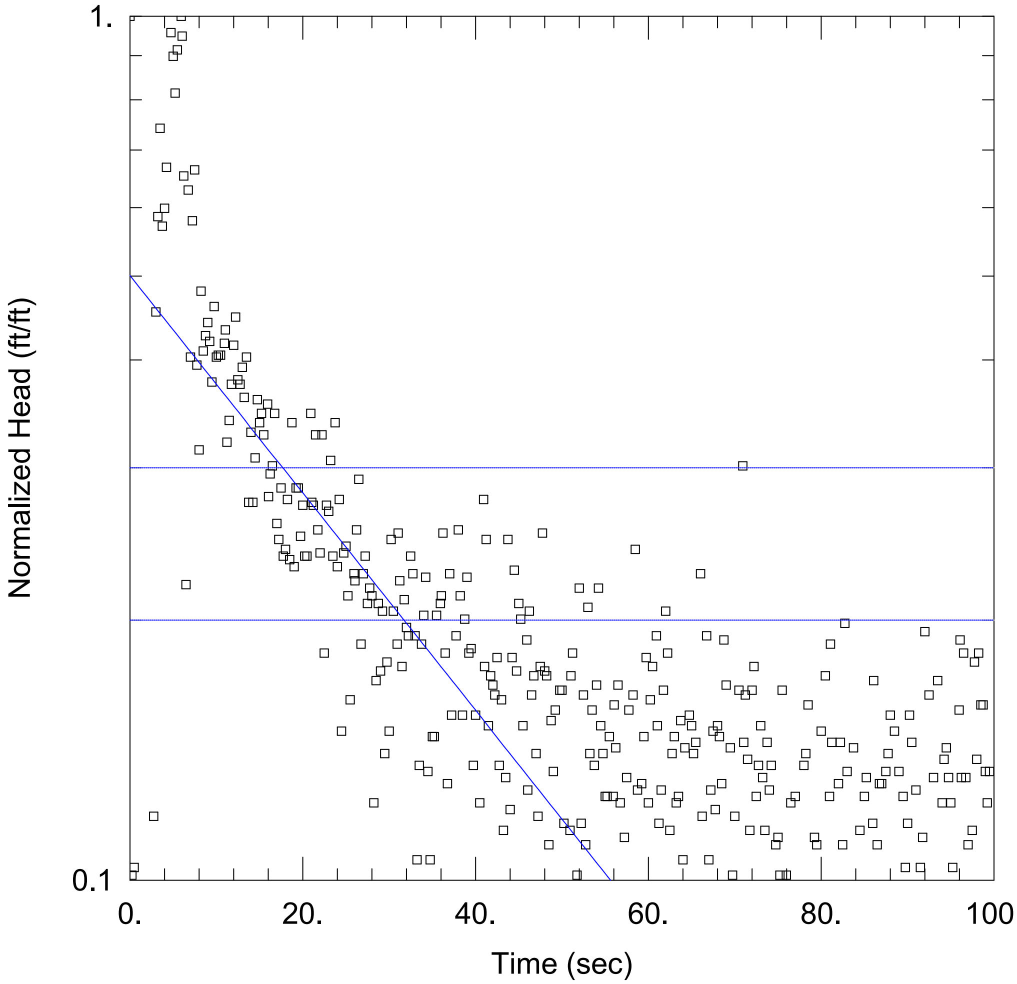
WELL DATA (MW-211)

Initial Displacement: 0.66 ft
Total Well Penetration Depth: 6.687 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 6.687 ft
Screen Length: 6.687 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 6.779 ft/day y0 = 0.4162 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-211-D2_BM.aqt
Date: 04/17/24 Time: 11:28:01

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-211
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 6.687 ft
Anisotropy Ratio (Kz/Kr): 1.

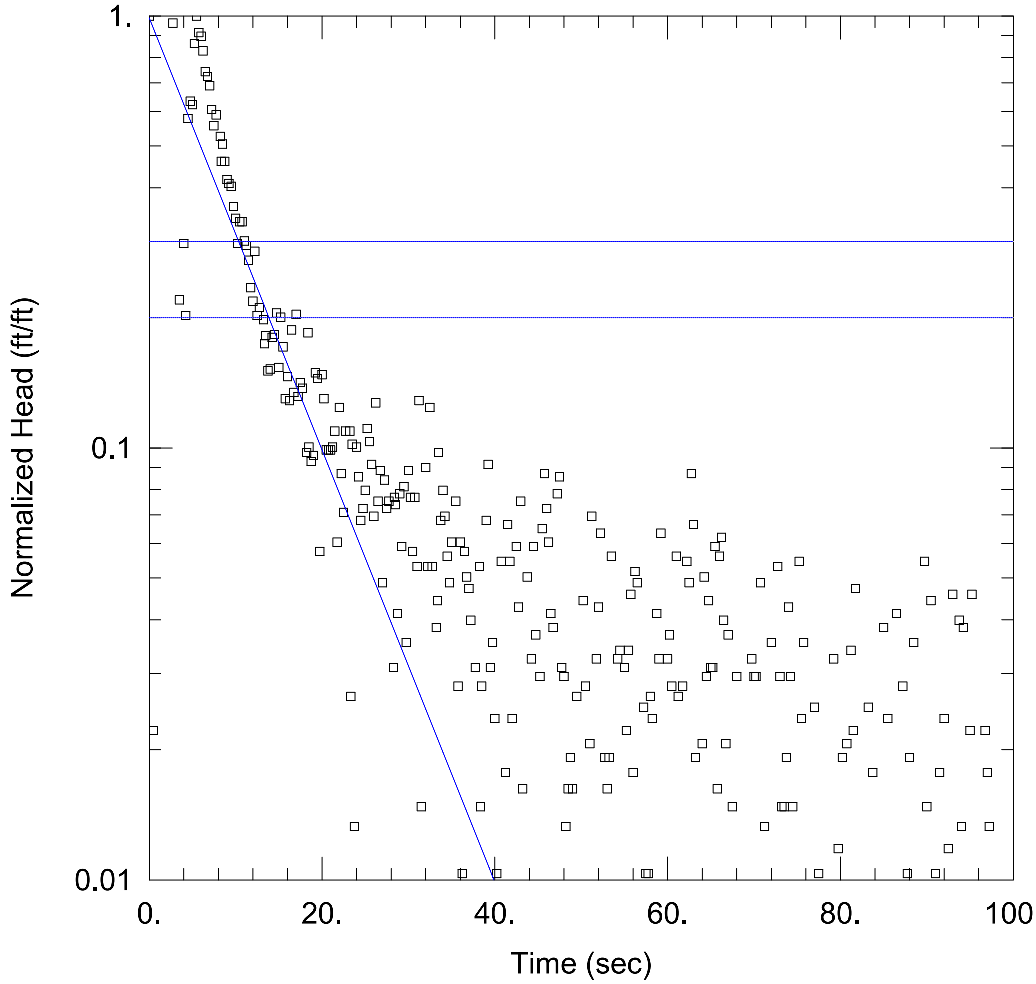
WELL DATA (MW-211)

Initial Displacement: 0.464 ft
Total Well Penetration Depth: 6.687 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 6.687 ft
Screen Length: 6.687 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 3.116 ft/day
y0 = 0.2324 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-211-U1_BM.aqt
Date: 04/17/24 Time: 11:29:30

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-211
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 6.687 ft
Anisotropy Ratio (Kz/Kr): 1.

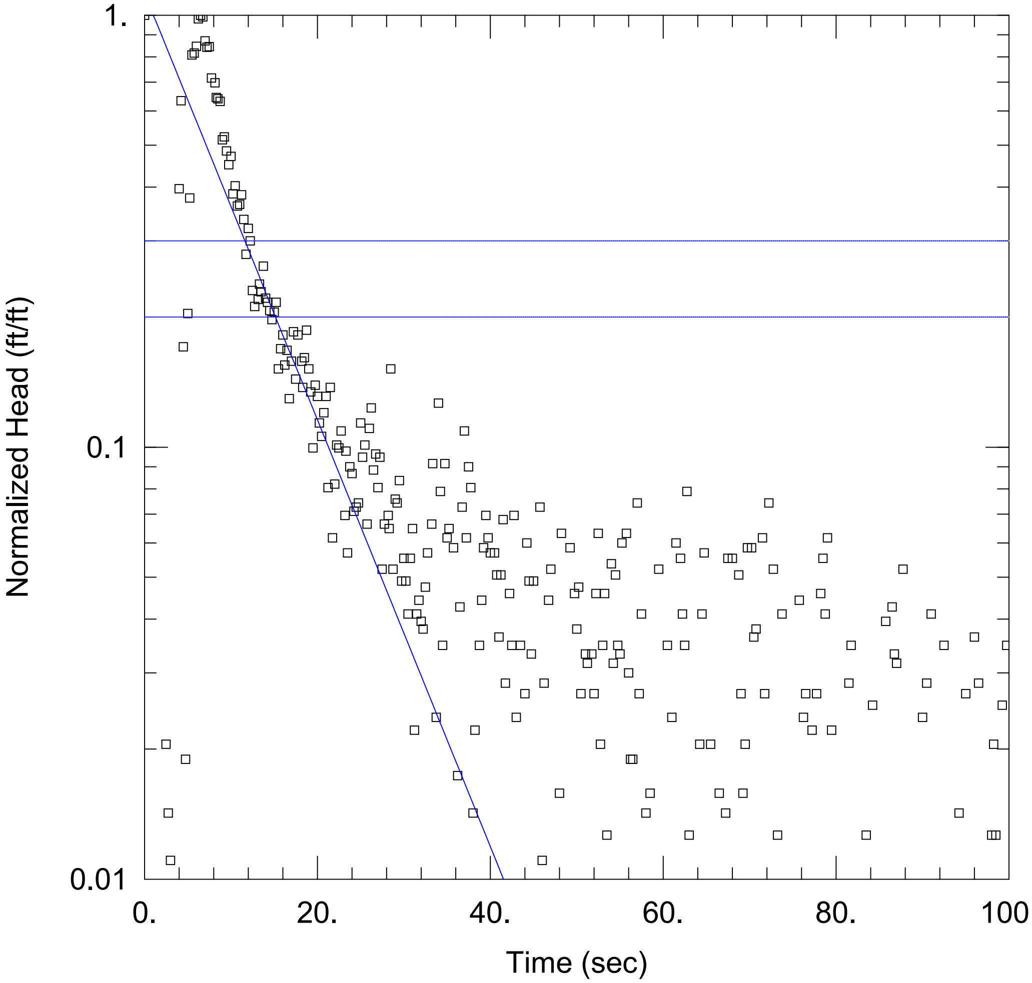
WELL DATA (MW-211)

Initial Displacement: 0.677 ft
Static Water Column Height: 6.687 ft
Total Well Penetration Depth: 6.687 ft
Screen Length: 6.687 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 12.39 ft/day
y0 = 0.6698 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-211-U2_BM.aqt
Date: 04/17/24 Time: 11:31:18

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-211
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 6.687 ft
Anisotropy Ratio (Kz/Kr): 1.

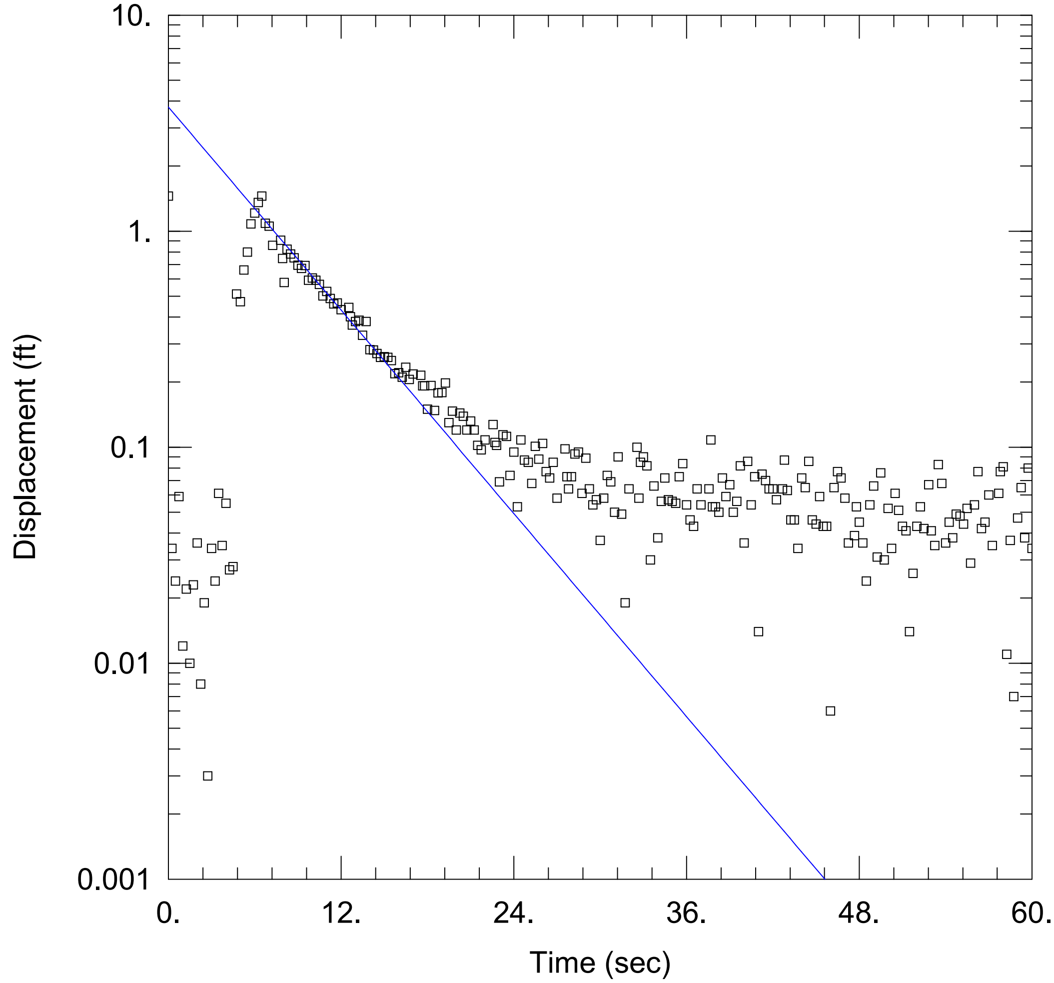
WELL DATA (MW-211)

Initial Displacement: 0.633 ft
Static Water Column Height: 6.687 ft
Total Well Penetration Depth: 6.687 ft
Screen Length: 6.687 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 12.24 ft/day
y0 = 0.7115 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-213-D1.aqt
Date: 11/13/23 Time: 10:05:16

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-213
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 16.36 ft Anisotropy Ratio (Kz/Kr): 1.

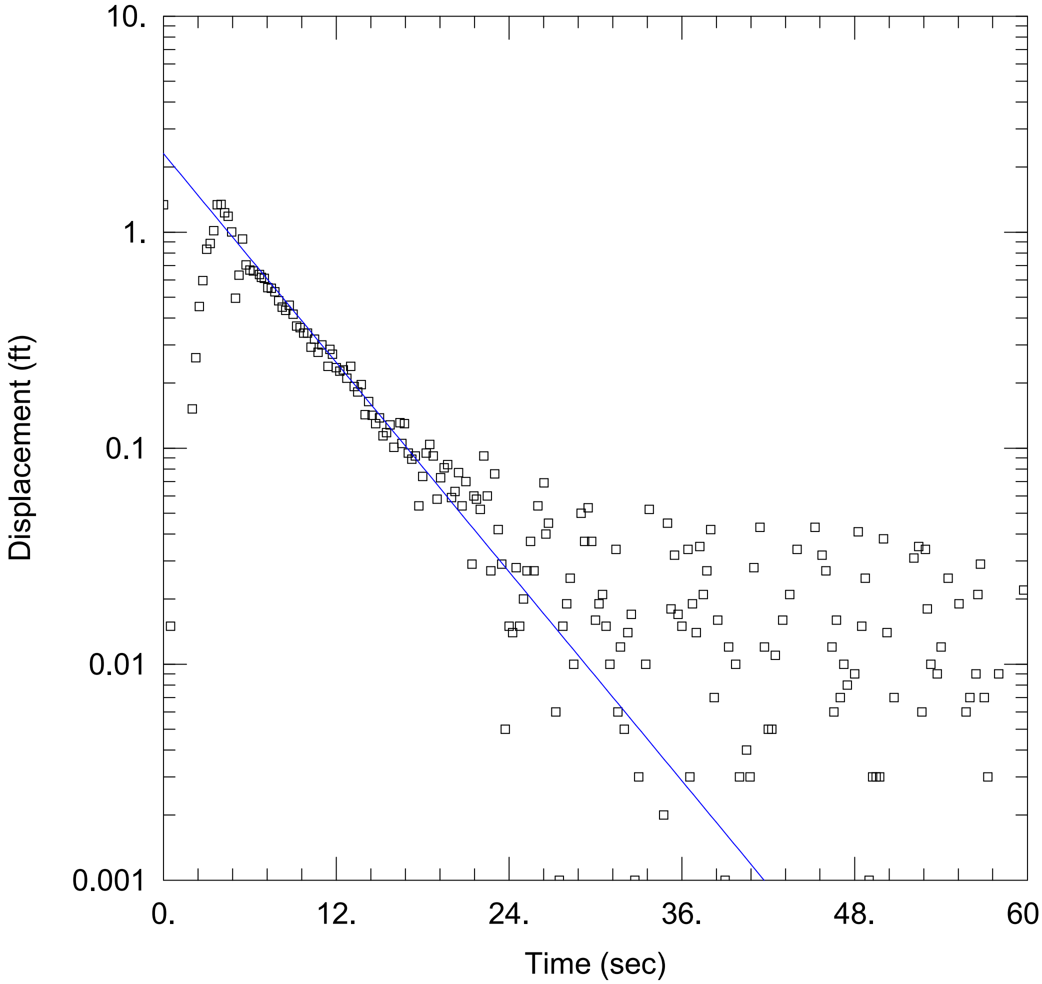
WELL DATA (MW-213)

Initial Displacement: 1.451 ft Static Water Column Height: 16.36 ft
Total Well Penetration Depth: 16.36 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 16.44 ft/day y0 = 3.754 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-213-D2.aqt
Date: 11/13/23 Time: 10:05:31

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-213
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 16.36 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-213)

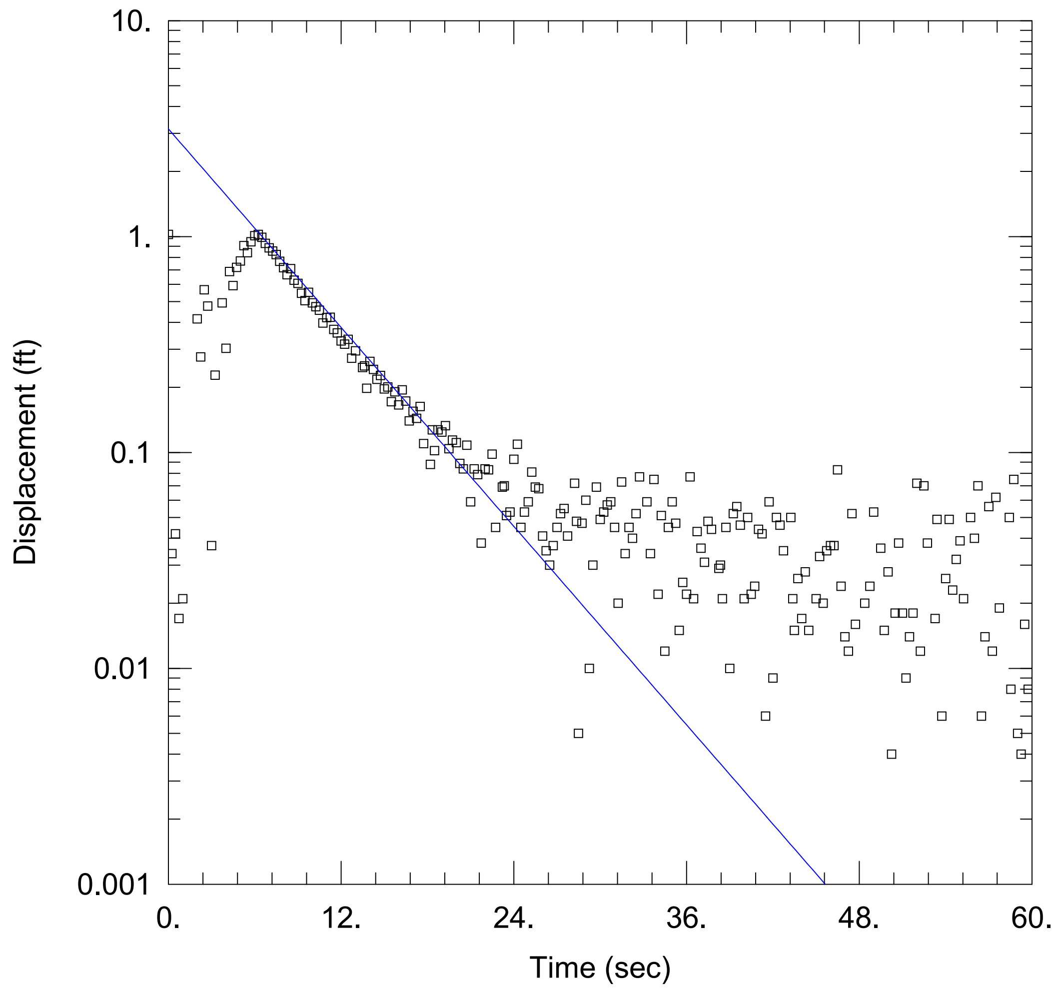
Initial Displacement: 1.34 ft
Total Well Penetration Depth: 16.36 ft
Casing Radius: 0.08333 ft

Static Water Column Height: 16.36 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 16.91 ft/day y0 = 2.309 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-213-U1.aqt
Date: 11/13/23 Time: 10:05:43

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-213
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 16.36 ft Anisotropy Ratio (Kz/Kr): 1.

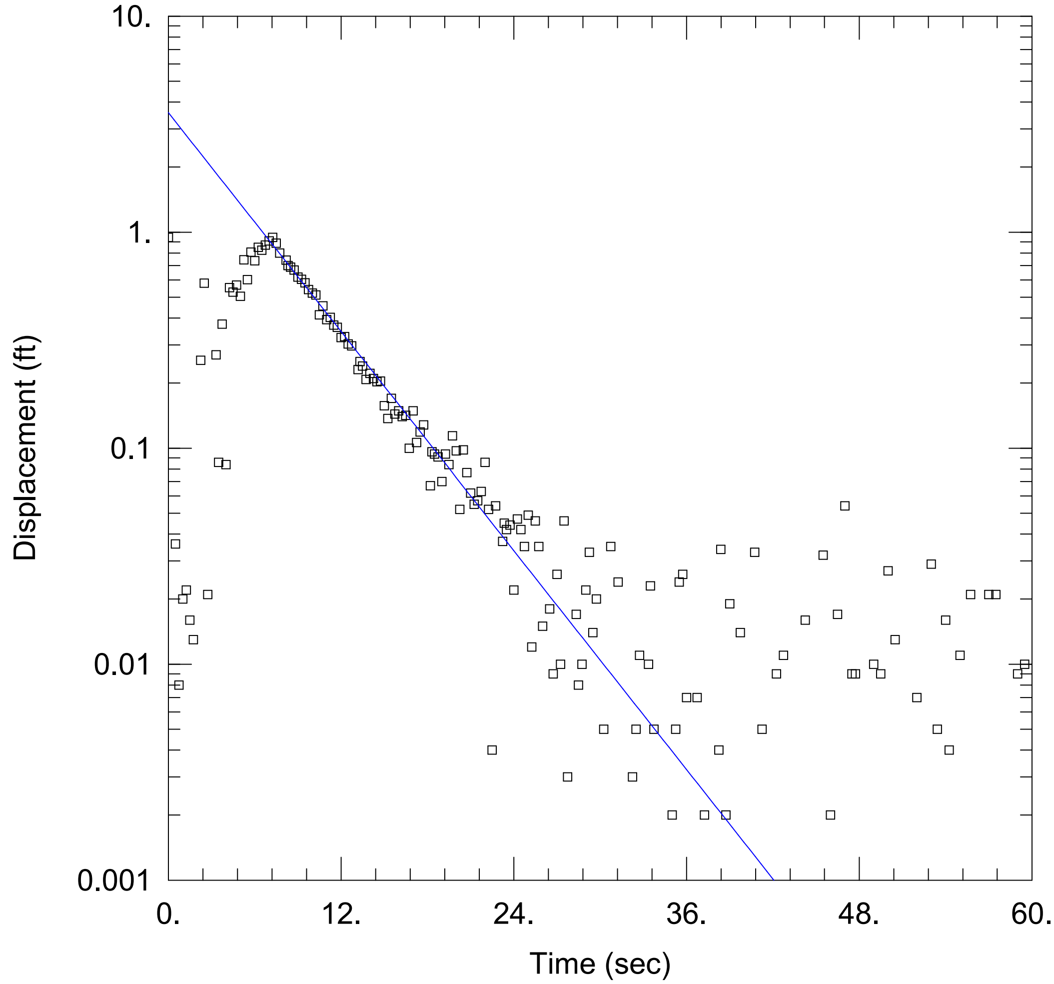
WELL DATA (MW-213)

Initial Displacement: 1.021 ft
Total Well Penetration Depth: 16.36 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 16.36 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 16.08 ft/day y0 = 3.149 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-213-U2.aqt
Date: 11/13/23 Time: 10:07:35

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-213
Test Date: 7/21/2023

AQUIFER DATA

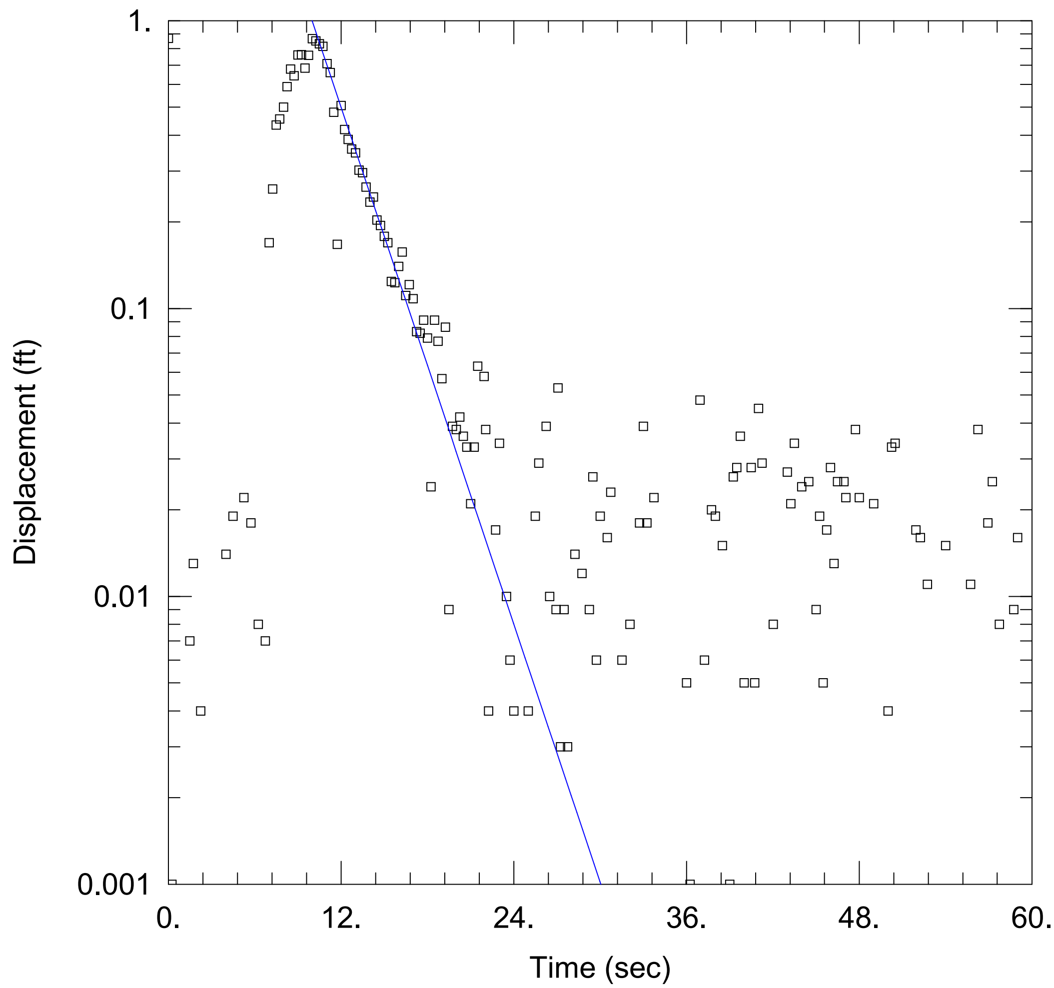
Saturated Thickness: 16.36 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-213)

Initial Displacement: 0.945 ft Static Water Column Height: 16.36 ft
Total Well Penetration Depth: 16.36 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 17.71 ft/day y0 = 3.57 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-217-D1.aqt
Date: 11/13/23
Time: 10:10:53

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-217
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 11.92 ft
Anisotropy Ratio (Kz/Kr): 1.

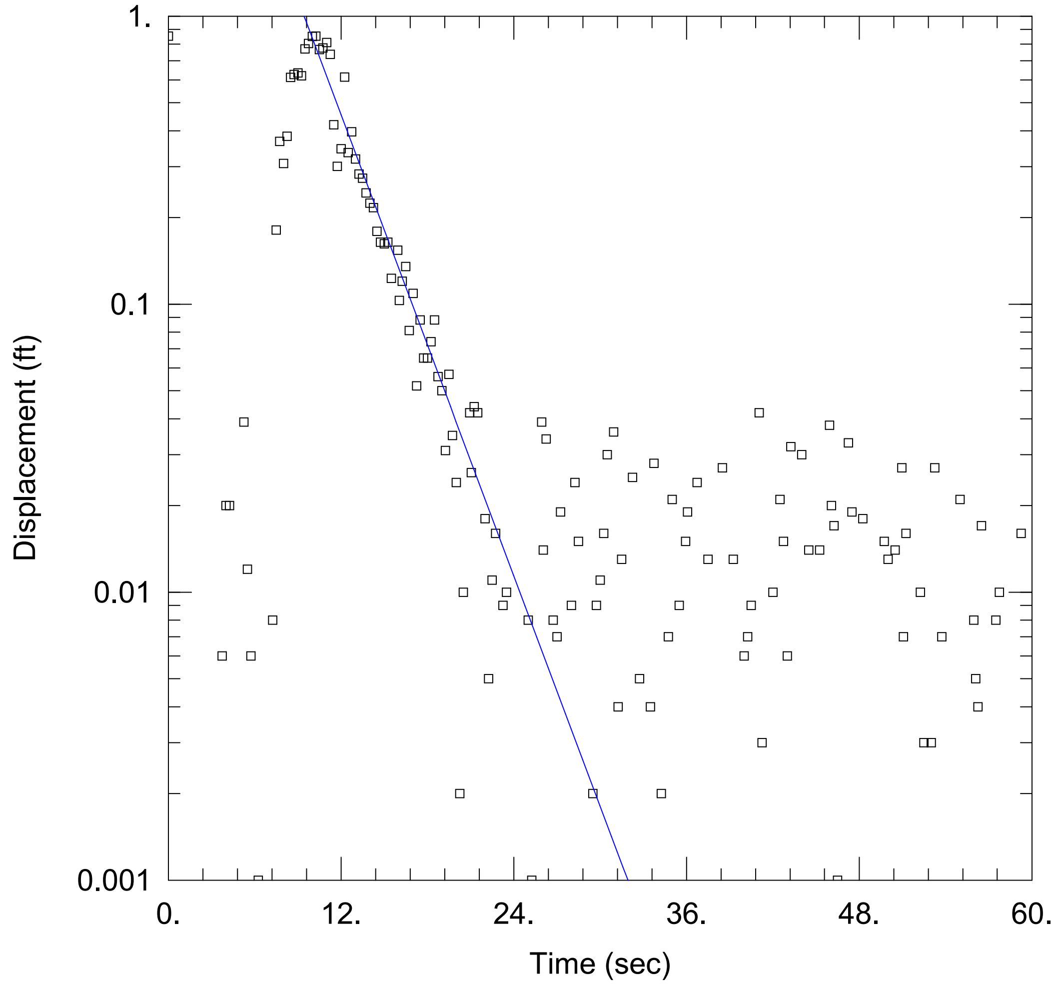
WELL DATA (MW-217)

Initial Displacement: 0.867 ft
Total Well Penetration Depth: 11.96 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 11.92 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 29.36 ft/day
y0 = 30.96 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-217-D2.aqt
Date: 11/13/23 Time: 10:10:41

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-217
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 11.92 ft Anisotropy Ratio (Kz/Kr): 1.

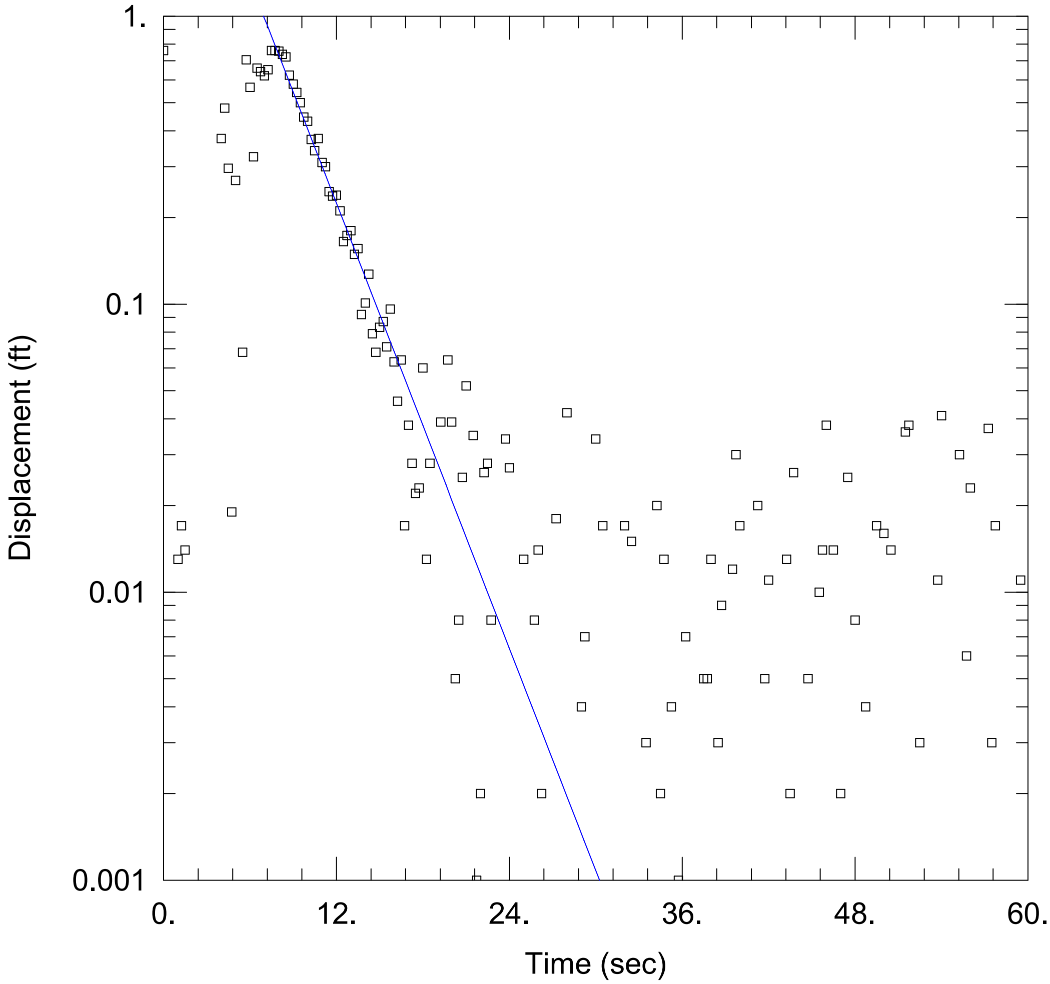
WELL DATA (MW-217)

Initial Displacement: 0.853 ft
Total Well Penetration Depth: 11.96 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 11.92 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 26.2 ft/day y0 = 18.07 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-217-U1.aqt
Date: 11/13/23 Time: 10:10:29

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-217
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 11.92 ft
Anisotropy Ratio (Kz/Kr): 1.

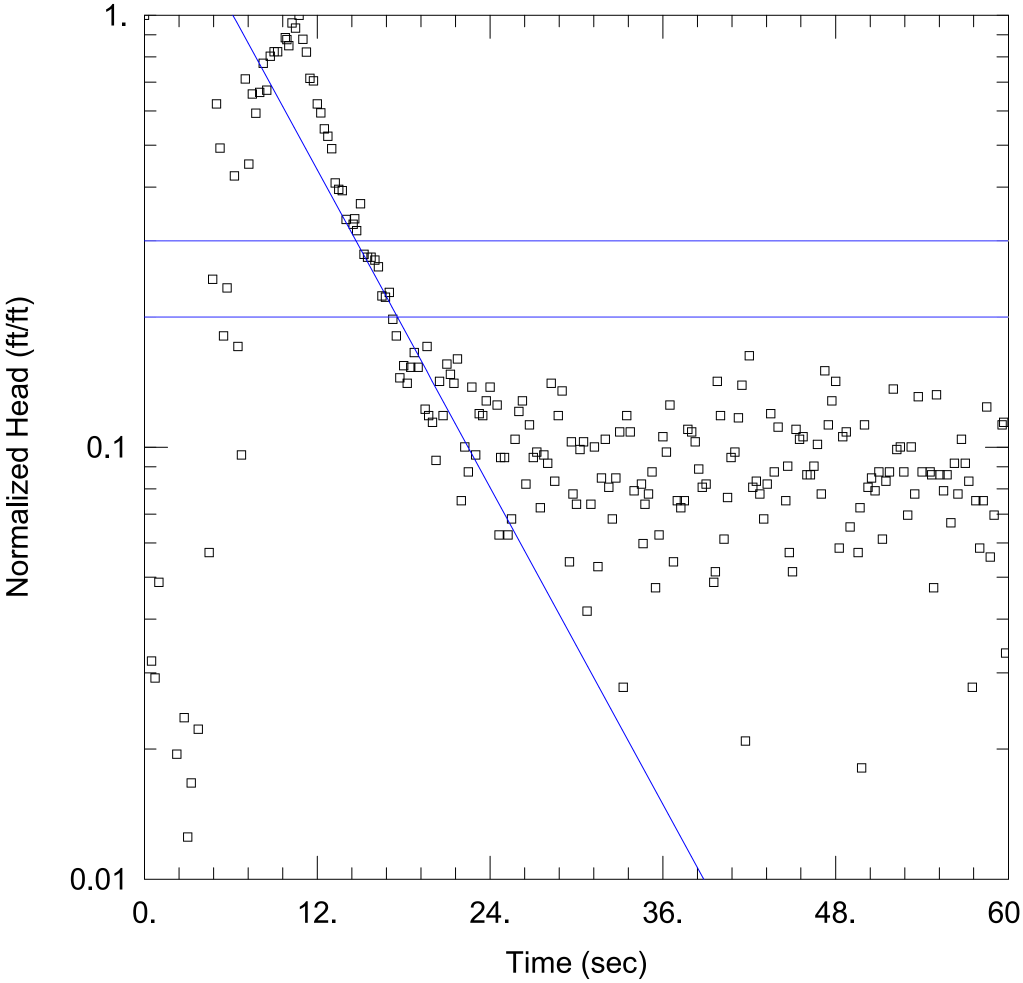
WELL DATA (MW-217)

Initial Displacement: 0.76 ft
Total Well Penetration Depth: 11.96 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 11.92 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 25.28 ft/day
y0 = 7.832 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-217-U2_BM.aqt
Date: 04/17/24 Time: 12:57:44

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-217
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 11.92 ft
Anisotropy Ratio (Kz/Kr): 1.

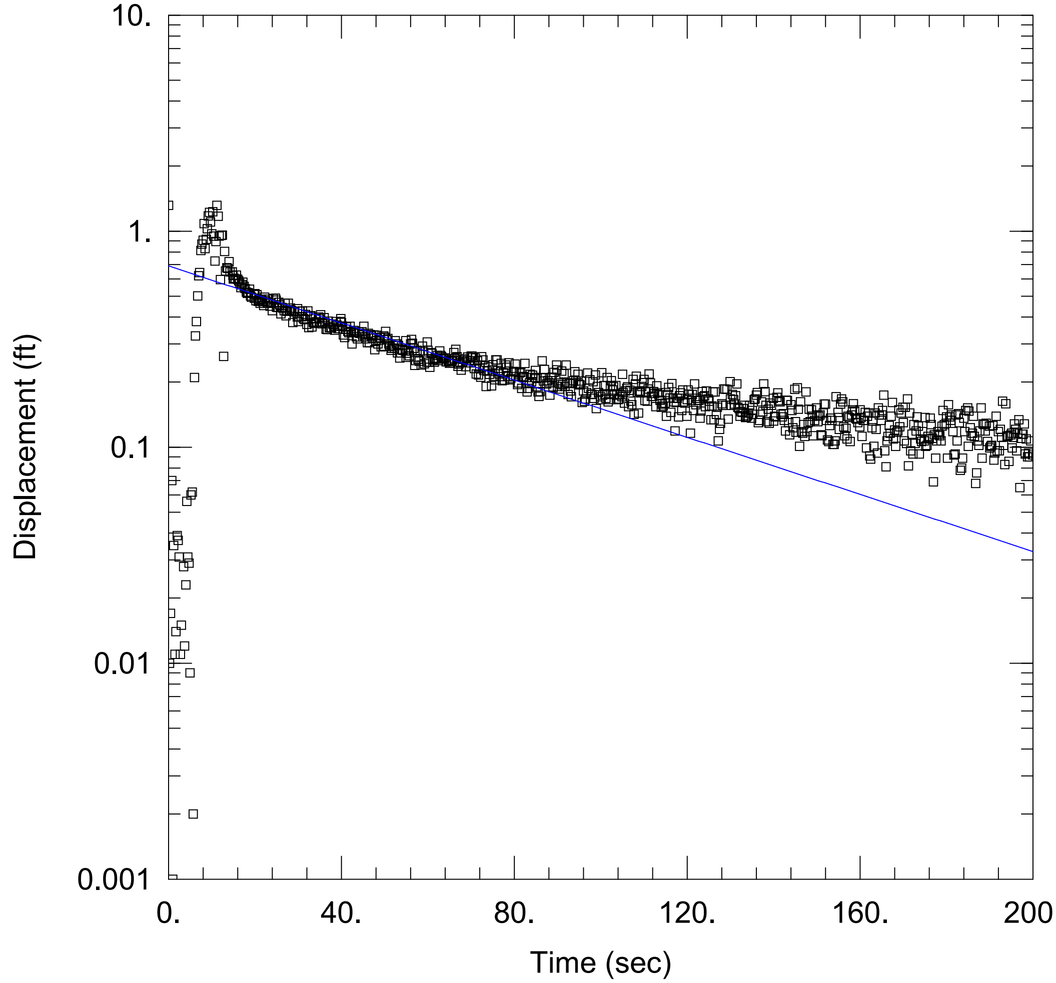
WELL DATA (MW-217)

Initial Displacement: 0.719 ft
Total Well Penetration Depth: 11.96 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 11.92 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 12.01 ft/day
y0 = 1.705 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-219-D1.aqt
Date: 11/13/23 Time: 10:12:22

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-219
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 8.331 ft
Anisotropy Ratio (Kz/Kr): 1.

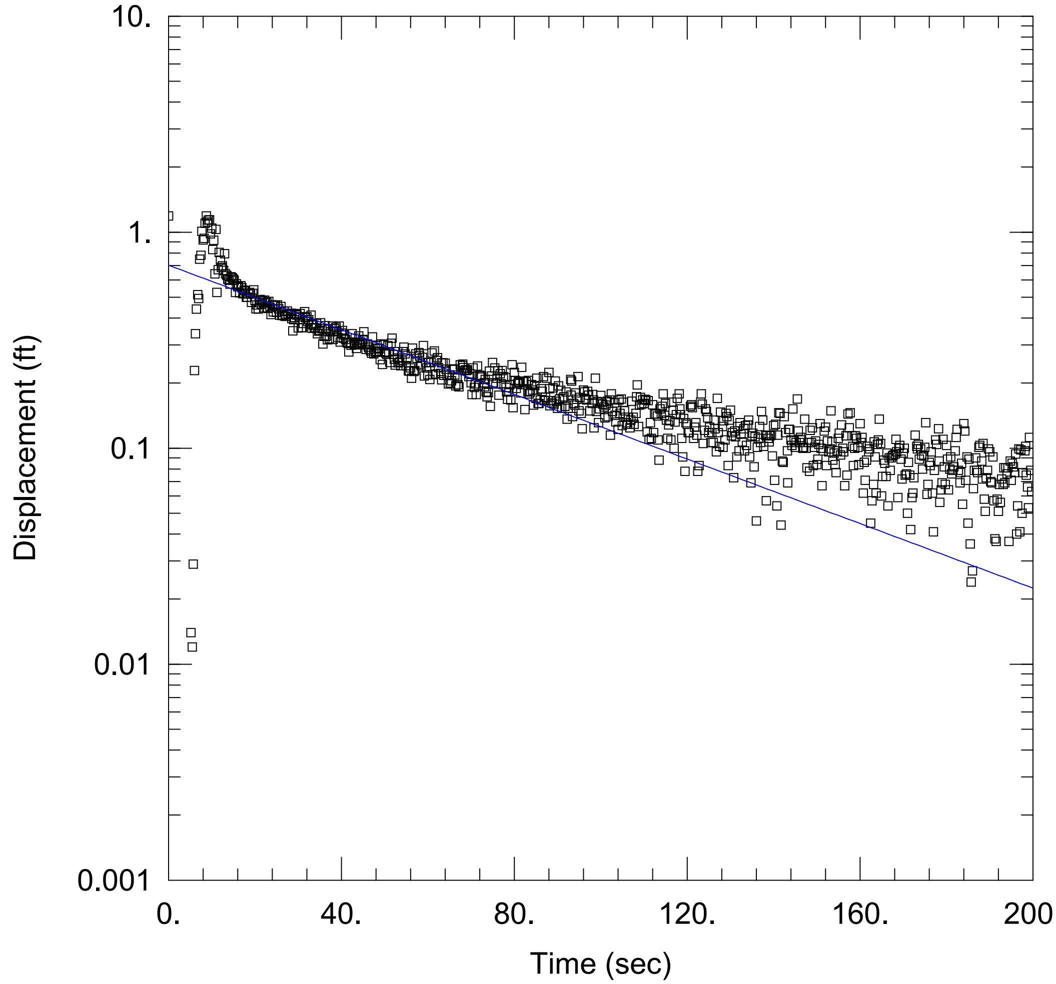
WELL DATA (MW-219)

Initial Displacement: 1.318 ft
Total Well Penetration Depth: 8.331 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.331 ft
Screen Length: 8.331 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.417 ft/day
y0 = 0.6907 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-219-D2.aqt
Date: 11/13/23 Time: 10:12:50

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-219
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 8.331 ft
Anisotropy Ratio (Kz/Kr): 1.

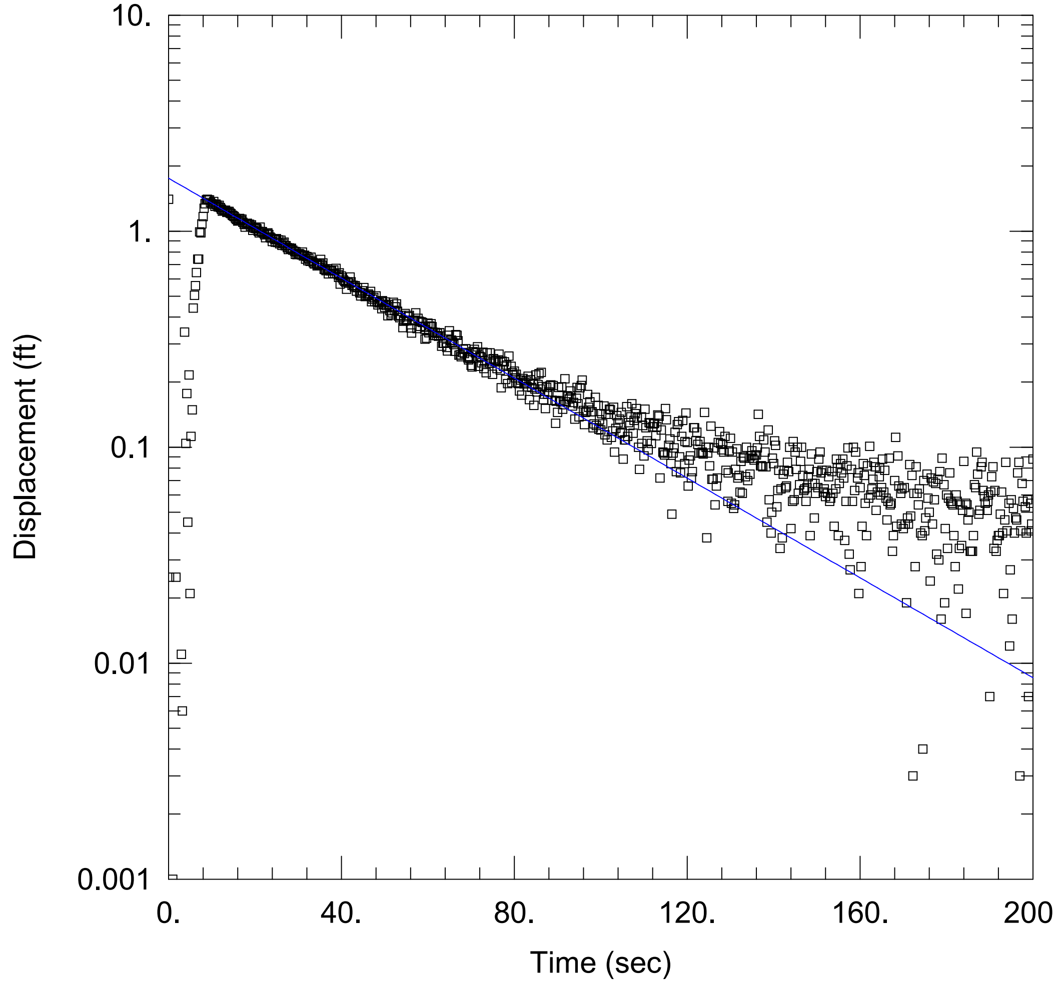
WELL DATA (MW-219)

Initial Displacement: 1.187 ft
Total Well Penetration Depth: 8.331 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.331 ft
Screen Length: 8.331 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 1.601 ft/day
y0 = 0.7027 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-219-U1.aqt
Date: 11/13/23 Time: 10:12:37

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-219
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 8.331 ft
Anisotropy Ratio (Kz/Kr): 1.

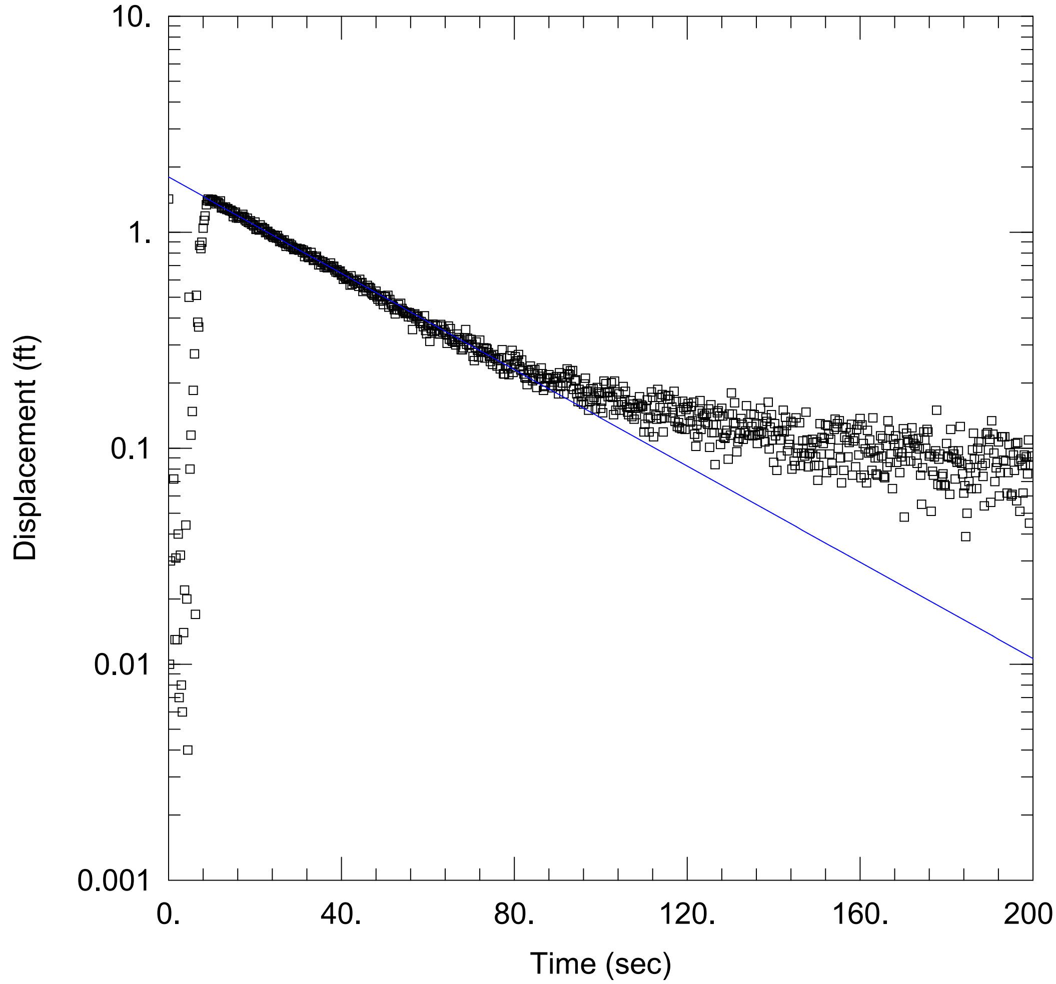
WELL DATA (MW-219)

Initial Displacement: 1.405 ft
Static Water Column Height: 8.331 ft
Total Well Penetration Depth: 8.331 ft
Screen Length: 8.331 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.477 ft/day
y0 = 1.758 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-219-U2.aqt
Date: 11/13/23 Time: 10:11:43

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-219
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 8.331 ft Anisotropy Ratio (Kz/Kr): 1.

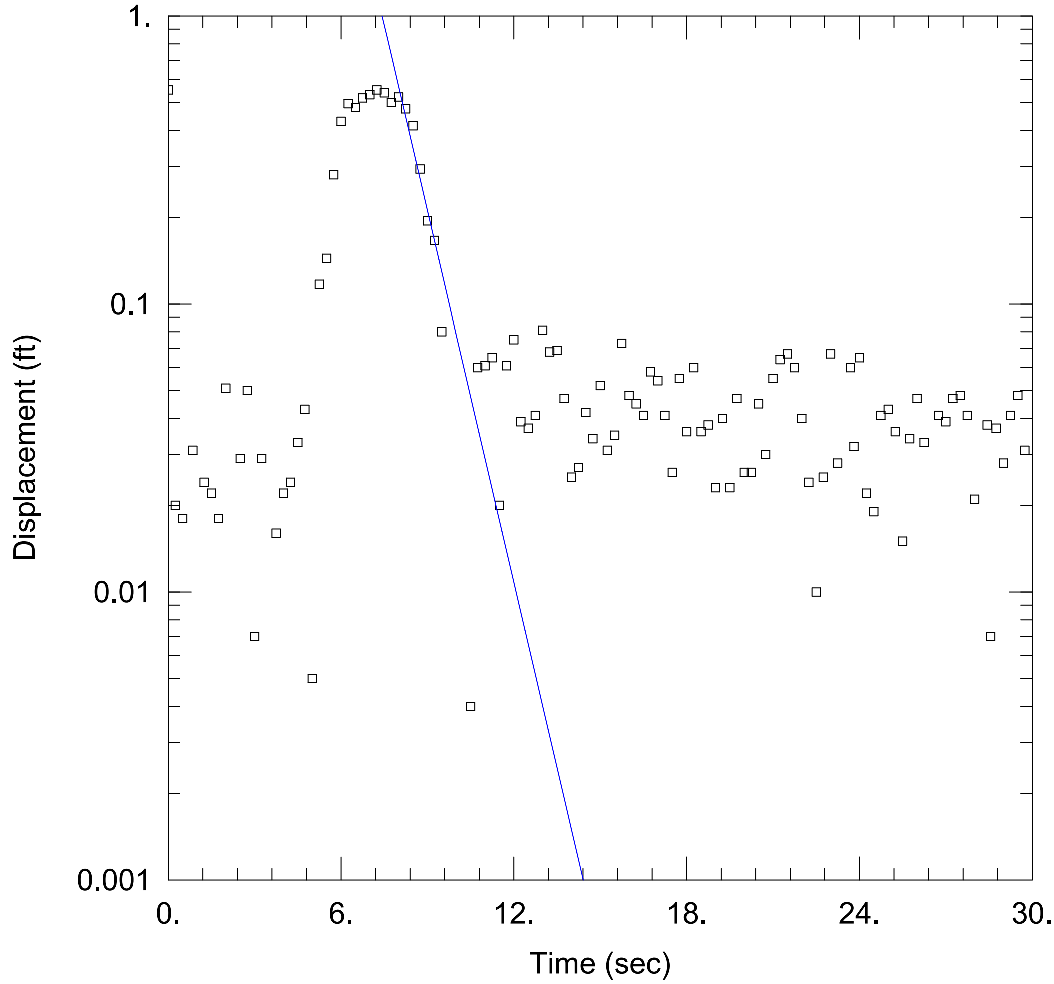
WELL DATA (MW-219)

Initial Displacement: 1.421 ft
Total Well Penetration Depth: 8.331 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.331 ft
Screen Length: 8.331 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.387 ft/day y0 = 1.799 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-221-D1.aqt
Date: 11/13/23 Time: 10:14:25

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-221
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

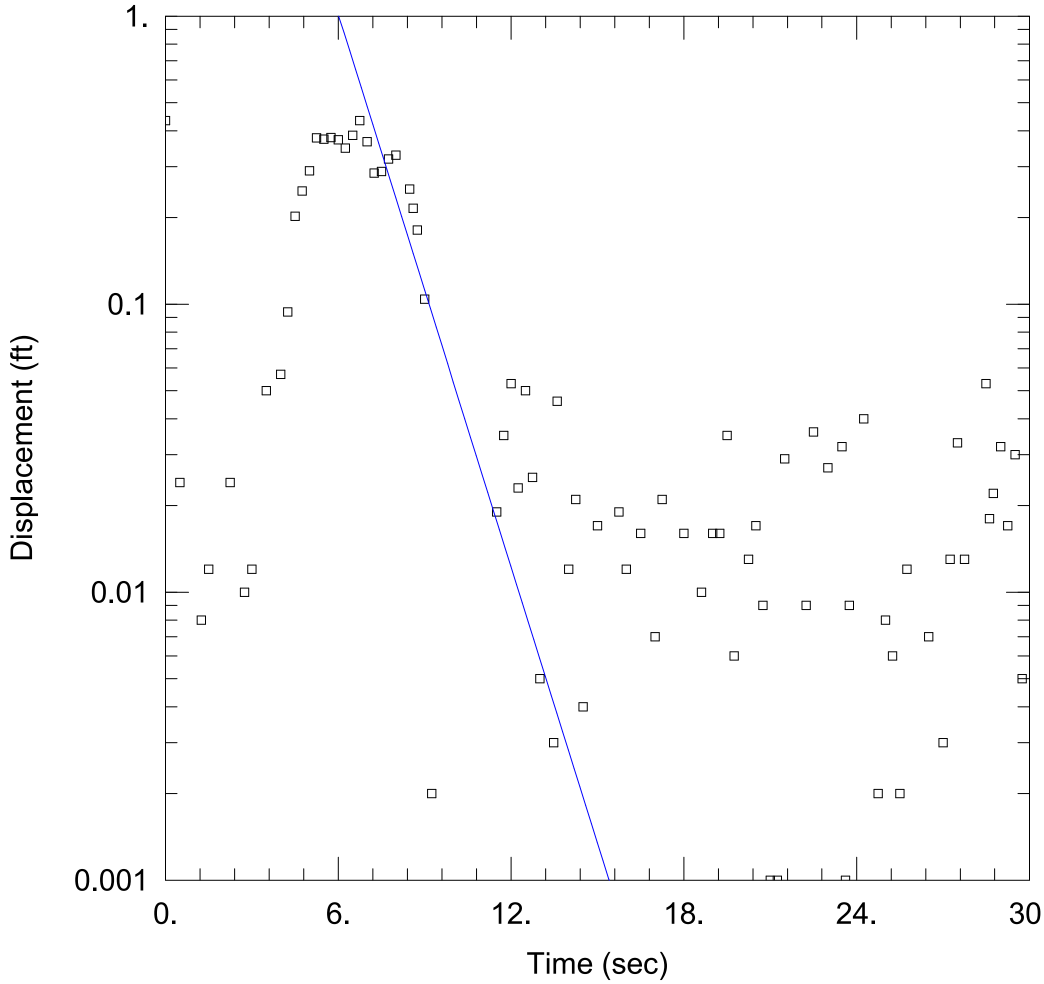
WELL DATA (MW-219)

Initial Displacement: 0.553 ft
Static Water Column Height: 20.31 ft
Total Well Penetration Depth: 20.31 ft
Screen Length: 10. ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 93.84 ft/day
y0 = 1539.1 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-221-D2.aqt
Date: 11/13/23 Time: 10:14:09

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-221
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

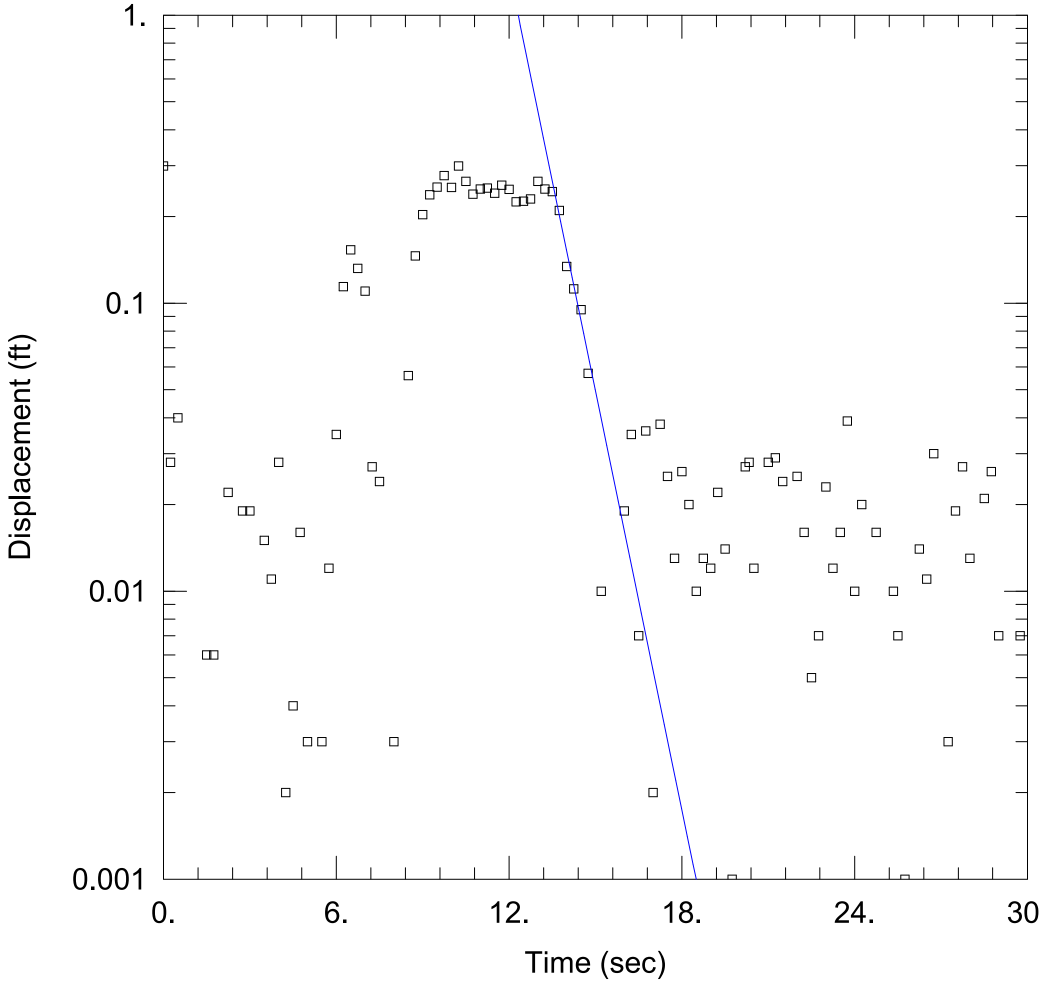
WELL DATA (MW-219)

Initial Displacement: 0.434 ft
Total Well Penetration Depth: 20.31 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 20.31 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 69.85 ft/day
y0 = 83.78 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-221-U1.aqt
Date: 11/13/23 Time: 10:13:56

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-221
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

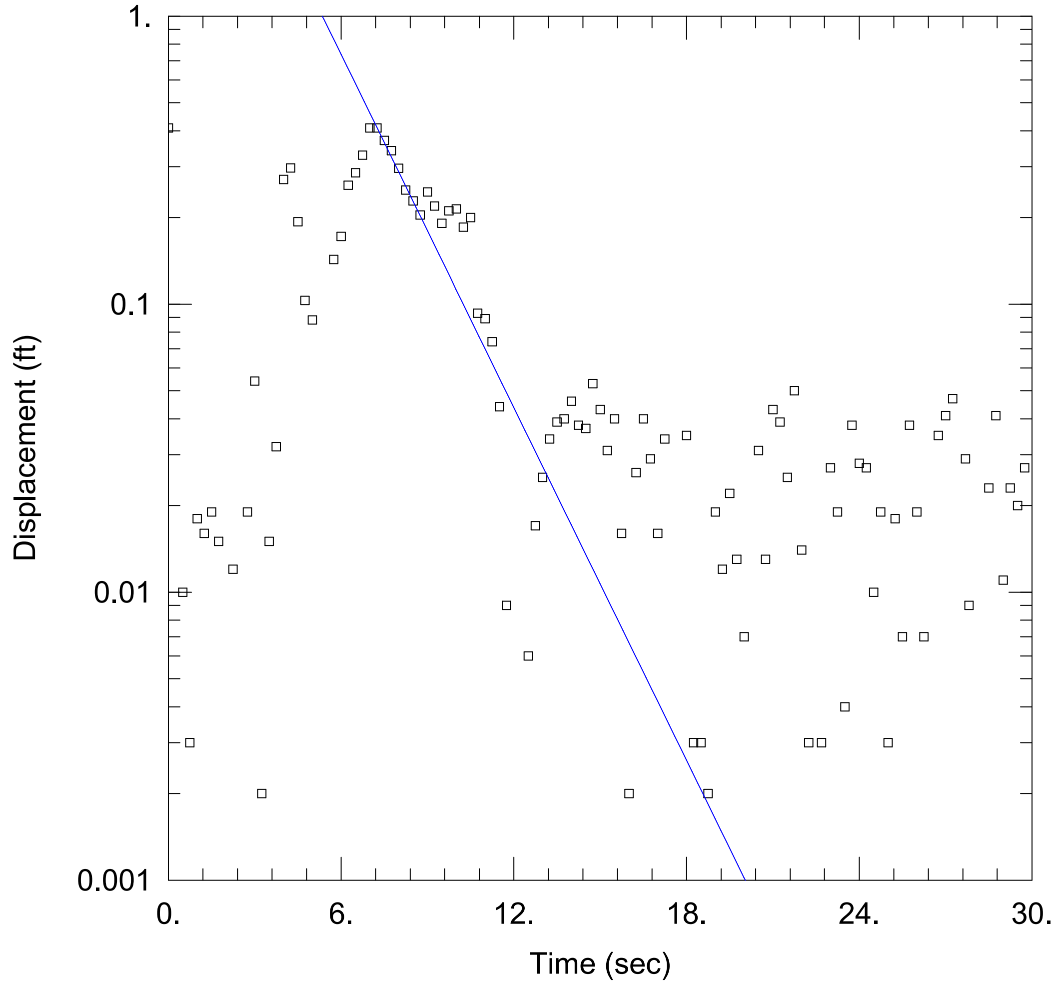
WELL DATA (MW-219)

Initial Displacement: 0.299 ft
Static Water Column Height: 20.31 ft
Total Well Penetration Depth: 20.31 ft
Screen Length: 10. ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 106.1 ft/day
y0 = 9.581E+5 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-221-U2.aqt
Date: 11/13/23 Time: 10:13:45

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-221
Test Date: 7/21/2023

AQUIFER DATA

Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

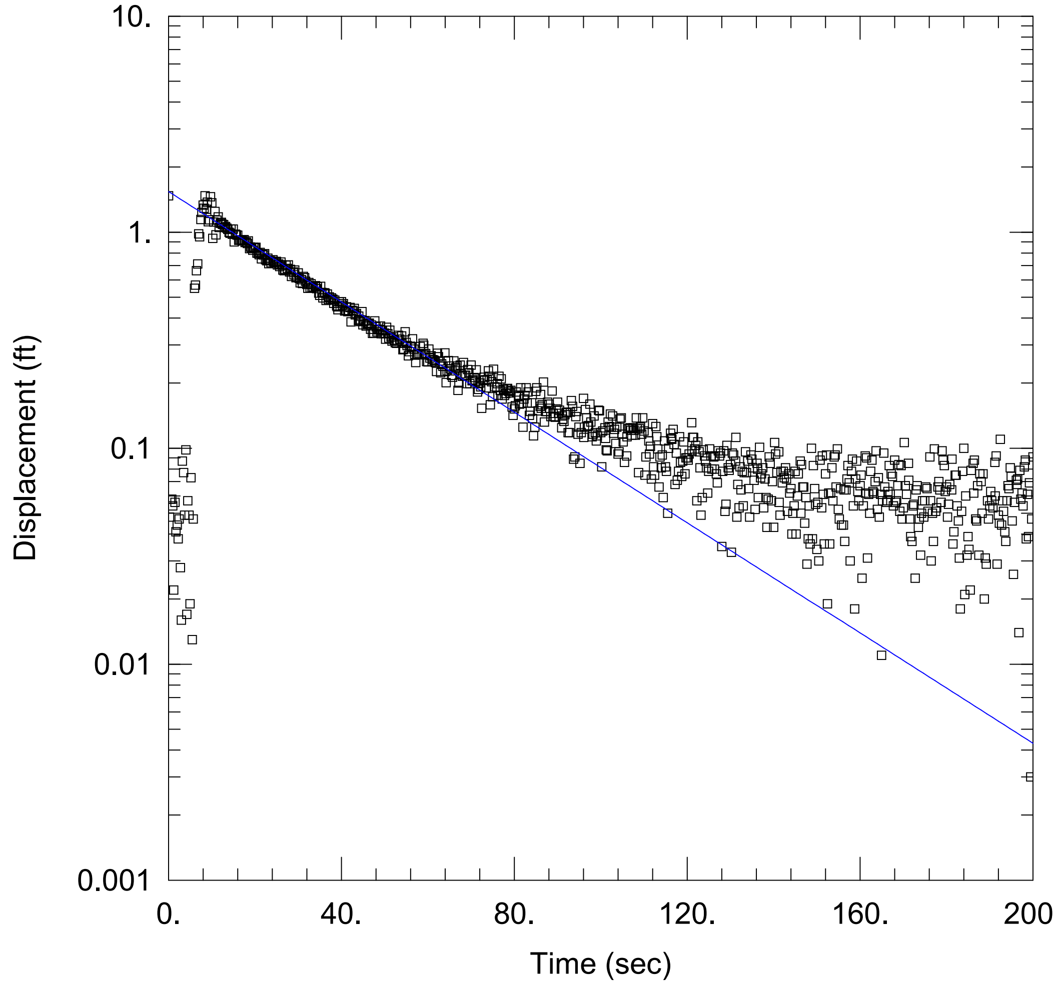
WELL DATA (MW-219)

Initial Displacement: 0.409 ft Static Water Column Height: 20.31 ft
Total Well Penetration Depth: 20.31 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 44.63 ft/day y0 = 12.35 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-300-D1.aqt
Date: 11/13/23 Time: 10:17:21

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-300
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

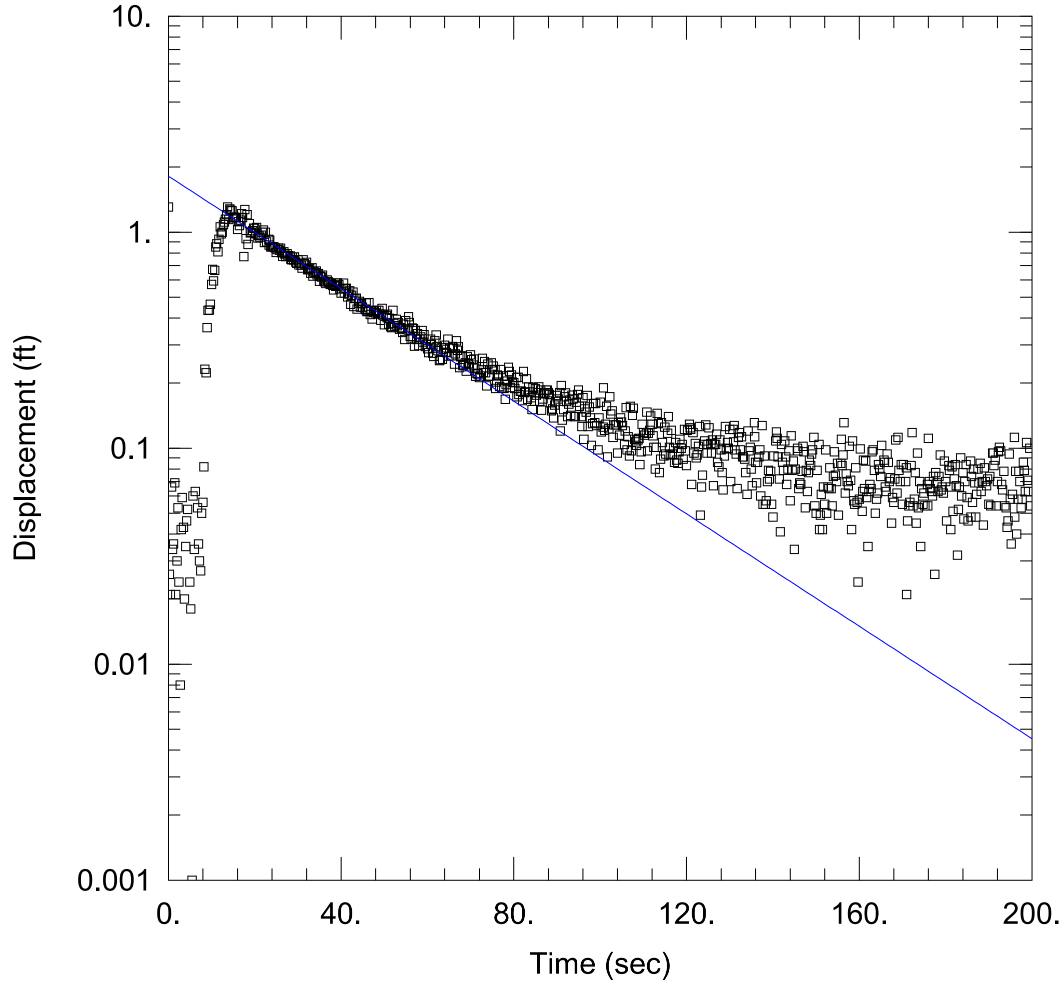
WELL DATA (MW-300)

Initial Displacement: 1.472 ft
Total Well Penetration Depth: 10.74 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 10.74 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.451 ft/day
y0 = 1.541 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-300-D2.aqt
Date: 11/13/23 Time: 10:17:49

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-300
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

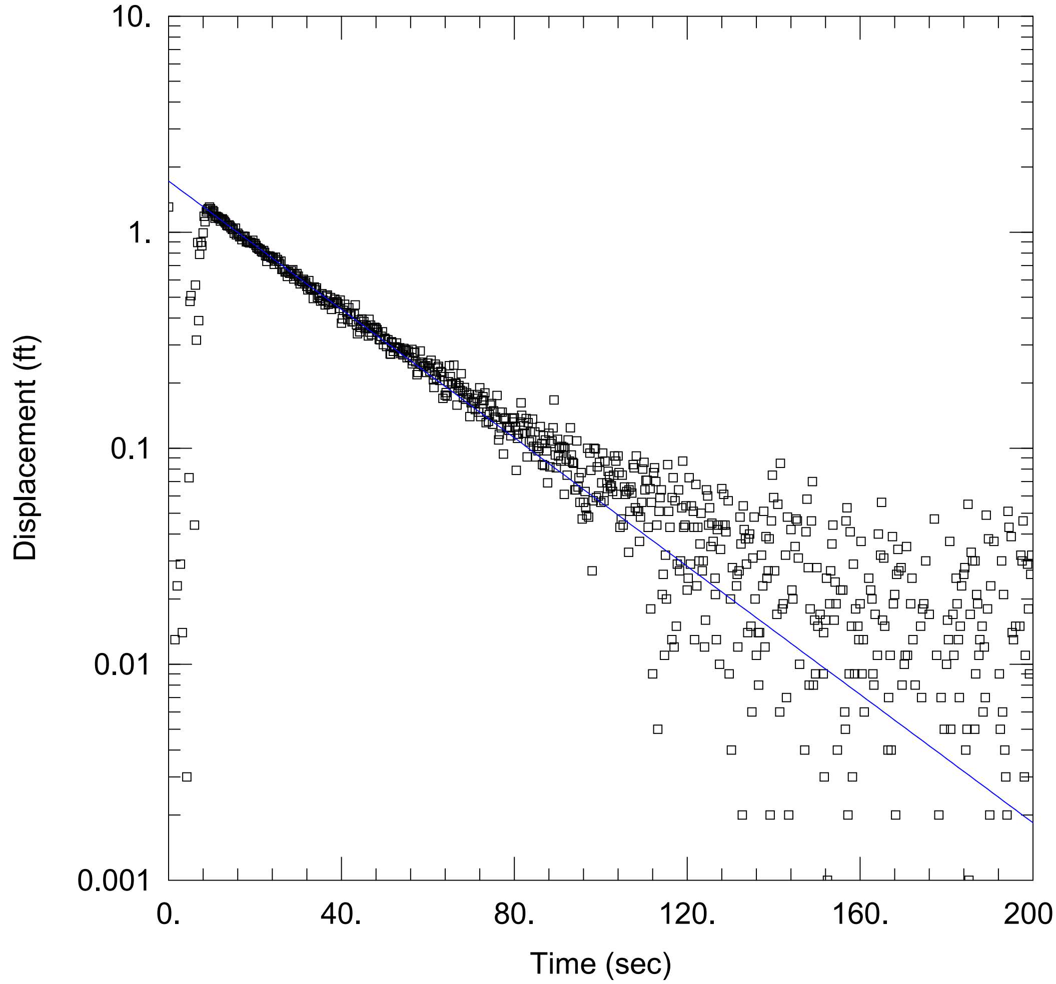
WELL DATA (MW-300)

Initial Displacement: 1.307 ft
Total Well Penetration Depth: 10.74 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 10.74 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.5 ft/day y0 = 1.817 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-300-U1.aqt
Date: 11/13/23 Time: 10:15:36

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-300
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

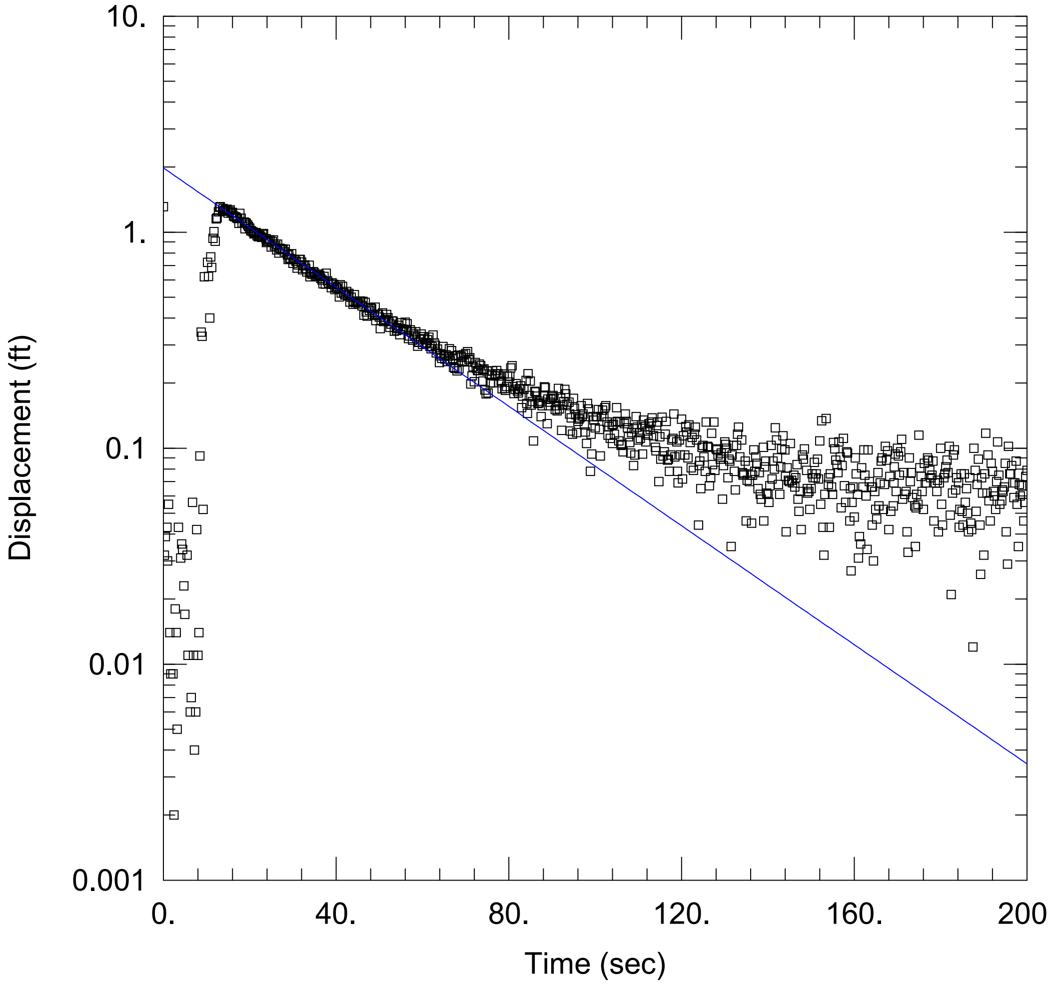
WELL DATA (MW-300)

Initial Displacement: 1.306 ft
Static Water Column Height: 10.74 ft
Total Well Penetration Depth: 10.74 ft
Screen Length: 10. ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.852 ft/day
y0 = 1.724 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-300-U2.aqt
Date: 11/13/23 Time: 10:15:17

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-300
Test Date: 7/20/2023

AQUIFER DATA

Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

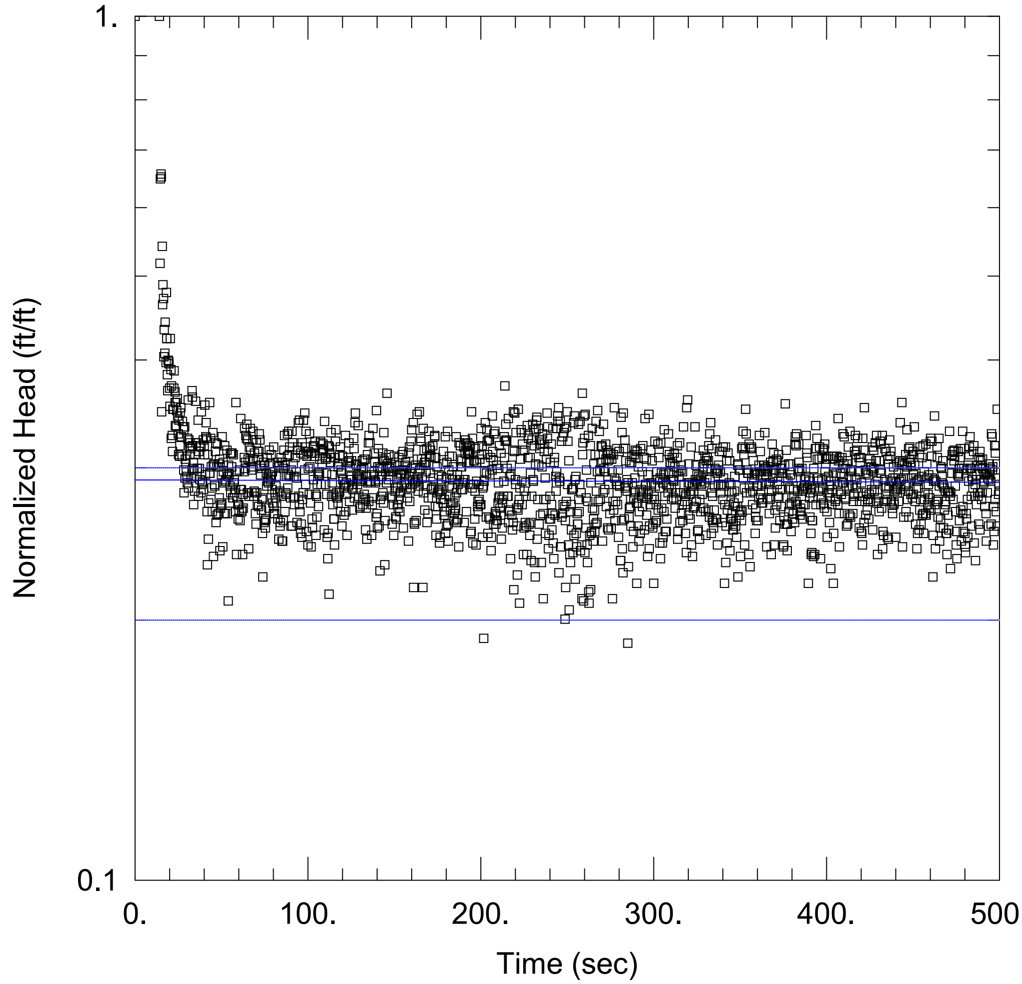
WELL DATA (MW-300)

Initial Displacement: 1.31 ft
Total Well Penetration Depth: 10.74 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 10.74 ft
Screen Length: 10. ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.648 ft/day
y0 = 1.981 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-PB1-D1_BM.aqt
Date: 04/17/24 Time: 15:55:40

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB1
Test Date: 7/24/2023

AQUIFER DATA

Saturated Thickness: 3.538 ft Anisotropy Ratio (Kz/Kr): 1.

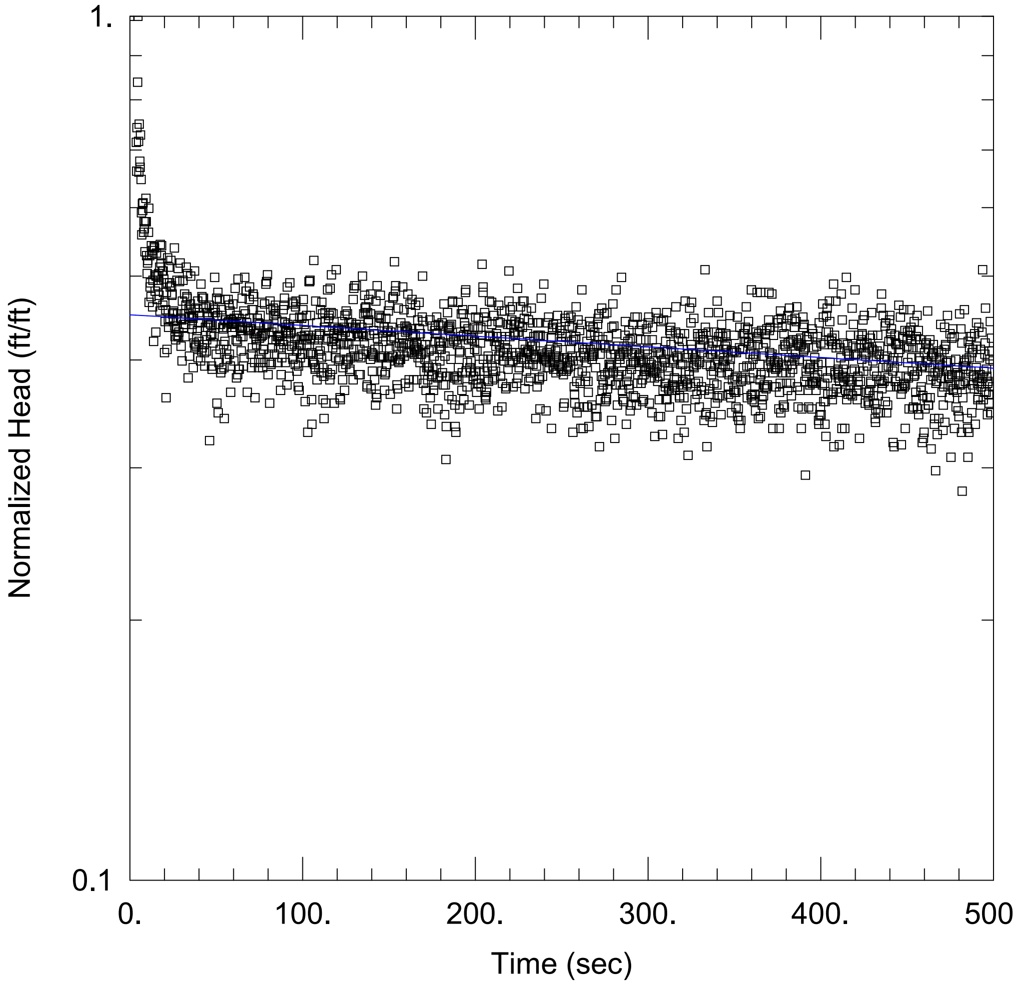
WELL DATA (MW-PB1)

Initial Displacement: 0.798 ft Static Water Column Height: 3.538 ft
Total Well Penetration Depth: 3.538 ft Screen Length: 3.538 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001876 ft/day y0 = 0.2318 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-PB1-D2_BM.aqt
Date: 04/17/24 Time: 15:56:42

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB1
Test Date: 7/24/2023

AQUIFER DATA

Saturated Thickness: 3.538 ft
Anisotropy Ratio (Kz/Kr): 1.

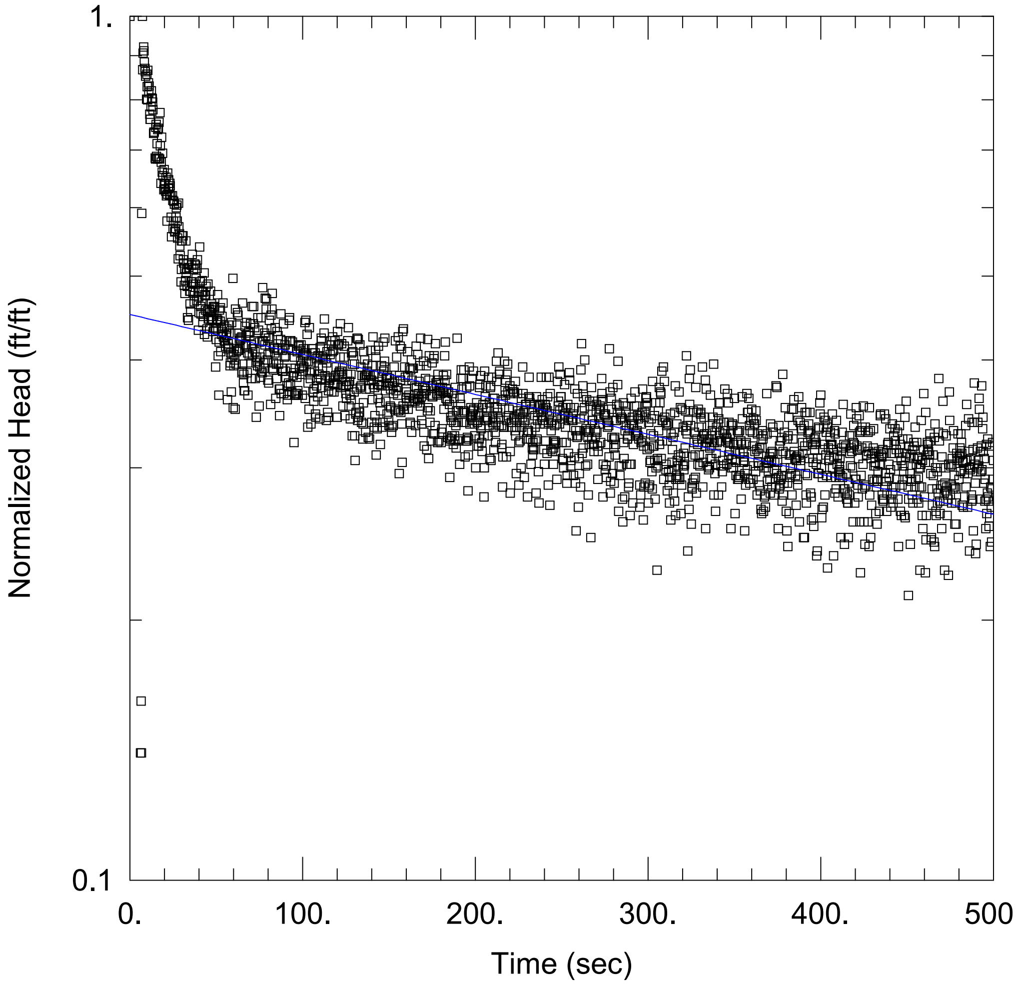
WELL DATA (MW-PB1)

Initial Displacement: 0.564 ft
Static Water Column Height: 3.538 ft
Total Well Penetration Depth: 3.538 ft
Screen Length: 3.538 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.04493 ft/day
y0 = 0.2544 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-PB1-U1_BM.aqt
Date: 04/17/24 Time: 15:53:19

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB1
Test Date: 7/24/2023

AQUIFER DATA

Saturated Thickness: 3.538 ft Anisotropy Ratio (Kz/Kr): 1.

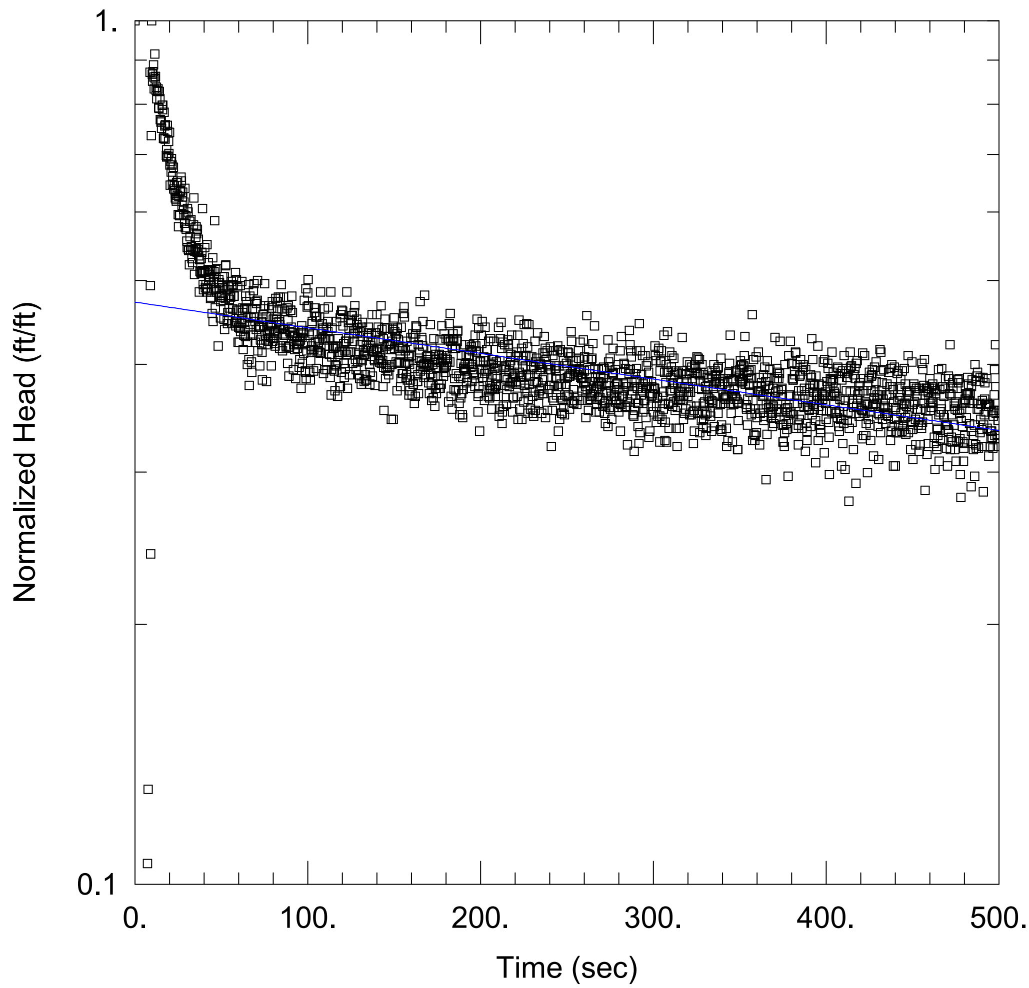
WELL DATA (MW-PB1)

Initial Displacement: 0.67 ft Static Water Column Height: 3.538 ft
Total Well Penetration Depth: 3.538 ft Screen Length: 3.538 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1681 ft/day y0 = 0.3025 ft



WELL TEST ANALYSIS

Data Set: C:\Users\USBM700816\OneDrive - WSP O365\GRE_Slug\GRE-SS-MW-PB1-U2_BM.aqt
Date: 04/17/24 Time: 15:50:24

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB1
Test Date: 7/24/2023

AQUIFER DATA

Saturated Thickness: 3.538 ft Anisotropy Ratio (Kz/Kr): 1.

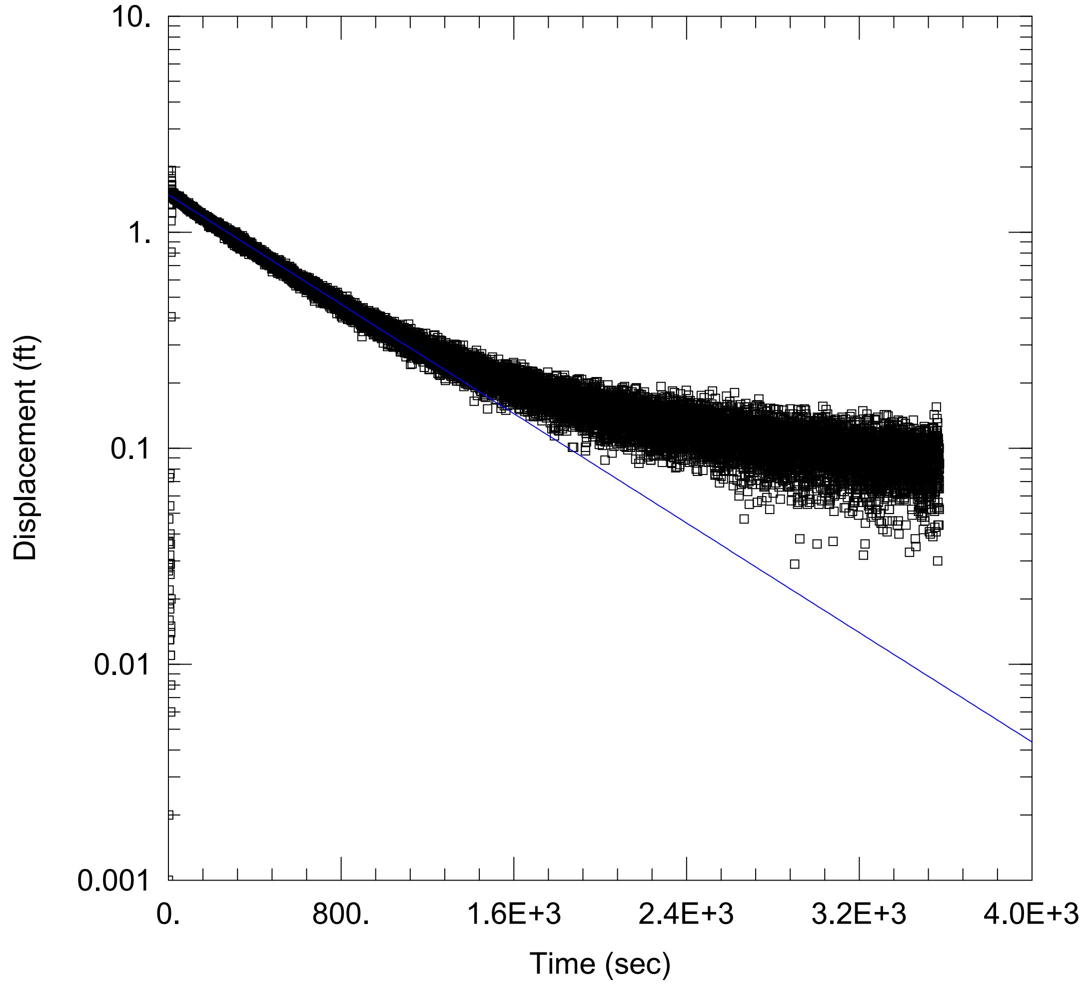
WELL DATA (MW-PB1)

Initial Displacement: 0.738 ft Static Water Column Height: 3.538 ft
Total Well Penetration Depth: 3.538 ft Screen Length: 3.538 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1081 ft/day y0 = 0.3484 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-PB3-D1.aqt
Date: 11/13/23 Time: 10:21:32

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB3
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 11.19 ft
Anisotropy Ratio (Kz/Kr): 1.

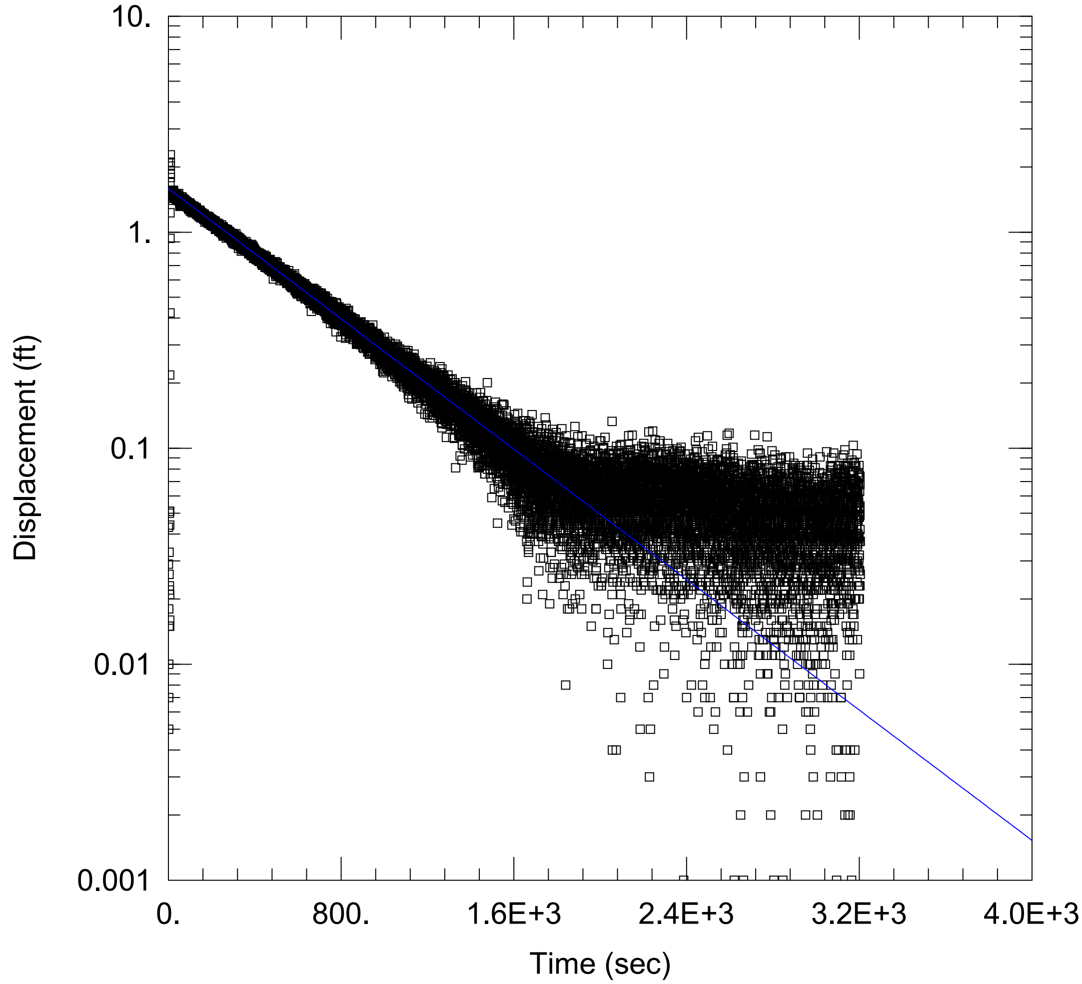
WELL DATA (MW-PB3)

Initial Displacement: 1.931 ft
Static Water Column Height: 11.19 ft
Total Well Penetration Depth: 11.19 ft
Screen Length: 11.19 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.1104 ft/day
y0 = 1.488 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-PB3-D2.aqt
Date: 11/13/23 Time: 10:21:46

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB3
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 11.19 ft
Anisotropy Ratio (Kz/Kr): 1.

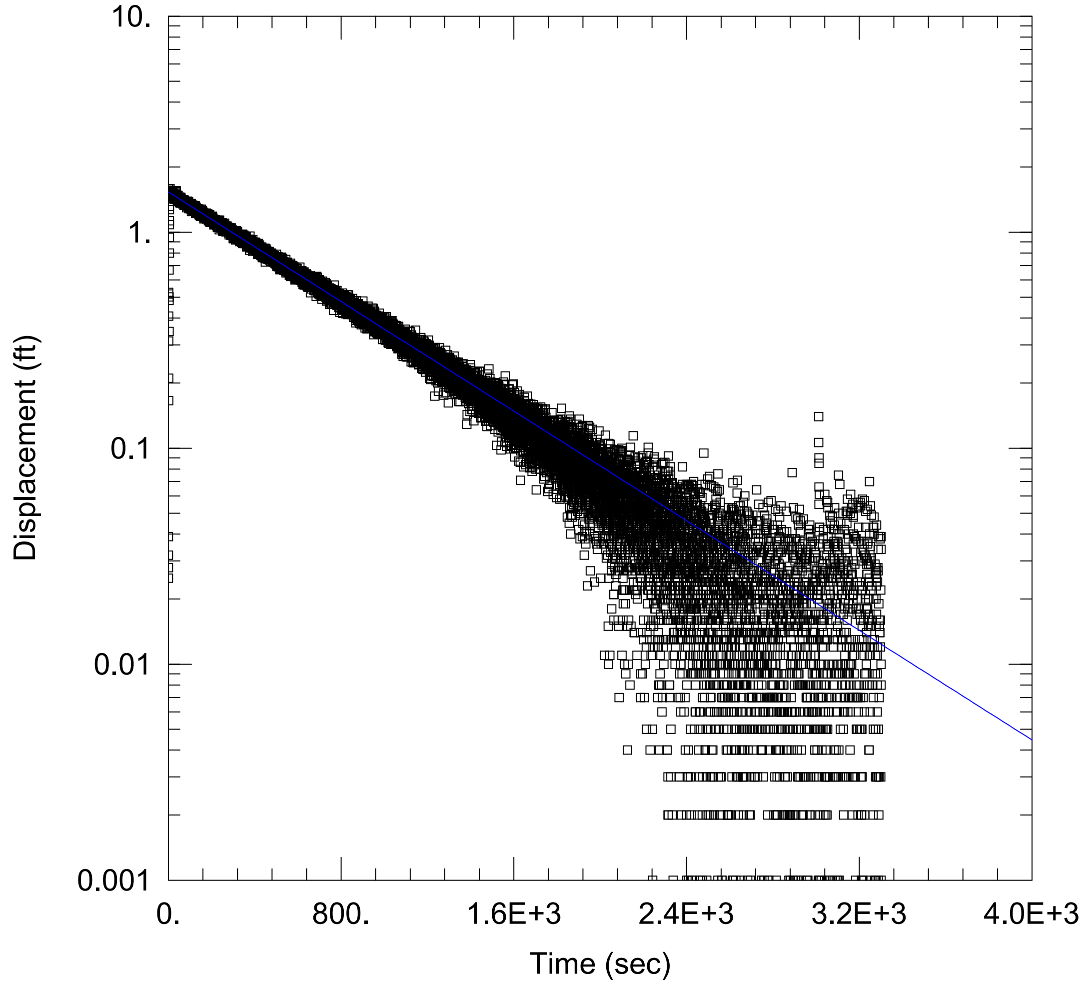
WELL DATA (MW-PB3)

Initial Displacement: 2.107 ft
Static Water Column Height: 11.19 ft
Total Well Penetration Depth: 11.19 ft
Screen Length: 11.19 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.1315 ft/day
y0 = 1.59 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-PB3-U1.aqt
Date: 11/13/23 Time: 10:22:04

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB3
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 11.19 ft Anisotropy Ratio (Kz/Kr): 1.

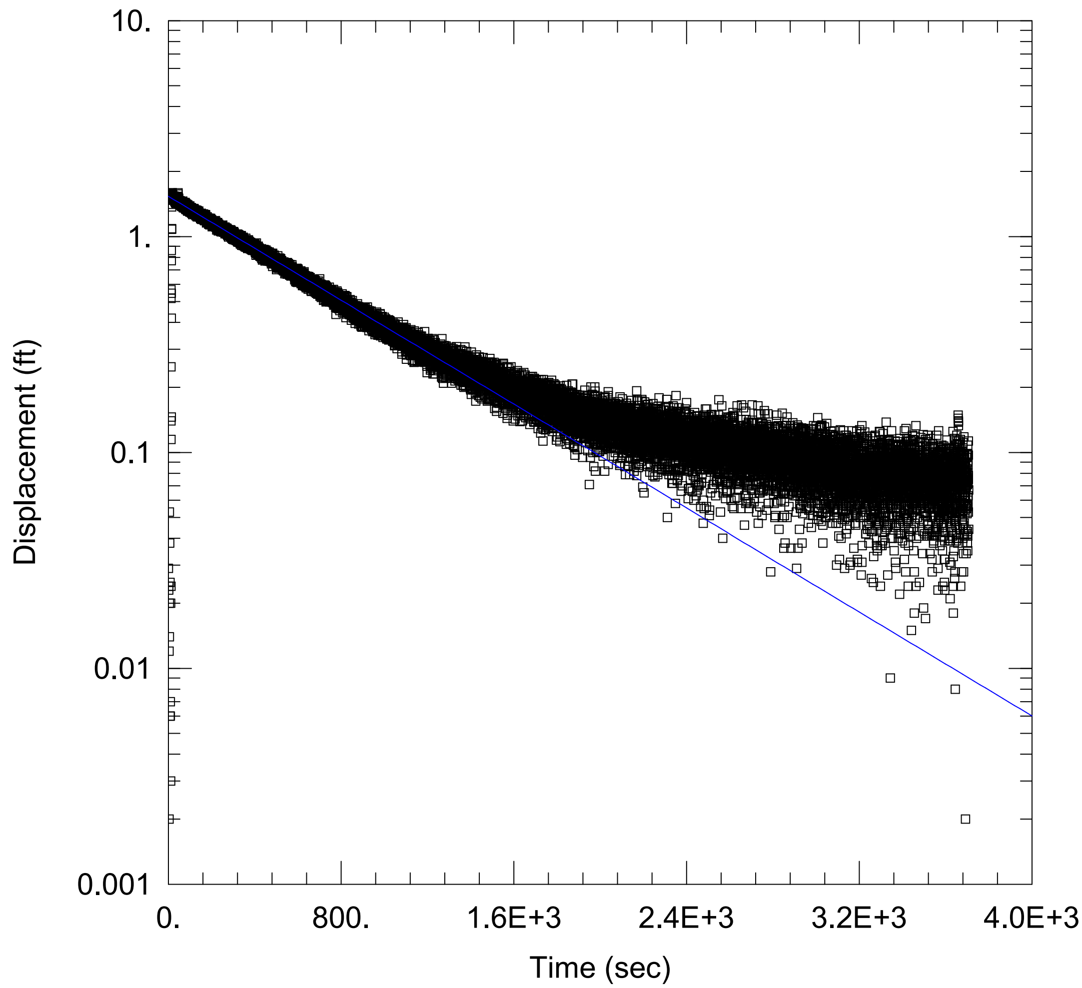
WELL DATA (MW-PB3)

Initial Displacement: 1.59 ft Static Water Column Height: 11.19 ft
Total Well Penetration Depth: 11.19 ft Screen Length: 11.19 ft
Casing Radius: 0.08333 ft Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1106 ft/day y0 = 1.534 ft



WELL TEST ANALYSIS

Data Set: C:\...\GRE-SS-MW-PB3-U2.aqt
Date: 11/13/23 Time: 10:22:18

PROJECT INFORMATION

Company: WSP USA Inc.
Client: GRE Stanton Station
Project: 21509219.000
Location: Stanton, ND
Test Well: MW-PB3
Test Date: 7/23/2023

AQUIFER DATA

Saturated Thickness: 11.19 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-PB3)

Initial Displacement: 1.532 ft
Static Water Column Height: 11.19 ft
Total Well Penetration Depth: 11.19 ft
Screen Length: 11.19 ft
Casing Radius: 0.08333 ft
Well Radius: 0.2604 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.1049 ft/day
y0 = 1.535 ft

APPENDIX B

Tier II and III MNA Evaluation for Arsenic

REPORT

Tier II and III MNA Evaluation for Arsenic

Bottom Ash Landfill - Stanton Station

Submitted to:

Great River Energy

12300 Elm Creek Boulevard
Maple Grove, Minnesota 55369

Submitted by:

WSP USA Inc.

7245 W Alaska Drive, Suite 200, Lakewood, Colorado, USA 80226

+1 303 980 0540

GL21509219.000-015-RPT-0

July 31, 2024

MNA CHECKLIST

For the convenience of the reader, the following checklist is provided as a quick reference to identify methods, analyses, and results relevant to each MNA tier that may appear in multiple sections.

Elements of MNA Evaluation	Characterization	Applicable Section(s)
Pre-Tier 1 - Site Background Information		
Site Layout	Identify potential source(s)	3.1, 5.1
	Identify potential exposure points/receptors	1.0, 5.1
Site History	History and inventory of contaminants released	1.0
	Mode of contaminant release	3.1, 5.1
	Chemistry of CCR source and release	3.1, 5.1
Tier 1 - Demonstrate Active Contaminant Removal from Groundwater		
Hydrogeologic Elements	Potential migration pathways identified	1.2
	Nature and extent of contaminant plume	1.0, 5.0
	Groundwater flow direction and aquifer hydrostratigraphy	1.2
General Site Chemistry	General chemistry (groundwater, surface water, and/or aquifer solids) for preliminary evaluation of contaminant degradation	5.1, 5.2, 5.3, 6.0, 7.0
	Trend evaluation of groundwater data	5.1, 6.0, 7.0
	Distribution of contaminants between aqueous and solid phases	5.1, 5.2, 5.3, 6.0, 7.0
Tier 2 - Determine Mechanisms and Rate of Attenuation		
Define Contaminant Aquifer Solid Interactions	Identify aquifer mineralogy, attenuation mechanisms, and microbiological processes (if applicable)	5.2, 5.5, 6.0
Chemistry and Spatial Distribution of Contaminants	Groundwater characteristics for source(s) and contaminant plume, including field parameters, Appendix III constituents, Appendix IV constituents, major cations and anions, and speciation data (if applicable)	5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6.0
Detailed Hydrogeology	Groundwater flow regime, including direction, velocity, potentiometric surface, gradients, etc.	1.2, 5.4, 6.0
Tier 3 – Determine System Capacity and Stability of Attenuation		
Measurement of Attenuation Capacity	Determination of contaminant and dissolved reactant fluxes (concentration data and water flux determination(s)	5.1, 5.5, 7.0
	Determine mass of available solid phase reactant(s)	5.2, 5.3, 5.6, 7.0
Stability of Attenuated Contaminated Mass	Laboratory testing of immobilized contaminant stability	5.3, 5.6, 7.0
	Model analyses to characterize uppermost water-bearing unit capacity and evaluation of immobilized contaminant stability.	5.3, 5.5, 5.6, 7.0
Tier 4 - Design of Performance Monitoring Program and Identify Alternative Remedy		
Long-Term Monitoring Program	Selection of monitoring locations and sampling frequency based on site conditions	N/A: to be provided in separate report.
	Selection of key monitoring parameters to assess remedy effectiveness	
	Selection of monitoring criteria that would trigger re-evaluation of adequacy of the monitoring program and the remedy selected.	

Note: Table based on summaries provided in United States Environmental Protection Agency (USEPA) *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water* (USEPA 2007a), and Interstate Technology & Regulatory Council (ITRC) *A Decision Framework for Applying Monitoring Natural Attenuation Processes to Metals and Radionuclides in Groundwater* (ITRC 2010).

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TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

On behalf of Great River Energy (GRE), WSP USA Inc. (WSP) performed an evaluation of groundwater and solids from the uppermost water-bearing unit (herein also referred to as the "aquifer") to determine the effectiveness of Monitored Natural Attenuation (MNA) as part of the assessment of corrective measures process for Stanton Station's coal combustion residual (CCR) Bottom Ash Landfill. The structure of this feasibility evaluation closely follows the United States Environmental Protection Agency (USEPA) guidance on using MNA as a remedial strategy (USEPA 2007a, 2007b, and 2015) and considers best practices from the Interstate Technology Regulatory Council (ITRC) document: "A Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater" (ITRC 2010).

This report has been prepared in response to groundwater monitoring and assessment of corrective measures requirements of the USEPA's Coal Combustion Residuals (CCR) rule and the North Dakota Department of Environmental Quality's (NDDEQ) CCR rule, hereafter referred to as the Federal and State CCR rules. Under the CCR rules, concentrations of Federal Appendix IV assessment monitoring constituents (State Appendix II constituents) present in groundwater downgradient of a CCR Unit at statistically significant levels (SSLs) above Groundwater Protection Standards (GWPS) must be addressed in accordance with the groundwater assessment and corrective measures provisions of 40 CFR 257.96 to 257.98 (NDAC 33.1-20-08-06(6) to 33.1-20-08-06(8)). When an Appendix IV constituent is confirmed to be present at an SSL above the GWPS downgradient of a CCR Unit, an Assessment of Corrective Measures (ACM) is completed in accordance with 40 CFR 257.96 and NDAC 33.1-20-08-06(6) to identify applicable corrective measures to prevent further releases from the CCR Unit and restore groundwater downgradient of the CCR Unit to the applicable GWPS. Corrective measures alternatives are further evaluated in accordance with 40 CFR 257.97 and NDAC 33.1-20-08-06(7) to identify a remedy for the CCR Unit, and remedy implementation is conducted in accordance with 40 CFR 257.98 and NDAC 33.1-20-08-06(8).

An SSL was identified for arsenic in groundwater in a downgradient well at the Bottom Ash Landfill on March 28, 2022, during the assessment monitoring statistical analysis for the fourth quarter (Q4) 2021 sampling event. A notification identifying the SSL for arsenic was prepared and posted online and submitted to the NDDEQ on April 27, 2022 (within 30 days of identifying the SSL). Arsenic is the constituent of interest (COI) for this MNA assessment.

MNA is one potential corrective measure discussed within the ACM (Golder 2022). Based on USEPA guidance (USEPA 2007a, 2007b, and 2015), an evaluation of each COI's potential for successful remediation by MNA is conducted utilizing the following phased approach:

- Tier I: Demonstrate active constituent removal from groundwater and plume stability.
- Tier II: Determine the mechanisms and rates of the operative attenuation processes.
- Tier III: Determine the long-term capacity for attenuation and the stability of immobilized constituents.

Prior to this MNA evaluation, the nature and extent of the plume was delineated in accordance with 40 CFR 257.95(g) and NDAC 33.1-20-08-06(5)(g) (Golder 2022). A Tier I MNA Evaluation for the Bottom Ash Landfill was completed in 2023 (WSP 2023a). The Tier I Evaluation concluded that sufficient evidence was present to satisfy the Tier I criteria for successful MNA implementation to address the groundwater SSL for arsenic. Further geochemical evaluation (i.e., Tier II and Tier III Evaluation) of MNA was recommended based on the Tier I assessment. This report presents the findings of the Tier II and Tier III MNA Evaluation for the Bottom Ash Landfill.

The Tier II and III evaluation results presented in this document will be used to further assess the performance and reliability of MNA as a potential corrective measure as required by 40 CFR 257.97 and NDAC 33.1-20-08-06(7). Following completion of this multi-tier evaluation, the fourth and final tier of an MNA program, which involves the design of a performance monitoring program and the development of a contingency plan, will be completed.

1.1 Site Background

Stanton Station (the Site) was a coal-fired electric generation facility located along the Missouri River in Mercer County, approximately three miles southeast of Stanton, North Dakota. Stanton Station began generating power in 1966 and ceased power production in February 2017. Demolition of the industrial footprint was finished in 2019, with Site restoration completed in 2020. CCRs were managed in composite-lined surface water impoundment cells and dry waste facilities regulated and permitted by the NDDEQ in accordance with North Dakota Administrative Code (NDAC) Article 33.1-20, Solid Waste Management and Land Protection.

Stanton Station has two CCR facilities that are within the purview of the USEPA and NDDEQ CCR rules:

- Bottom Ash CCR Landfill (Bottom Ash Landfill)
- Bottom Ash CCR Surface Impoundment (Bottom Ash Impoundment)

Each of the CCR facilities has its own monitoring network. A map of the Site and monitoring well locations is provided in Figure 1. This report specifically addresses the Bottom Ash Landfill.

1.2 Site Geology and Hydrogeologic Conditions

The principal hydrostratigraphic unit and aquifer near the CCR facilities consists of alluvial deposits and includes two subunits: an upper silty sand and clay, and an underlying outwash sand and gravel. Individually, these subunits are laterally heterogeneous and can be further characterized by interbedded layers of gravel, sand, silt, clay, and coal.

Due to variations in subunit thickness throughout the Site, groundwater in the aquifer is monitored in both the outwash subunit and the silty sand and clay subunit, with flow generally moving from southwest to northeast towards the Missouri River. Depths from the ground surface to the groundwater range from 5 to 20 feet in the area around Stanton Station. The range of groundwater flow velocities measured in November (Q4) 2022 is from 0.0012 to 0.23 feet per day (WSP 2023b). The groundwater flow velocities measured in the third quarter (Q3) of June 2023 range from 0.0011 to 0.21 feet per day (WSP 2024).

2.0 TIER II AND TIER III EVALUATION APPROACH

A Tier II and III evaluation is used to determine the mechanism(s), rates, and stability of constituent attenuation with respect to the MNA criteria (USEPA 2007a and 2007b). In 2022 and 2023, WSP collected water samples from the Site as part of a Nature and Extent evaluation and Tier I evaluation in accordance with the CCR rules (see Table 1 in Section 3.0 for a listing of the wells and sampling locations). Bottom Ash Landfill groundwater collection and analysis continues, and the water quality results through March 2023 are used in this Tier II and III evaluation. Data collected through March 2023 are presented in Appendix A. The overall groundwater quality and trends for constituents with SSLs were described in detail in the Tier I report (WSP 2023a). No substantial changes in groundwater quality have occurred that would change the findings of the Tier I evaluation.

This Tier II and III evaluation expands upon the following updated Tier I findings related to groundwater, as follows:

- **Plume Stability:** Based on the water quality monitoring data presented in this assessment, groundwater concentrations of arsenic outside of the Bottom Ash Landfill are stable or decreasing. Arsenic concentrations in most wells remain constant and are below the GWPS. Greater variations in arsenic concentrations exceeding the GWPS occur in MW-103 and MW-211, located at the waste boundary (CCR unit boundary) of the Bottom Ash Landfill. Statistical analysis of arsenic in MW-103 shows a decreasing trend at the 95% confidence interval over the complete record of data from 2016 to present. A general evaluation of the arsenic concentrations in the well network indicates that the extent of the arsenic plume is not increasing.
- **Arsenic Exceedances**: Arsenic concentrations at well MW-103 were above the GWPS (0.010 mg/L) until the sampling event in June 2022, then again above the GWPS in November 2022 and March 2023, and it was identified as an SSL of arsenic at that well. Samples from wells MW-211 and MW-221 have reported occasional detections above the GWPS.
- **Groundwater Chemistry:** The groundwater monitoring results and findings of the geochemical modeling support the potential for natural attenuation of arsenic. Equilibrium of groundwater with iron (hydr)oxides, aluminosilicates, and calcite was indicated in groundwater samples. Additionally, modeling results are consistent with the results from performing the sequential extraction procedure (SEP) on samples from the Site. These tests indicate the presence of amorphous and metal hydroxide fractions that can sequester arsenic.
- **Confirmation of Attenuation/Immobilization:** Based on both mineralogical and chemical analysis of soils it is evident that attenuation of arsenic by materials in the aquifer is occurring. Iron is present, which is capable of forming (hydr)oxide or amorphous phases that facilitate metals attenuation (Dzombak and Morel 1990).

The Tier II and III evaluation presented in this document builds upon the results of the Tier I evaluation with the following:

- Characterization of temporal and spatial trends in groundwater quality to estimate site-wide attenuation rates.
- Geochemical modeling to determine the aqueous speciation of arsenic and evaluate saturation indices of minerals relevant to its attenuation.
- Determination of the capacity of different geochemical mechanisms to attenuate arsenic, including adsorption, precipitation, co-precipitation, and physical attenuation (dilution/dispersion).
- Further geochemical modeling to assess the stability and reversibility of attenuation due to adsorption.

These analyses utilize the following information from the Tier I evaluation (USEPA 2007a, 2007b, and 2015):

- Mineralogical analysis of aquifer solids to identify and quantify the major mineral components.
- SEP on solids from the aquifer to quantify the total metal content and identify the environmentally available fractions of metals.

The approach and results of the Tier II and Tier III evaluation are presented in the sections that follow.

3.0 GEOCHEMICAL EVALUATION

Groundwater samples collected from background (upgradient and side-gradient) wells, downgradient wells, and sump water samples from a sump that collects leachate from the Bottom Ash Impoundment were used for this evaluation (Table 1). Note that the Bottom Ash Impoundment and Bottom Ash Landfill contain the same CCR materials, thus the bottom ash impoundment sump water sample is considered representative of “porewater” from the Bottom Ash Landfill.

Additional wells are present at the site but have not been included in this evaluation based on either location in relationship to the downgradient wells or issues with the groundwater information available at the time of modeling.

Table 1: Overview of the Sampling Locations Used for the MNA Assessment

Background Wells	Bottom Ash Landfill Downgradient Wells	Downgradient Delineation Wells	Bottom Ash Impoundment Sump Water
MW-105 MW-214* MW-6B MW-7A MW-7B MW-8B	MW-9N MW-102 MW-103	MW-1R MW-104 MW-210 MW-211 MW-212 MW-213 MW-216 MW-217 MW-218 MW-220 MW-221 MW-300 MW-301 MW-PB3	BAI-Sump-S

*Note:MW-214 is located upgradient of the Bottom Ash Landfill but not part of the formal monitoring network

3.1 Groundwater and Sump Water Analysis

Groundwater and sump water samples were analyzed for field parameters, total metals, and major cations and anions. The rationale and methods used for these measurements were as follows:

- **Field parameters:** Parameters measured in the field included pH, dissolved oxygen (DO), oxidation reduction potential (ORP), conductivity, and temperature. These parameters were used to determine general geochemical conditions in the groundwater and to support geochemical modeling.

- **Metals:** Analysis of Appendix III and IV metals concentrations was conducted to understand the geochemical composition of groundwater and CCR sump water. Metals analysis allows for the delineation of a potential plume, evaluation of mineral saturation indices through geochemical modeling, development of partitioning coefficients (in conjunction with solid material analyses), and evaluation of potential contributions from natural or anthropogenic background sources.

- **Major cations and anions:** Major cations and anions affect and participate in sorption and mineral dissolution or precipitation reactions. Therefore, data on these constituents are required for geochemical modeling of mineral solubility, metals attenuation, and background contributions.

3.2 Aquifer Solids Sample Collection and Analysis

Samples of aquifer solids were collected from soil borings at ten monitoring well locations around or adjacent to the Site surrounding monitoring well MW-103 (Table 2). The locations sampled are intended to capture the compositional variability of the aquifer solids and provide a range of characterization data for geochemical modeling.

Table 2: Locations of Aquifer Samples for Solids Testing and Corresponding Monitoring Well Screened Depths

Sample Location	Sample Depth [below ground surface (bgs)]	Sample/Unit Lithology	Depth of Well Screened Interval (bgs)
MW-214*	2 – 15’	Silty Sand, Fat Clay	5 – 15’
MW-210	15 – 25’	Poorly Graded Sand with Silt and Gravel	12 – 22’
MW-211A	0 – 15’	Lean Clay with Sand, Silty Sand	12 – 22’
MW-211B	14 – 25’	Lean Clay with Sand, Silty Sand, Poorly Graded Sand with Silt and Gravel	12 – 22’
MW-212A	14 – 25’	Fat Clay, Poorly Graded Sand with Silt	13.5 – 23.5’
MW-213	20 – 30’	Silty Sand, Fat Clay, Sandy Fat Clay	19.5 – 29.5’
MW-217	12 – 13’	Poorly Graded Sand with Silt and Gravel	9 – 19’
MW-218	11 – 12’	Silty Sand	10 – 20’
MW-300	11 – 13’	Poorly Graded Sand with Silt and Gravel	11 – 21’
MW-PB3	22 – 24’	Sandy Lean Clay	23 – 28’

*Note MW-214 is located upgradient of the Bottom Ash Landfill. Samples collected over 1-2’ intervals represent material as collected during split-spoon sampling. Samples over larger intervals were collected in 5-gallon buckets and composited in the field during drilling.

3.2.1 Aquifer Solids Analysis

Multiple analytical methods were used to assess the mineralogical and chemical composition of the solids samples. The test methods included:

- **Mineralogical composition:** The mineralogical analysis was performed using quantitative (Rietveld) X-ray diffraction (XRD) (ME-LR-MIN-MET-MN-DO5) and a Bruker AXS D8 Advance Diffractometer to identify and quantify the crystalline mineral phases in each sample. This information is required for geochemical modeling as the release or attenuation of trace constituents, such as arsenic, is influenced by the mineral phase(s) present in the aquifer solids (Hem 1985).
- **Sequential extraction procedure (SEP):** This test consists of a seven-step metals extraction from solids, as per Tessier et al. (1979), to identify the origin of trace constituents such as arsenic (i.e., the operationally defined fraction that contains the COI)[1] and determine their potential environmental mobility. For instance, metals bound in the carbonate fraction, or that are exchangeable, are much more likely to become mobile due to changes in groundwater conditions than metals bound within a sulfide or silicate fraction. Metals extracted in Steps 1 through 5 are considered environmentally available, whereas metals extracted in Steps 6 and 7 are not environmentally available under typical groundwater conditions (Tessier et al. 1979). The term "environmentally available" describes the fractions available to participate in environmental reactions such as adsorption, desorption, ion exchange and other reactions that involve removal or attenuation of specific constituents. The acid/sulfide and residual fractions (Steps 6 and 7) generally reflect the natural abundance of target constituents in silicates and sulfides, which do not readily interact with groundwater over short time scales. The total concentration of a metal measured from all seven steps can be compared to the sum of the steps for compositional accountability. For modeling, Steps 3 and 4 (the non-crystalline materials fraction and metal hydroxide fraction) represent the fractions that are the most likely surfaces to be adsorbed to (in the case of arsenic) or represent the quantity of sorptive materials available for adsorption with respect to aluminum and ferric hydroxides.
- **Total organic carbon (TOC):** TOC of aquifer solids was analyzed using method USEPA SW-846 9060A: "Total Organic Carbon by catalytic combustion or wet chemical oxidation". TOC is important when evaluating potential attenuation of metals in the subsurface, because organic carbon may act as a substrate for adsorption of some metals in the subsurface but can also compete with metals for adsorption sites on mineral surfaces (Grafe et al. 2001).
- **Cation exchange capacity (CEC):** The CEC of aquifer solids was analyzed using method USEPA SW-846 9081 "Cation-Exchange Capacity of Soils (Sodium Acetate)". The CEC represents the total number of negative charge sites in a given amount of solid at which reversible cation adsorption and desorption can occur (Hem 1985). The CEC of a material also commonly includes a measure of the replacement of one

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[1] Sequential extraction of metals from solids materials consisted of seven discrete steps for this investigation:

Step 1 - Exchangeable Fraction: This extraction includes trace elements that are reversibly adsorbed to minerals, amorphous solids, and/or organic material by electrostatic forces.

Step 2 - Carbonate Fraction: This extraction targets trace elements that are adsorbed or otherwise bound to carbonate minerals.

Step 3 - Non-Crystalline Materials Fraction: This extraction targets trace elements that are complexed by amorphous minerals (e.g., iron).

Step 4 - Metal Hydroxide Fraction: Trace elements bound to hydroxides of iron, manganese, and/or aluminum.

Step 5 - Organic Fraction: This extraction targets trace elements strongly bound via chemisorption to organic material.

Step 6 - Acid/Sulfide Fraction: The extraction is used to identify trace elements precipitated as sulfide minerals.

Step 7 - Residual Fraction: Trace elements remaining in the solids after the previous extractions will be distributed between silicates, phosphates, and refractory oxides.

cation by another in a selective series or preferred adsorption (Smith 1999). This information is used for geochemical modeling as the release or attenuation of many trace metals is affected by the CEC of soil in aquifer solids.

4.0 APPROACH

4.1 Geochemical Modeling

Geochemical modeling was conducted to evaluate the viability of MNA for reducing arsenic concentrations in groundwater. Numerous geochemical modeling approaches were used to answer multiple questions about MNA feasibility and provide supporting evidence based on the MNA Tiers. Inputs for modeling were determined using site-specific data. In many cases, the values for these variables were the most conservative measured (i.e. they were at the end of the range that would be less likely to demonstrate MNA for arsenic is viable). This section outlines the modeling approach and general groundwater and sump water quality, used to evaluate the potential for precipitation of sorbent media and the potential for mineral precipitation and/or adsorption in the aquifer, and determines the speciation of arsenic.

PHREEQC, a geochemical computer code developed by the United States Geological Survey (USGS), was used for these simulations (Parkhurst and Appelo 2013). PHREEQC Version 3.7 is a general-purpose geochemical modeling code used to simulate reactions in water and between water and solid mineral phases (e.g., rocks and sediments). Reactions include aqueous equilibria, mineral dissolution and precipitation, ion exchange, surface complexation, solid solutions, gas-water equilibrium, and kinetic biogeochemical reactions. The widely accepted thermodynamic database Minteq.v4, 2017 edition (USEPA 1998, as amended) was used as a basis for the thermodynamic constants required for modeling, with additions and modifications from recent literature as necessary.

The Geochemist's Workbench (Release 17; Bethke et al. 2023) was used to generate graphical representations of geochemical modeling outputs in the form of predominance, or Pourbaix diagrams (also known as Eh-pH diagrams) for arsenic and trilinear plots (also known as Piper plots) displaying the relative abundance of major ions. The Minteq.v4 database was used as the basis for the Pourbaix diagrams.

The geochemical modeling inputs for post-closure conditions represented that the Bottom Ash Landfill is closed with a cover system designed to minimize infiltration and erosion and to meet or exceed the requirements of 40 CFR 257.102(d)(3) and NDAC 33.1-20-08-07(3)(d)(3). More detail on the modeling approach is presented in the sections that follow.

4.1.1 Surface Complexation Modeling

The adsorptive partitioning between dissolved and solid phases was simulated using a diffuse double-layer Surface Complexation Model (SCM). The SCM approach is described in Davis and Kent (1990), with additional site-specific parameterization (calculations) based on Dzombak and Morel (1990) and Karamalidis and Dzombak (2011), utilizing iron (hydrous ferric oxide [Hfo]) as ferrihydrite [$Fe(OH)_{3(am)}$] and aluminum (hydrous aluminum oxide [Hao]) as gibbsite [$Al(OH)_{3(am)}$] as adsorbing surfaces.

As noted in Section 4.1, EPA's thermodynamic database Minteq V.4 was used as the underlying basis for all geochemical modeling conducted, as required by the computational codes. The Minteq V.4 database was updated, including the addition of data relating to partitioning coefficients for metals on gibbsite, developed by Karamalidis and Dzombak (2011), for use in the surface complexation modeling. These new data support more accurate definition of the pertinent geochemical reactions.

The methodology of Appelo and Postma (2005) was used to calculate the specific quantity of surface sites on each mineral surface type as a function of the amount of mineral available to participate in these reactions. The Appelo and Postma methodology (2005) assumes the number of surface sites (sites) equals the product of the moles of iron (Fe) and the moles of sites per mole of iron ([sites]/[Fe]= 0.2 moles of sites per mole of iron). For the amount of ferrihydrite available for sorption, the Appelo and Postma methodology further assumes the mass of ferrihydrite in grams available equals the product of the moles of iron ([Fe]) and the molecular weight of ferrihydrite (molecular weight Hfo = 88.85 g/mole as Fe_2O_3 x H_2O). The same approach was used to calculate the number of sites on gibbsite, assuming the [sites]/[Al] is 0.41 moles of sites per mole of aluminum and the molecular weight of gibbsite is 78.003 g/mole as $Al(OH)_3$ (Dzombak and Morel 1990; Karamalidis and Morel 2011; Table 3).

The amounts of Hfo and Hao available for attenuation within the models (Table 3) were based on the sum of the amorphous and metal hydroxide phase iron and aluminum concentrations (Steps 3 and 4) measured in site aquifer materials, as described in Section 3.2.1. The quantity of Hfo and Hao and the density and ratio of sorption sites used for modeling (based on Steps 3 and 4 of SEP testing as described above), is site-specific and is calculated using formulas from Dzombak and Morel (1990) and Karamalidis and Dzombak (2011). The surface areas of Hfo (600 m^2/gram) and Hao (32 m^2/gram) are constants provided in Dzombak and Morel (1990) and Karamalidis and Dzombak (2011). The minimum, mean, and maximum calculated quantity of Hfo and Hao captures the full range of iron and aluminum in aquifer solids available to participate in adsorption.

Table 3: Ferrihydrite and Gibbsite Surface Concentrations used for Geochemical Modeling

Parameter	Unit	Ferrihydrite			Gibbsite		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum
Aquifer Solids Composition	mg/kg X	3.25E+03	5.65E+03	1.89E+04	5.10E+02	1.10E+03	2.01E+03
	mol X	5.82E-02	1.01E-01	3.38E-01	1.89E-02	4.09E-02	7.45E-02
Surface Site Concentration	mol weak sites / mol X	0.2			0.41		
	mol strong sites / mol X	0.005			---		
Surface Sites	mol weak	1.2E-02	2.0E-02	6.8E-02	7.7E-03	1.7E-02	3.1E-02
	mol strong	2.9E-04	5.1E-04	1.7E-03	---		
Mass of Ferrihydrite or Gibbsite	grams	5.17E+00	8.99E+00	3.01E+01	1.47E+00	3.19E+00	5.81E+00

Notes:

Gibbsite only has one site type.
X refers to the metal attenuation surface (i.e., iron or aluminum).
Site densities are calculated using constants from Dzombak and Morel (1990) and Karamalidis and Morel, 2011 as described in Section 4.1.1.

Two modeling scenarios were applied: 1) a scenario using groundwater quality information (samples) from wells downgradient of the Bottom Ash Landfill (referred to throughout as the downgradient wells scenario) and 2) a scenario using groundwater data from samples from just the delineation wells where arsenic has not exceeded the GWPS (referred to as the delineation-wells-only scenario). The wells included in each scenario are shown in Table 4. The delineation-wells-only scenario excludes the network Bottom Ash Landfill downgradient wells (MW-9N, MW-102, MW-103), in addition to wells MW-211 and MW-221 (near MW-103), where arsenic has recently exceeded the GWPS.

The downgradient wells scenario is used to evaluate the capacity of aquifer solids even where arsenic has previously exceeded the GWPS. The delineation-wells-only scenario is used to evaluate the capacity of the native aquifer solids where arsenic has not exceeded the GWPS (downgradient of the monitoring well network) and contrast it to the area around MW-103 where arsenic has exceeded the GWPS.

Table 4: Wells Included in Each Model Scenario for MNA Evaluations

Downgradient Wells Scenario	Delineation Wells Only Scenario
MW-9N MW-102 MW-103 MW-104 MW-210 MW-211 MW-212 MW-213 MW-216 MW-217 MW-218 MW-220 MW-221 MW-300 MW-301 MW-PB3	MW-104 MW-210 MW-212 MW-213 MW-216 MW-217 MW-218 MW-220 MW-300 MW-301 MW-PB3

To simulate the capacity of soil to adsorb additional arsenic, a stepwise increase in arsenic concentrations was simulated (Section 5.5), similar in concept to a titration. This was accomplished by modeling twenty times the highest concentration of arsenic observed in sump water (0.03 mg/L), as well as the most recent concentrations of other constituents across the well network, allowing for competitive adsorption. This simulated titration used observed groundwater qualities in equilibrium with the adsorptive surfaces as shown in Table 3 (minimum, maximum, and mean Hfo and Hao; see section 4.1.1). The models were then used to predict the quantity of arsenic that could be attenuated at the Site.

4.2 Geochemical Modeling of Attenuation Rate

Geochemical modeling was conducted to estimate the rate of arsenic attenuation and the required time for concentrations to decrease below the GWPS. The attenuation rate model consisted of a 1-D (one-dimensional) transport scenario calculated in PHREEQC.

The model transect runs from the edge of ash at the Bottom Ash Landfill to well MW-218. The groundwater velocity along the transect is estimated at 0.23 ft/day. This value represents the higher end of the range measured onsite, as described in Section 1.2, and therefore a conservative value for attenuation/arsenic transport modeling (WSP 2023b).

To simulate the rate of arsenic attenuation along the transect, the composition of sump water was equilibrated with 0.015 mmol/L realgar [As_4S_4] to increase the concentration of arsenic in porewater (source term) for the Bottom Ash Landfill during the unit's operational life. Specifically, realgar was used in the modeled sump water sample to increase the concentration and mimic the likely speciation of arsenic from CCR at the Bottom Ash Landfill. The realgar addition was necessary to recreate observed conditions at MW-103 and reflects the operational conditions of the site. This included the following factors which likely contributed to higher infiltration and CCR interaction with water: an unlined CCR impoundment that existed prior to construction of the Bottom Ash Landfill, and operation of the clay-lined Bottom Ash Landfill prior to construction of the final cover at closure.

The new sump water composition (after equilibration with realgar) was then mixed with the composition of background groundwater (groundwater from well MW-214 was used as background) at a ratio of 30% to 70%. The mix ratio was determined by matching the concentrations of boron and sulfate (near-conservative CCR tracers) observed in groundwater at MW-103. The concentration of arsenic at MW-103 after being transported along the transect for 45 years (based on the operational history of the removed CCR impoundment and the Bottom Ash Landfill) was calibrated by adjusting the mass of realgar (0.015 mmol/L final concentration) in contact with the sump water and by using the mean Hfo and Hao concentrations calculated from aquifer solids (Table 3).

After calibration, the transect model was then used to evaluate post-closure conditions. To evaluate changes to groundwater quality at MW-103 and along the entire transect to MW-218 post-closure, the source water (term) was then adjusted by removing realgar from contact with the source water (all other calibrations remained the same, e.g., mix ratio and measured sump water arsenic concentration). The post-closure conditions are modeled without realgar to reflect the reduction of infiltration (drawdown of fluid head) associated with installation of the low permeability soil cover over the Bottom Ash Landfill at closure. The removal of realgar also simulates reduced CCR interactions with water, allowing for equilibration with native groundwater redox/pH, and the cessation of arsenic loading at concentrations higher than measured in the sump water. The subsequent use of the measured concentration of arsenic in sump water for the post-closure model is a conservative assumption that simulates an ongoing constant release (however, the installation of the low permeability soil cover is expected to reduce the generation of leachate from the unit). The transport model was run under these conditions for an additional 100 years to predict arsenic concentrations at MW-103, evaluate the transport of dissolved arsenic along the transect, and determine the efficiency of arsenic attenuation to aquifer solids.

4.3 Mineral Precipitation and Co-precipitation

The potential for mineral precipitation was assessed in PHREEQC using saturation indices (SI) calculated according to Equation 1.

$$SI = \log\left(IAP/K_{sp}\right) \quad \text{(Eq. 1)}$$

The saturation index is the ratio of the ion activity product (IAP) of a mineral to the solubility product (K_{sp}). An SI value greater than zero indicates that the solution is supersaturated with respect to a particular mineral phase and, therefore, precipitation of this mineral may occur. An evaluation of precipitation kinetics is then required to determine whether the supersaturated mineral will indeed form. An SI value less than zero indicates the solution is undersaturated with respect to a particular mineral phase. An SI value close to zero indicates equilibrium conditions exist between the mineral and the solution. SI values between -0.5 and 0.5 are considered to represent “equilibrium” in this report to account for the uncertainties inherent in the analytical methods and geochemical modeling.

In addition to adsorption, co-precipitation, or the direct incorporation of trace metals into precipitated iron oxide-oxyhydroxides, has been previously identified as a process of potential importance in trace metal sequestration (e.g., Butt et al. 2000; Dzombak and Morel 1990; Smith 1999). Metals may also be incorporated during the formation of ferrihydrite as opposed to subsequent adsorption following its formation (Weber et al. 2006). However, these processes are not accounted for in modeling or as part of this MNA demonstration as they cannot be fully elucidated in the environment.

4.4 Long-Term Stability of Attenuated Constituents

Three sensitivity analyses were performed to assess the long-term stability of attenuated arsenic under variable pH, redox, and ionic strength conditions. Variations in pH, redox, and ionic strength are the types of changes with the highest potential to impact arsenic sequestration that will occur in an aquifer over time (ITRC 2010). The sensitivity analyses were conducted applying the minimum, mean, and maximum Hfo and Hao contents determined for the Site soils. Surface sites are then equilibrated with the groundwater qualities observed at the Site at the measured pH and redox conditions to set a basis. Two versions of these analyses were run: a scenario using groundwater quality information (samples) from all downgradient wells and a scenario using groundwater data from samples from just the delineation wells where arsenic has not exceeded the GWPS (Table 3). For each sensitivity analysis, a single parameter was varied, as follows:

- **pH:** Hydrochloric acid or sodium hydroxide addition was used in the modeling simulations to vary the pH between 4 and 12, which is a range much wider than that observed at the site (which have historically ranged from 6.5 to 10). A pH range of 4 to 10 is the typical range considered for evaluating metal speciation. At a pH below 5, Hfo tends to become unstable, limiting attenuation/adsorption and causing a decrease in modeled attenuation even in the presence of Hao, which will remain stable until a pH range of approximately 3.5.
- **Redox:** Addition of DO was simulated to adjust redox (Eh) values between -200 and +700 millivolts (mV). This encompasses the historical and anticipated range of Eh in groundwater at the site (Section 5.1).
- **Ionic Strength:** The effect of ionic strength on arsenic concentrations was evaluated using total dissolved solids (TDS) because higher TDS concentrations can lead to arsenic desorption due to adsorptive competition. TDS concentrations were increased by titrating in calcium, magnesium, sodium, potassium, chloride, and sulfate in the proportions observed in monitoring wells at the Site. For modeling, TDS concentrations up to 4,650 mg/L were evaluated, which is approximately 5 times the average TDS concentration observed in monitoring wells at the Site.

4.5 Geochemical Modeling Assumptions and Data Handling

Assumptions related to data handling practices and geochemical modeling were as follows:

- **Groundwater continuity:** Samples from wells with analytical results for a full suite of constituents and parameters, as described in Section 3.1, were used for geochemical modeling. The resulting data are assumed to provide a comprehensive overview of Site conditions.
- **Background groundwater chemistry:** Groundwater samples collected from MW-105, MW-214, MW-6B, MW-7A, MW-7B, and MW-8B were used to represent natural background conditions.

- **Sump Water Chemistry:** Water chemistry of the porewater of the bottom ash landfill was modeled based on concentrations measured in the Bottom Ash Impoundment sump. Note that the Bottom Ash Impoundment and Bottom Ash Landfill generally contain the same CCR and other waste materials, thus samples of sump water are expected to be representative of porewater from the Bottom Ash Landfill. Five samples of sump water (BAI-Sump-S) were collected from October 2019 to March 2023. Generally, concentrations of the major constituents and metals were consistent across sampling events. The sample from October 2019 was used for MNA modeling purposes because it had the highest concentration of arsenic.
- **Non-detect values:** Constituents with concentrations less than their respective method detection limits were assumed to have a concentration equal to the practical quantitation limits.
- **Redox:** Field ORP was not adjusted to Eh for this MNA evaluation due to the presence of dissolved iron (filtered) in groundwater samples indicating that, at this site, Eh is likely equal to ORP.
- **Total recoverable concentrations:** Total recoverable fraction results were used for all analytes when available.
- **Charge balance:** Groundwater compositions with charge balance errors less than 10% were considered valid. Compositions with charge balance errors greater than 10% were included in the assessment but are considered to be less reliable. In March 2023, the charge balances of the groundwater samples from wells MW-212 and MW-9N were greater than 10% (shown in red on Table 5).

Certain wells were not included for MNA modeling evaluation for the following reasons:

- **MW-1R:** Groundwater from this well had high turbidity (185 NTU) when sampled in December 2022 and was not sampled during the March 2023 sampling event. Additionally, well MW-1R is not located downgradient of either the Bottom Ash Landfill or MW-103 and has not been included in these analyses due to lack of relevance to the units.

5.0 SITE CHARACTERIZATION

5.1 Groundwater and Sump Water

Comprehensive water quality data from background wells, downgradient wells, and the sump were used for this MNA evaluation. The water quality monitoring data can be summarized as follows:

Groundwater and Sump Water Chemistry:

- **pH (field):** The pH of background and downgradient wells ranged from 6.9 to 9.5 across the Site from June 2016 to March 2023 (Figure 2). The pH of sump water ranged from 7.1 to 9.5 between October 2019 and March 2023.
- **Redox (field):** Field-measured ORP of background and downgradient wells ranged from -186.3 to +285.8 mV across the Site from June 2016 to March 2023 (Figure 3).
- **TDS:** Groundwater TDS concentrations shown on Figure 4 ranged from 693 (MW-8B) to 3,320 mg/L (MW-9N) in background and downgradient wells from June 2016 to March 2023, with the exception of background well MW-7A, which is located upgradient of the Bottom Ash Impoundment, where TDS consistently ranged between 14,200 and 17,600 mg/L. Well MW-7A has historically had high TDS since the early 1980s and the TDS is at least 5 times lower at every other well. The high TDS at MW-7A is not

expected to result in a dramatic increase in TDS at the downgradient wells based on observations of groundwater downgradient of MW-7A over the last 40 years at the site. Notably, wells MW-212 and MW-221 are located immediately adjacent to MW-103 (where the SSL for arsenic occurs). At those wells, TDS concentrations are relatively low, ranging from 1,030 to 1,580 mg/L. The TDS of sump water ranged from 5,880 mg/L to 11,000 mg/L between October 2019 and March 2023.

- **Major ion chemistry:** A trilinear (Piper) diagram was generated for the most recent samples from the background and downgradient wells to facilitate the identification of the major water type at each location and potential source contributions (Figure 5). Groundwater at the site was a mixture of sodium bicarbonate or sodium sulfate water type (Table 5). Based on major ion relative abundance no differences in groundwater type or quality can be discerned between background and downgradient wells.

- **Iron:** The concentration of total iron in groundwater was variable, ranging from non-detect (< 0.1 mg/L) to 43.7 mg/L (November 2018 to March 2023). The highest concentration of total iron was observed in groundwater at well MW-211 (November 2022). Dissolved iron (filtered) in groundwater ranged from non-detect (< 0.1 mg/L) to 1.61 mg/L (June 2016 to November 2019). The highest concentration of dissolved iron (filtered) in groundwater was observed in downgradient well MW-1R (October 2017). The concentration of total iron in sump water was non-detect (< 0.5 mg/L) between October 2019 and March 2023 (dissolved iron was not measured).

- **Arsenic**: Arsenic concentrations in groundwater ranged from non-detect (< 0.002 mg/L) to 0.0496 mg/L between June 2016 and March 2023 (Figure 6). Downgradient delineation wells MW-211 and MW-221 both have had sampling events with arsenic concentrations above the GWPS (0.01 mg/L). In sump water, arsenic concentrations have ranged from non-detect to 0.03 mg/L. Arsenic concentrations in downgradient well MW-103 have exceeded the GWPS over multiple sampling events with a maximum concentration of 0.0227 mg/L in November 2019. Arsenic at well MW-103 has been statistically decreasing (where $p \geq 0.05$; USEPA 2009; Figure 7) based on a Mann-Kendall trend evaluation since July 2016. Based on the pH and redox of the groundwater samples, arsenic is expected to occur both in the oxidized form arsenate [As^{+5}] and the reduced form arsenite [As^{+3}] in background and downgradient groundwater samples (Figure 8). Arsenate has a greater affinity for sorption (attenuation) on metal (hydr)oxide surfaces than the reduced form, arsenite [As^{+3}], and is generally regarded to be less mobile in natural environments (Campbell and Nordstrom 2014).

5.2 Saturation Indices

The results of speciation modeling of groundwater from background wells and downgradient wells are provided in Table 5. Mineral saturation plays an important role in attenuation of metals, either directly by their removal through mineral precipitation, or indirectly by providing a sorptive surface. The results of the speciation modeling can be summarized as follows:

- **Iron-bearing minerals:** The model indicated ferrihydrite [$Fe(OH)_3$] and siderite [$FeCO_3$] are at equilibrium with groundwater or oversaturated among samples from both background and downgradient wells, indicating the potential for these minerals to form. Both ferrihydrite and siderite are recognized to sequester arsenic from groundwater (Dzombak and Morel 1990; Jönsson and Sherman 2008).

- **Other minerals:** The model indicated background and downgradient wells are at equilibrium or oversaturated with respect to calcite [$CaCO_3$] and barite [$BaSO_4$]. Magnesite [$MgCO_3$] was at equilibrium or oversaturated in groundwater at all wells except MW-6B, MW-1R, MW-104, MW-301, and MW-PB3. Gypsum [$CaSO_4$:$2H_2O$] was at equilibrium in groundwater at well MW-9A.

Barite, calcite, ferrihydrite, and siderite can each contribute to controlling major groundwater ion composition at some or all well locations. Ferrihydrite and siderite can also reduce the dissolved concentration of arsenic through precipitation / co-precipitation in addition to adsorption (Dzombak and Morel 1990; Jönsson and Sherman 2008).

5.3 Compositional Analysis of Aquifer Materials

5.3.1 Mineralogical Composition

Quantitative X-ray diffraction (XRD) with Rietveld refinement was used to identify and quantify the mineralogy of nine aquifer solids samples collected from nine well locations: MW-214, MW-210, MW-211 (listed as sample MW-211B), MW-212 (listed as sample MW-212A), MW-213, MW-217, MW-218, MW-300, and MW-PB3. These samples were analyzed in October 2023. The samples were used to better understand the mineralogical composition of the aquifer system and identify any minerals that could potentially influence the attenuation of arsenic. The presence of certain minerals could also indicate a potential for the naturally occurring release of metals into groundwater, for instance due to oxidation of sulfide minerals.

The mineralogical analysis determined that the aquifer materials predominately consist of quartz, with varying amounts of the silicate minerals albite, muscovite, and chlorite (Figure 9). Small amounts of calcite and dolomite are also present at varying concentrations in all samples, which can co-precipitate with arsenic. Iron oxides were not detected. The analytical report for the XRD samples is provided in Appendix B.

5.3.2 Chemical Composition

The results of the chemical analysis, including CEC, TOC, and SEP, were used to characterize the composition of the aquifer materials and the distribution of arsenic over various operationally defined fractions that describe the metals in various solid fractions. This testing was completed as described in Section 3.2.1 and results are presented in Tables 6, 7, and Appendix C.

Total metal quantities from the sequential extraction are expressed as “SEP Total.” The sum of the sequential extraction steps is also presented in laboratory reports for comparison but does not represent an analytically determined value.

The results from the sequential extraction described in WSP (2023a) and additional testing can be summarized as follows:

General Chemistry

- **Aluminum:** Total aluminum in aquifer solids ranged from 27,876 to 45,461 mg/kg, and the environmentally available fraction ranged from 603 mg/kg (MW-212A) to 2,263 mg/kg (MW-214). Aluminum in the soil at the Site is largely (93% to 98%) present in the residual, or silicate-bound, fraction (Figure 10). This fraction likely includes clays intermixed in the silica sand matrix. Clays represent an important sorptive reservoir for numerous trace metals and metalloids (Uddin 2017). Aluminum is not a COI at the Site, but it has been well studied as a sorbing medium in soils (e.g., Karamalidis and Dzombak 2011).

- **Iron:** Iron was present in each of the 10 aquifer solid samples analyzed, ranging from 14,060 mg/kg (MW-210) to 30,880 mg/kg (MW-213). The iron present in the environmentally available portion (Steps 1 through 5) of the 10 samples analyzed ranged from 20% to 63% of the iron present (Figure 11). Iron in Steps 3 and 4 ranges from 3,250 to 19,800 mg/kg (Figure 11). Of the environmentally available fraction, Steps 3 and 4 can generally be considered representative of the amount of iron in soil that may be available as a sorbing medium and can therefore be used as a proxy for determining the potential for attenuation of arsenic.

- **Arsenic:** Total arsenic in materials collected from the aquifer ranged from 4.6 to 10.13 mg/kg, while the environmentally available fraction ranged from 0.29 mg/kg in MW-213 to 2.7 mg/kg in MW-211A (Figure 12). The non-environmentally available fraction of arsenic (acid/sulfide and residual fractions) ranged from 51% to 96% of total arsenic, demonstrating the presence of a reservoir of naturally occurring arsenic in soils. The arsenic that was present in the environmentally available fraction was associated with the amorphous and metal hydroxide fractions, providing a good indication that adsorption to metal hydroxides in the aquifer is occurring.

- **Total Organic Carbon**: TOC was highly variable across the aquifer solids samples, ranging from 990 mg/kg to 28,000 mg/kg (Table 6). Arsenic in groundwater has been shown to adsorb to organic matter or be reduced and then potentially precipitate with a sulfide mineral (Hem 1985). The presence of organic carbon in the aquifer materials potentially provides an additional means of attenuation of arsenic in addition to sorption onto (hydr)oxide surfaces.

Table 6: Total Organic Carbon Content of Solids Samples in the Aquifer

Sample ID	Total Organic Carbon (mg/kg)
MW-210	990
MW-211B	1,900
MW-212A	9,000
MW-213	8,000
MW-217	9,700
MW-218	2,700
MW-300	9,200
MW-PB3	28,000

- **Cation Exchange Capacity:** CEC in aquifer solids samples ranged from 3.6 milliequivalents (meq)/100g at MW-213 to 50 meq/100g at MW-PB3 (Table 7). Most CEC values were low (< 30 meq/100g), indicating a limited number of cationic exchange sites available. CEC, while important for understanding the attenuation of some COIs, has little effect on arsenic because arsenic predominantly speciates as an anion in groundwater at the site (Section 5.1; Figure 8).

Table 7: Cation Exchange Capacity of Solid Samples in the Aquifer

Sample ID	Cation Exchange Capacity (meq/100g)
MW-210	4.4
MW-211B	13
MW-212A	24
MW-213	3.6
MW-217	4.4
MW-218	5.7

Sample ID	Cation Exchange Capacity (meq/100g)
MW-300	12
MW-PB3	50

Based on the above results, attenuation of arsenic by adsorption onto amorphous metals and metal hydroxides is the primary process occurring (Steps 3 and 4). Clay minerals may also play an important role in sequestering arsenic through cation exchange; however, that attenuation process is not modeled here due to the anionic behavior of arsenic within the groundwater at the site and the minimal cation exchange capacity measured for site soils.

5.4 Modeled Attenuation Rate

The results of attenuation / reactive 1-D transport modeling demonstrate that arsenic is not predicted to exceed the GWPS further than approximately 50 feet from MW-103 under the modeled conditions and time frame (Figure 13). The modeling takes into account mixing, sorption, groundwater migration, and possible changes in geochemical conditions. Thus, the observed exceedance at MW-103 is likely localized, and the impacted area is not expected to increase in size.

Attenuation modeling generally indicated a stable trend in the arsenic concentrations at MW-103 over the modeled timeframe. However, empirical groundwater data demonstrates that there is currently a statistically significant decreasing trend in arsenic concentrations at MW-103 over the period of record (Figure 7). The difference between modeled and empirical results is due to the cautious approach of assuming a constant ongoing release of arsenic following closure in the 1-D transport modeling. The closure of the unit with an engineered soil cover is expected to reduce the amount of infiltration leading to a reduction of leachate creation and release (Golder 2022).

The model indicates under the current conditions, there is minimal capacity to further attenuate arsenic in the immediate area of MW-103. As the water quality passing beneath the landfill improves over time (through the reduction of infiltration from the landfill), the spatial distribution of arsenic will equilibrate with surrounding aquifer solids, gradually reducing the arsenic concentrations in groundwater near MW-103. However, equilibration is a slow process and modeling indicates that arsenic near MW-103 will remain at concentrations similar to those that have been documented to date for the modeled time frame (Figure 13).

To decrease the amount of time necessary to meet the GWPS, additions to the system (generally referred to as enhanced MNA) will be considered. Enhancements may include increasing the amount of sorption sites through the addition of iron or aluminum substances, air sparging to alter the redox conditions of the system, or other alternatives.

5.5 Capacity of Attenuation Mechanisms

Attenuation capacity modeling revealed adequate attenuation capacity downgradient of the Bottom Ash Landfill (with the exception of the area immediately surrounding MW-103) to reduce the concentration of arsenic below the groundwater protection standard. Figures 14a and 14b display the predicted aqueous arsenic concentrations in the two modeling scenarios introduced in Section 4.1.1 (downgradient wells (14a) and the delineation-only-wells (14b)). The colored bold lines display the geometric means using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites for the two modeled groundwater scenarios and the grey area represents the range for the 5th to 95th percentile of all tested aquifer solids-groundwater combinations.

The predicted dissolved concentrations are compared against the GWPS for arsenic and the actual range of sump water arsenic concentrations (Figures 14a and 14b). On the plot, the further the predicted trajectory is to the right of the diagonal 1:1 line, the larger the amount of arsenic that can be attenuated by aquifer materials and removed from the aqueous phase. Notably, the trajectory for arsenic is nearly flat, and not parallel to the 1:1 line, indicating that there is sufficient sorption capacity to sequester arsenic, unless the concentrations were to increase substantially above the current source concentrations. The modeling results suggest that adsorption has the capacity to reduce groundwater arsenic concentrations from approximately 3.0 mg/L (an elevated concentration over what has ever been measured in the source area that is used for modeling purposes) to below the GWPS of 0.01 mg/L. This starting concentration is 2 orders of magnitude higher than measured in the sump water, indicating that there is significantly more adsorption capacity than required.

The attenuation capacity of aquifer materials is expected to lose efficacy as modeled arsenic starting concentrations approach 3.0 mg/L (much higher than the concentrations that have been recorded at the Site). This results in the predicted aqueous concentrations after adsorption approaching, but still remaining below, the GWPS (Figure 14a; Minimum Hfo case; shown as a black line). However, there is no evidence to show that source arsenic will increase to this level, and the modeling is for the purpose of determining these limits. Results of the delineation-only-wells scenario modeling indicate there is higher capacity and abundant attenuation capacity for arsenic downgradient of MW-103. The results of this subset of wells demonstrates that adsorption has the capacity to attenuate arsenic beyond the modeled concentrations and to reduce arsenic concentrations in groundwater greater than 3.0 mg/L (the highest concentration tested by the model) to below the GWPS of 0.01 mg/L with very high efficiency (Figure 14b).

The results of both capacity modeling scenarios clearly demonstrate that aquifer capacity exists for the attenuation of arsenic by aquifer solids at the Site at source concentrations much higher than have been recorded. Further, when evaluating the wells downgradient of MW-103 where arsenic has not exceeded the GWPS previously, it is predicted by the models that the aquifer materials will have a very high efficiency for arsenic attenuation into the future.

5.6 Constituent Stability

The effects of pH, Eh, and TDS on dissolved arsenic concentrations in groundwater are presented in Figures 15a and 15b, 16a and 16b, and 17a and 17b, respectively. Figures 15a, 16a, and 17a present the modeling results for the downgradient-wells scenario; Figures 15b, 16b, and 17b present the modeling results for the delineation-wells-only scenario. The results of the adsorption stability modeling for arsenic can be summarized as follows:

- **pH:** Over the range of pH measured onsite, arsenic is expected to remain attenuated on solids in the aquifer. For arsenic, neutral pH values are generally more favorable for adsorption (Figure 15a and 15b). Under alkaline conditions (pH greater than 10), nearly all arsenic desorbs, and concentrations can exceed the GWPS. Under acidic conditions (pH less than 7), arsenic also starts to desorb, and concentrations can exceed the GWPS. In the pH range of 7 to 10, small decreases in pH (e.g. a decrease from pH 9 to 7) can lead to the release of arsenic due to adsorptive equilibrium with aquifer solids. However, these releases are typically small and are quickly attenuated by other adsorptive materials. In the delineation-wells-only scenario, desorption starts to occur at a slightly lower pH than in the downgradient-wells scenario (Figure 15a and 15b).

However, based on the range of groundwater pH observed across the downgradient wells (6.9 to 9.5), arsenic is expected to remain attenuated on aquifer solids based on the mean attenuation capacity (shown in yellow), at wells where arsenic is not currently exceeding the GWPS (Figure 15a). In the delineation-wells-only scenario, results are even more favorable, as these wells have not had arsenic GWPS exceedances and show a greater range for arsenic stability and a narrower range of observed groundwater pH (Figure 15b).

- **Redox:** Over the range of measured redox values for the downgradient-wells (Figure 16a) and the delineation-wells-only (Figure 16b) scenarios, arsenic sorption is stable. Arsenic, once attenuated, is generally unresponsive to changes in redox and arsenic concentrations are predicted to remain below the GWPS. Based on historical groundwater redox conditions, any changes in redox conditions are expected to be minor and have little to no influence on arsenic concentrations.
- **TDS:** There is no evidence to suggest, based on groundwater TDS concentrations in downgradient wells, that levels will increase to a level that would cause enough arsenic desorption into groundwater to exceed the GWPS. Figure 17a and 17b show the results of the modeling simulations investigating the effect of changes in TDS on arsenic adsorption. In the downgradient-wells scenario, aqueous concentrations of arsenic did not exceed the GWPS even when the TDS concentration was greater than approximately 4,650 mg/L (Figure 17a and 17b). Notably, no downgradient well location at the Site has had TDS concentrations exceeding 3,320 mg/L.

6.0 TIER II EVALUATION

The purpose of the Tier II evaluation is to identify mechanisms and rates of the operative attenuation process (USEPA 2007a). Based on this definition, the following modeling results and observations support MNA as a viable corrective measure for the Bottom Ash Landfill:

- **Attenuation mechanisms:** PHREEQC modeling results (supported by SEP data) indicate that adsorption is likely attenuating arsenic downgradient of the Bottom Ash Landfill. The arsenic titration modeling (Figure 14a and 14b) demonstrates the capacity of the aquifer solids to attenuate arsenic and maintain concentrations below the GWPS even if source location arsenic concentrations were to increase. In addition to sorption onto metal hydroxides, sorption onto organic matter, and mineral precipitation (Sections 5.2, 5.3.1, and 5.3.2, respectively) are also likely occurring based on results of SEP testing. Clay minerals can also act as a substrate for attenuation (Uddin 2017) but this mechanism is not directly addressed in the current evaluation. In contrast to the cautious modeling approach for source location arsenic concentrations, empirical groundwater data at MW-103 indicate an ongoing decrease in arsenic concentrations.
- **Estimated Site attenuation rates:** Based on the 1-D reactive transport modeling that takes into account mixing, sorption, groundwater migration, and possible changes in geochemical conditions, arsenic levels are expected to remain below the GWPS farther than 50 feet from MW-103 for the next 100-years (extent of model prediction; Figure 13). Although attenuation rate modeling indicates that arsenic will remain below the GWPS farther than 50-feet from MW-103 (CCR unit boundary), it may take a long time (greater than 100 years) before arsenic is below the GWPS at MW-103.

Based on these findings, arsenic meets the criteria for Tier II MNA in accordance with USEPA guidance (USEPA 2007a and 2007b).

7.0 TIER III EVALUATION

According to USEPA (USEPA 2007a), the purpose of the Tier III evaluation is to eliminate MNA as a remedy at sites where (1) “there is insufficient capacity in the aquifer to attenuate" the Constituent of Concern (COC) mass to regulatory standards and/or (2) stability of the immobilized COC is “insufficient to prevent re-mobilization due to future changes in ground-water chemistry”. Based on this definition, the following observations support MNA as a viable corrective measure for the Bottom Ash Landfill:

- **Adsorption capacity modeling:** Modeling indicates that the soils in the aquifer have adsorption capacity to attenuate groundwater arsenic concentrations from approximately 3.0 mg/L to below the GWPS of 0.01 mg/L. Estimated concentrations in landfill porewater, the potential source, are two or more orders of magnitude lower than this concentration, with concentrations ranging from below detection (< 0.002 mg/L) to 0.03 mg/L. The 95th percentile of modeled trajectories shows that conditions at downgradient wells where arsenic has not exceeded the GWPS are favorable for attenuating arsenic, as seen by the difference in angle compared to the 1:1 line (Figure 14a). Further, the capacity for arsenic attenuation at the delineation wells (Figure 14b) is even greater than at the downgradient-wells group that includes MW-103. Thus, modeling indicates adequate adsorption capacity exists at the Site to ensure that arsenic levels stay below the GWPS outside the localized arsenic plume area at MW-103. This is supported by the observed decreasing trend in arsenic concentration at MW-103, indicating less leachate infiltration to groundwater passing beneath the landfill that equilibrates with aquifer solids.
- **Stability modeling for adsorbed constituents:** Stability modeling indicates that over the ranges of pH, redox, and TDS observed in groundwater at the Site, adsorbed arsenic will not remobilize to the extent that there would be a GWPS exceedance. The modeling results further indicate that while the adsorption of arsenic can be reversed under sufficiently alkaline or acidic conditions, there are no indications, geochemical mechanisms, or historical evidence to expect such an occurrence. Generally, Site groundwater is circum-neutral and the pH has remained stable since sampling began in 2016. The exception is MW-103 (Figure 2) where, since 2018, the pH has been statistically decreasing ($p \leq 0.05$), which will enhance arsenic attenuation as groundwater becomes less alkaline. Thus, it is likely that the groundwater pH will remain consistent at each well, supporting continued arsenic attenuation and stable adsorption of this constituent. Results of redox and TDS stability modeling showed minimal response of arsenic sorption to expected changes in groundwater redox or TDS. Based on the redox and TDS ranges observed in downgradient wells, it is unlikely for arsenic to be mobilized into groundwater.

Based on these findings, arsenic meets the criteria for Tier III MNA in accordance with USEPA guidance (USEPA 2007a and 2007b).

8.0 CONCLUSION

This report presents the results of a Tier II and III evaluation conducted to determine the feasibility of using MNA as a remedial strategy for arsenic at the Stanton Station Bottom Ash Landfill. This evaluation has been completed in accordance with guidance and best practices promulgated by the USEPA (USEPA 2007a, 2007b, 2015) and the ITRC (ITRC 2010). Based on the results of this evaluation, attenuation of arsenic is occurring. Arsenic levels in groundwater are decreasing at MW-103 (the well with the SSL and arsenic concentrations above the GWPS) and levels appear stable elsewhere. Additionally, the aquifer has adequate capacity to attenuate arsenic to below the GWPS where it has not been exceeded. Modeling indicates that arsenic attenuation will be efficient and stable in the long term. Therefore, MNA is considered a suitable corrective measure to address arsenic at the Stanton Station Bottom Ash Landfill.

However, attenuation rate modeling indicates that although arsenic will remain below the GWPS farther than 50-feet from MW-103 (CCR unit boundary), it may take a long time before arsenic is below the GWPS at MW-103.The actual time to attain the GWPS may be quicker than modeled based on:

- The impact of the engineered soil cover to reduce infiltration, which in turn is expected to reduce the quantity of leachate and/or concentration of arsenic in leachate coming from the Bottom Ash Landfill. This may result in a lower source than currently modeled which would allow for attain the GWPS more quickly.
- The potential for natural attenuation to occur laterally and vertically which is not captured in the one-dimensional model. Natural attenuation in three dimensions may allow for attain the GWPS to occur quicker.
- Monitoring of the total arsenic concentrations at MW-103 is indicating a statistically significant downward trend since the well was installed in 2016. This trend may be indicative of the items listed above and other variables that may also allow for attain the GWPS more quickly.

Despite these potential conditions, which may decrease the time to attain the GWPS, other options can be evaluated to decrease the amount of time necessary to meet the GWPS. Enhancements may include increasing the amount of attenuation capacity through the addition of iron or aluminum particles, the addition of oxidation mechanisms (such as air sparging) to alter the redox conditions of the system, or other alternatives.

A Tier IV evaluation to design a long-term MNA monitoring plan will be completed in the event that MNA is selected as the remedy/corrective measure for arsenic at the Stanton Station Bottom Ash Landfill.

Prior to final remedy selection, a final analysis of a chosen remedy will be conducted to demonstrate that the chosen remedy will meet the requirements of the Federal CCR rule at 40 CFR 257.97(c) and the State CCR rule at NDAC 33.1-20-08-06(7)(c).

9.0 REFERENCES

Appelo C and Postma D. 2005. Geochemistry, Groundwater and Pollution. 2nd Edition. Boca Raton, FL.

Bethke C, Farrell B, and Sharifl M. 2023. The Geochemist's Workbench, Release 17. GWB Essentials Guide. Aqueous Solutions, LLC., Champaign, IL

Butt C, Lintern M and Anand R. 2000. Evolution of regoliths and landscapes in deeply weathered terrain—implications for geochemical exploration. Ore geology reviews, 16(3-4), pp.167-183.

Campbell K and Nordstrom D. 2014. Arsenic Speciation and Sorption in Natural Environments. Reviews in Mineralogy and Geochemistry, 79(1), pp.185-216.

Davis J and Kent D. 1990. Surface Complexation Modeling in Aqueous Geochemistry, Eds. M.F. Hochella and A.F. White, Mineral-Water Interface Geochemistry, Min. Soc. Am. Reviews in Minerology, 23, pp.177-260.

Dzombak D and Morel F. 1990. Surface complexation modeling: hydrous ferric oxide. John Wiley & Sons.

Golder (Golder Associates USA Inc.). 2022. Assessment of Corrective Measures. November 21, 2022.

Grafe M, Eick M, and Grossl P. 2001. Adsorption of arsenate (V) and arsenite (III) on goethite in the presence and absence of dissolved organic carbon. Soil Science Society of America Journal, 65(6), pp.1680-1687.

Hem J. 1985. Study and Interpretation of the Chemical Characteristics of Natural Water. United States Geological Survey Water-Supply Paper 2254.

ITRC. 2010. A Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater. Technical/Regulatory Guidance.

Jönsson J and Sherman D. 2008. Sorption of As (III) and As (V) to siderite, green rust (fougerite) and magnetite: Implications for arsenic release in anoxic groundwaters. Chemical Geology, 255(1-2), pp.173-181.

Karamalidis A and Dzombak D. 2011. Surface Complexation Modeling: Gibbsite. John Wiley & Sons.

Parkhurst D and Appelo C. 2013. Description of input and examples for PHREEQC Version 3: a computer program for speciation, batch-reaction, one-dimensional transport, and inverse geochemical calculations (No. 6-A43). US Geological Survey.

Smith K. 1999. Metal sorption on mineral surfaces: an overview with examples relating to mineral deposits. The Environmental Geochemistry of Mineral Deposits. Part B: Case Studies and Research Topics, 6, pp.161-182.

Tessier A, Campbell P, and Bisson M. 1979. Sequential extraction procedure for the speciation of particulate trace metals. Analytical chemistry, 51(7), pp.844-851.

Uddin M. 2017. A review on the adsorption of heavy metals by clay minerals, with special focus on the past decade. Chemical Engineering Journal, 308, pp.438-462.

USEPA (United States Environmental Protection Agency). 1998. MINTEQA2/PRODEFA2, A geochemical assessment model for environmental systems—User manual supplement for Version 4.0: Athens, Georgia, National Exposure Research Laboratory, Ecosystems Research Division, 76 p. Revised September 2006. Amended 2017.

USEPA. 2007a. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 1. Technical Basis for Assessment. EPA/600/R-07/139.

USEPA. 2007b. Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 2. Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium. EPA/600/R-07/140.

USEPA. 2009. Unified Guidance, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Office of Solid Waste Management Division.

USEPA. 2015. Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites. OSWER Directive 9283.1-36

Weber K, Achenbach L, and Coates J. 2006. Microorganisms Pumping Iron: Anaerobic Microbial Iron Oxidation and Reduction. Nature Reviews Microbiology, 4(10), pp.752-764.

WSP (WSP USA Inc.). 2023a. Tier I MNA Evaluation for Arsenic – Bottom Ash Landfill – Stanton Station. April 13, 2023.

WSP. 2023b. Annual Groundwater Report, Great River Energy – Stanton Station. January 31, 2023.

WSP. 2024. Annual Groundwater Report, Great River Energy – Stanton Station. January 31, 2024.

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TABLES

Table 5: Saturation Indices of Select Minerals

Table 5. Saturation Indices of Select Minerals

	Well ID	MW-105 (3/21/2023)	MW-214 (3/21/2023)	MW-6B (3/21/2023)	MW-7A (3/21/2023)	MW-7B (3/21/2023)	MW-8B (3/21/2023)	MW-9N (3/21/2023)	MW-102 (3/21/2023)	MW-103 (3/21/2023)	MW-1R (6/28/2022)	MW-104 (6/28/2022)	MW-210 (3/21/2023)
	Water Type	Na-HCO_3	Na-HCO_3	Na-HCO_3	Na-SO_4	Na-HCO_3	Na-HCO_3	Na-SO_4	Na-HCO_3	Na-SO_4	Na-HCO_3	Na-HCO_3	Na-HCO_3
Charge Balance	%	6.3	4.7	1.6	6.4	5.3	5.9	**10.4**	8.9	9.6	4.5	2.8	8.5
Otavite	$CdCO_3$	-1.4	-1.5	-1.5	-2.6	-1.4	-1.9	-1.9	-1.6	-1.0	-1.7	-2.0	-1.5
Ferrihydrite	$Fe(OH)_3$	**1.7**	**2.9**	**3.2**	**1.4**	-1.5	**1.3**	**0.2**	**1.9**	**2.9**	**-0.4**	**1.2**	**-0.1**
Siderite	$FeCO_3$	**0.1**	**0.4**	**-0.2**	-1.1	**0.1**	-1.3	-1.0	**0.1**	**-0.3**	**1.2**	-1.4	**1.3**
Melanterite	$FeSO_4$ $7H_2O$	-5.7	-5.0	-5.8	-5.5	-5.7	-6.7	-6.0	-5.4	-6.9	-4.3	-6.5	-4.4
Anglesite	$PbSO_4$	-4.8	-4.7	-5.0	-4.3	-5.4	-5.1	-4.7	-5.1	-6.1	-5.1	-4.8	-4.7
Gypsum	$CaSO_4$:$2H_2O$	-1.5	-1.3	-1.7	**0.1**	-1.9	-1.4	-0.9	-1.2	-1.4	-1.0	-1.1	-1.2
Jarosite-H	$(H_3O)Fe_3(SO_4)_2(OH)_6$	-10.5	-6.6	-5.6	-7.6	-19.9	-10.0	-11.9	-9.0	-10.7	-15.7	-9.0	-16.0
Jarosite-K	$KFe_3(SO_4)_2(OH)_6$	-2.7	**1.4**	**1.9**	**0.4**	-12.1	-2.9	-4.3	-1.5	-1.7	-8.4	-1.9	-8.1
Jarosite-Na	$NaFe_3(SO_4)_2(OH)_6$	-4.6	**-0.4**	**0.4**	-1.0	-13.8	-5.1	-6.1	-3.1	-3.4	-10.3	-3.9	-10.0
Calcite	$CaCO_3$	**0.5**	**0.4**	**0.0**	**0.6**	**0.0**	**0.2**	**0.2**	**0.4**	**1.2**	**0.6**	**0.1**	**0.6**
Magnesite	$MgCO_3$	**0.6**	**-0.1**	-0.9	**0.4**	**-0.5**	**-0.4**	**0.0**	**-0.2**	**0.7**	-0.7	-1.0	**-0.3**
Barite	$BaSO_4$	**1.1**	**0.9**	**0.7**	**0.8**	**0.3**	**0.3**	**1.2**	**0.9**	**1.1**	**0.9**	**0.9**	**0.9**
Witherite	$BaCO_3$	-2.3	-2.8	-3.0	-4.1	-3.2	-3.6	-3.1	-2.9	-1.6	-2.8	-3.3	-2.7
Fluorite	CaF_2	-1.8	-2.1	-2.3	-1.9	-2.2	-2.7	-1.9	-2.0	-2.6	-1.4	-1.6	-1.8
$CoCO_3$	$CoCO_3$	-2.6	-2.9	-2.9	-3.8	-2.8	-3.3	-2.8	-2.6	-2.1	-3.0	-3.3	-2.8
Cerrusite	$PbCO_3$	-1.0	-1.3	-1.6	-2.0	-1.8	-1.8	-1.9	-1.8	-1.7	-1.9	-2.0	-1.2
Carbon Dioxide	$pCO_{2(g)}$ (b)	-2.1	-2.3	-2.2	-1.7	-2.2	-1.9	-1.5	-2.2	-3.5	-2.1	-1.6	-2.4

	Well ID	MW-211 (3/21/2023)	MW-212 (3/21/2023)	MW-213 (3/21/2023)	MW-216 (3/20/2023)	MW-217 (3/20/2023)	MW-218 (3/20/2023)	MW-220 (3/20/2023)	MW-221 (3/20/2023)	MW-300 (3/20/2023)	MW-301 (3/20/2023)	MW-PB3 (3/20/2023)
	Water Type	Na-SO_4	Na-HCO_3	Na-HCO_3	Na-SO_4	Na-SO_4	Na-SO_4	Na-SO_4	Na-SO_4	Na-SO_4	Na-HCO_3	Na-HCO_3
Charge Balance	%	5.8	**11.2**	5.3	4.3	3.6	1.7	4.3	4.5	4.7	6.3	6.2
Otavite	$CdCO_3$	-1.3	-1.1	-1.4	-1.5	-1.7	-1.7	-1.6	-1.7	-1.7	-1.1	-2.0
Ferrihydrite	$Fe(OH)_3$	**1.6**	**1.2**	-0.6	-1.3	-1.9	-2.2	**-0.3**	-1.2	**0.0**	**2.2**	**2.3**
Siderite	$FeCO_3$	**1.3**	**0.8**	**1.4**	**1.1**	**0.1**	**0.2**	**0.7**	**0.9**	**0.8**	**1.0**	**0.6**
Melanterite	$FeSO_4$ $7H_2O$	-4.4	-5.4	-4.4	-4.4	-5.0	-5.0	-4.8	-4.4	-4.5	-5.3	-4.5
Anglesite	$PbSO_4$	-4.6	-5.2	-4.7	-4.4	-4.9	-4.9	-4.8	-4.2	-4.7	-5.4	-3.6
Gypsum	$CaSO_4$:$2H_2O$	-1.2	-1.5	-1.1	-0.9	-0.8	-0.9	-1.0	-1.1	-0.8	-2.1	-0.9
Jarosite-H	$(H_3O)Fe_3(SO_4)_2(OH)_6$	-11.3	-14.2	-17.3	-18.9	-19.8	-20.6	-16.0	-17.7	-14.0	-11.1	-6.2
Jarosite-K	$KFe_3(SO_4)_2(OH)_6$	-3.2	-5.8	-9.5	-10.9	-12.0	-13.0	-8.1	-10.1	-6.2	-3.0	**1.4**
Jarosite-Na	$NaFe_3(SO_4)_2(OH)_6$	-4.9	-7.5	-11.5	-12.8	-13.8	-14.8	-10.0	-11.9	-8.2	-4.7	-0.8
Calcite	$CaCO_3$	**0.7**	**0.9**	**0.8**	**0.7**	**0.5**	**0.4**	**0.6**	**0.3**	**0.6**	**0.3**	**0.3**
Magnesite	$MgCO_3$	**0.2**	**0.0**	**-0.4**	**-0.2**	**-0.4**	**-0.5**	**-0.3**	**-0.4**	**-0.1**	-0.6	-0.6
Barite	$BaSO_4$	**1.7**	**1.0**	**1.0**	**1.3**	**1.0**	**1.0**	**1.1**	**1.1**	**1.4**	**0.6**	**1.3**
Witherite	$BaCO_3$	-1.8	-2.0	-2.5	-2.5	-3.1	-3.1	-2.7	-2.9	-2.6	-2.4	-2.9
Fluorite	CaF_2	-2.0	-2.2	-1.3	-1.7	-1.5	-1.7	-1.8	-2.1	-1.7	-2.6	-1.6
$CoCO_3$	$CoCO_3$	-2.3	-2.2	-2.7	-2.7	-3.1	-3.1	-2.9	-3.1	-2.8	-2.4	-3.0
Cerrusite	$PbCO_3$	-1.0	-1.2	-1.2	-1.1	-1.8	-1.8	-1.6	-1.1	-1.6	-1.3	-0.7
Carbon Dioxide	$pCO_{2(g)}$ (b)	-2.5	-2.9	-2.3	-2.3	-2.0	-1.9	-2.3	-2.0	-1.9	-2.7	-1.7

Notes:
Charge balances in red exceed 10%
Saturation indices >=-0.5 shown in bold and highlighted gray
(b) pCO2(g) values presented at $10^{\wedge value}$ atm
Data represents most complete dataset at each well location

Figures

LEGEND

- UPGRADIENT OR SIDEGRADIENT MONITORING WELL
- LANDFILL DOWNGRADIENT MONITORING WELL
- IMPOUNDMENT DOWNGRADIENT MONITORING WELL
- NATURE AND EXTENT WELLS
- CLOSED BOTTOM ASH LANDFILL/IMPOUNDMENT FOOTPRINT
- GENERAL DIRECTION OF GROUNDWATER FLOW
- GROUNDWATER CONTOURS AND ELEVATIONS

NOTE(S)

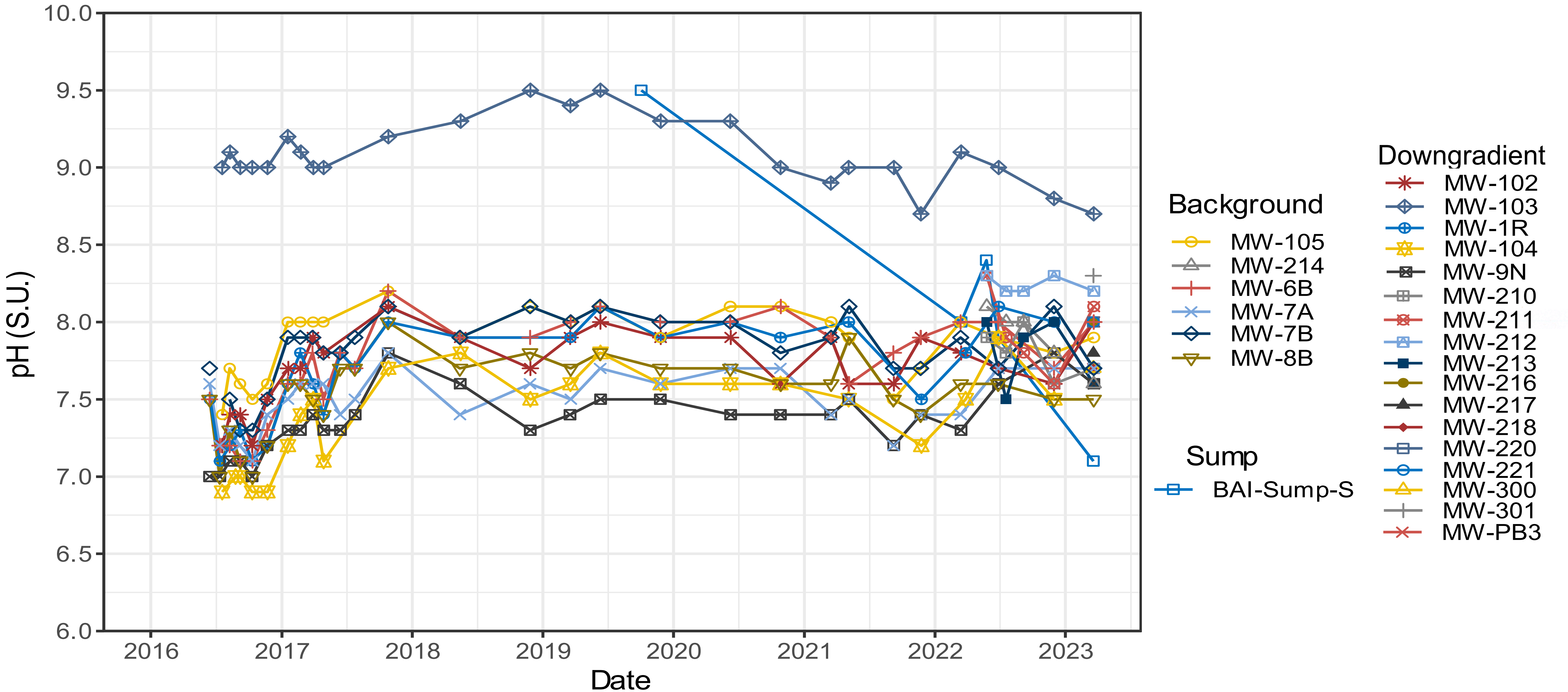
1. AERIAL IMAGERY OBTAINED FROM UNITED STATES DEPARTMENT OF AGRICULTURE, NATIONAL AGRICULTURE IMAGERY PROGRAM, 2023.
2. GROUNDWATER CONTOURS ARE BASED ON JUNE 2023 ELEVATION INFORMATION FROM THE SHOWN MONITORING WELLS, AS WELL AS MONITORING WELLS AND PIEZOMETERS NOT SHOWN.
3. THE NORTH AND CENTER CELLS OF THE BOTTOM ASH IMPOUNDMENT WERE CLOSED BY REMOVAL OF WASTE AND LINER.
4. THE SOUTH CELL OF THE BOTTOM ASH IMPOUNDMENT WAS CLOSED WITH A FINAL COVER OVER PLACED WASTE.
5. THE BOTTOM ASH LANDFILL WAS CLOSED BY CONSOLIDATION OF PLACED WASTE INTO A SMALLER FOOTPRINT AND CONSTRUCTION OF A FINAL COVER.

wsp

MONITORING WELL LOCATIONS AND
Q2 2023 GROUNDWATER ELEVATIONS
GREAT RIVER ENERGY - STANTON STATION

FIGURE 1

Path: \\golder.gds\complexdata\office\Denver\acad\GREAT RIVER ENERGY\STANTON\99_PROJECTS\21509219\Annual Monitoring Reports\ | File Name: 21509219_2023_WQ-StantonNDDEQ_Q2.dwg



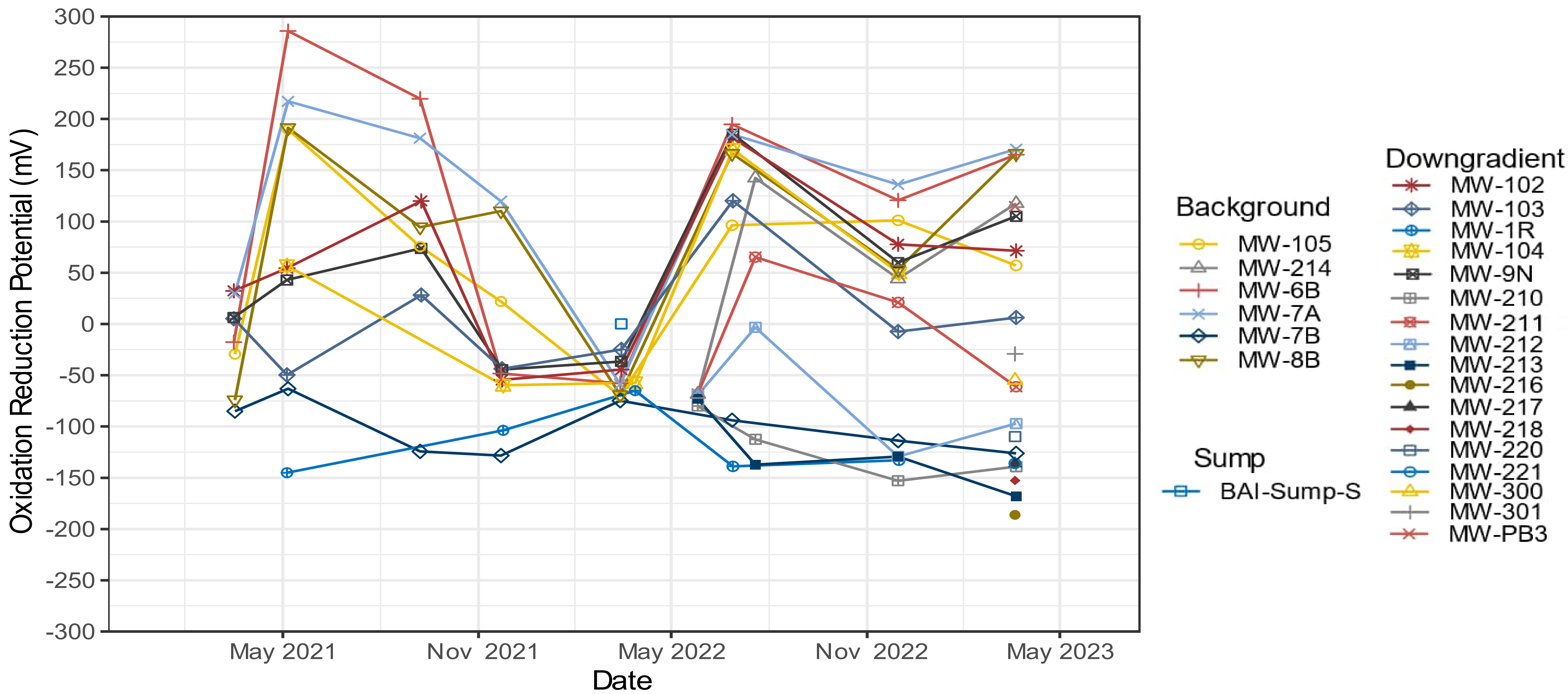
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

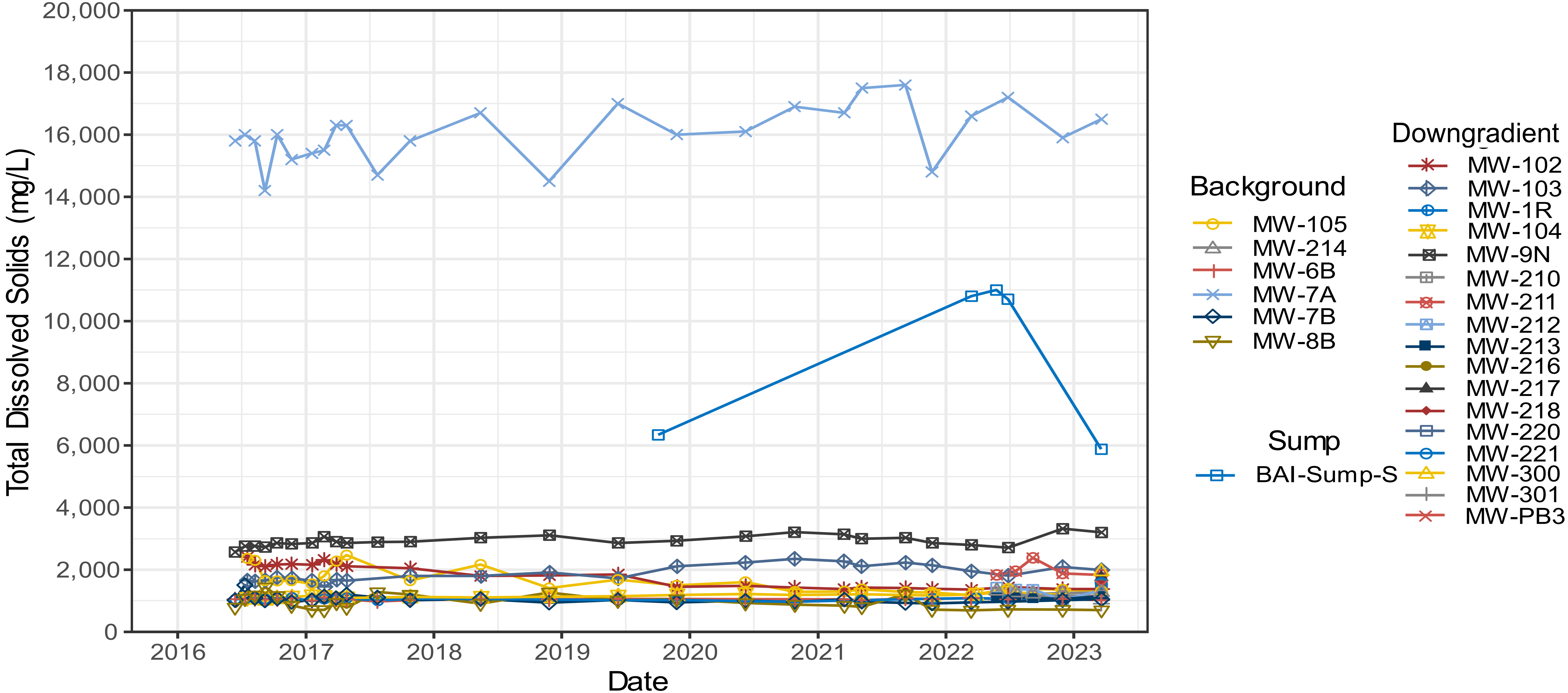
TITLE
pH in Groundwater at Background and Downgradient Wells

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	2



CLIENT	PROJECT
GREAT RIVER ENERGY STANTON STATION	TIER II + III MNA EVALUATION
CONSULTANT wsp	TITLE **ORP Values in Groundwater at Background and Downgradient Wells**

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	3



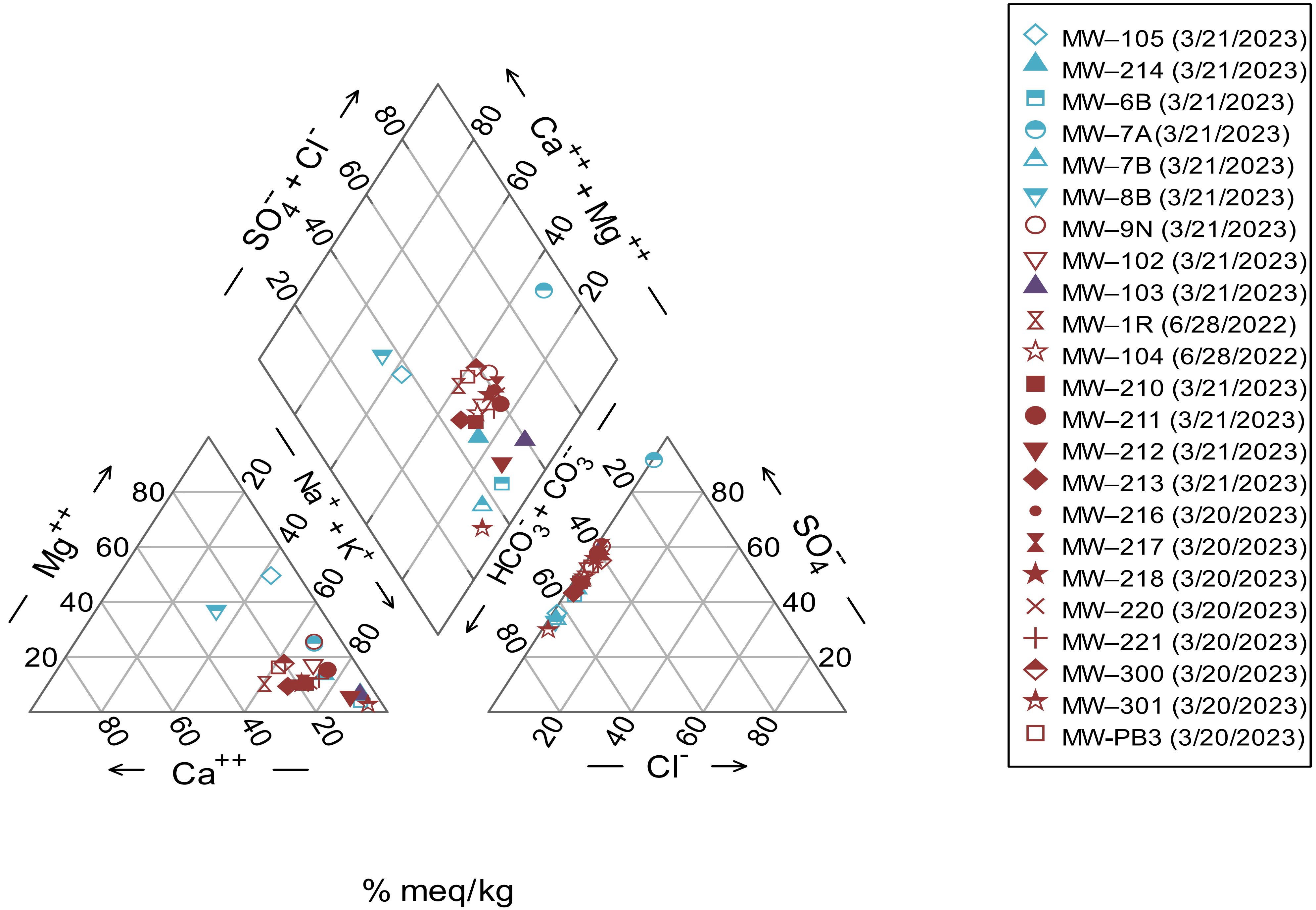
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
TDS Concentrations in Groundwater at Background and Downgradient Wells

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	4



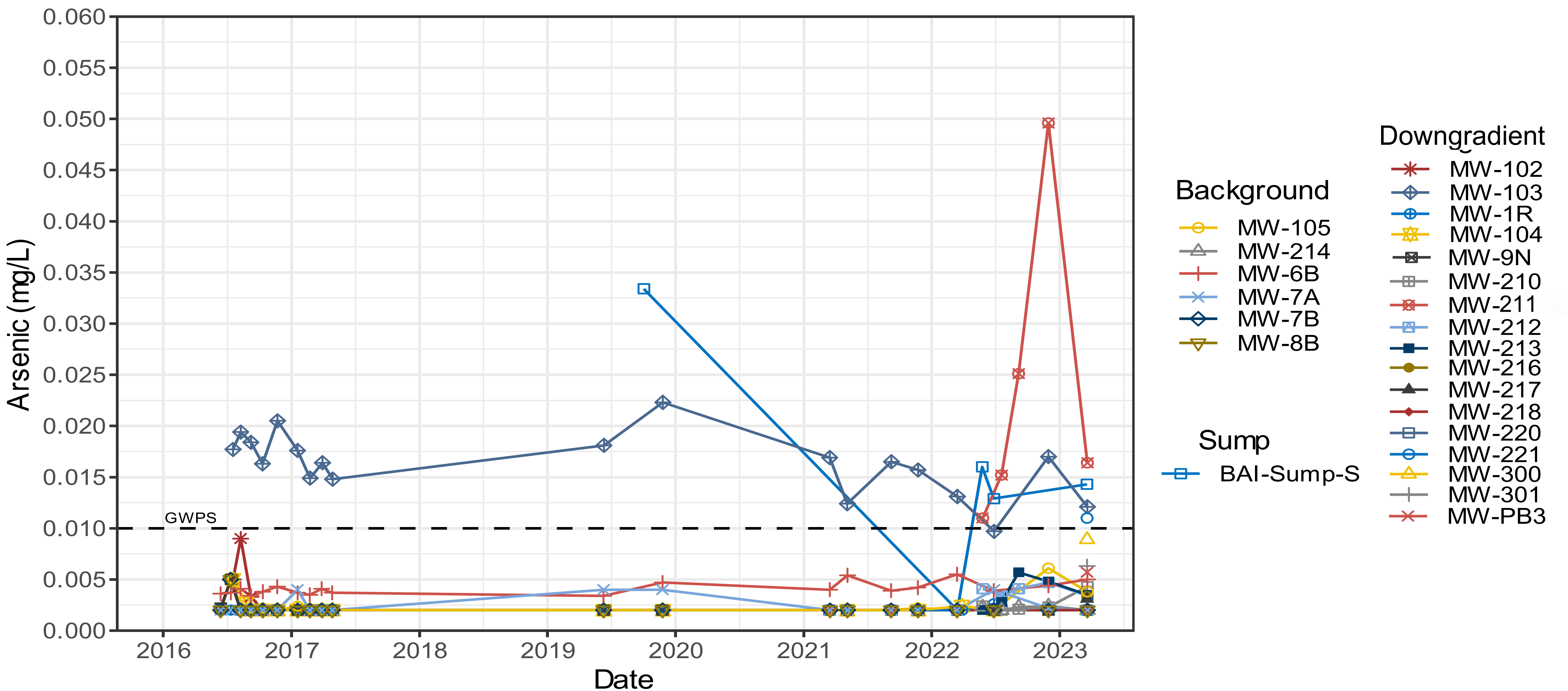
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
Trilinear Diagram Showing Major Relative Ion Abundance of Background and Downgradient Wells

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	5



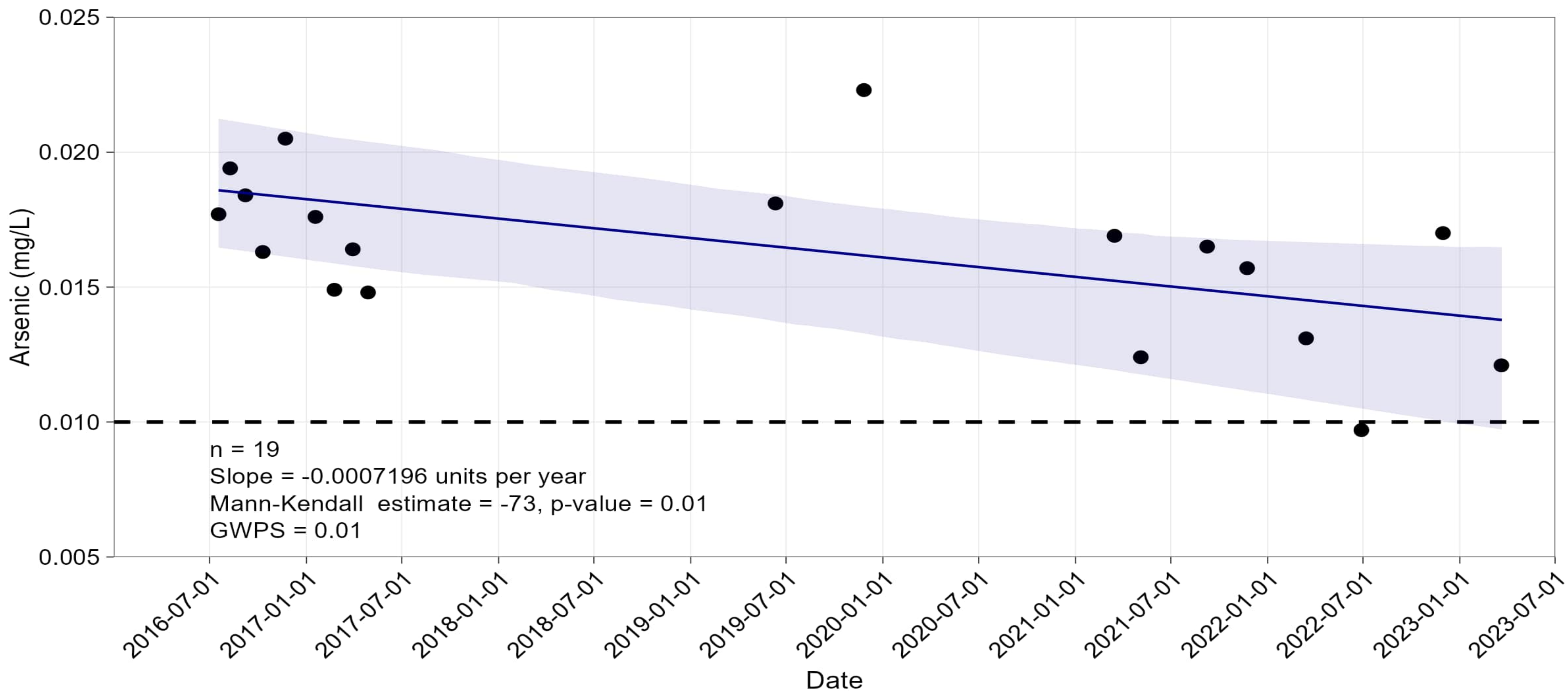
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
Arsenic Concentrations in Groundwater at Background and Downgradient Wells

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	6



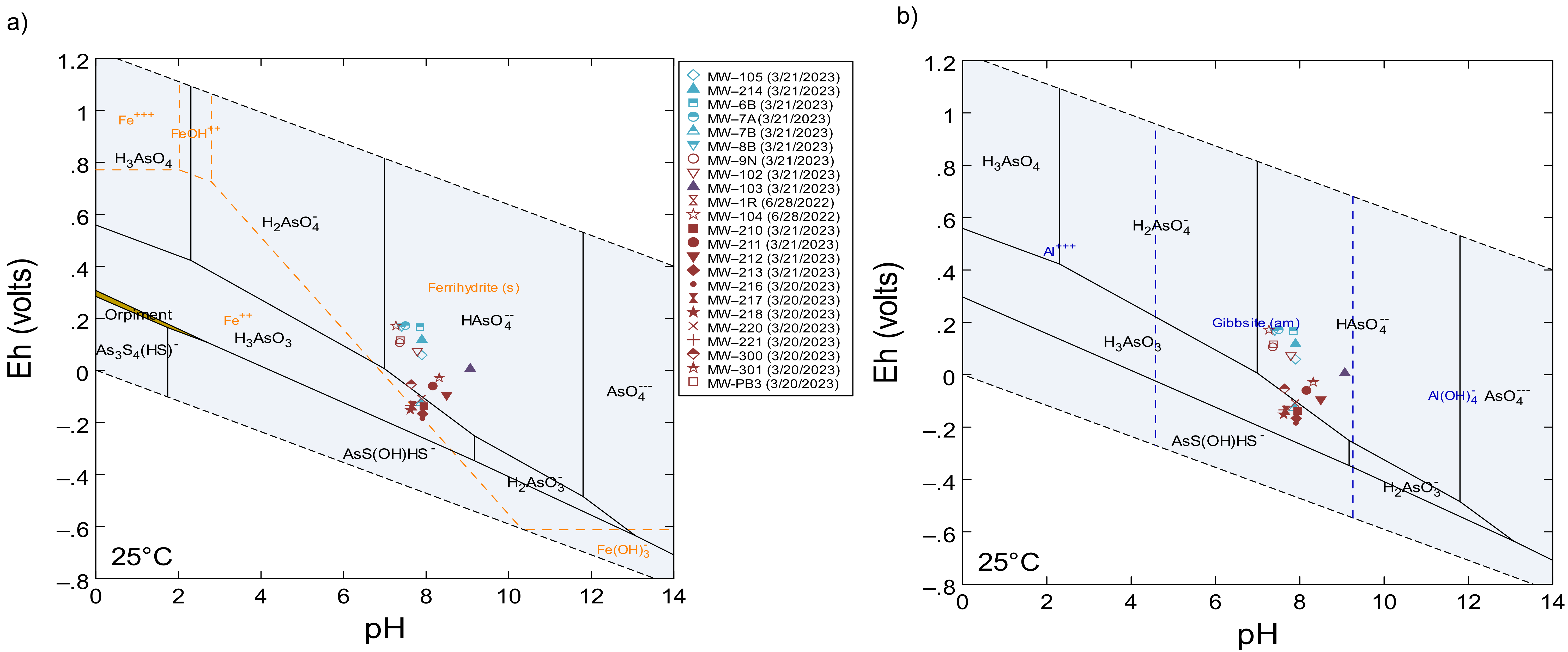
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
Sen's Slope Evaluation for Trend using Man-Kendall Test for Arsenic in Well MW-103

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	7



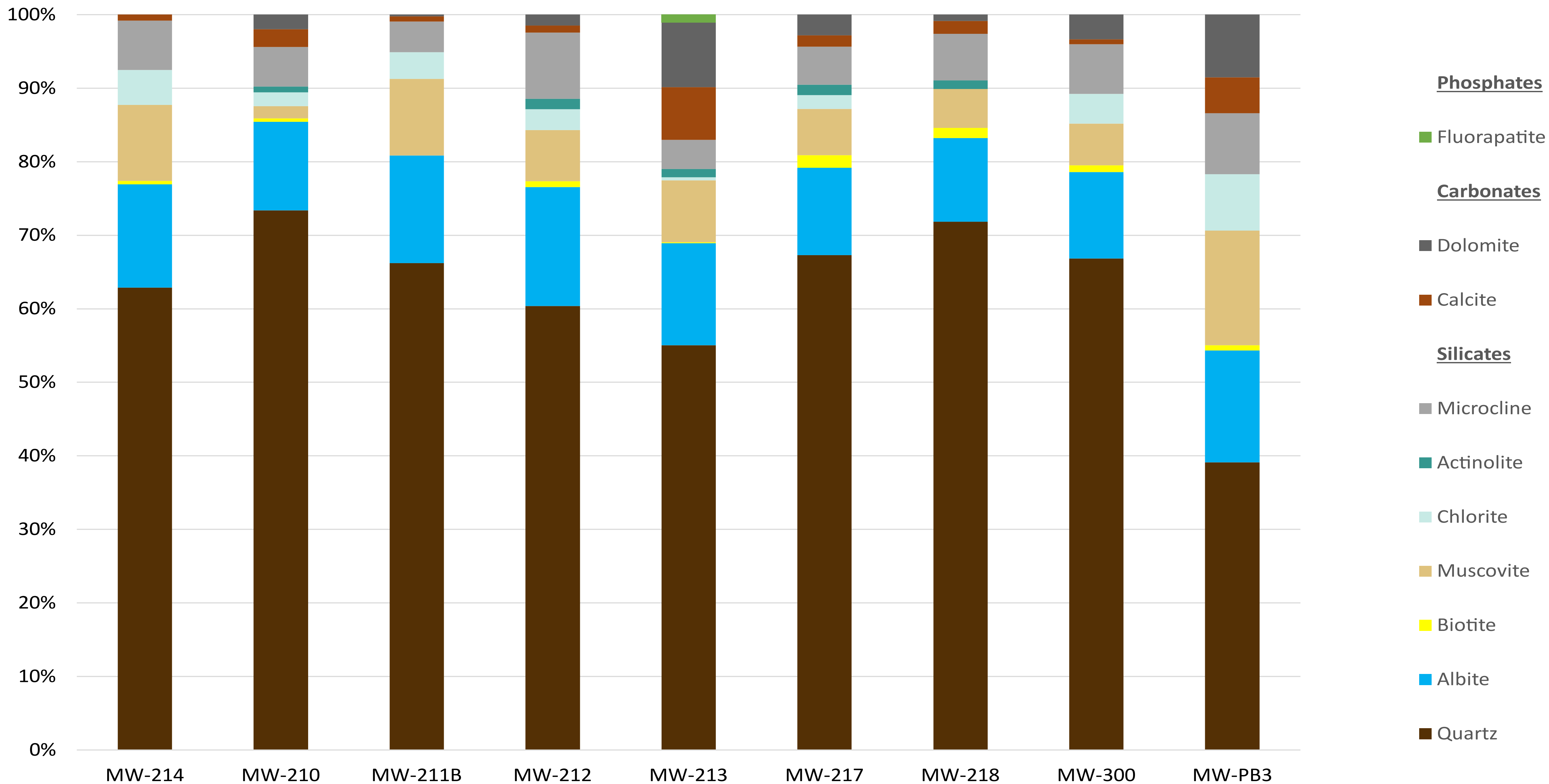
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
Speciation of Arsenic in Groundwater at Background and Downgradient Wells Overlaid with Iron (a) and Aluminum (b)

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	8a and b



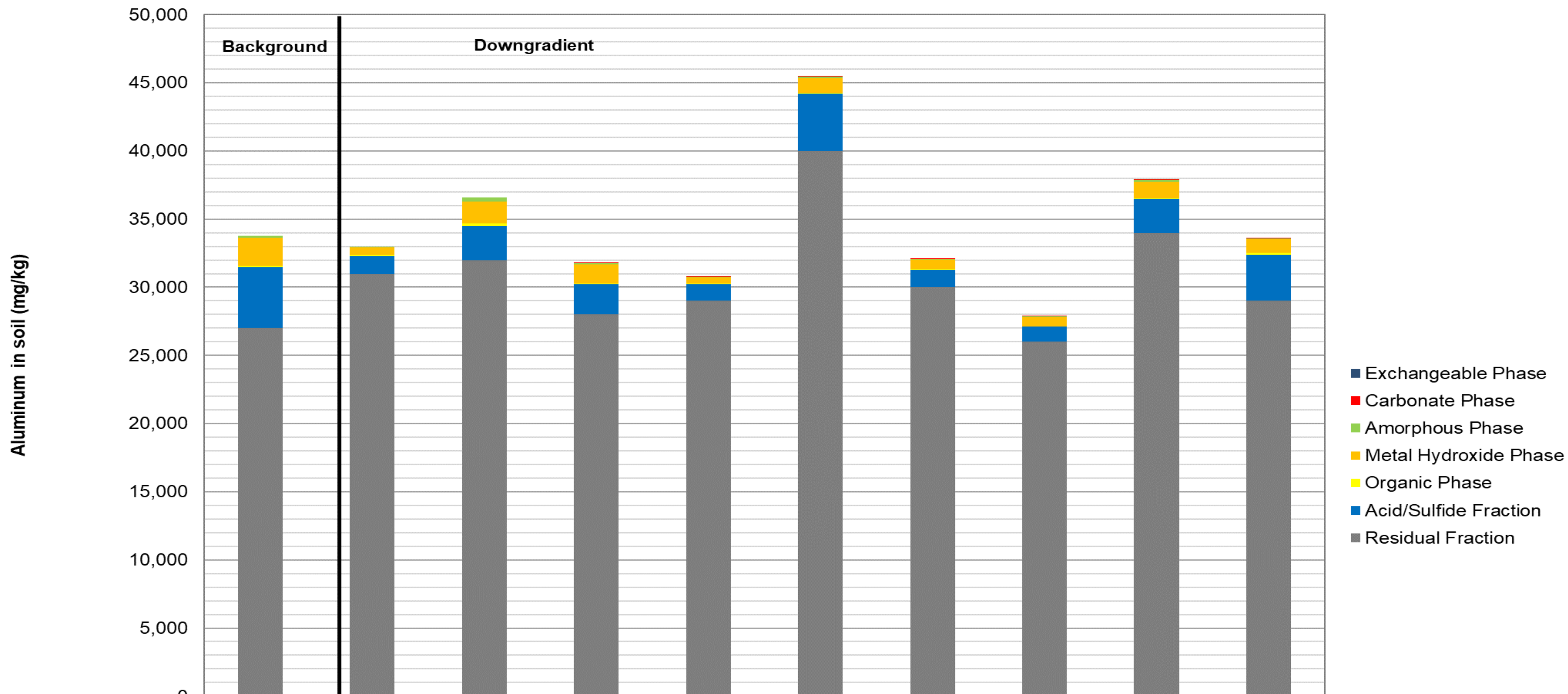
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
X-Ray Diffraction Results from Aquifer Solids

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	9



	MW-214	MW-210	MW-211A	MW-211B	MW-212A	MW-213	MW-217	MW-218	MW-300	MW-PB3
Exchangeable Phase	0	0	0	0	0	0	0	0	0	0
Carbonate Phase	0	0	0	11	5.9	15	11	11	13	11
Amorphous Phase	110	45	320	130	60	87	54	57	150	93
Metal Hydroxide Phase	2100	570	1600	1400	450	1100	680	680	1200	1000
Organic Phase	53	60	190	69	87	59	34	28	34	110
Acid/Sulfide Fraction	4500	1300	2500	2200	1200	4200	1300	1100	2500	3400
Residual Fraction	27000	31000	32000	28000	29000	40000	30000	26000	34000	29000

Borehole and depth below ground surface (Aluminum in mg/kg soil)

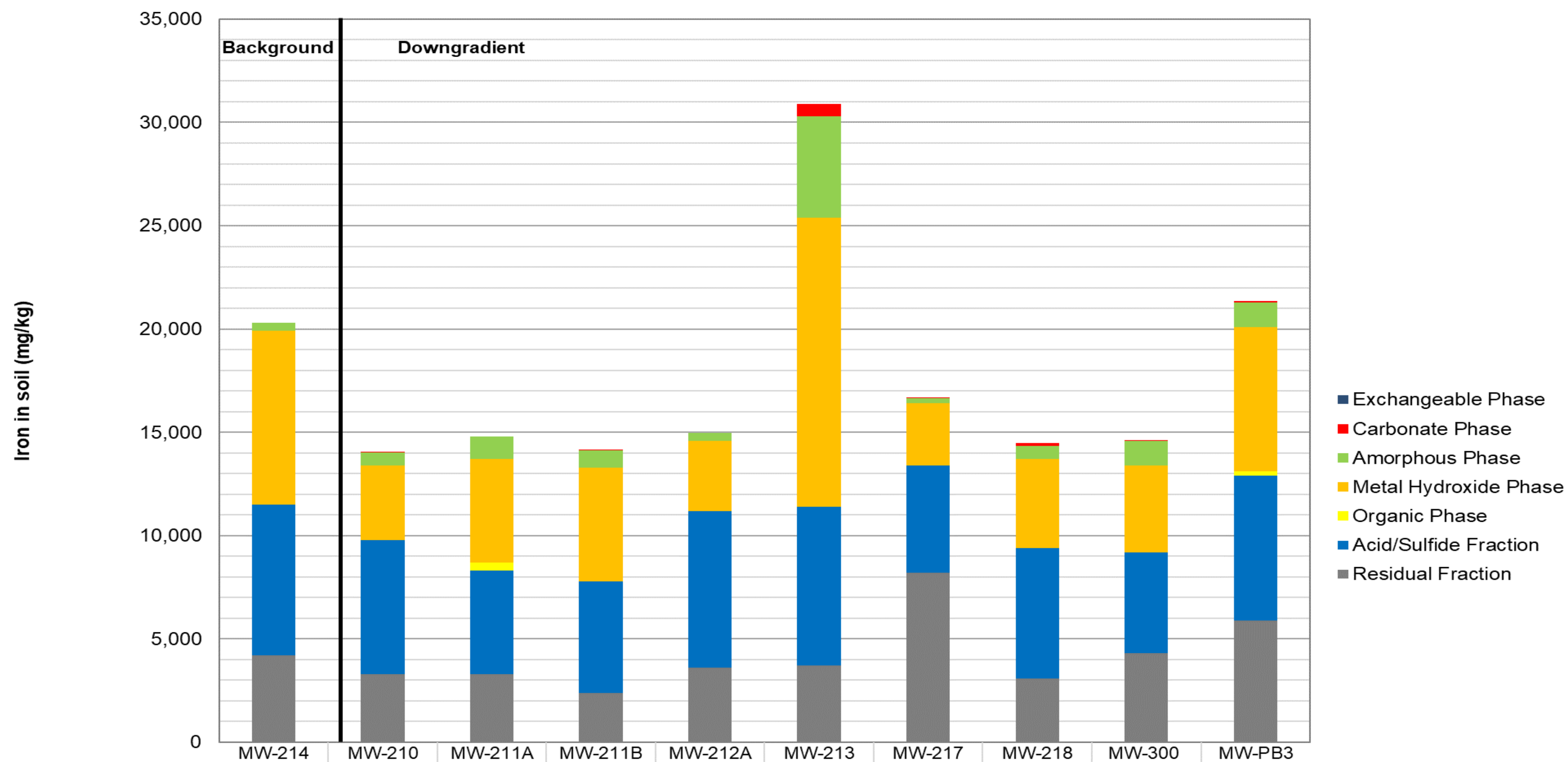
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
Sequential Extraction Results of Aluminum from Aquifer Solids

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	10



	MW-214	MW-210	MW-211A	MW-211B	MW-212A	MW-213	MW-217	MW-218	MW-300	MW-PB3
Exchangeable Phase	0	0	0	0	0	0	0	0	0	0
Carbonate Phase	0	40	0	38	0	580	28	160	38	65
Amorphous Phase	390	620	1100	820	380	4900	250	630	1200	1200
Metal Hydroxide Phase	8400	3600	5000	5500	3400	14000	3000	4300	4200	7000
Organic Phase	0	0	410	0	0	0	0	0	0	200
Acid/Sulfide Fraction	7300	6500	5000	5400	7600	7700	5200	6300	4900	7000
Residual Fraction	4200	3300	3300	2400	3600	3700	8200	3100	4300	5900

Borehole and depth below ground surface (Iron in mg/kg soil)

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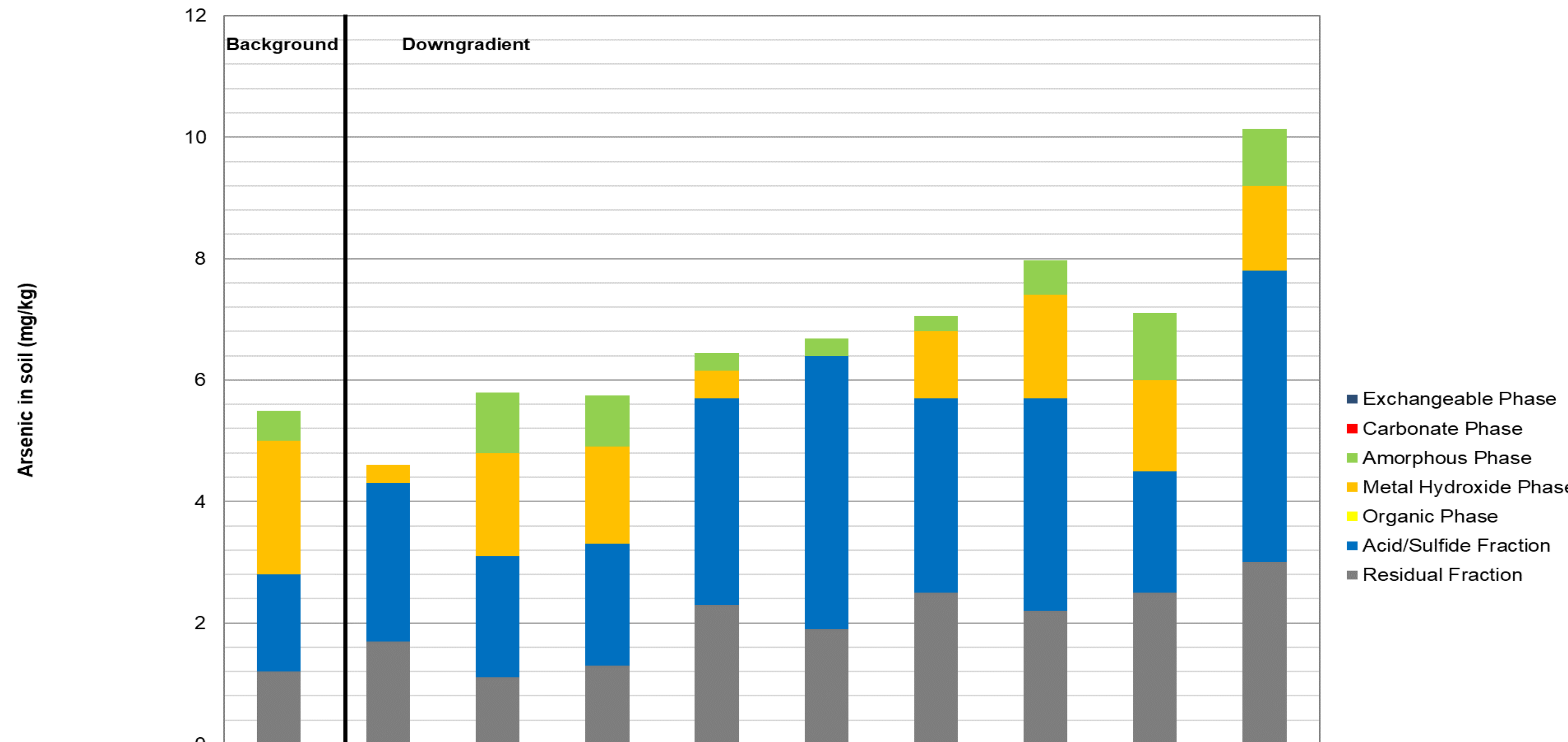
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
Sequential Extraction Results of Iron from Aquifer Solids

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	11



	MW-214	MW-210	MW-211A	MW-211B	MW-212A	MW-213	MW-217	MW-218	MW-300	MW-PB3
Exchangeable Phase	0	0	0	0	0	0	0	0	0	0
Carbonate Phase	0	0	0	0	0	0	0	0	0	0
Amorphous Phase	0.49	0	1	0.85	0.28	0.29	0.26	0.57	1.1	0.93
Metal Hydroxide Phase	2.2	0.3	1.7	1.6	0.46	0	1.1	1.7	1.5	1.4
Organic Phase	0	0	0	0	0	0	0	0	0	0
Acid/Sulfide Fraction	1.6	2.6	2	2	3.4	4.5	3.2	3.5	2	4.8
Residual Fraction	1.2	1.7	1.1	1.3	2.3	1.9	2.5	2.2	2.5	3

Borehole and depth below ground surface (Arsenic in mg/kg soil)

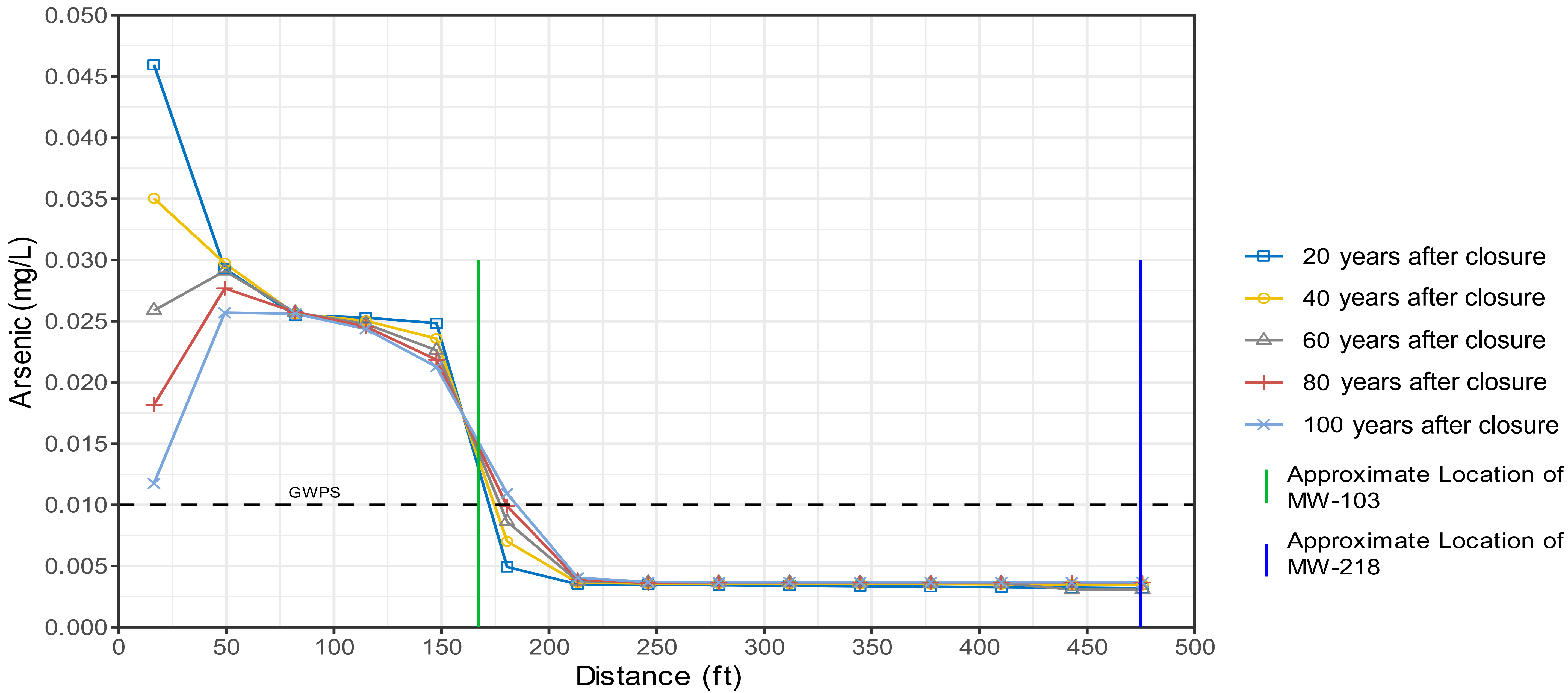
CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT
wsp

TITLE
Sequential Extraction Results of Arsenic from Aquifer Solids

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	12



CLIENT
GREAT RIVER ENERGY
STANTON STATION

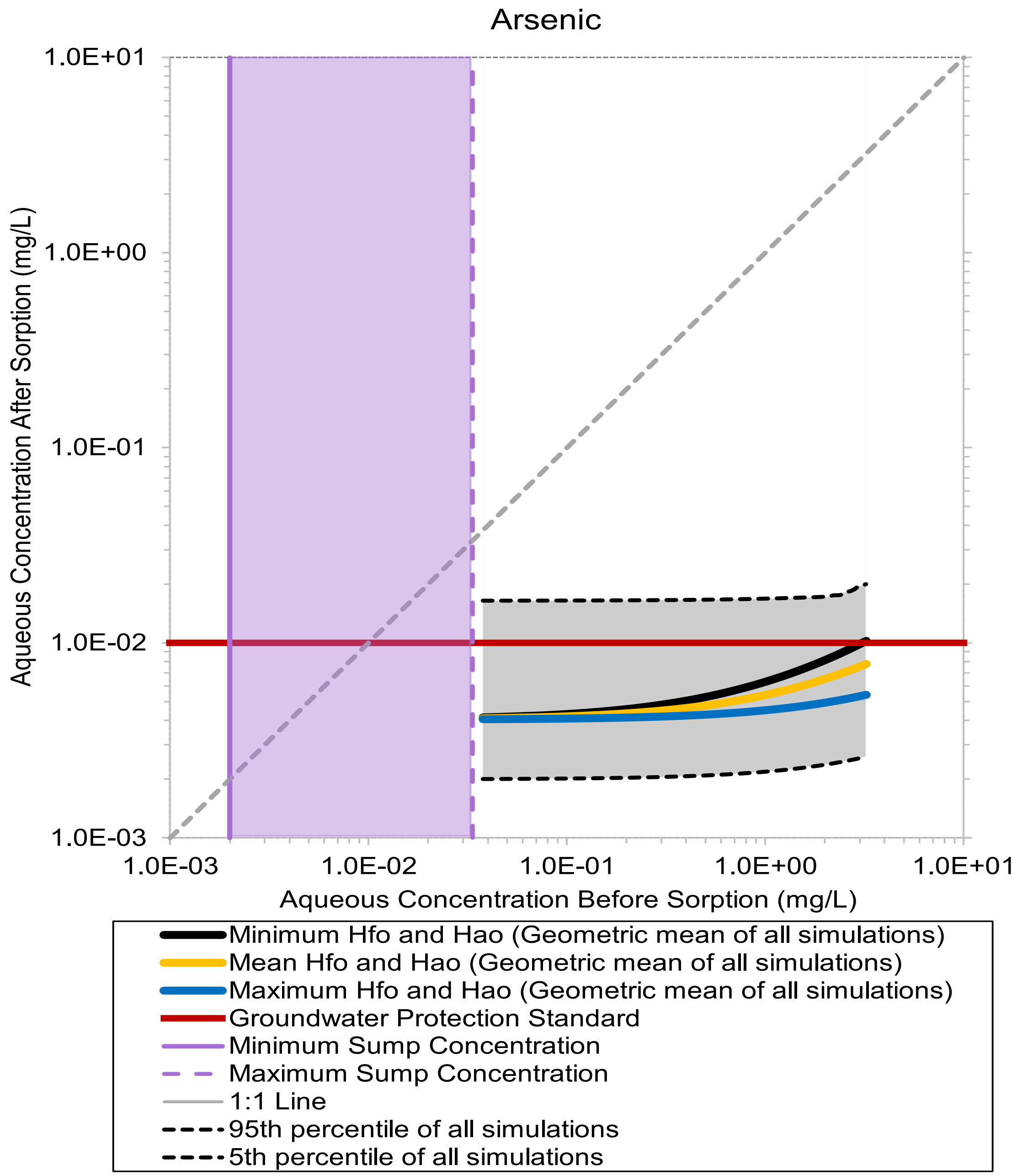
PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

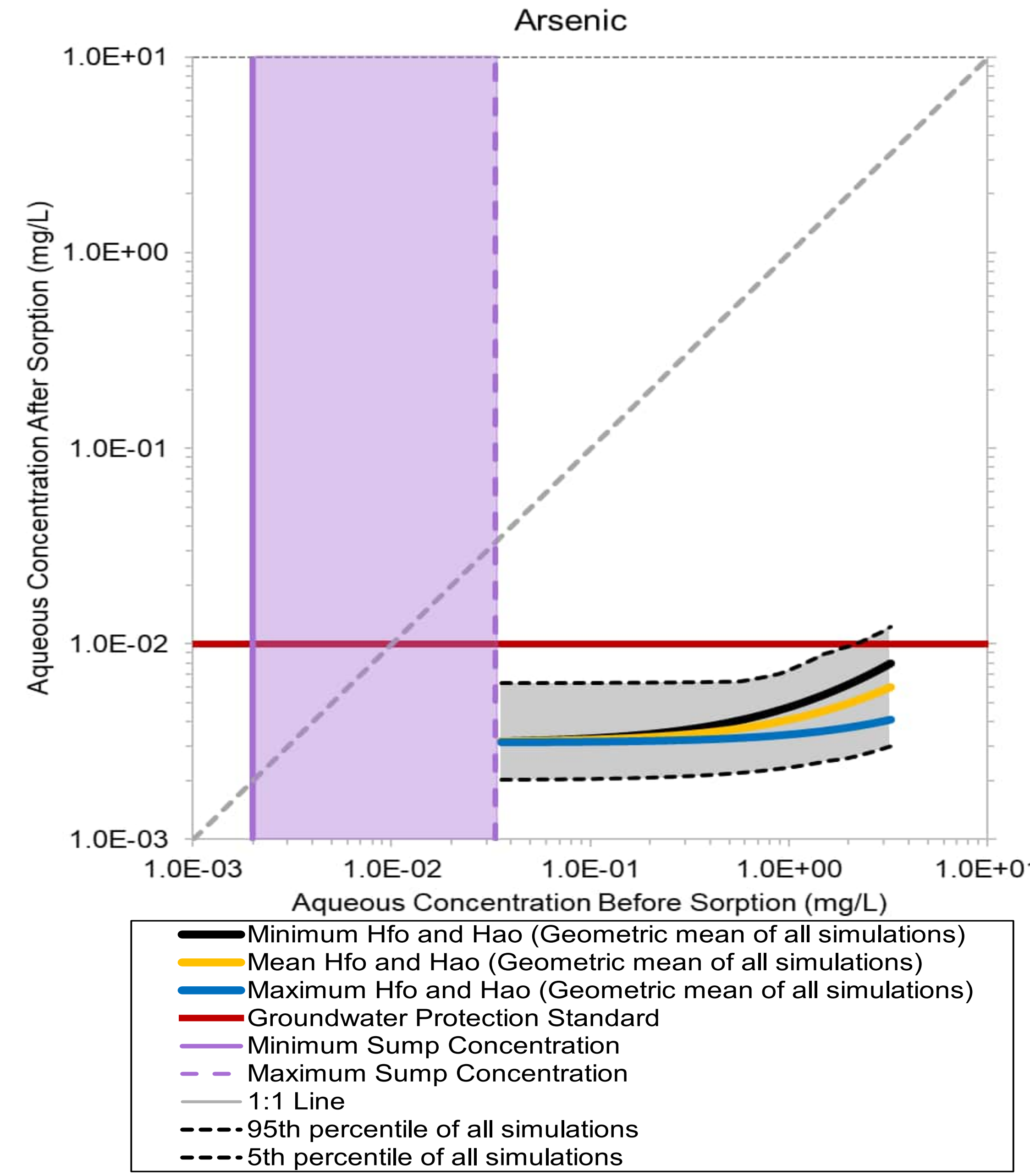
TITLE
Estimated Arsenic Concentrations Based on 1-D Transport Model Results

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	13

a)



b)

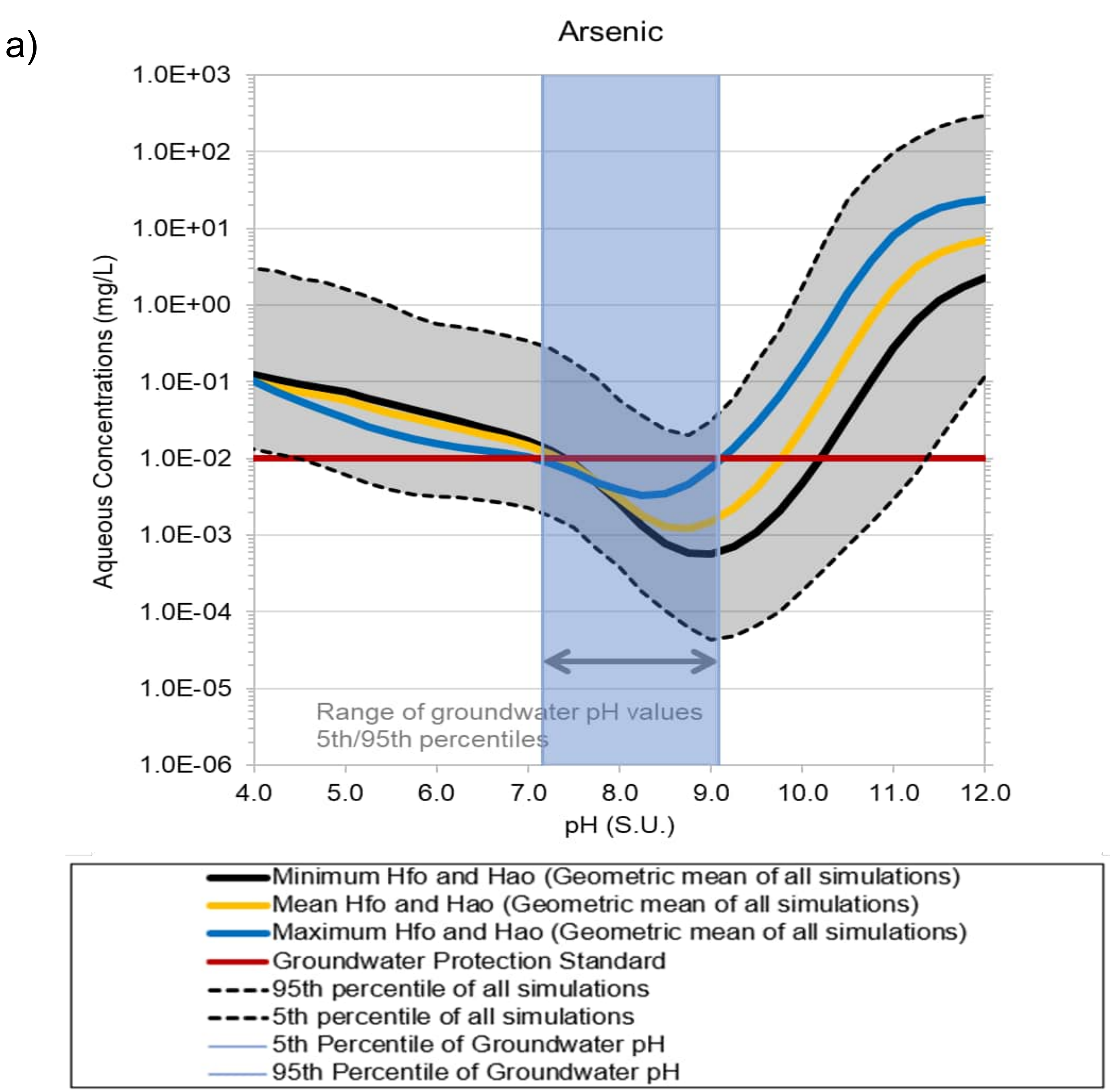


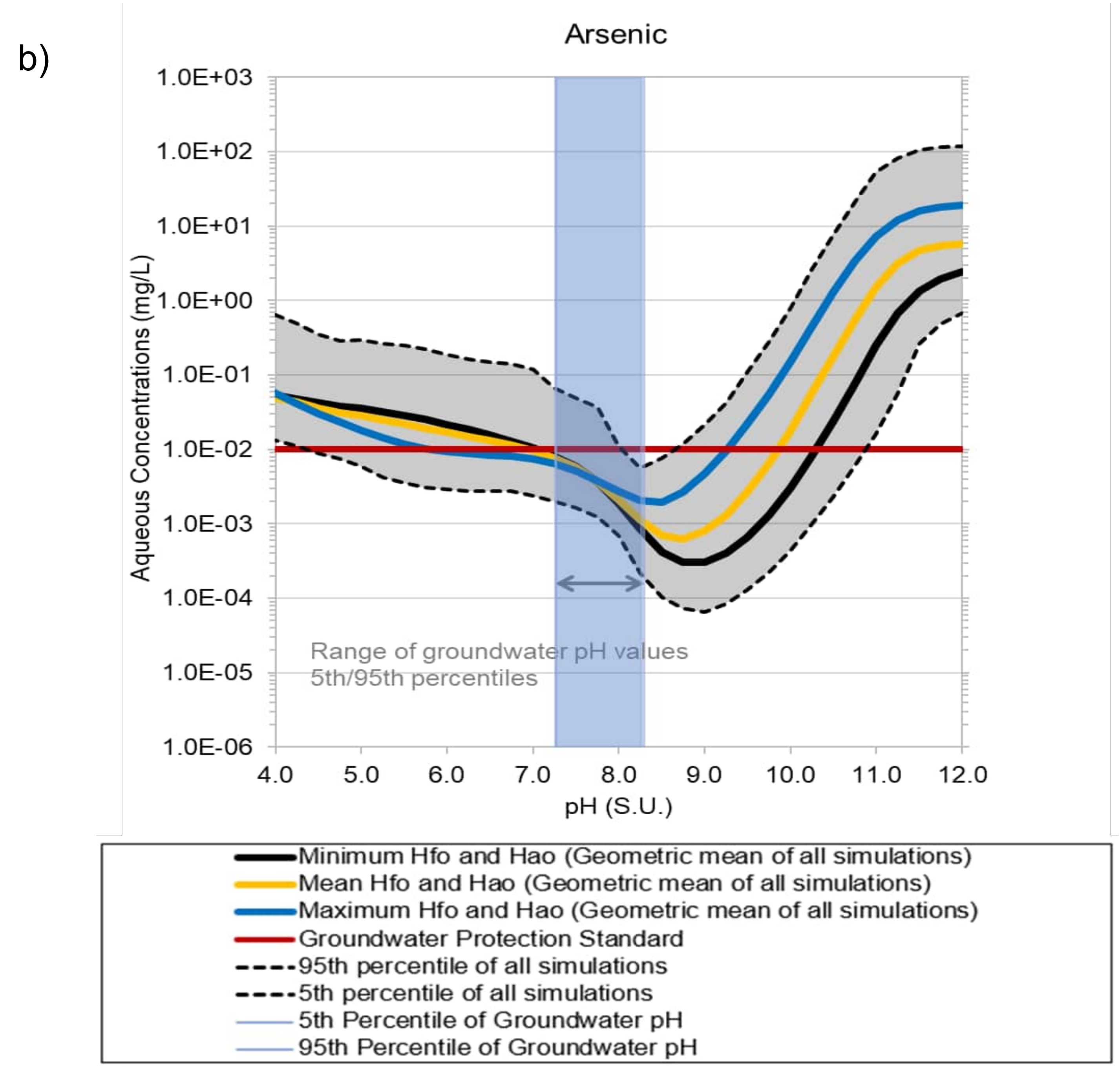
a) Downgradient wells scenario: Modeled arsenic concentrations using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from downgradient wells including those at the unit boundary with GWPS exceedances (e.g. MW-103).

b) Deliniation wells scenario: Modeled arsenic concentrations using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from delineation wells downgradient of MW-103 (not including wells along the unit boundary).

CLIENT GREAT RIVER ENERGY STANTON STATION	PROJECT TIER II + III MNA EVALUATION
CONSULTANT wsp	TITLE **Geochemical Modeling of the Attenuation Capacity for Arsenic at Downgradient Wells (14a) and at Delineation Wells (14b)**

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	14a and b





a) Downgradient wells scenario: Modeled arsenic concentrations for a range of pH using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from downgradient wells including those at the unit boundary with GWPS exceedances (e.g. MW-103).

b) Deliniation wells scenario: Modeled arsenic concentrations for a range of pH using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from delineation wells downgradient of MW-103 (not including wells along the unit boundary).

CLIENT
GREAT RIVER ENERGY
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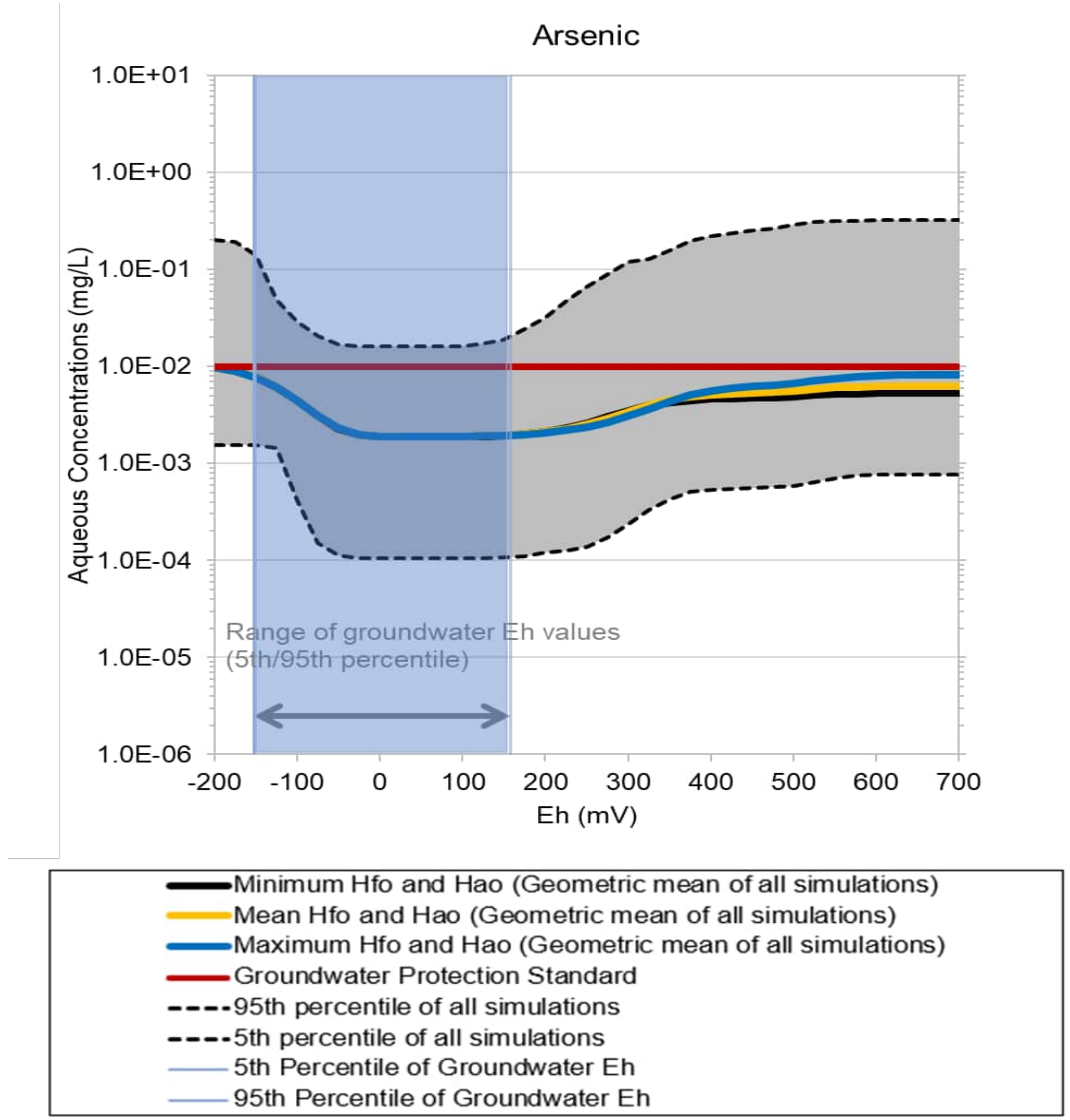
PROJECT
TIER II + III MNA EVALUATION

CONSULTANT
wsp

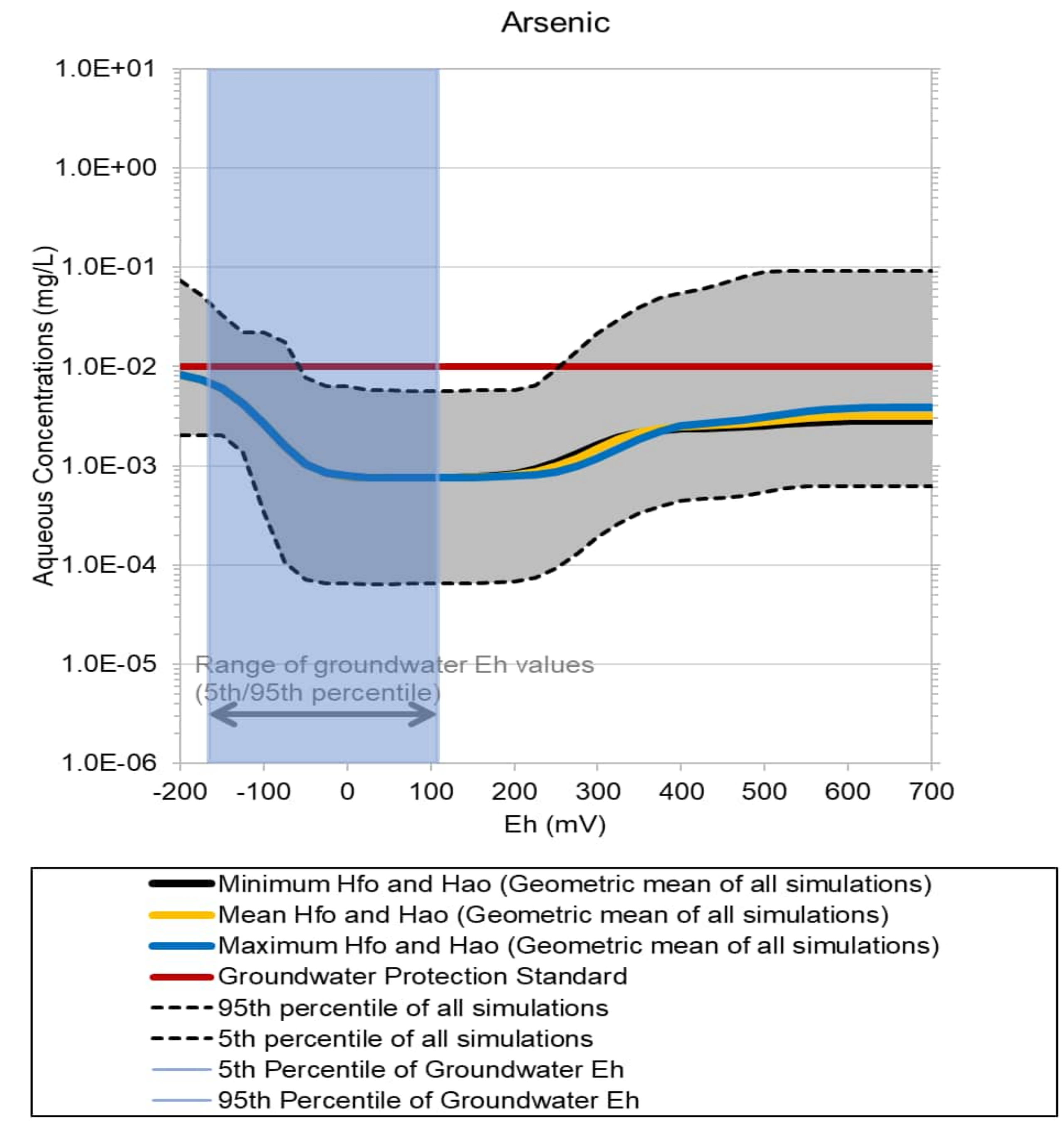
TITLE
Stability of Adsorbed Arsenic in response to pH at Downgradient Wells (15a) and at Delineation Wells (15b)

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	15a and b

a)



b)

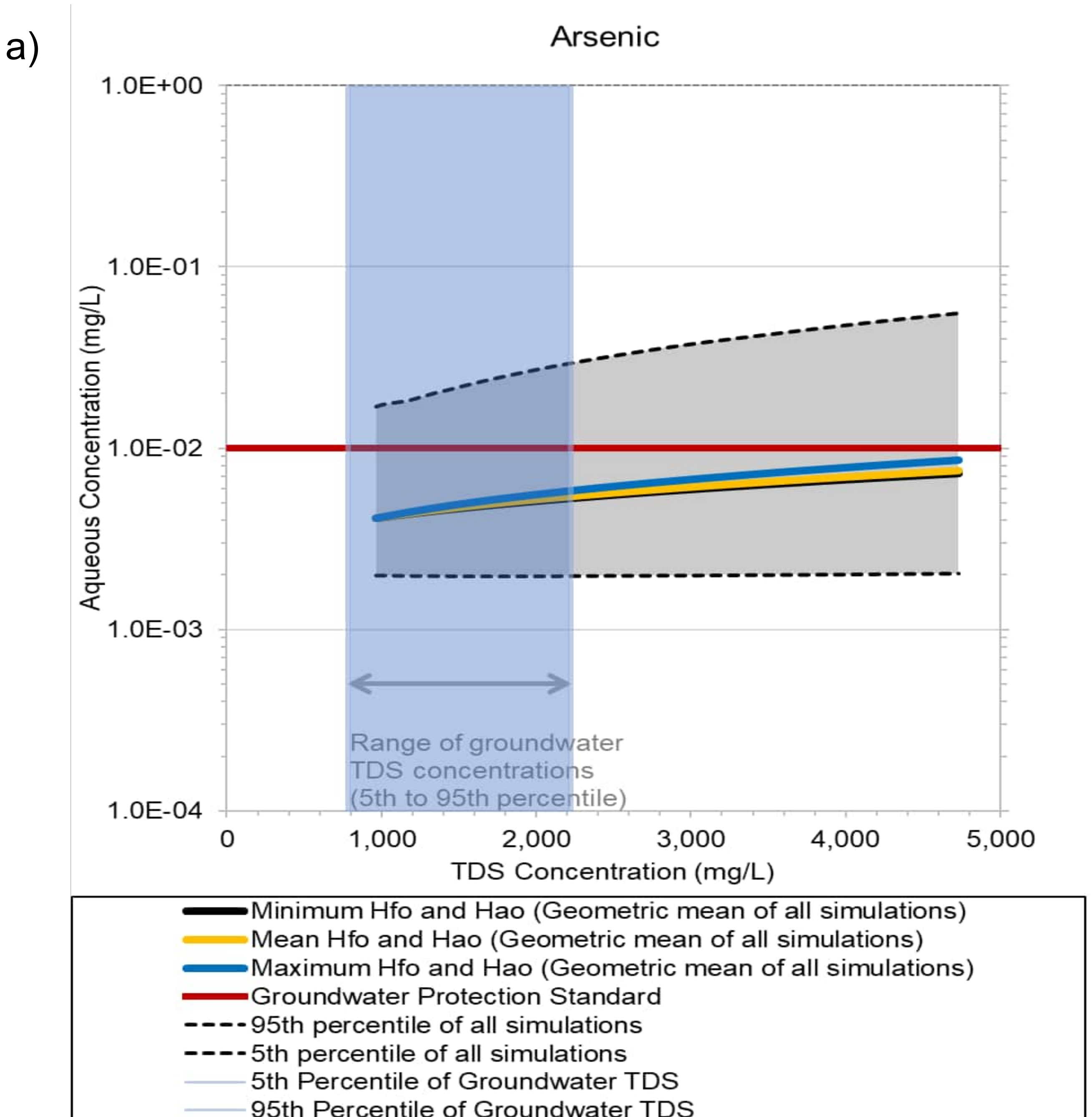


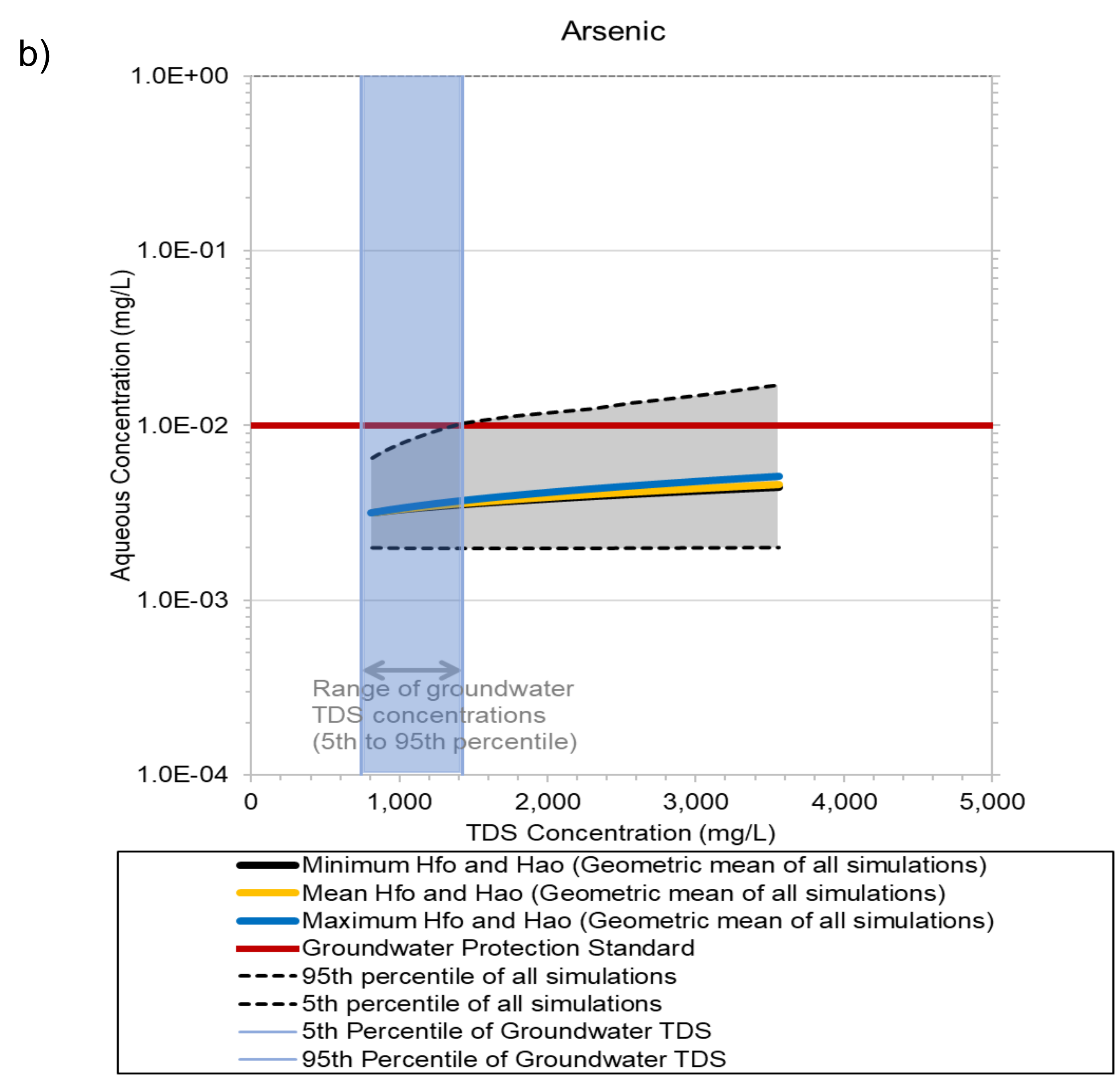
a) Downgradient wells scenario: Modeled arsenic concentrations for a range of Eh using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from downgradient wells including those at the unit boundary with GWPS exceedances (e.g. MW-103).

b) Deliniation wells scenario: Modeled arsenic concentrations for a range of Eh using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from delineation wells downgradient of MW-103 (not including wells along the unit boundary).

CLIENT GREAT RIVER ENERGY STANTON STATION	PROJECT TIER II + III MNA EVALUATION
CONSULTANT wsp	TITLE **Stability of Adsorbed Arsenic in response to Redox at Downgradient Wells (16a) and at Delineation Wells (16b)**

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	16a and b





a) Downgradient wells scenario: Modeled arsenic concentrations for a range of TDS using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from downgradient wells including those at the unit boundary with GWPS exceedances (e.g. MW-103).

b) Deliniation wells scenario: Modeled arsenic concentrations for a range of TDS using the minimum, mean, and maximum amount of iron and aluminum measured in aquifer solids for sorption sites with groundwater data from delineation wells downgradient of MW-103 (not including wells along the unit boundary).

CLIENT
GREAT RIVER ENERGY
STANTON STATION

PROJECT
TIER II + III MNA EVALUATION

CONSULTANT

TITLE
Stability of Adsorbed Arsenic in response to TDS at Downgradient Wells (17a) and at Delineation Wells (17b)

PROJECT NO.	PHASE	REV.	FIGURE
GL21509219	01.LBR	0	17a and b

APPENDIX A

Groundwater Monitoring Data

Well	Date	pH	pH, field measured	Dissolved Oxygen, field measured	Total Dissolved Solids	Turbidity, field measured	Oxidation Reduction Potential, field measured	Alkalinity, Bicarbonate as $CaCO_3$	Alkalinity, Carbonate as $CaCO_3$	Alkalinity, Total	Bicarbonate
		SU	SU	mg/L	mg/L	NTU	millivolts	mg/L	mg/L	mg/L	mg/L
BAI-Sump-S	5/25/2022	8.4	8.4	--	11,000	--	--	--	<20.5	94	91
BAI-Sump-S	3/15/2022	8.0	7.9	--	10,800	--	0	--	<20.5	120	120
BAI-Sump-S	6/27/2022	7.9	8.4	--	10,700	--	--	--	<20.5	--	87
BAI-Sump-S	10/3/2019	9.5	9.7	--	6,340	--	--	52	80	132	--
BAI-Sump-S	3/20/2023	7.1	8.5	--	5,880	16	--	--	<20.5	96	96
MW-102	12/17/2018	--	7.4	--	--	--	--	597	<20	--	--
MW-102	3/18/2019	7.9	7.3	--	--	--	--	--	--	--	--
MW-102	7/18/2016	7.2	7.4	--	2,410	--	--	--	--	--	--
MW-102	2/22/2017	7.7	7.3	--	2,320	--	--	--	--	--	--
MW-102	11/21/2016	7.5	7.4	--	2,180	--	--	--	--	--	--
MW-102	3/29/2017	7.9	7.5	--	2,180	--	--	657	<20	--	--
MW-102	10/10/2016	7.2	7.4	--	2,170	--	--	--	--	--	--
MW-102	8/9/2016	7.4	7.4	--	2,160	--	--	--	--	--	--
MW-102	1/19/2017	7.7	7.3	--	2,160	--	--	--	--	--	--
MW-102	4/28/2017	7.8	7.5	--	2,110	--	--	635	<20	--	--
MW-102	9/7/2016	7.4	7.3	--	2,100	--	--	--	--	--	--
MW-102	10/26/2017	8.1	7.4	--	2,050	--	--	--	--	--	--
MW-102	6/11/2019	8.0	7.2	--	1,850	--	--	--	--	--	--
MW-102	11/27/2018	7.7	7.4	--	1,820	--	--	--	--	--	--
MW-102	5/15/2018	7.9	7.3	--	1,800	--	--	--	--	--	--
MW-102	6/9/2020	7.9	7.5	--	1,480	--	--	484	<20	--	--
MW-102	11/26/2019	7.9	7.7	--	1,450	--	--	--	--	--	--
MW-102	6/28/2022	7.7	7.6	--	1,440	--	181	--	<20.5	--	597
MW-102	10/26/2020	7.6	7.6	--	1,430	--	--	592	<20	--	--
MW-102	5/5/2021	7.6	7.6	0.090	1,430	--	54	614	<20	--	--
MW-102	9/8/2021	7.6	7.5	0.10	1,410	--	120	--	--	--	--
MW-102	11/23/2021	7.9	7.6	0.32	1,390	--	-55	542	<20	--	--
MW-102	3/16/2021	7.9	7.6	0.18	1,380	--	32	--	--	--	--
MW-102	11/30/2022	7.6	7.6	0.14	1,380	6.9	78	--	<20.5	592	592
MW-102	3/21/2023	8.0	7.8	0.16	1,380	22	71	--	<20.5	486	486
MW-102	3/15/2022	7.8	7.4	0.20	1,360	--	-45	--	<20.5	--	592
MW-103	7/18/2016	9.0	9.2	--	1,650	--	--	--	--	--	--
MW-103	8/9/2016	9.1	9.3	--	1,630	--	--	--	--	--	--
MW-103	9/7/2016	9.0	9.3	--	1,660	--	--	--	--	--	--
MW-103	10/10/2016	9.0	9.2	--	1,750	--	--	--	--	--	--
MW-103	11/22/2016	9.0	9.2	--	1,720	--	--	--	--	--	--
MW-103	1/18/2017	9.2	9.2	--	1,650	--	--	--	--	--	--
MW-103	2/23/2017	9.1	9.1	--	1,450	--	--	--	--	--	--
MW-103	3/30/2017	9.0	9.1	--	1,680	--	--	429	104	--	--
MW-103	4/28/2017	9.0	9.1	--	1,650	--	--	423	105	--	--
MW-103	10/26/2017	9.2	9.2	--	1,800	--	--	--	--	--	--
MW-103	5/16/2018	9.3	9.2	--	1,800	--	--	--	--	--	--
MW-103	11/27/2018	9.5	9.4	--	1,910	--	--	393	238	--	--
MW-103	3/19/2019	9.4	9.1	--	--	--	--	--	--	--	--
MW-103	6/11/2019	9.5	9.2	--	1,720	--	--	--	--	--	--

Well	Date	pH	pH, field measured	Dissolved Oxygen, field measured	Total Dissolved Solids	Turbidity, field measured	Oxidation Reduction Potential, field measured	Alkalinity, Bicarbonate as $CaCO_3$	Alkalinity, Carbonate as $CaCO_3$	Alkalinity, Total	Bicarbonate
		SU	SU	mg/L	mg/L	NTU	millivolts	mg/L	mg/L	mg/L	mg/L
MW-103	11/26/2019	9.3	9.4	--	2,110	--	--	--	--	--	--
MW-103	6/8/2020	9.3	9.3	--	2,230	--	--	471	198	--	--
MW-103	10/26/2020	9.0	9.1	--	2,350	--	--	641	103	--	--
MW-103	3/16/2021	8.9	9.0	0.71	2,270	--	5.2	--	--	--	--
MW-103	5/5/2021	9.0	9.1	0.050	2,110	--	-50	625	95	--	--
MW-103	9/8/2021	9.0	8.9	0.070	2,230	--	28	--	--	--	--
MW-103	11/23/2021	8.7	8.9	0.29	2,140	--	-44	660	62	--	--
MW-103	3/15/2022	9.1	9.0	0.47	1,950	--	-25	--	118	--	472
MW-103	6/28/2022	9.0	9.2	--	1,810	--	120	--	91	--	496
MW-103	11/30/2022	8.8	9.1	0.23	2,090	2.1	-7.4	--	60	724	664
MW-103	3/21/2023	8.7	9.1	<0.1	1,990	6.0	6.3	--	62	620	558
MW-104	3/19/2019	7.6	7.0	--	--	--	--	--	--	--	--
MW-104	6/28/2022	7.9	7.3	--	1,280	--	170	--	<20.5	--	488
MW-104	6/8/2020	7.6	7.2	--	1,220	--	--	529	<20	--	--
MW-104	5/5/2021	7.5	7.2	0.080	1,210	--	57	574	<20	--	--
MW-104	3/28/2022	7.5	7.3	0.29	1,210	--	-57	--	<20.5	--	499
MW-104	11/26/2019	7.6	7.3	--	1,190	--	--	--	--	--	--
MW-104	10/26/2020	7.6	7.3	--	1,190	--	--	480	<20	--	--
MW-104	12/1/2022	7.5	7.3	0.10	1,190	1.8	50	--	<20.5	556	556
MW-104	11/24/2021	7.2	7.3	0.28	1,170	--	-60	716	<20	--	--
MW-104	1/18/2017	7.2	7.1	--	1,160	--	--	--	--	--	--
MW-104	6/11/2019	7.8	7.1	--	1,150	--	--	--	--	--	--
MW-104	2/23/2017	7.4	7.0	--	1,130	--	--	--	--	--	--
MW-104	11/27/2018	7.5	7.1	--	1,130	--	--	476	<20	--	--
MW-104	11/22/2016	6.9	7.3	--	1,120	--	--	--	--	--	--
MW-104	10/26/2017	7.7	7.1	--	1,120	--	--	--	--	--	--
MW-104	5/16/2018	7.8	7.2	--	1,110	--	--	--	--	--	--
MW-104	8/25/2016	7.0	7.2	--	1,100	--	--	--	--	--	--
MW-104	10/10/2016	6.9	7.3	--	1,100	--	--	--	--	--	--
MW-104	4/28/2017	7.1	7.1	--	1,090	--	--	446	<20	--	--
MW-104	7/18/2016	6.9	7.2	--	1,080	--	--	--	--	--	--
MW-104	3/30/2017	7.5	7.2	--	1,060	--	--	458	<20	--	--
MW-104	9/7/2016	7.0	7.1	--	1,050	--	--	--	--	--	--
MW-105	3/19/2019	8.0	7.6	--	--	--	--	--	--	--	--
MW-105	4/27/2017	8.0	7.7	--	2,470	--	--	820	<20	--	--
MW-105	7/18/2016	7.4	7.6	--	2,370	--	--	--	--	--	--
MW-105	8/8/2016	7.7	7.7	--	2,300	--	--	--	--	--	--
MW-105	3/29/2017	8.0	7.8	--	2,280	--	--	790	<20	--	--
MW-105	5/14/2018	7.9	7.7	--	2,170	--	--	--	--	--	--
MW-105	2/22/2017	8.0	7.6	--	1,800	--	--	--	--	--	--
MW-105	6/10/2019	8.1	7.7	--	1,680	--	--	--	--	--	--
MW-105	9/6/2016	7.6	7.7	--	1,650	--	--	--	--	--	--
MW-105	11/21/2016	7.6	7.7	--	1,650	--	--	--	--	--	--
MW-105	10/25/2017	8.2	7.7	--	1,650	--	--	--	--	--	--
MW-105	10/11/2016	7.5	7.8	--	1,640	--	--	--	--	--	--
MW-105	6/8/2020	8.1	7.7	--	1,600	--	--	762	<20	--	--

Well	Date	pH	pH, field measured	Dissolved Oxygen, field measured	Total Dissolved Solids	Turbidity, field measured	Oxidation Reduction Potential, field measured	Alkalinity, Bicarbonate as $CaCO_3$	Alkalinity, Carbonate as $CaCO_3$	Alkalinity, Total	Bicarbonate
		SU	SU	mg/L	mg/L	NTU	millivolts	mg/L	mg/L	mg/L	mg/L
MW-105	1/18/2017	8.0	7.8	--	1,550	--	--	--	--	--	--
MW-105	11/25/2019	7.9	7.8	--	1,500	--	--	--	--	--	--
MW-105	11/26/2018	8.1	7.8	--	1,410	--	--	575	<20	--	--
MW-105	6/27/2022	7.9	7.6	--	1,390	--	96	--	<20.5	--	829
MW-105	5/6/2021	7.9	7.8	0.44	1,370	--	190	759	<20	--	--
MW-105	11/30/2022	7.8	7.7	0.34	1,360	296	101	--	<20.5	753	753
MW-105	3/21/2023	7.9	7.9	--	1,310	453	57	--	<20.5	737	737
MW-105	3/17/2021	8.0	7.9	0.33	1,300	--	-29	--	--	--	--
MW-105	10/27/2020	8.1	7.6	--	1,290	--	--	642	<20	--	--
MW-105	9/7/2021	7.5	7.8	0.10	1,280	--	75	--	--	--	--
MW-105	11/22/2021	7.7	7.8	0.11	1,270	--	22	746	<20	--	--
MW-105	3/14/2022	8.0	7.8	1.8	1,180	--	-70	--	<20.5	--	718
MW-1R	6/14/2017	7.8	7.5	--	--	--	--	--	--	--	--
MW-1R	3/19/2019	7.9	7.4	--	--	--	--	--	--	--	--
MW-1R	11/22/2016	7.2	7.7	--	1,100	--	--	--	--	--	--
MW-1R	12/1/2022	8.0	7.6	0.14	1,100	186	-133	--	<20.5	426	426
MW-1R	8/10/2016	7.2	7.7	--	1,090	--	--	--	--	--	--
MW-1R	10/10/2016	7.1	7.6	--	1,090	--	--	--	--	--	--
MW-1R	4/28/2017	7.4	7.6	--	1,090	--	--	--	--	--	--
MW-1R	3/28/2022	7.8	7.6	0.13	1,080	--	-65	--	<20.5	--	450
MW-1R	7/12/2016	7.1	7.6	--	1,070	--	--	--	--	--	--
MW-1R	10/26/2017	8.0	7.6	--	1,070	--	--	438	<20	--	--
MW-1R	11/24/2021	7.5	7.7	0.24	1,070	--	-104	512	<20	--	--
MW-1R	6/28/2022	8.1	7.7	--	1,070	--	-139	--	<20.5	--	431
MW-1R	9/7/2016	7.3	7.6	--	1,060	--	--	--	--	--	--
MW-1R	2/22/2017	7.8	7.5	--	1,060	--	--	--	--	--	--
MW-1R	5/16/2018	7.9	7.5	--	1,060	--	--	458	<20	--	--
MW-1R	6/14/2016	7.5	7.7	--	1,050	--	--	--	--	--	--
MW-1R	3/30/2017	7.6	7.6	--	1,050	--	--	--	--	--	--
MW-1R	11/26/2019	7.9	7.8	--	1,030	--	--	430	<20	--	--
MW-1R	6/11/2019	8.1	7.5	--	1,020	--	--	434	<20	--	--
MW-1R	5/5/2021	8.0	7.8	0.050	1,020	--	-145	426	<20	--	--
MW-1R	7/25/2017	7.7	7.6	--	1,000	--	--	474	<20	--	--
MW-1R	1/18/2017	7.6	7.6	--	989	--	--	--	--	--	--
MW-1R	6/8/2020	8.0	7.6	--	988	--	--	452	<20	--	--
MW-1R	10/26/2020	7.9	7.8	--	975	--	--	442	<20	--	--
MW-210	5/26/2022	7.9	7.8	0.29	1,240	--	-80	--	<20.5	--	428
MW-210	7/19/2022	7.8	7.6	--	1,200	--	-113	--	<20.5	--	412
MW-210	9/6/2022	8.0	7.6	--	1,160	39	--	--	<20.5	--	446
MW-210	11/30/2022	7.6	7.6	0	1,160	42	-153	--	<20.5	509	509
MW-210	3/21/2023	7.7	7.9	0.12	1,160	77	-139	--	<20.5	452	452
MW-211	9/6/2022	7.8	7.2	--	2,380	1,516	--	--	<20.5	--	736
MW-211	7/19/2022	7.9	7.7	--	1,950	--	65	--	<20.5	--	554
MW-211	11/30/2022	7.6	7.8	0.61	1,880	1,072	21	--	<20.5	640	640
MW-211	5/26/2022	8.3	8.0	0.24	1,830	--	-68	--	<20.5	--	518
MW-211	3/21/2023	8.1	8.2	0.10	1,830	246	-61	--	<20.5	549	549

Well	Date	pH	pH, field measured	Dissolved Oxygen, field measured	Total Dissolved Solids	Turbidity, field measured	Oxidation Reduction Potential, field measured	Alkalinity, Bicarbonate as $CaCO_3$	Alkalinity, Carbonate as $CaCO_3$	Alkalinity, Total	Bicarbonate
		SU	SU	mg/L	mg/L	NTU	millivolts	mg/L	mg/L	mg/L	mg/L
MW-212	5/26/2022	8.3	8.1	0.18	1,430	--	-69	--	<20.5	--	511
MW-212	7/19/2022	8.2	7.9	--	1,370	--	-3.3	--	<20.5	--	505
MW-212	9/6/2022	8.2	8.1	--	1,360	<0.1	--	--	<20.5	--	462
MW-212	3/21/2023	8.2	8.5	<0.1	1,350	21	-97	--	<20.5	474	474
MW-212	11/30/2022	8.3	8.2	0.010	1,030	30	-129	--	<20.5	461	461
MW-213	3/21/2023	7.6	7.9	<0.1	1,150	248	-168	--	<20.5	495	495
MW-213	5/26/2022	8.0	7.7	0.69	1,110	--	-73	--	<20.5	--	445
MW-213	7/19/2022	7.5	7.6	--	1,110	--	-137	--	<20.5	--	464
MW-213	9/6/2022	7.9	7.5	--	1,090	1,468	--	--	<20.5	--	433
MW-213	11/30/2022	8.0	7.6	0.75	1,060	483	-129	--	<20.5	431	431
MW-214	5/26/2022	8.1	7.7	0.23	1,320	--	-69	--	<20.5	--	581
MW-214	3/21/2023	7.6	7.9	0.32	1,270	70	118	--	<20.5	545	545
MW-214	7/19/2022	8.0	7.5	--	1,260	--	143	--	<20.5	--	523
MW-214	11/30/2022	7.8	7.6	0.42	1,250	99	44	--	<20.5	506	506
MW-214	9/6/2022	8.0	7.7	--	1,220	169	--	--	<20.5	--	482
MW-216	3/20/2023	8.0	7.9	0.16	1,600	219	-186	--	<20.5	497	497
MW-217	3/20/2023	7.8	7.7	<0.1	1,760	60	-136	--	<20.5	529	529
MW-218	3/20/2023	7.7	7.6	<0.1	1,570	91	-153	--	<20.5	552	552
MW-220	3/20/2023	8.0	7.9	0.58	1,530	123	-110	--	<20.5	466	466
MW-221	3/20/2023	8.0	7.6	0.18	1,580	462	-136	--	<20.5	544	544
MW-300	3/20/2023	7.7	7.6	0.63	1,940	126	-55	--	<20.5	622	622
MW-301	3/20/2023	8.3	8.3	0.41	909	58	-29	--	<20.5	473	469
MW-6B	6/13/2017	7.8	7.5	--	--	--	--	--	--	--	--
MW-6B	3/20/2019	8.0	7.5	--	--	--	--	--	--	--	--
MW-6B	2/22/2017	7.6	7.5	--	1,110	--	--	--	--	--	--
MW-6B	3/14/2022	8.0	7.6	3.8	1,090	--	-58	--	<20.5	--	452
MW-6B	11/21/2016	7.3	7.6	--	1,080	--	--	--	--	--	--
MW-6B	9/7/2021	7.8	7.5	1.6	1,070	--	220	--	--	--	--
MW-6B	7/12/2016	7.2	7.6	--	1,060	--	--	--	--	--	--
MW-6B	8/8/2016	7.2	7.6	--	1,060	--	--	--	--	--	--
MW-6B	6/10/2019	8.1	7.4	--	1,060	--	--	453	<20	--	--
MW-6B	11/25/2019	8.0	7.7	--	1,060	--	--	417	<20	--	--
MW-6B	11/22/2021	7.9	7.6	0.79	1,060	--	-48	460	<20	--	--
MW-6B	11/30/2022	7.7	7.8	1.6	1,060	2.2	121	--	<20.5	520	520
MW-6B	6/13/2016	7.5	7.7	--	1,050	--	--	--	--	--	--
MW-6B	10/11/2016	7.1	7.7	--	1,050	--	--	--	--	--	--
MW-6B	5/14/2018	7.9	7.7	--	1,050	--	--	468	<20	--	--
MW-6B	6/8/2020	8.0	7.8	--	1,050	--	--	477	<20	--	--
MW-6B	10/27/2020	8.1	7.6	--	1,050	--	--	480	<20	--	--
MW-6B	9/7/2016	7.1	7.5	--	1,040	--	--	--	--	--	--
MW-6B	3/28/2017	7.8	7.8	--	1,040	--	--	--	--	--	--
MW-6B	4/27/2017	7.5	7.8	--	1,040	--	--	--	--	--	--
MW-6B	11/26/2018	7.9	7.6	--	1,040	--	--	434	<20	--	--
MW-6B	3/16/2021	7.9	7.8	3.0	1,040	--	-18	--	--	--	--
MW-6B	6/27/2022	8.0	7.7	--	1,040	--	195	--	<20.5	--	453
MW-6B	10/25/2017	8.2	7.5	--	1,020	--	--	444	<20	--	--

Well	Date	pH	pH, field measured	Dissolved Oxygen, field measured	Total Dissolved Solids	Turbidity, field measured	Oxidation Reduction Potential, field measured	Alkalinity, Bicarbonate as $CaCO_3$	Alkalinity, Carbonate as $CaCO_3$	Alkalinity, Total	Bicarbonate
		SU	SU	mg/L	mg/L	NTU	millivolts	mg/L	mg/L	mg/L	mg/L
MW-6B	5/6/2021	7.6	7.7	4.9	1,020	--	286	574	<20	--	--
MW-6B	3/21/2023	8.0	7.8	--	1,020	82	165	--	<20.5	468	468
MW-6B	1/18/2017	7.6	7.6	--	1,000	--	--	--	--	--	--
MW-6B	7/24/2017	7.7	7.7	--	983	--	--	477	<20	--	--
MW-7A	6/13/2017	7.4	7.1	--	--	--	--	--	--	--	--
MW-7A	3/20/2019	7.5	7.0	--	--	--	--	--	--	--	--
MW-7A	9/7/2021	7.2	7.2	2.0	17,600	--	181	--	--	--	--
MW-7A	5/6/2021	7.5	7.3	3.8	17,500	--	217	1,030	<20	--	--
MW-7A	6/27/2022	7.7	7.3	--	17,200	--	185	--	<20.5	--	902
MW-7A	6/10/2019	7.7	7.3	--	17,000	--	--	893	<20	--	--
MW-7A	10/26/2020	7.7	7.3	--	16,900	--	--	1,030	<20	--	--
MW-7A	5/14/2018	7.4	7.2	--	16,700	--	--	912	<20	--	--
MW-7A	3/17/2021	7.4	7.3	2.2	16,700	--	30	--	--	--	--
MW-7A	3/14/2022	7.4	7.3	5.2	16,600	--	-59	--	<20.5	--	989
MW-7A	3/21/2023	7.7	7.5	--	16,500	2.0	171	--	<20.5	920	920
MW-7A	3/28/2017	7.6	7.3	--	16,300	--	--	--	--	--	--
MW-7A	4/27/2017	7.6	7.2	--	16,300	--	--	--	--	--	--
MW-7A	6/8/2020	7.7	7.4	--	16,100	--	--	875	<20	--	--
MW-7A	7/11/2016	7.2	7.2	--	16,000	--	--	--	--	--	--
MW-7A	10/11/2016	7.1	7.2	--	16,000	--	--	--	--	--	--
MW-7A	11/25/2019	7.6	7.4	--	16,000	--	--	813	<20	--	--
MW-7A	11/30/2022	7.7	7.3	1.1	15,900	<0.1	136	--	<20.5	893	893
MW-7A	6/13/2016	7.6	7.3	--	15,800	--	--	--	--	--	--
MW-7A	8/8/2016	7.3	7.1	--	15,800	--	--	--	--	--	--
MW-7A	10/25/2017	7.8	7.1	--	15,800	--	--	903	<20	--	--
MW-7A	2/22/2017	7.6	7.2	--	15,500	--	--	--	--	--	--
MW-7A	1/18/2017	7.5	7.0	--	15,400	--	--	--	--	--	--
MW-7A	11/21/2016	7.4	7.2	--	15,200	--	--	--	--	--	--
MW-7A	11/22/2021	7.4	7.2	2.2	14,800	--	120	990	<20	--	--
MW-7A	7/24/2017	7.5	7.2	--	14,700	--	--	904	<20	--	--
MW-7A	11/26/2018	7.6	7.2	--	14,500	--	--	875	<20	--	--
MW-7A	9/6/2016	7.2	7.1	--	14,200	--	--	--	--	--	--
MW-7B	6/13/2017	7.8	7.4	--	--	--	--	--	--	--	--
MW-7B	3/20/2019	8.0	7.4	--	--	--	--	--	--	--	--
MW-7B	7/11/2016	1.3	7.6	--	1,510	--	--	--	--	--	--
MW-7B	4/27/2017	7.8	7.7	--	1,200	--	--	--	--	--	--
MW-7B	2/22/2017	7.9	7.5	--	1,140	--	--	--	--	--	--
MW-7B	7/24/2017	7.9	7.7	--	1,110	--	--	575	<20	--	--
MW-7B	8/8/2016	7.5	7.7	--	1,090	--	--	--	--	--	--
MW-7B	3/28/2017	7.9	7.7	--	1,090	--	--	--	--	--	--
MW-7B	10/11/2016	7.3	7.7	--	1,070	--	--	--	--	--	--
MW-7B	5/14/2018	7.9	7.6	--	1,060	--	--	536	<20	--	--
MW-7B	3/21/2023	7.7	7.9	--	1,050	<0.1	-126	--	<20.5	544	544
MW-7B	3/17/2021	7.9	7.7	0.76	1,040	--	-85	--	--	--	--
MW-7B	6/10/2019	8.1	7.7	--	1,030	--	--	499	<20	--	--
MW-7B	6/13/2016	7.7	7.7	--	1,020	--	--	--	--	--	--

Well	Date	pH	pH, field measured	Dissolved Oxygen, field measured	Total Dissolved Solids	Turbidity, field measured	Oxidation Reduction Potential, field measured	Alkalinity, Bicarbonate as $CaCO_3$	Alkalinity, Carbonate as $CaCO_3$	Alkalinity, Total	Bicarbonate
		SU	SU	mg/L	mg/L	NTU	millivolts	mg/L	mg/L	mg/L	mg/L
MW-7B	1/18/2017	7.9	7.4	--	1,020	--	--	--	--	--	--
MW-7B	10/25/2017	8.1	7.4	--	1,020	--	--	502	<20	--	--
MW-7B	11/30/2022	8.1	7.7	0.030	1,020	<0.1	-114	--	<20.5	510	510
MW-7B	9/6/2016	7.3	7.5	--	1,010	--	--	--	--	--	--
MW-7B	6/8/2020	8.0	7.8	--	1,000	--	--	513	<20	--	--
MW-7B	5/6/2021	8.1	7.7	0.35	970	--	-63	508	<20	--	--
MW-7B	6/27/2022	7.7	7.8	--	970	--	-94	--	<20.5	--	550
MW-7B	11/21/2016	7.5	7.6	--	961	--	--	--	--	--	--
MW-7B	10/26/2020	7.8	7.8	--	960	--	--	502	<20	--	--
MW-7B	3/14/2022	7.9	7.7	0.57	951	--	-75	--	<20.5	--	601
MW-7B	11/25/2019	8.0	7.7	--	949	--	--	467	<20	--	--
MW-7B	11/26/2018	8.1	7.6	--	937	--	--	435	<20	--	--
MW-7B	9/7/2021	7.7	7.6	0.020	931	--	-124	--	--	--	--
MW-7B	11/22/2021	7.7	7.7	0.010	914	--	-128	532	<20	--	--
MW-8B	6/13/2017	7.7	7.3	--	--	--	--	--	--	--	--
MW-8B	3/20/2019	7.7	7.1	--	--	--	--	--	--	--	--
MW-8B	9/7/2016	7.1	7.3	--	1,440	--	--	--	--	--	--
MW-8B	7/24/2017	7.7	7.5	--	1,280	--	--	561	<20	--	--
MW-8B	11/26/2018	7.8	7.3	--	1,270	--	--	515	<20	--	--
MW-8B	9/7/2021	7.5	7.3	0.26	1,210	--	95	--	--	--	--
MW-8B	10/25/2017	8.0	7.2	--	1,200	--	--	522	<20	--	--
MW-8B	8/8/2016	7.3	7.4	--	1,180	--	--	--	--	--	--
MW-8B	10/11/2016	7.0	7.4	--	1,160	--	--	--	--	--	--
MW-8B	7/11/2016	7.0	7.4	--	1,070	--	--	--	--	--	--
MW-8B	11/25/2019	7.7	7.4	--	1,050	--	--	484	<20	--	--
MW-8B	6/10/2019	7.8	7.4	--	1,010	--	--	494	<20	--	--
MW-8B	3/29/2017	7.5	7.4	--	938	--	--	--	--	--	--
MW-8B	6/8/2020	7.7	7.4	--	931	--	--	528	<20	--	--
MW-8B	5/14/2018	7.7	7.3	--	911	--	--	484	<20	--	--
MW-8B	10/27/2020	7.6	7.2	--	878	--	--	472	<20	--	--
MW-8B	11/21/2016	7.2	7.3	--	850	--	--	--	--	--	--
MW-8B	3/17/2021	7.6	7.4	1.3	844	--	-74	--	--	--	--
MW-8B	5/6/2021	7.9	7.3	0.11	804	--	191	447	<20	--	--
MW-8B	6/13/2016	7.5	7.4	--	791	--	--	--	--	--	--
MW-8B	4/27/2017	7.4	7.4	--	784	--	--	--	--	--	--
MW-8B	6/27/2022	7.6	7.4	--	721	--	166	--	<20.5	--	441
MW-8B	11/22/2021	7.4	7.4	0.63	719	--	110	462	<20	--	--
MW-8B	11/30/2022	7.5	7.3	0.53	719	1.6	53	--	<20.5	466	466
MW-8B	1/18/2017	7.6	7.4	--	712	--	--	--	--	--	--
MW-8B	2/22/2017	7.6	7.4	--	706	--	--	--	--	--	--
MW-8B	3/21/2023	7.5	7.4	--	702	2.2	166	--	<20.5	409	409
MW-8B	3/14/2022	7.6	7.3	0.49	693	--	-69	--	<20.5	--	371
MW-9N	6/14/2017	7.3	7.0	--	--	--	--	--	--	--	--
MW-9N	3/18/2019	7.4	6.8	--	--	--	--	--	--	--	--
MW-9N	11/30/2022	7.8	7.2	0.22	3,320	9.8	60	--	<20.5	922	922
MW-9N	10/26/2020	7.4	7.1	--	3,210	--	--	904	<20	--	--

Well	Date	pH	pH, field measured	Dissolved Oxygen, field measured	Total Dissolved Solids	Turbidity, field measured	Oxidation Reduction Potential, field measured	Alkalinity, Bicarbonate as $CaCO_3$	Alkalinity, Carbonate as $CaCO_3$	Alkalinity, Total	Bicarbonate
		SU	SU	mg/L	mg/L	NTU	millivolts	mg/L	mg/L	mg/L	mg/L
MW-9N	3/21/2023	7.6	7.4	0.30	3,200	2.7	105	--	<20.5	872	872
MW-9N	3/16/2021	7.4	7.1	0.48	3,140	--	6.4	--	--	--	--
MW-9N	11/27/2018	7.3	7.0	--	3,110	--	--	921	<20	--	--
MW-9N	6/9/2020	7.4	7.1	--	3,080	--	--	851	<20	--	--
MW-9N	2/22/2017	7.3	6.9	--	3,060	--	--	--	--	--	--
MW-9N	5/15/2018	7.6	7.0	--	3,030	--	--	929	<20	--	--
MW-9N	9/8/2021	7.2	7.0	0.17	3,030	--	74	--	--	--	--
MW-9N	5/5/2021	7.5	7.2	0.25	3,000	--	43	1,020	<20	--	--
MW-9N	11/25/2019	7.5	7.1	--	2,930	--	--	851	<20	--	--
MW-9N	3/29/2017	7.4	7.0	--	2,900	--	--	--	--	--	--
MW-9N	10/26/2017	7.8	7.0	--	2,900	--	--	926	<20	--	--
MW-9N	7/25/2017	7.4	7.0	--	2,890	--	--	933	<20	--	--
MW-9N	10/10/2016	7.0	7.0	--	2,860	--	--	--	--	--	--
MW-9N	1/19/2017	7.3	6.9	--	2,860	--	--	--	--	--	--
MW-9N	4/28/2017	7.3	7.0	--	2,860	--	--	--	--	--	--
MW-9N	6/11/2019	7.5	6.8	--	2,860	--	--	808	<20	--	--
MW-9N	11/23/2021	7.4	7.1	0.32	2,860	--	-45	1,020	<20	--	--
MW-9N	11/21/2016	7.2	7.0	--	2,830	--	--	--	--	--	--
MW-9N	3/15/2022	7.3	7.0	1.8	2,800	--	-37	--	<20.5	--	940
MW-9N	7/12/2016	7.0	7.0	--	2,760	--	--	--	--	--	--
MW-9N	8/8/2016	7.1	7.1	--	2,760	--	--	--	--	--	--
MW-9N	9/7/2016	7.1	6.9	--	2,730	--	--	--	--	--	--
MW-9N	6/28/2022	7.6	7.2	--	2,710	--	185	--	<20.5	--	904
MW-9N	6/13/2016	7.0	7.1	--	2,570	--	--	--	--	--	--
MW-PB1	5/25/2022	7.7	7.2	2.6	1,610	--	-62	--	<20.5	--	556
MW-PB1	2/1/2021	7.3	7.2	0.52	1,580	--	-69	500	<20	--	--
MW-PB1	7/27/2021	7.9	7.1	0.75	1,580	--	-44	594	<20	--	--
MW-PB1	11/18/2021	7.8	7.1	4.7	1,500	--	-44	466	<20	--	--
MW-PB1	6/27/2022	7.7	7.2	--	1,500	--	199	--	<20.5	--	508
MW-PB1	3/15/2021	7.6	7.2	0.28	1,470	--	-29	500	<20	--	--
MW-PB1	9/9/2021	7.7	7.0	3.3	1,400	--	235	508	<20	--	--
MW-PB1	3/28/2022	7.4	7.0	1.1	1,400	--	-50	--	<20.5	--	519
MW-PB1	12/1/2020	7.5	7.2	--	1,390	--	--	469	<20	--	--
MW-PB1	11/30/2022	7.5	7.0	1.1	1,360	90	124	--	<20.5	477	477
MW-PB1	5/4/2021	7.3	7.1	0.24	1,330	--	98	641	<20	--	--
MW-PB1	3/20/2023	7.7	7.3	4.6	1,180	1,294	169	--	<20.5	518	518
MW-PB3	3/20/2023	7.7	7.4	2.3	1,480	346	115	--	<20.5	530	530

Well	Date	Sulfate	Chloride	Fluoride	Calcium	Magnesium	Potassium	Sodium	Mercury	Lithium	Boron	Lead	Molybdenum	Thallium	Antimony	Arsenic	Barium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BAI-Sump-S	5/25/2022	6,850	95	1.3	151	14	191	2,750	<0.0002	--	--	<0.0005	<0.016	--	0.0015	<0.016	0.036
BAI-Sump-S	3/15/2022	6,790	97	1.4	170	16	184	3,410	<0.0002	<0.1	4.1	0.0072	0.0070	<0.0005	0.0012	<0.002	0.039
BAI-Sump-S	6/27/2022	6,380	89	1.4	147	15	157	2,990	<0.0002	<0.1	3.7	<0.0005	1.2	<0.0005	0.0016	0.013	0.12
BAI-Sump-S	10/3/2019	4,560	43	1.5	60	5.9	125	1,930	<0.0002	<0.1	0.66	0.0010	0.61	<0.001	0.0019	0.033	0.053
BAI-Sump-S	3/20/2023	3,610	45	1.3	68	5.7	93	1,800	<0.0002	<0.1	3.2	<0.0005	0.57	<0.0005	0.0010	0.014	0.037
MW-102	12/17/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-102	3/18/2019	--	--	--	--	58	4.5	385	--	--	--	--	--	--	--	--	--
MW-102	7/18/2016	1,080	18	0.66	73	--	--	--	<0.0002	<0.1	2.1	0.0022	0.057	<0.001	<0.001	<0.005	0.11
MW-102	2/22/2017	868	16	0.75	66	--	--	--	<0.0002	<0.1	2.2	<0.002	0.053	<0.0005	<0.001	<0.002	0.045
MW-102	11/21/2016	1,160	16	0.74	66	--	--	--	<0.0002	<0.1	1.9	<0.001	0.062	<0.0005	<0.001	<0.002	0.056
MW-102	3/29/2017	868	15	0.77	55	110	4.0	550	<0.0002	<0.1	2.4	<0.0005	0.077	<0.0005	<0.001	<0.002	0.038
MW-102	10/10/2016	1,090	15	0.71	66	--	--	--	<0.0002	<0.1	2.0	0.00050	0.063	<0.0005	<0.001	<0.002	0.054
MW-102	8/9/2016	1,150	16	0.64	81	--	--	--	<0.0002	<0.1	1.9	0.0087	0.049	<0.0005	<0.001	0.0090	0.31
MW-102	1/19/2017	1,050	15	0.77	66	--	--	--	<0.0002	<0.1	1.9	<0.0005	0.055	<0.0005	<0.001	<0.002	0.046
MW-102	4/28/2017	812	16	0.81	50	96	4.0	540	<0.0002	<0.1	2.2	<0.0005	0.087	<0.0005	<0.001	<0.002	0.036
MW-102	9/7/2016	996	19	0.70	65	--	--	--	<0.0002	<0.1	2.1	0.0021	0.064	<0.0005	<0.001	0.0033	0.12
MW-102	10/26/2017	860	15	0.82	58	--	--	--	--	--	2.2	--	--	--	--	--	--
MW-102	6/11/2019	656	20	0.90	36	--	--	--	<0.0002	0.043	1.8	<0.0005	0.099	<0.0005	<0.001	<0.002	0.034
MW-102	11/27/2018	787	18	0.64	58	81	5.0	453	--	--	1.4	--	--	--	--	--	--
MW-102	5/15/2018	615	17	0.46	77	--	--	--	--	--	0.75	--	--	--	--	--	--
MW-102	6/9/2020	606	15	0.48	65	54	4.4	384	--	--	0.48	--	--	--	--	--	--
MW-102	11/26/2019	615	16	0.53	63	--	--	--	<0.0002	0.061	0.53	<0.0005	0.029	<0.0005	<0.001	<0.002	0.025
MW-102	6/28/2022	575	17	0.50	61	55	4.6	381	<0.0002	0.056	0.43	<0.0005	0.025	<0.0005	<0.001	<0.002	0.026
MW-102	10/26/2020	564	16	0.47	69	54	5.2	416	--	--	0.58	--	--	--	--	--	--
MW-102	5/5/2021	522	16	0.52	64	51	4.5	370	<0.0002	0.062	0.46	<0.0005	0.021	<0.0005	<0.001	<0.002	0.026
MW-102	9/8/2021	527	17	0.47	60	--	--	--	<0.0002	0.057	0.44	<0.0005	0.021	<0.0005	<0.001	<0.002	0.025
MW-102	11/23/2021	601	17	0.50	61	49	4.9	376	<0.0002	0.058	0.48	<0.0005	0.027	<0.0005	<0.001	<0.002	0.039
MW-102	3/16/2021	500	16	0.48	60	--	--	--	<0.0002	0.064	0.41	<0.0005	0.021	<0.0005	<0.001	<0.002	0.027
MW-102	11/30/2022	491	16	0.49	63	50	4.8	408	<0.0002	0.061	0.43	<0.0005	0.022	<0.0005	<0.001	<0.002	0.036
MW-102	3/21/2023	526	15	0.50	62	51	4.7	401	0.00030	0.060	0.42	0.00050	0.024	<0.0005	<0.001	<0.002	0.047
MW-102	3/15/2022	566	16	0.49	65	48	5.1	386	<0.0002	0.060	0.46	<0.0005	0.018	<0.0005	<0.001	<0.002	0.026
MW-103	7/18/2016	700	12	0.24	17	--	--	--	<0.0002	<0.1	1.1	0.0026	0.027	<0.001	<0.001	0.018	0.081
MW-103	8/9/2016	759	12	0.22	17	--	--	--	<0.0002	<0.1	1.1	0.0021	0.025	<0.0005	<0.001	0.019	0.081
MW-103	9/7/2016	614	15	0.24	17	--	--	--	<0.0002	<0.1	1.1	<0.005	0.026	<0.0005	<0.001	0.018	0.084
MW-103	10/10/2016	695	14	0.24	20	--	--	--	<0.0002	<0.1	1.2	0.0027	0.032	<0.0005	<0.001	0.016	0.086
MW-103	11/22/2016	701	14	0.27	20	--	--	--	<0.0002	<0.1	1.1	0.0034	0.035	<0.0005	<0.001	0.021	0.11
MW-103	1/18/2017	643	13	0.26	22	--	--	--	<0.0002	<0.1	1.2	0.0025	0.031	<0.0005	<0.001	0.018	0.10
MW-103	2/23/2017	552	14	0.26	23	--	--	--	<0.0002	<0.1	1.2	<0.002	0.032	<0.0005	<0.001	0.015	0.11
MW-103	3/30/2017	570	15	0.28	25	15	13	565	<0.0002	<0.1	1.2	0.0023	0.033	<0.0005	<0.001	0.016	0.11
MW-103	4/28/2017	603	14	0.24	23	14	12	488	<0.0002	<0.1	1.1	0.0015	0.029	<0.0005	<0.001	0.015	0.090
MW-103	10/26/2017	460	14	0.36	23	--	--	--	--	--	1.2	--	--	--	--	--	--
MW-103	5/16/2018	591	19	0.32	23	--	--	--	--	--	1.3	--	--	--	--	--	--
MW-103	11/27/2018	833	17	0.41	17	11	9.5	610	--	--	1.3	--	--	--	--	--	--
MW-103	3/19/2019	--	--	--	--	12	7.8	624	--	--	--	--	--	--	--	--	--
MW-103	6/11/2019	545	17	0.41	12	--	--	--	<0.0002	0.022	1.1	0.0018	0.029	<0.0005	<0.001	0.018	0.049

Well	Date	Sulfate	Chloride	Fluoride	Calcium	Magnesium	Potassium	Sodium	Mercury	Lithium	Boron	Lead	Molybdenum	Thallium	Antimony	Arsenic	Barium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-103	11/26/2019	847	17	0.41	24	--	--	--	<0.0002	0.023	1.4	0.0030	0.046	<0.0005	<0.001	0.022	0.055
MW-103	6/8/2020	807	16	0.36	23	21	6.4	765	--	--	1.4	--	--	--	--	--	--
MW-103	10/26/2020	995	18	0.40	35	28	6.6	810	--	--	1.7	--	--	--	--	--	--
MW-103	3/16/2021	949	18	0.38	31	--	--	--	<0.0002	0.027	1.3	0.0022	0.053	<0.0005	<0.001	0.017	0.071
MW-103	5/5/2021	725	18	0.34	23	20	6.2	643	<0.0002	0.026	1.3	0.0012	0.044	<0.0005	<0.001	0.012	0.048
MW-103	9/8/2021	914	19	0.40	27	--	--	--	<0.0002	0.022	1.5	0.0022	0.062	<0.0005	<0.001	0.017	0.055
MW-103	11/23/2021	891	19	0.43	29	23	7.2	639	<0.0002	0.030	1.4	0.0016	0.050	<0.0005	<0.001	0.016	0.054
MW-103	3/15/2022	779	18	0.34	24	16	8.2	652	<0.0002	0.030	1.3	0.0031	0.050	<0.0005	<0.001	0.013	0.061
MW-103	6/28/2022	725	20	0.22	21	16	10	596	<0.0002	0.037	0.86	0.0038	0.032	<0.0005	<0.001	0.0097	0.071
MW-103	11/30/2022	734	18	0.43	31	25	6.1	723	<0.0002	0.023	1.5	0.0030	0.066	<0.0005	<0.001	0.017	0.062
MW-103	3/21/2023	762	17	0.40	31	26	7.0	668	<0.0002	0.034	1.3	0.0015	0.045	<0.0005	<0.001	0.012	0.059
MW-104	3/19/2019	--	--	--	--	33	9.0	290	--	--	--	--	--	--	--	--	--
MW-104	6/28/2022	469	15	0.69	80	26	9.3	336	<0.0002	0.030	0.69	<0.0005	0.047	<0.0005	<0.001	<0.002	0.058
MW-104	6/8/2020	415	13	0.62	99	31	9.2	293	--	--	0.72	--	--	--	--	--	--
MW-104	5/5/2021	377	15	0.64	95	28	9.1	308	<0.0002	0.031	0.75	<0.0005	0.025	<0.0005	<0.001	<0.002	0.058
MW-104	3/28/2022	471	15	0.69	84	26	9.7	318	<0.0002	0.031	0.74	0.0015	0.044	<0.0005	<0.001	0.0024	0.098
MW-104	11/26/2019	407	15	0.65	101	--	--	--	<0.0002	0.032	0.73	<0.0005	0.023	<0.0005	<0.001	<0.002	0.058
MW-104	10/26/2020	403	15	0.64	94	29	9.5	311	--	--	0.70	--	--	--	--	--	--
MW-104	12/1/2022	390	14	0.76	75	23	8.9	328	--	0.029	0.68	--	--	--	--	--	--
MW-104	11/24/2021	420	16	0.24	77	24	9.0	303	<0.0002	0.030	0.72	<0.0005	0.039	<0.0005	<0.001	<0.002	0.058
MW-104	1/18/2017	378	12	0.75	95	--	--	--	<0.0002	<0.1	0.60	<0.0005	0.021	<0.0005	<0.001	<0.002	0.063
MW-104	6/11/2019	368	15	0.74	73	--	--	--	<0.0002	0.028	0.69	<0.0005	0.025	<0.0005	<0.001	<0.002	0.055
MW-104	2/23/2017	365	13	0.81	94	--	--	--	<0.0002	<0.1	0.71	<0.002	0.020	<0.0005	<0.001	<0.002	0.063
MW-104	11/27/2018	392	15	0.70	93	30	9.0	302	--	--	0.68	--	--	--	--	--	--
MW-104	11/22/2016	483	13	0.79	92	--	--	--	<0.0002	<0.1	0.64	<0.001	0.021	<0.0005	<0.001	<0.002	0.064
MW-104	10/26/2017	392	12	0.82	96	--	--	--	--	--	0.64	--	--	--	--	--	--
MW-104	5/16/2018	381	15	0.73	91	--	--	--	--	--	0.68	--	--	--	--	--	--
MW-104	8/25/2016	429	17	0.73	99	--	--	--	<0.0002	<0.1	0.72	0.0017	0.027	<0.0005	<0.001	0.0027	0.11
MW-104	10/10/2016	399	13	0.76	89	--	--	--	<0.0002	<0.1	0.66	<0.0005	0.021	<0.0005	<0.001	<0.002	0.058
MW-104	4/28/2017	372	13	0.75	86	28	8.5	233	<0.0002	<0.1	0.64	<0.0005	0.021	<0.0005	<0.001	<0.002	0.055
MW-104	7/18/2016	355	13	0.72	90	--	--	--	<0.0002	<0.1	0.68	<0.0005	0.022	<0.001	<0.001	<0.005	0.059
MW-104	3/30/2017	338	13	0.78	90	30	8.9	247	<0.0002	<0.1	0.70	<0.0005	0.023	<0.0005	<0.001	<0.002	0.062
MW-104	9/7/2016	380	15	0.75	92	--	--	--	<0.0002	<0.1	0.68	<0.005	0.020	<0.0005	<0.001	<0.002	0.076
MW-105	3/19/2019	--	--	--	--	184	6.6	321	--	--	--	--	--	--	--	--	--
MW-105	4/27/2017	1,020	19	0.80	62	300	5.5	340	<0.0002	<0.1	0.35	<0.0005	0.018	<0.0005	<0.001	<0.002	0.073
MW-105	7/18/2016	1,200	22	0.91	63	--	--	--	<0.0002	<0.1	0.38	0.00050	0.021	<0.001	<0.001	<0.005	0.097
MW-105	8/8/2016	1,360	22	0.91	60	--	--	--	<0.0002	<0.1	0.41	<0.002	0.023	0.00090	<0.001	<0.002	0.086
MW-105	3/29/2017	1,040	19	0.90	62	297	5.8	354	<0.0002	<0.1	0.37	<0.0005	0.020	<0.0005	<0.001	<0.002	0.080
MW-105	5/14/2018	870	16	0.82	57	--	--	--	--	--	0.35	--	--	--	--	--	--
MW-105	2/22/2017	714	37	1.0	55	--	--	--	<0.0002	<0.1	0.38	<0.002	0.024	<0.0005	<0.001	0.0021	0.049
MW-105	6/10/2019	622	14	0.89	41	--	--	--	<0.0002	0.057	0.38	<0.0005	0.026	<0.0005	<0.001	<0.002	0.055
MW-105	9/6/2016	775	19	1.0	46	--	--	--	<0.0002	<0.1	0.38	<0.0005	0.027	<0.0005	<0.001	0.0022	0.053
MW-105	11/21/2016	725	16	1.1	46	--	--	--	<0.0002	<0.1	0.36	<0.002	0.029	<0.0005	<0.001	<0.002	0.048
MW-105	10/25/2017	642	13	1.0	47	--	--	--	--	--	0.32	--	--	--	--	--	--
MW-105	10/11/2016	711	17	1.0	45	--	--	--	<0.0002	<0.1	0.38	0.00050	0.030	<0.0005	<0.001	0.0022	0.045
MW-105	6/8/2020	585	10	0.83	51	215	4.7	249	--	--	0.36	--	--	--	--	--	--

Well	Date	Sulfate	Chloride	Fluoride	Calcium	Magnesium	Potassium	Sodium	Mercury	Lithium	Boron	Lead	Molybdenum	Thallium	Antimony	Arsenic	Barium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-105	1/18/2017	703	15	1.0	47	--	--	--	<0.0002	<0.1	0.27	<0.0005	0.027	<0.0005	<0.001	0.0024	0.046
MW-105	11/25/2019	571	12	1.0	42	--	--	--	<0.0002	0.056	0.37	<0.0005	0.033	<0.0005	<0.001	<0.002	0.044
MW-105	11/26/2018	597	13	1.0	39	117	4.8	301	--	--	0.34	--	--	--	--	--	--
MW-105	6/27/2022	424	12	0.90	46	153	4.4	236	<0.0002	0.050	0.29	<0.0005	0.025	<0.0005	<0.001	<0.002	0.046
MW-105	5/6/2021	438	11	0.96	41	130	4.2	249	<0.0002	0.050	0.32	<0.0005	0.029	<0.0005	<0.001	<0.002	0.038
MW-105	11/30/2022	242	11	0.92	46	161	5.6	270	<0.0002	0.065	0.37	0.0051	0.029	<0.0005	<0.001	0.0061	0.17
MW-105	3/21/2023	400	9.5	0.88	42	157	4.9	253	<0.0002	0.055	0.33	0.0029	0.028	<0.0005	<0.001	0.0038	0.11
MW-105	3/17/2021	396	11	0.90	37	--	--	--	<0.0002	0.051	0.30	<0.0005	0.031	<0.0005	<0.001	<0.002	0.030
MW-105	10/27/2020	368	12	0.94	36	107	4.6	278	--	--	0.36	--	--	--	--	--	--
MW-105	9/7/2021	416	14	0.92	36	--	--	--	<0.0002	0.048	0.34	<0.0005	0.029	<0.0005	<0.001	<0.002	0.034
MW-105	11/22/2021	415	16	0.93	38	113	5.1	270	<0.0002	0.047	0.37	<0.0005	0.032	<0.0005	<0.001	0.0022	0.033
MW-105	3/14/2022	396	14	0.97	38	111	4.7	278	<0.0002	0.047	0.35	<0.0005	0.040	<0.0005	<0.001	0.0020	0.041
MW-1R	6/14/2017	354	--	--	--	--	--	226	--	--	--	--	--	--	--	--	--
MW-1R	3/19/2019	352	--	--	--	25	7.1	211	--	--	--	--	--	--	--	--	--
MW-1R	11/22/2016	409	18	0.73	119	--	--	--	<0.0002	<0.1	1.3	<0.001	0.013	<0.0005	<0.001	<0.002	0.052
MW-1R	12/1/2022	374	13	0.74	103	21	7.3	267	--	0.051	1.2	--	--	--	--	--	--
MW-1R	8/10/2016	397	17	0.67	115	--	--	--	<0.0002	<0.1	1.3	<0.002	0.012	<0.0005	<0.001	<0.002	0.044
MW-1R	10/10/2016	394	18	0.70	116	--	--	--	<0.0002	<0.1	1.2	<0.0005	0.011	<0.0005	<0.001	<0.002	0.043
MW-1R	4/28/2017	397	19	0.67	116	--	--	--	<0.0002	<0.1	1.2	<0.0005	0.011	<0.0005	<0.001	<0.002	0.045
MW-1R	3/28/2022	404	14	0.70	106	21	7.6	245	<0.0002	0.049	1.2	<0.0005	0.014	<0.0005	<0.001	<0.002	0.048
MW-1R	7/12/2016	382	17	0.67	114	--	--	--	<0.0002	<0.1	1.3	0.00070	0.014	<0.0005	<0.001	<0.002	0.044
MW-1R	10/26/2017	287	20	0.64	130	22	7.8	227	--	--	1.3	--	--	--	--	--	--
MW-1R	11/24/2021	361	15	0.71	110	22	7.7	243	<0.0002	0.050	1.2	0.00050	0.014	<0.0005	<0.001	<0.002	0.075
MW-1R	6/28/2022	405	15	0.72	109	22	7.1	252	<0.0002	0.046	1.2	<0.0005	0.013	<0.0005	<0.001	0.0026	0.073
MW-1R	9/7/2016	375	20	0.70	112	--	--	--	<0.0002	<0.1	1.3	<0.005	0.011	<0.0005	<0.001	<0.002	0.047
MW-1R	2/22/2017	387	19	0.75	124	--	--	--	<0.0002	<0.1	1.4	<0.002	0.011	<0.0005	<0.001	<0.002	0.049
MW-1R	5/16/2018	352	20	0.63	124	23	7.6	203	--	--	1.3	--	--	--	--	--	--
MW-1R	6/14/2016	387	17	0.72	112	--	--	--	<0.0002	<0.1	1.3	<0.0005	<0.025	<0.0005	<0.001	<0.002	0.053
MW-1R	3/30/2017	354	21	0.72	123	--	--	233	<0.0002	<0.1	1.3	<0.0005	0.011	<0.0005	<0.001	<0.002	0.046
MW-1R	11/26/2019	327	16	0.61	120	23	7.8	226	<0.0002	0.055	1.3	<0.0005	0.013	<0.0005	<0.001	<0.002	0.042
MW-1R	6/11/2019	329	17	0.70	100	23	7.4	232	<0.0002	0.052	1.3	<0.0005	0.013	<0.0005	<0.001	<0.002	0.045
MW-1R	5/5/2021	341	13	0.74	118	23	8.0	227	<0.0002	0.053	1.2	0.0013	0.012	<0.0005	<0.001	<0.002	0.079
MW-1R	7/25/2017	331	20	0.62	123	20	7.5	214	--	--	--	--	--	--	--	--	--
MW-1R	1/18/2017	356	17	0.77	123	--	--	--	<0.0002	<0.1	1.2	<0.0005	0.012	<0.0005	<0.001	<0.002	0.048
MW-1R	6/8/2020	325	14	0.66	108	21	7.1	220	--	--	1.2	--	--	--	--	--	--
MW-1R	10/26/2020	274	15	0.68	116	22	7.7	236	--	--	1.3	--	--	--	--	--	--
MW-210	5/26/2022	422	15	0.54	79	27	7.1	331	<0.0002	0.039	0.66	0.0010	0.011	<0.0005	<0.001	0.0024	0.059
MW-210	7/19/2022	400	14	0.55	75	26	6.4	306	<0.0002	0.041	0.67	0.0011	0.011	<0.0005	<0.001	0.0020	0.057
MW-210	9/6/2022	534	15	0.55	77	27	6.7	345	<0.0002	0.044	0.69	0.0014	0.011	<0.0005	<0.001	0.0021	0.066
MW-210	11/30/2022	397	14	0.57	77	25	6.7	329	<0.0002	0.042	0.70	0.0012	0.011	<0.0005	<0.001	0.0023	0.059
MW-210	3/21/2023	398	13	0.52	73	25	6.5	333	<0.0002	0.043	0.67	0.0022	0.012	<0.0005	<0.001	0.0043	0.059
MW-211	9/6/2022	1,020	18	0.55	98	78	7.0	679	<0.0002	0.046	2.2	0.0089	0.024	<0.0005	<0.001	0.025	0.37
MW-211	7/19/2022	791	18	0.56	57	51	6.0	499	<0.0002	0.030	1.6	0.0055	0.024	<0.0005	<0.001	0.015	0.27
MW-211	11/30/2022	791	17	0.55	65	57	7.0	566	<0.0002	0.046	1.7	0.016	0.026	<0.0005	<0.001	0.050	0.61
MW-211	5/26/2022	787	19	0.55	53	49	6.9	515	<0.0002	0.023	1.3	0.0016	0.021	<0.0005	<0.001	0.011	0.18
MW-211	3/21/2023	741	16	0.54	55	54	6.2	511	<0.0002	0.030	1.6	0.0035	0.023	<0.0005	<0.001	0.016	0.24

Well	Date	Sulfate	Chloride	Fluoride	Calcium	Magnesium	Potassium	Sodium	Mercury	Lithium	Boron	Lead	Molybdenum	Thallium	Antimony	Arsenic	Barium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-212	5/26/2022	522	17	0.44	51	21	7.3	387	<0.0002	0.026	0.66	0.0014	0.032	<0.0005	<0.001	0.0041	0.11
MW-212	7/19/2022	486	16	0.48	53	22	7.2	382	<0.0002	0.030	0.65	0.0017	0.037	<0.0005	<0.001	0.0034	0.089
MW-212	9/6/2022	477	17	0.49	43	17	6.7	456	<0.0002	0.025	0.74	0.0028	0.050	<0.0005	<0.001	0.0041	0.086
MW-212	3/21/2023	411	15	0.47	37	15	6.1	452	<0.0002	0.025	0.72	0.0025	0.054	<0.0005	<0.001	0.0034	0.073
MW-212	11/30/2022	400	17	0.49	41	16	6.5	464	<0.0002	0.025	0.72	0.0030	0.052	<0.0005	<0.001	0.0047	0.086
MW-213	3/21/2023	373	13	0.81	92	22	8.0	297	<0.0002	0.043	1.1	0.0023	0.016	<0.0005	<0.001	0.0035	0.081
MW-213	5/26/2022	368	15	0.74	91	22	8.3	264	0.00020	0.034	1.1	<0.0005	0.013	<0.0005	<0.001	<0.002	0.046
MW-213	7/19/2022	354	14	0.78	91	22	7.3	252	<0.0002	0.038	1.1	0.0026	0.014	<0.0005	<0.001	0.0028	0.077
MW-213	9/6/2022	389	14	0.75	100	23	8.5	287	<0.0002	0.046	1.2	0.0048	0.015	<0.0005	<0.001	0.0057	0.13
MW-213	11/30/2022	382	14	0.79	100	24	9.3	304	<0.0002	0.046	1.1	0.0044	0.016	<0.0005	<0.001	0.0048	0.12
MW-214	5/26/2022	452	23	0.60	46	52	6.1	355	<0.0002	0.045	0.29	0.0015	0.014	<0.0005	<0.001	0.0023	0.061
MW-214	3/21/2023	441	16	0.43	50	37	4.9	384	0.00030	0.051	0.30	0.0015	0.013	<0.0005	<0.001	<0.002	0.045
MW-214	7/19/2022	338	70	0.61	45	39	5.6	338	<0.0002	0.050	0.35	0.0047	0.017	<0.0005	<0.001	<0.002	0.056
MW-214	11/30/2022	422	16	0.53	47	34	5.6	390	<0.0002	0.059	0.38	0.0012	0.015	<0.0005	<0.001	0.0024	0.057
MW-214	9/6/2022	536	17	0.54	43	31	5.9	386	<0.0002	0.050	0.40	0.0016	0.016	<0.0005	<0.001	0.0023	0.053
MW-216	3/20/2023	695	17	0.54	95	36	7.9	430	<0.0002	0.059	0.71	0.0027	0.0099	<0.0005	<0.001	0.0034	0.10
MW-217	3/20/2023	790	18	0.65	109	38	8.5	474	<0.0002	0.055	0.83	<0.0005	0.013	<0.0005	<0.001	0.0031	0.048
MW-218	3/20/2023	696	17	0.57	102	34	7.5	430	<0.0002	0.054	0.78	<0.0005	0.011	<0.0005	<0.001	<0.002	0.046
MW-220	3/20/2023	650	17	0.56	84	32	8.3	416	<0.0002	0.058	0.76	0.00090	0.013	<0.0005	<0.001	<0.002	0.075
MW-221	3/20/2023	647	18	0.42	72	39	6.7	455	<0.0002	0.044	0.81	0.0027	0.024	<0.0005	<0.001	0.011	0.063
MW-300	3/20/2023	798	43	0.53	133	70	12	460	<0.0002	0.045	0.90	0.00090	0.013	<0.0005	<0.001	0.0089	0.12
MW-301	3/20/2023	196	8.1	0.42	13	5.2	4.0	327	<0.0002	0.064	0.38	0.0017	0.019	<0.0005	<0.001	0.0063	0.043
MW-6B	6/13/2017	348	--	--	--	--	--	319	--	--	--	--	--	--	--	--	--
MW-6B	3/20/2019	356	--	--	--	--	--	348	--	--	--	--	--	--	--	--	--
MW-6B	2/22/2017	304	12	0.62	27	--	--	--	<0.0002	<0.1	0.36	<0.002	0.011	<0.0005	<0.001	0.0035	0.025
MW-6B	3/14/2022	325	17	0.61	19	7.3	3.4	361	<0.0002	0.051	0.34	<0.0005	0.016	<0.0005	<0.001	0.0055	0.027
MW-6B	11/21/2016	364	12	0.58	28	--	--	--	<0.0002	<0.1	0.32	<0.002	0.013	<0.0005	<0.001	0.0043	0.027
MW-6B	9/7/2021	335	19	0.53	19	--	--	--	<0.0002	0.050	0.32	<0.0005	0.012	<0.0005	<0.001	0.0039	0.022
MW-6B	7/12/2016	372	12	0.52	33	--	--	--	<0.0002	<0.1	0.32	<0.0005	0.016	<0.0005	<0.001	0.0037	0.028
MW-6B	8/8/2016	391	12	0.53	31	--	--	--	<0.0002	<0.1	0.33	<0.002	0.013	<0.0005	<0.001	0.0041	0.028
MW-6B	6/10/2019	349	16	0.55	24	13	3.5	359	<0.0002	0.050	0.36	<0.0005	0.014	<0.0005	<0.001	0.0034	0.029
MW-6B	11/25/2019	340	16	0.53	21	8.6	3.5	362	<0.0002	0.054	0.33	<0.0005	0.013	0.00050	<0.001	0.0047	0.023
MW-6B	11/22/2021	330	18	0.57	18	7.2	3.2	345	<0.0002	0.048	0.31	<0.0005	0.014	<0.0005	<0.001	0.0042	0.022
MW-6B	11/30/2022	317	17	0.57	22	8.3	3.3	383	<0.0002	0.053	0.31	<0.0005	0.012	<0.0005	<0.001	0.0044	0.025
MW-6B	6/13/2016	374	12	0.56	33	--	--	--	<0.0002	<0.1	0.34	<0.0005	<0.025	<0.0005	<0.001	0.0036	0.030
MW-6B	10/11/2016	325	14	0.56	30	--	--	--	<0.0002	<0.1	0.34	<0.0005	0.013	<0.0005	<0.001	0.0038	0.026
MW-6B	5/14/2018	337	15	0.53	25	11	3.5	325	--	--	0.32	--	--	--	--	--	--
MW-6B	6/8/2020	312	15	0.54	25	10	3.5	348	--	--	0.33	--	--	--	--	--	--
MW-6B	10/27/2020	261	18	0.61	21	8.1	3.4	364	--	--	0.32	--	--	--	--	--	--
MW-6B	9/7/2016	366	14	0.55	30	--	--	--	<0.0002	<0.1	0.34	<0.0005	0.013	<0.0005	<0.001	0.0034	0.027
MW-6B	3/28/2017	334	12	0.60	24	--	--	349	<0.0002	<0.1	0.35	<0.0005	0.012	<0.0005	<0.001	0.0041	0.024
MW-6B	4/27/2017	347	13	0.53	28	--	--	--	<0.0002	<0.1	0.34	<0.0005	0.012	<0.0005	<0.001	0.0037	0.025
MW-6B	11/26/2018	353	15	0.59	21	8.4	3.5	353	--	--	0.31	--	--	--	--	--	--
MW-6B	3/16/2021	313	18	0.56	19	--	--	--	<0.0002	0.054	0.29	<0.0005	0.011	<0.0005	<0.001	0.0040	0.021
MW-6B	6/27/2022	326	18	0.61	20	7.5	2.9	314	<0.0002	0.048	0.27	<0.0005	0.013	<0.0005	<0.001	0.0039	0.024
MW-6B	10/25/2017	316	11	0.56	23	9.5	3.0	359	--	--	0.29	--	--	--	--	--	--

Well	Date	Sulfate	Chloride	Fluoride	Calcium	Magnesium	Potassium	Sodium	Mercury	Lithium	Boron	Lead	Molybdenum	Thallium	Antimony	Arsenic	Barium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-6B	5/6/2021	325	18	0.61	21	8.0	3.3	355	<0.0002	0.054	0.32	<0.0005	0.014	<0.0005	<0.001	0.0054	0.023
MW-6B	3/21/2023	346	17	0.55	20	8.2	3.4	363	<0.0002	0.052	0.31	0.00080	0.013	<0.0005	<0.001	0.0050	0.033
MW-6B	1/18/2017	357	11	0.57	27	--	--	--	<0.0002	<0.1	0.23	<0.0005	0.012	<0.0005	<0.001	0.0037	0.026
MW-6B	7/24/2017	310	14	0.51	32	14	3.4	324	--	--	--	--	--	--	--	--	--
MW-7A	6/13/2017	9,950	--	--	--	--	--	3,020	--	--	--	--	--	--	--	--	--
MW-7A	3/20/2019	10,300	--	--	--	--	--	3,950	--	--	--	--	--	--	--	--	--
MW-7A	9/7/2021	11,400	38	0.51	410	--	--	--	<0.0002	0.29	0.56	<0.0005	0.011	<0.0005	<0.001	<0.002	0.0087
MW-7A	5/6/2021	10,400	40	0.53	441	770	22	3,650	<0.0002	0.33	0.67	<0.0005	0.0049	<0.0005	<0.001	<0.002	0.0077
MW-7A	6/27/2022	10,700	33	0.54	418	713	21	3,530	<0.0002	0.31	<0.5	<0.0005	0.011	<0.0005	<0.001	<0.004	0.0084
MW-7A	6/10/2019	10,700	40	0.52	377	755	21	4,200	<0.0002	0.30	0.70	<0.0005	0.011	<0.0005	<0.001	<0.004	0.0087
MW-7A	10/26/2020	9,470	40	0.60	438	740	48	3,880	--	--	0.68	--	--	--	--	--	--
MW-7A	5/14/2018	10,600	50	0.52	428	735	24	3,620	--	--	0.57	--	--	--	--	--	--
MW-7A	3/17/2021	10,900	38	0.48	387	--	--	--	<0.0002	0.31	<0.5	<0.0005	0.0091	<0.0005	<0.001	<0.002	0.0074
MW-7A	3/14/2022	10,500	34	0.53	406	714	24	3,550	<0.0002	0.28	0.56	<0.0005	0.012	<0.0005	<0.001	<0.002	0.0096
MW-7A	3/21/2023	9,840	33	0.52	412	739	20	3,790	<0.0002	0.30	0.58	<0.0005	0.011	<0.0005	<0.001	<0.002	0.0075
MW-7A	3/28/2017	10,000	152	0.54	454	--	--	3,550	<0.0002	<0.5	0.85	<0.0005	0.011	<0.0005	<0.001	<0.002	0.0086
MW-7A	4/27/2017	10,100	45	0.51	434	--	--	--	<0.0002	<0.5	0.67	<0.0005	0.0095	<0.0005	<0.001	<0.002	0.0088
MW-7A	6/8/2020	10,800	38	0.53	470	795	20	3,400	--	--	0.62	--	--	--	--	--	--
MW-7A	7/11/2016	11,500	36	0.51	432	--	--	--	<0.0002	<0.5	0.79	<0.0005	0.011	<0.0005	<0.001	<0.002	0.0079
MW-7A	10/11/2016	10,900	46	0.55	444	--	--	--	<0.0002	<0.5	0.92	<0.0005	0.013	<0.0005	<0.001	<0.002	0.0095
MW-7A	11/25/2019	10,500	37	0.61	452	765	22	3,380	<0.0002	0.29	0.63	<0.0005	0.011	<0.0005	<0.001	<0.004	0.0097
MW-7A	11/30/2022	9,020	33	0.53	416	690	22	3,770	<0.0002	0.29	<0.5	<0.0005	0.011	<0.0005	<0.001	0.0022	0.0087
MW-7A	6/13/2016	11,100	35	0.54	1,880	--	--	--	<0.0002	0.30	0.70	<0.0005	<0.025	<0.0005	<0.001	<0.002	0.0092
MW-7A	8/8/2016	11,900	34	0.51	444	--	--	--	<0.0002	<0.5	0.86	<0.002	0.013	0.0011	<0.001	<0.002	0.0088
MW-7A	10/25/2017	9,620	46	0.57	420	695	21	3,550	--	--	0.58	--	--	--	--	--	--
MW-7A	2/22/2017	8,650	42	0.58	407	--	--	--	<0.0002	<0.5	0.88	<0.002	0.0091	<0.0005	<0.001	<0.002	0.0079
MW-7A	1/18/2017	10,500	41	0.56	416	--	--	--	<0.0002	<0.5	<0.5	<0.001	0.0098	<0.001	<0.002	<0.004	0.0092
MW-7A	11/21/2016	11,200	43	0.57	406	--	--	--	<0.0002	<0.5	0.68	<0.002	0.011	<0.0005	<0.001	<0.002	0.011
MW-7A	11/22/2021	9,360	35	0.52	372	620	24	3,230	<0.0002	0.26	0.68	<0.0005	0.013	<0.0005	<0.001	<0.002	0.0073
MW-7A	7/24/2017	9,600	49	0.52	438	735	20	3,320	--	--	--	--	--	--	--	--	--
MW-7A	11/26/2018	9,460	36	0.53	403	660	30	3,450	--	--	0.66	--	--	--	--	--	--
MW-7A	9/6/2016	11,100	49	0.55	425	--	--	--	<0.0002	<0.5	0.86	<0.0005	0.013	<0.0005	<0.001	<0.002	0.0091
MW-7B	6/13/2017	262	--	--	--	--	--	356	--	--	--	--	--	--	--	--	--
MW-7B	3/20/2019	281	--	--	--	--	--	352	--	--	--	--	--	--	--	--	--
MW-7B	7/11/2016	346	6.6	0.52	20	--	--	--	<0.0002	<0.1	0.45	<0.0005	0.0082	<0.0005	<0.001	<0.005	0.020
MW-7B	4/27/2017	280	9.6	0.55	19	--	--	--	<0.0002	<0.1	0.42	<0.0005	0.0050	<0.0005	<0.001	<0.002	0.018
MW-7B	2/22/2017	288	9.3	0.63	20	--	--	--	<0.0002	<0.1	0.46	<0.002	0.0048	<0.0005	<0.001	<0.002	0.020
MW-7B	7/24/2017	362	11	0.56	18	16	5.2	354	--	--	--	--	--	--	--	--	--
MW-7B	8/8/2016	364	8.6	0.57	19	--	--	--	<0.0002	<0.1	0.45	<0.002	0.0064	<0.0005	<0.001	<0.002	0.020
MW-7B	3/28/2017	267	9.4	0.61	19	--	--	340	<0.0002	<0.1	0.44	<0.0005	0.0054	<0.0005	<0.001	<0.002	0.020
MW-7B	10/11/2016	320	10	0.59	19	--	--	--	<0.0002	<0.1	0.44	<0.0005	0.0061	<0.0005	<0.001	<0.002	0.019
MW-7B	5/14/2018	288	12	0.59	16	15	5.1	334	--	--	0.43	--	--	--	--	--	--
MW-7B	3/21/2023	273	12	0.61	17	15	5.3	379	<0.0002	0.058	0.43	<0.0005	0.0056	<0.0005	<0.001	<0.002	0.016
MW-7B	3/17/2021	265	12	0.53	18	--	--	--	<0.0002	0.064	0.36	<0.0005	0.0054	<0.0005	<0.001	<0.002	0.016
MW-7B	6/10/2019	286	12	0.62	13	14	5.1	346	<0.0002	0.057	0.47	<0.0005	0.0071	<0.0005	<0.001	<0.002	0.014
MW-7B	6/13/2016	312	8.9	0.61	19	--	--	--	<0.0002	<0.1	0.44	<0.0005	<0.025	<0.0005	<0.001	<0.002	0.021

Well	Date	Sulfate	Chloride	Fluoride	Calcium	Magnesium	Potassium	Sodium	Mercury	Lithium	Boron	Lead	Molybdenum	Thallium	Antimony	Arsenic	Barium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-7B	1/18/2017	303	8.6	0.58	19	--	--	--	<0.0002	<0.1	0.34	<0.0005	0.0050	<0.0005	<0.001	<0.002	0.018
MW-7B	10/25/2017	262	8.6	0.57	17	15	4.8	323	--	--	0.37	--	--	--	--	--	--
MW-7B	11/30/2022	236	13	0.60	17	15	5.5	385	<0.0002	0.057	0.43	<0.0005	0.0052	<0.0005	<0.001	<0.002	0.017
MW-7B	9/6/2016	309	10	0.59	19	--	--	--	<0.0002	<0.1	0.45	<0.0005	0.0053	<0.0005	<0.001	<0.002	0.022
MW-7B	6/8/2020	266	10	0.55	17	14	5.1	320	--	--	0.42	--	--	--	--	--	--
MW-7B	5/6/2021	250	12	0.59	18	15	5.2	326	<0.0002	0.061	0.40	<0.0005	0.0050	<0.0005	<0.001	<0.002	0.016
MW-7B	6/27/2022	271	13	0.64	15	13	4.7	308	<0.0002	0.054	0.38	<0.0005	0.0053	<0.0005	<0.001	<0.002	0.016
MW-7B	11/21/2016	289	9.2	0.62	19	--	--	--	<0.0002	<0.1	0.41	<0.002	0.0053	<0.0005	<0.001	<0.002	0.020
MW-7B	10/26/2020	222	12	0.51	19	15	5.4	329	--	--	0.50	--	--	--	--	--	--
MW-7B	3/14/2022	250	13	0.60	16	14	5.2	323	<0.0002	0.057	0.42	<0.0005	0.0071	<0.0005	<0.001	<0.002	0.019
MW-7B	11/25/2019	261	11	0.60	17	14	5.5	328	<0.0002	0.062	0.42	<0.0005	0.0068	<0.0005	<0.001	<0.002	0.016
MW-7B	11/26/2018	304	11	0.58	16	13	5.2	322	--	--	0.41	--	--	--	--	--	--
MW-7B	9/7/2021	242	14	0.55	16	--	--	--	<0.0002	0.059	0.42	<0.0005	0.0054	<0.0005	<0.001	<0.002	0.017
MW-7B	11/22/2021	248	13	0.56	16	14	5.2	326	<0.0002	0.056	0.40	<0.0005	0.0057	<0.0005	<0.001	<0.002	0.015
MW-8B	6/13/2017	345	--	--	--	--	--	212	--	--	--	--	--	--	--	--	--
MW-8B	3/20/2019	326	--	--	--	--	--	191	--	--	--	--	--	--	--	--	--
MW-8B	9/7/2016	642	15	0.34	89	--	--	--	<0.0002	0.11	0.40	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.039
MW-8B	7/24/2017	496	13	0.30	79	69	8.7	272	--	--	--	--	--	--	--	--	--
MW-8B	11/26/2018	490	13	0.35	77	71	6.8	285	--	--	0.38	--	--	--	--	--	--
MW-8B	9/7/2021	419	15	0.32	75	--	--	--	<0.0002	0.095	0.40	<0.0005	0.022	<0.0005	<0.001	<0.002	0.027
MW-8B	10/25/2017	439	11	0.29	84	73	6.0	252	--	--	0.30	--	--	--	--	--	--
MW-8B	8/8/2016	502	11	0.27	83	--	--	--	<0.0002	<0.1	0.35	<0.002	<0.002	<0.0005	<0.001	<0.002	0.039
MW-8B	10/11/2016	448	13	0.27	88	--	--	--	<0.0002	<0.1	0.33	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.031
MW-8B	7/11/2016	431	11	0.26	85	--	--	--	<0.0002	<0.1	0.36	0.0020	<0.002	<0.0005	<0.001	<0.005	0.060
MW-8B	11/25/2019	358	12	0.28	99	79	6.2	210	<0.0002	0.089	0.34	0.00050	<0.002	<0.0005	<0.001	<0.002	0.028
MW-8B	6/10/2019	354	11	0.27	71	66	5.4	199	<0.0002	0.075	0.35	<0.0005	<0.005	<0.0005	<0.001	<0.002	0.028
MW-8B	3/29/2017	260	9.4	0.22	87	--	--	161	<0.0002	<0.1	0.30	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.028
MW-8B	6/8/2020	291	9.7	0.20	95	70	4.9	156	--	--	0.31	--	--	--	--	--	--
MW-8B	5/14/2018	282	11	0.22	80	61	4.7	156	--	--	0.29	--	--	--	--	--	--
MW-8B	10/27/2020	238	12	0.22	90	72	5.1	146	--	--	0.23	--	--	--	--	--	--
MW-8B	11/21/2016	342	9.9	0.26	82	--	--	--	<0.0002	<0.1	0.27	<0.002	<0.002	<0.0005	<0.001	<0.002	0.030
MW-8B	3/17/2021	259	11	0.17	101	--	--	--	<0.0002	0.075	0.21	0.00060	0.0026	<0.0005	<0.001	<0.002	0.027
MW-8B	5/6/2021	251	11	0.18	106	75	4.2	89	<0.0002	0.070	0.25	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.030
MW-8B	6/13/2016	255	9.0	0.18	91	--	--	--	<0.0002	<0.1	0.28	<0.0005	<0.025	<0.0005	<0.001	<0.002	0.038
MW-8B	4/27/2017	233	8.5	0.19	75	--	--	--	<0.0002	<0.1	0.25	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.026
MW-8B	6/27/2022	205	12	0.20	86	62	3.6	79	<0.0002	0.066	0.20	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.030
MW-8B	11/22/2021	221	12	0.22	77	65	4.4	87	<0.0002	0.061	0.23	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.020
MW-8B	11/30/2022	194	11	0.19	89	64	4.3	112	<0.0002	0.072	0.26	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.030
MW-8B	1/18/2017	252	8.5	0.21	90	--	--	--	<0.0002	<0.1	0.17	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.032
MW-8B	2/22/2017	181	16	0.19	83	--	--	--	<0.0002	<0.1	0.26	<0.002	<0.002	<0.0005	<0.001	<0.002	0.031
MW-8B	3/21/2023	196	10	0.17	83	62	4.1	106	<0.0002	0.069	0.25	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.027
MW-8B	3/14/2022	221	12	0.17	92	68	4.0	76	<0.0002	0.065	0.23	<0.0005	<0.002	<0.0005	<0.001	<0.002	0.034
MW-9N	6/14/2017	1,100	--	--	--	--	--	745	--	--	--	--	--	--	--	--	--
MW-9N	3/18/2019	1,320	--	--	--	152	11	755	--	--	--	--	--	--	--	--	--
MW-9N	11/30/2022	1,430	27	0.70	100	189	14	867	<0.0002	0.060	2.5	<0.0005	0.060	<0.0005	<0.001	<0.002	0.091
MW-9N	10/26/2020	1,370	33	0.68	110	176	14	860	--	--	3.2	--	--	--	--	--	--

Well	Date	Sulfate	Chloride	Fluoride	Calcium	Magnesium	Potassium	Sodium	Mercury	Lithium	Boron	Lead	Molybdenum	Thallium	Antimony	Arsenic	Barium
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-9N	3/21/2023	1,310	24	0.65	88	168	12	829	0.00030	0.054	2.6	<0.0005	0.057	<0.0005	<0.001	<0.002	0.070
MW-9N	3/16/2021	1,270	27	0.64	96	--	--	--	<0.0002	0.057	2.5	<0.0005	0.043	<0.0005	<0.001	<0.002	0.056
MW-9N	11/27/2018	1,350	21	0.60	86	144	13	790	--	--	2.7	--	--	--	--	--	--
MW-9N	6/9/2020	1,330	24	0.60	93	148	10	643	--	--	2.2	--	--	--	--	--	--
MW-9N	2/22/2017	1,490	16	0.59	77	--	--	--	<0.0002	<0.1	3.2	<0.002	0.046	<0.0005	<0.001	<0.002	0.099
MW-9N	5/15/2018	1,240	22	0.51	84	142	12	785	--	--	2.5	--	--	--	--	--	--
MW-9N	9/8/2021	1,330	25	0.70	78	--	--	--	<0.0002	0.054	2.9	<0.0005	0.061	<0.0005	<0.001	<0.002	0.069
MW-9N	5/5/2021	1,250	27	0.67	91	153	11	700	<0.0002	0.054	2.6	<0.0005	0.048	<0.0005	<0.001	<0.002	0.062
MW-9N	11/25/2019	1,360	31	0.54	91	149	13	775	<0.0002	0.054	2.6	<0.0005	0.044	<0.0005	<0.001	<0.002	0.064
MW-9N	3/29/2017	1,110	16	0.56	82	--	--	790	<0.0002	<0.1	2.6	<0.0005	0.050	<0.0005	<0.001	<0.002	0.093
MW-9N	10/26/2017	1,120	18	0.56	85	140	11	765	--	--	2.9	--	--	--	--	--	--
MW-9N	7/25/2017	1,300	19	0.51	85	142	11	750	--	--	--	--	--	--	--	--	--
MW-9N	10/10/2016	1,360	15	0.55	78	--	--	--	<0.0002	<0.1	2.7	<0.0005	0.047	<0.0005	<0.001	<0.002	0.092
MW-9N	1/19/2017	1,350	14	0.60	81	--	--	--	<0.0002	<0.1	2.9	<0.0005	0.045	<0.0005	<0.001	<0.002	0.097
MW-9N	4/28/2017	1,260	16	0.56	76	--	--	--	<0.0002	<0.1	2.4	<0.0005	0.050	<0.0005	<0.001	<0.002	0.075
MW-9N	6/11/2019	1,290	20	0.59	70	136	11	835	<0.0002	0.045	2.3	<0.0005	0.049	<0.0005	<0.001	<0.002	0.065
MW-9N	11/23/2021	1,270	24	0.73	75	134	12	684	<0.0002	0.051	2.9	<0.0005	0.091	<0.0005	0.0011	<0.002	0.082
MW-9N	11/21/2016	1,320	15	0.58	78	--	--	--	<0.0002	<0.1	3.0	0.0010	0.047	<0.0005	<0.001	<0.002	0.10
MW-9N	3/15/2022	1,200	23	0.68	84	145	12	768	<0.0002	0.051	2.6	<0.0005	0.054	<0.0005	<0.001	<0.002	0.058
MW-9N	7/12/2016	1,290	14	0.51	74	--	--	--	<0.0002	<0.1	2.7	<0.0005	0.044	<0.0005	<0.001	<0.005	0.098
MW-9N	8/8/2016	1,360	14	0.52	75	--	--	--	<0.0002	<0.1	2.7	<0.002	0.045	<0.0005	<0.001	<0.002	0.099
MW-9N	9/7/2016	1,220	17	0.55	80	--	--	--	<0.0002	<0.1	2.7	<0.0005	0.045	<0.0005	<0.001	<0.002	0.12
MW-9N	6/28/2022	1,260	23	0.72	86	136	9.9	660	<0.0002	0.050	2.3	<0.0005	0.054	<0.0005	<0.001	<0.002	0.053
MW-9N	6/13/2016	1,230	15	0.53	74	--	--	--	<0.0002	<0.1	2.9	0.00080	0.046	<0.0005	<0.001	0.0022	0.10
MW-PB1	5/25/2022	610	25	0.53	154	66	9.1	326	<0.0002	0.044	1.3	0.0038	0.011	<0.0005	<0.001	0.0033	0.11
MW-PB1	2/1/2021	640	32	0.50	176	73	13	312	<0.0002	0.061	1.2	0.017	0.0085	<0.0005	<0.001	0.013	0.34
MW-PB1	7/27/2021	532	26	0.50	129	60	9.8	278	<0.0002	0.057	1.2	0.015	0.0090	<0.0005	<0.001	0.012	0.33
MW-PB1	11/18/2021	568	24	0.46	132	58	10	274	<0.0002	0.054	1.2	0.017	0.015	<0.0005	<0.001	0.014	0.36
MW-PB1	6/27/2022	567	24	0.58	158	65	9.0	315	<0.0002	0.039	1.2	<0.0005	0.0091	<0.0005	<0.001	0.0024	0.056
MW-PB1	3/15/2021	455	26	0.51	126	62	12	276	<0.0002	0.050	1.3	0.0077	0.010	<0.0005	<0.001	0.0066	0.19
MW-PB1	9/9/2021	478	25	0.49	123	54	8.8	265	<0.0002	0.040	1.2	0.0034	0.010	<0.0005	<0.001	0.0035	0.11
MW-PB1	3/28/2022	438	26	0.51	120	55	11	265	<0.0002	0.043	1.3	0.0048	0.010	<0.0005	<0.001	0.0044	0.11
MW-PB1	12/1/2020	502	26	0.51	130	58	10	262	<0.0002	0.050	1.2	0.0022	0.011	<0.0005	<0.001	0.0024	0.099
MW-PB1	11/30/2022	470	23	0.52	136	56	9.4	296	--	--	1.1	--	--	--	--	--	--
MW-PB1	5/4/2021	437	26	0.52	160	70	13	279	<0.0002	0.063	1.3	0.022	0.010	<0.0005	<0.001	0.016	0.38
MW-PB1	3/20/2023	515	22	0.50	117	52	9.5	284	<0.0002	0.062	1.3	0.027	0.019	0.00050	<0.001	0.021	0.57
MW-PB3	3/20/2023	595	18	0.57	118	51	15	358	<0.0002	0.045	0.93	0.0071	0.030	<0.0005	<0.001	0.0057	0.11

Well	Date	Beryllium	Cadmium	Chromium	Cobalt	Selenium	Aluminum	Iron, T	Iron, D	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BAI-Sump-S	5/25/2022	--	<0.0005	--	--	<0.04	0.77	<0.5	--	<0.05
BAI-Sump-S	3/15/2022	<0.0005	0.0028	--	<0.002	<0.005	--	<0.5	--	--
BAI-Sump-S	6/27/2022	<0.002	<0.0005	--	<0.008	<0.02	--	<0.5	--	--
BAI-Sump-S	10/3/2019	<0.0005	<0.0005	--	<0.002	0.053	--	<0.5	--	--
BAI-Sump-S	3/20/2023	<0.0005	<0.0005	<0.002	<0.002	0.011	<0.5	<0.5	--	<0.25
MW-102	12/17/2018	--	--	--	--	--	--	--	--	--
MW-102	3/18/2019	--	--	--	--	--	--	--	--	--
MW-102	7/18/2016	<0.0005	<0.0005	0.0070	0.0039	<0.002	--	--	--	--
MW-102	2/22/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-102	11/21/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-102	3/29/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-102	10/10/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-102	8/9/2016	0.00090	<0.0005	0.028	0.012	<0.002	--	--	--	--
MW-102	1/19/2017	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-102	4/28/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-102	9/7/2016	<0.0005	<0.0005	0.0069	0.0041	<0.002	--	--	--	--
MW-102	10/26/2017	--	--	--	--	--	--	--	--	--
MW-102	6/11/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-102	11/27/2018	--	--	--	--	--	--	0.34	--	--
MW-102	5/15/2018	--	--	--	--	--	--	--	--	--
MW-102	6/9/2020	--	--	--	--	--	--	0.15	--	--
MW-102	11/26/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-102	6/28/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-102	10/26/2020	--	--	--	--	--	--	0.34	--	--
MW-102	5/5/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.21	--	--
MW-102	9/8/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-102	11/23/2021	<0.0005	<0.0005	<0.002	0.0036	<0.005	--	0.57	--	--
MW-102	3/16/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-102	11/30/2022	<0.0005	<0.0005	<0.002	0.0023	<0.005	--	0.37	--	--
MW-102	3/21/2023	<0.0005	<0.0005	<0.002	0.0043	<0.005	0.91	1.0	--	1.6
MW-102	3/15/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.10	--	--
MW-103	7/18/2016	<0.0005	<0.0005	<0.002	<0.002	0.0049	--	--	--	--
MW-103	8/9/2016	<0.0005	<0.0005	<0.002	<0.002	0.0043	--	--	--	--
MW-103	9/7/2016	<0.0005	<0.0005	<0.002	<0.002	0.0050	--	--	--	--
MW-103	10/10/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-103	11/22/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-103	1/18/2017	<0.0005	<0.0005	<0.002	<0.002	0.0071	--	--	--	--
MW-103	2/23/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-103	3/30/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-103	4/28/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-103	10/26/2017	--	--	--	--	--	--	--	--	--
MW-103	5/16/2018	--	--	--	--	--	--	--	--	--
MW-103	11/27/2018	--	--	--	--	--	--	0.33	--	--
MW-103	3/19/2019	--	--	--	--	--	--	--	--	--
MW-103	6/11/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--

Well	Date	Beryllium	Cadmium	Chromium	Cobalt	Selenium	Aluminum	Iron, T	Iron, D	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-103	11/26/2019	<0.0005	<0.0005	<0.002	<0.002	0.011	--	--	--	--
MW-103	6/8/2020	--	--	--	--	--	--	0.16	--	--
MW-103	10/26/2020	--	--	--	--	--	--	0.16	--	--
MW-103	3/16/2021	<0.0005	<0.0005	0.0024	0.0022	0.011	--	--	--	--
MW-103	5/5/2021	<0.0005	<0.0005	<0.002	<0.002	0.0079	--	0.30	--	--
MW-103	9/8/2021	<0.0005	<0.0005	<0.002	<0.002	0.012	--	--	--	--
MW-103	11/23/2021	<0.0005	<0.0005	<0.002	<0.002	0.011	--	0.34	--	--
MW-103	3/15/2022	<0.0005	<0.0005	<0.002	<0.002	0.0061	--	1.0	--	--
MW-103	6/28/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.15	--	--
MW-103	11/30/2022	<0.0005	<0.0005	<0.002	<0.002	0.013	--	0.28	--	--
MW-103	3/21/2023	<0.0005	<0.0005	<0.002	<0.002	0.011	0.10	0.21	--	0.060
MW-104	3/19/2019	--	--	--	--	--	--	--	--	--
MW-104	6/28/2022	<0.0005	<0.0005	<0.002	0.0022	<0.005	--	<0.1	--	--
MW-104	6/8/2020	--	--	--	--	--	--	0.15	--	--
MW-104	5/5/2021	<0.0005	<0.0005	<0.002	0.0025	<0.005	--	<0.1	--	--
MW-104	3/28/2022	<0.0005	<0.0005	0.0025	0.0058	<0.005	--	1.5	--	--
MW-104	11/26/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-104	10/26/2020	--	--	--	--	--	--	<0.1	--	--
MW-104	12/1/2022	--	--	--	--	--	--	0.10	--	--
MW-104	11/24/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-104	1/18/2017	<0.0005	<0.0005	<0.002	0.0020	<0.002	--	--	--	--
MW-104	6/11/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-104	2/23/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-104	11/27/2018	--	--	--	--	--	--	0.15	--	--
MW-104	11/22/2016	<0.0005	<0.0005	<0.002	0.0021	<0.01	--	--	--	--
MW-104	10/26/2017	--	--	--	--	--	--	--	--	--
MW-104	5/16/2018	--	--	--	--	--	--	--	--	--
MW-104	8/25/2016	<0.0005	<0.0005	0.0026	0.0037	<0.002	--	--	--	--
MW-104	10/10/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-104	4/28/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-104	7/18/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-104	3/30/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-104	9/7/2016	<0.0005	<0.0005	<0.002	0.0024	<0.002	--	--	--	--
MW-105	3/19/2019	--	--	--	--	--	--	--	--	--
MW-105	4/27/2017	<0.0005	<0.0005	0.0070	<0.002	0.052	--	--	--	--
MW-105	7/18/2016	<0.0005	<0.0005	0.0075	<0.002	0.065	--	--	--	--
MW-105	8/8/2016	<0.0005	<0.0005	0.0063	<0.002	0.053	--	--	--	--
MW-105	3/29/2017	<0.0005	<0.0005	0.0070	<0.002	0.051	--	--	--	--
MW-105	5/14/2018	--	--	--	--	--	--	--	--	--
MW-105	2/22/2017	<0.0005	<0.0005	0.0024	<0.002	0.050	--	--	--	--
MW-105	6/10/2019	<0.0005	<0.0005	0.0050	<0.002	0.044	--	--	--	--
MW-105	9/6/2016	<0.0005	<0.0005	<0.002	<0.002	0.050	--	--	--	--
MW-105	11/21/2016	<0.0005	<0.0005	<0.002	<0.002	0.051	--	--	--	--
MW-105	10/25/2017	--	--	--	--	--	--	--	--	--
MW-105	10/11/2016	<0.0005	<0.0005	<0.002	<0.002	0.052	--	--	--	--
MW-105	6/8/2020	--	--	--	--	--	--	0.31	--	--

Well	Date	Beryllium	Cadmium	Chromium	Cobalt	Selenium	Aluminum	Iron, T	Iron, D	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-105	1/18/2017	<0.0005	<0.0005	<0.002	<0.002	0.053	--	--	--	--
MW-105	11/25/2019	<0.0005	<0.0005	0.0028	<0.002	0.037	--	--	--	--
MW-105	11/26/2018	--	--	--	--	0.038	--	<0.1	--	--
MW-105	6/27/2022	<0.0005	<0.0005	0.0032	<0.002	0.028	--	<0.1	--	--
MW-105	5/6/2021	<0.0005	<0.0005	0.0022	<0.002	0.030	--	<0.1	--	--
MW-105	11/30/2022	<0.0005	<0.0005	0.015	0.0052	0.032	--	8.3	--	--
MW-105	3/21/2023	<0.0005	<0.0005	0.011	0.0031	0.027	0.69	0.61	--	<0.05
MW-105	3/17/2021	<0.0005	<0.0005	<0.002	<0.002	0.020	--	--	--	--
MW-105	10/27/2020	--	--	--	--	--	--	0.18	--	--
MW-105	9/7/2021	<0.0005	<0.0005	<0.002	<0.002	0.020	--	--	--	--
MW-105	11/22/2021	<0.0005	<0.0005	<0.002	<0.002	0.017	--	<0.1	--	--
MW-105	3/14/2022	<0.0005	<0.0005	<0.002	<0.002	0.021	--	<0.1	--	--
MW-1R	6/14/2017	--	--	--	--	--	--	--	--	--
MW-1R	3/19/2019	--	--	--	--	--	--	--	--	--
MW-1R	11/22/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	1.4	--
MW-1R	12/1/2022	--	--	--	--	--	--	16	--	--
MW-1R	8/10/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-1R	10/10/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-1R	4/28/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-1R	3/28/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	4.3	--	--
MW-1R	7/12/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-1R	10/26/2017	--	--	--	--	--	--	--	1.6	--
MW-1R	11/24/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	7.5	--	--
MW-1R	6/28/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	15	--	--
MW-1R	9/7/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-1R	2/22/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-1R	5/16/2018	--	--	--	--	--	--	--	1.6	--
MW-1R	6/14/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	1.4	--
MW-1R	3/30/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-1R	11/26/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	1.4	--
MW-1R	6/11/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	1.5	--
MW-1R	5/5/2021	<0.0005	<0.0005	0.0023	<0.002	<0.005	--	6.4	--	--
MW-1R	7/25/2017	--	--	--	--	--	--	--	1.5	--
MW-1R	1/18/2017	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-1R	6/8/2020	--	--	--	--	--	--	1.9	--	--
MW-1R	10/26/2020	--	--	--	--	--	--	2.2	--	--
MW-210	5/26/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	3.1	--	--
MW-210	7/19/2022	<0.0005	<0.0005	0.0028	<0.002	<0.005	--	4.2	--	--
MW-210	9/6/2022	<0.0005	<0.0005	0.0024	<0.002	<0.005	--	4.7	--	--
MW-210	11/30/2022	<0.0005	<0.0005	0.0021	<0.002	<0.005	--	3.6	--	--
MW-210	3/21/2023	<0.0005	<0.0005	0.0021	<0.002	<0.005	0.83	10	--	0.16
MW-211	9/6/2022	0.00070	<0.0005	0.019	0.010	0.024	--	22	--	--
MW-211	7/19/2022	<0.0005	<0.0005	0.011	0.0058	<0.005	--	13	--	--
MW-211	11/30/2022	0.0010	<0.0005	0.034	0.019	0.0062	--	44	--	--
MW-211	5/26/2022	<0.0005	<0.0005	0.0038	0.0020	<0.005	--	3.6	--	--
MW-211	3/21/2023	<0.0005	<0.0005	0.0088	0.0049	<0.005	5.0	8.2	--	0.76

Well	Date	Beryllium	Cadmium	Chromium	Cobalt	Selenium	Aluminum	Iron, T	Iron, D	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-212	5/26/2022	<0.0005	<0.0005	0.0024	0.0023	<0.005	--	1.3	--	--
MW-212	7/19/2022	<0.0005	<0.0005	<0.002	0.0022	<0.005	--	0.95	--	--
MW-212	9/6/2022	<0.0005	<0.0005	0.0020	0.0036	<0.005	--	1.2	--	--
MW-212	3/21/2023	<0.0005	<0.0005	<0.002	0.0033	<0.005	0.56	0.98	--	0.48
MW-212	11/30/2022	<0.0005	<0.0005	0.0022	0.0037	<0.005	--	1.1	--	--
MW-213	3/21/2023	<0.0005	<0.0005	0.0063	0.0025	<0.005	3.2	12	--	0.26
MW-213	5/26/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	1.8	--	--
MW-213	7/19/2022	<0.0005	<0.0005	0.0056	0.0021	<0.005	--	8.3	--	--
MW-213	9/6/2022	<0.0005	<0.0005	0.012	0.0049	<0.005	--	20	--	--
MW-213	11/30/2022	<0.0005	<0.0005	0.012	0.0044	<0.005	--	18	--	--
MW-214	5/26/2022	<0.0005	<0.0005	0.0054	0.0021	0.0074	--	3.6	--	--
MW-214	3/21/2023	<0.0005	<0.0005	0.0038	<0.002	<0.005	2.1	2.2	--	0.16
MW-214	7/19/2022	<0.0005	<0.0005	0.0044	<0.002	<0.005	--	2.8	--	--
MW-214	11/30/2022	<0.0005	<0.0005	0.0043	<0.002	0.0051	--	2.7	--	--
MW-214	9/6/2022	<0.0005	<0.0005	0.0048	<0.002	<0.005	--	2.6	--	--
MW-216	3/20/2023	<0.0005	<0.0005	0.0084	0.0029	<0.005	6.3	8.5	--	0.30
MW-217	3/20/2023	<0.0005	<0.0005	<0.002	<0.002	<0.005	0.35	1.7	--	0.17
MW-218	3/20/2023	<0.0005	<0.0005	<0.002	<0.002	<0.005	0.69	1.8	--	0.16
MW-220	3/20/2023	<0.0005	<0.0005	0.0043	<0.002	<0.005	3.6	3.4	--	0.16
MW-221	3/20/2023	<0.0005	<0.0005	0.0042	<0.002	<0.005	3.7	8.6	--	0.29
MW-300	3/20/2023	<0.0005	<0.0005	0.0043	0.0038	<0.005	2.9	6.7	--	1.9
MW-301	3/20/2023	<0.0005	<0.0005	0.0029	<0.002	<0.005	3.4	1.9	--	0.050
MW-6B	6/13/2017	--	--	--	--	--	--	--	--	--
MW-6B	3/20/2019	--	--	--	--	--	--	--	--	--
MW-6B	2/22/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-6B	3/14/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.12	--	--
MW-6B	11/21/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	<0.1	--
MW-6B	9/7/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-6B	7/12/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-6B	8/8/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-6B	6/10/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	<0.1	--
MW-6B	11/25/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	<0.1	--
MW-6B	11/22/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.13	--	--
MW-6B	11/30/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.22	--	--
MW-6B	6/13/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	<0.1	--
MW-6B	10/11/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-6B	5/14/2018	--	--	--	--	--	--	--	<0.1	--
MW-6B	6/8/2020	--	--	--	--	--	--	0.36	--	--
MW-6B	10/27/2020	--	--	--	--	--	--	0.19	--	--
MW-6B	9/7/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-6B	3/28/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-6B	4/27/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-6B	11/26/2018	--	--	--	--	--	--	--	<0.1	--
MW-6B	3/16/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-6B	6/27/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.14	--	--
MW-6B	10/25/2017	--	--	--	--	--	--	--	<0.1	--

Well	Date	Beryllium	Cadmium	Chromium	Cobalt	Selenium	Aluminum	Iron, T	Iron, D	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-6B	5/6/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.15	--	--
MW-6B	3/21/2023	<0.0005	<0.0005	0.0033	<0.002	<0.005	0.77	0.83	--	0.13
MW-6B	1/18/2017	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-6B	7/24/2017	--	--	--	--	--	--	--	<0.1	--
MW-7A	6/13/2017	--	--	--	--	--	--	--	--	--
MW-7A	3/20/2019	--	--	--	--	--	--	--	--	--
MW-7A	9/7/2021	<0.0005	<0.0005	0.0022	<0.002	<0.005	--	--	--	--
MW-7A	5/6/2021	<0.0005	<0.0005	0.0022	<0.002	<0.005	--	<0.1	--	--
MW-7A	6/27/2022	<0.001	<0.0005	<0.004	<0.004	<0.01	--	<0.5	--	--
MW-7A	6/10/2019	<0.001	<0.0005	<0.004	<0.004	<0.01	--	--	<0.1	--
MW-7A	10/26/2020	--	--	--	--	--	--	<0.1	--	--
MW-7A	5/14/2018	--	--	--	--	--	--	--	<0.1	--
MW-7A	3/17/2021	<0.001	<0.0005	0.0024	<0.002	<0.005	--	--	--	--
MW-7A	3/14/2022	<0.0005	<0.0005	0.0022	<0.002	<0.005	--	<0.5	--	--
MW-7A	3/21/2023	<0.0005	<0.0005	<0.002	<0.002	<0.005	<0.5	<0.5	--	<0.25
MW-7A	3/28/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-7A	4/27/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-7A	6/8/2020	--	--	--	--	--	--	<0.1	--	--
MW-7A	7/11/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7A	10/11/2016	<0.0005	<0.0005	<0.002	<0.002	0.0031	--	--	--	--
MW-7A	11/25/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	<0.1	--
MW-7A	11/30/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<1	--	--
MW-7A	6/13/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	<0.1	--
MW-7A	8/8/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7A	10/25/2017	--	--	--	--	--	--	--	1.0	--
MW-7A	2/22/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-7A	1/18/2017	<0.001	<0.001	<0.004	<0.004	<0.01	--	--	--	--
MW-7A	11/21/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	<0.1	--
MW-7A	11/22/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-7A	7/24/2017	--	--	--	--	--	--	--	<0.1	--
MW-7A	11/26/2018	--	--	--	--	--	--	--	<0.1	--
MW-7A	9/6/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7B	6/13/2017	--	--	--	--	--	--	--	--	--
MW-7B	3/20/2019	--	--	--	--	--	--	--	--	--
MW-7B	7/11/2016	<0.001	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7B	4/27/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-7B	2/22/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-7B	7/24/2017	--	--	--	--	--	--	--	0.74	--
MW-7B	8/8/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7B	3/28/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-7B	10/11/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7B	5/14/2018	--	--	--	--	--	--	--	0.59	--
MW-7B	3/21/2023	<0.0005	<0.0005	<0.002	<0.002	<0.005	<0.1	0.67	--	0.080
MW-7B	3/17/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-7B	6/10/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	0.38	--
MW-7B	6/13/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	0.70	--

Well	Date	Beryllium	Cadmium	Chromium	Cobalt	Selenium	Aluminum	Iron, T	Iron, D	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-7B	1/18/2017	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7B	10/25/2017	--	--	--	--	--	--	--	0.68	--
MW-7B	11/30/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.68	--	--
MW-7B	9/6/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-7B	6/8/2020	--	--	--	--	--	--	0.54	--	--
MW-7B	5/6/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.67	--	--
MW-7B	6/27/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.43	--	--
MW-7B	11/21/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	0.68	--
MW-7B	10/26/2020	--	--	--	--	--	--	0.80	--	--
MW-7B	3/14/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.68	--	--
MW-7B	11/25/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	0.42	--
MW-7B	11/26/2018	--	--	--	--	--	--	--	0.62	--
MW-7B	9/7/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-7B	11/22/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	0.64	--	--
MW-8B	6/13/2017	--	--	--	--	--	--	--	--	--
MW-8B	3/20/2019	--	--	--	--	--	--	--	--	--
MW-8B	9/7/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-8B	7/24/2017	--	--	--	--	--	--	--	<0.1	--
MW-8B	11/26/2018	--	--	--	--	--	--	--	<0.1	--
MW-8B	9/7/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-8B	10/25/2017	--	--	--	--	--	--	--	<0.1	--
MW-8B	8/8/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-8B	10/11/2016	<0.0005	<0.0005	<0.002	<0.002	<0.002	--	--	--	--
MW-8B	7/11/2016	<0.001	<0.001	0.0044	<0.002	<0.002	--	--	--	--
MW-8B	11/25/2019	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	0.12	--
MW-8B	6/10/2019	<0.0005	<0.0005	<0.002	<0.002	0.0066	--	--	<0.1	--
MW-8B	3/29/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-8B	6/8/2020	--	--	--	--	--	--	0.98	--	--
MW-8B	5/14/2018	--	--	--	--	--	--	--	<0.1	--
MW-8B	10/27/2020	--	--	--	--	--	--	0.47	--	--
MW-8B	11/21/2016	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	<0.1	--
MW-8B	3/17/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-8B	5/6/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-8B	6/13/2016	<0.0005	<0.0005	<0.002	<0.002	0.0028	--	--	<0.1	--
MW-8B	4/27/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-8B	6/27/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-8B	11/22/2021	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-8B	11/30/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-8B	1/18/2017	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	--	--	--
MW-8B	2/22/2017	<0.0005	<0.0005	<0.002	<0.002	<0.01	--	--	--	--
MW-8B	3/21/2023	<0.0005	<0.0005	<0.002	<0.002	<0.005	<0.1	<0.1	--	0.16
MW-8B	3/14/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	<0.1	--	--
MW-9N	6/14/2017	--	--	--	--	--	--	--	--	--
MW-9N	3/18/2019	--	--	--	--	--	--	--	--	--
MW-9N	11/30/2022	<0.0005	<0.0005	<0.002	0.0070	0.025	--	0.34	--	--
MW-9N	10/26/2020	--	--	--	--	--	--	1.3	--	--

Well	Date	Beryllium	Cadmium	Chromium	Cobalt	Selenium	Aluminum	Iron, T	Iron, D	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-9N	3/21/2023	<0.0005	<0.0005	<0.002	0.0077	0.015	0.20	0.20	--	1.9
MW-9N	3/16/2021	<0.0005	<0.0005	<0.002	0.0027	0.014	--	--	--	--
MW-9N	11/27/2018	--	--	--	--	--	--	--	<0.1	--
MW-9N	6/9/2020	--	--	--	--	--	--	<0.1	--	--
MW-9N	2/22/2017	<0.0005	<0.0005	<0.002	0.0047	0.045	--	--	--	--
MW-9N	5/15/2018	--	--	--	--	--	--	--	<0.1	--
MW-9N	9/8/2021	<0.0005	<0.0005	0.0024	0.0030	0.022	--	--	--	--
MW-9N	5/5/2021	<0.0005	<0.0005	<0.002	0.0028	0.017	--	0.10	--	--
MW-9N	11/25/2019	<0.0005	<0.0005	<0.002	0.0029	0.014	--	--	<0.1	--
MW-9N	3/29/2017	<0.0005	<0.0005	<0.002	0.0033	0.047	--	--	--	--
MW-9N	10/26/2017	--	--	--	--	--	--	--	<0.1	--
MW-9N	7/25/2017	--	--	--	--	--	--	--	<0.1	--
MW-9N	10/10/2016	<0.0005	<0.0005	<0.002	0.0033	0.049	--	--	--	--
MW-9N	1/19/2017	<0.0005	<0.0005	<0.002	0.0043	0.049	--	--	--	--
MW-9N	4/28/2017	<0.0005	<0.0005	<0.002	0.0031	0.044	--	--	--	--
MW-9N	6/11/2019	<0.0005	<0.0005	<0.002	0.0032	0.023	--	--	<0.1	--
MW-9N	11/23/2021	<0.0005	<0.0005	<0.002	0.013	0.015	--	0.13	--	--
MW-9N	11/21/2016	<0.0005	<0.0005	<0.002	0.0041	0.047	--	--	<0.1	--
MW-9N	3/15/2022	<0.0005	<0.0005	<0.002	0.0021	0.013	--	<0.1	--	--
MW-9N	7/12/2016	<0.001	<0.001	<0.002	0.0038	0.044	--	--	--	--
MW-9N	8/8/2016	<0.0005	<0.0005	<0.002	0.0033	0.050	--	--	--	--
MW-9N	9/7/2016	<0.0005	<0.0005	<0.002	0.0039	0.047	--	--	--	--
MW-9N	6/28/2022	<0.0005	<0.0005	<0.002	0.0038	0.011	--	0.40	--	--
MW-9N	6/13/2016	<0.0005	<0.0005	<0.002	0.0049	0.047	--	--	<0.1	--
MW-PB1	5/25/2022	<0.0005	<0.0005	0.0076	0.0049	<0.005	--	5.0	--	--
MW-PB1	2/1/2021	0.0012	<0.0005	0.024	0.013	<0.005	--	26	--	--
MW-PB1	7/27/2021	0.0011	<0.0005	0.026	0.013	<0.005	--	25	--	--
MW-PB1	11/18/2021	0.0014	<0.0005	0.028	0.018	<0.005	--	27	--	--
MW-PB1	6/27/2022	<0.0005	<0.0005	<0.002	<0.002	<0.005	--	5.5	--	--
MW-PB1	3/15/2021	0.00050	<0.0005	0.015	0.0077	<0.005	--	12	--	--
MW-PB1	9/9/2021	<0.0005	<0.0005	0.011	0.0050	<0.005	--	5.4	--	--
MW-PB1	3/28/2022	0.00050	<0.0005	0.0077	0.0053	<0.005	--	6.2	--	--
MW-PB1	12/1/2020	<0.0005	<0.0005	0.0071	0.0036	<0.005	--	3.1	--	--
MW-PB1	11/30/2022	--	--	--	--	--	--	4.0	--	--
MW-PB1	5/4/2021	0.0016	<0.0005	0.039	0.017	<0.005	--	31	--	--
MW-PB1	3/20/2023	0.0020	0.00070	0.044	0.030	<0.005	29	43	--	9.2
MW-PB3	3/20/2023	0.00090	<0.0005	0.0077	0.0046	<0.005	9.9	7.7	--	0.73

APPENDIX B

XRD Results

Quantitative X-Ray Diffraction by Rietveld Refinement

Report Prepared for:	*WSP USA Inc (Great River Energy)*
Project Number/ LIMS No.	*19912-01/MI7015-SEP23*
Sample Receipt:	*September 13, 2023*
Sample Analysis:	*October 5, 2023*
Reporting Date:	*October 31, 2023*

Instrument:	Panalytical X'pert Pro Diffractometer
Test Conditions:	Co radiation, 40 kV, 45 mA Regular Scanning: Step: 0.033°, Step time:0.15s, 2θ range: 5-80°
Interpretations :	PDF2/PDF4 powder diffraction databases issued by the International Center for Diffraction Data (ICDD). DiffracPlus Eva and Topas software.
Detection Limit :	0.5-2%. Strongly dependent on crystallinity.

Contents:

Landon Kapusianyk, B.Sc.
Mineralogist

Huyun Zhou, Ph.D., P.Geo.
Senior Mineralogist

Method Summary

Mineral Identification and Interpretation:

Mineral identification and interpretation involves matching the diffraction pattern of an unknown material to patterns of single-phase reference materials. The reference patterns are compiled by the Joint Committee on Powder Diffraction Standards - International Center for Diffraction Data (JCPDS-ICDD) database and released on software as Powder Diffraction Files (PDF).

Interpretations do not reflect the presence of non-crystalline and/or amorphous compounds, except when internal standards have been added by request. Mineral proportions may be strongly influenced by crystallinity, crystal structure and preferred orientations. Mineral or compound identification and quantitative analysis results should be accompanied by supporting chemical assay data or other additional tests.

Quantitative Rietveld Analysis:

Quantitative Rietveld Analysis is performed by using Topas 4.2 (Bruker AXS), a graphics based profile analysis program built around a non-linear least squares fitting system, to determine the amount of different phases present in a multicomponent sample. Whole pattern analyses are predicated by the fact that the X-ray diffraction pattern is a total sum of both instrumental and specimen factors. Unlike other peak intensity-based methods, the Rietveld method uses a least squares approach to refine a theoretical line profile until it matches the obtained experimental patterns.

Rietveld refinement is completed with a set of minerals specifically identified for the sample. Zero values indicate that the mineral was included in the refinement calculations, but the calculated concentration was less than 0.05wt%. Minerals not identified by the analyst are not included in refinement calculations for specific samples and are indicated with a dash.

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Summary of Rietveld Quantitative Analysis X-Ray Diffraction Results

Mineral/Compound	MW-210 - 15-25' SEP7015-01 (wt %)	MW-211(B) - 14-25' SEP7015-02 (wt %)	MW-212(A) - 14-25' SEP7015-03 (wt %)	MW-212(B) - 0-5' SEP7015-04 (wt %)	MW-213 - 20-30' SEP7015-05 (wt %)	MW-214 - 2-15' SEP7015-06 (wt %)	BH-1 - 2-5' SEP7015-07 (wt %)	TW-2R2 - 50-94' SEP7015-08 (wt %)	MW-215 - 16-18' SEP7015-09 (wt %)	MW-217 - 12-13' SEP7015-10 (wt %)	MW-218 - 11-12' SEP7015-11 (wt %)	MW-219 - 18-20' SEP7015-12 (wt %)	MW-222 - 34.5-36' SEP7015-13 (wt %)	MW-300 - 11-13' SEP7015-14 (wt %)	MW-PB3 - 22-24' SEP7015-15 (wt %)
Quartz	73.4	66.2	60.4	60.8	55.1	62.9	15.3	31.8	74.8	67.3	71.8	59.2	60.0	66.9	39.1
Albite	12.0	14.7	16.2	15.5	13.8	14.1	23.2	12.4	12.9	11.9	11.4	14.5	14.9	11.7	15.2
Microcline	5.4	4.2	9.0	6.4	4.0	6.7	8.0	6.6	5.5	5.1	6.4	8.6	5.9	6.7	8.3
Biotite	0.5	-	0.8	-	0.2	0.4	-	0.1	0.6	1.7	1.4	1.1	0.8	0.9	0.7
Muscovite	1.7	10.4	6.9	11.4	8.4	10.3	8.4	15.9	4.2	6.3	5.3	11.6	11.0	5.7	15.6
Chlorite	1.9	3.6	2.8	5.8	0.4	4.8	-	8.2	-	1.9	-	2.8	4.6	4.0	7.6
Actinolite	0.8	-	1.4	-	1.1	-	-	-	-	1.4	1.2	0.1	-	-	-
Calcite	2.4	0.7	1.0	-	7.2	0.8	11.6	3.1	0.8	1.6	1.7	1.6	1.9	0.7	4.9
Dolomite	2.0	0.3	1.5	-	8.8	-	1.2	3.0	1.2	2.8	0.9	0.5	0.8	3.4	8.5
Fluorapatite	-	-	-	-	1.1	-	-	-	-	-	-	-	-	-	-
Diopside	-	-	-	-	-	-	8.8	-	-	-	-	-	-	-	-
Magnetite	-	-	-	-	-	-	1.1	-	-	-	-	-	-	-	-
Hematite	-	-	-	-	-	-	1.4	-	-	-	-	-	-	-	-
Goethite	-	-	-	-	-	-	4.0	-	-	-	-	-	-	-	-
Fayalite	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-
Akemanite	-	-	-	-	-	-	16.3	-	-	-	-	-	-	-	-
Montmorillonite	-	-	-	-	-	-	-	18.9	-	-	-	-	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

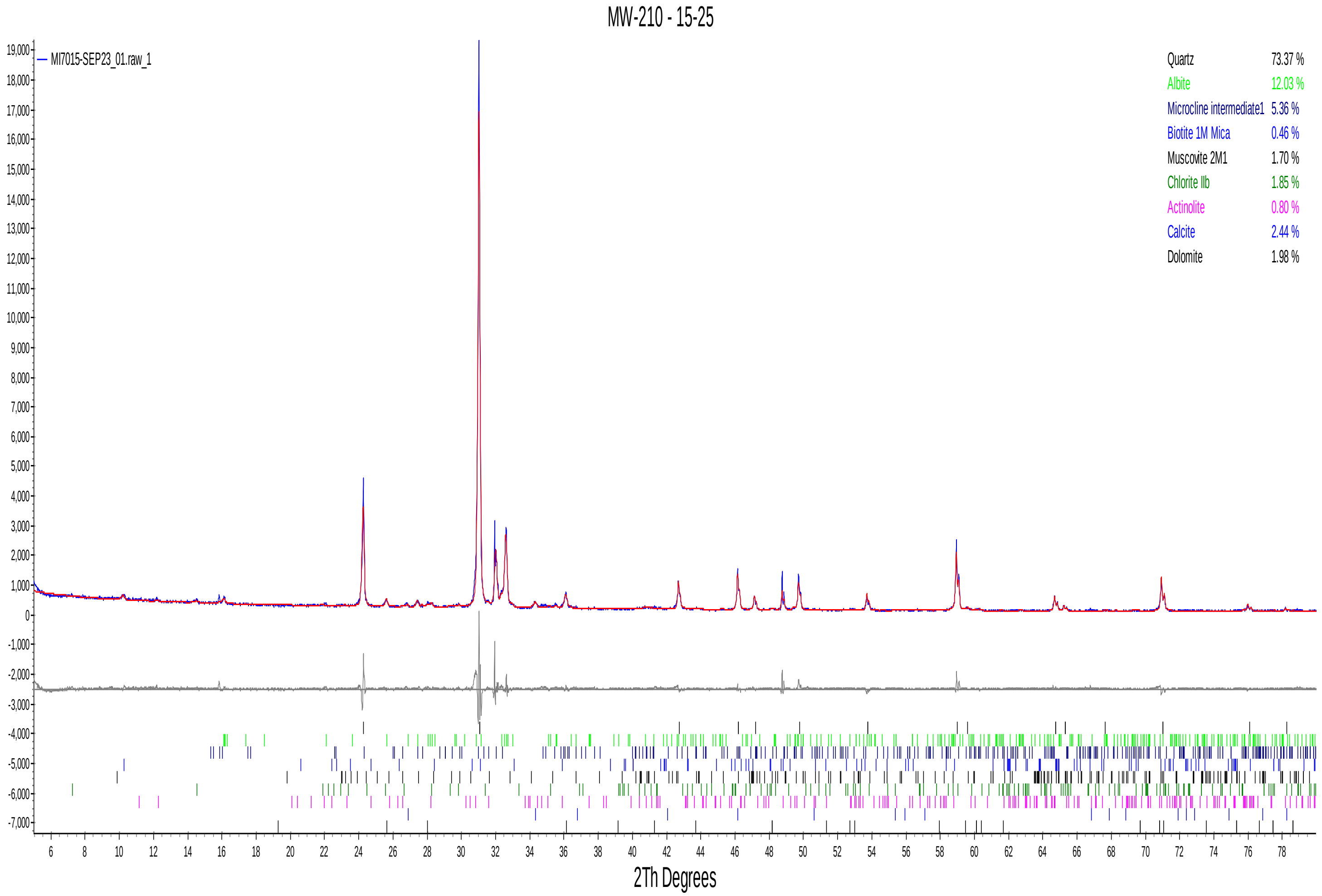
Zero values indicate that the mineral was included in the refinement, but the calculated concentration is below a measurable value.

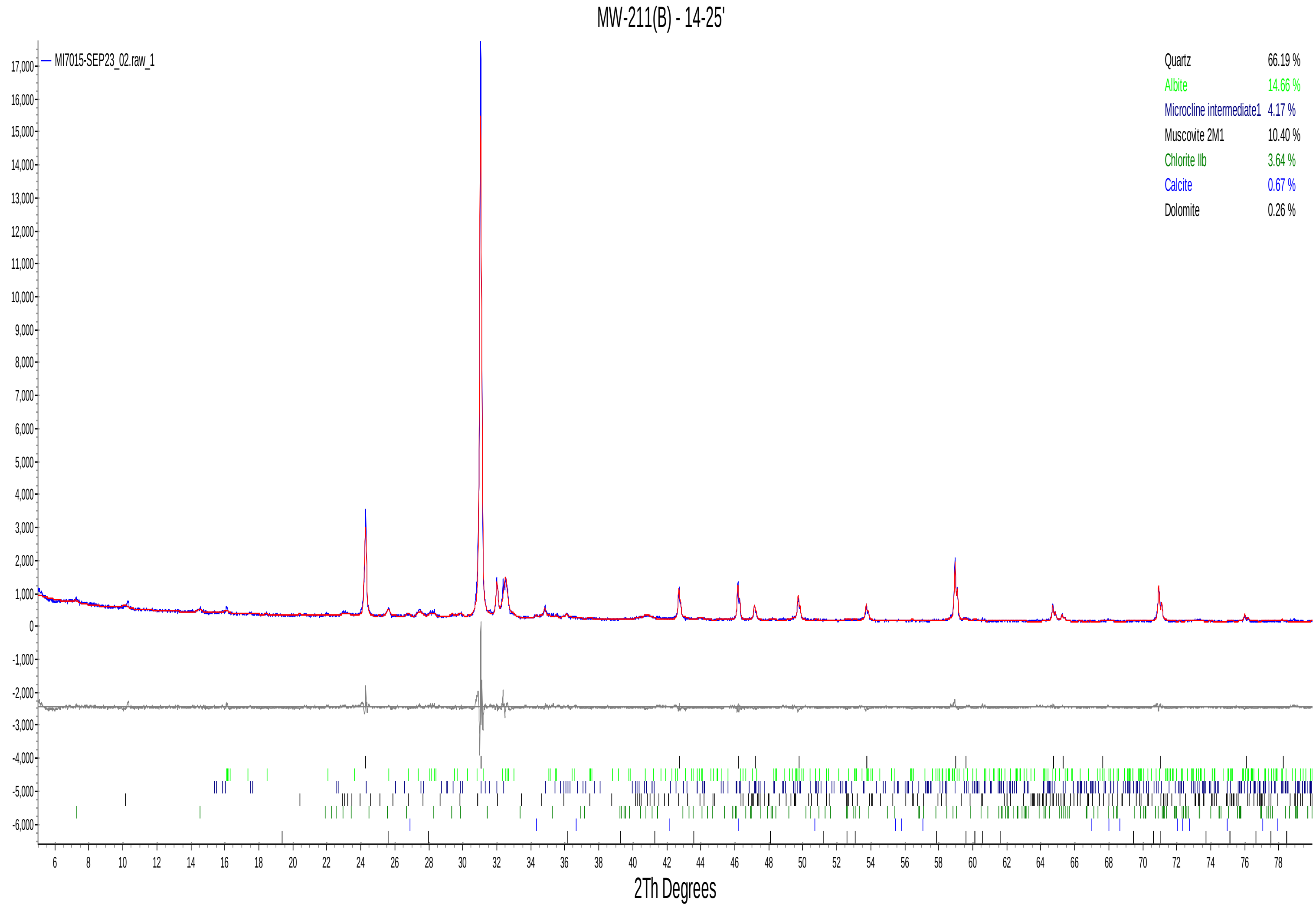
Dashes indicate that the mineral was not identified by the analyst and not included in the refinement calculation for the sample.

The weight percent quantities indicated have been normalized to a sum of 100%. The quantity of amorphous material has not been determined.

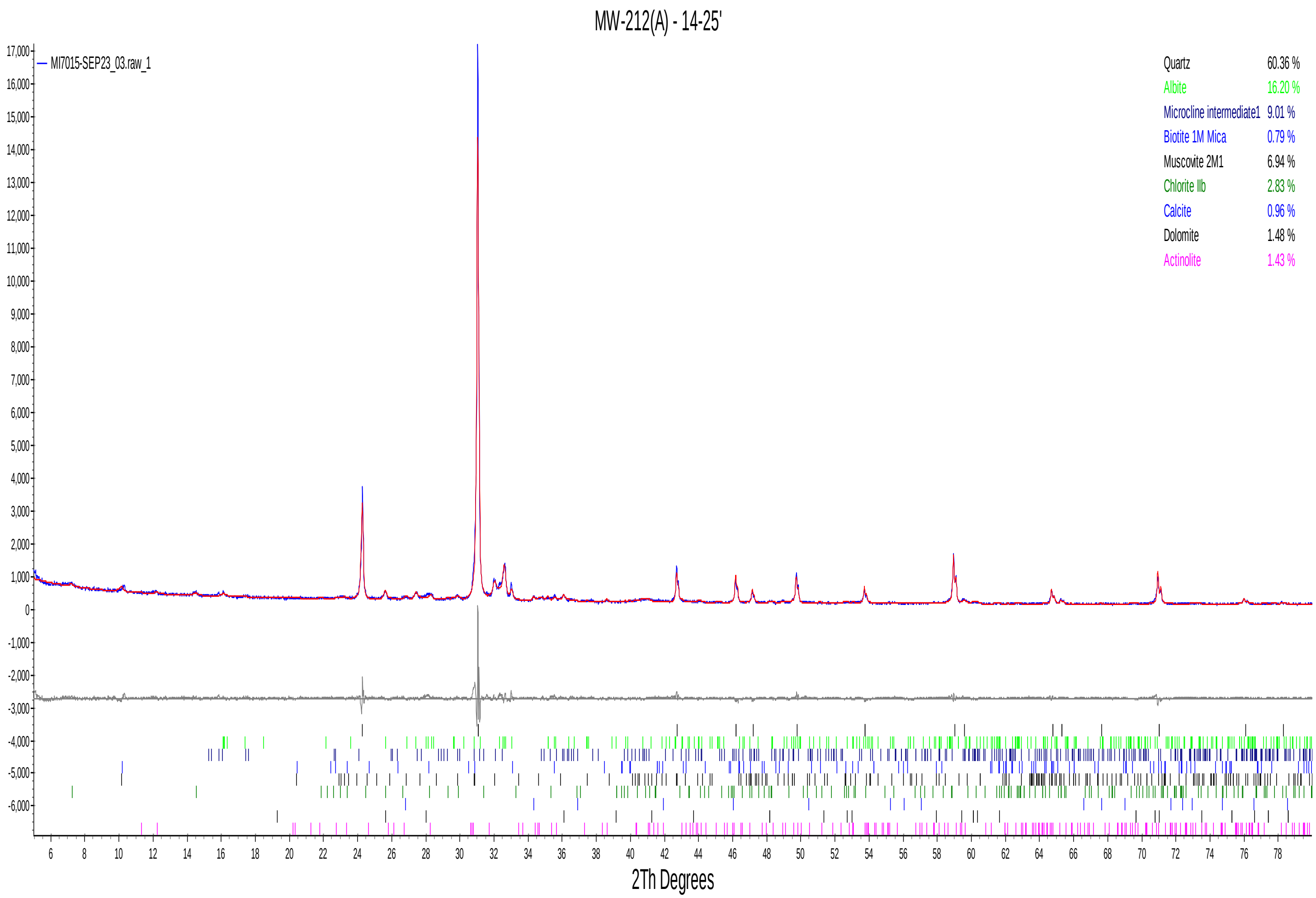
Mineral/Compound	Formula
Quartz	SiO_2
Albite	$NaAlSi_3O_8$
Microcline	$KAlSi_3O_8$
Biotite	$K(Mg,Fe)_3(AlSi_3O_{10})(OH)_2$
Muscovite	$KAl_2(AlSi_3O_{10})(OH)_2$
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$
Actinolite	$Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$
Calcite	$CaCO_3$
Dolomite	$CaMg(CO_3)_2$
Fluorapatite	$Ca_5(PO_4)_3F$
Diopside	$CaMgSi_2O_6$
Magnetite	Fe_3O_4
Hematite	Fe_2O_3
Goethite	$\alpha FeO\cdot OH$
Fayalite	Fe_2SiO_4
Akemanite	$Ca_2MgSi_2O_7$
Montmorillonite	$(Na,Ca)_{0.3}(Al,Mg)_2Si_4O_{10}(OH)_2\cdot 10H_2O$

WSP USA Inc (Great River Energy)
19912-01/MI7015-SEP23
10/31/2023




MW-211(B) - 14-25'
MI7015-SEP23_02.raw_1
Quartz 66.19 %
Albite 14.66 %
Microcline intermediate1 4.17 %
Muscovite 2M1 10.40 %
Chlorite IIb 3.64 %
Calcite 0.67 %
Dolomite 0.26 %
2Th Degrees

WSP USA Inc (Great River Energy)
19912-01/MI7015-SEP23
10/31/2023



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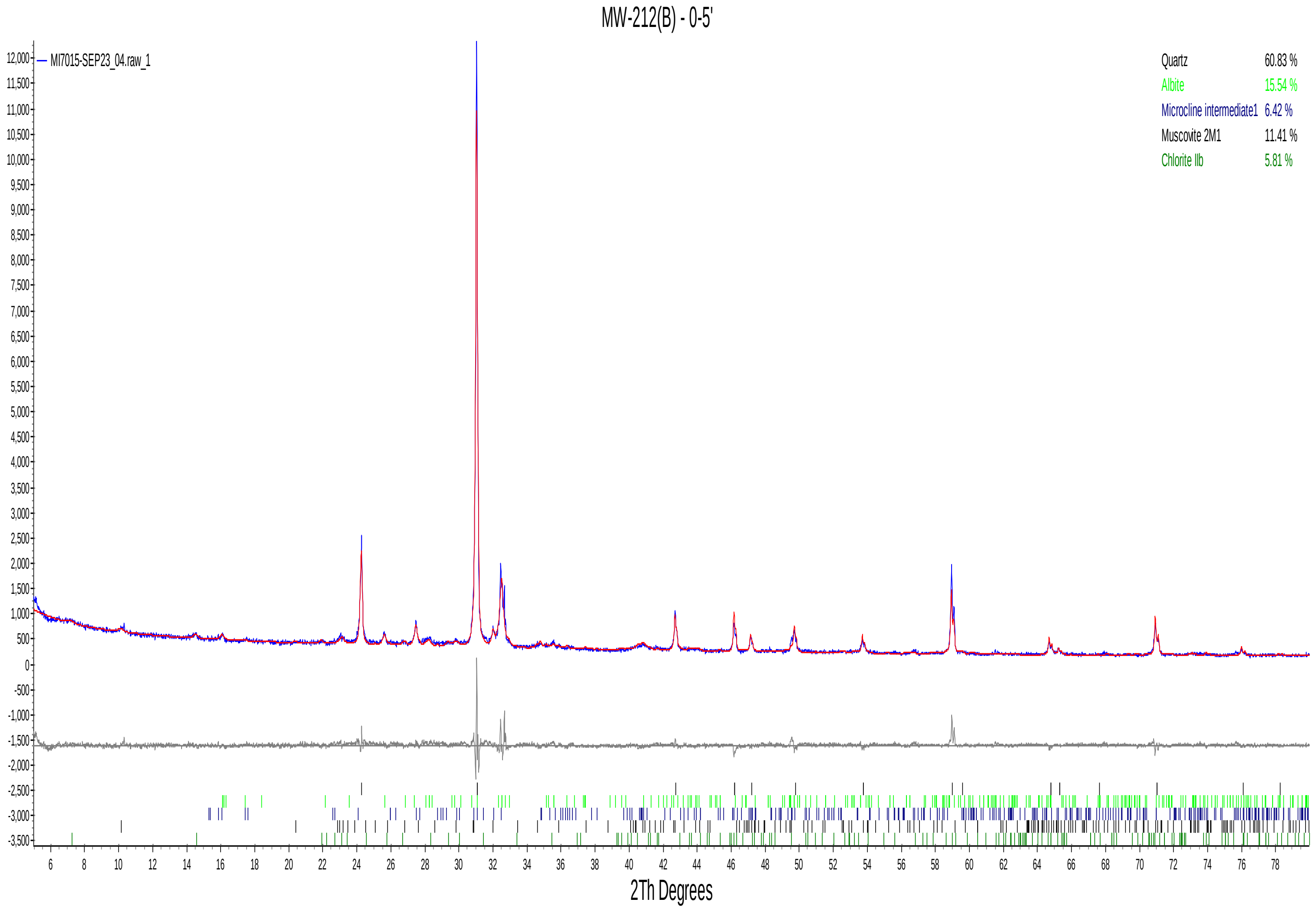
19912-01/MI7015-SEP23
10/31/2023



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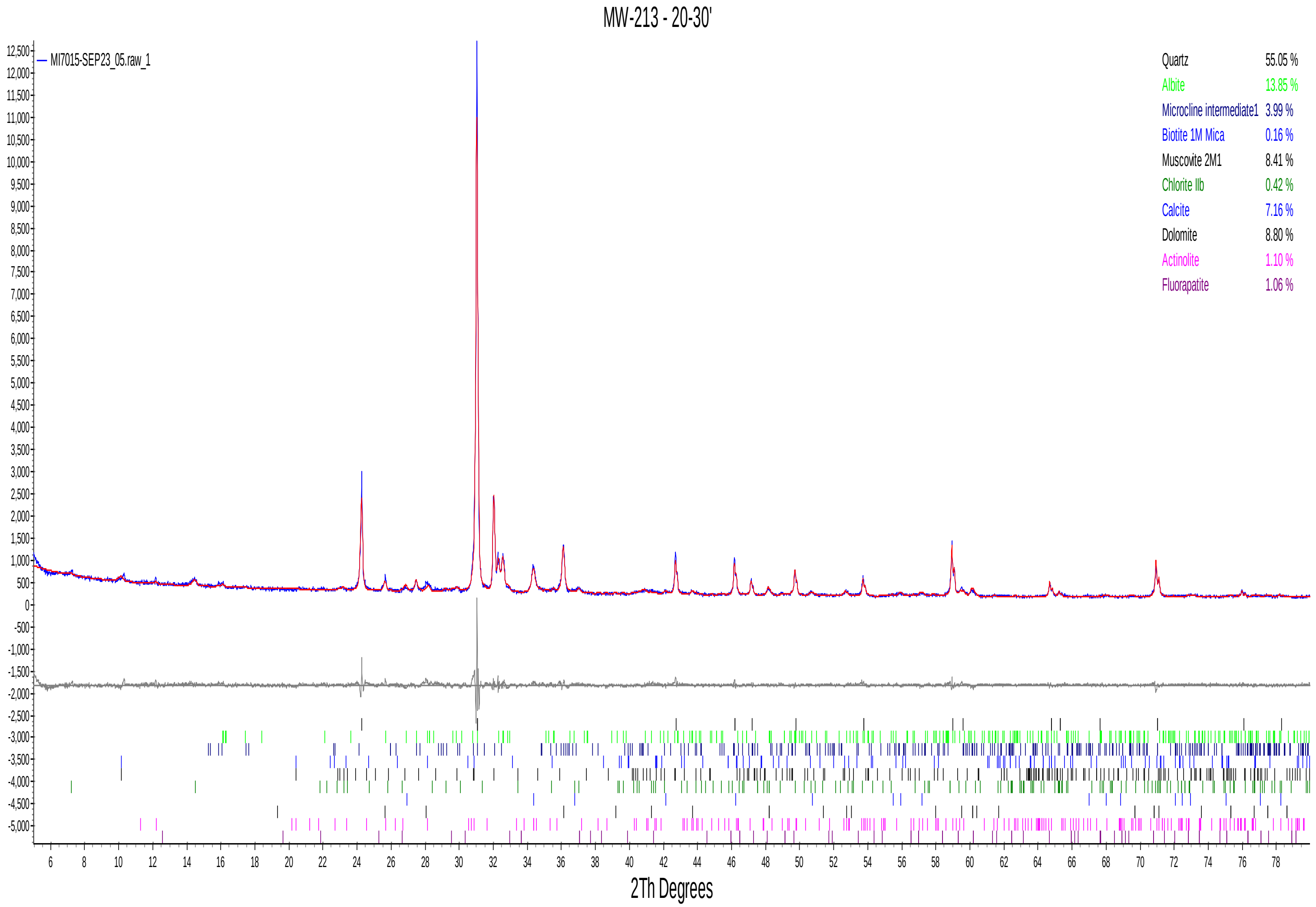
10/31/2023



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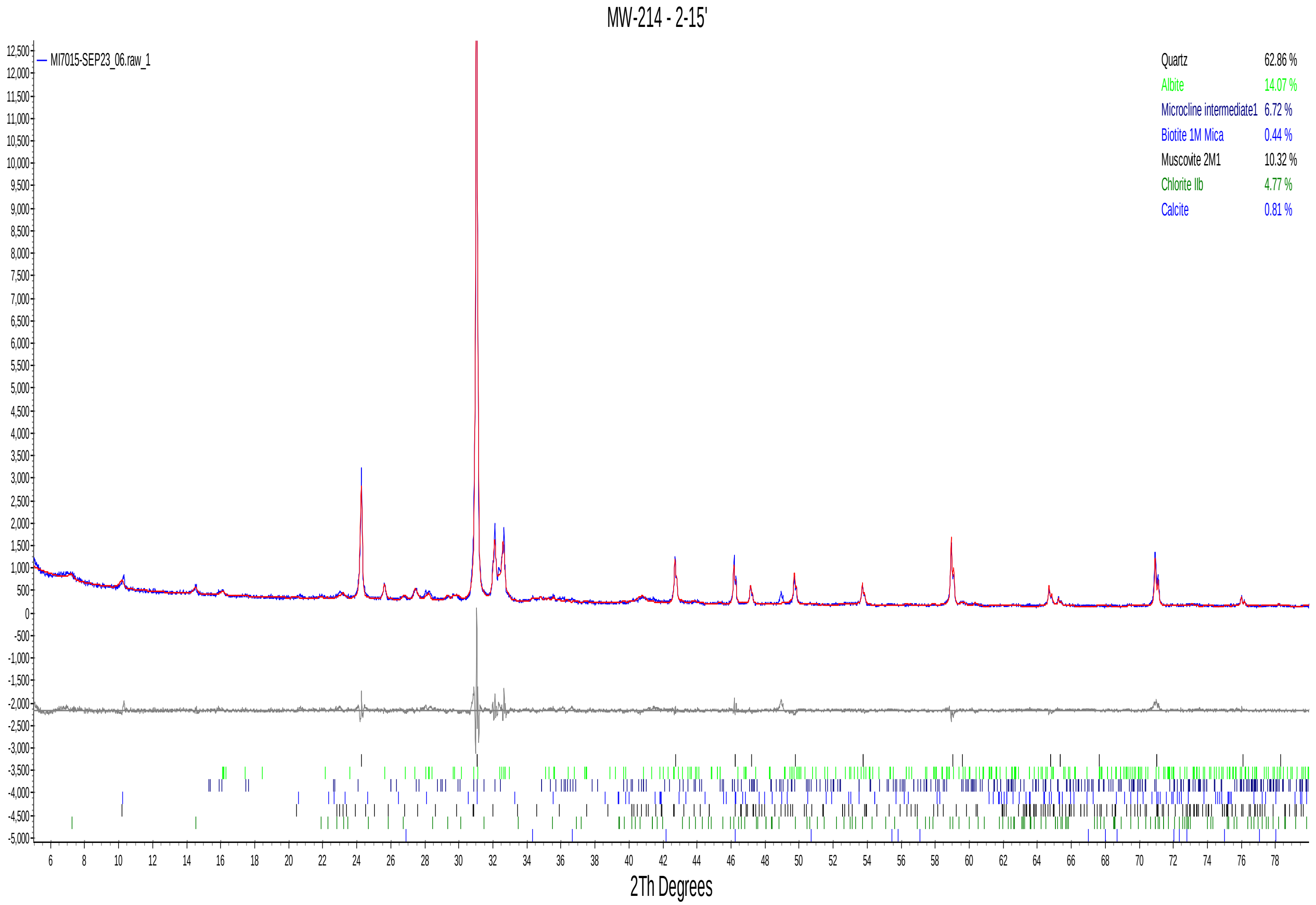
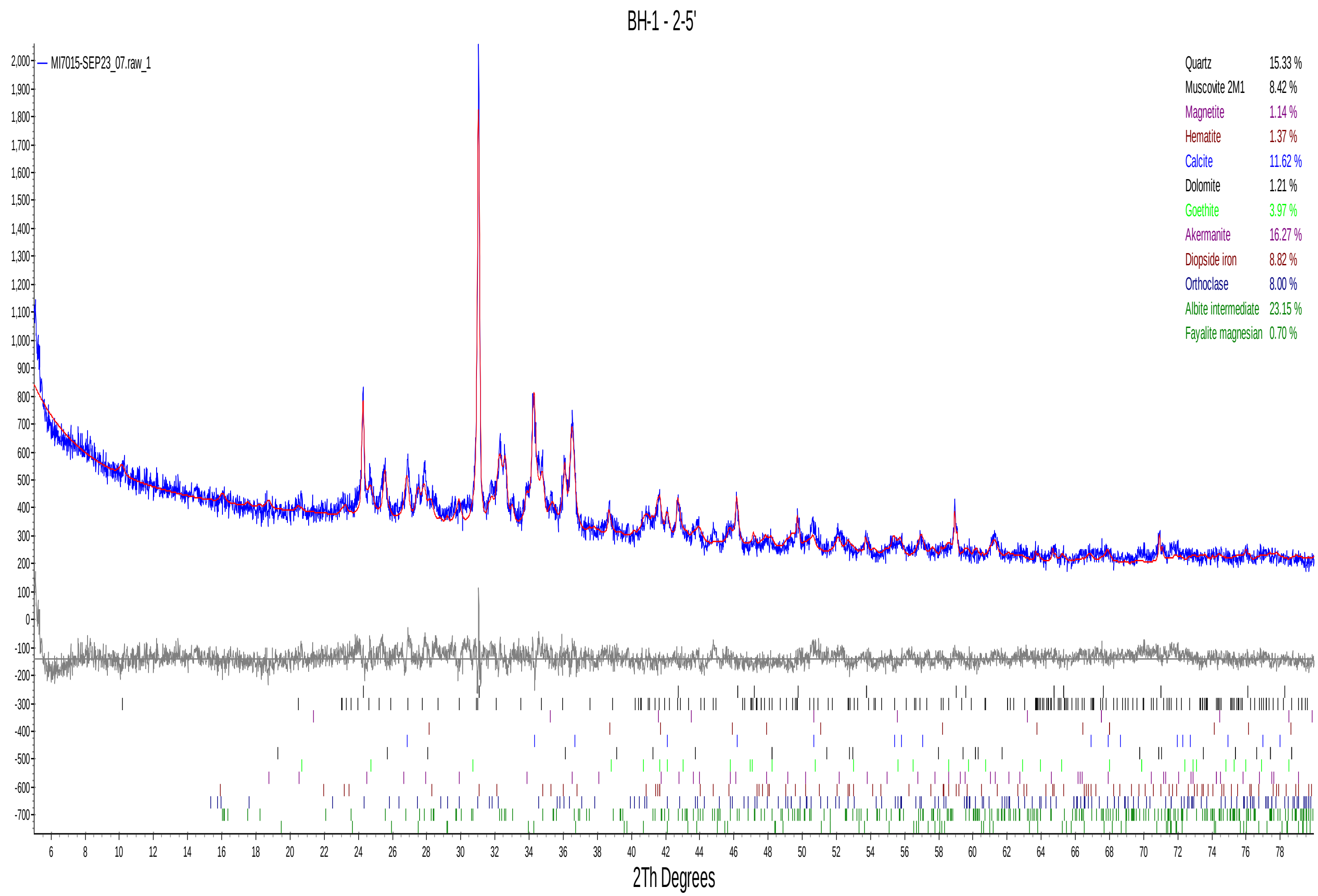
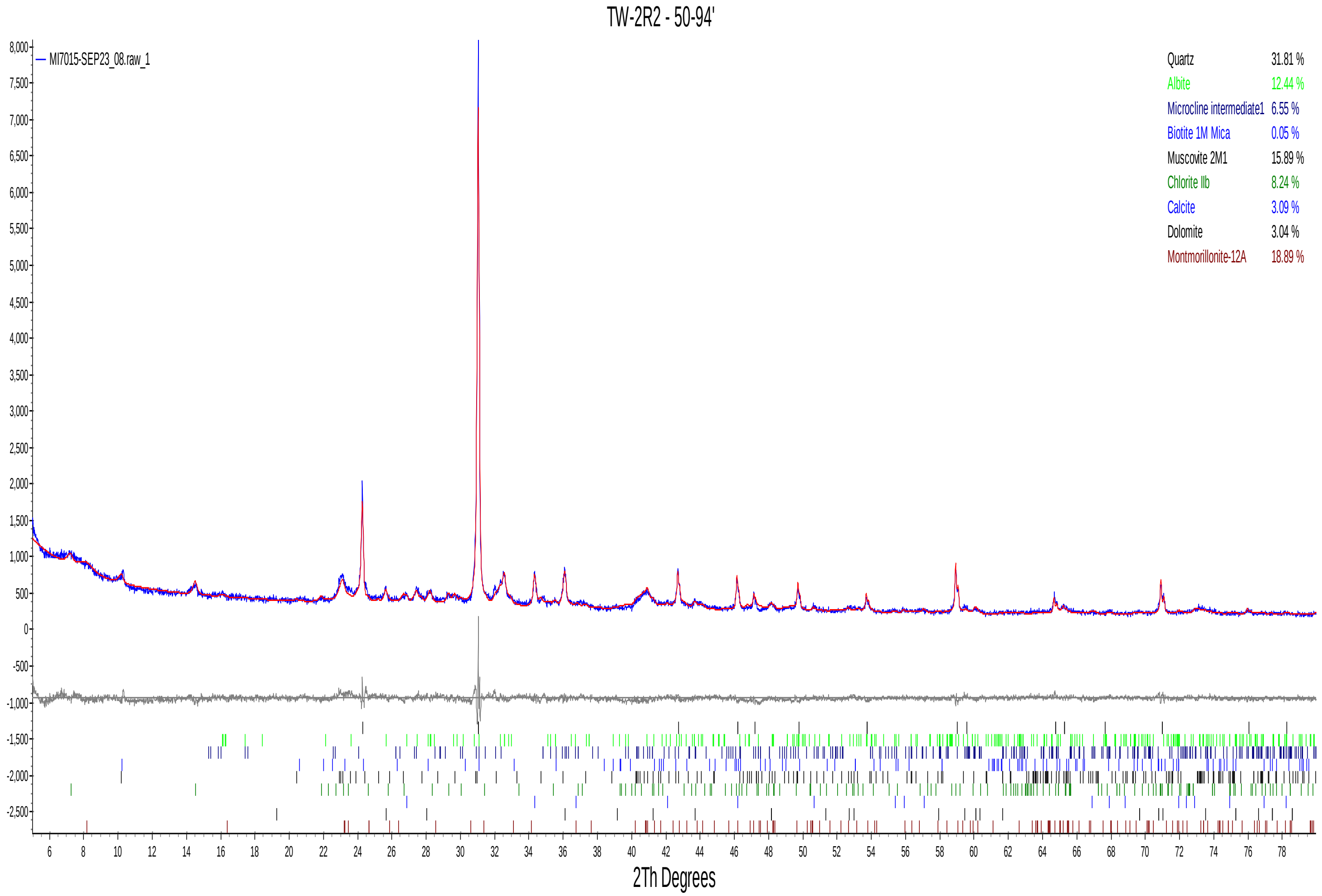
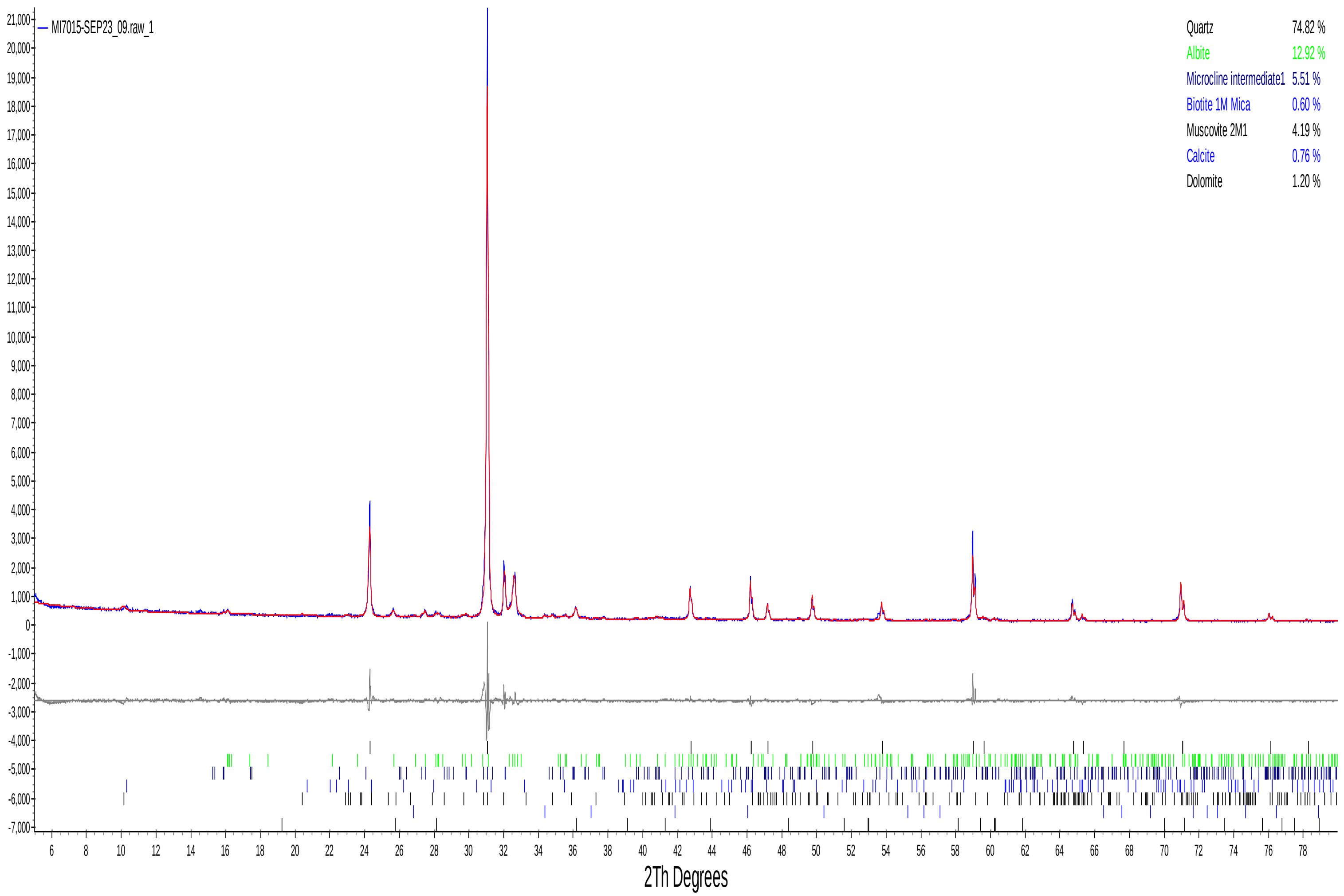
19912-01/MI7015-SEP23
10/31/2023



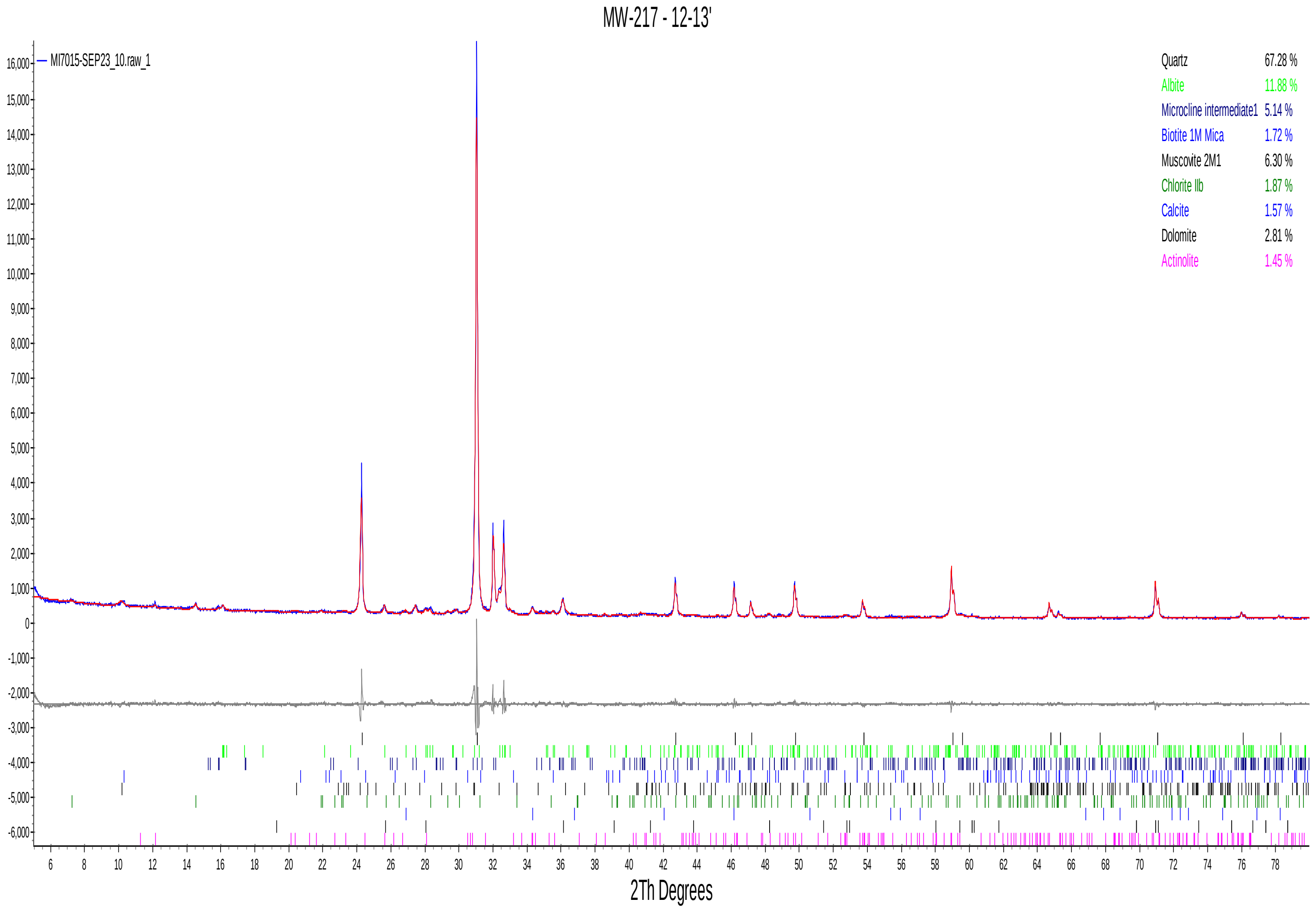

BH-1 - 2-5'
MI7015-SEP23_07.raw_1
Quartz 15.33 %
Muscovite 2M1 8.42 %
Magnetite 1.14 %
Hematite 1.37 %
Calcite 11.62 %
Dolomite 1.21 %
Goethite 3.97 %
Akermanite 16.27 %
Diopside iron 8.82 %
Orthoclase 8.00 %
Albite intermediate 23.15 %
Fayalite magnesian 0.70 %
2Th Degrees


TW-2R2 - 50-94'
MI7015-SEP23_08.raw_1
Quartz 31.81 %
Albite 12.44 %
Microcline intermediate1 6.55 %
Biotite 1M Mica 0.05 %
Muscovite 2M1 15.89 %
Chlorite IIb 8.24 %
Calcite 3.09 %
Dolomite 3.04 %
Montmorillonite-12A 18.89 %
2Th Degrees

MW-215 - 16-18'

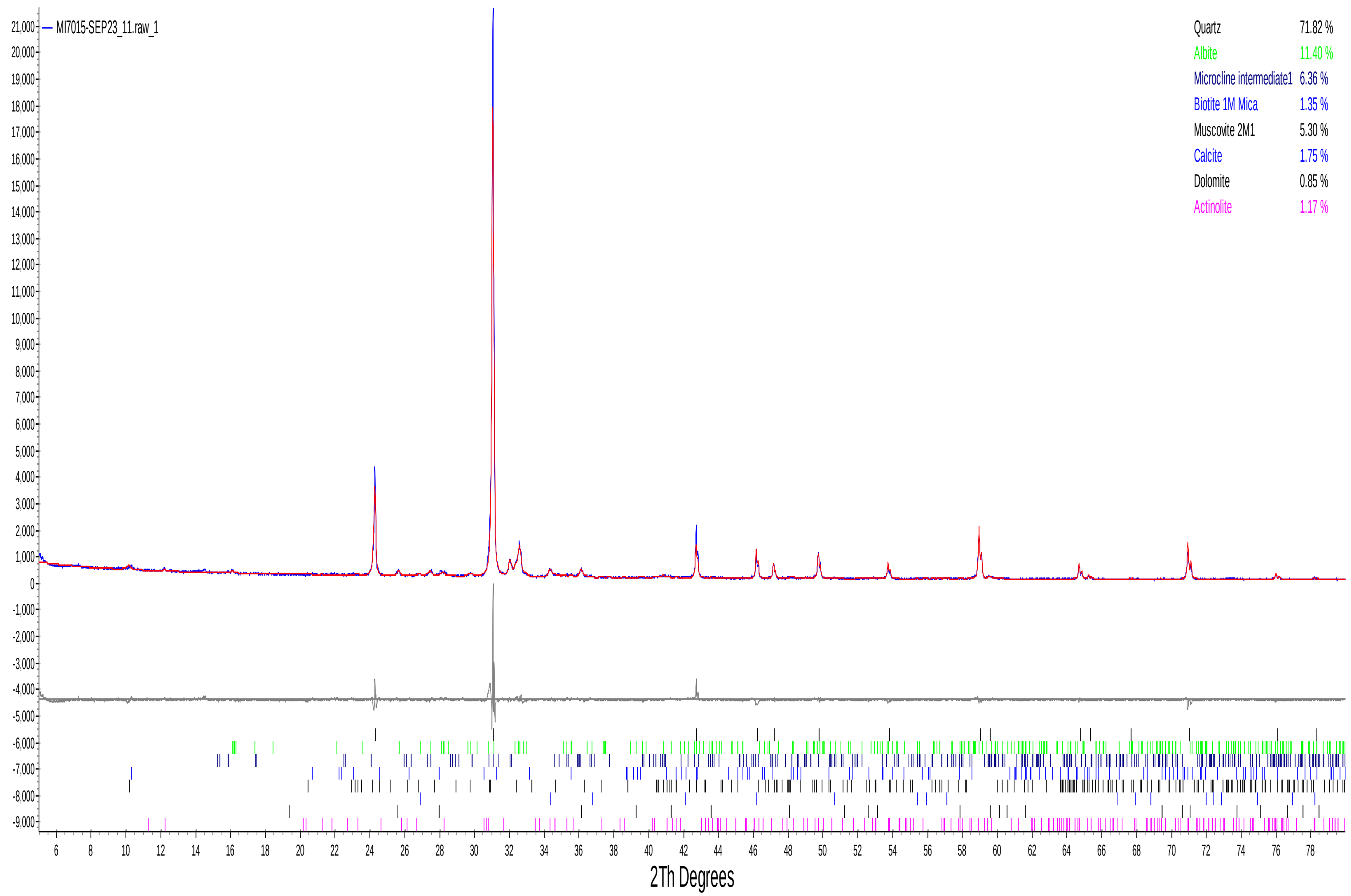

MI7015-SEP23_09.raw_1
Quartz 74.82 %
Albite 12.92 %
Microcline intermediate1 5.51 %
Biotite 1M Mica 0.60 %
Muscovite 2M1 4.19 %
Calcite 0.76 %
Dolomite 1.20 %
2Th Degrees

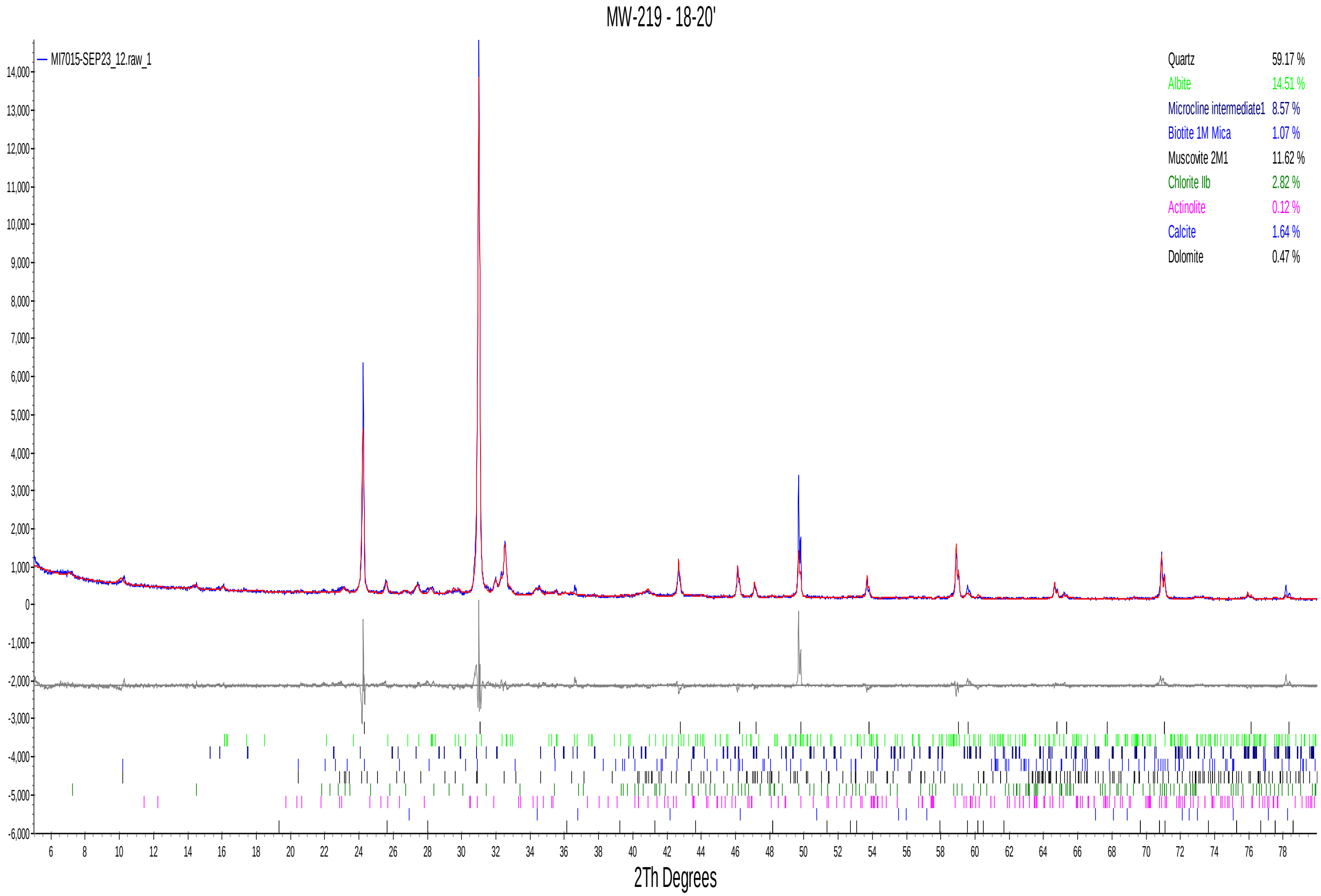
WSP USA Inc (Great River Energy)
19912-01/MI7015-SEP23
10/31/2023



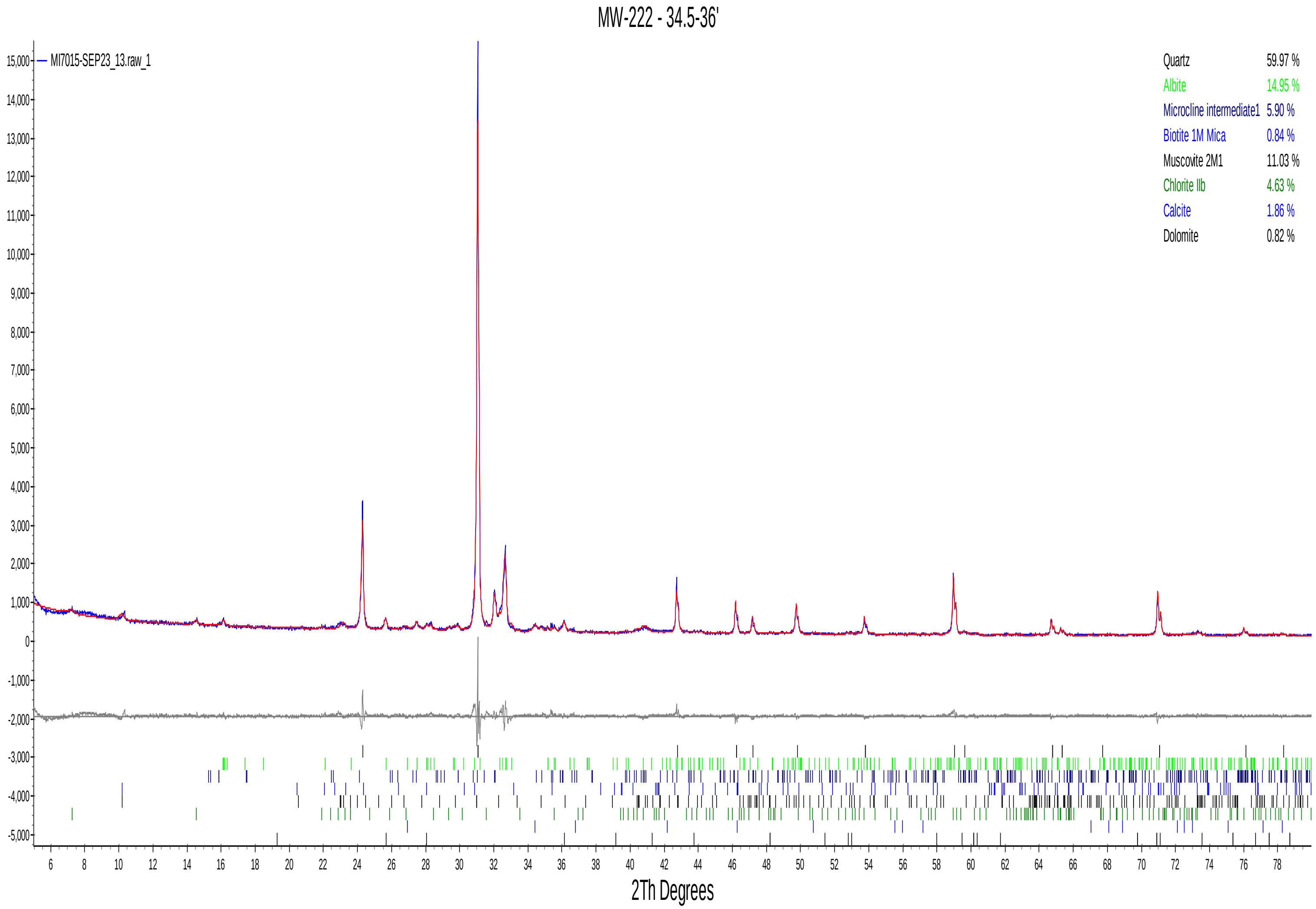
WSP USA Inc (Great River Energy)
19912-01/MI7015-SEP23
10/31/2023

MW-218 - 11-12'

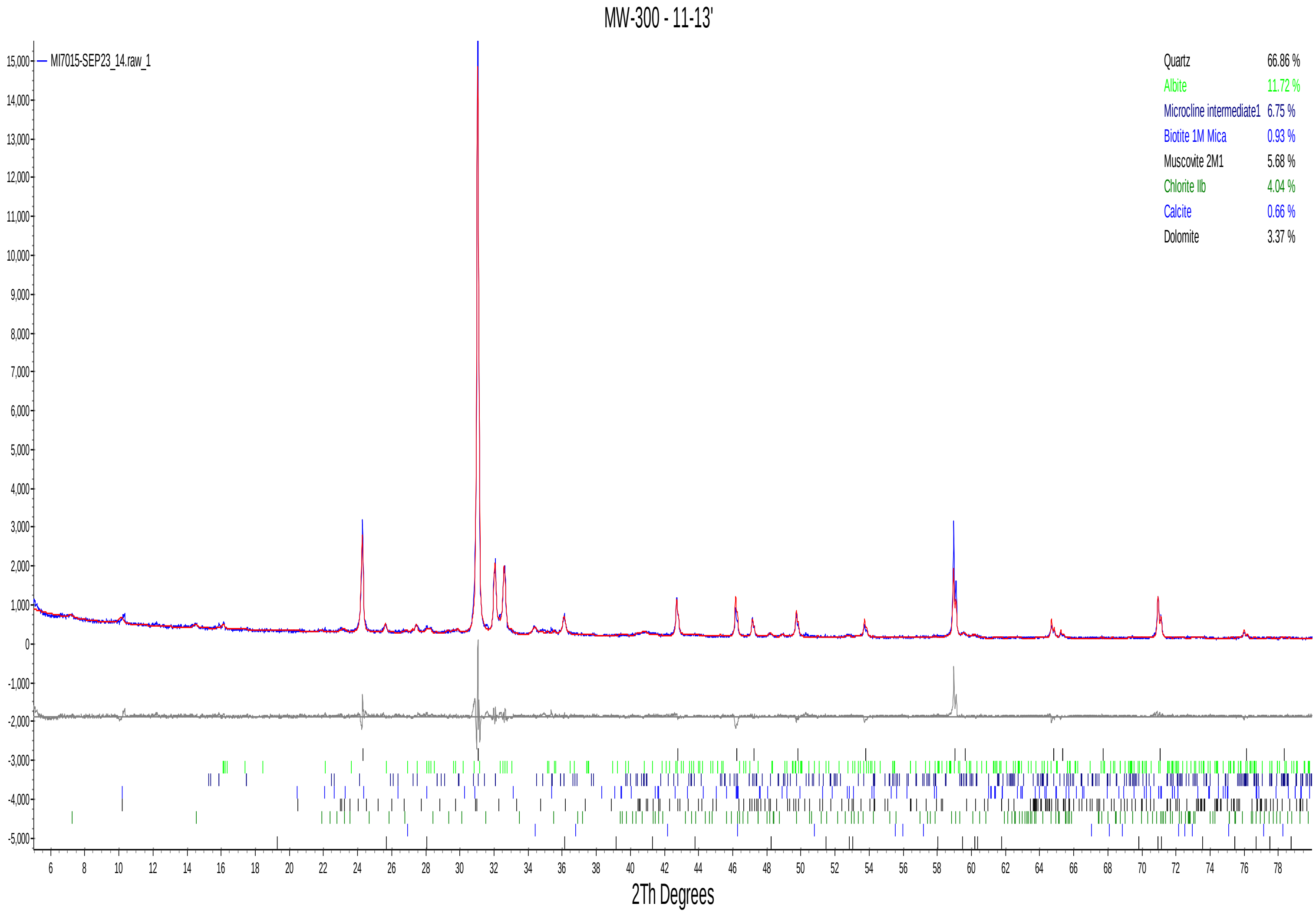



MW-219 - 18-20'
MI7015-SEP23_12.raw_1
Quartz 59.17 %
Albite 14.51 %
Microcline intermediate1 8.57 %
Biotite 1M Mica 1.07 %
Muscovite 2M1 11.62 %
Chlorite IIb 2.82 %
Actinolite 0.12 %
Calcite 1.64 %
Dolomite 0.47 %
2Th Degrees

WSP USA Inc (Great River Energy)
19912-01/MI7015-SEP23
10/31/2023



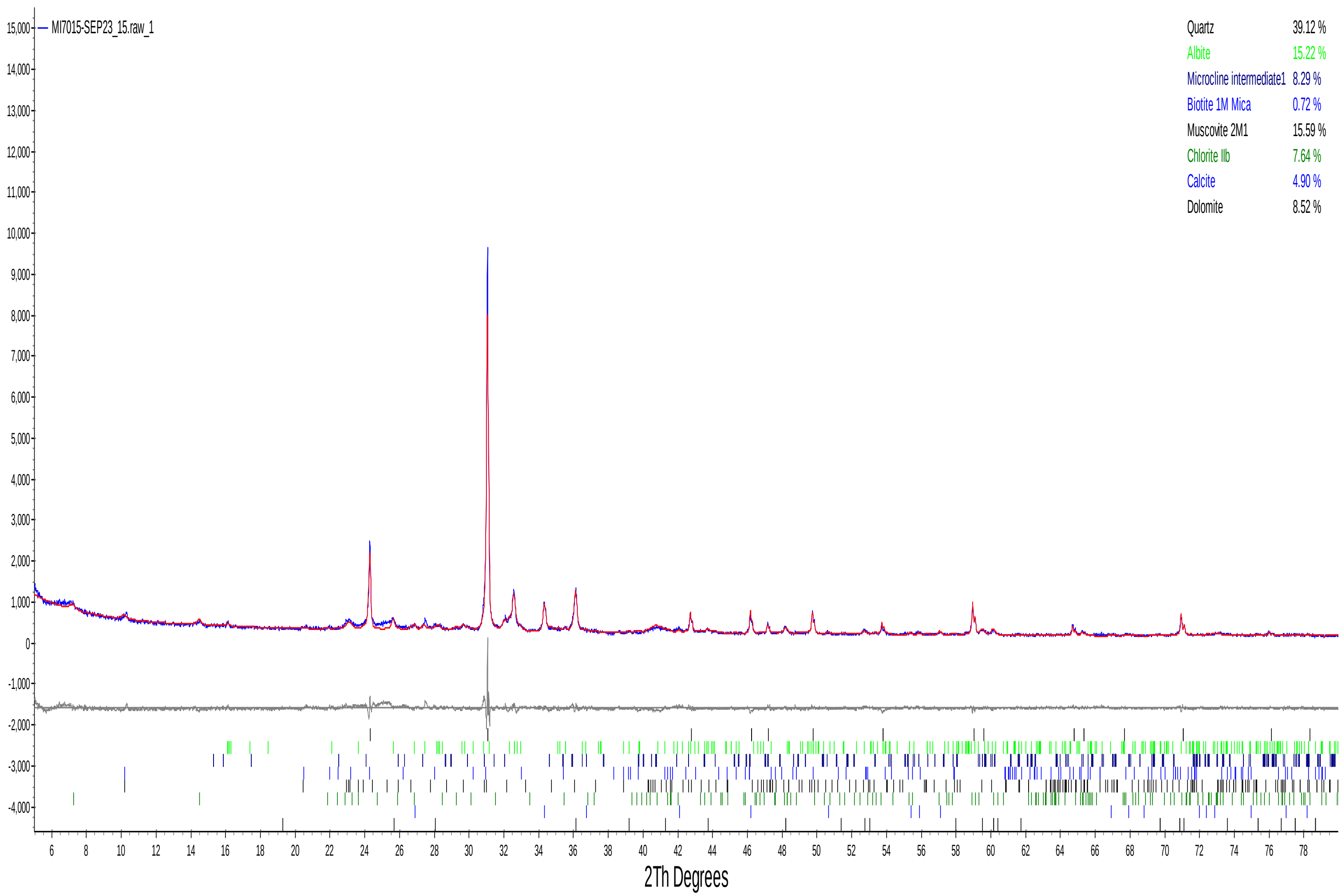
WSP USA Inc (Great River Energy)
19912-01/MI7015-SEP23
10/31/2023



SGS Natural Resources, 3260 Production Way, Burnaby, British Columbia V5A 4W4

WSP USA Inc (Great River Energy)
19912-01/MI7015-SEP23
10/31/2023

MW-PB3 - 22-24'



APPENDIX C

Aquifer Solids Chemical Analysis

Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Erin Hunter
WSP USA Inc
7245 W Alaska Drive
Suite 200
Lakewood, Colorado 80226

Generated 10/20/2023 3:30:14 PM

JOB DESCRIPTION

GRE Stanton Station MNA

JOB NUMBER

140-33465-1

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville TN 37921

See page two for job notes and contact information.

Eurofins Knoxville

Job Notes

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

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

Authorization

Ryan Henry

Authorized for release by
Ryan Henry, Project Manager I
WilliamR.Henry@et.eurofinsus.com
(865)291-3006

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Table of Contents

Definitions/Glossary

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
H3	Sample was received and analyzed past holding time. This does not meet regulatory requirements.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Job ID: 140-33465-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative
140-33465-1

Receipt
The samples were received on 9/12/2023 at 2:00pm and arrived in good condition. The temperature of the cooler at receipt was 21.9º C.

Receipt Exceptions
The following samples were received outside of holding time: MW-215 -16-18' (140-33465-1), MW-217 - 12-13' (140-33465-2), MW-218 - 11-12' (140-33465-3), MW-219 - 18-20' (140-33465-4), MW-222 - 34.5-36' (140-33465-5), MW-300 - 11-13' (140-33465-6) and MW-PB3 - 22-24' (140-33465-7). The lab was instructed to proceed.

Metals
7 Step Sequential Extraction Procedure

These soil samples were prepared and analyzed using Eurofins TestAmerica Knoxville standard operating procedure KNOX-MT-0008, “7 Step Sequential Extraction Procedure”. SW-846 Method 6010B as incorporated in Eurofins TestAmerica Knoxville standard operating procedure KNOX-MT-0007 was used to perform the final instrument analyses.

An aliquot of each sample was sequentially extracted using the steps listed below:

· Step 1 - Exchangeable Fraction: A 5 gram aliquot of sample was extracted with 25 mL of 1M magnesium sulfate ($MgSO_4$), centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 2 - Carbonate Fraction: The sample residue from step 1 was extracted with 25 mL of 1M sodium acetate/acetic acid (NaOAc/HOAc) at pH 5, centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 3 - Non-crystalline Materials Fraction: The sample residue from step 2 was extracted with 25 mL of 0.2M ammonium oxalate (pH 3), centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 4 - Metal Hydroxide Fraction: The sample residue from step 3 was extracted with 25 mL of 1M hydroxylamine hydrochloride solution in 25% v/v acetic acid, centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 5 - Organic-bound Fraction: The sample residue from step 4 was extracted three times with 25 mL of 5% sodium hypochlorite (NaClO) at pH 9.5, centrifuged and filtered. The resulting leachates were combined and 5 mL were digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 6 - Acid/Sulfide Fraction: The sample residue from step 5 was extracted with 25 mL of a 3:1:2 v/v solution of HCl-HNO_3-H_2O, centrifuged and filtered. 5 mL of the resulting leachate was diluted to 50 mL with reagent water and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 7 - Residual Fraction: A 1.0 g aliquot of the sample residue from step 6 was digested using HF, HNO_3, HCl and H_3BO_3. The digestate was analyzed by ICP using method 6010B. Results are reported in mg/kg on a dry weight basis.

In addition, a 1.0 g aliquot of the original sample was digested using HF, HNO_3, HCl and H_3BO_3. The digestate was analyzed by ICP using method 6010B. Total metal results are reported in mg/kg on a dry weight basis.

Results were calculated using the following equation:

Result, µg/g or mg/Kg, dry weight = $(C \times V \times V1 \times D) / (W \times S \times V2)$

Where:
C = Concentration from instrument readout, µg/mL
V = Final volume of digestate, mL
D = Instrument dilution factor
V1 = Total volume of leachate, mL
V2 = Volume of leachate digested, mL
W = Wet weight of sample, g

Job ID: 140-33465-1 (Continued)

Laboratory: Eurofins Knoxville (Continued)

S = Percent solids/100

A method blank, laboratory control sample and laboratory control sample duplicate were prepared and analyzed with each SEP step in order to provide information about both the presence of elements of interest in the extraction solutions, and the recovery of elements of interest from the extraction solutions. Results outside of laboratory QC limits do not reflect out of control performance, but rather the effect of the extraction solution upon the analyte.

A laboratory sample duplicate was prepared and analyzed with each batch of samples in order to provide information regarding the reproducibility of the procedure.

Methods 6010B, 6010B SEP: The following samples were diluted due to the nature of the sample matrix: MW-215 -16-18' (140-33465-1), MW-217 - 12-13' (140-33465-2), MW-218 - 11-12' (140-33465-3), MW-219 - 18-20' (140-33465-4), MW-222 - 34.5-36' (140-33465-5), MW-300 - 11-13' (140-33465-6) and MW-PB3 - 22-24' (140-33465-7). Elevated reporting limits (RLs) are provided for Aluminum.

Methods 6010B, 6010B SEP: The following samples were diluted due to the presence of Silicon which interferes with Arsenic, Cobalt and Lead: MW-215 -16-18' (140-33465-1), MW-217 - 12-13' (140-33465-2), MW-218 - 11-12' (140-33465-3), MW-219 - 18-20' (140-33465-4), MW-222 - 34.5-36' (140-33465-5), MW-300 - 11-13' (140-33465-6) and MW-PB3 - 22-24' (140-33465-7). Elevated reporting limits (RLs) are provided.

Method 6010B: The serial dilution performed for the following sample associated with batch 140-79123 was outside control limits: MW-222 - 34.5-36' (140-33465-5), (140-33465-A-5-A SD ^10) and (140-33465-A-5-A SD ^5)

Method 6010B SEP: The following samples were prepared outside of preparation holding time due to being received at the laboratory outside of holding time. The client acknowledged the holding time issue and provided instructions to proceed with the SEP procedure: MW-215 -16-18' (140-33465-1), MW-217 - 12-13' (140-33465-2), MW-218 - 11-12' (140-33465-3), MW-219 - 18-20' (140-33465-4), MW-222 - 34.5-36' (140-33465-5), MW-300 - 11-13' (140-33465-6) and MW-PB3 - 22-24' (140-33465-7).

Method 6010B SEP: The serial dilution performed for the following sample associated with batch 140-78659 was outside control limits: MW-222 - 34.5-36' (140-33465-5) and (140-33465-A-5-U SD ^5)

Method 6010B SEP: The following sample was diluted due to the presence of Titanium which interferes with Cobalt: MW-217 - 12-13' (140-33465-2). Elevated reporting limits (RLs) are provided.

Method 6010B SEP: The sample duplicate (DUP) precision for preparation batch 140-78222 and analytical batch 140-79123 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

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

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

Sample Summary

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-33465-1	MW-215 -16-18'	Solid	02/06/23 08:00	09/12/23 14:00
140-33465-2	MW-217 - 12-13'	Solid	02/08/23 09:00	09/12/23 14:00
140-33465-3	MW-218 - 11-12'	Solid	02/08/23 10:30	09/12/23 14:00
140-33465-4	MW-219 - 18-20'	Solid	02/08/23 13:00	09/12/23 14:00
140-33465-5	MW-222 - 34.5-36'	Solid	02/09/23 10:00	09/12/23 14:00
140-33465-6	MW-300 - 11-13'	Solid	02/09/23 12:30	09/12/23 14:00
140-33465-7	MW-PB3 - 22-24'	Solid	02/10/23 10:00	09/12/23 14:00

Client Sample ID: MW-215 -16-18'

Date Collected: 02/06/23 08:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-1

Matrix: Solid
Percent Solids: 80.3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	50	8.0	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4
Arsenic	ND	H H3	2.5	0.65	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4
Cobalt	ND	H H3	12	0.22	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4
Iron	ND	H H3	25	14	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4
Lead	ND	H H3	2.5	0.55	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4
Lithium	ND	H H3	12	0.75	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4
Manganese	**12**	**H H3**	3.7	0.15	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4
Molybdenum	ND	H H3	10	0.41	mg/Kg	☼	09/20/23 08:00	10/02/23 14:08	4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**12**	**J H H3**	37	6.0	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3
Arsenic	ND	H H3	1.9	0.49	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3
Cobalt	**0.31**	**J H H3**	9.3	0.24	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3
Iron	**130**	**H H3**	19	11	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3
Lead	**0.42**	**J H H3**	1.9	0.41	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3
Lithium	ND	H H3	9.3	0.56	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3
Manganese	**37**	**H H3**	2.8	1.0	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3
Molybdenum	ND	H H3	7.5	0.31	mg/Kg	☼	09/21/23 08:00	10/02/23 15:17	3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**92**	**H H3**	12	2.6	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1
Arsenic	**0.65**	**H H3**	0.62	0.16	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1
Cobalt	**0.32**	**J H H3**	3.1	0.056	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1
Iron	**620**	**H H3**	6.2	3.6	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1
Lead	ND	H H3	0.62	0.14	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1
Lithium	ND	H H3	3.1	0.19	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1
Manganese	**9.9**	**H H3 B**	0.93	0.034	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1
Molybdenum	ND	H H3	2.5	0.10	mg/Kg	☼	09/22/23 07:00	10/03/23 11:19	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**980**	**H H3**	12	2.0	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1
Arsenic	**1.6**	**H H3**	0.62	0.27	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1
Cobalt	**1.7**	**J H H3**	3.1	0.066	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1
Iron	**4100**	**H H3**	6.2	3.6	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1
Lead	**2.0**	**H H3**	0.62	0.14	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1
Lithium	**1.7**	**J H H3**	3.1	0.19	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1
Manganese	**42**	**H H3**	0.93	0.16	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1
Molybdenum	**0.20**	**J H H3**	2.5	0.10	mg/Kg	☼	09/25/23 07:00	10/03/23 12:14	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**48**	**J H H3 B**	190	29	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5
Arsenic	ND	H H3	9.3	2.4	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5
Cobalt	ND	H H3	47	0.75	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5
Iron	ND	H H3	93	55	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5
Lead	ND	H H3	9.3	2.1	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5
Lithium	ND	H H3	47	2.7	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5

1 2 3 4 5 6 7 8 9 10 11 12 13

Client Sample ID: MW-215 -16-18'
Date Collected: 02/06/23 08:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-1
Matrix: Solid
Percent Solids: 80.3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	H H3	14	2.3	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5
Molybdenum	ND	H H3	37	1.6	mg/Kg	☼	09/27/23 07:00	10/05/23 11:59	5

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1200**	**H H3**	12	2.0	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1
Arsenic	**2.2**	**H H3**	0.62	0.19	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1
Cobalt	**0.83**	**J H H3**	3.1	0.057	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1
Iron	**5100**	**H H3**	6.2	3.6	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1
Lead	**0.84**	**H H3**	0.62	0.14	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1
Lithium	**1.4**	**J H H3**	3.1	0.19	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1
Manganese	**47**	**H H3**	0.93	0.31	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1
Molybdenum	**0.17**	**J H H3**	2.5	0.12	mg/Kg	☼	09/26/23 11:00	10/05/23 13:09	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**29000**	**H H3**	120	20	mg/Kg	☼	09/27/23 08:00	10/17/23 13:39	10
Arsenic	**2.5**	**H H3**	1.2	0.75	mg/Kg	☼	09/27/23 08:00	10/17/23 17:33	2
Cobalt	**0.57**	**J H H3**	6.2	0.065	mg/Kg	☼	09/27/23 08:00	10/17/23 17:33	2
Iron	**2500**	**H H3**	6.2	5.1	mg/Kg	☼	09/27/23 08:00	10/17/23 15:25	1
Lead	**3.5**	**H H3**	1.2	0.27	mg/Kg	☼	09/27/23 08:00	10/17/23 17:33	2
Lithium	**4.7**	**H H3**	3.1	0.19	mg/Kg	☼	09/27/23 08:00	10/17/23 15:25	1
Manganese	**35**	**H H3**	0.93	0.39	mg/Kg	☼	09/27/23 08:00	10/17/23 15:25	1
Molybdenum	**0.15**	**J H H3**	2.5	0.10	mg/Kg	☼	09/27/23 08:00	10/17/23 15:25	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**32000**		10	1.6	mg/Kg			10/19/23 14:22	1
Arsenic	**7.0**		0.50	0.13	mg/Kg			10/19/23 14:22	1
Cobalt	**3.8**		2.5	0.023	mg/Kg			10/19/23 14:22	1
Iron	**13000**		5.0	4.1	mg/Kg			10/19/23 14:22	1
Lead	**6.7**		0.50	0.11	mg/Kg			10/19/23 14:22	1
Lithium	**7.8**		2.5	0.15	mg/Kg			10/19/23 14:22	1
Manganese	**180**		0.75	0.052	mg/Kg			10/19/23 14:22	1
Molybdenum	**0.53**	**J**	2.0	0.082	mg/Kg			10/19/23 14:22	1

Method: SW846 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**31000**	**H H3**	120	20	mg/Kg	☼	09/27/23 08:00	10/17/23 14:33	10
Arsenic	**7.8**	**H H3**	1.2	0.75	mg/Kg	☼	09/27/23 08:00	10/17/23 18:27	2
Cobalt	**4.2**	**J H H3**	6.2	0.065	mg/Kg	☼	09/27/23 08:00	10/17/23 18:27	2
Iron	**12000**	**H H3**	6.2	5.1	mg/Kg	☼	09/27/23 08:00	10/17/23 16:22	1
Lead	**6.1**	**H H3**	1.2	0.27	mg/Kg	☼	09/27/23 08:00	10/17/23 18:27	2
Lithium	**7.6**	**H H3**	3.1	0.19	mg/Kg	☼	09/27/23 08:00	10/17/23 16:22	1
Manganese	**170**	**H H3**	0.93	0.39	mg/Kg	☼	09/27/23 08:00	10/17/23 16:22	1
Molybdenum	**0.66**	**J H H3**	2.5	0.10	mg/Kg	☼	09/27/23 08:00	10/17/23 16:22	1

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: MW-217 - 12-13'
Date Collected: 02/08/23 09:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-2
Matrix: Solid
Percent Solids: 96.0

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	42	6.7	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4
Arsenic	ND	H H3	2.1	0.54	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4
Cobalt	ND	H H3	10	0.19	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4
Iron	ND	H H3	21	12	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4
Lead	ND	H H3	2.1	0.46	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4
Lithium	ND	H H3	10	0.62	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4
Manganese	**0.25**	**J H H3**	3.1	0.13	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4
Molybdenum	ND	H H3	8.3	0.34	mg/Kg	☼	09/20/23 08:00	10/02/23 14:13	4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**11**	**J H H3**	31	5.0	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3
Arsenic	ND	H H3	1.6	0.41	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3
Cobalt	ND	H H3	7.8	0.20	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3
Iron	**28**	**H H3**	16	9.1	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3
Lead	ND	H H3	1.6	0.34	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3
Lithium	ND	H H3	7.8	0.47	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3
Manganese	**35**	**H H3**	2.3	0.87	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3
Molybdenum	ND	H H3	6.2	0.26	mg/Kg	☼	09/21/23 08:00	10/02/23 15:22	3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**54**	**H H3**	10	2.2	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1
Arsenic	**0.26**	**J H H3**	0.52	0.14	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1
Cobalt	**0.87**	**J H H3**	2.6	0.047	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1
Iron	**250**	**H H3**	5.2	3.0	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1
Lead	ND	H H3	0.52	0.11	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1
Lithium	ND	H H3	2.6	0.16	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1
Manganese	**62**	**H H3 B**	0.78	0.028	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1
Molybdenum	ND	H H3	2.1	0.085	mg/Kg	☼	09/22/23 07:00	10/03/23 11:25	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**680**	**H H3**	10	1.7	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1
Arsenic	**1.1**	**H H3**	0.52	0.23	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1
Cobalt	**1.1**	**J H H3**	2.6	0.055	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1
Iron	**3000**	**H H3**	5.2	3.0	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1
Lead	**1.4**	**H H3**	0.52	0.11	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1
Lithium	**1.1**	**J H H3**	2.6	0.16	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1
Manganese	**51**	**H H3**	0.78	0.14	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1
Molybdenum	**0.13**	**J H H3**	2.1	0.085	mg/Kg	☼	09/25/23 07:00	10/03/23 12:19	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**34**	**J H H3 B**	160	24	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5
Arsenic	ND	H H3	7.8	2.0	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5
Cobalt	ND	H H3	39	0.62	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5
Iron	ND	H H3	78	46	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5
Lead	ND	H H3	7.8	1.7	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5
Lithium	ND	H H3	39	2.3	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5

Client Sample ID: MW-217 - 12-13'

Lab Sample ID: 140-33465-2

Date Collected: 02/08/23 09:00 | **Matrix: Solid**

Date Received: 09/12/23 14:00 | **Percent Solids: 96.0**

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	2.7	J H H3	12	1.9	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5
Molybdenum	ND	H H3	31	1.3	mg/Kg	☼	09/27/23 07:00	10/05/23 12:04	5

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1300	H H3	10	1.7	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1
Arsenic	3.2	H H3	0.52	0.16	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1
Cobalt	1.1	J H H3	2.6	0.048	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1
Iron	5200	H H3	5.2	3.0	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1
Lead	0.78	H H3	0.52	0.11	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1
Lithium	1.7	J H H3	2.6	0.16	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1
Manganese	53	H H3	0.78	0.26	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1
Molybdenum	0.16	J H H3	2.1	0.10	mg/Kg	☼	09/26/23 11:00	10/05/23 13:14	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	30000	H H3	100	17	mg/Kg	☼	09/27/23 08:00	10/17/23 13:44	10
Arsenic	2.5	H H3	1.0	0.62	mg/Kg	☼	09/27/23 08:00	10/17/23 17:38	2
Cobalt	2.9	J H H3	5.2	0.054	mg/Kg	☼	09/27/23 08:00	10/17/23 17:38	2
Iron	8200	H H3	5.2	4.3	mg/Kg	☼	09/27/23 08:00	10/17/23 15:31	1
Lead	2.5	H H3	1.0	0.23	mg/Kg	☼	09/27/23 08:00	10/17/23 17:38	2
Lithium	4.5	H H3	2.6	0.16	mg/Kg	☼	09/27/23 08:00	10/17/23 15:31	1
Manganese	140	H H3	0.78	0.32	mg/Kg	☼	09/27/23 08:00	10/17/23 15:31	1
Molybdenum	0.11	J H H3	2.1	0.085	mg/Kg	☼	09/27/23 08:00	10/17/23 15:31	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	32000		10	1.6	mg/Kg			10/19/23 14:22	1
Arsenic	7.1		0.50	0.13	mg/Kg			10/19/23 14:22	1
Cobalt	6.0		2.5	0.023	mg/Kg			10/19/23 14:22	1
Iron	17000		5.0	4.1	mg/Kg			10/19/23 14:22	1
Lead	4.7		0.50	0.11	mg/Kg			10/19/23 14:22	1
Lithium	7.4		2.5	0.15	mg/Kg			10/19/23 14:22	1
Manganese	340		0.75	0.052	mg/Kg			10/19/23 14:22	1
Molybdenum	0.41	J	2.0	0.082	mg/Kg			10/19/23 14:22	1

Method: SW846 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	30000	H H3	100	17	mg/Kg	☼	09/27/23 08:00	10/17/23 14:37	10
Arsenic	8.5	H H3	1.0	0.62	mg/Kg	☼	09/27/23 08:00	10/17/23 18:32	2
Cobalt	5.6	H H3	5.2	0.054	mg/Kg	☼	09/27/23 08:00	10/17/23 18:32	2
Iron	16000	H H3	5.2	4.3	mg/Kg	☼	09/27/23 08:00	10/17/23 16:28	1
Lead	6.4	H H3	1.0	0.23	mg/Kg	☼	09/27/23 08:00	10/17/23 18:32	2
Lithium	7.2	H H3	2.6	0.16	mg/Kg	☼	09/27/23 08:00	10/17/23 16:28	1
Manganese	330	H H3	0.78	0.32	mg/Kg	☼	09/27/23 08:00	10/17/23 16:28	1
Molybdenum	0.79	J H H3	2.1	0.085	mg/Kg	☼	09/27/23 08:00	10/17/23 16:28	1

Client Sample Results

Client Sample ID: MW-218 - 11-12'
Lab Sample ID: 140-33465-3

Date Collected: 02/08/23 10:30
Matrix: Solid
Date Received: 09/12/23 14:00
Percent Solids: 85.0

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	47	7.5	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4
Arsenic	ND	H H3	2.4	0.61	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4
Cobalt	ND	H H3	12	0.21	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4
Iron	ND	H H3	24	14	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4
Lead	ND	H H3	2.4	0.52	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4
Lithium	ND	H H3	12	0.71	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4
Manganese	**14**	**H H3**	3.5	0.15	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4
Molybdenum	ND	H H3	9.4	0.39	mg/Kg	☼	09/20/23 08:00	10/02/23 14:18	4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**11**	**J H H3**	35	5.6	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3
Arsenic	ND	H H3	1.8	0.46	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3
Cobalt	**0.50**	**J H H3**	8.8	0.22	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3
Iron	**160**	**H H3**	18	10	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3
Lead	ND	H H3	1.8	0.39	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3
Lithium	ND	H H3	8.8	0.53	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3
Manganese	**99**	**H H3**	2.6	0.99	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3
Molybdenum	ND	H H3	7.1	0.29	mg/Kg	☼	09/21/23 08:00	10/02/23 15:27	3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**57**	**H H3**	12	2.5	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1
Arsenic	**0.57**	**J H H3**	0.59	0.15	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1
Cobalt	**0.53**	**J H H3**	2.9	0.053	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1
Iron	**630**	**H H3**	5.9	3.4	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1
Lead	ND	H H3	0.59	0.13	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1
Lithium	ND	H H3	2.9	0.18	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1
Manganese	**21**	**H H3 B**	0.88	0.032	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1
Molybdenum	**0.12**	**J H H3**	2.4	0.096	mg/Kg	☼	09/22/23 07:00	10/03/23 11:30	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**680**	**H H3**	12	1.9	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1
Arsenic	**1.7**	**H H3**	0.59	0.26	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1
Cobalt	**1.7**	**J H H3**	2.9	0.062	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1
Iron	**4300**	**H H3**	5.9	3.4	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1
Lead	**2.0**	**H H3**	0.59	0.13	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1
Lithium	**1.2**	**J H H3**	2.9	0.18	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1
Manganese	**51**	**H H3**	0.88	0.15	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1
Molybdenum	**0.28**	**J H H3**	2.4	0.096	mg/Kg	☼	09/25/23 07:00	10/03/23 12:24	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**28**	**J H H3 B**	180	28	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5
Arsenic	ND	H H3	8.8	2.2	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5
Cobalt	ND	H H3	44	0.71	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5
Iron	ND	H H3	88	52	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5
Lead	ND	H H3	8.8	1.9	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5
Lithium	ND	H H3	44	2.6	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5

Client: WSP USA Inc
Job ID: 140-33465-1
Project/Site: GRE Stanton Station MNA

Client Sample ID: MW-218 - 11-12'
Lab Sample ID: 140-33465-3
Date Collected: 02/08/23 10:30
Matrix: Solid
Date Received: 09/12/23 14:00
Percent Solids: 85.0

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	H H3	13	2.2	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5
Molybdenum	ND	H H3	35	1.5	mg/Kg	☼	09/27/23 07:00	10/05/23 12:09	5

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1100**	**H H3**	12	1.9	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1
Arsenic	**3.5**	**H H3**	0.59	0.18	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1
Cobalt	**1.1**	**J H H3**	2.9	0.054	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1
Iron	**6300**	**H H3**	5.9	3.4	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1
Lead	**0.96**	**H H3**	0.59	0.13	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1
Lithium	**1.4**	**J H H3**	2.9	0.18	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1
Manganese	**60**	**H H3**	0.88	0.29	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1
Molybdenum	**0.27**	**J H H3**	2.4	0.12	mg/Kg	☼	09/26/23 11:00	10/05/23 13:19	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**26000**	**H H3**	120	19	mg/Kg	☼	09/27/23 08:00	10/17/23 13:49	10
Arsenic	**2.2**	**H H3**	1.2	0.71	mg/Kg	☼	09/27/23 08:00	10/17/23 17:43	2
Cobalt	**0.68**	**J H H3**	5.9	0.061	mg/Kg	☼	09/27/23 08:00	10/17/23 17:43	2
Iron	**3100**	**H H3**	5.9	4.8	mg/Kg	☼	09/27/23 08:00	10/17/23 15:36	1
Lead	**2.5**	**H H3**	1.2	0.26	mg/Kg	☼	09/27/23 08:00	10/17/23 17:43	2
Lithium	**3.7**	**H H3**	2.9	0.18	mg/Kg	☼	09/27/23 08:00	10/17/23 15:36	1
Manganese	**56**	**H H3**	0.88	0.36	mg/Kg	☼	09/27/23 08:00	10/17/23 15:36	1
Molybdenum	**0.13**	**J H H3**	2.4	0.096	mg/Kg	☼	09/27/23 08:00	10/17/23 15:36	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**27000**		10	1.6	mg/Kg			10/19/23 14:22	1
Arsenic	**8.0**		0.50	0.13	mg/Kg			10/19/23 14:22	1
Cobalt	**4.4**		2.5	0.023	mg/Kg			10/19/23 14:22	1
Iron	**15000**		5.0	4.1	mg/Kg			10/19/23 14:22	1
Lead	**5.5**		0.50	0.11	mg/Kg			10/19/23 14:22	1
Lithium	**6.3**		2.5	0.15	mg/Kg			10/19/23 14:22	1
Manganese	**300**		0.75	0.052	mg/Kg			10/19/23 14:22	1
Molybdenum	**0.81**	**J**	2.0	0.082	mg/Kg			10/19/23 14:22	1

Method: SW846 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**27000**	**H H3**	120	19	mg/Kg	☼	09/27/23 08:00	10/17/23 14:42	10
Arsenic	**9.3**	**H H3**	1.2	0.71	mg/Kg	☼	09/27/23 08:00	10/17/23 18:37	2
Cobalt	**5.1**	**J H H3**	5.9	0.061	mg/Kg	☼	09/27/23 08:00	10/17/23 18:37	2
Iron	**15000**	**H H3**	5.9	4.8	mg/Kg	☼	09/27/23 08:00	10/17/23 16:33	1
Lead	**5.9**	**H H3**	1.2	0.26	mg/Kg	☼	09/27/23 08:00	10/17/23 18:37	2
Lithium	**6.8**	**H H3**	2.9	0.18	mg/Kg	☼	09/27/23 08:00	10/17/23 16:33	1
Manganese	**300**	**H H3**	0.88	0.36	mg/Kg	☼	09/27/23 08:00	10/17/23 16:33	1
Molybdenum	**0.91**	**J H H3**	2.4	0.096	mg/Kg	☼	09/27/23 08:00	10/17/23 16:33	1

Client Sample ID: MW-219 - 18-20'

Lab Sample ID: 140-33465-4

Date Collected: 02/08/23 13:00
Matrix: Solid
Date Received: 09/12/23 14:00
Percent Solids: 82.8

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	48	7.7	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4
Arsenic	ND	H H3	2.4	0.63	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4
Cobalt	ND	H H3	12	0.22	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4
Iron	ND	H H3	24	14	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4
Lead	**0.61**	**J H H3**	2.4	0.53	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4
Lithium	ND	H H3	12	0.73	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4
Manganese	**1.3**	**J H H3**	3.6	0.15	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4
Molybdenum	ND	H H3	9.7	0.40	mg/Kg	☼	09/20/23 08:00	10/02/23 14:23	4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**16**	**J H H3**	36	5.8	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3
Arsenic	ND	H H3	1.8	0.47	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3
Cobalt	ND	H H3	9.1	0.23	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3
Iron	**21**	**H H3**	18	11	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3
Lead	ND	H H3	1.8	0.40	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3
Lithium	ND	H H3	9.1	0.54	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3
Manganese	**49**	**H H3**	2.7	1.0	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3
Molybdenum	ND	H H3	7.3	0.30	mg/Kg	☼	09/21/23 08:00	10/02/23 15:32	3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**110**	**H H3**	12	2.5	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1
Arsenic	**0.51**	**J H H3**	0.60	0.16	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1
Cobalt	**0.86**	**J H H3**	3.0	0.054	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1
Iron	**340**	**H H3**	6.0	3.5	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1
Lead	**0.14**	**J H H3**	0.60	0.13	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1
Lithium	ND	H H3	3.0	0.18	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1
Manganese	**55**	**H H3 B**	0.91	0.033	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1
Molybdenum	ND	H H3	2.4	0.099	mg/Kg	☼	09/22/23 07:00	10/03/23 11:35	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1900**	**H H3**	12	1.9	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1
Arsenic	**1.9**	**H H3**	0.60	0.27	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1
Cobalt	**2.3**	**J H H3**	3.0	0.064	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1
Iron	**6300**	**H H3**	6.0	3.5	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1
Lead	**3.2**	**H H3**	0.60	0.13	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1
Lithium	**3.7**	**H H3**	3.0	0.18	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1
Manganese	**67**	**H H3**	0.91	0.16	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1
Molybdenum	**0.15**	**J H H3**	2.4	0.099	mg/Kg	☼	09/25/23 07:00	10/03/23 12:29	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	180	28	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5
Arsenic	ND	H H3	9.1	2.3	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5
Cobalt	ND	H H3	45	0.73	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5
Iron	ND	H H3	91	53	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5
Lead	ND	H H3	9.1	2.0	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5
Lithium	ND	H H3	45	2.7	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5

Client Sample ID: MW-219 - 18-20' Lab Sample ID: 140-33465-4

Date Collected: 02/08/23 13:00 Matrix: Solid
Date Received: 09/12/23 14:00 Percent Solids: 82.8

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	H H3	14	2.2	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5
Molybdenum	ND	H H3	36	1.5	mg/Kg	☼	09/27/23 07:00	10/05/23 12:14	5

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3100**	**H H3**	12	1.9	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1
Arsenic	**1.5**	**H H3**	0.60	0.18	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1
Cobalt	**1.0**	**J H H3**	3.0	0.056	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1
Iron	**5000**	**H H3**	6.0	3.5	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1
Lead	**1.0**	**H H3**	0.60	0.13	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1
Lithium	**2.7**	**J H H3**	3.0	0.18	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1
Manganese	**41**	**H H3**	0.91	0.30	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1
Molybdenum	ND	H H3	2.4	0.12	mg/Kg	☼	09/26/23 11:00	10/05/23 13:24	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**30000**	**H H3**	120	19	mg/Kg	☼	09/27/23 08:00	10/17/23 13:54	10
Arsenic	**2.1**	**H H3**	1.2	0.73	mg/Kg	☼	09/27/23 08:00	10/17/23 17:48	2
Cobalt	**0.29**	**J H H3**	6.0	0.063	mg/Kg	☼	09/27/23 08:00	10/17/23 17:48	2
Iron	**3000**	**H H3**	6.0	5.0	mg/Kg	☼	09/27/23 08:00	10/17/23 15:41	1
Lead	**1.2**	**H H3**	1.2	0.27	mg/Kg	☼	09/27/23 08:00	10/17/23 17:48	2
Lithium	**5.3**	**H H3**	3.0	0.18	mg/Kg	☼	09/27/23 08:00	10/17/23 15:41	1
Manganese	**32**	**H H3**	0.91	0.37	mg/Kg	☼	09/27/23 08:00	10/17/23 15:41	1
Molybdenum	**0.12**	**J H H3**	2.4	0.099	mg/Kg	☼	09/27/23 08:00	10/17/23 15:41	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**35000**		10	1.6	mg/Kg			10/19/23 14:22	1
Arsenic	**6.0**		0.50	0.13	mg/Kg			10/19/23 14:22	1
Cobalt	**4.5**		2.5	0.023	mg/Kg			10/19/23 14:22	1
Iron	**15000**		5.0	4.1	mg/Kg			10/19/23 14:22	1
Lead	**6.3**		0.50	0.11	mg/Kg			10/19/23 14:22	1
Lithium	**12**		2.5	0.15	mg/Kg			10/19/23 14:22	1
Manganese	**250**		0.75	0.052	mg/Kg			10/19/23 14:22	1
Molybdenum	**0.27**	**J**	2.0	0.082	mg/Kg			10/19/23 14:22	1

Method: SW846 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**36000**	**H H3**	120	19	mg/Kg	☼	09/27/23 08:00	10/17/23 14:47	10
Arsenic	**7.0**	**H H3**	1.2	0.73	mg/Kg	☼	09/27/23 08:00	10/17/23 18:42	2
Cobalt	**4.6**	**J H H3**	6.0	0.063	mg/Kg	☼	09/27/23 08:00	10/17/23 18:42	2
Iron	**14000**	**H H3**	6.0	5.0	mg/Kg	☼	09/27/23 08:00	10/17/23 16:39	1
Lead	**5.8**	**H H3**	1.2	0.27	mg/Kg	☼	09/27/23 08:00	10/17/23 18:42	2
Lithium	**12**	**H H3**	3.0	0.18	mg/Kg	☼	09/27/23 08:00	10/17/23 16:39	1
Manganese	**200**	**H H3**	0.91	0.37	mg/Kg	☼	09/27/23 08:00	10/17/23 16:39	1
Molybdenum	**0.47**	**J H H3**	2.4	0.099	mg/Kg	☼	09/27/23 08:00	10/17/23 16:39	1

Client Sample Results

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: MW-222 - 34.5-36'
Date Collected: 02/09/23 10:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-5
Matrix: Solid
Percent Solids: 81.7

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	49	7.8	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4
Arsenic	ND	H H3	2.4	0.64	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4
Cobalt	ND	H H3	12	0.22	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4
Iron	ND	H H3	24	14	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4
Lead	**0.59**	**J H H3**	2.4	0.54	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4
Lithium	ND	H H3	12	0.73	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4
Manganese	**10**	**H H3**	3.7	0.15	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4
Molybdenum	ND	H H3	9.8	0.40	mg/Kg	☼	09/20/23 08:00	10/02/23 14:28	4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**23**	**J H H3**	37	5.9	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3
Arsenic	ND	H H3	1.8	0.48	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3
Cobalt	ND	H H3	9.2	0.23	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3
Iron	**46**	**H H3**	18	11	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3
Lead	**0.64**	**J H H3**	1.8	0.40	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3
Lithium	ND	H H3	9.2	0.55	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3
Manganese	**46**	**H H3**	2.8	1.0	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3
Molybdenum	ND	H H3	7.3	0.30	mg/Kg	☼	09/21/23 08:00	10/02/23 15:37	3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**210**	**H H3**	12	2.6	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1
Arsenic	**0.75**	**H H3**	0.61	0.16	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1
Cobalt	**0.65**	**J H H3**	3.1	0.055	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1
Iron	**870**	**H H3**	6.1	3.5	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1
Lead	**0.17**	**J H H3**	0.61	0.13	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1
Lithium	ND	H H3	3.1	0.18	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1
Manganese	**40**	**H H3 B**	0.92	0.033	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1
Molybdenum	ND	H H3	2.4	0.10	mg/Kg	☼	09/22/23 07:00	10/03/23 11:49	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1500**	**H H3**	12	2.0	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1
Arsenic	**1.5**	**H H3**	0.61	0.27	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1
Cobalt	**2.2**	**J H H3**	3.1	0.065	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1
Iron	**5100**	**H H3**	6.1	3.5	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1
Lead	**3.1**	**H H3**	0.61	0.13	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1
Lithium	**3.0**	**J H H3**	3.1	0.18	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1
Manganese	**72**	**H H3**	0.92	0.16	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1
Molybdenum	**0.18**	**J H H3**	2.4	0.10	mg/Kg	☼	09/25/23 07:00	10/03/23 12:33	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	180	29	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5
Arsenic	ND	H H3	9.2	2.3	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5
Cobalt	ND	H H3	46	0.73	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5
Iron	ND	H H3	92	54	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5
Lead	ND	H H3	9.2	2.0	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5
Lithium	ND	H H3	46	2.7	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5

Client: WSP USA Inc — Job ID: 140-33465-1
Project/Site: GRE Stanton Station MNA

Client Sample ID: MW-222 - 34.5-36' — **Lab Sample ID: 140-33465-5**
Date Collected: 02/09/23 10:00 — **Matrix: Solid**
Date Received: 09/12/23 14:00 — **Percent Solids: 81.7**

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	H H3	14	2.3	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5
Molybdenum	ND	H H3	37	1.5	mg/Kg	☼	09/27/23 07:00	10/05/23 12:19	5

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2900**	**H H3**	12	2.0	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1
Arsenic	**1.8**	**H H3**	0.61	0.18	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1
Cobalt	**1.1**	**J H H3**	3.1	0.056	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1
Iron	**5000**	**H H3**	6.1	3.5	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1
Lead	**0.97**	**H H3**	0.61	0.13	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1
Lithium	**2.8**	**J H H3**	3.1	0.18	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1
Manganese	**47**	**H H3**	0.92	0.31	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1
Molybdenum	ND	H H3	2.4	0.12	mg/Kg	☼	09/26/23 11:00	10/05/23 13:28	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**32000**	**H H3**	120	20	mg/Kg	☼	09/27/23 08:00	10/17/23 14:08	10
Arsenic	**2.4**	**H H3**	1.2	0.73	mg/Kg	☼	09/27/23 08:00	10/17/23 17:53	2
Cobalt	**0.32**	**J H H3**	6.1	0.064	mg/Kg	☼	09/27/23 08:00	10/17/23 17:53	2
Iron	**3200**	**H H3**	6.1	5.0	mg/Kg	☼	09/27/23 08:00	10/17/23 15:46	1
Lead	**1.2**	**H H3**	1.2	0.27	mg/Kg	☼	09/27/23 08:00	10/17/23 17:53	2
Lithium	**5.5**	**H H3**	3.1	0.18	mg/Kg	☼	09/27/23 08:00	10/17/23 15:46	1
Manganese	**37**	**H H3**	0.92	0.38	mg/Kg	☼	09/27/23 08:00	10/17/23 15:46	1
Molybdenum	**0.13**	**J H H3**	2.4	0.10	mg/Kg	☼	09/27/23 08:00	10/17/23 15:46	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**37000**		10	1.6	mg/Kg			10/19/23 14:22	1
Arsenic	**6.4**		0.50	0.13	mg/Kg			10/19/23 14:22	1
Cobalt	**4.3**		2.5	0.023	mg/Kg			10/19/23 14:22	1
Iron	**14000**		5.0	4.1	mg/Kg			10/19/23 14:22	1
Lead	**6.7**		0.50	0.11	mg/Kg			10/19/23 14:22	1
Lithium	**11**		2.5	0.15	mg/Kg			10/19/23 14:22	1
Manganese	**250**		0.75	0.052	mg/Kg			10/19/23 14:22	1
Molybdenum	**0.31**	**J**	2.0	0.082	mg/Kg			10/19/23 14:22	1

Method: SW846 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**45000**	**H H3**	120	20	mg/Kg	☼	09/27/23 08:00	10/17/23 14:52	10
Arsenic	**7.7**	**H H3**	1.2	0.73	mg/Kg	☼	09/27/23 08:00	10/17/23 18:47	2
Cobalt	**5.3**	**J H H3**	6.1	0.064	mg/Kg	☼	09/27/23 08:00	10/17/23 18:47	2
Iron	**15000**	**H H3**	6.1	5.0	mg/Kg	☼	09/27/23 08:00	10/17/23 16:45	1
Lead	**7.0**	**H H3**	1.2	0.27	mg/Kg	☼	09/27/23 08:00	10/17/23 18:47	2
Lithium	**13**	**H H3**	3.1	0.18	mg/Kg	☼	09/27/23 08:00	10/17/23 16:45	1
Manganese	**240**	**H H3**	0.92	0.38	mg/Kg	☼	09/27/23 08:00	10/17/23 16:45	1
Molybdenum	**0.60**	**J H H3**	2.4	0.10	mg/Kg	☼	09/27/23 08:00	10/17/23 16:45	1

Client Sample ID: MW-300 - 11-13'

Date Collected: 02/09/23 12:30

Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-6

Matrix: Solid

Percent Solids: 89.4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	45	7.2	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4
Arsenic	ND	H H3	2.2	0.58	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4
Cobalt	ND	H H3	11	0.20	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4
Iron	ND	H H3	22	13	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4
Lead	ND	H H3	2.2	0.49	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4
Lithium	ND	H H3	11	0.67	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4
Manganese	**1.3**	**J H H3**	3.4	0.14	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4
Molybdenum	ND	H H3	9.0	0.37	mg/Kg	☼	09/20/23 08:00	10/02/23 14:52	4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**13**	**J H H3**	34	5.4	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3
Arsenic	ND	H H3	1.7	0.44	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3
Cobalt	ND	H H3	8.4	0.21	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3
Iron	**38**	**H H3**	17	9.7	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3
Lead	ND	H H3	1.7	0.37	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3
Lithium	ND	H H3	8.4	0.50	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3
Manganese	**49**	**H H3**	2.5	0.94	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3
Molybdenum	ND	H H3	6.7	0.28	mg/Kg	☼	09/21/23 08:00	10/02/23 15:57	3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**150**	**H H3**	11	2.3	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1
Arsenic	**1.1**	**H H3**	0.56	0.15	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1
Cobalt	**0.99**	**J H H3**	2.8	0.050	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1
Iron	**1200**	**H H3**	5.6	3.2	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1
Lead	ND	H H3	0.56	0.12	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1
Lithium	ND	H H3	2.8	0.17	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1
Manganese	**58**	**H H3 B**	0.84	0.030	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1
Molybdenum	**0.10**	**J H H3**	2.2	0.092	mg/Kg	☼	09/22/23 07:00	10/03/23 11:59	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1200**	**H H3**	11	1.8	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1
Arsenic	**1.5**	**H H3**	0.56	0.25	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1
Cobalt	**1.9**	**J H H3**	2.8	0.059	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1
Iron	**4200**	**H H3**	5.6	3.2	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1
Lead	**3.4**	**H H3**	0.56	0.12	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1
Lithium	**2.5**	**J H H3**	2.8	0.17	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1
Manganese	**48**	**H H3**	0.84	0.15	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1
Molybdenum	**0.17**	**J H H3**	2.2	0.092	mg/Kg	☼	09/25/23 07:00	10/03/23 12:53	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**34**	**J H H3 B**	170	26	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5
Arsenic	ND	H H3	8.4	2.1	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5
Cobalt	ND	H H3	42	0.67	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5
Iron	ND	H H3	84	49	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5
Lead	ND	H H3	8.4	1.8	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5
Lithium	ND	H H3	42	2.5	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5

Client Sample ID: MW-300 - 11-13'

Lab Sample ID: 140-33465-6

Date Collected: 02/09/23 12:30 — **Matrix: Solid**

Date Received: 09/12/23 14:00 — **Percent Solids: 89.4**

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	H H3	13	2.1	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5
Molybdenum	ND	H H3	34	1.4	mg/Kg	☼	09/27/23 07:00	10/05/23 12:44	5

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2500**	**H H3**	11	1.8	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1
Arsenic	**2.0**	**H H3**	0.56	0.17	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1
Cobalt	**1.1**	**J H H3**	2.8	0.051	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1
Iron	**4900**	**H H3**	5.6	3.2	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1
Lead	**0.94**	**H H3**	0.56	0.12	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1
Lithium	**2.6**	**J H H3**	2.8	0.17	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1
Manganese	**42**	**H H3**	0.84	0.28	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1
Molybdenum	ND	H H3	2.2	0.11	mg/Kg	☼	09/26/23 11:00	10/05/23 13:48	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**34000**	**H H3**	110	18	mg/Kg	☼	09/27/23 08:00	10/17/23 14:18	10
Arsenic	**2.5**	**H H3**	1.7	1.0	mg/Kg	☼	09/27/23 08:00	10/17/23 18:02	3
Cobalt	**0.57**	**J H H3**	8.4	0.087	mg/Kg	☼	09/27/23 08:00	10/17/23 18:02	3
Iron	**4300**	**H H3**	5.6	4.6	mg/Kg	☼	09/27/23 08:00	10/17/23 16:12	1
Lead	**0.98**	**J H H3**	1.7	0.37	mg/Kg	☼	09/27/23 08:00	10/17/23 18:02	3
Lithium	**6.4**	**H H3**	2.8	0.17	mg/Kg	☼	09/27/23 08:00	10/17/23 16:12	1
Manganese	**48**	**H H3**	0.84	0.35	mg/Kg	☼	09/27/23 08:00	10/17/23 16:12	1
Molybdenum	**0.13**	**J H H3**	2.2	0.092	mg/Kg	☼	09/27/23 08:00	10/17/23 16:12	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**38000**		10	1.6	mg/Kg			10/19/23 14:22	1
Arsenic	**7.2**		0.50	0.13	mg/Kg			10/19/23 14:22	1
Cobalt	**4.5**		2.5	0.023	mg/Kg			10/19/23 14:22	1
Iron	**15000**		5.0	4.1	mg/Kg			10/19/23 14:22	1
Lead	**5.3**		0.50	0.11	mg/Kg			10/19/23 14:22	1
Lithium	**11**		2.5	0.15	mg/Kg			10/19/23 14:22	1
Manganese	**250**		0.75	0.052	mg/Kg			10/19/23 14:22	1
Molybdenum	**0.40**	**J**	2.0	0.082	mg/Kg			10/19/23 14:22	1

Method: SW846 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**36000**	**H H3**	110	18	mg/Kg	☼	09/27/23 08:00	10/17/23 15:11	10
Arsenic	**7.9**	**H H3**	1.1	0.67	mg/Kg	☼	09/27/23 08:00	10/17/23 18:58	2
Cobalt	**4.9**	**J H H3**	5.6	0.058	mg/Kg	☼	09/27/23 08:00	10/17/23 18:58	2
Iron	**15000**	**H H3**	5.6	4.6	mg/Kg	☼	09/27/23 08:00	10/17/23 17:10	1
Lead	**6.7**	**H H3**	1.1	0.25	mg/Kg	☼	09/27/23 08:00	10/17/23 18:58	2
Lithium	**9.7**	**H H3**	2.8	0.17	mg/Kg	☼	09/27/23 08:00	10/17/23 17:10	1
Manganese	**260**	**H H3**	0.84	0.35	mg/Kg	☼	09/27/23 08:00	10/17/23 17:10	1
Molybdenum	**0.61**	**J H H3**	2.2	0.092	mg/Kg	☼	09/27/23 08:00	10/17/23 17:10	1

Client Sample Results

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: MW-PB3 - 22-24'

Date Collected: 02/10/23 10:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-7
Matrix: Solid
Percent Solids: 76.0

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	H H3	53	8.4	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4
Arsenic	ND	H H3	2.6	0.68	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4
Cobalt	ND	H H3	13	0.24	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4
Iron	ND	H H3	26	15	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4
Lead	ND	H H3	2.6	0.58	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4
Lithium	ND	H H3	13	0.79	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4
Manganese	**7.7**	**H H3**	3.9	0.16	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4
Molybdenum	ND	H H3	11	0.43	mg/Kg	☼	09/20/23 08:00	10/02/23 14:57	4

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**11**	**J H H3**	39	6.3	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3
Arsenic	ND	H H3	2.0	0.51	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3
Cobalt	**0.71**	**J H H3**	9.9	0.25	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3
Iron	**65**	**H H3**	20	11	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3
Lead	**1.1**	**J H H3**	2.0	0.43	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3
Lithium	ND	H H3	9.9	0.59	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3
Manganese	**170**	**H H3**	3.0	1.1	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3
Molybdenum	ND	H H3	7.9	0.32	mg/Kg	☼	09/21/23 08:00	10/02/23 16:02	3

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**93**	**H H3**	13	2.8	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1
Arsenic	**0.93**	**H H3**	0.66	0.17	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1
Cobalt	**0.59**	**J H H3**	3.3	0.059	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1
Iron	**1200**	**H H3**	6.6	3.8	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1
Lead	ND	H H3	0.66	0.14	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1
Lithium	ND	H H3	3.3	0.20	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1
Manganese	**92**	**H H3 B**	0.99	0.036	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1
Molybdenum	**0.11**	**J H H3**	2.6	0.11	mg/Kg	☼	09/22/23 07:00	10/03/23 12:04	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1000**	**H H3**	13	2.1	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1
Arsenic	**1.4**	**H H3**	0.66	0.29	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1
Cobalt	**2.1**	**J H H3**	3.3	0.070	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1
Iron	**7000**	**H H3**	6.6	3.8	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1
Lead	**3.7**	**H H3**	0.66	0.14	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1
Lithium	**3.6**	**H H3**	3.3	0.20	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1
Manganese	**200**	**H H3**	0.99	0.17	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1
Molybdenum	**0.23**	**J H H3**	2.6	0.11	mg/Kg	☼	09/25/23 07:00	10/03/23 12:58	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**110**	**J H H3 B**	200	31	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5
Arsenic	ND	H H3	9.9	2.5	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5
Cobalt	**0.99**	**J H H3**	49	0.79	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5
Iron	**200**	**H H3**	99	58	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5
Lead	**2.2**	**J H H3**	9.9	2.2	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5
Lithium	ND	H H3	49	2.9	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5

Client Sample ID: MW-PB3 - 22-24'
Date Collected: 02/10/23 10:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-7
Matrix: Solid
Percent Solids: 76.0

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**35**	**H H3**	15	2.4	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5
Molybdenum	ND	H H3	39	1.6	mg/Kg	☼	09/27/23 07:00	10/05/23 12:49	5

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3400**	**H H3**	13	2.1	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1
Arsenic	**4.8**	**H H3**	0.66	0.20	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1
Cobalt	**1.4**	**J H H3**	3.3	0.061	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1
Iron	**7000**	**H H3**	6.6	3.8	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1
Lead	**2.0**	**H H3**	0.66	0.14	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1
Lithium	**4.2**	**H H3**	3.3	0.20	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1
Manganese	**50**	**H H3**	0.99	0.33	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1
Molybdenum	**0.26**	**J H H3**	2.6	0.13	mg/Kg	☼	09/26/23 11:00	10/05/23 13:53	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**29000**	**H H3**	130	21	mg/Kg	☼	09/27/23 08:00	10/17/23 14:23	10
Arsenic	**3.0**	**H H3**	2.0	1.2	mg/Kg	☼	09/27/23 08:00	10/17/23 18:07	3
Cobalt	**0.55**	**J H H3**	9.9	0.10	mg/Kg	☼	09/27/23 08:00	10/17/23 18:07	3
Iron	**5900**	**H H3**	6.6	5.4	mg/Kg	☼	09/27/23 08:00	10/17/23 16:17	1
Lead	ND	H H3	2.0	0.43	mg/Kg	☼	09/27/23 08:00	10/17/23 18:07	3
Lithium	**10**	**H H3**	3.3	0.20	mg/Kg	☼	09/27/23 08:00	10/17/23 16:17	1
Manganese	**31**	**H H3**	0.99	0.41	mg/Kg	☼	09/27/23 08:00	10/17/23 16:17	1
Molybdenum	**0.12**	**J H H3**	2.6	0.11	mg/Kg	☼	09/27/23 08:00	10/17/23 16:17	1

Method: SW846 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**34000**		10	1.6	mg/Kg			10/19/23 14:22	1
Arsenic	**10**		0.50	0.13	mg/Kg			10/19/23 14:22	1
Cobalt	**6.4**		2.5	0.023	mg/Kg			10/19/23 14:22	1
Iron	**21000**		5.0	4.1	mg/Kg			10/19/23 14:22	1
Lead	**8.9**		0.50	0.11	mg/Kg			10/19/23 14:22	1
Lithium	**18**		2.5	0.15	mg/Kg			10/19/23 14:22	1
Manganese	**590**		0.75	0.052	mg/Kg			10/19/23 14:22	1
Molybdenum	**0.72**	**J**	2.0	0.082	mg/Kg			10/19/23 14:22	1

Method: SW846 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**47000**	**H H3**	130	21	mg/Kg	☼	09/27/23 08:00	10/17/23 15:16	10
Arsenic	**9.2**	**H H3**	1.3	0.79	mg/Kg	☼	09/27/23 08:00	10/17/23 19:03	2
Cobalt	**6.7**	**H H3**	6.6	0.068	mg/Kg	☼	09/27/23 08:00	10/17/23 19:03	2
Iron	**18000**	**H H3**	6.6	5.4	mg/Kg	☼	09/27/23 08:00	10/17/23 17:16	1
Lead	**8.6**	**H H3**	1.3	0.29	mg/Kg	☼	09/27/23 08:00	10/17/23 19:03	2
Lithium	**20**	**H H3**	3.3	0.20	mg/Kg	☼	09/27/23 08:00	10/17/23 17:16	1
Manganese	**410**	**H H3**	0.99	0.41	mg/Kg	☼	09/27/23 08:00	10/17/23 17:16	1
Molybdenum	**1.1**	**J H H3**	2.6	0.11	mg/Kg	☼	09/27/23 08:00	10/17/23 17:16	1

Method: 6010B SEP - SEP Metals (ICP) - Step 1
Prep: 3010A
SEP: Exchangeable

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.045	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.031	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 2
Prep: 3010A
SEP: Carbonate

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.063	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.28	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 3
Prep: 3010A
SEP: Non-Crystalline

Analyte	RL	MDL	Units
Aluminum	10	2.1	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.045	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.027	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 4
Prep: 3010A
SEP: Metal Hydroxide

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.22	mg/Kg
Cobalt	2.5	0.053	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.13	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 5
Prep: 3010A

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Prep: 3010A

SEP: Organic-Bound

Analyte	RL	MDL	Units
Aluminum	30	4.7	mg/Kg
Arsenic	1.5	0.38	mg/Kg
Cobalt	7.5	0.12	mg/Kg
Iron	15	8.8	mg/Kg
Lead	1.5	0.33	mg/Kg
Lithium	7.5	0.44	mg/Kg
Manganese	2.3	0.37	mg/Kg
Molybdenum	6.0	0.25	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 6

SEP: Acid/Sulfide

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.15	mg/Kg
Cobalt	2.5	0.046	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.25	mg/Kg
Molybdenum	2.0	0.099	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Prep: Residual

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.30	mg/Kg
Cobalt	2.5	0.026	mg/Kg
Iron	5.0	4.1	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.31	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.023	mg/Kg
Iron	5.0	4.1	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.052	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B - SEP Metals (ICP) - Total

Prep: Total

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.30	mg/Kg
Cobalt	2.5	0.026	mg/Kg

Default Detection Limits

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Method: 6010B - SEP Metals (ICP) - Total (Continued)

Prep: Total

Analyte	RL	MDL	Units
Iron	5.0	4.1	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.31	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Method: 6010B - SEP Metals (ICP) - Total

Lab Sample ID: MB 140-77869/9-A
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77869

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		09/27/23 08:00	10/17/23 13:24	1
Arsenic	ND		0.50	0.30	mg/Kg		09/27/23 08:00	10/17/23 13:24	1
Cobalt	ND		2.5	0.026	mg/Kg		09/27/23 08:00	10/17/23 13:24	1
Iron	ND		5.0	4.1	mg/Kg		09/27/23 08:00	10/17/23 13:24	1
Lead	ND		0.50	0.11	mg/Kg		09/27/23 08:00	10/17/23 13:24	1
Lithium	ND		2.5	0.15	mg/Kg		09/27/23 08:00	10/17/23 13:24	1
Manganese	ND		0.75	0.31	mg/Kg		09/27/23 08:00	10/17/23 13:24	1
Molybdenum	ND		2.0	0.082	mg/Kg		09/27/23 08:00	10/17/23 13:24	1

Lab Sample ID: LCS 140-77869/10-A
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77869

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	103		mg/Kg		103	80 - 120
Arsenic	5.00	5.07		mg/Kg		101	80 - 120
Cobalt	5.00	5.14		mg/Kg		103	80 - 125
Iron	50.0	53.7		mg/Kg		107	80 - 120
Lead	5.00	4.99		mg/Kg		100	80 - 120
Lithium	5.00	5.08		mg/Kg		102	80 - 120
Manganese	5.00	5.10		mg/Kg		102	80 - 120
Molybdenum	25.0	25.5		mg/Kg		102	80 - 125

Lab Sample ID: LCSD 140-77869/11-A
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 77869

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	113		mg/Kg		113	80 - 120	9	30
Arsenic	5.00	5.00		mg/Kg		100	80 - 120	1	30
Cobalt	5.00	5.12		mg/Kg		102	80 - 125	0	30
Iron	50.0	53.3		mg/Kg		107	80 - 120	1	30
Lead	5.00	5.01		mg/Kg		100	80 - 120	0	30
Lithium	5.00	5.11		mg/Kg		102	80 - 120	1	30
Manganese	5.00	5.16		mg/Kg		103	80 - 120	1	30
Molybdenum	25.0	25.3		mg/Kg		101	80 - 125	1	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Total/NA
Prep Batch: 77869

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	45000	H H3	43400		mg/Kg	☼	4	30

Method: 6010B - SEP Metals (ICP) - Total (Continued)

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Total/NA
Prep Batch: 77869

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	15000	H H3	13600		mg/Kg	☼	11	30
Lithium	13	H H3	11.5		mg/Kg	☼	14	30
Manganese	240	H H3	228		mg/Kg	☼	6	30
Molybdenum	0.60	J H H3	0.556	J	mg/Kg	☼	8	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Total/NA
Prep Batch: 77869

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	7.7	H H3	7.01		mg/Kg	☼	9	30
Cobalt	5.3	J H H3	4.64	J	mg/Kg	☼	13	30
Lead	7.0	H H3	7.22		mg/Kg	☼	2	30

Method: 6010B SEP - SEP Metals (ICP)

Lab Sample ID: MB 140-77870/9-B ^4
Matrix: Solid
Analysis Batch: 78508

Client Sample ID: Method Blank
Prep Type: Step 1
Prep Batch: 77907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		40	6.4	mg/Kg		09/20/23 08:00	10/02/23 13:53	4
Arsenic	ND		2.0	0.52	mg/Kg		09/20/23 08:00	10/02/23 13:53	4
Cobalt	ND		10	0.18	mg/Kg		09/20/23 08:00	10/02/23 13:53	4
Iron	ND		20	12	mg/Kg		09/20/23 08:00	10/02/23 13:53	4
Lead	ND		2.0	0.44	mg/Kg		09/20/23 08:00	10/02/23 13:53	4
Lithium	ND		10	0.60	mg/Kg		09/20/23 08:00	10/02/23 13:53	4
Manganese	ND		3.0	0.12	mg/Kg		09/20/23 08:00	10/02/23 13:53	4
Molybdenum	ND		8.0	0.33	mg/Kg		09/20/23 08:00	10/02/23 13:53	4

Lab Sample ID: LCS 140-77870/10-B ^5
Matrix: Solid
Analysis Batch: 78508

Client Sample ID: Lab Control Sample
Prep Type: Step 1
Prep Batch: 77907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	100		mg/Kg		100	80 - 120
Arsenic	5.00	4.79		mg/Kg		96	80 - 120
Cobalt	5.00	5.01	J	mg/Kg		100	80 - 120
Iron	50.0	49.6		mg/Kg		99	80 - 120
Lead	5.00	5.06		mg/Kg		101	80 - 120
Lithium	5.00	4.77	J	mg/Kg		95	80 - 120
Manganese	5.00	5.19		mg/Kg		104	80 - 120
Molybdenum	25.0	25.0		mg/Kg		100	80 - 120

Lab Sample ID: LCSD 140-77870/11-B ^5
Matrix: Solid
Analysis Batch: 78508

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 1
Prep Batch: 77907

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	98.2		mg/Kg		98	80 - 120	2	30

QC Sample Results

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCSD 140-77870/11-B ^5
Matrix: Solid
Analysis Batch: 78508

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 1
Prep Batch: 77907

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	5.00	5.05		mg/Kg		101	80 - 120	5	30
Cobalt	5.00	4.88	J	mg/Kg		98	80 - 120	3	30
Iron	50.0	47.9		mg/Kg		96	80 - 120	3	30
Lead	5.00	4.95		mg/Kg		99	80 - 120	2	30
Lithium	5.00	4.89	J	mg/Kg		98	80 - 120	3	30
Manganese	5.00	5.00		mg/Kg		100	80 - 120	4	30
Molybdenum	25.0	24.3		mg/Kg		97	80 - 120	3	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 78508

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Step 1
Prep Batch: 77907

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	ND	H H3	ND		mg/Kg	☼	NC	30
Arsenic	ND	H H3	ND		mg/Kg	☼	NC	30
Cobalt	ND	H H3	ND		mg/Kg	☼	NC	30
Iron	ND	H H3	ND		mg/Kg	☼	NC	30
Lead	0.59	J H H3	ND		mg/Kg	☼	NC	30
Lithium	ND	H H3	ND		mg/Kg	☼	NC	30
Manganese	10	H H3	8.37		mg/Kg	☼	18	30
Molybdenum	ND	H H3	ND		mg/Kg	☼	NC	30

Lab Sample ID: MB 140-77916/9-B ^3
Matrix: Solid
Analysis Batch: 78508

Client Sample ID: Method Blank
Prep Type: Step 2
Prep Batch: 77970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		30	4.8	mg/Kg		09/21/23 08:00	10/02/23 15:02	3
Arsenic	ND		1.5	0.39	mg/Kg		09/21/23 08:00	10/02/23 15:02	3
Cobalt	ND		7.5	0.19	mg/Kg		09/21/23 08:00	10/02/23 15:02	3
Iron	ND		15	8.7	mg/Kg		09/21/23 08:00	10/02/23 15:02	3
Lead	ND		1.5	0.33	mg/Kg		09/21/23 08:00	10/02/23 15:02	3
Lithium	ND		7.5	0.45	mg/Kg		09/21/23 08:00	10/02/23 15:02	3
Manganese	ND		2.3	0.84	mg/Kg		09/21/23 08:00	10/02/23 15:02	3
Molybdenum	ND		6.0	0.25	mg/Kg		09/21/23 08:00	10/02/23 15:02	3

Lab Sample ID: LCS 140-77916/10-B ^5
Matrix: Solid
Analysis Batch: 78508

Client Sample ID: Lab Control Sample
Prep Type: Step 2
Prep Batch: 77970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	ND		mg/Kg		4	
Arsenic	5.00	3.61		mg/Kg		72	60 - 120
Cobalt	5.00	4.52	J	mg/Kg		90	80 - 120
Iron	50.0	ND		mg/Kg		3	
Lead	5.00	4.44		mg/Kg		89	70 - 120
Lithium	5.00	4.18	J	mg/Kg		84	80 - 120
Manganese	5.00	4.66		mg/Kg		93	80 - 120
Molybdenum	25.0	20.0		mg/Kg		80	70 - 120

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCSD 140-77916/11-B ^5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Step 2**
Analysis Batch: 78508 — **Prep Batch: 77970**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	ND		mg/Kg		-0.3		231	
Arsenic	5.00	3.71		mg/Kg		74	60 - 120	3	30
Cobalt	5.00	4.61	J	mg/Kg		92	80 - 120	2	30
Iron	50.0	ND		mg/Kg		2		30	
Lead	5.00	4.55		mg/Kg		91	70 - 120	2	30
Lithium	5.00	4.54	J	mg/Kg		91	80 - 120	8	30
Manganese	5.00	4.76		mg/Kg		95	80 - 120	2	30
Molybdenum	25.0	20.3		mg/Kg		81	70 - 120	2	30

Lab Sample ID: 140-33465-5 DU — **Client Sample ID: MW-222 - 34.5-36'**
Matrix: Solid — **Prep Type: Step 2**
Analysis Batch: 78508 — **Prep Batch: 77970**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	23	J H H3	26.4	J	mg/Kg	☼	13	
Arsenic	ND	H H3	ND		mg/Kg	☼	NC	30
Cobalt	ND	H H3	ND		mg/Kg	☼	NC	30
Iron	46	H H3	36.7		mg/Kg	☼	22	
Lead	0.64	J H H3	0.720	J	mg/Kg	☼	11	30
Lithium	ND	H H3	ND		mg/Kg	☼	NC	30
Manganese	46	H H3	47.7		mg/Kg	☼	4	30
Molybdenum	ND	H H3	ND		mg/Kg	☼	NC	30

Lab Sample ID: MB 140-77990/9-B — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Step 3**
Analysis Batch: 78553 — **Prep Batch: 78030**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	2.1	mg/Kg		09/22/23 07:00	10/03/23 10:51	1
Arsenic	ND		0.50	0.13	mg/Kg		09/22/23 07:00	10/03/23 10:51	1
Cobalt	ND		2.5	0.045	mg/Kg		09/22/23 07:00	10/03/23 10:51	1
Iron	ND		5.0	2.9	mg/Kg		09/22/23 07:00	10/03/23 10:51	1
Lead	ND		0.50	0.11	mg/Kg		09/22/23 07:00	10/03/23 10:51	1
Lithium	ND		2.5	0.15	mg/Kg		09/22/23 07:00	10/03/23 10:51	1
Manganese	0.0905	J	0.75	0.027	mg/Kg		09/22/23 07:00	10/03/23 10:51	1
Molybdenum	ND		2.0	0.082	mg/Kg		09/22/23 07:00	10/03/23 10:51	1

Lab Sample ID: LCS 140-77990/10-B — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Step 3**
Analysis Batch: 78553 — **Prep Batch: 78030**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	97.9		mg/Kg		98	80 - 120
Arsenic	5.00	4.75		mg/Kg		95	80 - 120
Cobalt	5.00	4.81		mg/Kg		96	80 - 120
Iron	50.0	50.1		mg/Kg		100	80 - 120
Lead	5.00	ND		mg/Kg		0.9	
Lithium	5.00	4.84		mg/Kg		97	80 - 120
Manganese	5.00	4.73		mg/Kg		95	80 - 120

QC Sample Results

Client: WSP USA Inc — Job ID: 140-33465-1
Project/Site: GRE Stanton Station MNA

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCS 140-77990/10-B — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Step 3**
Analysis Batch: 78553 — **Prep Batch: 78030**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Molybdenum	25.0	24.0		mg/Kg		96	80 - 120

Lab Sample ID: LCSD 140-77990/11-B — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Step 3**
Analysis Batch: 78553 — **Prep Batch: 78030**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	98.6		mg/Kg		99	80 - 120	1	30
Arsenic	5.00	4.76		mg/Kg		95	80 - 120	0	30
Cobalt	5.00	4.81		mg/Kg		96	80 - 120	0	30
Iron	50.0	50.0		mg/Kg		100	80 - 120	0	30
Lead	5.00	ND		mg/Kg		1		43	
Lithium	5.00	4.83		mg/Kg		97	80 - 120	0	30
Manganese	5.00	4.74		mg/Kg		95	80 - 120	0	30
Molybdenum	25.0	24.0		mg/Kg		96	80 - 120	0	30

Lab Sample ID: 140-33465-5 DU — **Client Sample ID: MW-222 - 34.5-36'**
Matrix: Solid — **Prep Type: Step 3**
Analysis Batch: 78553 — **Prep Batch: 78030**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	210	H H3	215		mg/Kg	☼	0.1	30
Arsenic	0.75	H H3	0.774		mg/Kg	☼	3	30
Cobalt	0.65	J H H3	0.714	J	mg/Kg	☼	10	30
Iron	870	H H3	827		mg/Kg	☼	5	30
Lead	0.17	J H H3	0.169	J	mg/Kg	☼	1	
Lithium	ND	H H3	0.241	J	mg/Kg	☼	NC	30
Manganese	40	H H3 B	44.2		mg/Kg	☼	9	30
Molybdenum	ND	H H3	ND		mg/Kg	☼	NC	30

Lab Sample ID: MB 140-78031/9-B — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Step 4**
Analysis Batch: 78553 — **Prep Batch: 78077**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		09/25/23 07:00	10/03/23 11:05	1
Arsenic	ND		0.50	0.22	mg/Kg		09/25/23 07:00	10/03/23 11:05	1
Cobalt	ND		2.5	0.053	mg/Kg		09/25/23 07:00	10/03/23 11:05	1
Iron	ND		5.0	2.9	mg/Kg		09/25/23 07:00	10/03/23 11:05	1
Lead	ND		0.50	0.11	mg/Kg		09/25/23 07:00	10/03/23 11:05	1
Lithium	ND		2.5	0.15	mg/Kg		09/25/23 07:00	10/03/23 11:05	1
Manganese	ND		0.75	0.13	mg/Kg		09/25/23 07:00	10/03/23 11:05	1
Molybdenum	ND		2.0	0.082	mg/Kg		09/25/23 07:00	10/03/23 11:05	1

Lab Sample ID: LCS 140-78031/10-B — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Step 4**
Analysis Batch: 78553 — **Prep Batch: 78077**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	101		mg/Kg		101	80 - 120

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCS 140-78031/10-B
Matrix: Solid
Analysis Batch: 78553

Client Sample ID: Lab Control Sample
Prep Type: Step 4
Prep Batch: 78077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	5.00	5.00		mg/Kg		100	80 - 130
Cobalt	5.00	5.06		mg/Kg		101	80 - 120
Iron	50.0	51.2		mg/Kg		102	80 - 120
Lead	5.00	4.94		mg/Kg		99	80 - 120
Lithium	5.00	5.05		mg/Kg		101	80 - 120
Manganese	5.00	4.99		mg/Kg		100	80 - 120
Molybdenum	25.0	25.6		mg/Kg		102	80 - 120

Lab Sample ID: LCSD 140-78031/11-B
Matrix: Solid
Analysis Batch: 78553

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 4
Prep Batch: 78077

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	101		mg/Kg		101	80 - 120	1	30
Arsenic	5.00	5.06		mg/Kg		101	80 - 130	1	30
Cobalt	5.00	5.11		mg/Kg		102	80 - 120	1	30
Iron	50.0	51.0		mg/Kg		102	80 - 120	0	30
Lead	5.00	5.05		mg/Kg		101	80 - 120	2	30
Lithium	5.00	5.12		mg/Kg		102	80 - 120	1	30
Manganese	5.00	5.06		mg/Kg		101	80 - 120	1	30
Molybdenum	25.0	26.0		mg/Kg		104	80 - 120	1	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 78553

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Step 4
Prep Batch: 78077

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	1500	H H3	1570		mg/Kg	☼	2	30
Arsenic	1.5	H H3	1.61		mg/Kg	☼	8	30
Cobalt	2.2	J H H3	2.32	J	mg/Kg	☼	5	30
Iron	5100	H H3	5290		mg/Kg	☼	3	30
Lead	3.1	H H3	3.21		mg/Kg	☼	2	30
Lithium	3.0	J H H3	3.04	J	mg/Kg	☼	2	30
Manganese	72	H H3	75.6		mg/Kg	☼	4	30
Molybdenum	0.18	J H H3	0.193	J	mg/Kg	☼	8	30

Lab Sample ID: MB 140-78108/9-B ^5
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: Method Blank
Prep Type: Step 5
Prep Batch: 78232

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	24.6	J	150	24	mg/Kg		09/27/23 07:00	10/05/23 11:44	5
Arsenic	ND		7.5	1.9	mg/Kg		09/27/23 07:00	10/05/23 11:44	5
Cobalt	ND		38	0.60	mg/Kg		09/27/23 07:00	10/05/23 11:44	5
Iron	ND		75	44	mg/Kg		09/27/23 07:00	10/05/23 11:44	5
Lead	ND		7.5	1.7	mg/Kg		09/27/23 07:00	10/05/23 11:44	5
Lithium	ND		38	2.2	mg/Kg		09/27/23 07:00	10/05/23 11:44	5
Manganese	ND		11	1.9	mg/Kg		09/27/23 07:00	10/05/23 11:44	5
Molybdenum	ND		30	1.3	mg/Kg		09/27/23 07:00	10/05/23 11:44	5

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCS 140-78108/10-B ^5
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: Lab Control Sample
Prep Type: Step 5
Prep Batch: 78232

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	300	ND		mg/Kg		7	
Arsenic	15.0	10.8		mg/Kg		72	60 - 100
Cobalt	15.0	3.43	J	mg/Kg		23	1 - 60
Iron	150	ND		mg/Kg		0.04	
Lead	15.0	8.66		mg/Kg		58	40 - 80
Lithium	15.0	14.3	J	mg/Kg		96	80 - 150
Manganese	15.0	2.93	J	mg/Kg		20	1 - 60
Molybdenum	75.0	55.3		mg/Kg		74	60 - 100

Lab Sample ID: LCSD 140-78108/11-B ^5
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 5
Prep Batch: 78232

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	300	ND		mg/Kg		6		18	
Arsenic	15.0	10.9		mg/Kg		72	60 - 100	1	30
Cobalt	15.0	3.65	J	mg/Kg		24	1 - 60	6	30
Iron	150	ND		mg/Kg		-0.5		229	
Lead	15.0	7.86		mg/Kg		52	40 - 80	10	30
Lithium	15.0	14.7	J	mg/Kg		98	80 - 150	3	30
Manganese	15.0	3.01	J	mg/Kg		20	1 - 60	3	30
Molybdenum	75.0	56.1		mg/Kg		75	60 - 100	1	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Step 5
Prep Batch: 78232

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	ND	H H3	31.1	J	mg/Kg	☼	NC	
Arsenic	ND	H H3	ND		mg/Kg	☼	NC	30
Cobalt	ND	H H3	ND		mg/Kg	☼	NC	30
Iron	ND	H H3	ND		mg/Kg	☼	NC	
Lead	ND	H H3	ND		mg/Kg	☼	NC	30
Lithium	ND	H H3	ND		mg/Kg	☼	NC	30
Manganese	ND	H H3	ND		mg/Kg	☼	NC	30
Molybdenum	ND	H H3	ND		mg/Kg	☼	NC	30

Lab Sample ID: MB 140-78189/9-A
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: Method Blank
Prep Type: Step 6
Prep Batch: 78189

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		09/26/23 11:00	10/05/23 12:54	1
Arsenic	ND		0.50	0.15	mg/Kg		09/26/23 11:00	10/05/23 12:54	1
Cobalt	ND		2.5	0.046	mg/Kg		09/26/23 11:00	10/05/23 12:54	1
Iron	ND		5.0	2.9	mg/Kg		09/26/23 11:00	10/05/23 12:54	1
Lead	ND		0.50	0.11	mg/Kg		09/26/23 11:00	10/05/23 12:54	1
Lithium	ND		2.5	0.15	mg/Kg		09/26/23 11:00	10/05/23 12:54	1
Manganese	ND		0.75	0.25	mg/Kg		09/26/23 11:00	10/05/23 12:54	1

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: MB 140-78189/9-A
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: Method Blank
Prep Type: Step 6
Prep Batch: 78189

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		2.0	0.099	mg/Kg		09/26/23 11:00	10/05/23 12:54	1

Lab Sample ID: LCS 140-78189/10-A
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: Lab Control Sample
Prep Type: Step 6
Prep Batch: 78189

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	87.5		mg/Kg		88	80 - 120
Arsenic	5.00	4.65		mg/Kg		93	80 - 120
Cobalt	5.00	4.48		mg/Kg		90	80 - 120
Iron	50.0	44.6		mg/Kg		89	80 - 120
Lead	5.00	4.65		mg/Kg		93	80 - 120
Lithium	5.00	4.53		mg/Kg		91	80 - 120
Manganese	5.00	4.57		mg/Kg		91	80 - 120
Molybdenum	25.0	22.5		mg/Kg		90	80 - 120

Lab Sample ID: LCSD 140-78189/11-A
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 6
Prep Batch: 78189

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	95.1		mg/Kg		95	80 - 120	8	30
Arsenic	5.00	4.82		mg/Kg		96	80 - 120	4	30
Cobalt	5.00	4.90		mg/Kg		98	80 - 120	9	30
Iron	50.0	49.4		mg/Kg		99	80 - 120	10	30
Lead	5.00	4.92		mg/Kg		98	80 - 120	6	30
Lithium	5.00	4.82		mg/Kg		96	80 - 120	6	30
Manganese	5.00	5.00		mg/Kg		100	80 - 120	9	30
Molybdenum	25.0	24.3		mg/Kg		97	80 - 120	8	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 78659

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Step 6
Prep Batch: 78189

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	2900	H H3	2810		mg/Kg	☼	4	30
Arsenic	1.8	H H3	1.78		mg/Kg	☼	3	30
Cobalt	1.1	J H H3	1.07	J	mg/Kg	☼	3	30
Iron	5000	H H3	4830		mg/Kg	☼	3	30
Lead	0.97	H H3	0.965		mg/Kg	☼	0.5	30
Lithium	2.8	J H H3	2.65	J	mg/Kg	☼	7	30
Manganese	47	H H3	46.1		mg/Kg	☼	1	30
Molybdenum	ND	H H3	ND		mg/Kg	☼	NC	30

Lab Sample ID: MB 140-78222/9-A
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: Method Blank
Prep Type: Step 7
Prep Batch: 78222

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		09/27/23 08:00	10/17/23 13:09	1

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: MB 140-78222/9-A
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: Method Blank
Prep Type: Step 7
Prep Batch: 78222

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.30	mg/Kg		09/27/23 08:00	10/17/23 13:09	1
Cobalt	ND		2.5	0.026	mg/Kg		09/27/23 08:00	10/17/23 13:09	1
Iron	ND		5.0	4.1	mg/Kg		09/27/23 08:00	10/17/23 13:09	1
Lead	ND		0.50	0.11	mg/Kg		09/27/23 08:00	10/17/23 13:09	1
Lithium	ND		2.5	0.15	mg/Kg		09/27/23 08:00	10/17/23 13:09	1
Manganese	ND		0.75	0.31	mg/Kg		09/27/23 08:00	10/17/23 13:09	1
Molybdenum	ND		2.0	0.082	mg/Kg		09/27/23 08:00	10/17/23 13:09	1

Lab Sample ID: LCS 140-78222/10-A
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: Lab Control Sample
Prep Type: Step 7
Prep Batch: 78222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	101		mg/Kg		101	80 - 120
Arsenic	5.00	4.94		mg/Kg		99	80 - 120
Cobalt	5.00	5.08		mg/Kg		102	80 - 125
Iron	50.0	53.1		mg/Kg		106	80 - 120
Lead	5.00	5.00		mg/Kg		100	80 - 120
Lithium	5.00	4.94		mg/Kg		99	80 - 120
Manganese	5.00	5.10		mg/Kg		102	80 - 120
Molybdenum	25.0	25.2		mg/Kg		101	80 - 125

Lab Sample ID: LCSD 140-78222/11-A
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 7
Prep Batch: 78222

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	104		mg/Kg		104	80 - 120	3	30
Arsenic	5.00	5.05		mg/Kg		101	80 - 120	2	30
Cobalt	5.00	5.19		mg/Kg		104	80 - 125	2	30
Iron	50.0	54.0		mg/Kg		108	80 - 120	2	30
Lead	5.00	5.07		mg/Kg		101	80 - 120	1	30
Lithium	5.00	5.07		mg/Kg		101	80 - 120	3	30
Manganese	5.00	5.19		mg/Kg		104	80 - 120	2	30
Molybdenum	25.0	25.5		mg/Kg		102	80 - 125	1	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Step 7
Prep Batch: 78222

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	32000	H H3	31400		mg/Kg	☼	3	30

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Analysis Batch: 79123

Client Sample ID: MW-222 - 34.5-36'
Prep Type: Step 7
Prep Batch: 78222

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	3200	H H3	3540		mg/Kg	☼	10	30
Lithium	5.5	H H3	5.91		mg/Kg	☼	7	30

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: 140-33465-5 DU — **Client Sample ID: MW-222 - 34.5-36'**

Matrix: Solid — **Prep Type: Step 7**

Analysis Batch: 79123 — **Prep Batch: 78222**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Manganese	37	H H3	36.9		mg/Kg	☼	1	30
Molybdenum	0.13	J H H3	0.149	J	mg/Kg	☼	10	30

Lab Sample ID: 140-33465-5 DU — **Client Sample ID: MW-222 - 34.5-36'**

Matrix: Solid — **Prep Type: Step 7**

Analysis Batch: 79123 — **Prep Batch: 78222**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	2.4	H H3	2.36		mg/Kg	☼	0.2	30
Cobalt	0.32	J H H3	0.319	J	mg/Kg	☼	0.8	30
Lead	1.2	H H3	0.787	J F5	mg/Kg	☼	42	30

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Metals

Prep Batch: 77869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Total/NA	Solid	Total	
140-33465-2	MW-217 - 12-13'	Total/NA	Solid	Total	
140-33465-3	MW-218 - 11-12'	Total/NA	Solid	Total	
140-33465-4	MW-219 - 18-20'	Total/NA	Solid	Total	
140-33465-5	MW-222 - 34.5-36'	Total/NA	Solid	Total	
140-33465-6	MW-300 - 11-13'	Total/NA	Solid	Total	
140-33465-7	MW-PB3 - 22-24'	Total/NA	Solid	Total	
MB 140-77869/9-A	Method Blank	Total/NA	Solid	Total	
LCS 140-77869/10-A	Lab Control Sample	Total/NA	Solid	Total	
LCSD 140-77869/11-A	Lab Control Sample Dup	Total/NA	Solid	Total	
140-33465-5 DU	MW-222 - 34.5-36'	Total/NA	Solid	Total	

SEP Batch: 77870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 1	Solid	Exchangeable	
140-33465-2	MW-217 - 12-13'	Step 1	Solid	Exchangeable	
140-33465-3	MW-218 - 11-12'	Step 1	Solid	Exchangeable	
140-33465-4	MW-219 - 18-20'	Step 1	Solid	Exchangeable	
140-33465-5	MW-222 - 34.5-36'	Step 1	Solid	Exchangeable	
140-33465-6	MW-300 - 11-13'	Step 1	Solid	Exchangeable	
140-33465-7	MW-PB3 - 22-24'	Step 1	Solid	Exchangeable	
MB 140-77870/9-B ^4	Method Blank	Step 1	Solid	Exchangeable	
LCS 140-77870/10-B ^5	Lab Control Sample	Step 1	Solid	Exchangeable	
LCSD 140-77870/11-B ^5	Lab Control Sample Dup	Step 1	Solid	Exchangeable	
140-33465-5 DU	MW-222 - 34.5-36'	Step 1	Solid	Exchangeable	

Prep Batch: 77907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 1	Solid	3010A	77870
140-33465-2	MW-217 - 12-13'	Step 1	Solid	3010A	77870
140-33465-3	MW-218 - 11-12'	Step 1	Solid	3010A	77870
140-33465-4	MW-219 - 18-20'	Step 1	Solid	3010A	77870
140-33465-5	MW-222 - 34.5-36'	Step 1	Solid	3010A	77870
140-33465-6	MW-300 - 11-13'	Step 1	Solid	3010A	77870
140-33465-7	MW-PB3 - 22-24'	Step 1	Solid	3010A	77870
MB 140-77870/9-B ^4	Method Blank	Step 1	Solid	3010A	77870
LCS 140-77870/10-B ^5	Lab Control Sample	Step 1	Solid	3010A	77870
LCSD 140-77870/11-B ^5	Lab Control Sample Dup	Step 1	Solid	3010A	77870
140-33465-5 DU	MW-222 - 34.5-36'	Step 1	Solid	3010A	77870

SEP Batch: 77916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 2	Solid	Carbonate	
140-33465-2	MW-217 - 12-13'	Step 2	Solid	Carbonate	
140-33465-3	MW-218 - 11-12'	Step 2	Solid	Carbonate	
140-33465-4	MW-219 - 18-20'	Step 2	Solid	Carbonate	
140-33465-5	MW-222 - 34.5-36'	Step 2	Solid	Carbonate	
140-33465-6	MW-300 - 11-13'	Step 2	Solid	Carbonate	
140-33465-7	MW-PB3 - 22-24'	Step 2	Solid	Carbonate	
MB 140-77916/9-B ^3	Method Blank	Step 2	Solid	Carbonate	
LCS 140-77916/10-B ^5	Lab Control Sample	Step 2	Solid	Carbonate	

Metals (Continued)

SEP Batch: 77916 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 140-77916/11-B ^5	Lab Control Sample Dup	Step 2	Solid	Carbonate	
140-33465-5 DU	MW-222 - 34.5-36'	Step 2	Solid	Carbonate	

Prep Batch: 77970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 2	Solid	3010A	77916
140-33465-2	MW-217 - 12-13'	Step 2	Solid	3010A	77916
140-33465-3	MW-218 - 11-12'	Step 2	Solid	3010A	77916
140-33465-4	MW-219 - 18-20'	Step 2	Solid	3010A	77916
140-33465-5	MW-222 - 34.5-36'	Step 2	Solid	3010A	77916
140-33465-6	MW-300 - 11-13'	Step 2	Solid	3010A	77916
140-33465-7	MW-PB3 - 22-24'	Step 2	Solid	3010A	77916
MB 140-77916/9-B ^3	Method Blank	Step 2	Solid	3010A	77916
LCS 140-77916/10-B ^5	Lab Control Sample	Step 2	Solid	3010A	77916
LCSD 140-77916/11-B ^5	Lab Control Sample Dup	Step 2	Solid	3010A	77916
140-33465-5 DU	MW-222 - 34.5-36'	Step 2	Solid	3010A	77916

SEP Batch: 77990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 3	Solid	Non-Crystalline	
140-33465-2	MW-217 - 12-13'	Step 3	Solid	Non-Crystalline	
140-33465-3	MW-218 - 11-12'	Step 3	Solid	Non-Crystalline	
140-33465-4	MW-219 - 18-20'	Step 3	Solid	Non-Crystalline	
140-33465-5	MW-222 - 34.5-36'	Step 3	Solid	Non-Crystalline	
140-33465-6	MW-300 - 11-13'	Step 3	Solid	Non-Crystalline	
140-33465-7	MW-PB3 - 22-24'	Step 3	Solid	Non-Crystalline	
MB 140-77990/9-B	Method Blank	Step 3	Solid	Non-Crystalline	
LCS 140-77990/10-B	Lab Control Sample	Step 3	Solid	Non-Crystalline	
LCSD 140-77990/11-B	Lab Control Sample Dup	Step 3	Solid	Non-Crystalline	
140-33465-5 DU	MW-222 - 34.5-36'	Step 3	Solid	Non-Crystalline	

Prep Batch: 78030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 3	Solid	3010A	77990
140-33465-2	MW-217 - 12-13'	Step 3	Solid	3010A	77990
140-33465-3	MW-218 - 11-12'	Step 3	Solid	3010A	77990
140-33465-4	MW-219 - 18-20'	Step 3	Solid	3010A	77990
140-33465-5	MW-222 - 34.5-36'	Step 3	Solid	3010A	77990
140-33465-6	MW-300 - 11-13'	Step 3	Solid	3010A	77990
140-33465-7	MW-PB3 - 22-24'	Step 3	Solid	3010A	77990
MB 140-77990/9-B	Method Blank	Step 3	Solid	3010A	77990
LCS 140-77990/10-B	Lab Control Sample	Step 3	Solid	3010A	77990
LCSD 140-77990/11-B	Lab Control Sample Dup	Step 3	Solid	3010A	77990
140-33465-5 DU	MW-222 - 34.5-36'	Step 3	Solid	3010A	77990

SEP Batch: 78031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 4	Solid	Metal Hydroxide	
140-33465-2	MW-217 - 12-13'	Step 4	Solid	Metal Hydroxide	
140-33465-3	MW-218 - 11-12'	Step 4	Solid	Metal Hydroxide	
140-33465-4	MW-219 - 18-20'	Step 4	Solid	Metal Hydroxide	

Metals (Continued)

SEP Batch: 78031 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-5	MW-222 - 34.5-36'	Step 4	Solid	Metal Hydroxide	
140-33465-6	MW-300 - 11-13'	Step 4	Solid	Metal Hydroxide	
140-33465-7	MW-PB3 - 22-24'	Step 4	Solid	Metal Hydroxide	
MB 140-78031/9-B	Method Blank	Step 4	Solid	Metal Hydroxide	
LCS 140-78031/10-B	Lab Control Sample	Step 4	Solid	Metal Hydroxide	
LCSD 140-78031/11-B	Lab Control Sample Dup	Step 4	Solid	Metal Hydroxide	
140-33465-5 DU	MW-222 - 34.5-36'	Step 4	Solid	Metal Hydroxide	

Prep Batch: 78077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 4	Solid	3010A	78031
140-33465-2	MW-217 - 12-13'	Step 4	Solid	3010A	78031
140-33465-3	MW-218 - 11-12'	Step 4	Solid	3010A	78031
140-33465-4	MW-219 - 18-20'	Step 4	Solid	3010A	78031
140-33465-5	MW-222 - 34.5-36'	Step 4	Solid	3010A	78031
140-33465-6	MW-300 - 11-13'	Step 4	Solid	3010A	78031
140-33465-7	MW-PB3 - 22-24'	Step 4	Solid	3010A	78031
MB 140-78031/9-B	Method Blank	Step 4	Solid	3010A	78031
LCS 140-78031/10-B	Lab Control Sample	Step 4	Solid	3010A	78031
LCSD 140-78031/11-B	Lab Control Sample Dup	Step 4	Solid	3010A	78031
140-33465-5 DU	MW-222 - 34.5-36'	Step 4	Solid	3010A	78031

SEP Batch: 78108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 5	Solid	Organic-Bound	
140-33465-2	MW-217 - 12-13'	Step 5	Solid	Organic-Bound	
140-33465-3	MW-218 - 11-12'	Step 5	Solid	Organic-Bound	
140-33465-4	MW-219 - 18-20'	Step 5	Solid	Organic-Bound	
140-33465-5	MW-222 - 34.5-36'	Step 5	Solid	Organic-Bound	
140-33465-6	MW-300 - 11-13'	Step 5	Solid	Organic-Bound	
140-33465-7	MW-PB3 - 22-24'	Step 5	Solid	Organic-Bound	
MB 140-78108/9-B ^5	Method Blank	Step 5	Solid	Organic-Bound	
LCS 140-78108/10-B ^5	Lab Control Sample	Step 5	Solid	Organic-Bound	
LCSD 140-78108/11-B ^5	Lab Control Sample Dup	Step 5	Solid	Organic-Bound	
140-33465-5 DU	MW-222 - 34.5-36'	Step 5	Solid	Organic-Bound	

SEP Batch: 78189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 6	Solid	Acid/Sulfide	
140-33465-2	MW-217 - 12-13'	Step 6	Solid	Acid/Sulfide	
140-33465-3	MW-218 - 11-12'	Step 6	Solid	Acid/Sulfide	
140-33465-4	MW-219 - 18-20'	Step 6	Solid	Acid/Sulfide	
140-33465-5	MW-222 - 34.5-36'	Step 6	Solid	Acid/Sulfide	
140-33465-6	MW-300 - 11-13'	Step 6	Solid	Acid/Sulfide	
140-33465-7	MW-PB3 - 22-24'	Step 6	Solid	Acid/Sulfide	
MB 140-78189/9-A	Method Blank	Step 6	Solid	Acid/Sulfide	
LCS 140-78189/10-A	Lab Control Sample	Step 6	Solid	Acid/Sulfide	
LCSD 140-78189/11-A	Lab Control Sample Dup	Step 6	Solid	Acid/Sulfide	
140-33465-5 DU	MW-222 - 34.5-36'	Step 6	Solid	Acid/Sulfide	

Metals

Prep Batch: 78222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 7	Solid	Residual	
140-33465-2	MW-217 - 12-13'	Step 7	Solid	Residual	
140-33465-3	MW-218 - 11-12'	Step 7	Solid	Residual	
140-33465-4	MW-219 - 18-20'	Step 7	Solid	Residual	
140-33465-5	MW-222 - 34.5-36'	Step 7	Solid	Residual	
140-33465-6	MW-300 - 11-13'	Step 7	Solid	Residual	
140-33465-7	MW-PB3 - 22-24'	Step 7	Solid	Residual	
MB 140-78222/9-A	Method Blank	Step 7	Solid	Residual	
LCS 140-78222/10-A	Lab Control Sample	Step 7	Solid	Residual	
LCSD 140-78222/11-A	Lab Control Sample Dup	Step 7	Solid	Residual	
140-33465-5 DU	MW-222 - 34.5-36'	Step 7	Solid	Residual	

Prep Batch: 78232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 5	Solid	3010A	78108
140-33465-2	MW-217 - 12-13'	Step 5	Solid	3010A	78108
140-33465-3	MW-218 - 11-12'	Step 5	Solid	3010A	78108
140-33465-4	MW-219 - 18-20'	Step 5	Solid	3010A	78108
140-33465-5	MW-222 - 34.5-36'	Step 5	Solid	3010A	78108
140-33465-6	MW-300 - 11-13'	Step 5	Solid	3010A	78108
140-33465-7	MW-PB3 - 22-24'	Step 5	Solid	3010A	78108
MB 140-78108/9-B ^5	Method Blank	Step 5	Solid	3010A	78108
LCS 140-78108/10-B ^5	Lab Control Sample	Step 5	Solid	3010A	78108
LCSD 140-78108/11-B ^5	Lab Control Sample Dup	Step 5	Solid	3010A	78108
140-33465-5 DU	MW-222 - 34.5-36'	Step 5	Solid	3010A	78108

Analysis Batch: 78508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 1	Solid	6010B SEP	77907
140-33465-1	MW-215 -16-18'	Step 2	Solid	6010B SEP	77970
140-33465-2	MW-217 - 12-13'	Step 1	Solid	6010B SEP	77907
140-33465-2	MW-217 - 12-13'	Step 2	Solid	6010B SEP	77970
140-33465-3	MW-218 - 11-12'	Step 1	Solid	6010B SEP	77907
140-33465-3	MW-218 - 11-12'	Step 2	Solid	6010B SEP	77970
140-33465-4	MW-219 - 18-20'	Step 1	Solid	6010B SEP	77907
140-33465-4	MW-219 - 18-20'	Step 2	Solid	6010B SEP	77970
140-33465-5	MW-222 - 34.5-36'	Step 1	Solid	6010B SEP	77907
140-33465-5	MW-222 - 34.5-36'	Step 2	Solid	6010B SEP	77970
140-33465-6	MW-300 - 11-13'	Step 1	Solid	6010B SEP	77907
140-33465-6	MW-300 - 11-13'	Step 2	Solid	6010B SEP	77970
140-33465-7	MW-PB3 - 22-24'	Step 1	Solid	6010B SEP	77907
140-33465-7	MW-PB3 - 22-24'	Step 2	Solid	6010B SEP	77970
MB 140-77870/9-B ^4	Method Blank	Step 1	Solid	6010B SEP	77907
MB 140-77916/9-B ^3	Method Blank	Step 2	Solid	6010B SEP	77970
LCS 140-77870/10-B ^5	Lab Control Sample	Step 1	Solid	6010B SEP	77907
LCS 140-77916/10-B ^5	Lab Control Sample	Step 2	Solid	6010B SEP	77970
LCSD 140-77870/11-B ^5	Lab Control Sample Dup	Step 1	Solid	6010B SEP	77907
LCSD 140-77916/11-B ^5	Lab Control Sample Dup	Step 2	Solid	6010B SEP	77970
140-33465-5 DU	MW-222 - 34.5-36'	Step 1	Solid	6010B SEP	77907
140-33465-5 DU	MW-222 - 34.5-36'	Step 2	Solid	6010B SEP	77970

1 2 3 4 5 6 7 8 9 10 11 12 13

Metals

Analysis Batch: 78553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 3	Solid	6010B SEP	78030
140-33465-1	MW-215 -16-18'	Step 4	Solid	6010B SEP	78077
140-33465-2	MW-217 - 12-13'	Step 3	Solid	6010B SEP	78030
140-33465-2	MW-217 - 12-13'	Step 4	Solid	6010B SEP	78077
140-33465-3	MW-218 - 11-12'	Step 3	Solid	6010B SEP	78030
140-33465-3	MW-218 - 11-12'	Step 4	Solid	6010B SEP	78077
140-33465-4	MW-219 - 18-20'	Step 3	Solid	6010B SEP	78030
140-33465-4	MW-219 - 18-20'	Step 4	Solid	6010B SEP	78077
140-33465-5	MW-222 - 34.5-36'	Step 3	Solid	6010B SEP	78030
140-33465-5	MW-222 - 34.5-36'	Step 4	Solid	6010B SEP	78077
140-33465-6	MW-300 - 11-13'	Step 3	Solid	6010B SEP	78030
140-33465-6	MW-300 - 11-13'	Step 4	Solid	6010B SEP	78077
140-33465-7	MW-PB3 - 22-24'	Step 3	Solid	6010B SEP	78030
140-33465-7	MW-PB3 - 22-24'	Step 4	Solid	6010B SEP	78077
MB 140-77990/9-B	Method Blank	Step 3	Solid	6010B SEP	78030
MB 140-78031/9-B	Method Blank	Step 4	Solid	6010B SEP	78077
LCS 140-77990/10-B	Lab Control Sample	Step 3	Solid	6010B SEP	78030
LCS 140-78031/10-B	Lab Control Sample	Step 4	Solid	6010B SEP	78077
LCSD 140-77990/11-B	Lab Control Sample Dup	Step 3	Solid	6010B SEP	78030
LCSD 140-78031/11-B	Lab Control Sample Dup	Step 4	Solid	6010B SEP	78077
140-33465-5 DU	MW-222 - 34.5-36'	Step 3	Solid	6010B SEP	78030
140-33465-5 DU	MW-222 - 34.5-36'	Step 4	Solid	6010B SEP	78077

Analysis Batch: 78659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 5	Solid	6010B SEP	78232
140-33465-1	MW-215 -16-18'	Step 6	Solid	6010B SEP	78189
140-33465-2	MW-217 - 12-13'	Step 5	Solid	6010B SEP	78232
140-33465-2	MW-217 - 12-13'	Step 6	Solid	6010B SEP	78189
140-33465-3	MW-218 - 11-12'	Step 5	Solid	6010B SEP	78232
140-33465-3	MW-218 - 11-12'	Step 6	Solid	6010B SEP	78189
140-33465-4	MW-219 - 18-20'	Step 5	Solid	6010B SEP	78232
140-33465-4	MW-219 - 18-20'	Step 6	Solid	6010B SEP	78189
140-33465-5	MW-222 - 34.5-36'	Step 5	Solid	6010B SEP	78232
140-33465-5	MW-222 - 34.5-36'	Step 6	Solid	6010B SEP	78189
140-33465-6	MW-300 - 11-13'	Step 5	Solid	6010B SEP	78232
140-33465-6	MW-300 - 11-13'	Step 6	Solid	6010B SEP	78189
140-33465-7	MW-PB3 - 22-24'	Step 5	Solid	6010B SEP	78232
140-33465-7	MW-PB3 - 22-24'	Step 6	Solid	6010B SEP	78189
MB 140-78108/9-B ^5	Method Blank	Step 5	Solid	6010B SEP	78232
MB 140-78189/9-A	Method Blank	Step 6	Solid	6010B SEP	78189
LCS 140-78108/10-B ^5	Lab Control Sample	Step 5	Solid	6010B SEP	78232
LCS 140-78189/10-A	Lab Control Sample	Step 6	Solid	6010B SEP	78189
LCSD 140-78108/11-B ^5	Lab Control Sample Dup	Step 5	Solid	6010B SEP	78232
LCSD 140-78189/11-A	Lab Control Sample Dup	Step 6	Solid	6010B SEP	78189
140-33465-5 DU	MW-222 - 34.5-36'	Step 5	Solid	6010B SEP	78232
140-33465-5 DU	MW-222 - 34.5-36'	Step 6	Solid	6010B SEP	78189

Analysis Batch: 79123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 7	Solid	6010B SEP	78222

Metals (Continued)

Analysis Batch: 79123 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Step 7	Solid	6010B SEP	78222
140-33465-1	MW-215 -16-18'	Step 7	Solid	6010B SEP	78222
140-33465-1	MW-215 -16-18'	Total/NA	Solid	6010B	77869
140-33465-1	MW-215 -16-18'	Total/NA	Solid	6010B	77869
140-33465-1	MW-215 -16-18'	Total/NA	Solid	6010B	77869
140-33465-2	MW-217 - 12-13'	Step 7	Solid	6010B SEP	78222
140-33465-2	MW-217 - 12-13'	Step 7	Solid	6010B SEP	78222
140-33465-2	MW-217 - 12-13'	Step 7	Solid	6010B SEP	78222
140-33465-2	MW-217 - 12-13'	Total/NA	Solid	6010B	77869
140-33465-2	MW-217 - 12-13'	Total/NA	Solid	6010B	77869
140-33465-2	MW-217 - 12-13'	Total/NA	Solid	6010B	77869
140-33465-3	MW-218 - 11-12'	Step 7	Solid	6010B SEP	78222
140-33465-3	MW-218 - 11-12'	Step 7	Solid	6010B SEP	78222
140-33465-3	MW-218 - 11-12'	Step 7	Solid	6010B SEP	78222
140-33465-3	MW-218 - 11-12'	Total/NA	Solid	6010B	77869
140-33465-3	MW-218 - 11-12'	Total/NA	Solid	6010B	77869
140-33465-3	MW-218 - 11-12'	Total/NA	Solid	6010B	77869
140-33465-4	MW-219 - 18-20'	Step 7	Solid	6010B SEP	78222
140-33465-4	MW-219 - 18-20'	Step 7	Solid	6010B SEP	78222
140-33465-4	MW-219 - 18-20'	Step 7	Solid	6010B SEP	78222
140-33465-4	MW-219 - 18-20'	Total/NA	Solid	6010B	77869
140-33465-4	MW-219 - 18-20'	Total/NA	Solid	6010B	77869
140-33465-4	MW-219 - 18-20'	Total/NA	Solid	6010B	77869
140-33465-5	MW-222 - 34.5-36'	Step 7	Solid	6010B SEP	78222
140-33465-5	MW-222 - 34.5-36'	Step 7	Solid	6010B SEP	78222
140-33465-5	MW-222 - 34.5-36'	Step 7	Solid	6010B SEP	78222
140-33465-5	MW-222 - 34.5-36'	Total/NA	Solid	6010B	77869
140-33465-5	MW-222 - 34.5-36'	Total/NA	Solid	6010B	77869
140-33465-5	MW-222 - 34.5-36'	Total/NA	Solid	6010B	77869
140-33465-6	MW-300 - 11-13'	Step 7	Solid	6010B SEP	78222
140-33465-6	MW-300 - 11-13'	Step 7	Solid	6010B SEP	78222
140-33465-6	MW-300 - 11-13'	Step 7	Solid	6010B SEP	78222
140-33465-6	MW-300 - 11-13'	Total/NA	Solid	6010B	77869
140-33465-6	MW-300 - 11-13'	Total/NA	Solid	6010B	77869
140-33465-6	MW-300 - 11-13'	Total/NA	Solid	6010B	77869
140-33465-7	MW-PB3 - 22-24'	Step 7	Solid	6010B SEP	78222
140-33465-7	MW-PB3 - 22-24'	Step 7	Solid	6010B SEP	78222
140-33465-7	MW-PB3 - 22-24'	Step 7	Solid	6010B SEP	78222
140-33465-7	MW-PB3 - 22-24'	Total/NA	Solid	6010B	77869
140-33465-7	MW-PB3 - 22-24'	Total/NA	Solid	6010B	77869
140-33465-7	MW-PB3 - 22-24'	Total/NA	Solid	6010B	77869
MB 140-77869/9-A	Method Blank	Total/NA	Solid	6010B	77869
MB 140-78222/9-A	Method Blank	Step 7	Solid	6010B SEP	78222
LCS 140-77869/10-A	Lab Control Sample	Total/NA	Solid	6010B	77869
LCS 140-78222/10-A	Lab Control Sample	Step 7	Solid	6010B SEP	78222
LCSD 140-77869/11-A	Lab Control Sample Dup	Total/NA	Solid	6010B	77869
LCSD 140-78222/11-A	Lab Control Sample Dup	Step 7	Solid	6010B SEP	78222
140-33465-5 DU	MW-222 - 34.5-36'	Step 7	Solid	6010B SEP	78222
140-33465-5 DU	MW-222 - 34.5-36'	Step 7	Solid	6010B SEP	78222
140-33465-5 DU	MW-222 - 34.5-36'	Step 7	Solid	6010B SEP	78222
140-33465-5 DU	MW-222 - 34.5-36'	Total/NA	Solid	6010B	77869

Metals (Continued)

Analysis Batch: 79123 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-5 DU	MW-222 - 34.5-36'	Total/NA	Solid	6010B	77869
140-33465-5 DU	MW-222 - 34.5-36'	Total/NA	Solid	6010B	77869

Analysis Batch: 79252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Sum of Steps 1-7	Solid	6010B SEP	
140-33465-2	MW-217 - 12-13'	Sum of Steps 1-7	Solid	6010B SEP	
140-33465-3	MW-218 - 11-12'	Sum of Steps 1-7	Solid	6010B SEP	
140-33465-4	MW-219 - 18-20'	Sum of Steps 1-7	Solid	6010B SEP	
140-33465-5	MW-222 - 34.5-36'	Sum of Steps 1-7	Solid	6010B SEP	
140-33465-6	MW-300 - 11-13'	Sum of Steps 1-7	Solid	6010B SEP	
140-33465-7	MW-PB3 - 22-24'	Sum of Steps 1-7	Solid	6010B SEP	

General Chemistry

Analysis Batch: 78525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-33465-1	MW-215 -16-18'	Total/NA	Solid	Moisture	
140-33465-2	MW-217 - 12-13'	Total/NA	Solid	Moisture	
140-33465-3	MW-218 - 11-12'	Total/NA	Solid	Moisture	
140-33465-4	MW-219 - 18-20'	Total/NA	Solid	Moisture	
140-33465-5	MW-222 - 34.5-36'	Total/NA	Solid	Moisture	
140-33465-6	MW-300 - 11-13'	Total/NA	Solid	Moisture	
140-33465-7	MW-PB3 - 22-24'	Total/NA	Solid	Moisture	

Lab Chronicle

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: MW-215 -16-18'

Date Collected: 02/06/23 08:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			79252	10/19/23 14:22	KNC	EET KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			78525	10/03/23 09:14	ACW	EET KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-215 -16-18'

Date Collected: 02/06/23 08:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-1
Matrix: Solid
Percent Solids: 80.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 14:33	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 16:22	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 18:27	KNC	EET KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:08	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:17	KNC	EET KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:19	KNC	EET KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:14	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 11:59	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:09	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 13:39	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-215 -16-18'
Lab Sample ID: 140-33465-1
Date Collected: 02/06/23 08:00
Matrix: Solid
Date Received: 09/12/23 14:00
Percent Solids: 80.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 15:25	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		2			79123	10/17/23 17:33	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-217 - 12-13'
Lab Sample ID: 140-33465-2
Date Collected: 02/08/23 09:00
Matrix: Solid
Date Received: 09/12/23 14:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			79252	10/19/23 14:22	KNC	EET KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			78525	10/03/23 09:14	ACW	EET KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-217 - 12-13'
Lab Sample ID: 140-33465-2
Date Collected: 02/08/23 09:00
Matrix: Solid
Date Received: 09/12/23 14:00
Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 14:37	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 16:28	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 18:32	KNC	EET KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:13	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:22	KNC	EET KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:25	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-217 - 12-13' — Lab Sample ID: 140-33465-2

Date Collected: 02/08/23 09:00 — **Matrix: Solid**
Date Received: 09/12/23 14:00 — **Percent Solids: 96.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:19	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 12:04	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:14	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 13:44	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 15:31	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		2			79123	10/17/23 17:38	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-218 - 11-12' — Lab Sample ID: 140-33465-3

Date Collected: 02/08/23 10:30 — **Matrix: Solid**
Date Received: 09/12/23 14:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			79252	10/19/23 14:22	KNC	EET KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			78525	10/03/23 09:14	ACW	EET KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-218 - 11-12' — Lab Sample ID: 140-33465-3

Date Collected: 02/08/23 10:30 — **Matrix: Solid**
Date Received: 09/12/23 14:00 — **Percent Solids: 85.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 14:42	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 16:33	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 18:37	KNC	EET KNX
	Instrument ID: DUO									

Lab Chronicle

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: MW-218 - 11-12'

Lab Sample ID: 140-33465-3

Date Collected: 02/08/23 10:30
Date Received: 09/12/23 14:00

Matrix: Solid
Percent Solids: 85.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:18	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:27	KNC	EET KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:30	KNC	EET KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:24	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 12:09	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:19	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 13:49	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 15:36	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		2			79123	10/17/23 17:43	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-219 - 18-20'

Lab Sample ID: 140-33465-4

Date Collected: 02/08/23 13:00
Date Received: 09/12/23 14:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			79252	10/19/23 14:22	KNC	EET KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			78525	10/03/23 09:14	ACW	EET KNX
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: WSP USA Inc	Job ID: 140-33465-1
Project/Site: GRE Stanton Station MNA

Client Sample ID: MW-219 - 18-20'	**Lab Sample ID: 140-33465-4**
Date Collected: 02/08/23 13:00	**Matrix: Solid**
Date Received: 09/12/23 14:00	**Percent Solids: 82.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 14:47	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 16:39	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 18:42	KNC	EET KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:23	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:32	KNC	EET KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:35	KNC	EET KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:29	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 12:14	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:24	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 13:54	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 15:41	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		2			79123	10/17/23 17:48	KNC	EET KNX
	Instrument ID: DUO									

Lab Chronicle

Client: WSP USA Inc — Job ID: 140-33465-1
Project/Site: GRE Stanton Station MNA

Client Sample ID: MW-222 - 34.5-36'
Lab Sample ID: 140-33465-5
Date Collected: 02/09/23 10:00
Matrix: Solid
Date Received: 09/12/23 14:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			79252	10/19/23 14:22	KNC	EET KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			78525	10/03/23 09:14	ACW	EET KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-222 - 34.5-36'
Lab Sample ID: 140-33465-5
Date Collected: 02/09/23 10:00
Matrix: Solid
Date Received: 09/12/23 14:00
Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 14:52	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 16:45	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 18:47	KNC	EET KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:28	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:37	KNC	EET KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:49	KNC	EET KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:33	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 12:19	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:28	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 14:08	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-222 - 34.5-36' Lab Sample ID: 140-33465-5

Date Collected: 02/09/23 10:00 **Matrix: Solid**
Date Received: 09/12/23 14:00 **Percent Solids: 81.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 15:46	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		2			79123	10/17/23 17:53	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-300 - 11-13' Lab Sample ID: 140-33465-6

Date Collected: 02/09/23 12:30 **Matrix: Solid**
Date Received: 09/12/23 14:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			79252	10/19/23 14:22	KNC	EET KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			78525	10/03/23 09:14	ACW	EET KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-300 - 11-13' Lab Sample ID: 140-33465-6

Date Collected: 02/09/23 12:30 **Matrix: Solid**
Date Received: 09/12/23 14:00 **Percent Solids: 89.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 15:11	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 17:10	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 18:58	KNC	EET KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:52	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:57	KNC	EET KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:59	KNC	EET KNX
	Instrument ID: DUO									

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: MW-300 - 11-13'

Lab Sample ID: 140-33465-6

Date Collected: 02/09/23 12:30
Date Received: 09/12/23 14:00

Matrix: Solid
Percent Solids: 89.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:53	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 12:44	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:48	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 14:18	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 16:12	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		3			79123	10/17/23 18:02	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-PB3 - 22-24'

Lab Sample ID: 140-33465-7

Date Collected: 02/10/23 10:00
Date Received: 09/12/23 14:00

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			79252	10/19/23 14:22	KNC	EET KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			78525	10/03/23 09:14	ACW	EET KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-PB3 - 22-24'

Lab Sample ID: 140-33465-7

Date Collected: 02/10/23 10:00
Date Received: 09/12/23 14:00

Matrix: Solid
Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 15:16	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 17:16	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 19:03	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-PB3 - 22-24'
Date Collected: 02/10/23 10:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-7
Matrix: Solid
Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:57	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 16:02	KNC	EET KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 12:04	KNC	EET KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:58	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 12:49	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:53	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 14:23	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 16:17	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		3			79123	10/17/23 18:07	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Date Collected: N/A
Date Received: N/A

Lab Sample ID: MB 140-77869/9-A
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 13:24	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-77870/9-B ^4
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 13:53	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-77916/9-B ^3
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:02	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-77990/9-B
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 10:51	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-78031/9-B
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 11:05	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-78108/9-B ^5
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 11:44	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-78189/9-A
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 12:54	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-78222/9-A
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 13:09	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-77869/10-A
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 13:29	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-77870/10-B ^5
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		5			78508	10/02/23 13:58	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-77916/10-B ^5
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		5			78508	10/02/23 15:07	KNC	EET KNX
	Instrument ID: DUO									

Lab Chronicle

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-77990/10-B
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 10:56	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-78031/10-B
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 11:10	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-78108/10-B ^5
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 11:49	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-78189/10-A
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 12:59	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample
Lab Sample ID: LCS 140-78222/10-A
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 13:15	KNC	EET KNX
	Instrument ID: DUO									

Client: WSP USA Inc | Job ID: 140-33465-1
Project/Site: GRE Stanton Station MNA

Client Sample ID: Lab Control Sample Dup | Lab Sample ID: LCSD 140-77869/11-A

Date Collected: N/A | **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 13:34	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup | Lab Sample ID: LCSD 140-77870/11-B ^5

Date Collected: N/A | **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		5			78508	10/02/23 14:03	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup | Lab Sample ID: LCSD 140-77916/11-B ^5

Date Collected: N/A | **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		5			78508	10/02/23 15:12	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup | Lab Sample ID: LCSD 140-77990/11-B

Date Collected: N/A | **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:00	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup | Lab Sample ID: LCSD 140-78031/11-B

Date Collected: N/A | **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 11:15	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 140-78108/11-B ^5
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 11:54	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 140-78189/11-A
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:04	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 140-78222/11-A
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 13:19	KNC	EET KNX
	Instrument ID: DUO									

Client Sample ID: MW-222 - 34.5-36'

Lab Sample ID: 140-33465-5 DU
Date Collected: 02/09/23 10:00
Matrix: Solid
Date Received: 09/12/23 14:00
Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		10			79123	10/17/23 15:06	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		1			79123	10/17/23 16:50	KNC	EET KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	77869	09/27/23 08:00	JDM	EET KNX
Total/NA	Analysis	6010B		2			79123	10/17/23 18:53	KNC	EET KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	77870	09/19/23 08:00	JDM	EET KNX
Step 1	Prep	3010A			5 mL	50 mL	77907	09/20/23 08:00	JDM	EET KNX
Step 1	Analysis	6010B SEP		4			78508	10/02/23 14:32	KNC	EET KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	77916	09/20/23 07:00	JDM	EET KNX
Step 2	Prep	3010A			5 mL	50 mL	77970	09/21/23 08:00	JDM	EET KNX
Step 2	Analysis	6010B SEP		3			78508	10/02/23 15:52	KNC	EET KNX
	Instrument ID: DUO									

Lab Chronicle

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Client Sample ID: MW-222 - 34.5-36'
Date Collected: 02/09/23 10:00
Date Received: 09/12/23 14:00

Lab Sample ID: 140-33465-5 DU
Matrix: Solid
Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	77990	09/21/23 07:00	JDM	EET KNX
Step 3	Prep	3010A			5 mL	50 mL	78030	09/22/23 07:00	JDM	EET KNX
Step 3	Analysis	6010B SEP		1			78553	10/03/23 11:54	KNC	EET KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	78031	09/22/23 07:00	JDM	EET KNX
Step 4	Prep	3010A			5 mL	50 mL	78077	09/25/23 07:00	JDM	EET KNX
Step 4	Analysis	6010B SEP		1			78553	10/03/23 12:48	KNC	EET KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	78108	09/25/23 07:30	JDM	EET KNX
Step 5	Prep	3010A			5 mL	50 mL	78232	09/27/23 07:00	JDM	EET KNX
Step 5	Analysis	6010B SEP		5			78659	10/05/23 12:24	KNC	EET KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	78189	09/26/23 11:00	JDM	EET KNX
Step 6	Analysis	6010B SEP		1			78659	10/05/23 13:43	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		10			79123	10/17/23 14:13	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		1			79123	10/17/23 16:06	KNC	EET KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	78222	09/27/23 08:00	JDM	EET KNX
Step 7	Analysis	6010B SEP		2			79123	10/17/23 17:58	KNC	EET KNX
	Instrument ID: DUO									

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: WSP USA Inc Job ID: 140-33465-1
Project/Site: GRE Stanton Station MNA

Laboratory: Eurofins Knoxville

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

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-24
Colorado	State	TN00009	02-29-24
Connecticut	State	PH-0223	09-30-25
Florida	NELAP	E87177	06-30-24
Georgia (DW)	State	906	07-27-25
Hawaii	State	NA	07-27-24
Kansas	NELAP	E-10349	10-31-23
Kentucky (DW)	State	90101	12-31-23
Louisiana (All)	NELAP	83979	06-30-24
Louisiana (DW)	State	LA019	12-31-23
Maryland	State	277	03-31-24
Michigan	State	9933	07-27-25
Nevada	State	TN00009	07-31-24
New Hampshire	NELAP	2999	01-17-24
New Jersey	NELAP	TN001	07-01-24
New York	NELAP	10781	03-31-24
North Carolina (DW)	State	21705	07-31-24
North Carolina (WW/SW)	State	64	12-31-23
Oklahoma	State	9415	12-31-23
Oregon	NELAP	TNI0189	01-01-24
Pennsylvania	NELAP	68-00576	12-01-23
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-23-18	08-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	525-22-279-18762	10-06-25
Utah	NELAP	TN00009	07-31-24
Virginia	NELAP	460176	09-14-24
Washington	State	C593	01-19-24
West Virginia (DW)	State	9955C	12-31-23
West Virginia DEP	State	345	04-30-24
Wisconsin	State	998044300	08-31-24

Method Summary

Client: WSP USA Inc
Project/Site: GRE Stanton Station MNA

Job ID: 140-33465-1

Method	Method Description	Protocol	Laboratory
6010B	SEP Metals (ICP) - Total	SW846	EET KNX
6010B SEP	SEP Metals (ICP)	SW846	EET KNX
Moisture	Percent Moisture	EPA	EET KNX
3010A	Preparation, Total Metals	SW846	EET KNX
Acid/Sulfide	Sequential Extraction Procedure, Acid/Sulfide Fraction	TAL-KNOX	EET KNX
Carbonate	Sequential Extraction Procedure, Carbonate Fraction	TAL-KNOX	EET KNX
Exchangeable	Sequential Extraction Procedure, Exchangeable Fraction	TAL-KNOX	EET KNX
Metal Hydroxide	Sequential Extraction Procedure, Metal Hydroxide Fraction	TAL-KNOX	EET KNX
Non-Crystalline	Sequential Extraction Procedure, Non-crystalline Materials	TAL-KNOX	EET KNX
Organic-Bound	Sequential Extraction Procedure, Organic Bound Fraction	TAL-KNOX	EET KNX
Residual	Sequential Extraction Procedure, Residual Fraction	TAL-KNOX	EET KNX
Total	Preparation, Total Material	TAL-KNOX	EET KNX

Protocol References:

EPA = US Environmental Protection Agency

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

TAL-KNOX = TestAmerica Laboratories, Knoxville, Facility Standard Operating Procedure.

Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Phone: 865-291-3000 Fax: 865-584-4315

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: Kevin Cernik	Lab PM: Henry, Ryan	Carrier Tracking No(s):
Client Contact: Ms. Erin Hunter	Phone: 303-980-0540	E-Mail: WilliamR.Henry@et.eurofinsus.com	State of Origin:
COC No: 140-12512-3394.1	Page: Page 1 of 1	Job #:	
Company: WSP USA Inc	PWSID:		
Address: 7245 W Alaska Drive Suite 200	Due Date Requested:		
City: Lakewood	TAT Requested (days):		
State, Zip: CO, 80226	Compliance Project: Δ Yes X No		
Phone: 720-962-3424(Tel)	PO #: Purchase Order not required		
Email: erin.hunter@wsp.com	WO #: GL21509219.000, task 01.EXP		
Project Name: GRE Stanton Station MNA	Project #: 14006675		
Site: Stanton Station, Stanton, ND	SSOW#:		

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010B_SEP - 7-Step SEP	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
MW-215 - 16-18'	2/6/2023	8:00	C	S	N	N	X		
MW-217 - 12-13'	2/8/2023	9:00	C	S	N	N	X		
MW-218 - 11-12'	2/8/2023	10:30	C	S	N	N	X		Custody Seal Intact
MW-219 - 18-20'	2/8/2023	13:00	C	S	N	N	X		Received Ambient
MW-222 - 34.5-36'	2/9/2023	10:00	C	S	N	N	X		RT: 22.0 / CT: 21.9°C
MW-300 - 11-13'	2/9/2023	12:30	C	S	N	N	X		DH 9/12/23
MW-PB3 - 22-24'	2/10/2023	10:00	C	S	N	N	X		1 Cooler FedEx G
									7733 5145 1587

140-33465 Chain of Custody

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Possible Hazard Identification
X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client X Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: Please proceed w/ out of hold time analysis & out of temperature

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FedEx
Relinquished by: Erin Hunter [signature]	Date/Time: 9/8/2023 11:00am	Company: WSP USA Inc	
Received by: [signature]	Date/Time: 9/12/23 14:00	Company: ETA KNX	
Relinquished by:	Date/Time:	Company:	
Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	
Received by:	Date/Time:	Company:	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 1207687	Cooler Temperature(s) °C and Other Remarks:	

Ver: 06/08/2021

Loc: 140
33465

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	✓			☐ Containers, Broken	15
2. Were ambient air containers received intact?			✓	☐ Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	✓			☐ Yes ☐ NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : 5C76 Correction factor: -0.1°C			✓	☐ Cooler Out of Temp, Client Contacted, Proceed/Cancel ☐ Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	✓			☐ Containers, Broken	
6. Were samples received in appropriate containers?	✓			☐ Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ COC & Samples Do Not Match ☐ COC Incorrect/Incomplete ☐ COC Not Received	
8. Were all of the samples listed on the COC received?	✓			☐ Sample Received, Not on COC ☐ Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	✓			☐ COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	✓			☐ Sampler Not Listed on COC	**Labeling Verified by:** **Date:**
11. Is the client and project name/# identified?	✓			☐ COC Incorrect/Incomplete	
12. Are tests/parameters listed for each sample?	✓			☐ COC No tests on COC	**pH test strip lot number:**
13. Is the matrix of the samples noted?	✓			☐ COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ COC Incorrect/Incomplete	
15. Were samples received within holding time?		✓		☑ Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ pH Adjusted, pH Included (See box 16A) ☐ Incorrect Preservative	
17. Were VOA samples received without headspace?			✓	☐ Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ Residual Chlorine	
19. For 1613B water samples is pH<9?			✓	☐ If no, notify lab to adjust	
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info	

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: 14006675 PM Instructions:

Sample Receiving Associate: Chris Rickman Date: 9-12-23

QA026R32.doc, 062719

13 12 11 10 9 8 7 6 5 4 3 2 1

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Environment Testing America

ANALYTICAL REPORT

Eurofins Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Tel: (865)291-3000

Laboratory Job ID: 140-27497-1
Client Project/Site: GL21509219, GRE Stanton 2022

For:
Golder Associates Inc.
7245 W Alaska Drive
Suite 200
Lakewood, Colorado 80226

Attn: Ms. Erin Hunter

Ryan Henry

Authorized for release by:
6/17/2022 11:28:52 AM

Ryan Henry, Project Manager I
(865)291-3000
WilliamR.Henry@et.eurofinsus.com

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

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

Table of Contents

1 2 3 4 5 6 7 8 9 10 11 12 13

Qualifiers

Metals

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
L	A negative instrument reading had an absolute value greater than the reporting limit

Glossary

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

Case Narrative

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Job ID: 140-27497-1

Laboratory: Eurofins Knoxville

Narrative

Job Narrative
140-27497-1

Receipt
The samples were received on 5/18/2022 at 11:20am and arrived in good condition.

Receipt Exceptions
The Field Sampler was not listed on the Chain of Custody.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Not relinquished by client.

Metals
7 Step Sequential Extraction Procedure

These soil samples were prepared and analyzed using Eurofins TestAmerica Knoxville standard operating procedure KNOX-MT-0008, "7 Step Sequential Extraction Procedure". SW-846 Method 6010B as incorporated in Eurofins TestAmerica Knoxville standard operating procedure KNOX-MT-0007 was used to perform the final instrument analyses.

An aliquot of each sample was sequentially extracted using the steps listed below:

· Step 1 - Exchangeable Fraction: A 5 gram aliquot of sample was extracted with 25 mL of 1M magnesium sulfate ($MgSO_4$), centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 2 - Carbonate Fraction: The sample residue from step 1 was extracted with 25 mL of 1M sodium acetate/acetic acid (NaOAc/HOAc) at pH 5, centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 3 - Non-crystalline Materials Fraction: The sample residue from step 2 was extracted with 25 mL of 0.2M ammonium oxalate (pH 3), centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 4 - Metal Hydroxide Fraction: The sample residue from step 3 was extracted with 25 mL of 1M hydroxylamine hydrochloride solution in 25% v/v acetic acid, centrifuged and filtered. 5 mL of the resulting leachate was digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 5 - Organic-bound Fraction: The sample residue from step 4 was extracted three times with 25 mL of 5% sodium hypochlorite (NaClO) at pH 9.5, centrifuged and filtered. The resulting leachates were combined and 5 mL were digested using method 3010A and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 6 - Acid/Sulfide Fraction: The sample residue from step 5 was extracted with 25 mL of a 3:1:2 v/v solution of HCl-HNO_3-H_2O, centrifuged and filtered. 5 mL of the resulting leachate was diluted to 50 mL with reagent water and analyzed by method 6010B. Results are reported in mg/kg on a dry weight basis.
· Step 7 - Residual Fraction: A 1.0 g aliquot of the sample residue from step 6 was digested using HF, HNO_3, HCl and H_3BO_3. The digestate was analyzed by ICP using method 6010B. Results are reported in mg/kg on a dry weight basis.

In addition, a 1.0 g aliquot of the original sample was digested using HF, HNO_3, HCl and H_3BO_3. The digestate was analyzed by ICP using method 6010B. Total metal results are reported in mg/kg on a dry weight basis.

Results were calculated using the following equation:

Result, µg/g or mg/Kg, dry weight = $(C \times V \times V1 \times D) / (W \times S \times V2)$

Where:
C = Concentration from instrument readout, µg/mL
V = Final volume of digestate, mL
D = Instrument dilution factor
V1 = Total volume of leachate, mL
V2 = Volume of leachate digested, mL

1 2 3 4 5 6 7 8 9 10 11 12 13

Job ID: 140-27497-1 (Continued)

Laboratory: Eurofins Knoxville (Continued)

W = Wet weight of sample, g
S = Percent solids/100

A method blank, laboratory control sample and laboratory control sample duplicate were prepared and analyzed with each SEP step in order to provide information about both the presence of elements of interest in the extraction solutions, and the recovery of elements of interest from the extraction solutions. Results outside of laboratory QC limits do not reflect out of control performance, but rather the effect of the extraction solution upon the analyte.

A laboratory sample duplicate was prepared and analyzed with each batch of samples in order to provide information regarding the reproducibility of the procedure.

SEP Report Notes:

The final report lists the results for each step, the result for the total digestion of the sample, and a sum of the results of steps 1 through 7 by element.

Magnesium was not reported for step 1 because the extraction solution for this step (magnesium sulfate) contains high levels of magnesium. Sodium was not reported for steps 2 and 5 since the extraction solutions for these steps contain high levels of sodium. The sum of steps 1 through 7 is much higher than the total result for sodium and magnesium due to the magnesium and sodium introduced by the extraction solutions.

The digestates for steps 1, 2 and 5 were analyzed at a dilution due to instrument problems caused by the high solids content of the digestates. The reporting limits were adjusted accordingly.

Method 6010B: The following sample was diluted to bring the concentration of target analyte, Iron, within the calibration range: TW-TR2-C2 (140-27497-9). Elevated reporting limits (RLs) are provided.

Method 6010B: The following sample was diluted due to the presence of Iron which interferes with Arsenic and Lead: TW-TR2-C2 (140-27497-9). Elevated reporting limits (RLs) are provided.

Method 6010B: The following samples were diluted due to the presence of Silicon which interferes with Arsenic, Cobalt, and Lead: MW-212-C (140-27497-1), MW-212 (140-27497-2), MW-210 (140-27497-4), MW-211-0-5FT (140-27497-7) and TW-TR2-C2 (140-27497-9). Elevated reporting limits (RLs) are provided.

Method 6010B: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following sample: BH-1 (140-27497-5).

Methods 6010B, 6010B SEP: The following samples were diluted due to the nature of the sample matrix: MW-212-C (140-27497-1), MW-212 (140-27497-2), TW-TR2 (140-27497-3), MW-210 (140-27497-4), BH-1 (140-27497-5), MW-214 (140-27497-6), MW-211-0-5FT (140-27497-7), MW-211-14-25FT (140-27497-8), TW-TR2-C2 (140-27497-9), TW-TR2-C1 (140-27497-10) and MW-213 (140-27497-11). Elevated reporting limits (RLs) are provided for Aluminum.

Method 6010B: The following samples were diluted due to the presence of Aluminum which interferes with Lead: TW-TR2 (140-27497-3) and MW-213 (140-27497-11). Elevated reporting limits (RLs) are provided.

Method 6010B: The following samples were diluted due to the presence of Titanium which interferes with Cobalt: TW-TR2 (140-27497-3), MW-214 (140-27497-6), TW-TR2-C1 (140-27497-10) and MW-213 (140-27497-11). Elevated reporting limits (RLs) are provided.

Titanium is not an interfering element for the Lead line used for reporting these samples.

Method 6010B SEP: LCS/LCSD %RPD was out due to the very low recoveries known for Manganese for this step.

Job ID: 140-27497-1 (Continued)

Laboratory: Eurofins Knoxville (Continued)

MW-212-C (140-27497-1)

Method 6010B SEP: The following sample was diluted due to the presence of titanium which interferes with Cobalt and Lead: BH-1 (140-27497-5). Elevated reporting limits (RLs) are provided.

Method 6010B SEP: The following samples were diluted due to the presence of Silicon which interferes with Arsenic, Cobalt, and Lead: MW-212-C (140-27497-1), MW-210 (140-27497-4), MW-211-0-5FT (140-27497-7), MW-211-14-25FT (140-27497-8), TW-TR2-C2 (140-27497-9), TW-TR2-C1 (140-27497-10) and MW-213 (140-27497-11). Elevated reporting limits (RLs) are provided.

Method 6010B SEP: The following samples were diluted due to the presence of Titanium which interferes with Cobalt: TW-TR2 (140-27497-3), BH-1 (140-27497-5) and MW-213 (140-27497-11). Elevated reporting limits (RLs) are provided.

Titanium is not an interfering element for the Lead line used for reporting these samples.

Method 6010B SEP: The following sample was diluted due to the nature of the sample matrix: MW-212-C (140-27497-1). Elevated reporting limits (RLs) are provided for Aluminum.

Method Organic-Bound: The following samples are not amenable for this step as each addition of the extraction reagent caused significant foaming which resulted in sample loss.

MW-212-C (140-27497-1), MW-211-0-5FT (140-27497-7), TW-TR2-C2 (140-27497-9) and TW-TR2-C1 (140-27497-10)

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

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

Sample Summary

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-27497-1	MW-212-C	Solid	05/10/22 10:48	05/18/22 11:20
140-27497-2	MW-212	Solid	05/10/22 11:20	05/18/22 11:20
140-27497-3	TW-TR2	Solid	05/11/22 15:00	05/18/22 11:20
140-27497-4	MW-210	Solid	05/09/22 10:37	05/18/22 11:20
140-27497-5	BH-1	Solid	05/10/22 13:15	05/18/22 11:20
140-27497-6	MW-214	Solid	05/12/22 15:15	05/18/22 11:20
140-27497-7	MW-211-0-5FT	Solid	05/10/22 08:24	05/18/22 11:20
140-27497-8	MW-211-14-25FT	Solid	05/10/22 09:30	05/18/22 11:20
140-27497-9	TW-TR2-C2	Solid	05/11/22 14:00	05/18/22 11:20
140-27497-10	TW-TR2-C1	Solid	05/11/22 13:00	05/18/22 11:20
140-27497-11	MW-213	Solid	05/12/22 12:40	05/18/22 11:20

Client Sample Results

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-212-C Lab Sample ID: 140-27497-1

Date Collected: 05/10/22 10:48 Matrix: Solid
Date Received: 05/18/22 11:20 Percent Solids: 72.2

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		55	8.9	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4
Arsenic	ND		2.8	0.72	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4
Cobalt	ND		14	0.25	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4
Iron	ND		28	16	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4
Lead	ND		2.8	0.61	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4
Lithium	ND		14	0.83	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4
Manganese	**7.3**		4.2	0.17	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4
Molybdenum	ND		11	0.45	mg/Kg	☼	06/01/22 08:00	06/08/22 11:27	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		42	6.6	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3
Arsenic	ND		2.1	0.54	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3
Cobalt	ND		10	0.26	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3
Iron	ND		21	12	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3
Lead	**0.47**	**J**	2.1	0.46	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3
Lithium	**0.71**	**J**	10	0.62	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3
Manganese	**16**		3.1	1.2	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3
Molybdenum	ND		8.3	0.34	mg/Kg	☼	06/02/22 08:00	06/08/22 13:26	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**730**		14	2.9	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1
Arsenic	**1.3**		0.69	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1
Cobalt	**1.2**	**J**	3.5	0.062	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1
Iron	**1900**		6.9	4.0	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1
Lead	ND		0.69	0.15	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1
Lithium	**0.27**	**J**	3.5	0.21	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1
Manganese	**71**	**B**	1.0	0.037	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1
Molybdenum	ND		2.8	0.11	mg/Kg	☼	06/03/22 08:00	06/09/22 11:02	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2500**		14	2.2	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1
Arsenic	**2.7**		0.69	0.30	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1
Cobalt	**1.5**	**J**	3.5	0.073	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1
Iron	**6300**		6.9	4.0	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1
Lead	**3.9**		0.69	0.15	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1
Lithium	**3.5**	**B**	3.5	0.21	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1
Manganese	**78**		1.0	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1
Molybdenum	**0.14**	**J**	2.8	0.11	mg/Kg	☼	06/06/22 08:00	06/09/22 12:59	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**480**		210	33	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5
Arsenic	ND		10	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5
Cobalt	ND		52	0.83	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5
Iron	**1300**		100	61	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5
Lead	**2.4**	**J**	10	2.3	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5
Lithium	**10**	**J B**	52	3.0	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5

Client Sample ID: MW-212-C **Lab Sample ID: 140-27497-1**
Date Collected: 05/10/22 10:48 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 72.2**

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	14	J *1	16	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5
Molybdenum	ND		42	1.7	mg/Kg	☼	06/08/22 08:00	06/10/22 11:22	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1300		14	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1
Arsenic	0.94		0.69	0.21	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1
Cobalt	0.41	J	3.5	0.064	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1
Iron	2000		6.9	4.0	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1
Lead	0.51	J	0.69	0.15	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1
Lithium	1.0	J	3.5	0.21	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1
Manganese	11		1.0	0.35	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1
Molybdenum	ND		2.8	0.14	mg/Kg	☼	06/08/22 08:00	06/10/22 13:22	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	22000		140	22	mg/Kg	☼	06/09/22 08:00	06/13/22 11:43	10
Arsenic	0.94	J	1.4	0.36	mg/Kg	☼	06/09/22 08:00	06/13/22 15:31	2
Cobalt	2.0	J	6.9	0.072	mg/Kg	☼	06/09/22 08:00	06/13/22 15:31	2
Iron	3100		6.9	5.7	mg/Kg	☼	06/09/22 08:00	06/14/22 12:42	1
Lead	2.3		1.4	0.30	mg/Kg	☼	06/09/22 08:00	06/13/22 15:31	2
Lithium	6.9		3.5	0.21	mg/Kg	☼	06/09/22 08:00	06/14/22 12:42	1
Manganese	28		1.0	0.15	mg/Kg	☼	06/09/22 08:00	06/13/22 13:40	1
Molybdenum	0.14	J	2.8	0.11	mg/Kg	☼	06/09/22 08:00	06/13/22 13:40	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	27000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	5.9		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	5.2		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	15000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	9.5		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	22		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	230		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	0.28	J	2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	26000		140	22	mg/Kg	☼	05/26/22 08:00	06/14/22 13:41	10
Arsenic	7.9		2.1	0.54	mg/Kg	☼	05/26/22 08:00	06/14/22 17:27	3
Cobalt	5.8	J	10	0.11	mg/Kg	☼	05/26/22 08:00	06/14/22 17:27	3
Iron	13000		6.9	5.7	mg/Kg	☼	05/26/22 08:00	06/14/22 15:40	1
Lead	7.7		2.1	0.46	mg/Kg	☼	05/26/22 08:00	06/14/22 17:27	3
Lithium	10		3.5	0.21	mg/Kg	☼	05/26/22 08:00	06/14/22 15:40	1
Manganese	200		1.0	0.15	mg/Kg	☼	05/26/22 08:00	06/14/22 15:40	1
Molybdenum	1.1	J	2.8	0.11	mg/Kg	☼	05/26/22 08:00	06/14/22 15:40	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-212 Lab Sample ID: 140-27497-2

Date Collected: 05/10/22 11:20 Matrix: Solid
Date Received: 05/18/22 11:20 Percent Solids: 85.2

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		47	7.5	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4
Arsenic	ND		2.3	0.61	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4
Cobalt	ND		12	0.21	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4
Iron	ND		23	14	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4
Lead	ND		2.3	0.52	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4
Lithium	ND		12	0.70	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4
Manganese	**10**		3.5	0.15	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4
Molybdenum	ND		9.4	0.38	mg/Kg	☼	06/01/22 08:00	06/08/22 11:42	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**5.9**	**J**	35	5.6	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3
Arsenic	ND		1.8	0.46	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3
Cobalt	ND		8.8	0.22	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3
Iron	ND		18	10	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3
Lead	ND		1.8	0.39	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3
Lithium	ND		8.8	0.53	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3
Manganese	**30**		2.6	0.99	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3
Molybdenum	ND		7.0	0.29	mg/Kg	☼	06/02/22 08:00	06/08/22 13:41	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**60**		12	2.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1
Arsenic	**0.28**	**J**	0.59	0.15	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1
Cobalt	**0.34**	**J**	2.9	0.053	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1
Iron	**380**		5.9	3.4	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1
Lead	ND		0.59	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1
Lithium	ND		2.9	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1
Manganese	**24**	**B**	0.88	0.032	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1
Molybdenum	ND		2.3	0.096	mg/Kg	☼	06/03/22 08:00	06/09/22 11:17	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**450**		12	1.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1
Arsenic	**0.46**	**J**	0.59	0.26	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1
Cobalt	**1.3**	**J**	2.9	0.062	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1
Iron	**3400**		5.9	3.4	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1
Lead	**1.3**		0.59	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1
Lithium	**1.1**	**J B**	2.9	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1
Manganese	**62**		0.88	0.15	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1
Molybdenum	**0.58**	**J**	2.3	0.096	mg/Kg	☼	06/06/22 08:00	06/09/22 13:14	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**87**	**J**	180	28	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5
Arsenic	ND		8.8	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5
Cobalt	ND		44	0.70	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5
Iron	ND		88	52	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5
Lead	ND		8.8	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5
Lithium	**7.5**	**J B**	44	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5

Client Sample ID: MW-212

Date Collected: 05/10/22 11:20
Date Received: 05/18/22 11:20

Lab Sample ID: 140-27497-2

Matrix: Solid
Percent Solids: 85.2

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	2.5	J *1	13	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5
Molybdenum	ND		35	1.5	mg/Kg	☼	06/08/22 08:00	06/10/22 11:37	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1200		12	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1
Arsenic	3.4		0.59	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1
Cobalt	1.3	J	2.9	0.054	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1
Iron	7600		5.9	3.4	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1
Lead	0.90		0.59	0.13	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1
Lithium	1.9	J	2.9	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1
Manganese	84		0.88	0.29	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1
Molybdenum	1.4	J	2.3	0.12	mg/Kg	☼	06/08/22 08:00	06/10/22 13:37	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	29000		120	19	mg/Kg	☼	06/09/22 08:00	06/14/22 11:00	10
Arsenic	2.3		0.59	0.15	mg/Kg	☼	06/09/22 08:00	06/13/22 13:55	1
Cobalt	2.0	J	2.9	0.031	mg/Kg	☼	06/09/22 08:00	06/13/22 13:55	1
Iron	3600		5.9	4.8	mg/Kg	☼	06/09/22 08:00	06/13/22 13:55	1
Lead	7.1		0.59	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 13:55	1
Lithium	4.7		2.9	0.18	mg/Kg	☼	06/09/22 08:00	06/13/22 13:55	1
Manganese	55		0.88	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 13:55	1
Molybdenum	0.88	J	2.3	0.096	mg/Kg	☼	06/09/22 08:00	06/13/22 13:55	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	31000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	6.4		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	4.9		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	15000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	9.3		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	15		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	270		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	2.9		2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	33000		120	19	mg/Kg	☼	05/26/22 08:00	06/14/22 13:55	10
Arsenic	7.9		1.2	0.31	mg/Kg	☼	05/26/22 08:00	06/14/22 17:32	2
Cobalt	5.4	J	5.9	0.061	mg/Kg	☼	05/26/22 08:00	06/14/22 17:32	2
Iron	13000		5.9	4.8	mg/Kg	☼	05/26/22 08:00	06/14/22 15:55	1
Lead	7.3		1.2	0.26	mg/Kg	☼	05/26/22 08:00	06/14/22 17:32	2
Lithium	8.5		2.9	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 15:55	1
Manganese	200		0.88	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 15:55	1
Molybdenum	0.62	J	2.3	0.096	mg/Kg	☼	05/26/22 08:00	06/14/22 15:55	1

Client Sample ID: TW-TR2

Date Collected: 05/11/22 15:00
Date Received: 05/18/22 11:20

Lab Sample ID: 140-27497-3

Matrix: Solid
Percent Solids: 84.1

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		48	7.6	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4
Arsenic	ND		2.4	0.62	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4
Cobalt	**0.84**	**J**	12	0.21	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4
Iron	ND		24	14	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4
Lead	**0.60**	**J B**	2.4	0.52	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4
Lithium	ND		12	0.71	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4
Manganese	**8.3**		3.6	0.15	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4
Molybdenum	**0.86**	**J**	9.5	0.39	mg/Kg	☼	06/01/22 08:00	06/08/22 11:47	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**11**	**J**	36	5.7	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3
Arsenic	ND		1.8	0.46	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3
Cobalt	**1.8**	**J**	8.9	0.22	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3
Iron	**57**		18	10	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3
Lead	**2.1**		1.8	0.39	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3
Lithium	**0.91**	**J**	8.9	0.53	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3
Manganese	**47**		2.7	1.0	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3
Molybdenum	ND		7.1	0.29	mg/Kg	☼	06/02/22 08:00	06/08/22 13:46	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**100**		12	2.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1
Arsenic	**1.9**		0.59	0.15	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1
Cobalt	**1.7**	**J**	3.0	0.053	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1
Iron	**2500**		5.9	3.4	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1
Lead	ND		0.59	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1
Lithium	**0.26**	**J**	3.0	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1
Manganese	**69**	**B**	0.89	0.032	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1
Molybdenum	**0.50**	**J**	2.4	0.097	mg/Kg	☼	06/03/22 08:00	06/09/22 11:21	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1800**		12	1.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1
Arsenic	ND		0.59	0.26	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1
Cobalt	**1.8**	**J**	3.0	0.063	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1
Iron	**6400**		5.9	3.4	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1
Lead	**6.7**		0.59	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1
Lithium	**4.4**	**B**	3.0	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1
Manganese	**130**		0.89	0.15	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1
Molybdenum	**0.18**	**J**	2.4	0.097	mg/Kg	☼	06/06/22 08:00	06/09/22 13:18	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**310**		180	28	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5
Arsenic	ND		8.9	2.3	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5
Cobalt	**0.82**	**J**	45	0.71	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5
Iron	**530**		89	52	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5
Lead	**3.2**	**J**	8.9	2.0	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5
Lithium	**9.2**	**J B**	45	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5

Client Sample ID: TW-TR2 **Lab Sample ID: 140-27497-3**
Date Collected: 05/11/22 15:00 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 84.1**

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	26	*1	13	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5
Molybdenum	ND		36	1.5	mg/Kg	☼	06/08/22 08:00	06/10/22 11:42	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4200		12	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1
Arsenic	1.5		0.59	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1
Cobalt	1.4	J	3.0	0.055	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1
Iron	5600		5.9	3.4	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1
Lead	2.5		0.59	0.13	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1
Lithium	5.0		3.0	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1
Manganese	47		0.89	0.30	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1
Molybdenum	0.34	J	2.4	0.12	mg/Kg	☼	06/08/22 08:00	06/10/22 13:47	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	28000		120	19	mg/Kg	☼	06/09/22 08:00	06/14/22 11:05	10
Arsenic	0.66		0.59	0.15	mg/Kg	☼	06/09/22 08:00	06/13/22 14:00	1
Cobalt	1.1	J	5.9	0.062	mg/Kg	☼	06/09/22 08:00	06/13/22 15:36	2
Iron	5800		5.9	4.9	mg/Kg	☼	06/09/22 08:00	06/13/22 14:00	1
Lead	2.3		0.59	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:00	1
Lithium	8.5		3.0	0.18	mg/Kg	☼	06/09/22 08:00	06/13/22 14:00	1
Manganese	28		0.89	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:00	1
Molybdenum	0.18	J	2.4	0.097	mg/Kg	☼	06/09/22 08:00	06/13/22 14:00	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	34000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	4.1		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	9.5		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	21000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	17		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	28		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	350		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	2.1		2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	73000		120	19	mg/Kg	☼	05/26/22 08:00	06/14/22 14:00	10
Arsenic	6.1		0.59	0.15	mg/Kg	☼	05/26/22 08:00	06/14/22 16:01	1
Cobalt	8.9		8.9	0.093	mg/Kg	☼	05/26/22 08:00	06/14/22 17:37	3
Iron	22000		5.9	4.9	mg/Kg	☼	05/26/22 08:00	06/14/22 16:01	1
Lead	15		1.8	0.39	mg/Kg	☼	05/26/22 08:00	06/14/22 17:37	3
Lithium	26		3.0	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 16:01	1
Manganese	270		0.89	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:01	1
Molybdenum	3.7		2.4	0.097	mg/Kg	☼	05/26/22 08:00	06/14/22 16:01	1

1 2 3 4 5 6 7 8 9 10 11 12 13

Client Sample ID: MW-210 Lab Sample ID: 140-27497-4

Date Collected: 05/09/22 10:37 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 83.8**

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		48	7.6	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4
Arsenic	ND		2.4	0.62	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4
Cobalt	ND		12	0.21	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4
Iron	ND		24	14	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4
Lead	**0.54**	**J B**	2.4	0.53	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4
Lithium	ND		12	0.72	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4
Manganese	**1.4**	**J**	3.6	0.15	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4
Molybdenum	ND		9.5	0.39	mg/Kg	☼	06/01/22 08:00	06/08/22 11:52	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		36	5.7	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3
Arsenic	ND		1.8	0.47	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3
Cobalt	ND		9.0	0.23	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3
Iron	**40**		18	10	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3
Lead	**0.56**	**J**	1.8	0.39	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3
Lithium	ND		9.0	0.54	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3
Manganese	**13**		2.7	1.0	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3
Molybdenum	ND		7.2	0.29	mg/Kg	☼	06/02/22 08:00	06/08/22 13:51	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**45**		12	2.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1
Arsenic	ND		0.60	0.16	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1
Cobalt	**0.32**	**J**	3.0	0.054	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1
Iron	**620**		6.0	3.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1
Lead	ND		0.60	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1
Lithium	ND		3.0	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1
Manganese	**7.2**	**B**	0.90	0.032	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1
Molybdenum	**0.11**	**J**	2.4	0.098	mg/Kg	☼	06/03/22 08:00	06/09/22 11:26	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**570**		12	1.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1
Arsenic	**0.30**	**J**	0.60	0.26	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1
Cobalt	**1.5**	**J**	3.0	0.063	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1
Iron	**3600**		6.0	3.5	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1
Lead	**1.6**		0.60	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1
Lithium	**1.4**	**J B**	3.0	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1
Manganese	**37**		0.90	0.16	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1
Molybdenum	**0.25**	**J**	2.4	0.098	mg/Kg	☼	06/06/22 08:00	06/09/22 13:23	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**60**	**J**	180	28	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5
Arsenic	ND		9.0	2.3	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5
Cobalt	ND		45	0.72	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5
Iron	ND		90	53	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5
Lead	ND		9.0	2.0	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5
Lithium	**7.8**	**J B**	45	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5

Client Sample ID: MW-210 **Lab Sample ID: 140-27497-4**
Date Collected: 05/09/22 10:37 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 83.8**

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	*1	13	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5
Molybdenum	ND		36	1.5	mg/Kg	☼	06/08/22 08:00	06/10/22 11:47	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1300		12	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1
Arsenic	2.6		0.60	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1
Cobalt	1.3	J	3.0	0.055	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1
Iron	6500		6.0	3.5	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1
Lead	0.99		0.60	0.13	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1
Lithium	1.9	J	3.0	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1
Manganese	66		0.90	0.30	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1
Molybdenum	0.33	J	2.4	0.12	mg/Kg	☼	06/08/22 08:00	06/10/22 13:52	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	31000		120	19	mg/Kg	☼	06/09/22 08:00	06/14/22 11:09	10
Arsenic	1.7		1.2	0.31	mg/Kg	☼	06/09/22 08:00	06/13/22 15:41	2
Cobalt	1.9	J	6.0	0.062	mg/Kg	☼	06/09/22 08:00	06/13/22 15:41	2
Iron	3300		6.0	4.9	mg/Kg	☼	06/09/22 08:00	06/13/22 14:05	1
Lead	4.7		1.2	0.26	mg/Kg	☼	06/09/22 08:00	06/13/22 15:41	2
Lithium	3.8		3.0	0.18	mg/Kg	☼	06/09/22 08:00	06/13/22 14:05	1
Manganese	61		0.90	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:05	1
Molybdenum	0.13	J	2.4	0.098	mg/Kg	☼	06/09/22 08:00	06/13/22 14:05	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	33000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	4.6		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	5.1		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	14000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	8.4		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	15		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	180		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	0.81	J	2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	30000		120	19	mg/Kg	☼	05/26/22 08:00	06/14/22 14:05	10
Arsenic	6.0		1.2	0.31	mg/Kg	☼	05/26/22 08:00	06/14/22 17:42	2
Cobalt	4.7	J	6.0	0.062	mg/Kg	☼	05/26/22 08:00	06/14/22 17:42	2
Iron	13000		6.0	4.9	mg/Kg	☼	05/26/22 08:00	06/14/22 16:06	1
Lead	7.1		1.2	0.26	mg/Kg	☼	05/26/22 08:00	06/14/22 17:42	2
Lithium	6.5		3.0	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 16:06	1
Manganese	170		0.90	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:06	1
Molybdenum	0.85	J	2.4	0.098	mg/Kg	☼	05/26/22 08:00	06/14/22 16:06	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: BH-1 Lab Sample ID: 140-27497-5
Date Collected: 05/10/22 13:15 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 89.0**

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		45	7.2	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4
Arsenic	ND		2.2	0.58	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4
Cobalt	ND		11	0.20	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4
Iron	ND		22	13	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4
Lead	ND		2.2	0.49	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4
Lithium	ND		11	0.67	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4
Manganese	**0.34**	**J**	3.4	0.14	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4
Molybdenum	ND		9.0	0.37	mg/Kg	☼	06/01/22 08:00	06/08/22 11:57	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1600**		34	5.4	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3
Arsenic	ND		1.7	0.44	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3
Cobalt	**0.21**	**J**	8.4	0.21	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3
Iron	**190**		17	9.8	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3
Lead	**0.80**	**J**	1.7	0.37	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3
Lithium	**1.9**	**J**	8.4	0.51	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3
Manganese	**23**		2.5	0.94	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3
Molybdenum	ND		6.7	0.28	mg/Kg	☼	06/02/22 08:00	06/08/22 13:56	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**3400**		11	2.4	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1
Arsenic	**1.6**		0.56	0.15	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1
Cobalt	**0.60**	**J**	2.8	0.051	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1
Iron	**1100**		5.6	3.3	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1
Lead	ND		0.56	0.12	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1
Lithium	**1.4**	**J**	2.8	0.17	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1
Manganese	**12**	**B**	0.84	0.030	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1
Molybdenum	**0.39**	**J**	2.2	0.092	mg/Kg	☼	06/03/22 08:00	06/09/22 11:31	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**12000**		11	1.8	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1
Arsenic	**1.0**		0.56	0.25	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1
Cobalt	**2.0**	**J**	2.8	0.060	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1
Iron	**3500**		5.6	3.3	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1
Lead	**6.3**		0.56	0.12	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1
Lithium	**12**	**B**	2.8	0.17	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1
Manganese	**65**		0.84	0.15	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1
Molybdenum	**0.80**	**J**	2.2	0.092	mg/Kg	☼	06/06/22 08:00	06/09/22 13:28	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**710**		170	26	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5
Arsenic	ND		8.4	2.1	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5
Cobalt	ND		42	0.67	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5
Iron	ND		84	49	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5
Lead	ND		8.4	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5
Lithium	**7.9**	**J B**	42	2.5	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5

Client Sample ID: BH-1
Date Collected: 05/10/22 13:15
Date Received: 05/18/22 11:20

Lab Sample ID: 140-27497-5
Matrix: Solid
Percent Solids: 89.0

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	11	J *1	13	2.1	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5
Molybdenum	ND		34	1.4	mg/Kg	☼	06/08/22 08:00	06/10/22 11:52	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	23000		11	1.8	mg/Kg	☼	06/08/22 08:00	06/10/22 13:56	1
Arsenic	4.1		0.56	0.17	mg/Kg	☼	06/08/22 08:00	06/10/22 13:56	1
Cobalt	4.2	J	5.6	0.10	mg/Kg	☼	06/08/22 08:00	06/13/22 16:26	2
Iron	13000		5.6	3.3	mg/Kg	☼	06/08/22 08:00	06/10/22 13:56	1
Lead	4.5		1.1	0.25	mg/Kg	☼	06/08/22 08:00	06/13/22 16:26	2
Lithium	19		2.8	0.17	mg/Kg	☼	06/08/22 08:00	06/10/22 13:56	1
Manganese	86		0.84	0.28	mg/Kg	☼	06/08/22 08:00	06/10/22 13:56	1
Molybdenum	0.96	J	2.2	0.11	mg/Kg	☼	06/08/22 08:00	06/10/22 13:56	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	21000		110	18	mg/Kg	☼	06/09/22 08:00	06/14/22 11:14	10
Arsenic	1.6		0.56	0.15	mg/Kg	☼	06/09/22 08:00	06/13/22 14:10	1
Cobalt	5.6	J	14	0.15	mg/Kg	☼	06/09/22 08:00	06/13/22 15:46	5
Iron	14000		5.6	4.6	mg/Kg	☼	06/09/22 08:00	06/13/22 14:10	1
Lead	4.6		0.56	0.12	mg/Kg	☼	06/09/22 08:00	06/13/22 14:10	1
Lithium	24		2.8	0.17	mg/Kg	☼	06/09/22 08:00	06/13/22 14:10	1
Manganese	97		0.84	0.12	mg/Kg	☼	06/09/22 08:00	06/13/22 14:10	1
Molybdenum	0.98	J	2.2	0.092	mg/Kg	☼	06/09/22 08:00	06/13/22 14:10	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	62000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	8.3		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	13		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	31000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	16		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	67		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	300		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	3.1		2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	79000		110	18	mg/Kg	☼	05/26/22 08:00	06/14/22 14:09	10
Arsenic	11		1.1	0.29	mg/Kg	☼	05/26/22 08:00	06/14/22 17:48	2
Cobalt	14	J	28	0.29	mg/Kg	☼	05/26/22 08:00	06/14/22 14:09	10
Iron	35000		56	46	mg/Kg	☼	05/26/22 08:00	06/14/22 14:09	10
Lead	11		1.1	0.25	mg/Kg	☼	05/26/22 08:00	06/14/22 17:48	2
Lithium	69		28	1.7	mg/Kg	☼	05/26/22 08:00	06/14/22 14:09	10
Manganese	250		1.7	0.25	mg/Kg	☼	05/26/22 08:00	06/14/22 17:48	2
Molybdenum	3.4	J	4.5	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 17:48	2

Client Sample ID: MW-214 Lab Sample ID: 140-27497-6

Date Collected: 05/12/22 15:15 **Matrix: Solid**

Date Received: 05/18/22 11:20 **Percent Solids: 83.4**

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		48	7.7	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4
Arsenic	ND		2.4	0.62	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4
Cobalt	ND		12	0.22	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4
Iron	ND		24	14	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4
Lead	**0.59**	**J B**	2.4	0.53	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4
Lithium	ND		12	0.72	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4
Manganese	**0.36**	**J**	3.6	0.15	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4
Molybdenum	ND		9.6	0.39	mg/Kg	☼	06/01/22 08:00	06/08/22 12:02	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		36	5.8	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3
Arsenic	ND		1.8	0.47	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3
Cobalt	ND		9.0	0.23	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3
Iron	ND		18	10	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3
Lead	ND		1.8	0.40	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3
Lithium	ND		9.0	0.54	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3
Manganese	**15**		2.7	1.0	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3
Molybdenum	ND		7.2	0.29	mg/Kg	☼	06/02/22 08:00	06/08/22 14:01	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**110**		12	2.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1
Arsenic	**0.49**	**J**	0.60	0.16	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1
Cobalt	**1.4**	**J**	3.0	0.054	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1
Iron	**390**		6.0	3.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1
Lead	**0.32**	**J**	0.60	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1
Lithium	**0.21**	**J**	3.0	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1
Manganese	**83**	**B**	0.90	0.032	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1
Molybdenum	ND		2.4	0.098	mg/Kg	☼	06/03/22 08:00	06/09/22 11:36	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2100**		12	1.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1
Arsenic	**2.2**		0.60	0.26	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1
Cobalt	**3.2**		3.0	0.064	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1
Iron	**8400**		6.0	3.5	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1
Lead	**4.7**		0.60	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1
Lithium	**3.9**	**B**	3.0	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1
Manganese	**110**		0.90	0.16	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1
Molybdenum	**0.35**	**J**	2.4	0.098	mg/Kg	☼	06/06/22 08:00	06/09/22 13:33	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**53**	**J**	180	28	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5
Arsenic	ND		9.0	2.3	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5
Cobalt	ND		45	0.72	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5
Iron	ND		90	53	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5
Lead	ND		9.0	2.0	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5
Lithium	**7.0**	**J B**	45	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5

Client Sample ID: MW-214 **Lab Sample ID: 140-27497-6**
Date Collected: 05/12/22 15:15 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 83.4**

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	5.0	J *1	13	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5
Molybdenum	ND		36	1.5	mg/Kg	☼	06/08/22 08:00	06/10/22 11:57	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4500		12	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1
Arsenic	1.6		0.60	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1
Cobalt	1.5	J	3.0	0.055	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1
Iron	7300		6.0	3.5	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1
Lead	1.2		0.60	0.13	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1
Lithium	3.7		3.0	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1
Manganese	62		0.90	0.30	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1
Molybdenum	0.12	J	2.4	0.12	mg/Kg	☼	06/08/22 08:00	06/10/22 14:02	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	27000		120	19	mg/Kg	☼	06/09/22 08:00	06/14/22 11:19	10
Arsenic	1.2		0.60	0.16	mg/Kg	☼	06/09/22 08:00	06/13/22 14:16	1
Cobalt	1.1	J	3.0	0.031	mg/Kg	☼	06/09/22 08:00	06/13/22 14:16	1
Iron	4200		6.0	4.9	mg/Kg	☼	06/09/22 08:00	06/13/22 14:16	1
Lead	2.6		0.60	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:16	1
Lithium	5.3		3.0	0.18	mg/Kg	☼	06/09/22 08:00	06/13/22 14:16	1
Manganese	39		0.90	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:16	1
Molybdenum	0.15	J	2.4	0.098	mg/Kg	☼	06/09/22 08:00	06/13/22 14:16	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	34000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	5.4		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	7.2		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	20000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	9.4		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	20		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	310		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	0.62	J	2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	44000		120	19	mg/Kg	☼	05/26/22 08:00	06/14/22 14:14	10
Arsenic	7.2		0.60	0.16	mg/Kg	☼	05/26/22 08:00	06/14/22 16:18	1
Cobalt	6.1		6.0	0.062	mg/Kg	☼	05/26/22 08:00	06/14/22 17:53	2
Iron	17000		6.0	4.9	mg/Kg	☼	05/26/22 08:00	06/14/22 16:18	1
Lead	7.8		0.60	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:18	1
Lithium	13		3.0	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 16:18	1
Manganese	210		0.90	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:18	1
Molybdenum	0.66	J	2.4	0.098	mg/Kg	☼	05/26/22 08:00	06/14/22 16:18	1

Client Sample Results

Client: Golder Associates Inc. — Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-211-0-5FT — Lab Sample ID: 140-27497-7

Date Collected: 05/10/22 08:24 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 83.9**

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		48	7.6	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4
Arsenic	ND		2.4	0.62	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4
Cobalt	ND		12	0.21	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4
Iron	ND		24	14	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4
Lead	ND		2.4	0.52	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4
Lithium	ND		12	0.72	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4
Manganese	ND		3.6	0.15	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4
Molybdenum	ND		9.5	0.39	mg/Kg	☼	06/01/22 08:00	06/08/22 12:07	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		36	5.7	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3
Arsenic	ND		1.8	0.47	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3
Cobalt	ND		8.9	0.23	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3
Iron	ND		18	10	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3
Lead	ND		1.8	0.39	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3
Lithium	ND		8.9	0.54	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3
Manganese	**17**		2.7	1.0	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3
Molybdenum	ND		7.2	0.29	mg/Kg	☼	06/02/22 08:00	06/08/22 14:06	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**320**		12	2.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1
Arsenic	**1.0**		0.60	0.16	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1
Cobalt	**1.4**	**J**	3.0	0.054	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1
Iron	**1100**		6.0	3.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1
Lead	ND		0.60	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1
Lithium	**0.24**	**J**	3.0	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1
Manganese	**94**	**B**	0.89	0.032	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1
Molybdenum	**0.21**	**J**	2.4	0.098	mg/Kg	☼	06/03/22 08:00	06/09/22 11:41	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1600**		12	1.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1
Arsenic	**1.7**		0.60	0.26	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1
Cobalt	**1.5**	**J**	3.0	0.063	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1
Iron	**5000**		6.0	3.5	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1
Lead	**3.6**		0.60	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1
Lithium	**3.2**	**B**	3.0	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1
Manganese	**67**		0.89	0.16	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1
Molybdenum	**0.18**	**J**	2.4	0.098	mg/Kg	☼	06/06/22 08:00	06/09/22 13:38	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**190**		180	28	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5
Arsenic	ND		8.9	2.3	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5
Cobalt	ND		45	0.72	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5
Iron	**410**		89	52	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5
Lead	ND		8.9	2.0	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5
Lithium	**6.3**	**J B**	45	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5

Client Sample Results

Client: Golder Associates Inc.
Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-211-0-5FT
Lab Sample ID: 140-27497-7
Date Collected: 05/10/22 08:24
Matrix: Solid
Date Received: 05/18/22 11:20
Percent Solids: 83.9

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	12	J *1	13	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5
Molybdenum	ND		36	1.5	mg/Kg	☼	06/08/22 08:00	06/10/22 12:02	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	2500		12	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1
Arsenic	2.0		0.60	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1
Cobalt	0.98	J	3.0	0.055	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1
Iron	5000		6.0	3.5	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1
Lead	1.0		0.60	0.13	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1
Lithium	2.4	J	3.0	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1
Manganese	39		0.89	0.30	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1
Molybdenum	0.13	J	2.4	0.12	mg/Kg	☼	06/08/22 08:00	06/10/22 14:07	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	32000		120	19	mg/Kg	☼	06/09/22 08:00	06/14/22 11:24	10
Arsenic	1.1	J	1.8	0.47	mg/Kg	☼	06/09/22 08:00	06/13/22 15:51	3
Cobalt	2.1	J	8.9	0.093	mg/Kg	☼	06/09/22 08:00	06/13/22 15:51	3
Iron	3300		6.0	4.9	mg/Kg	☼	06/09/22 08:00	06/13/22 14:21	1
Lead	3.2		1.8	0.39	mg/Kg	☼	06/09/22 08:00	06/13/22 15:51	3
Lithium	5.6		3.0	0.18	mg/Kg	☼	06/09/22 08:00	06/13/22 14:21	1
Manganese	42		0.89	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:21	1
Molybdenum	0.14	J	2.4	0.098	mg/Kg	☼	06/09/22 08:00	06/13/22 14:21	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	37000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	5.9		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	6.0		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	15000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	7.8		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	18		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	270		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	0.66	J	2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	32000		120	19	mg/Kg	☼	05/26/22 08:00	06/14/22 14:19	10
Arsenic	7.8		1.2	0.31	mg/Kg	☼	05/26/22 08:00	06/14/22 17:58	2
Cobalt	5.5	J	6.0	0.062	mg/Kg	☼	05/26/22 08:00	06/14/22 17:58	2
Iron	13000		6.0	4.9	mg/Kg	☼	05/26/22 08:00	06/14/22 16:23	1
Lead	8.4		1.2	0.26	mg/Kg	☼	05/26/22 08:00	06/14/22 17:58	2
Lithium	10		3.0	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 16:23	1
Manganese	260		0.89	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:23	1
Molybdenum	0.98	J	2.4	0.098	mg/Kg	☼	05/26/22 08:00	06/14/22 16:23	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-211-14-25FT

Lab Sample ID: 140-27497-8

Date Collected: 05/10/22 09:30
Matrix: Solid

Date Received: 05/18/22 11:20
Percent Solids: 83.2

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		48	7.7	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4
Arsenic	ND		2.4	0.63	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4
Cobalt	ND		12	0.22	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4
Iron	ND		24	14	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4
Lead	ND		2.4	0.53	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4
Lithium	ND		12	0.72	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4
Manganese	**13**		3.6	0.15	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4
Molybdenum	ND		9.6	0.39	mg/Kg	☼	06/01/22 08:00	06/08/22 12:12	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**11**	**J**	36	5.8	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3
Arsenic	ND		1.8	0.47	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3
Cobalt	ND		9.0	0.23	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3
Iron	**38**		18	10	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3
Lead	**0.43**	**J**	1.8	0.40	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3
Lithium	ND		9.0	0.54	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3
Manganese	**29**		2.7	1.0	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3
Molybdenum	ND		7.2	0.30	mg/Kg	☼	06/02/22 08:00	06/08/22 14:11	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**130**		12	2.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1
Arsenic	**0.85**		0.60	0.16	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1
Cobalt	**0.54**	**J**	3.0	0.054	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1
Iron	**820**		6.0	3.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1
Lead	**0.28**	**J**	0.60	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1
Lithium	**0.19**	**J**	3.0	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1
Manganese	**26**	**B**	0.90	0.032	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1
Molybdenum	**0.29**	**J**	2.4	0.099	mg/Kg	☼	06/03/22 08:00	06/09/22 11:46	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1400**		12	1.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1
Arsenic	**1.6**		0.60	0.26	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1
Cobalt	**1.8**	**J**	3.0	0.064	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1
Iron	**5500**		6.0	3.5	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1
Lead	**1.9**		0.60	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1
Lithium	**2.5**	**J B**	3.0	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1
Manganese	**69**		0.90	0.16	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1
Molybdenum	**0.64**	**J**	2.4	0.099	mg/Kg	☼	06/06/22 08:00	06/09/22 13:42	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**69**	**J**	180	28	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5
Arsenic	ND		9.0	2.3	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5
Cobalt	ND		45	0.72	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5
Iron	ND		90	53	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5
Lead	ND		9.0	2.0	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5
Lithium	**6.6**	**J B**	45	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5

Client Sample ID: MW-211-14-25FT
Lab Sample ID: 140-27497-8

Date Collected: 05/10/22 09:30
Matrix: Solid
Date Received: 05/18/22 11:20
Percent Solids: 83.2

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	*1	14	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5
Molybdenum	ND		36	1.5	mg/Kg	☼	06/08/22 08:00	06/10/22 12:07	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2200**		12	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1
Arsenic	**2.0**		0.60	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1
Cobalt	**0.95**	**J**	3.0	0.055	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1
Iron	**5400**		6.0	3.5	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1
Lead	**0.62**		0.60	0.13	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1
Lithium	**2.2**	**J**	3.0	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1
Manganese	**50**		0.90	0.30	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1
Molybdenum	**0.85**	**J**	2.4	0.12	mg/Kg	☼	06/08/22 08:00	06/10/22 14:11	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**28000**		120	19	mg/Kg	☼	06/09/22 08:00	06/14/22 11:29	10
Arsenic	**1.3**	**J**	1.8	0.47	mg/Kg	☼	06/09/22 08:00	06/13/22 16:06	3
Cobalt	**1.4**	**J**	9.0	0.094	mg/Kg	☼	06/09/22 08:00	06/13/22 16:06	3
Iron	**2400**		6.0	4.9	mg/Kg	☼	06/09/22 08:00	06/13/22 14:26	1
Lead	**3.4**		1.8	0.40	mg/Kg	☼	06/09/22 08:00	06/13/22 16:06	3
Lithium	**4.0**		3.0	0.18	mg/Kg	☼	06/09/22 08:00	06/13/22 14:26	1
Manganese	**36**		0.90	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:26	1
Molybdenum	**0.16**	**J**	2.4	0.099	mg/Kg	☼	06/09/22 08:00	06/13/22 14:26	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**32000**		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	**5.8**		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	**4.7**		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	**14000**		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	**6.6**		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	**16**		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	**220**		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	**2.0**		2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**43000**		120	19	mg/Kg	☼	05/26/22 08:00	06/14/22 14:24	10
Arsenic	**8.7**		0.60	0.16	mg/Kg	☼	05/26/22 08:00	06/14/22 16:29	1
Cobalt	**4.7**		3.0	0.031	mg/Kg	☼	05/26/22 08:00	06/14/22 16:29	1
Iron	**13000**		6.0	4.9	mg/Kg	☼	05/26/22 08:00	06/14/22 16:29	1
Lead	**7.5**		0.60	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:29	1
Lithium	**9.2**		3.0	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 16:29	1
Manganese	**240**		0.90	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:29	1
Molybdenum	**0.79**	**J**	2.4	0.099	mg/Kg	☼	05/26/22 08:00	06/14/22 16:29	1

Client Sample Results

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Client Sample ID: TW-TR2-C2
Date Collected: 05/11/22 14:00
Date Received: 05/18/22 11:20

Lab Sample ID: 140-27497-9
Matrix: Solid
Percent Solids: 54.6

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		73	12	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4
Arsenic	ND		3.7	0.95	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4
Cobalt	ND		18	0.33	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4
Iron	ND		37	21	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4
Lead	**1.1**	**J B**	3.7	0.81	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4
Lithium	**1.6**	**J**	18	1.1	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4
Manganese	**25**		5.5	0.23	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4
Molybdenum	ND		15	0.60	mg/Kg	☼	06/01/22 08:00	06/08/22 12:17	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**11**	**J**	55	8.8	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3
Arsenic	ND		2.7	0.71	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3
Cobalt	ND		14	0.35	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3
Iron	ND		27	16	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3
Lead	ND		2.7	0.60	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3
Lithium	ND		14	0.82	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3
Manganese	**11**		4.1	1.5	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3
Molybdenum	ND		11	0.45	mg/Kg	☼	06/02/22 08:00	06/08/22 14:16	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**810**		18	3.8	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1
Arsenic	**0.34**	**J**	0.92	0.24	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1
Cobalt	**0.23**	**J**	4.6	0.082	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1
Iron	**2500**		9.2	5.3	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1
Lead	ND		0.92	0.20	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1
Lithium	**0.32**	**J**	4.6	0.27	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1
Manganese	**7.4**	**B**	1.4	0.049	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1
Molybdenum	**0.33**	**J**	3.7	0.15	mg/Kg	☼	06/03/22 08:00	06/09/22 11:51	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1300**		18	2.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1
Arsenic	**2.1**		0.92	0.40	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1
Cobalt	**1.7**	**J**	4.6	0.097	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1
Iron	**13000**		9.2	5.3	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1
Lead	**1.7**		0.92	0.20	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1
Lithium	**1.6**	**J B**	4.6	0.27	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1
Manganese	**99**		1.4	0.24	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1
Molybdenum	**3.2**	**J**	3.7	0.15	mg/Kg	☼	06/06/22 08:00	06/09/22 13:47	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**360**		270	43	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5
Arsenic	ND		14	3.5	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5
Cobalt	ND		69	1.1	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5
Iron	**5300**		140	81	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5
Lead	ND		14	3.0	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5
Lithium	**6.0**	**J B**	69	4.0	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5

Client Sample ID: TW-TR2-C2 — Lab Sample ID: 140-27497-9

Date Collected: 05/11/22 14:00 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 54.6**

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	26	*1	21	3.4	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5
Molybdenum	5.1	J	55	2.3	mg/Kg	☼	06/08/22 08:00	06/10/22 12:12	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	300		18	2.9	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1
Arsenic	0.50	J	0.92	0.27	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1
Cobalt	1.1	J	4.6	0.084	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1
Iron	29000		9.2	5.3	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1
Lead	ND		0.92	0.20	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1
Lithium	0.44	J	4.6	0.27	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1
Manganese	100		1.4	0.46	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1
Molybdenum	59		3.7	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:16	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	18000		180	29	mg/Kg	☼	06/09/22 08:00	06/14/22 11:33	10
Arsenic	ND		1.8	0.48	mg/Kg	☼	06/09/22 08:00	06/13/22 16:10	2
Cobalt	1.7	J	9.2	0.095	mg/Kg	☼	06/09/22 08:00	06/13/22 16:10	2
Iron	6800		9.2	7.5	mg/Kg	☼	06/09/22 08:00	06/13/22 14:31	1
Lead	ND		1.8	0.40	mg/Kg	☼	06/09/22 08:00	06/13/22 16:10	2
Lithium	3.9	J	4.6	0.27	mg/Kg	☼	06/09/22 08:00	06/13/22 14:31	1
Manganese	23		1.4	0.20	mg/Kg	☼	06/09/22 08:00	06/13/22 14:31	1
Molybdenum	9.2		3.7	0.15	mg/Kg	☼	06/09/22 08:00	06/13/22 14:31	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	21000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	2.9		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	4.7		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	57000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	2.8		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	14		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	290		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	77		2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	16000		180	29	mg/Kg	☼	05/26/22 08:00	06/14/22 14:29	10
Arsenic	9.3		9.2	2.4	mg/Kg	☼	05/26/22 08:00	06/14/22 14:29	10
Cobalt	8.2	J	9.2	0.095	mg/Kg	☼	05/26/22 08:00	06/14/22 18:13	2
Iron	100000		92	75	mg/Kg	☼	05/26/22 08:00	06/14/22 14:29	10
Lead	6.8	J	9.2	2.0	mg/Kg	☼	05/26/22 08:00	06/14/22 14:29	10
Lithium	6.6		4.6	0.27	mg/Kg	☼	05/26/22 08:00	06/14/22 16:34	1
Manganese	510		1.4	0.20	mg/Kg	☼	05/26/22 08:00	06/14/22 16:34	1
Molybdenum	150		3.7	0.15	mg/Kg	☼	05/26/22 08:00	06/14/22 16:34	1

Client Sample Results

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: TW-TR2-C1 **Lab Sample ID: 140-27497-10**
Date Collected: 05/11/22 13:00 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 64.6**

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		62	9.9	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4
Arsenic	ND		3.1	0.80	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4
Cobalt	ND		15	0.28	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4
Iron	ND		31	18	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4
Lead	ND		3.1	0.68	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4
Lithium	ND		15	0.93	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4
Manganese	**0.24**	**J**	4.6	0.19	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4
Molybdenum	**1.1**	**J**	12	0.51	mg/Kg	☼	06/01/22 08:00	06/08/22 12:22	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**9.7**	**J**	46	7.4	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3
Arsenic	ND		2.3	0.60	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3
Cobalt	ND		12	0.29	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3
Iron	ND		23	13	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3
Lead	ND		2.3	0.51	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3
Lithium	**1.5**	**J**	12	0.70	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3
Manganese	**8.3**		3.5	1.3	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3
Molybdenum	ND		9.3	0.38	mg/Kg	☼	06/02/22 08:00	06/08/22 14:22	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	3.2	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1
Arsenic	ND		0.77	0.20	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1
Cobalt	ND		3.9	0.070	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1
Iron	ND		7.7	4.5	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1
Lead	ND		0.77	0.17	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1
Lithium	**0.61**	**J**	3.9	0.23	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1
Manganese	**1.9**	**B**	1.2	0.042	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1
Molybdenum	**0.14**	**J**	3.1	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 11:56	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8500**		15	2.5	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1
Arsenic	ND	L	0.77	0.34	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1
Cobalt	**4.8**		3.9	0.082	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1
Iron	**15000**		7.7	4.5	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1
Lead	**1.7**		0.77	0.17	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1
Lithium	**6.5**	**B**	3.9	0.23	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1
Manganese	**150**		1.2	0.20	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1
Molybdenum	**1.4**	**J**	3.1	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:52	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1500**		230	36	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5
Arsenic	ND		12	2.9	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5
Cobalt	**2.9**	**J**	58	0.93	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5
Iron	**700**		120	68	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5
Lead	ND		12	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5
Lithium	**8.4**	**J B**	58	3.4	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: TW-TR2-C1 Lab Sample ID: 140-27497-10

Date Collected: 05/11/22 13:00 Matrix: Solid
Date Received: 05/18/22 11:20 Percent Solids: 64.6

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	19	*1	17	2.9	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5
Molybdenum	4.8	J	46	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 12:17	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	3600		15	2.5	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1
Arsenic	47		0.77	0.23	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1
Cobalt	1.1	J	3.9	0.071	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1
Iron	19000		7.7	4.5	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1
Lead	7.8		0.77	0.17	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1
Lithium	1.3	J	3.9	0.23	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1
Manganese	21		1.2	0.39	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1
Molybdenum	10		3.1	0.15	mg/Kg	☼	06/08/22 08:00	06/10/22 14:21	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	18000		150	25	mg/Kg	☼	06/09/22 08:00	06/14/22 11:38	10
Arsenic	5.2		1.5	0.40	mg/Kg	☼	06/09/22 08:00	06/13/22 16:16	2
Cobalt	1.3	J	7.7	0.080	mg/Kg	☼	06/09/22 08:00	06/13/22 16:16	2
Iron	5000		7.7	6.3	mg/Kg	☼	06/09/22 08:00	06/13/22 14:36	1
Lead	1.1	J	1.5	0.34	mg/Kg	☼	06/09/22 08:00	06/13/22 16:16	2
Lithium	6.5		3.9	0.23	mg/Kg	☼	06/09/22 08:00	06/13/22 14:36	1
Manganese	7.4		1.2	0.17	mg/Kg	☼	06/09/22 08:00	06/13/22 14:36	1
Molybdenum	1.1	J	3.1	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:36	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	31000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	52		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	10		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	39000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	11		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	25		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	210		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	19		2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	15000		150	25	mg/Kg	☼	05/26/22 08:00	06/14/22 14:33	10
Arsenic	56		0.77	0.20	mg/Kg	☼	05/26/22 08:00	06/14/22 16:40	1
Cobalt	8.8		7.7	0.080	mg/Kg	☼	05/26/22 08:00	06/14/22 18:19	2
Iron	33000		7.7	6.3	mg/Kg	☼	05/26/22 08:00	06/14/22 16:40	1
Lead	12		0.77	0.17	mg/Kg	☼	05/26/22 08:00	06/14/22 16:40	1
Lithium	9.1		3.9	0.23	mg/Kg	☼	05/26/22 08:00	06/14/22 16:40	1
Manganese	160		1.2	0.17	mg/Kg	☼	05/26/22 08:00	06/14/22 16:40	1
Molybdenum	17		3.1	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:40	1

Client Sample Results

Client: Golder Associates Inc.
Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-213
Lab Sample ID: 140-27497-11
Date Collected: 05/12/22 12:40
Matrix: Solid
Date Received: 05/18/22 11:20
Percent Solids: 85.3

Method: 6010B SEP - SEP Metals (ICP) - Step 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		47	7.5	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4
Arsenic	ND		2.3	0.61	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4
Cobalt	**0.46**	**J**	12	0.21	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4
Iron	ND		23	14	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4
Lead	ND		2.3	0.52	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4
Lithium	ND		12	0.70	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4
Manganese	**10**		3.5	0.15	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4
Molybdenum	ND		9.4	0.38	mg/Kg	☼	06/01/22 08:00	06/08/22 12:27	4

Method: 6010B SEP - SEP Metals (ICP) - Step 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**15**	**J**	35	5.6	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3
Arsenic	ND		1.8	0.46	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3
Cobalt	**1.1**	**J**	8.8	0.22	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3
Iron	**580**		18	10	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3
Lead	**1.6**	**J**	1.8	0.39	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3
Lithium	**0.91**	**J**	8.8	0.53	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3
Manganese	**69**		2.6	0.98	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3
Molybdenum	ND		7.0	0.29	mg/Kg	☼	06/02/22 08:00	06/08/22 14:27	3

Method: 6010B SEP - SEP Metals (ICP) - Step 3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**87**		12	2.5	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1
Arsenic	**0.29**	**J**	0.59	0.15	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1
Cobalt	**0.96**	**J**	2.9	0.053	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1
Iron	**4900**		5.9	3.4	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1
Lead	ND		0.59	0.13	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1
Lithium	**0.34**	**J**	2.9	0.18	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1
Manganese	**130**	**B**	0.88	0.032	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1
Molybdenum	**0.11**	**J**	2.3	0.096	mg/Kg	☼	06/03/22 08:00	06/09/22 12:01	1

Method: 6010B SEP - SEP Metals (ICP) - Step 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1100**		12	1.9	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1
Arsenic	ND	L	0.59	0.26	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1
Cobalt	**2.4**	**J**	2.9	0.062	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1
Iron	**14000**		5.9	3.4	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1
Lead	**3.1**		0.59	0.13	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1
Lithium	**3.7**	**B**	2.9	0.18	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1
Manganese	**350**		0.88	0.15	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1
Molybdenum	ND		2.3	0.096	mg/Kg	☼	06/06/22 08:00	06/09/22 13:57	1

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**59**	**J**	180	28	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5
Arsenic	ND		8.8	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5
Cobalt	ND		44	0.70	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5
Iron	ND		88	52	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5
Lead	ND		8.8	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5
Lithium	**5.4**	**J B**	44	2.6	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5

Client Sample ID: MW-213 — Lab Sample ID: 140-27497-11

Date Collected: 05/12/22 12:40 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 85.3**

Method: 6010B SEP - SEP Metals (ICP) - Step 5 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	7.3	J *1	13	2.2	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5
Molybdenum	ND		35	1.5	mg/Kg	☼	06/08/22 08:00	06/10/22 12:22	5

Method: 6010B SEP - SEP Metals (ICP) - Step 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4200		12	1.9	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1
Arsenic	4.5		0.59	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1
Cobalt	2.5	J	2.9	0.054	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1
Iron	7700		5.9	3.4	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1
Lead	1.6		0.59	0.13	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1
Lithium	5.1		2.9	0.18	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1
Manganese	84		0.88	0.29	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1
Molybdenum	ND		2.3	0.12	mg/Kg	☼	06/08/22 08:00	06/10/22 14:27	1

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	40000		120	19	mg/Kg	☼	06/09/22 08:00	06/14/22 11:43	10
Arsenic	1.9		1.2	0.30	mg/Kg	☼	06/09/22 08:00	06/13/22 16:21	2
Cobalt	1.6	J	5.9	0.061	mg/Kg	☼	06/09/22 08:00	06/13/22 16:21	2
Iron	3700		5.9	4.8	mg/Kg	☼	06/09/22 08:00	06/13/22 14:41	1
Lead	2.1		1.2	0.26	mg/Kg	☼	06/09/22 08:00	06/13/22 16:21	2
Lithium	11		2.9	0.18	mg/Kg	☼	06/09/22 08:00	06/13/22 14:41	1
Manganese	34		0.88	0.13	mg/Kg	☼	06/09/22 08:00	06/13/22 14:41	1
Molybdenum	0.12	J	2.3	0.096	mg/Kg	☼	06/09/22 08:00	06/13/22 14:41	1

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	46000		10	1.6	mg/Kg			06/16/22 15:26	1
Arsenic	6.7		0.50	0.13	mg/Kg			06/16/22 15:26	1
Cobalt	9.1		2.5	0.023	mg/Kg			06/16/22 15:26	1
Iron	31000		5.0	4.1	mg/Kg			06/16/22 15:26	1
Lead	8.4		0.50	0.11	mg/Kg			06/16/22 15:26	1
Lithium	26		2.5	0.15	mg/Kg			06/16/22 15:26	1
Manganese	690		0.75	0.052	mg/Kg			06/16/22 15:26	1
Molybdenum	0.23	J	2.0	0.082	mg/Kg			06/16/22 15:26	1

Method: 6010B - SEP Metals (ICP) - Total

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	62000		120	19	mg/Kg	☼	05/26/22 08:00	06/14/22 14:38	10
Arsenic	6.2		0.59	0.15	mg/Kg	☼	05/26/22 08:00	06/14/22 16:45	1
Cobalt	9.3		5.9	0.061	mg/Kg	☼	05/26/22 08:00	06/14/22 18:24	2
Iron	19000		5.9	4.8	mg/Kg	☼	05/26/22 08:00	06/14/22 16:45	1
Lead	8.9		1.2	0.26	mg/Kg	☼	05/26/22 08:00	06/14/22 18:24	2
Lithium	21		2.9	0.18	mg/Kg	☼	05/26/22 08:00	06/14/22 16:45	1
Manganese	300		0.88	0.13	mg/Kg	☼	05/26/22 08:00	06/14/22 16:45	1
Molybdenum	0.40	J	2.3	0.096	mg/Kg	☼	05/26/22 08:00	06/14/22 16:45	1

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Method: 6010B SEP - SEP Metals (ICP) - Step 1
Prep: 3010A
SEP: Exchangeable

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.045	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.031	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 2
Prep: 3010A
SEP: Carbonate

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.063	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.28	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 3
Prep: 3010A
SEP: Non-Crystalline

Analyte	RL	MDL	Units
Aluminum	10	2.1	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.045	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.027	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 4
Prep: 3010A
SEP: Metal Hydroxide

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.22	mg/Kg
Cobalt	2.5	0.053	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.13	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 5
Prep: 3010A

Method: 6010B SEP - SEP Metals (ICP) - Step 5

Prep: 3010A
SEP: Organic-Bound

Analyte	RL	MDL	Units
Aluminum	30	4.7	mg/Kg
Arsenic	1.5	0.38	mg/Kg
Cobalt	7.5	0.12	mg/Kg
Iron	15	8.8	mg/Kg
Lead	1.5	0.33	mg/Kg
Lithium	7.5	0.44	mg/Kg
Manganese	2.3	0.37	mg/Kg
Molybdenum	6.0	0.25	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 6

SEP: Acid/Sulfide

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.15	mg/Kg
Cobalt	2.5	0.046	mg/Kg
Iron	5.0	2.9	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.25	mg/Kg
Molybdenum	2.0	0.099	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Step 7

Prep: Residual

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.026	mg/Kg
Iron	5.0	4.1	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.11	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B SEP - SEP Metals (ICP) - Sum of Steps 1-7

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.023	mg/Kg
Iron	5.0	4.1	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.052	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Method: 6010B - SEP Metals (ICP) - Total

Prep: Total

Analyte	RL	MDL	Units
Aluminum	10	1.6	mg/Kg
Arsenic	0.50	0.13	mg/Kg
Cobalt	2.5	0.026	mg/Kg

Method: 6010B - SEP Metals (ICP) - Total (Continued)

Prep: Total

Analyte	RL	MDL	Units
Iron	5.0	4.1	mg/Kg
Lead	0.50	0.11	mg/Kg
Lithium	2.5	0.15	mg/Kg
Manganese	0.75	0.11	mg/Kg
Molybdenum	2.0	0.082	mg/Kg

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Method: 6010B - SEP Metals (ICP) - Total

Lab Sample ID: MB 140-61991/17-A
Matrix: Solid
Analysis Batch: 62595

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 61991

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		05/26/22 08:00	06/14/22 14:53	1
Arsenic	ND		0.50	0.13	mg/Kg		05/26/22 08:00	06/14/22 14:53	1
Cobalt	ND		2.5	0.026	mg/Kg		05/26/22 08:00	06/14/22 14:53	1
Iron	ND		5.0	4.1	mg/Kg		05/26/22 08:00	06/14/22 14:53	1
Lead	ND		0.50	0.11	mg/Kg		05/26/22 08:00	06/14/22 14:53	1
Lithium	ND		2.5	0.15	mg/Kg		05/26/22 08:00	06/14/22 14:53	1
Manganese	ND		0.75	0.11	mg/Kg		05/26/22 08:00	06/14/22 14:53	1
Molybdenum	ND		2.0	0.082	mg/Kg		05/26/22 08:00	06/14/22 14:53	1

Lab Sample ID: LCS 140-61991/18-A
Matrix: Solid
Analysis Batch: 62595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61991

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	98.2		mg/Kg		98	80 - 120
Arsenic	5.00	5.31		mg/Kg		106	80 - 120
Cobalt	5.00	5.19		mg/Kg		104	80 - 125
Iron	50.0	51.9		mg/Kg		104	80 - 120
Lead	5.00	5.08		mg/Kg		102	80 - 120
Lithium	5.00	4.98		mg/Kg		100	80 - 120
Manganese	5.00	5.06		mg/Kg		101	80 - 120
Molybdenum	25.0	25.7		mg/Kg		103	80 - 125

Lab Sample ID: LCSD 140-61991/19-A
Matrix: Solid
Analysis Batch: 62595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 61991

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	97.3		mg/Kg		97	80 - 120	1	30
Arsenic	5.00	5.29		mg/Kg		106	80 - 120	0	30
Cobalt	5.00	5.17		mg/Kg		103	80 - 125	0	30
Iron	50.0	52.4		mg/Kg		105	80 - 120	1	30
Lead	5.00	5.07		mg/Kg		101	80 - 120	0	30
Lithium	5.00	4.98		mg/Kg		100	80 - 120	0	30
Manganese	5.00	5.06		mg/Kg		101	80 - 120	0	30
Molybdenum	25.0	25.7		mg/Kg		103	80 - 125	0	30

Method: 6010B SEP - SEP Metals (ICP)

Lab Sample ID: MB 140-61992/17-B ^4
Matrix: Solid
Analysis Batch: 62391

Client Sample ID: Method Blank
Prep Type: Step 1
Prep Batch: 62134

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		40	6.4	mg/Kg		06/01/22 08:00	06/08/22 10:43	4
Arsenic	ND		2.0	0.52	mg/Kg		06/01/22 08:00	06/08/22 10:43	4
Cobalt	ND		10	0.18	mg/Kg		06/01/22 08:00	06/08/22 10:43	4
Iron	ND		20	12	mg/Kg		06/01/22 08:00	06/08/22 10:43	4
Lead	0.592	J	2.0	0.44	mg/Kg		06/01/22 08:00	06/08/22 10:43	4

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: MB 140-61992/17-B ^4
Matrix: Solid
Analysis Batch: 62391

Client Sample ID: Method Blank
Prep Type: Step 1
Prep Batch: 62134

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		10	0.60	mg/Kg		06/01/22 08:00	06/08/22 10:43	4
Manganese	ND		3.0	0.12	mg/Kg		06/01/22 08:00	06/08/22 10:43	4
Molybdenum	ND		8.0	0.33	mg/Kg		06/01/22 08:00	06/08/22 10:43	4

Lab Sample ID: LCS 140-61992/18-B ^5
Matrix: Solid
Analysis Batch: 62391

Client Sample ID: Lab Control Sample
Prep Type: Step 1
Prep Batch: 62134

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	102		mg/Kg		102	80 - 120
Arsenic	5.00	5.07		mg/Kg		101	80 - 120
Cobalt	5.00	5.04	J	mg/Kg		101	80 - 120
Iron	50.0	50.8		mg/Kg		102	80 - 120
Lead	5.00	5.40		mg/Kg		108	80 - 120
Lithium	5.00	5.47	J	mg/Kg		109	80 - 120
Manganese	5.00	5.09		mg/Kg		102	80 - 120
Molybdenum	25.0	24.7		mg/Kg		99	80 - 120

Lab Sample ID: LCSD 140-61992/19-B ^5
Matrix: Solid
Analysis Batch: 62391

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 1
Prep Batch: 62134

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	99.3		mg/Kg		99	80 - 120	3	30
Arsenic	5.00	5.06		mg/Kg		101	80 - 120	0	30
Cobalt	5.00	5.19	J	mg/Kg		104	80 - 120	3	30
Iron	50.0	51.5		mg/Kg		103	80 - 120	1	30
Lead	5.00	5.46		mg/Kg		109	80 - 120	1	30
Lithium	5.00	5.39	J	mg/Kg		108	80 - 120	1	30
Manganese	5.00	5.21		mg/Kg		104	80 - 120	2	30
Molybdenum	25.0	25.2		mg/Kg		101	80 - 120	2	30

Lab Sample ID: MB 140-62135/17-B ^3
Matrix: Solid
Analysis Batch: 62391

Client Sample ID: Method Blank
Prep Type: Step 2
Prep Batch: 62164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		30	4.8	mg/Kg		06/02/22 08:00	06/08/22 12:41	3
Arsenic	ND		1.5	0.39	mg/Kg		06/02/22 08:00	06/08/22 12:41	3
Cobalt	ND		7.5	0.19	mg/Kg		06/02/22 08:00	06/08/22 12:41	3
Iron	ND		15	8.7	mg/Kg		06/02/22 08:00	06/08/22 12:41	3
Lead	ND		1.5	0.33	mg/Kg		06/02/22 08:00	06/08/22 12:41	3
Lithium	ND		7.5	0.45	mg/Kg		06/02/22 08:00	06/08/22 12:41	3
Manganese	ND		2.3	0.84	mg/Kg		06/02/22 08:00	06/08/22 12:41	3
Molybdenum	ND		6.0	0.25	mg/Kg		06/02/22 08:00	06/08/22 12:41	3

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCS 140-62135/18-B ^5 **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Step 2**
Analysis Batch: 62391 **Prep Batch: 62164**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	ND		mg/Kg		4	
Arsenic	5.00	3.61		mg/Kg		72	60 - 120
Cobalt	5.00	4.80	J	mg/Kg		96	80 - 120
Iron	50.0	ND		mg/Kg		3	
Lead	5.00	4.50		mg/Kg		90	70 - 120
Lithium	5.00	5.26	J	mg/Kg		105	80 - 120
Manganese	5.00	4.78		mg/Kg		96	80 - 120
Molybdenum	25.0	21.2		mg/Kg		85	70 - 120

Lab Sample ID: LCSD 140-62135/19-B ^5 **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Step 2**
Analysis Batch: 62391 **Prep Batch: 62164**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	ND		mg/Kg		3		4	
Arsenic	5.00	3.74		mg/Kg		75	60 - 120	4	30
Cobalt	5.00	4.72	J	mg/Kg		94	80 - 120	2	30
Iron	50.0	ND		mg/Kg		3		9	
Lead	5.00	4.74		mg/Kg		95	70 - 120	5	30
Lithium	5.00	4.90	J	mg/Kg		98	80 - 120	7	30
Manganese	5.00	4.76		mg/Kg		95	80 - 120	1	30
Molybdenum	25.0	21.2		mg/Kg		85	70 - 120	0	30

Lab Sample ID: MB 140-62165/17-B **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Step 3**
Analysis Batch: 62441 **Prep Batch: 62194**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	2.1	mg/Kg		06/03/22 08:00	06/09/22 10:19	1
Arsenic	ND		0.50	0.13	mg/Kg		06/03/22 08:00	06/09/22 10:19	1
Cobalt	ND		2.5	0.045	mg/Kg		06/03/22 08:00	06/09/22 10:19	1
Iron	ND		5.0	2.9	mg/Kg		06/03/22 08:00	06/09/22 10:19	1
Lead	ND		0.50	0.11	mg/Kg		06/03/22 08:00	06/09/22 10:19	1
Lithium	ND		2.5	0.15	mg/Kg		06/03/22 08:00	06/09/22 10:19	1
Manganese	0.0870	J	0.75	0.027	mg/Kg		06/03/22 08:00	06/09/22 10:19	1
Molybdenum	ND		2.0	0.082	mg/Kg		06/03/22 08:00	06/09/22 10:19	1

Lab Sample ID: LCS 140-62165/18-B **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Step 3**
Analysis Batch: 62441 **Prep Batch: 62194**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	102		mg/Kg		102	80 - 120
Arsenic	5.00	5.05		mg/Kg		101	80 - 120
Cobalt	5.00	5.14		mg/Kg		103	80 - 120
Iron	50.0	51.7		mg/Kg		103	80 - 120
Lead	5.00	0.143	J	mg/Kg		3	
Lithium	5.00	5.07		mg/Kg		101	80 - 120
Manganese	5.00	5.08		mg/Kg		102	80 - 120

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCS 140-62165/18-B **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Step 3**
Analysis Batch: 62441 **Prep Batch: 62194**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Molybdenum	25.0	25.2		mg/Kg		101	80 - 120

Lab Sample ID: LCSD 140-62165/19-B **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Step 3**
Analysis Batch: 62441 **Prep Batch: 62194**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	103		mg/Kg		103	80 - 120	1	30
Arsenic	5.00	5.11		mg/Kg		102	80 - 120	1	30
Cobalt	5.00	5.16		mg/Kg		103	80 - 120	0	30
Iron	50.0	52.2		mg/Kg		104	80 - 120	1	30
Lead	5.00	0.149	J	mg/Kg		3		4	
Lithium	5.00	5.08		mg/Kg		102	80 - 120	0	30
Manganese	5.00	5.05		mg/Kg		101	80 - 120	1	30
Molybdenum	25.0	25.5		mg/Kg		102	80 - 120	1	30

Lab Sample ID: MB 140-62195/17-B **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Step 4**
Analysis Batch: 62441 **Prep Batch: 62239**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		06/06/22 08:00	06/09/22 12:15	1
Arsenic	ND		0.50	0.22	mg/Kg		06/06/22 08:00	06/09/22 12:15	1
Cobalt	ND		2.5	0.053	mg/Kg		06/06/22 08:00	06/09/22 12:15	1
Iron	ND		5.0	2.9	mg/Kg		06/06/22 08:00	06/09/22 12:15	1
Lead	ND		0.50	0.11	mg/Kg		06/06/22 08:00	06/09/22 12:15	1
Lithium	0.166	J	2.5	0.15	mg/Kg		06/06/22 08:00	06/09/22 12:15	1
Manganese	ND		0.75	0.13	mg/Kg		06/06/22 08:00	06/09/22 12:15	1
Molybdenum	ND		2.0	0.082	mg/Kg		06/06/22 08:00	06/09/22 12:15	1

Lab Sample ID: LCS 140-62195/18-B **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Step 4**
Analysis Batch: 62441 **Prep Batch: 62239**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	107		mg/Kg		107	80 - 120
Arsenic	5.00	5.45		mg/Kg		109	80 - 130
Cobalt	5.00	5.35		mg/Kg		107	80 - 120
Iron	50.0	54.3		mg/Kg		109	80 - 120
Lead	5.00	5.17		mg/Kg		103	80 - 120
Lithium	5.00	5.37		mg/Kg		107	80 - 120
Manganese	5.00	5.19		mg/Kg		104	80 - 120
Molybdenum	25.0	27.2		mg/Kg		109	80 - 120

Lab Sample ID: LCSD 140-62195/19-B **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Step 4**
Analysis Batch: 62441 **Prep Batch: 62239**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	103		mg/Kg		103	80 - 120	4	30

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCSD 140-62195/19-B **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Step 4**
Analysis Batch: 62441 **Prep Batch: 62239**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	5.00	5.21		mg/Kg		104	80 - 130	5	30
Cobalt	5.00	5.13		mg/Kg		103	80 - 120	4	30
Iron	50.0	52.0		mg/Kg		104	80 - 120	4	30
Lead	5.00	4.89		mg/Kg		98	80 - 120	5	30
Lithium	5.00	5.10		mg/Kg		102	80 - 120	5	30
Manganese	5.00	4.96		mg/Kg		99	80 - 120	4	30
Molybdenum	25.0	26.1		mg/Kg		105	80 - 120	4	30

Lab Sample ID: MB 140-62240/17-B ^5 **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Step 5**
Analysis Batch: 62493 **Prep Batch: 62350**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		150	24	mg/Kg		06/08/22 08:00	06/10/22 10:11	5
Arsenic	ND		7.5	1.9	mg/Kg		06/08/22 08:00	06/10/22 10:11	5
Cobalt	ND		38	0.60	mg/Kg		06/08/22 08:00	06/10/22 10:11	5
Iron	ND		75	44	mg/Kg		06/08/22 08:00	06/10/22 10:11	5
Lead	ND		7.5	1.7	mg/Kg		06/08/22 08:00	06/10/22 10:11	5
Lithium	5.22	J	38	2.2	mg/Kg		06/08/22 08:00	06/10/22 10:11	5
Manganese	ND		11	1.9	mg/Kg		06/08/22 08:00	06/10/22 10:11	5
Molybdenum	ND		30	1.3	mg/Kg		06/08/22 08:00	06/10/22 10:11	5

Lab Sample ID: LCS 140-62240/18-B ^5 **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Step 5**
Analysis Batch: 62493 **Prep Batch: 62350**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	300	ND		mg/Kg		5	
Arsenic	15.0	10.9		mg/Kg		73	60 - 100
Cobalt	15.0	ND		mg/Kg		3	1 - 60
Iron	150	ND		mg/Kg		2	
Lead	15.0	8.02		mg/Kg		53	40 - 80
Lithium	15.0	20.3	J	mg/Kg		135	80 - 150
Manganese	15.0	2.48	J	mg/Kg		17	1 - 60
Molybdenum	75.0	54.8		mg/Kg		73	60 - 100

Lab Sample ID: LCSD 140-62240/19-B ^5 **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Step 5**
Analysis Batch: 62493 **Prep Batch: 62350**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	300	28.6	J	mg/Kg		10		67	
Arsenic	15.0	10.4		mg/Kg		69	60 - 100	5	30
Cobalt	15.0	ND		mg/Kg		3	1 - 60	8	30
Iron	150	ND		mg/Kg		-0.2		244	
Lead	15.0	8.11		mg/Kg		54	40 - 80	1	30
Lithium	15.0	21.4	J	mg/Kg		142	80 - 150	5	30
Manganese	15.0	3.62	J *1	mg/Kg		24	1 - 60	37	30
Molybdenum	75.0	55.9		mg/Kg		75	60 - 100	2	30

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: MB 140-62351/17-A
Matrix: Solid
Analysis Batch: 62493

Client Sample ID: Method Blank
Prep Type: Step 6
Prep Batch: 62351

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		06/08/22 08:00	06/10/22 12:37	1
Arsenic	ND		0.50	0.15	mg/Kg		06/08/22 08:00	06/10/22 12:37	1
Cobalt	ND		2.5	0.046	mg/Kg		06/08/22 08:00	06/10/22 12:37	1
Iron	ND		5.0	2.9	mg/Kg		06/08/22 08:00	06/10/22 12:37	1
Lead	ND		0.50	0.11	mg/Kg		06/08/22 08:00	06/10/22 12:37	1
Lithium	ND		2.5	0.15	mg/Kg		06/08/22 08:00	06/10/22 12:37	1
Manganese	ND		0.75	0.25	mg/Kg		06/08/22 08:00	06/10/22 12:37	1
Molybdenum	ND		2.0	0.099	mg/Kg		06/08/22 08:00	06/10/22 12:37	1

Lab Sample ID: LCS 140-62351/18-A
Matrix: Solid
Analysis Batch: 62493

Client Sample ID: Lab Control Sample
Prep Type: Step 6
Prep Batch: 62351

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	97.2		mg/Kg		97	80 - 120
Arsenic	5.00	5.03		mg/Kg		101	80 - 120
Cobalt	5.00	4.90		mg/Kg		98	80 - 120
Iron	50.0	49.0		mg/Kg		98	80 - 120
Lead	5.00	4.81		mg/Kg		96	80 - 120
Lithium	5.00	4.79		mg/Kg		96	80 - 120
Manganese	5.00	4.94		mg/Kg		99	80 - 120
Molybdenum	25.0	24.1		mg/Kg		96	80 - 120

Lab Sample ID: LCSD 140-62351/19-A
Matrix: Solid
Analysis Batch: 62493

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 6
Prep Batch: 62351

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	102		mg/Kg		102	80 - 120	4	30
Arsenic	5.00	5.09		mg/Kg		102	80 - 120	1	30
Cobalt	5.00	4.98		mg/Kg		100	80 - 120	2	30
Iron	50.0	50.7		mg/Kg		101	80 - 120	3	30
Lead	5.00	4.97		mg/Kg		99	80 - 120	3	30
Lithium	5.00	4.99		mg/Kg		100	80 - 120	4	30
Manganese	5.00	5.00		mg/Kg		100	80 - 120	1	30
Molybdenum	25.0	24.8		mg/Kg		99	80 - 120	3	30

Lab Sample ID: MB 140-62386/17-A
Matrix: Solid
Analysis Batch: 62545

Client Sample ID: Method Blank
Prep Type: Step 7
Prep Batch: 62386

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.13	mg/Kg		06/09/22 08:00	06/13/22 12:55	1
Cobalt	ND		2.5	0.026	mg/Kg		06/09/22 08:00	06/13/22 12:55	1
Lead	ND		0.50	0.11	mg/Kg		06/09/22 08:00	06/13/22 12:55	1
Manganese	ND		0.75	0.11	mg/Kg		06/09/22 08:00	06/13/22 12:55	1
Molybdenum	ND		2.0	0.082	mg/Kg		06/09/22 08:00	06/13/22 12:55	1

QC Sample Results

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: MB 140-62386/17-A
Matrix: Solid
Analysis Batch: 62595

Client Sample ID: Method Blank
Prep Type: Step 7
Prep Batch: 62386

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10	1.6	mg/Kg		06/09/22 08:00	06/14/22 11:57	1
Arsenic	ND		0.50	0.13	mg/Kg		06/09/22 08:00	06/14/22 11:57	1
Cobalt	ND		2.5	0.026	mg/Kg		06/09/22 08:00	06/14/22 11:57	1
Iron	ND		5.0	4.1	mg/Kg		06/09/22 08:00	06/14/22 11:57	1
Lead	ND		0.50	0.11	mg/Kg		06/09/22 08:00	06/14/22 11:57	1
Lithium	ND		2.5	0.15	mg/Kg		06/09/22 08:00	06/14/22 11:57	1
Manganese	ND		0.75	0.11	mg/Kg		06/09/22 08:00	06/14/22 11:57	1
Molybdenum	ND		2.0	0.082	mg/Kg		06/09/22 08:00	06/14/22 11:57	1

Lab Sample ID: LCS 140-62386/18-A
Matrix: Solid
Analysis Batch: 62545

Client Sample ID: Lab Control Sample
Prep Type: Step 7
Prep Batch: 62386

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	5.00	5.28		mg/Kg		106	80 - 120
Cobalt	5.00	5.30		mg/Kg		106	80 - 125
Lead	5.00	5.15		mg/Kg		103	80 - 120
Manganese	5.00	5.24		mg/Kg		105	80 - 120
Molybdenum	25.0	26.5		mg/Kg		106	80 - 125

Lab Sample ID: LCS 140-62386/18-A
Matrix: Solid
Analysis Batch: 62595

Client Sample ID: Lab Control Sample
Prep Type: Step 7
Prep Batch: 62386

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	98.1		mg/Kg		98	80 - 120
Arsenic	5.00	5.23		mg/Kg		105	80 - 120
Cobalt	5.00	5.18		mg/Kg		104	80 - 125
Iron	50.0	51.4		mg/Kg		103	80 - 120
Lead	5.00	5.18		mg/Kg		104	80 - 120
Lithium	5.00	5.08		mg/Kg		102	80 - 120
Manganese	5.00	5.11		mg/Kg		102	80 - 120
Molybdenum	25.0	25.4		mg/Kg		101	80 - 125

Lab Sample ID: LCSD 140-62386/19-A
Matrix: Solid
Analysis Batch: 62545

Client Sample ID: Lab Control Sample Dup
Prep Type: Step 7
Prep Batch: 62386

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	5.00	5.34		mg/Kg		107	80 - 120	1	30
Cobalt	5.00	5.32		mg/Kg		106	80 - 125	0	30
Lead	5.00	5.19		mg/Kg		104	80 - 120	1	30
Manganese	5.00	5.16		mg/Kg		103	80 - 120	1	30
Molybdenum	25.0	26.6		mg/Kg		107	80 - 125	0	30

Method: 6010B SEP - SEP Metals (ICP) (Continued)

Lab Sample ID: LCSD 140-62386/19-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Step 7
Analysis Batch: 62595
Prep Batch: 62386

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	100	98.0		mg/Kg		98	80 - 120	0	30
Arsenic	5.00	5.27		mg/Kg		105	80 - 120	1	30
Cobalt	5.00	5.17		mg/Kg		103	80 - 125	0	30
Iron	50.0	50.9		mg/Kg		102	80 - 120	1	30
Lead	5.00	5.12		mg/Kg		102	80 - 120	1	30
Lithium	5.00	5.03		mg/Kg		101	80 - 120	1	30
Manganese	5.00	5.05		mg/Kg		101	80 - 120	1	30
Molybdenum	25.0	25.3		mg/Kg		101	80 - 125	0	30

QC Association Summary

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Metals

Prep Batch: 61991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Total/NA	Solid	Total	
140-27497-2	MW-212	Total/NA	Solid	Total	
140-27497-3	TW-TR2	Total/NA	Solid	Total	
140-27497-4	MW-210	Total/NA	Solid	Total	
140-27497-5	BH-1	Total/NA	Solid	Total	
140-27497-6	MW-214	Total/NA	Solid	Total	
140-27497-7	MW-211-0-5FT	Total/NA	Solid	Total	
140-27497-8	MW-211-14-25FT	Total/NA	Solid	Total	
140-27497-9	TW-TR2-C2	Total/NA	Solid	Total	
140-27497-10	TW-TR2-C1	Total/NA	Solid	Total	
140-27497-11	MW-213	Total/NA	Solid	Total	
MB 140-61991/17-A	Method Blank	Total/NA	Solid	Total	
LCS 140-61991/18-A	Lab Control Sample	Total/NA	Solid	Total	
LCSD 140-61991/19-A	Lab Control Sample Dup	Total/NA	Solid	Total	

SEP Batch: 61992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 1	Solid	Exchangeable	
140-27497-2	MW-212	Step 1	Solid	Exchangeable	
140-27497-3	TW-TR2	Step 1	Solid	Exchangeable	
140-27497-4	MW-210	Step 1	Solid	Exchangeable	
140-27497-5	BH-1	Step 1	Solid	Exchangeable	
140-27497-6	MW-214	Step 1	Solid	Exchangeable	
140-27497-7	MW-211-0-5FT	Step 1	Solid	Exchangeable	
140-27497-8	MW-211-14-25FT	Step 1	Solid	Exchangeable	
140-27497-9	TW-TR2-C2	Step 1	Solid	Exchangeable	
140-27497-10	TW-TR2-C1	Step 1	Solid	Exchangeable	
140-27497-11	MW-213	Step 1	Solid	Exchangeable	
MB 140-61992/17-B ^4	Method Blank	Step 1	Solid	Exchangeable	
LCS 140-61992/18-B ^5	Lab Control Sample	Step 1	Solid	Exchangeable	
LCSD 140-61992/19-B ^5	Lab Control Sample Dup	Step 1	Solid	Exchangeable	

Prep Batch: 62134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 1	Solid	3010A	61992
140-27497-2	MW-212	Step 1	Solid	3010A	61992
140-27497-3	TW-TR2	Step 1	Solid	3010A	61992
140-27497-4	MW-210	Step 1	Solid	3010A	61992
140-27497-5	BH-1	Step 1	Solid	3010A	61992
140-27497-6	MW-214	Step 1	Solid	3010A	61992
140-27497-7	MW-211-0-5FT	Step 1	Solid	3010A	61992
140-27497-8	MW-211-14-25FT	Step 1	Solid	3010A	61992
140-27497-9	TW-TR2-C2	Step 1	Solid	3010A	61992
140-27497-10	TW-TR2-C1	Step 1	Solid	3010A	61992
140-27497-11	MW-213	Step 1	Solid	3010A	61992
MB 140-61992/17-B ^4	Method Blank	Step 1	Solid	3010A	61992
LCS 140-61992/18-B ^5	Lab Control Sample	Step 1	Solid	3010A	61992
LCSD 140-61992/19-B ^5	Lab Control Sample Dup	Step 1	Solid	3010A	61992

Metals

SEP Batch: 62135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 2	Solid	Carbonate	
140-27497-2	MW-212	Step 2	Solid	Carbonate	
140-27497-3	TW-TR2	Step 2	Solid	Carbonate	
140-27497-4	MW-210	Step 2	Solid	Carbonate	
140-27497-5	BH-1	Step 2	Solid	Carbonate	
140-27497-6	MW-214	Step 2	Solid	Carbonate	
140-27497-7	MW-211-0-5FT	Step 2	Solid	Carbonate	
140-27497-8	MW-211-14-25FT	Step 2	Solid	Carbonate	
140-27497-9	TW-TR2-C2	Step 2	Solid	Carbonate	
140-27497-10	TW-TR2-C1	Step 2	Solid	Carbonate	
140-27497-11	MW-213	Step 2	Solid	Carbonate	
MB 140-62135/17-B ^3	Method Blank	Step 2	Solid	Carbonate	
LCS 140-62135/18-B ^5	Lab Control Sample	Step 2	Solid	Carbonate	
LCSD 140-62135/19-B ^5	Lab Control Sample Dup	Step 2	Solid	Carbonate	

Prep Batch: 62164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 2	Solid	3010A	62135
140-27497-2	MW-212	Step 2	Solid	3010A	62135
140-27497-3	TW-TR2	Step 2	Solid	3010A	62135
140-27497-4	MW-210	Step 2	Solid	3010A	62135
140-27497-5	BH-1	Step 2	Solid	3010A	62135
140-27497-6	MW-214	Step 2	Solid	3010A	62135
140-27497-7	MW-211-0-5FT	Step 2	Solid	3010A	62135
140-27497-8	MW-211-14-25FT	Step 2	Solid	3010A	62135
140-27497-9	TW-TR2-C2	Step 2	Solid	3010A	62135
140-27497-10	TW-TR2-C1	Step 2	Solid	3010A	62135
140-27497-11	MW-213	Step 2	Solid	3010A	62135
MB 140-62135/17-B ^3	Method Blank	Step 2	Solid	3010A	62135
LCS 140-62135/18-B ^5	Lab Control Sample	Step 2	Solid	3010A	62135
LCSD 140-62135/19-B ^5	Lab Control Sample Dup	Step 2	Solid	3010A	62135

SEP Batch: 62165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 3	Solid	Non-Crystalline	
140-27497-2	MW-212	Step 3	Solid	Non-Crystalline	
140-27497-3	TW-TR2	Step 3	Solid	Non-Crystalline	
140-27497-4	MW-210	Step 3	Solid	Non-Crystalline	
140-27497-5	BH-1	Step 3	Solid	Non-Crystalline	
140-27497-6	MW-214	Step 3	Solid	Non-Crystalline	
140-27497-7	MW-211-0-5FT	Step 3	Solid	Non-Crystalline	
140-27497-8	MW-211-14-25FT	Step 3	Solid	Non-Crystalline	
140-27497-9	TW-TR2-C2	Step 3	Solid	Non-Crystalline	
140-27497-10	TW-TR2-C1	Step 3	Solid	Non-Crystalline	
140-27497-11	MW-213	Step 3	Solid	Non-Crystalline	
MB 140-62165/17-B	Method Blank	Step 3	Solid	Non-Crystalline	
LCS 140-62165/18-B	Lab Control Sample	Step 3	Solid	Non-Crystalline	
LCSD 140-62165/19-B	Lab Control Sample Dup	Step 3	Solid	Non-Crystalline	

Metals

Prep Batch: 62194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 3	Solid	3010A	62165
140-27497-2	MW-212	Step 3	Solid	3010A	62165
140-27497-3	TW-TR2	Step 3	Solid	3010A	62165
140-27497-4	MW-210	Step 3	Solid	3010A	62165
140-27497-5	BH-1	Step 3	Solid	3010A	62165
140-27497-6	MW-214	Step 3	Solid	3010A	62165
140-27497-7	MW-211-0-5FT	Step 3	Solid	3010A	62165
140-27497-8	MW-211-14-25FT	Step 3	Solid	3010A	62165
140-27497-9	TW-TR2-C2	Step 3	Solid	3010A	62165
140-27497-10	TW-TR2-C1	Step 3	Solid	3010A	62165
140-27497-11	MW-213	Step 3	Solid	3010A	62165
MB 140-62165/17-B	Method Blank	Step 3	Solid	3010A	62165
LCS 140-62165/18-B	Lab Control Sample	Step 3	Solid	3010A	62165
LCSD 140-62165/19-B	Lab Control Sample Dup	Step 3	Solid	3010A	62165

SEP Batch: 62195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 4	Solid	Metal Hydroxide	
140-27497-2	MW-212	Step 4	Solid	Metal Hydroxide	
140-27497-3	TW-TR2	Step 4	Solid	Metal Hydroxide	
140-27497-4	MW-210	Step 4	Solid	Metal Hydroxide	
140-27497-5	BH-1	Step 4	Solid	Metal Hydroxide	
140-27497-6	MW-214	Step 4	Solid	Metal Hydroxide	
140-27497-7	MW-211-0-5FT	Step 4	Solid	Metal Hydroxide	
140-27497-8	MW-211-14-25FT	Step 4	Solid	Metal Hydroxide	
140-27497-9	TW-TR2-C2	Step 4	Solid	Metal Hydroxide	
140-27497-10	TW-TR2-C1	Step 4	Solid	Metal Hydroxide	
140-27497-11	MW-213	Step 4	Solid	Metal Hydroxide	
MB 140-62195/17-B	Method Blank	Step 4	Solid	Metal Hydroxide	
LCS 140-62195/18-B	Lab Control Sample	Step 4	Solid	Metal Hydroxide	
LCSD 140-62195/19-B	Lab Control Sample Dup	Step 4	Solid	Metal Hydroxide	

Prep Batch: 62239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 4	Solid	3010A	62195
140-27497-2	MW-212	Step 4	Solid	3010A	62195
140-27497-3	TW-TR2	Step 4	Solid	3010A	62195
140-27497-4	MW-210	Step 4	Solid	3010A	62195
140-27497-5	BH-1	Step 4	Solid	3010A	62195
140-27497-6	MW-214	Step 4	Solid	3010A	62195
140-27497-7	MW-211-0-5FT	Step 4	Solid	3010A	62195
140-27497-8	MW-211-14-25FT	Step 4	Solid	3010A	62195
140-27497-9	TW-TR2-C2	Step 4	Solid	3010A	62195
140-27497-10	TW-TR2-C1	Step 4	Solid	3010A	62195
140-27497-11	MW-213	Step 4	Solid	3010A	62195
MB 140-62195/17-B	Method Blank	Step 4	Solid	3010A	62195
LCS 140-62195/18-B	Lab Control Sample	Step 4	Solid	3010A	62195
LCSD 140-62195/19-B	Lab Control Sample Dup	Step 4	Solid	3010A	62195

Metals

SEP Batch: 62240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 5	Solid	Organic-Bound	
140-27497-2	MW-212	Step 5	Solid	Organic-Bound	
140-27497-3	TW-TR2	Step 5	Solid	Organic-Bound	
140-27497-4	MW-210	Step 5	Solid	Organic-Bound	
140-27497-5	BH-1	Step 5	Solid	Organic-Bound	
140-27497-6	MW-214	Step 5	Solid	Organic-Bound	
140-27497-7	MW-211-0-5FT	Step 5	Solid	Organic-Bound	
140-27497-8	MW-211-14-25FT	Step 5	Solid	Organic-Bound	
140-27497-9	TW-TR2-C2	Step 5	Solid	Organic-Bound	
140-27497-10	TW-TR2-C1	Step 5	Solid	Organic-Bound	
140-27497-11	MW-213	Step 5	Solid	Organic-Bound	
MB 140-62240/17-B ^5	Method Blank	Step 5	Solid	Organic-Bound	
LCS 140-62240/18-B ^5	Lab Control Sample	Step 5	Solid	Organic-Bound	
LCSD 140-62240/19-B ^5	Lab Control Sample Dup	Step 5	Solid	Organic-Bound	

Prep Batch: 62350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 5	Solid	3010A	62240
140-27497-2	MW-212	Step 5	Solid	3010A	62240
140-27497-3	TW-TR2	Step 5	Solid	3010A	62240
140-27497-4	MW-210	Step 5	Solid	3010A	62240
140-27497-5	BH-1	Step 5	Solid	3010A	62240
140-27497-6	MW-214	Step 5	Solid	3010A	62240
140-27497-7	MW-211-0-5FT	Step 5	Solid	3010A	62240
140-27497-8	MW-211-14-25FT	Step 5	Solid	3010A	62240
140-27497-9	TW-TR2-C2	Step 5	Solid	3010A	62240
140-27497-10	TW-TR2-C1	Step 5	Solid	3010A	62240
140-27497-11	MW-213	Step 5	Solid	3010A	62240
MB 140-62240/17-B ^5	Method Blank	Step 5	Solid	3010A	62240
LCS 140-62240/18-B ^5	Lab Control Sample	Step 5	Solid	3010A	62240
LCSD 140-62240/19-B ^5	Lab Control Sample Dup	Step 5	Solid	3010A	62240

SEP Batch: 62351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 6	Solid	Acid/Sulfide	
140-27497-2	MW-212	Step 6	Solid	Acid/Sulfide	
140-27497-3	TW-TR2	Step 6	Solid	Acid/Sulfide	
140-27497-4	MW-210	Step 6	Solid	Acid/Sulfide	
140-27497-5	BH-1	Step 6	Solid	Acid/Sulfide	
140-27497-6	MW-214	Step 6	Solid	Acid/Sulfide	
140-27497-7	MW-211-0-5FT	Step 6	Solid	Acid/Sulfide	
140-27497-8	MW-211-14-25FT	Step 6	Solid	Acid/Sulfide	
140-27497-9	TW-TR2-C2	Step 6	Solid	Acid/Sulfide	
140-27497-10	TW-TR2-C1	Step 6	Solid	Acid/Sulfide	
140-27497-11	MW-213	Step 6	Solid	Acid/Sulfide	
MB 140-62351/17-A	Method Blank	Step 6	Solid	Acid/Sulfide	
LCS 140-62351/18-A	Lab Control Sample	Step 6	Solid	Acid/Sulfide	
LCSD 140-62351/19-A	Lab Control Sample Dup	Step 6	Solid	Acid/Sulfide	

QC Association Summary

Client: Golder Associates Inc.
Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Metals

Prep Batch: 62386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 7	Solid	Residual	
140-27497-2	MW-212	Step 7	Solid	Residual	
140-27497-3	TW-TR2	Step 7	Solid	Residual	
140-27497-4	MW-210	Step 7	Solid	Residual	
140-27497-5	BH-1	Step 7	Solid	Residual	
140-27497-6	MW-214	Step 7	Solid	Residual	
140-27497-7	MW-211-0-5FT	Step 7	Solid	Residual	
140-27497-8	MW-211-14-25FT	Step 7	Solid	Residual	
140-27497-9	TW-TR2-C2	Step 7	Solid	Residual	
140-27497-10	TW-TR2-C1	Step 7	Solid	Residual	
140-27497-11	MW-213	Step 7	Solid	Residual	
MB 140-62386/17-A	Method Blank	Step 7	Solid	Residual	
LCS 140-62386/18-A	Lab Control Sample	Step 7	Solid	Residual	
LCSD 140-62386/19-A	Lab Control Sample Dup	Step 7	Solid	Residual	

Analysis Batch: 62391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 1	Solid	6010B SEP	62134
140-27497-1	MW-212-C	Step 2	Solid	6010B SEP	62164
140-27497-2	MW-212	Step 1	Solid	6010B SEP	62134
140-27497-2	MW-212	Step 2	Solid	6010B SEP	62164
140-27497-3	TW-TR2	Step 1	Solid	6010B SEP	62134
140-27497-3	TW-TR2	Step 2	Solid	6010B SEP	62164
140-27497-4	MW-210	Step 1	Solid	6010B SEP	62134
140-27497-4	MW-210	Step 2	Solid	6010B SEP	62164
140-27497-5	BH-1	Step 1	Solid	6010B SEP	62134
140-27497-5	BH-1	Step 2	Solid	6010B SEP	62164
140-27497-6	MW-214	Step 1	Solid	6010B SEP	62134
140-27497-6	MW-214	Step 2	Solid	6010B SEP	62164
140-27497-7	MW-211-0-5FT	Step 1	Solid	6010B SEP	62134
140-27497-7	MW-211-0-5FT	Step 2	Solid	6010B SEP	62164
140-27497-8	MW-211-14-25FT	Step 1	Solid	6010B SEP	62134
140-27497-8	MW-211-14-25FT	Step 2	Solid	6010B SEP	62164
140-27497-9	TW-TR2-C2	Step 1	Solid	6010B SEP	62134
140-27497-9	TW-TR2-C2	Step 2	Solid	6010B SEP	62164
140-27497-10	TW-TR2-C1	Step 1	Solid	6010B SEP	62134
140-27497-10	TW-TR2-C1	Step 2	Solid	6010B SEP	62164
140-27497-11	MW-213	Step 1	Solid	6010B SEP	62134
140-27497-11	MW-213	Step 2	Solid	6010B SEP	62164
MB 140-61992/17-B ^4	Method Blank	Step 1	Solid	6010B SEP	62134
MB 140-62135/17-B ^3	Method Blank	Step 2	Solid	6010B SEP	62164
LCS 140-61992/18-B ^5	Lab Control Sample	Step 1	Solid	6010B SEP	62134
LCS 140-62135/18-B ^5	Lab Control Sample	Step 2	Solid	6010B SEP	62164
LCSD 140-61992/19-B ^5	Lab Control Sample Dup	Step 1	Solid	6010B SEP	62134
LCSD 140-62135/19-B ^5	Lab Control Sample Dup	Step 2	Solid	6010B SEP	62164

Analysis Batch: 62441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 3	Solid	6010B SEP	62194
140-27497-1	MW-212-C	Step 4	Solid	6010B SEP	62239
140-27497-2	MW-212	Step 3	Solid	6010B SEP	62194

Metals (Continued)

Analysis Batch: 62441 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-2	MW-212	Step 4	Solid	6010B SEP	62239
140-27497-3	TW-TR2	Step 3	Solid	6010B SEP	62194
140-27497-3	TW-TR2	Step 4	Solid	6010B SEP	62239
140-27497-4	MW-210	Step 3	Solid	6010B SEP	62194
140-27497-4	MW-210	Step 4	Solid	6010B SEP	62239
140-27497-5	BH-1	Step 3	Solid	6010B SEP	62194
140-27497-5	BH-1	Step 4	Solid	6010B SEP	62239
140-27497-6	MW-214	Step 3	Solid	6010B SEP	62194
140-27497-6	MW-214	Step 4	Solid	6010B SEP	62239
140-27497-7	MW-211-0-5FT	Step 3	Solid	6010B SEP	62194
140-27497-7	MW-211-0-5FT	Step 4	Solid	6010B SEP	62239
140-27497-8	MW-211-14-25FT	Step 3	Solid	6010B SEP	62194
140-27497-8	MW-211-14-25FT	Step 4	Solid	6010B SEP	62239
140-27497-9	TW-TR2-C2	Step 3	Solid	6010B SEP	62194
140-27497-9	TW-TR2-C2	Step 4	Solid	6010B SEP	62239
140-27497-10	TW-TR2-C1	Step 3	Solid	6010B SEP	62194
140-27497-10	TW-TR2-C1	Step 4	Solid	6010B SEP	62239
140-27497-11	MW-213	Step 3	Solid	6010B SEP	62194
140-27497-11	MW-213	Step 4	Solid	6010B SEP	62239
MB 140-62165/17-B	Method Blank	Step 3	Solid	6010B SEP	62194
MB 140-62195/17-B	Method Blank	Step 4	Solid	6010B SEP	62239
LCS 140-62165/18-B	Lab Control Sample	Step 3	Solid	6010B SEP	62194
LCS 140-62195/18-B	Lab Control Sample	Step 4	Solid	6010B SEP	62239
LCSD 140-62165/19-B	Lab Control Sample Dup	Step 3	Solid	6010B SEP	62194
LCSD 140-62195/19-B	Lab Control Sample Dup	Step 4	Solid	6010B SEP	62239

Analysis Batch: 62493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 5	Solid	6010B SEP	62350
140-27497-1	MW-212-C	Step 6	Solid	6010B SEP	62351
140-27497-2	MW-212	Step 5	Solid	6010B SEP	62350
140-27497-2	MW-212	Step 6	Solid	6010B SEP	62351
140-27497-3	TW-TR2	Step 5	Solid	6010B SEP	62350
140-27497-3	TW-TR2	Step 6	Solid	6010B SEP	62351
140-27497-4	MW-210	Step 5	Solid	6010B SEP	62350
140-27497-4	MW-210	Step 6	Solid	6010B SEP	62351
140-27497-5	BH-1	Step 5	Solid	6010B SEP	62350
140-27497-5	BH-1	Step 6	Solid	6010B SEP	62351
140-27497-6	MW-214	Step 5	Solid	6010B SEP	62350
140-27497-6	MW-214	Step 6	Solid	6010B SEP	62351
140-27497-7	MW-211-0-5FT	Step 5	Solid	6010B SEP	62350
140-27497-7	MW-211-0-5FT	Step 6	Solid	6010B SEP	62351
140-27497-8	MW-211-14-25FT	Step 5	Solid	6010B SEP	62350
140-27497-8	MW-211-14-25FT	Step 6	Solid	6010B SEP	62351
140-27497-9	TW-TR2-C2	Step 5	Solid	6010B SEP	62350
140-27497-9	TW-TR2-C2	Step 6	Solid	6010B SEP	62351
140-27497-10	TW-TR2-C1	Step 5	Solid	6010B SEP	62350
140-27497-10	TW-TR2-C1	Step 6	Solid	6010B SEP	62351
140-27497-11	MW-213	Step 5	Solid	6010B SEP	62350
140-27497-11	MW-213	Step 6	Solid	6010B SEP	62351
MB 140-62240/17-B ^5	Method Blank	Step 5	Solid	6010B SEP	62350

Metals (Continued)

Analysis Batch: 62493 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 140-62351/17-A	Method Blank	Step 6	Solid	6010B SEP	62351
LCS 140-62240/18-B ^5	Lab Control Sample	Step 5	Solid	6010B SEP	62350
LCS 140-62351/18-A	Lab Control Sample	Step 6	Solid	6010B SEP	62351
LCSD 140-62240/19-B ^5	Lab Control Sample Dup	Step 5	Solid	6010B SEP	62350
LCSD 140-62351/19-A	Lab Control Sample Dup	Step 6	Solid	6010B SEP	62351

Analysis Batch: 62545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 7	Solid	6010B SEP	62386
140-27497-1	MW-212-C	Step 7	Solid	6010B SEP	62386
140-27497-1	MW-212-C	Step 7	Solid	6010B SEP	62386
140-27497-2	MW-212	Step 7	Solid	6010B SEP	62386
140-27497-3	TW-TR2	Step 7	Solid	6010B SEP	62386
140-27497-3	TW-TR2	Step 7	Solid	6010B SEP	62386
140-27497-4	MW-210	Step 7	Solid	6010B SEP	62386
140-27497-4	MW-210	Step 7	Solid	6010B SEP	62386
140-27497-5	BH-1	Step 6	Solid	6010B SEP	62351
140-27497-5	BH-1	Step 7	Solid	6010B SEP	62386
140-27497-5	BH-1	Step 7	Solid	6010B SEP	62386
140-27497-6	MW-214	Step 7	Solid	6010B SEP	62386
140-27497-7	MW-211-0-5FT	Step 7	Solid	6010B SEP	62386
140-27497-7	MW-211-0-5FT	Step 7	Solid	6010B SEP	62386
140-27497-8	MW-211-14-25FT	Step 7	Solid	6010B SEP	62386
140-27497-8	MW-211-14-25FT	Step 7	Solid	6010B SEP	62386
140-27497-9	TW-TR2-C2	Step 7	Solid	6010B SEP	62386
140-27497-9	TW-TR2-C2	Step 7	Solid	6010B SEP	62386
140-27497-10	TW-TR2-C1	Step 7	Solid	6010B SEP	62386
140-27497-10	TW-TR2-C1	Step 7	Solid	6010B SEP	62386
140-27497-11	MW-213	Step 7	Solid	6010B SEP	62386
140-27497-11	MW-213	Step 7	Solid	6010B SEP	62386
MB 140-62386/17-A	Method Blank	Step 7	Solid	6010B SEP	62386
LCS 140-62386/18-A	Lab Control Sample	Step 7	Solid	6010B SEP	62386
LCSD 140-62386/19-A	Lab Control Sample Dup	Step 7	Solid	6010B SEP	62386

Analysis Batch: 62595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Step 7	Solid	6010B SEP	62386
140-27497-1	MW-212-C	Total/NA	Solid	6010B	61991
140-27497-1	MW-212-C	Total/NA	Solid	6010B	61991
140-27497-1	MW-212-C	Total/NA	Solid	6010B	61991
140-27497-2	MW-212	Step 7	Solid	6010B SEP	62386
140-27497-2	MW-212	Total/NA	Solid	6010B	61991
140-27497-2	MW-212	Total/NA	Solid	6010B	61991
140-27497-2	MW-212	Total/NA	Solid	6010B	61991
140-27497-3	TW-TR2	Step 7	Solid	6010B SEP	62386
140-27497-3	TW-TR2	Total/NA	Solid	6010B	61991
140-27497-3	TW-TR2	Total/NA	Solid	6010B	61991
140-27497-3	TW-TR2	Total/NA	Solid	6010B	61991
140-27497-4	MW-210	Step 7	Solid	6010B SEP	62386
140-27497-4	MW-210	Total/NA	Solid	6010B	61991
140-27497-4	MW-210	Total/NA	Solid	6010B	61991

Metals (Continued)

Analysis Batch: 62595 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-4	MW-210	Total/NA	Solid	6010B	61991
140-27497-5	BH-1	Step 7	Solid	6010B SEP	62386
140-27497-5	BH-1	Total/NA	Solid	6010B	61991
140-27497-5	BH-1	Total/NA	Solid	6010B	61991
140-27497-6	MW-214	Step 7	Solid	6010B SEP	62386
140-27497-6	MW-214	Total/NA	Solid	6010B	61991
140-27497-6	MW-214	Total/NA	Solid	6010B	61991
140-27497-6	MW-214	Total/NA	Solid	6010B	61991
140-27497-7	MW-211-0-5FT	Step 7	Solid	6010B SEP	62386
140-27497-7	MW-211-0-5FT	Total/NA	Solid	6010B	61991
140-27497-7	MW-211-0-5FT	Total/NA	Solid	6010B	61991
140-27497-7	MW-211-0-5FT	Total/NA	Solid	6010B	61991
140-27497-8	MW-211-14-25FT	Step 7	Solid	6010B SEP	62386
140-27497-8	MW-211-14-25FT	Total/NA	Solid	6010B	61991
140-27497-8	MW-211-14-25FT	Total/NA	Solid	6010B	61991
140-27497-9	TW-TR2-C2	Step 7	Solid	6010B SEP	62386
140-27497-9	TW-TR2-C2	Total/NA	Solid	6010B	61991
140-27497-9	TW-TR2-C2	Total/NA	Solid	6010B	61991
140-27497-9	TW-TR2-C2	Total/NA	Solid	6010B	61991
140-27497-10	TW-TR2-C1	Step 7	Solid	6010B SEP	62386
140-27497-10	TW-TR2-C1	Total/NA	Solid	6010B	61991
140-27497-10	TW-TR2-C1	Total/NA	Solid	6010B	61991
140-27497-10	TW-TR2-C1	Total/NA	Solid	6010B	61991
140-27497-11	MW-213	Step 7	Solid	6010B SEP	62386
140-27497-11	MW-213	Total/NA	Solid	6010B	61991
140-27497-11	MW-213	Total/NA	Solid	6010B	61991
140-27497-11	MW-213	Total/NA	Solid	6010B	61991
MB 140-61991/17-A	Method Blank	Total/NA	Solid	6010B	61991
MB 140-62386/17-A	Method Blank	Step 7	Solid	6010B SEP	62386
LCS 140-61991/18-A	Lab Control Sample	Total/NA	Solid	6010B	61991
LCS 140-62386/18-A	Lab Control Sample	Step 7	Solid	6010B SEP	62386
LCSD 140-61991/19-A	Lab Control Sample Dup	Total/NA	Solid	6010B	61991
LCSD 140-62386/19-A	Lab Control Sample Dup	Step 7	Solid	6010B SEP	62386

Analysis Batch: 62654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-2	MW-212	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-3	TW-TR2	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-4	MW-210	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-5	BH-1	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-6	MW-214	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-7	MW-211-0-5FT	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-8	MW-211-14-25FT	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-9	TW-TR2-C2	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-10	TW-TR2-C1	Sum of Steps 1-7	Solid	6010B SEP	
140-27497-11	MW-213	Sum of Steps 1-7	Solid	6010B SEP	

General Chemistry

Analysis Batch: 62024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-27497-1	MW-212-C	Total/NA	Solid	Moisture	
140-27497-2	MW-212	Total/NA	Solid	Moisture	
140-27497-3	TW-TR2	Total/NA	Solid	Moisture	
140-27497-4	MW-210	Total/NA	Solid	Moisture	
140-27497-5	BH-1	Total/NA	Solid	Moisture	
140-27497-6	MW-214	Total/NA	Solid	Moisture	
140-27497-7	MW-211-0-5FT	Total/NA	Solid	Moisture	
140-27497-8	MW-211-14-25FT	Total/NA	Solid	Moisture	
140-27497-9	TW-TR2-C2	Total/NA	Solid	Moisture	
140-27497-10	TW-TR2-C1	Total/NA	Solid	Moisture	
140-27497-11	MW-213	Total/NA	Solid	Moisture	
140-27497-1 DU	MW-212-C	Total/NA	Solid	Moisture	

Client: Golder Associates Inc.
Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-212-C **Lab Sample ID: 140-27497-1**
Date Collected: 05/10/22 10:48 **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-212-C **Lab Sample ID: 140-27497-1**
Date Collected: 05/10/22 10:48 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 72.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 13:41	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 15:40	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		3			62595	06/14/22 17:27	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 11:27	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 13:26	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:02	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 12:59	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 11:22	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 13:22	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62545	06/13/22 11:43	JGT	TAL KNX
	Instrument ID: DUO									

Client: Golder Associates Inc.
Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-212-C

Lab Sample ID: 140-27497-1
Date Collected: 05/10/22 10:48
Matrix: Solid
Date Received: 05/18/22 11:20
Percent Solids: 72.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 13:40	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		2			62545	06/13/22 15:31	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62595	06/14/22 12:42	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: MW-212

Lab Sample ID: 140-27497-2
Date Collected: 05/10/22 11:20
Matrix: Solid
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-212

Lab Sample ID: 140-27497-2
Date Collected: 05/10/22 11:20
Matrix: Solid
Date Received: 05/18/22 11:20
Percent Solids: 85.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 13:55	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 15:55	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 17:32	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 11:42	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 13:41	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:17	JGT	TAL KNX
	Instrument ID: DUO									

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-212 — Lab Sample ID: 140-27497-2

Date Collected: 05/10/22 11:20 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 85.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:14	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 11:37	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 13:37	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 13:55	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:00	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: TW-TR2 — Lab Sample ID: 140-27497-3

Date Collected: 05/11/22 15:00 — **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: TW-TR2 — Lab Sample ID: 140-27497-3

Date Collected: 05/11/22 15:00 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 84.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:00	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:01	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		3			62595	06/14/22 17:37	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 11:47	JGT	TAL KNX
	Instrument ID: DUO									

Lab Chronicle

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: TW-TR2 **Lab Sample ID: 140-27497-3**
Date Collected: 05/11/22 15:00 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 84.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 13:46	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:21	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:18	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 11:42	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 13:47	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:00	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		2			62545	06/13/22 15:36	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:05	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: MW-210 **Lab Sample ID: 140-27497-4**
Date Collected: 05/09/22 10:37 **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-210 **Lab Sample ID: 140-27497-4**
Date Collected: 05/09/22 10:37 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 83.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:05	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:06	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 17:42	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 11:52	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 13:51	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:26	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:23	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 11:47	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 13:52	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:05	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		2			62545	06/13/22 15:41	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:09	JGT	TAL KNX
	Instrument ID: DUO									

Lab Chronicle

Client: Golder Associates Inc.
Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: BH-1
Lab Sample ID: 140-27497-5
Date Collected: 05/10/22 13:15
Matrix: Solid
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: BH-1
Lab Sample ID: 140-27497-5
Date Collected: 05/10/22 13:15
Matrix: Solid
Date Received: 05/18/22 11:20
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:09	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 17:48	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 11:57	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 13:56	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:31	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:28	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 11:52	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 13:56	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		2			62545	06/13/22 16:26	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:10	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: BH-1 — Lab Sample ID: 140-27497-5

Date Collected: 05/10/22 13:15 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 89.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		5			62545	06/13/22 15:46	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:14	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: MW-214 — Lab Sample ID: 140-27497-6

Date Collected: 05/12/22 15:15 — **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-214 — Lab Sample ID: 140-27497-6

Date Collected: 05/12/22 15:15 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 83.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:14	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:18	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 17:53	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 12:02	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 14:01	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:36	JGT	TAL KNX
	Instrument ID: DUO									

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-214 — Lab Sample ID: 140-27497-6

Date Collected: 05/12/22 15:15 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 83.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:33	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 11:57	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 14:02	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:16	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:19	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: MW-211-0-5FT — Lab Sample ID: 140-27497-7

Date Collected: 05/10/22 08:24 — **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-211-0-5FT — Lab Sample ID: 140-27497-7

Date Collected: 05/10/22 08:24 — **Matrix: Solid**
Date Received: 05/18/22 11:20 — **Percent Solids: 83.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:19	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:23	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 17:58	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 12:07	JGT	TAL KNX
	Instrument ID: DUO									

Lab Chronicle

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Client Sample ID: MW-211-0-5FT

Date Collected: 05/10/22 08:24
Date Received: 05/18/22 11:20

Lab Sample ID: 140-27497-7
Matrix: Solid
Percent Solids: 83.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 14:06	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:41	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:38	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 12:02	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 14:07	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:21	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		3			62545	06/13/22 15:51	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:24	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: MW-211-14-25FT

Date Collected: 05/10/22 09:30
Date Received: 05/18/22 11:20

Lab Sample ID: 140-27497-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-211-14-25FT **Lab Sample ID: 140-27497-8**
Date Collected: 05/10/22 09:30 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 83.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:24	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:29	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 12:12	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 14:11	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:46	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:42	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 12:07	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 14:11	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:26	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		3			62545	06/13/22 16:06	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:29	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: TW-TR2-C2 **Lab Sample ID: 140-27497-9**
Date Collected: 05/11/22 14:00 **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: TW-TR2-C2 Lab Sample ID: 140-27497-9

Date Collected: 05/11/22 14:00 **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX

Client Sample ID: TW-TR2-C2 Lab Sample ID: 140-27497-9

Date Collected: 05/11/22 14:00 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 54.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:29	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:34	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 18:13	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 12:17	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 14:16	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:51	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:47	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 12:12	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 14:16	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:31	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		2			62545	06/13/22 16:10	JGT	TAL KNX
	Instrument ID: DUO									

Lab Chronicle

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: TW-TR2-C2 **Lab Sample ID: 140-27497-9**
Date Collected: 05/11/22 14:00 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 54.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:33	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: TW-TR2-C1 **Lab Sample ID: 140-27497-10**
Date Collected: 05/11/22 13:00 **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: TW-TR2-C1 **Lab Sample ID: 140-27497-10**
Date Collected: 05/11/22 13:00 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 64.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:33	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:40	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 18:19	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 12:22	JGT	TAL KNX
	Instrument ID: DUO									
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 14:22	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 11:56	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:52	JGT	TAL KNX
	Instrument ID: DUO									

Lab Chronicle

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: TW-TR2-C1 Lab Sample ID: 140-27497-10
Date Collected: 05/11/22 13:00 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 64.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 12:17	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 14:21	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:36	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		2			62545	06/13/22 16:16	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:38	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: MW-213 Lab Sample ID: 140-27497-11
Date Collected: 05/12/22 12:40 **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Sum of Steps 1-7	Analysis	6010B SEP		1			62654	06/16/22 15:26	KNC	TAL KNX
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Client Sample ID: MW-213 Lab Sample ID: 140-27497-11
Date Collected: 05/12/22 12:40 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 85.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		10			62595	06/14/22 14:38	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 16:45	JGT	TAL KNX
	Instrument ID: DUO									
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		2			62595	06/14/22 18:24	JGT	TAL KNX
	Instrument ID: DUO									
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 12:27	JGT	TAL KNX
	Instrument ID: DUO									

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: MW-213 **Lab Sample ID: 140-27497-11**
Date Collected: 05/12/22 12:40 **Matrix: Solid**
Date Received: 05/18/22 11:20 **Percent Solids: 85.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 14:27	JGT	TAL KNX
	Instrument ID: DUO									
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 12:01	JGT	TAL KNX
	Instrument ID: DUO									
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 13:57	JGT	TAL KNX
	Instrument ID: DUO									
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 12:22	JGT	TAL KNX
	Instrument ID: DUO									
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 14:27	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 14:41	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		2			62545	06/13/22 16:21	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		10			62595	06/14/22 11:43	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank **Lab Sample ID: MB 140-61991/17-A**
Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 14:53	JGT	TAL KNX
	Instrument ID: DUO									

Lab Chronicle

Client: Golder Associates Inc.
Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: Method Blank
Lab Sample ID: MB 140-61992/17-B ^4
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		4			62391	06/08/22 10:43	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-62135/17-B ^3
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		3			62391	06/08/22 12:41	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-62165/17-B
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 10:19	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-62195/17-B
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 12:15	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank
Lab Sample ID: MB 140-62240/17-B ^5
Date Collected: N/A
Matrix: Solid
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 10:11	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank — Lab Sample ID: MB 140-62351/17-A

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 12:37	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Method Blank — Lab Sample ID: MB 140-62386/17-A

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 12:55	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62595	06/14/22 11:57	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-61991/18-A

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 14:58	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-61992/18-B ^5

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		5			62391	06/08/22 10:48	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-62135/18-B ^5

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		5			62391	06/08/22 12:46	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-62165/18-B

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 10:24	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-62195/18-B

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 12:20	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-62240/18-B ^5

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 10:16	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-62351/18-A

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 12:42	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 140-62386/18-A

Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 13:00	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62595	06/14/22 12:02	JGT	TAL KNX
	Instrument ID: DUO									

Lab Chronicle

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: Lab Control Sample Dup — Lab Sample ID: LCSD 140-61991/19-A

Date Collected: N/A — **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Total			1.000 g	50 mL	61991	05/26/22 08:00	KNC	TAL KNX
Total/NA	Analysis	6010B		1			62595	06/14/22 15:03	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup — Lab Sample ID: LCSD 140-61992/19-B ^5

Date Collected: N/A — **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 1	SEP	Exchangeable			5.000 g	25 mL	61992	05/31/22 08:00	KNC	TAL KNX
Step 1	Prep	3010A			5 mL	50 mL	62134	06/01/22 08:00	KNC	TAL KNX
Step 1	Analysis	6010B SEP		5			62391	06/08/22 10:53	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup — Lab Sample ID: LCSD 140-62135/19-B ^5

Date Collected: N/A — **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 2	SEP	Carbonate			5.000 g	25 mL	62135	06/01/22 08:00	KNC	TAL KNX
Step 2	Prep	3010A			5 mL	50 mL	62164	06/02/22 08:00	KNC	TAL KNX
Step 2	Analysis	6010B SEP		5			62391	06/08/22 12:51	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup — Lab Sample ID: LCSD 140-62165/19-B

Date Collected: N/A — **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 3	SEP	Non-Crystalline			5.000 g	25 mL	62165	06/02/22 08:00	KNC	TAL KNX
Step 3	Prep	3010A			5 mL	50 mL	62194	06/03/22 08:00	KNC	TAL KNX
Step 3	Analysis	6010B SEP		1			62441	06/09/22 10:28	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup — Lab Sample ID: LCSD 140-62195/19-B

Date Collected: N/A — **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 4	SEP	Metal Hydroxide			5.000 g	25 mL	62195	06/03/22 08:00	KNC	TAL KNX
Step 4	Prep	3010A			5 mL	50 mL	62239	06/06/22 08:00	KNC	TAL KNX
Step 4	Analysis	6010B SEP		1			62441	06/09/22 12:25	JGT	TAL KNX
	Instrument ID: DUO									

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Client Sample ID: Lab Control Sample Dup **Lab Sample ID: LCSD 140-62240/19-B ^5**
Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 5	SEP	Organic-Bound			5.000 g	75 mL	62240	06/06/22 08:00	KNC	TAL KNX
Step 5	Prep	3010A			5 mL	50 mL	62350	06/08/22 08:00	KNC	TAL KNX
Step 5	Analysis	6010B SEP		5			62493	06/10/22 10:21	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup **Lab Sample ID: LCSD 140-62351/19-A**
Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 6	SEP	Acid/Sulfide			5.000 g	250 mL	62351	06/08/22 08:00	KNC	TAL KNX
Step 6	Analysis	6010B SEP		1			62493	06/10/22 12:47	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: Lab Control Sample Dup **Lab Sample ID: LCSD 140-62386/19-A**
Date Collected: N/A **Matrix: Solid**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62545	06/13/22 13:05	JGT	TAL KNX
	Instrument ID: DUO									
Step 7	Prep	Residual			1.000 g	50 mL	62386	06/09/22 08:00	KNC	TAL KNX
Step 7	Analysis	6010B SEP		1			62595	06/14/22 12:07	JGT	TAL KNX
	Instrument ID: DUO									

Client Sample ID: MW-212-C **Lab Sample ID: 140-27497-1 DU**
Date Collected: 05/10/22 10:48 **Matrix: Solid**
Date Received: 05/18/22 11:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			62024	05/25/22 14:02	ACW	TAL KNX
	Instrument ID: NOEQUIP									

Laboratory References:
TAL KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Accreditation/Certification Summary

Client: Golder Associates Inc. Job ID: 140-27497-1
Project/Site: GL21509219, GRE Stanton 2022

Laboratory: Eurofins Knoxville

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

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-17-22
California	State	2423	06-30-22
Colorado	State	TN00009	02-28-23
Connecticut	State	PH-0223	09-30-23
Florida	NELAP	E87177	06-30-22
Georgia (DW)	State	906	12-11-22
Hawaii	State	NA	12-11-22
Kansas	NELAP	E-10349	10-31-22
Kentucky (DW)	State	90101	12-31-22
Louisiana	NELAP	83979	06-30-22
Louisiana (DW)	State	LA019	12-31-22
Maryland	State	277	03-31-23
Michigan	State	9933	12-11-22
Nevada	State	TN00009	07-31-22
New Hampshire	NELAP	299919	01-17-23
New Jersey	NELAP	TN001	06-30-22
New York	NELAP	10781	03-31-23
North Carolina (DW)	State	21705	07-31-22
North Carolina (WW/SW)	State	64	12-31-22
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-22
Oregon	NELAP	TNI0189	12-31-22
Pennsylvania	NELAP	68-00576	12-31-22
Tennessee	State	02014	12-11-22
Texas	NELAP	T104704380-18-12	08-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-19-00236	08-20-22
Utah	NELAP	TN00009	07-31-22
Virginia	NELAP	460176	09-14-22
Washington	State	C593	01-19-23
West Virginia (DW)	State	9955C	12-31-22
West Virginia DEP	State	345	04-30-23
Wisconsin	State	998044300	08-31-22

Method Summary

Client: Golder Associates Inc.
Project/Site: GL21509219, GRE Stanton 2022

Job ID: 140-27497-1

Method	Method Description	Protocol	Laboratory
6010B	SEP Metals (ICP) - Total	SW846	TAL KNX
6010B SEP	SEP Metals (ICP)	SW846	TAL KNX
Moisture	Percent Moisture	EPA	TAL KNX
3010A	Preparation, Total Metals	SW846	TAL KNX
Acid/Sulfide	Sequential Extraction Procedure, Acid/Sulfide Fraction	TAL-KNOX	TAL KNX
Carbonate	Sequential Extraction Procedure, Carbonate Fraction	TAL-KNOX	TAL KNX
Exchangeable	Sequential Extraction Procedure, Exchangeable Fraction	TAL-KNOX	TAL KNX
Metal Hydroxide	Sequential Extraction Procedure, Metal Hydroxide Fraction	TAL-KNOX	TAL KNX
Non-Crystalline	Sequential Extraction Procedure, Non-crystalline Materials	TAL-KNOX	TAL KNX
Organic-Bound	Sequential Extraction Procedure, Organic Bound Fraction	TAL-KNOX	TAL KNX
Residual	Sequential Extraction Procedure, Residual Fraction	TAL-KNOX	TAL KNX
Total	Preparation, Total Material	TAL-KNOX	TAL KNX

Protocol References:

EPA = US Environmental Protection Agency

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

TAL-KNOX = TestAmerica Laboratories, Knoxville, Facility Standard Operating Procedure.

Laboratory References:

TAL KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Eurofins TestAmerica, Knoxville
5815 Middlebrook Pike

Knoxville, TN 37921-5947
phone 865.291.3000 fax 865.584.4315

Chain of Custody Record

eurofins | Environment Testing America

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

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Erin Hunter	Site Contact: Brittany Bradley	Date:	COC No: 1
Golder Associates USA Inc., Member of WSP	Email: erin.hunter@wsp.com	Lab Contact: Ryan Henry	Carrier:	1 of 1 COCs
7245 W Alaska Drive, Suite 200	Tel/Fax: 720-962-3424			TALS Project #:
Lakewood, CO 80226	Analysis Turnaround Time			Sampler:
(303) 980-0540 Phone	☐ CALENDAR DAYS ☑ WORKING DAYS			For Lab Use Only:
(xxx) xxx-xxxx FAX	TAT if different from Below ____			Walk-in Client:
Project Name: GL21509219, GRE Stanton 2022	☐ 2 weeks			
Site: Stanton Station	☐ 1 week			
P O #	☐ 2 days			
	☐ 1 day			

140-27497 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	6010B SEP - Al, As, Fe, Li, Mn	Sample Specific Notes:
MW-212-C	5/10/22	10:48	Soil ⟷ C		1	N	N	X	0-5 ft
MW-212	5/10/22	11:20	C	Soil	1	N	N	X	14-25 ft
TW-TR2	5/11/22	15:00	C	Soil	1	N	N	X	75-95 ft
MW-210	5/9/22	10:37	C	Soil	1	N	N	X	15-25 ft
BH-1	5/10/22	13:15	C	Soil	1	N	N	X	2-5 ft
MW-214	5/12/22	15:15	C	Soil	1	N	N	X	2-15 ft
MW-211 - 0-5 ft	5/10/22	8:24	C	Soil	1	N	N	X	0-5 ft
MW-211 - 14-25 ft	5/10/22	9:30	C	Soil	1	N	N	X	14-25 ft
TW-TR2-C2	5/11/22	14:00	C	Soil	1	N	N	X	50-55 ft
TW-TR2-C1	5/11/22	13:00	C	Soil	1	N	N	X	20-25 ft
MW-213	5/12/22	12:40	C	Soil	1	N	N	X	20-30 ft

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: NO CUSTODY SEALS, RECEIVED AMBIENT RT 20.3/CT 20.6°C
BKD 5-18-22, 1 BOX FEDX #2731 1134 0091 G

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____		Therm ID No.: ____
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: ETA Knx	Date/Time: 5-18-22 11:20
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Loc: 140
27497

EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	✓			☐ Containers, Broken	10
2. Were ambient air containers received intact?			✓	☐ Checked in lab	
3. The coolers/containers custody seal if present, is it intact?			✓	☐ Yes ☐ NA	14
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : SC71 Correction factor: +0.3°C			✓	☐ Cooler Out of Temp, Client Contacted, Proceed/Cancel ☐ Cooler Out of Temp, Same Day Receipt	
5. Were all of the sample containers received intact?	✓			☐ Containers, Broken	
6. Were samples received in appropriate containers?	✓			☐ Containers, Improper; Client Contacted; Proceed/Cancel	
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ COC & Samples Do Not Match ☐ COC Incorrect/Incomplete ☐ COC Not Received	
8. Were all of the samples listed on the COC received?	✓			☐ Sample Received, Not on COC ☐ Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	✓			☐ COC; No Date/Time; Client Contacted	**Labeling Verified by:** **Date:**
10. Was the sampler identified on the COC?		✓		☑ Sampler Not Listed on COC	
11. Is the client and project name/# identified?	✓			☐ COC Incorrect/Incomplete	**pH test strip lot number:**
12. Are tests/parameters listed for each sample?	✓			☐ COC No tests on COC	
13. Is the matrix of the samples noted?	✓			☐ COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)		✓		☑ COC Incorrect/Incomplete	
15. Were samples received within holding time?	✓			☐ Holding Time - Receipt	
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ pH Adjusted, pH Included (See box 16A) ☐ Incorrect Preservative	
17. Were VOA samples received without headspace?			✓	☐ Headspace (VOA only)	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: ______			✓	☐ Residual Chlorine	
19. For 1613B water samples is pH<9?			✓	☐ If no, notify lab to adjust	
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info	

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: 14006675 PM Instructions: ______

Sample Receiving Associate: [signature] Date: 5-18-22

QA026R32.doc, 062719

eurofins Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Erin Hunter
WSP USA Inc
7245 W Alaska Drive
Suite 200
Lakewood, Colorado 80226

Generated 10/6/2023 4:04:45 PM

JOB DESCRIPTION

GRE Stantion Station MNA

JOB NUMBER

280-181324-1

Eurofins Denver
4955 Yarrow Street
Arvada CO 80002

See page two for job notes and contact information.

myEOL

Eurofins Denver

Job Notes

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

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

Authorization

Generated
10/6/2023 4:04:45 PM

Authorized for release by
Megan McElheny, Project Manager I
Megan.Mcelheny@et.eurofinsus.com
(303)736-0100

Table of Contents

Job ID: 280-181324-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: WSP USA Inc

Project: GRE Stantion Station MNA

Report Number: 280-181324-1

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

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

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

RECEIPT

The samples were received on 9/11/2023 1:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 18.6º C.

Receipt Exceptions

Denver methods and Houston methods requested, only one container provided for each sample. Sample splitting required. MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218 - 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15).

The following samples were received at the laboratory outside the required temperature criteria: 18.6°C corrected. MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218 - 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15). This does not meet regulatory requirements. Special instructions say to proceed whether out of hold or out of temperature.

Waybill damaged during unpacking, unable to scan in as a document. The tracking number is: 7733 5138 7210. MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218 - 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15).

METALS (ICP)

Samples MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218 - 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15) were analyzed for Metals (ICP) in accordance with 6010D. The samples were prepared on 09/20/2023 and analyzed on 09/20/2023 and 09/21/2023.

The following samples were received outside of holding time: MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218

1 2 3 4 5 6 7 8 9 10 11 12 13

Job ID: 280-181324-1 (Continued)

Laboratory: Eurofins Denver (Continued)

- 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15).

The following sample was diluted due to the nature of the sample matrix: MW-212(B) - 0-5' (280-181324-11). Elevated reporting limits (RLs) are provided.

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

TOTAL ORGANIC CARBON

Samples MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218 - 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 09/16/2023, 09/18/2023 and 09/19/2023.

Samples MW-300 - 11-13' (280-181324-6)[2X], MW-PB3 - 22-24' (280-181324-7)[2X], MW-212(A) - 14-25' (280-181324-10)[2X], MW-212(B) - 0-5' (280-181324-11)[10X], MW-213 - 20-30' (280-181324-12)[2X], BH-1 - 2-5' (280-181324-14)[2X] and TW-2R2 - 50-94' (280-181324-15) [5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The matrix spike (MS) recoveries for Total Organic Carbon were outside control limits in analytical batch 626583. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples in batch 626706 were analyzed outside of the holding time due client requesting this method after holding time had expired. MW-215 - 16-18' (280-181324-1), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5) and MW-211(B) - 14-25' (280-181324-9).

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

CATION EXCHANGE CAPACITY

Samples MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218 - 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15) were analyzed for Cation Exchange Capacity in accordance with a calculated method. The samples were prepared on 09/25/2023 and analyzed on 09/27/2023.

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

PERCENT SOLIDS

Samples MW-215 - 16-18' (280-181324-1), MW-217 - 12-13' (280-181324-2), MW-218 - 11-12' (280-181324-3), MW-219 - 18-20' (280-181324-4), MW-222 - 34.5-36' (280-181324-5), MW-300 - 11-13' (280-181324-6), MW-PB3 - 22-24' (280-181324-7), MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15) were analyzed for percent solids in accordance with ASTM D2216-90. The samples were analyzed on 09/14/2023.

The following samples were received outside of holding time: MW-210 - 15-25' (280-181324-8), MW-211(B) - 14-25' (280-181324-9), MW-212(A) - 14-25' (280-181324-10), MW-212(B) - 0-5' (280-181324-11), MW-213 - 20-30' (280-181324-12), MW-214 - 2-15' (280-181324-13), BH-1 - 2-5' (280-181324-14) and TW-2R2 - 50-94' (280-181324-15).

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

Detection Summary

Client: WSP USA Inc
Job ID: 280-181324-1
Project/Site: GRE Stantion Station MNA

Client Sample ID: MW-215 - 16-18'
Lab Sample ID: 280-181324-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	190	H H3	54	13	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	2500	J H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	8.4		0.61	0.61	meq/100gm	1	☼	9081	Total/NA

Client Sample ID: MW-217 - 12-13'
Lab Sample ID: 280-181324-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	100	H H3	47	12	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	7900	H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	4.4		0.52	0.52	meq/100gm	1	☼	9081	Total/NA

Client Sample ID: MW-218 - 11-12'
Lab Sample ID: 280-181324-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	150	H H3	54	13	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	2700	J H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	5.7		0.60	0.60	meq/100gm	1	☼	9081	Total/NA

Client Sample ID: MW-219 - 18-20'
Lab Sample ID: 280-181324-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	350	H H3	51	13	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	1700	J H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	26		0.61	0.61	meq/100gm	1	☼	9081	Total/NA

Client Sample ID: MW-222 - 34.5-36'
Lab Sample ID: 280-181324-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	1300	H H3	59	14	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	1900	J H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	18		0.59	0.59	meq/100gm	1	☼	9081	Total/NA

Client Sample ID: MW-300 - 11-13'
Lab Sample ID: 280-181324-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	130	H H3	48	12	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	9200	H H3	8000	1800	mg/Kg	2	☼	9060A	Total/NA
Cation Exchange Capacity	12		0.58	0.58	meq/100gm	1	☼	9081	Total/NA

Client Sample ID: MW-PB3 - 22-24'
Lab Sample ID: 280-181324-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	260	H H3	64	16	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	28000	H H3	8000	1800	mg/Kg	2	☼	9060A	Total/NA
Cation Exchange Capacity	50		0.68	0.68	meq/100gm	1	☼	9081	Total/NA

Client Sample ID: MW-210 - 15-25'
Lab Sample ID: 280-181324-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	74	H H3	50	12	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	990	J H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	4.4		0.59	0.59	meq/100gm	1	☼	9081	Total/NA

This Detection Summary does not include radiochemical test results.

## Client Sample ID: MW-211(B) - 14-25'	Lab Sample ID: 280-181324-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	390	H H3	56	14	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	1900	J H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	13		0.59	0.59	meq/100gm	1	☼	9081	Total/NA

## Client Sample ID: MW-212(A) - 14-25'	Lab Sample ID: 280-181324-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	150	H H3	48	12	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	9000	H H3	8000	1800	mg/Kg	2	☼	9060A	Total/NA
Cation Exchange Capacity	24		0.58	0.58	meq/100gm	1	☼	9081	Total/NA

## Client Sample ID: MW-212(B) - 0-5'	Lab Sample ID: 280-181324-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	1100	H H3	290	71	mg/Kg	5	☼	6010D	Total/NA
Total Organic Carbon	1500000	H H3	40000	9000	mg/Kg	10	☼	9060A	Total/NA
Cation Exchange Capacity	150		0.60	0.60	meq/100gm	1	☼	9081	Total/NA

## Client Sample ID: MW-213 - 20-30'	Lab Sample ID: 280-181324-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	180	H H3	49	12	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	8000	H H3	8000	1800	mg/Kg	2	☼	9060A	Total/NA
Cation Exchange Capacity	3.6		0.59	0.59	meq/100gm	1	☼	9081	Total/NA

## Client Sample ID: MW-214 - 2-15'	Lab Sample ID: 280-181324-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	200	H H3	53	13	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	2400	J H H3	4000	900	mg/Kg	1	☼	9060A	Total/NA
Cation Exchange Capacity	12		0.64	0.64	meq/100gm	1	☼	9081	Total/NA

## Client Sample ID: BH-1 - 2-5'	Lab Sample ID: 280-181324-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	47000	H H3	5300	1300	mg/Kg	100	☼	6010D	Total/NA
Total Organic Carbon	28000	H H3	8000	1800	mg/Kg	2	☼	9060A	Total/NA
Cation Exchange Capacity	21		0.55	0.55	meq/100gm	1	☼	9081	Total/NA

## Client Sample ID: TW-2R2 - 50-94'	Lab Sample ID: 280-181324-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	3200	H H3	60	15	mg/Kg	1	☼	6010D	Total/NA
Total Organic Carbon	360000	H H3 F1	20000	4500	mg/Kg	5	☼	9060A	Total/NA
Cation Exchange Capacity	73		0.60	0.60	meq/100gm	1	☼	9081	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

Method	Method Description	Protocol	Laboratory
6010D	Metals (ICP)	SW846	EET HOU
9060A	Organic Carbon, Total (TOC)	SW846	EET DEN
9081	Cation Exchange Capacity (CEC)	SW846	EET HOU
D 2216	Percent Moisture	ASTM	EET DEN
3051A	Preparation, Metals, Microwave Assisted	SW846	EET HOU
9081	Cation Exchange Capacity (CEC)	SW846	EET HOU

Protocol References:

ASTM = ASTM International

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

Laboratory References:

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

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-181324-1	MW-215 - 16-18'	Solid	02/06/23 08:00	09/11/23 13:30
280-181324-2	MW-217 - 12-13'	Solid	02/08/23 09:00	09/11/23 13:30
280-181324-3	MW-218 - 11-12'	Solid	02/08/23 10:30	09/11/23 13:30
280-181324-4	MW-219 - 18-20'	Solid	02/08/23 13:00	09/11/23 13:30
280-181324-5	MW-222 - 34.5-36'	Solid	02/09/23 10:00	09/11/23 13:30
280-181324-6	MW-300 - 11-13'	Solid	02/09/23 12:30	09/11/23 13:30
280-181324-7	MW-PB3 - 22-24'	Solid	02/10/23 10:00	09/11/23 13:30
280-181324-8	MW-210 - 15-25'	Solid	05/15/22 13:00	09/11/23 13:30
280-181324-9	MW-211(B) - 14-25'	Solid	05/15/22 11:35	09/11/23 13:30
280-181324-10	MW-212(A) - 14-25'	Solid	05/16/22 08:00	09/11/23 13:30
280-181324-11	MW-212(B) - 0-5'	Solid	05/16/22 07:35	09/11/23 13:30
280-181324-12	MW-213 - 20-30'	Solid	05/16/22 11:00	09/11/23 13:30
280-181324-13	MW-214 - 2-15'	Solid	05/16/22 13:00	09/11/23 13:30
280-181324-14	BH-1 - 2-5'	Solid	05/16/22 15:00	09/11/23 13:30
280-181324-15	TW-2R2 - 50-94'	Solid	05/17/22 12:00	09/11/23 13:30

Method: SW846 6010D - Metals (ICP)

Client Sample ID: MW-215 - 16-18'
Date Collected: 02/06/23 08:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-1
Matrix: Solid
Percent Solids: 82.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	190	H H3	54	13	mg/Kg	☼	09/20/23 08:39	09/20/23 22:45	1

Client Sample ID: MW-217 - 12-13'
Date Collected: 02/08/23 09:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-2
Matrix: Solid
Percent Solids: 95.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	100	H H3	47	12	mg/Kg	☼	09/20/23 08:39	09/20/23 23:09	1

Client Sample ID: MW-218 - 11-12'
Date Collected: 02/08/23 10:30
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-3
Matrix: Solid
Percent Solids: 83.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	150	H H3	54	13	mg/Kg	☼	09/20/23 08:39	09/20/23 23:11	1

Client Sample ID: MW-219 - 18-20'
Date Collected: 02/08/23 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-4
Matrix: Solid
Percent Solids: 82.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	350	H H3	51	13	mg/Kg	☼	09/20/23 08:39	09/20/23 23:14	1

Client Sample ID: MW-222 - 34.5-36'
Date Collected: 02/09/23 10:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-5
Matrix: Solid
Percent Solids: 85.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	1300	H H3	59	14	mg/Kg	☼	09/20/23 08:39	09/20/23 23:17	1

Client Sample ID: MW-300 - 11-13'
Date Collected: 02/09/23 12:30
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-6
Matrix: Solid
Percent Solids: 86.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	130	H H3	48	12	mg/Kg	☼	09/20/23 08:39	09/20/23 23:19	1

Client Sample ID: MW-PB3 - 22-24'
Date Collected: 02/10/23 10:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-7
Matrix: Solid
Percent Solids: 74.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	260	H H3	64	16	mg/Kg	☼	09/20/23 08:39	09/20/23 23:22	1

Client Sample ID: MW-210 - 15-25'
Date Collected: 05/15/22 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-8
Matrix: Solid
Percent Solids: 84.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	74	H H3	50	12	mg/Kg	☼	09/20/23 08:39	09/20/23 23:25	1

Client Sample ID: MW-211(B) - 14-25'
Date Collected: 05/15/22 11:35
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-9
Matrix: Solid
Percent Solids: 85.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	390	H H3	56	14	mg/Kg	☼	09/20/23 08:39	09/20/23 23:27	1

1 2 3 4 5 6 7 8 9 10 11 12 13

Method: SW846 6010D - Metals (ICP)

Client Sample ID: MW-212(A) - 14-25'
Date Collected: 05/16/22 08:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-10
Matrix: Solid
Percent Solids: 86.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	150	H H3	48	12	mg/Kg	☼	09/20/23 08:39	09/20/23 23:40	1

Client Sample ID: MW-212(B) - 0-5'
Date Collected: 05/16/22 07:35
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-11
Matrix: Solid
Percent Solids: 83.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	1100	H H3	290	71	mg/Kg	☼	09/20/23 08:39	09/20/23 23:43	5

Client Sample ID: MW-213 - 20-30'
Date Collected: 05/16/22 11:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-12
Matrix: Solid
Percent Solids: 84.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	180	H H3	49	12	mg/Kg	☼	09/20/23 08:39	09/20/23 23:48	1

Client Sample ID: MW-214 - 2-15'
Date Collected: 05/16/22 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-13
Matrix: Solid
Percent Solids: 78.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	200	H H3	53	13	mg/Kg	☼	09/20/23 08:39	09/20/23 23:51	1

Client Sample ID: BH-1 - 2-5'
Date Collected: 05/16/22 15:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-14
Matrix: Solid
Percent Solids: 90.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	47000	H H3	5300	1300	mg/Kg	☼	09/20/23 08:39	09/21/23 00:02	100

Client Sample ID: TW-2R2 - 50-94'
Date Collected: 05/17/22 12:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-15
Matrix: Solid
Percent Solids: 82.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	3200	H H3	60	15	mg/Kg	☼	09/20/23 08:39	09/20/23 23:56	1

General Chemistry

Client Sample ID: MW-215 - 16-18'
Date Collected: 02/06/23 08:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	2500	J H H3	4000	900	mg/Kg	☼		09/19/23 13:08	1
Percent Moisture (ASTM D 2216)	17.5		0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-215 - 16-18'
Date Collected: 02/06/23 08:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-1
Matrix: Solid
Percent Solids: 82.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	8.4		0.61	0.61	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

General Chemistry

Client Sample ID: MW-217 - 12-13'
Date Collected: 02/08/23 09:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	7900	H H3	4000	900	mg/Kg	☼		09/18/23 11:41	1
Percent Moisture (ASTM D 2216)	4.4		0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-217 - 12-13'
Date Collected: 02/08/23 09:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-2
Matrix: Solid
Percent Solids: 95.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	4.4		0.52	0.52	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-218 - 11-12'
Date Collected: 02/08/23 10:30
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	2700	J H H3	4000	900	mg/Kg	☼		09/18/23 11:30	1
Percent Moisture (ASTM D 2216)	16.6		0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-218 - 11-12'
Date Collected: 02/08/23 10:30
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-3
Matrix: Solid
Percent Solids: 83.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	5.7		0.60	0.60	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-219 - 18-20'
Date Collected: 02/08/23 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-4
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	1700	J H H3	4000	900	mg/Kg	☼		09/19/23 13:17	1
Percent Moisture (ASTM D 2216)	17.5		0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-219 - 18-20'
Date Collected: 02/08/23 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-4
Matrix: Solid
Percent Solids: 82.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	26		0.61	0.61	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-222 - 34.5-36'
Date Collected: 02/09/23 10:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-5
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	1900	J H H3	4000	900	mg/Kg	☼		09/19/23 12:29	1
Percent Moisture (ASTM D 2216)	14.9		0.1	0.1	%			09/14/23 10:03	1

General Chemistry

Client Sample ID: MW-222 - 34.5-36'
Date Collected: 02/09/23 10:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-5
Matrix: Solid
Percent Solids: 85.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	18		0.59	0.59	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-300 - 11-13'
Date Collected: 02/09/23 12:30
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-6
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	9200	H H3	8000	1800	mg/Kg	☼		09/16/23 17:22	2
Percent Moisture (ASTM D 2216)	13.1		0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-300 - 11-13'
Date Collected: 02/09/23 12:30
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-6
Matrix: Solid
Percent Solids: 86.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	12		0.58	0.58	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-PB3 - 22-24'
Date Collected: 02/10/23 10:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-7
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	28000	H H3	8000	1800	mg/Kg	☼		09/16/23 17:10	2
Percent Moisture (ASTM D 2216)	26.0		0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-PB3 - 22-24'
Date Collected: 02/10/23 10:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-7
Matrix: Solid
Percent Solids: 74.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	50		0.68	0.68	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-210 - 15-25'
Date Collected: 05/15/22 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-8
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	990	J H H3	4000	900	mg/Kg	☼		09/16/23 16:59	1
Percent Moisture (ASTM D 2216)	15.5	H H3	0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-210 - 15-25'
Date Collected: 05/15/22 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-8
Matrix: Solid
Percent Solids: 84.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	4.4		0.59	0.59	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

General Chemistry

Client Sample ID: MW-211(B) - 14-25'
Date Collected: 05/15/22 11:35
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-9
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	1900	J H H3	4000	900	mg/Kg	☼		09/19/23 12:58	1
Percent Moisture (ASTM D 2216)	14.6	H H3	0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-211(B) - 14-25'
Date Collected: 05/15/22 11:35
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-9
Matrix: Solid
Percent Solids: 85.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	13		0.59	0.59	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-212(A) - 14-25'
Date Collected: 05/16/22 08:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-10
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	9000	H H3	8000	1800	mg/Kg	☼		09/16/23 16:37	2
Percent Moisture (ASTM D 2216)	13.7	H H3	0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-212(A) - 14-25'
Date Collected: 05/16/22 08:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-10
Matrix: Solid
Percent Solids: 86.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	24		0.58	0.58	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-212(B) - 0-5'
Date Collected: 05/16/22 07:35
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-11
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	1500000	H H3	40000	9000	mg/Kg	☼		09/16/23 16:27	10
Percent Moisture (ASTM D 2216)	16.6	H H3	0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-212(B) - 0-5'
Date Collected: 05/16/22 07:35
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-11
Matrix: Solid
Percent Solids: 83.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	150		0.60	0.60	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-213 - 20-30'
Date Collected: 05/16/22 11:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-12
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	8000	H H3	8000	1800	mg/Kg	☼		09/16/23 16:17	2
Percent Moisture (ASTM D 2216)	15.6	H H3	0.1	0.1	%			09/14/23 10:03	1

General Chemistry

Client Sample ID: MW-213 - 20-30'
Date Collected: 05/16/22 11:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-12
Matrix: Solid
Percent Solids: 84.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	3.6		0.59	0.59	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: MW-214 - 2-15'
Date Collected: 05/16/22 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-13
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	2400	J H H3	4000	900	mg/Kg	☼		09/16/23 16:06	1
Percent Moisture (ASTM D 2216)	21.8	H H3	0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: MW-214 - 2-15'
Date Collected: 05/16/22 13:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-13
Matrix: Solid
Percent Solids: 78.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	12		0.64	0.64	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: BH-1 - 2-5'
Date Collected: 05/16/22 15:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-14
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	28000	H H3	8000	1800	mg/Kg	☼		09/16/23 15:37	2
Percent Moisture (ASTM D 2216)	9.2	H H3	0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: BH-1 - 2-5'
Date Collected: 05/16/22 15:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-14
Matrix: Solid
Percent Solids: 90.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	21		0.55	0.55	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client Sample ID: TW-2R2 - 50-94'
Date Collected: 05/17/22 12:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-15
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SW846 9060A)	360000	H H3 F1	20000	4500	mg/Kg	☼		09/16/23 12:09	5
Percent Moisture (ASTM D 2216)	17.1	H H3	0.1	0.1	%			09/14/23 10:03	1

Client Sample ID: TW-2R2 - 50-94'
Date Collected: 05/17/22 12:00
Date Received: 09/11/23 13:30

Lab Sample ID: 280-181324-15
Matrix: Solid
Percent Solids: 82.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cation Exchange Capacity (SW846 9081)	73		0.60	0.60	meq/100gm	☼	09/25/23 16:39	09/27/23 15:15	1

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

Qualifiers

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
H3	Sample was received and analyzed past holding time. This does not meet regulatory requirements.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
H3	Sample was received and analyzed past holding time. This does not meet regulatory requirements.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Metals

Prep Batch: 122500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-1	MW-215 - 16-18'	Total/NA	Solid	3051A	
280-181324-2	MW-217 - 12-13'	Total/NA	Solid	3051A	
280-181324-3	MW-218 - 11-12'	Total/NA	Solid	3051A	
280-181324-4	MW-219 - 18-20'	Total/NA	Solid	3051A	
280-181324-5	MW-222 - 34.5-36'	Total/NA	Solid	3051A	
280-181324-6	MW-300 - 11-13'	Total/NA	Solid	3051A	
280-181324-7	MW-PB3 - 22-24'	Total/NA	Solid	3051A	
280-181324-8	MW-210 - 15-25'	Total/NA	Solid	3051A	
280-181324-9	MW-211(B) - 14-25'	Total/NA	Solid	3051A	
280-181324-10	MW-212(A) - 14-25'	Total/NA	Solid	3051A	
280-181324-11	MW-212(B) - 0-5'	Total/NA	Solid	3051A	
280-181324-12	MW-213 - 20-30'	Total/NA	Solid	3051A	
280-181324-13	MW-214 - 2-15'	Total/NA	Solid	3051A	
280-181324-14	BH-1 - 2-5'	Total/NA	Solid	3051A	
280-181324-15	TW-2R2 - 50-94'	Total/NA	Solid	3051A	
MB 860-122500/1-A	Method Blank	Total/NA	Solid	3051A	
LCS 860-122500/2-A	Lab Control Sample	Total/NA	Solid	3051A	
LCSD 860-122500/3-A	Lab Control Sample Dup	Total/NA	Solid	3051A	
280-181324-1 MS	MW-215 - 16-18'	Total/NA	Solid	3051A	
280-181324-1 MSD	MW-215 - 16-18'	Total/NA	Solid	3051A	

Analysis Batch: 122713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-1	MW-215 - 16-18'	Total/NA	Solid	6010D	122500
280-181324-2	MW-217 - 12-13'	Total/NA	Solid	6010D	122500
280-181324-3	MW-218 - 11-12'	Total/NA	Solid	6010D	122500
280-181324-4	MW-219 - 18-20'	Total/NA	Solid	6010D	122500
280-181324-5	MW-222 - 34.5-36'	Total/NA	Solid	6010D	122500
280-181324-6	MW-300 - 11-13'	Total/NA	Solid	6010D	122500
280-181324-7	MW-PB3 - 22-24'	Total/NA	Solid	6010D	122500
280-181324-8	MW-210 - 15-25'	Total/NA	Solid	6010D	122500
280-181324-9	MW-211(B) - 14-25'	Total/NA	Solid	6010D	122500
280-181324-10	MW-212(A) - 14-25'	Total/NA	Solid	6010D	122500
280-181324-11	MW-212(B) - 0-5'	Total/NA	Solid	6010D	122500
280-181324-12	MW-213 - 20-30'	Total/NA	Solid	6010D	122500
280-181324-13	MW-214 - 2-15'	Total/NA	Solid	6010D	122500
280-181324-14	BH-1 - 2-5'	Total/NA	Solid	6010D	122500
280-181324-15	TW-2R2 - 50-94'	Total/NA	Solid	6010D	122500
MB 860-122500/1-A	Method Blank	Total/NA	Solid	6010D	122500
LCS 860-122500/2-A	Lab Control Sample	Total/NA	Solid	6010D	122500
LCSD 860-122500/3-A	Lab Control Sample Dup	Total/NA	Solid	6010D	122500
280-181324-1 MS	MW-215 - 16-18'	Total/NA	Solid	6010D	122500
280-181324-1 MSD	MW-215 - 16-18'	Total/NA	Solid	6010D	122500

General Chemistry

Prep Batch: 123303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-1	MW-215 - 16-18'	Total/NA	Solid	9081	
280-181324-2	MW-217 - 12-13'	Total/NA	Solid	9081	
280-181324-3	MW-218 - 11-12'	Total/NA	Solid	9081	

General Chemistry (Continued)

Prep Batch: 123303 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-4	MW-219 - 18-20'	Total/NA	Solid	9081	
280-181324-5	MW-222 - 34.5-36'	Total/NA	Solid	9081	
280-181324-6	MW-300 - 11-13'	Total/NA	Solid	9081	
280-181324-7	MW-PB3 - 22-24'	Total/NA	Solid	9081	
280-181324-8	MW-210 - 15-25'	Total/NA	Solid	9081	
280-181324-9	MW-211(B) - 14-25'	Total/NA	Solid	9081	
280-181324-10	MW-212(A) - 14-25'	Total/NA	Solid	9081	
280-181324-11	MW-212(B) - 0-5'	Total/NA	Solid	9081	
280-181324-12	MW-213 - 20-30'	Total/NA	Solid	9081	
280-181324-13	MW-214 - 2-15'	Total/NA	Solid	9081	
280-181324-14	BH-1 - 2-5'	Total/NA	Solid	9081	
280-181324-15	TW-2R2 - 50-94'	Total/NA	Solid	9081	

Analysis Batch: 123738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-1	MW-215 - 16-18'	Total/NA	Solid	9081	123303
280-181324-2	MW-217 - 12-13'	Total/NA	Solid	9081	123303
280-181324-3	MW-218 - 11-12'	Total/NA	Solid	9081	123303
280-181324-4	MW-219 - 18-20'	Total/NA	Solid	9081	123303
280-181324-5	MW-222 - 34.5-36'	Total/NA	Solid	9081	123303
280-181324-6	MW-300 - 11-13'	Total/NA	Solid	9081	123303
280-181324-7	MW-PB3 - 22-24'	Total/NA	Solid	9081	123303
280-181324-8	MW-210 - 15-25'	Total/NA	Solid	9081	123303
280-181324-9	MW-211(B) - 14-25'	Total/NA	Solid	9081	123303
280-181324-10	MW-212(A) - 14-25'	Total/NA	Solid	9081	123303
280-181324-11	MW-212(B) - 0-5'	Total/NA	Solid	9081	123303
280-181324-12	MW-213 - 20-30'	Total/NA	Solid	9081	123303
280-181324-13	MW-214 - 2-15'	Total/NA	Solid	9081	123303
280-181324-14	BH-1 - 2-5'	Total/NA	Solid	9081	123303
280-181324-15	TW-2R2 - 50-94'	Total/NA	Solid	9081	123303

Analysis Batch: 626177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-1	MW-215 - 16-18'	Total/NA	Solid	D 2216	
280-181324-2	MW-217 - 12-13'	Total/NA	Solid	D 2216	
280-181324-3	MW-218 - 11-12'	Total/NA	Solid	D 2216	
280-181324-4	MW-219 - 18-20'	Total/NA	Solid	D 2216	
280-181324-5	MW-222 - 34.5-36'	Total/NA	Solid	D 2216	
280-181324-6	MW-300 - 11-13'	Total/NA	Solid	D 2216	
280-181324-7	MW-PB3 - 22-24'	Total/NA	Solid	D 2216	
280-181324-8	MW-210 - 15-25'	Total/NA	Solid	D 2216	
280-181324-9	MW-211(B) - 14-25'	Total/NA	Solid	D 2216	
280-181324-10	MW-212(A) - 14-25'	Total/NA	Solid	D 2216	
280-181324-11	MW-212(B) - 0-5'	Total/NA	Solid	D 2216	
280-181324-12	MW-213 - 20-30'	Total/NA	Solid	D 2216	
280-181324-13	MW-214 - 2-15'	Total/NA	Solid	D 2216	
280-181324-14	BH-1 - 2-5'	Total/NA	Solid	D 2216	
280-181324-15	TW-2R2 - 50-94'	Total/NA	Solid	D 2216	
280-181324-15 DU	TW-2R2 - 50-94'	Total/NA	Solid	D 2216	

QC Association Summary

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

General Chemistry

Analysis Batch: 626583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-2	MW-217 - 12-13'	Total/NA	Solid	9060A	
280-181324-3	MW-218 - 11-12'	Total/NA	Solid	9060A	
280-181324-6	MW-300 - 11-13'	Total/NA	Solid	9060A	
280-181324-7	MW-PB3 - 22-24'	Total/NA	Solid	9060A	
280-181324-8	MW-210 - 15-25'	Total/NA	Solid	9060A	
280-181324-10	MW-212(A) - 14-25'	Total/NA	Solid	9060A	
280-181324-11	MW-212(B) - 0-5'	Total/NA	Solid	9060A	
280-181324-12	MW-213 - 20-30'	Total/NA	Solid	9060A	
280-181324-13	MW-214 - 2-15'	Total/NA	Solid	9060A	
280-181324-14	BH-1 - 2-5'	Total/NA	Solid	9060A	
280-181324-15	TW-2R2 - 50-94'	Total/NA	Solid	9060A	
MB 280-626583/34	Method Blank	Total/NA	Solid	9060A	
MB 280-626583/4	Method Blank	Total/NA	Solid	9060A	
LCS 280-626583/3	Lab Control Sample	Total/NA	Solid	9060A	
LCS 280-626583/33	Lab Control Sample	Total/NA	Solid	9060A	
280-181324-15 MS	TW-2R2 - 50-94'	Total/NA	Solid	9060A	
280-181324-15 MSD	TW-2R2 - 50-94'	Total/NA	Solid	9060A	

Analysis Batch: 626706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-181324-1	MW-215 - 16-18'	Total/NA	Solid	9060A	
280-181324-4	MW-219 - 18-20'	Total/NA	Solid	9060A	
280-181324-5	MW-222 - 34.5-36'	Total/NA	Solid	9060A	
280-181324-9	MW-211(B) - 14-25'	Total/NA	Solid	9060A	
MB 280-626706/4	Method Blank	Total/NA	Solid	9060A	
LCS 280-626706/3	Lab Control Sample	Total/NA	Solid	9060A	
280-181324-5 MS	MW-222 - 34.5-36'	Total/NA	Solid	9060A	
280-181324-5 MSD	MW-222 - 34.5-36'	Total/NA	Solid	9060A	

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 860-122500/1-A
Matrix: Solid
Analysis Batch: 122713

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 122500

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		50	12	mg/Kg		09/20/23 08:39	09/20/23 22:37	1

Lab Sample ID: LCS 860-122500/2-A
Matrix: Solid
Analysis Batch: 122713

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 122500

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	2500	2540		mg/Kg		102	80 - 120

Lab Sample ID: LCSD 860-122500/3-A
Matrix: Solid
Analysis Batch: 122713

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 122500

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	2500	2540		mg/Kg		102	80 - 120	0	20

Lab Sample ID: 280-181324-1 MS
Matrix: Solid
Analysis Batch: 122713

Client Sample ID: MW-215 - 16-18'
Prep Type: Total/NA
Prep Batch: 122500

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	190	H H3	2570	2410		mg/Kg	☼	87	75 - 125

Lab Sample ID: 280-181324-1 MSD
Matrix: Solid
Analysis Batch: 122713

Client Sample ID: MW-215 - 16-18'
Prep Type: Total/NA
Prep Batch: 122500

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	190	H H3	2710	2530		mg/Kg	☼	87	75 - 125	5	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-626583/34
Matrix: Solid
Analysis Batch: 626583

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4000	900	mg/Kg			09/16/23 14:22	1

Lab Sample ID: MB 280-626583/4
Matrix: Solid
Analysis Batch: 626583

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4000	900	mg/Kg			09/15/23 15:45	1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 280-626583/3 **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626583

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	5790	5300		mg/Kg		92	46 - 130

Lab Sample ID: LCS 280-626583/33 **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626583

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	5790	5070		mg/Kg		88	46 - 130

Lab Sample ID: 280-181324-15 MS **Client Sample ID: TW-2R2 - 50-94'**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626583

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	360000	H H3 F1	306000	886000	F1	mg/Kg	☼	172	46 - 130

Lab Sample ID: 280-181324-15 MSD **Client Sample ID: TW-2R2 - 50-94'**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626583

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	360000	H H3 F1	303000	733000		mg/Kg	☼	124	46 - 130	19	20

Lab Sample ID: MB 280-626706/4 **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4000	900	mg/Kg			09/19/23 12:19	1

Lab Sample ID: LCS 280-626706/3 **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	5790	5040		mg/Kg		87	46 - 130

Lab Sample ID: 280-181324-5 MS **Client Sample ID: MW-222 - 34.5-36'**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1900	J H H3	12000	13900		mg/Kg	☼	100	46 - 130

Lab Sample ID: 280-181324-5 MSD **Client Sample ID: MW-222 - 34.5-36'**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 626706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1900	J H H3	12000	13800		mg/Kg	☼	99	46 - 130	1	20

QC Sample Results

Client: WSP USA Inc

Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

Method: D 2216 - Percent Moisture

Lab Sample ID: 280-181324-15 DU

Matrix: Solid

Analysis Batch: 626177

Client Sample ID: TW-2R2 - 50-94'

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	17.1	H H3		15.3		%				11	20

Client Sample ID: MW-215 - 16-18'
Lab Sample ID: 280-181324-1
Date Collected: 02/06/23 08:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	100.9 mg	100.9 mg	626706	09/19/23 13:08	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-215 - 16-18'
Lab Sample ID: 280-181324-1
Date Collected: 02/06/23 08:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.56 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 22:45	JDM	EET HOU
Total/NA	Prep	9081			5.02 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-217 - 12-13'
Lab Sample ID: 280-181324-2
Date Collected: 02/08/23 09:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	99.7 mg	99.7 mg	626583	09/18/23 11:41	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-217 - 12-13'
Lab Sample ID: 280-181324-2
Date Collected: 02/08/23 09:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 95.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.56 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:09	JDM	EET HOU
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-218 - 11-12'
Lab Sample ID: 280-181324-3
Date Collected: 02/08/23 10:30
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	99.6 mg	99.6 mg	626583	09/18/23 11:30	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-218 - 11-12'
Lab Sample ID: 280-181324-3
Date Collected: 02/08/23 10:30
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.56 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:11	JDM	EET HOU

Lab Chronicle

Client: WSP USA Inc
Job ID: 280-181324-1
Project/Site: GRE Stantion Station MNA

Client Sample ID: MW-218 - 11-12'
Lab Sample ID: 280-181324-3
Date Collected: 02/08/23 10:30
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-219 - 18-20'
Lab Sample ID: 280-181324-4
Date Collected: 02/08/23 13:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	99.0 mg	99.0 mg	626706	09/19/23 13:17	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-219 - 18-20'
Lab Sample ID: 280-181324-4
Date Collected: 02/08/23 13:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.59 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:14	JDM	EET HOU
Total/NA	Prep	9081			5.02 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-222 - 34.5-36'
Lab Sample ID: 280-181324-5
Date Collected: 02/09/23 10:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	100.7 mg	100.7 mg	626706	09/19/23 12:29	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-222 - 34.5-36'
Lab Sample ID: 280-181324-5
Date Collected: 02/09/23 10:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 85.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.5 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:17	JDM	EET HOU
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-300 - 11-13'
Lab Sample ID: 280-181324-6
Date Collected: 02/09/23 12:30
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		2	51.2 mg	51.2 mg	626583	09/16/23 17:22	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Lab Chronicle

Client: WSP USA Inc
Job ID: 280-181324-1
Project/Site: GRE Stantion Station MNA

Client Sample ID: MW-300 - 11-13'
Lab Sample ID: 280-181324-6
Date Collected: 02/09/23 12:30
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 86.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.6 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:19	JDM	EET HOU
Total/NA	Prep	9081			5.02 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-PB3 - 22-24'
Lab Sample ID: 280-181324-7
Date Collected: 02/10/23 10:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		2	49.9 mg	49.9 mg	626583	09/16/23 17:10	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-PB3 - 22-24'
Lab Sample ID: 280-181324-7
Date Collected: 02/10/23 10:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 74.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.53 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:22	JDM	EET HOU
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-210 - 15-25'
Lab Sample ID: 280-181324-8
Date Collected: 05/15/22 13:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	99.7 mg	99.7 mg	626583	09/16/23 16:59	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-210 - 15-25'
Lab Sample ID: 280-181324-8
Date Collected: 05/15/22 13:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.59 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:25	JDM	EET HOU
Total/NA	Prep	9081			5.00 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Lab Chronicle

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

Client Sample ID: MW-211(B) - 14-25'
Lab Sample ID: 280-181324-9
Date Collected: 05/15/22 11:35
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	99.6 mg	99.6 mg	626706	09/19/23 12:58	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-211(B) - 14-25'
Lab Sample ID: 280-181324-9
Date Collected: 05/15/22 11:35
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 85.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.52 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:27	JDM	EET HOU
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-212(A) - 14-25'
Lab Sample ID: 280-181324-10
Date Collected: 05/16/22 08:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		2	50.4 mg	50.4 mg	626583	09/16/23 16:37	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-212(A) - 14-25'
Lab Sample ID: 280-181324-10
Date Collected: 05/16/22 08:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.6 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:40	JDM	EET HOU
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-212(B) - 0-5'
Lab Sample ID: 280-181324-11
Date Collected: 05/16/22 07:35
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		10	11.0 mg	11.0 mg	626583	09/16/23 16:27	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-212(B) - 0-5'
Lab Sample ID: 280-181324-11
Date Collected: 05/16/22 07:35
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.52 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		5			122713	09/20/23 23:43	JDM	EET HOU

Client Sample ID: MW-212(B) - 0-5'

Lab Sample ID: 280-181324-11
Date Collected: 05/16/22 07:35
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-213 - 20-30'

Lab Sample ID: 280-181324-12
Date Collected: 05/16/22 11:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		2	50.9 mg	50.9 mg	626583	09/16/23 16:17	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-213 - 20-30'

Lab Sample ID: 280-181324-12
Date Collected: 05/16/22 11:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 84.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.6 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:48	JDM	EET HOU
Total/NA	Prep	9081			5.02 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: MW-214 - 2-15'

Lab Sample ID: 280-181324-13
Date Collected: 05/16/22 13:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	99.8 mg	99.8 mg	626583	09/16/23 16:06	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: MW-214 - 2-15'

Lab Sample ID: 280-181324-13
Date Collected: 05/16/22 13:00
Matrix: Solid
Date Received: 09/11/23 13:30
Percent Solids: 78.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.6 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:51	JDM	EET HOU
Total/NA	Prep	9081			5.02 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: BH-1 - 2-5'

Lab Sample ID: 280-181324-14
Date Collected: 05/16/22 15:00
Matrix: Solid
Date Received: 09/11/23 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		2	51.8 mg	51.8 mg	626583	09/16/23 15:37	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Lab Chronicle

Client: WSP USA Inc
Project/Site: GRE Stantion Station MNA

Job ID: 280-181324-1

Client Sample ID: BH-1 - 2-5'

Lab Sample ID: 280-181324-14

Date Collected: 05/16/22 15:00
Date Received: 09/11/23 13:30

Matrix: Solid
Percent Solids: 90.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.52 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		100			122713	09/21/23 00:02	JDM	EET HOU
Total/NA	Prep	9081			5.01 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Client Sample ID: TW-2R2 - 50-94'

Lab Sample ID: 280-181324-15

Date Collected: 05/17/22 12:00
Date Received: 09/11/23 13:30

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		5	21.0 mg	21.0 mg	626583	09/16/23 12:09	ABW	EET DEN
Total/NA	Analysis	D 2216		1			626177	09/14/23 10:03	SL	EET DEN

Client Sample ID: TW-2R2 - 50-94'

Lab Sample ID: 280-181324-15

Date Collected: 05/17/22 12:00
Date Received: 09/11/23 13:30

Matrix: Solid
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3051A			.5 g	50 mL	122500	09/20/23 08:39	PB	EET HOU
Total/NA	Analysis	6010D		1			122713	09/20/23 23:56	JDM	EET HOU
Total/NA	Prep	9081			5.00 g	100 mL	123303	09/25/23 16:39	PB	EET HOU
Total/NA	Analysis	9081		1			123738	09/27/23 15:15	JDM	EET HOU

Laboratory References:

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

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Eurofins Denver
4955 Yarrow Street

Arvada, CO 80002-4517
phone 303.736.0100 fax 303.431.7171

Chain of Custody Record

eurofins Environment Testing America

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

Eurofins Environment Testing America
COC No: GL21509219.000-1
1 of 2 COCs

Client Contact	Project Manager: Erin Hunter	Site Contact: Erin Hunter	Date:
WSP USA Inc.	Email: erin.hunter@wsp.com		
7245 W Alaska Drive, Suite 200	Tel/Fax: 720-962-3424 (tel)	Lab Contact: Megan McElheny	Carrier: FedEx
Lakewood, CO 80226	Analysis Turnaround Time		
(303) 980-0540 Phone	☐ CALENDAR DAYS ☑ WORKING DAYS		
(xxx) xxx-xxxx FAX	TAT if different from Below ______		
Project Name: GRE Stanton Station MNA	☑ 2 weeks		
Site: Stanton Station, Stanton, ND	☐ 1 week		
P O # Project GL21509219.000, task 01.EXP	☐ 2 days		
	☐ 1 day		

TALS Project #:
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	9060A - TOC (Single Run)	D2216 Percent Moisture for Dry Weight Reporting	9081 - Cation Exchange Capacity (CEC)	9081 - Prep - Cation Exchange Capacity (CEC)	6010D - Sodium Only (Required for CEC)	3051A - Prep - Metals Digestion	Sample Specific Notes:
MW-215 - 16-18'	2/6/23	8:00	C	S	1	N	N	x	x	x	x	x	x	
MW-217 - 12-13'	2/8/23	9:00	C	S	1	N	N	x	x	x	x	x	x	
MW-218 - 11-12'	2/8/23	10:30	C	S	1	N	N	x	x	x	x	x	x	
MW-219 - 18-20'	2/8/23	13:00	C	S	1	N	N	x	x	x	x	x	x	
MW-222 - 34.5-36'	2/9/23	10:00	C	S	1	N	N	x	x	x	x	x	x	
MW-300 - 11-13'	2/9/23	12:30	C	S	1	N	N	x	x	x	x	x	x	
MW-PB3 - 22-24'	2/10/23	10:00	C	S	1	N	N	x	x	x	x	x	x	

280-181324 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☑ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☑ Disposal by Lab ☐ Archive for ______ Months

Special Instructions/QC Requirements & Comments:
See Quote 28024975-0 for additional instructions. Please proceed with analysis that is out of hold time and/or out of temperature, with inclusion of applicable qualifiers.

18.3°C Momo CF0.3

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ______ Corr'd: ______ | Therm ID No.: ______

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Erin Hunter [signature]	WSP USA Inc	9/8/23 11:00	[signature]	EETDEN	09-11-23 1330
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins Denver
4955 Yarrow Street

Arvada, CO 80002-4517
phone 303.736.0100 fax 303.431.7171

Chain of Custody Record

eurofins Environment Testing America

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **CCR**

Eurofins Environment Testing America

COC No: GL21509219.000-2
2 of 2 COCs

Client Contact	Project Manager: Erin Hunter	Site Contact: Erin Hunter	Date:
WSP USA Inc.	Email: erin.hunter@wsp.com	Lab Contact: Megan McElheny	Carrier: FedEx
7245 W Alaska Drive, Suite 200	Tel/Fax: 720-962-3424 (tel)		
Lakewood, CO 80226	**Analysis Turnaround Time**		
(303) 980-0540 Phone	☐ CALENDAR DAYS ☑ WORKING DAYS		
(xxx) xxx-xxxx FAX	TAT if different from Below ______		
Project Name: GRE Stanton Station MNA	☑ 2 weeks		
Site: Stanton Station, Stanton, ND	☐ 1 week		
P O # Project GL21509219.000, task 01.EXP	☐ 2 days		
	☐ 1 day		

TALS Project #:
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	9060A - TOC (Single Run)	D2216 Percent Moisture for Dry Weight Reporting	9081 - Cation Exchange Capacity (CEC)	9081 - Prep - Cation Exchange Capacity (CEC)	6010D - Sodium Only (Required for CEC)	3051A - Prep - Metals Digestion	Sample Specific Notes:
MW-210 - 15-25'	5/15/22	13:00	C	S	1	N	N	x	x	x	x	x	x	
MW-211(B) - 14-25'	5/15/22	11:35	C	S	1	N	N	x	x	x	x	x	x	
MW-212(A) - 14-25'	5/16/22	8:00	C	S	1	N	N	x	x	x	x	x	x	
MW-212(B) - 0-5'	5/16/22	7:35	C	S	1	N	N	x	x	x	x	x	x	
MW-213 - 20-30'	5/16/22	11:00	C	S	1	N	N	x	x	x	x	x	x	
MW-214 - 2-15'	5/16/22	13:00	C	S	1	N	N	x	x	x	x	x	x	
BH-1 - 2-5'	5/16/22	15:00	C	S	1	N	N	x	x	x	x	x	x	
TW-2R2 - 50-94'	5/17/22	12:00	C	S	1	N	N	x	x	x	x	x	x	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ________ Months

Special Instructions/QC Requirements & Comments:
See Quote 28024975-0 for additional instructions. Please proceed with analysis that is out of hold time and/or out of temperature, with inclusion of applicable qualifiers.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:______ Corr'd:______ | Therm ID No.:______

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Erin Hunter [signature]	WSP USA Inc.	9/9/23 11:00	[signature]	EETDEN	9-11-23 1330
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: McElheny Megan E	Carrier Tracking No(s):	COC No: 280-671689.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Megan.Mcelheny@et.eurofinsus.com	State of Origin: Colorado	Page: Page 1 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note):		Job #: 280-181324-1
Address: 4145 Greenbriar Dr	Due Date Requested: 9/25/2023	Analysis Requested		Preservation Codes:
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: GRE Stantion Station MNA	Project #: 28025062			
Site:	SSOW#:			Other:

Preservation Codes: A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9081/9081_Calc_Prep	6010D/3051A (MOD) Custom List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-215 16-18' (280-181324-1)	2/6/23	08:00 Mountain		Solid			X	X		
MW-217 12-13' (280-181324-2)	2/8/23	09:00 Mountain		Solid			X	X		
MW-218 11-12' (280-181324-3)	2/8/23	10:30 Mountain		Solid			X	X		
MW-219 18-20' (280-181324-4)	2/8/23	13:00 Mountain		Solid			X	X		
MW-222 34 5-36' (280-181324-5)	2/9/23	10:00 Mountain		Solid			X	X		
MW-300 11 13' (280-181324-6)	2/9/23	12:30 Mountain		Solid			X	X		
MW-PB3 22-24' (280-181324-7)	2/10/23	10:00 Mountain		Solid			X	X		Temp: 2.9 IR ID HOU-369
MW-210 15-25' (280-181324-8)	5/15/22	13:00 Mountain		Solid			X	X		C/F -0.0
MW-211(B) 14-25' (280-181324-9)	5/15/22	11 35 Mountain		Solid			X	X		Corrected Temp: 2.9

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*	
Unconfirmed		☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*	
Deliverable Requested: I, II, III IV Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:	
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: [signature]	Date/Time: 9-12-23 16:25	Company: EETDEN	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Jeremiah Baker	Date/Time: 9/13/2023 9:25	Company: EX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: WSP USA Inc | Job Number: 280-181324-1

Login Number: 181324 | **List Source: Eurofins Denver**
List Number: 1
Creator: Held, Wesley

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

Login Sample Receipt Checklist

Client: WSP USA Inc

Job Number: 280-181324-1

Login Number: 181324
List Number: 2
Creator: Baker, Jeremiah

List Source: Eurofins Houston
List Creation: 09/13/23 12:18 PM

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

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