Annual Groundwater Monitoring and Corrective Action Report for the WSEC CCR Monofill

Permit 78-SDP-26-06P
Walter Scott Jr. Energy Center
Council Bluffs, Iowa

MidAmerican Energy Company

January 31, 2025

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Certification

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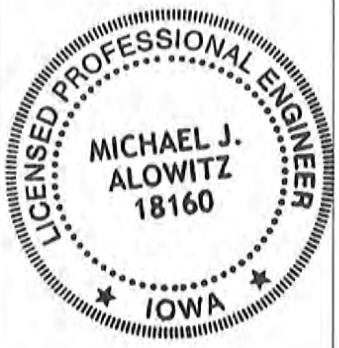
Permit 78-SDP-26-06P
Walter Scott Jr. Energy Center
Council Bluffs, Iowa
MidAmerican Energy Company

I certify this Annual Groundwater Monitoring and Corrective Action Report meets the requirements of 40 CFR §257.90(e).



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Michael J. Alowitz, P.E. — Date: 1/31/2025

License Number: 18160

My license renewal date is: December 31, 2026

Pages or sheets covered by this seal: Entire Document

Executive summary

In compliance with 40 CFR §257.90(e)(6), this executive summary provides an overview of the current status of groundwater monitoring and corrective action programs for Walter Scott Jr. Energy Center coal combustion residual (CCR) Monofill located near Council Bluffs, Iowa.

Item	Current Status
(e)(6)(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	At the start of the current annual reporting period, this CCR unit was operating under the detection monitoring program (40 CFR §257.94).
(e)(6)(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	At the end of the current annual reporting period, this CCR unit was operating under the detection monitoring program (40 CFR §257.94).
(e)(6)(iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to §257.94(e):	
Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and	Verified statistically significant increases were detected for the following Appendix III constituents during the calendar year 2024 reporting period: – Boron at MW-133 – Calcium at MW-105, MW-156, MW-190, MW-227, MW-245, MW-247, and MW-250 – Chloride at MW-105, MW-108, MW-133, MW-157, MW-247, and MW-250 – Sulfate at MW-105, MW-156, MW-191, MW-227, MW-245, MW-247, and MW-250 – TDS at MW-105, MW-108, MW-247, and MW-250
Provide the date when the assessment monitoring program was initiated for the CCR unit.	An alternate source demonstration was completed and this CCR unit was determined to not be the source of the SSIs; therefore, an assessment monitoring program has not been initiated for this CCR unit.
(e)(6)(iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to §257.95(g) include all of the following:	
Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;	Monitoring for Appendix IV constituents was not completed for this CCR unit during the 2024 annual reporting period because the CCR unit is in detection monitoring.
Provide the date when the assessment of corrective measures was initiated for the CCR unit;	A corrective measures assessment is not required for this CCR unit.
Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	A public meeting for assessment of corrective measures is not required for this CCR unit.
Provide the date when the assessment of corrective measures was completed for the CCR unit.	A corrective measures assessment is not required for this CCR unit.
(e)(6)(v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and	A remedy selection is not required for this CCR unit.

Item	Current Status
(e)(6)(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	No remedial activities pursuant to §257.98 occurred during the current annual reporting period for this CCR unit.

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1. Introduction

1.1 Purpose of this Report

This Annual Groundwater Monitoring and Corrective Action Report was prepared by GHD on behalf of MidAmerican Energy Company (MidAmerican) in compliance with the Federal Coal Combustion Residual (CCR) rule (40 CFR Part 257) for the Walter Scott Jr. Energy Center (WSEC) Monofill located near Council Bluffs, Iowa. The Monofill is located in portions of the SW ¼ of Section 31 Township 74N, and Range 43W; the NW ¼ of Section 6, Township 73N, Range 43W; and the NE ¼ of Section 1, Township 73N, and Range 44W in Pottawattamie and Mills Counties, Iowa. The site location map is shown on Figure 1.1, and the Monofill extent and monitoring well locations are shown on Figure 1.2. Figure 1.3 shows the background monitoring well locations and the Monofill location.

MidAmerican initiated baseline groundwater monitoring in accordance with the Federal CCR rule in March 2016. Subsequent changes to the monitoring well network were certified on January 20, 2020, November 30, 2021, and January 11, 2023, to reflect changes required due to expansion of the monofill. Two semiannual detection monitoring events were conducted during 2024 (April 1 through 4, 2024, and September 30 through October 3, 2024) and two verification groundwater monitoring events (June 3 through 5, 2024 and December 9 and 10, 2024) were conducted to evaluate statistically significant increases (SSIs) measured during the detection monitoring events.

The alluvial aquifer is considered a contiguous unit with a single water table. Bedrock was not encountered in a boring drilled at the site to a depth of approximately 117 feet below ground surface, however, bedrock at the site is believed to be either shale or limestone. In general, the subsurface geology at the Monofill consists of layers of sands, silts, and clays which are consistent with alluvial flood plain deposits.

2. Groundwater Monitoring Activities

2.1 Groundwater Monitoring Network

The groundwater monitoring network consists of 32 monitoring wells (Table 2.1). The groundwater monitoring network includes monitoring wells used for collection of groundwater samples and for gauging groundwater elevations. Groundwater elevation data were collected from all 32 wells and groundwater samples were collected from 24 wells. Horizontal spacing between the downgradient alluvial aquifer monitoring wells ranges from approximately 400 to 600 feet. Groundwater samples are used to assess potential impacts of the WSEC Monofill on surrounding groundwater. Groundwater elevation data are used to identify upgradient and downgradient monitoring points and to determine the potential influence of the Missouri River on groundwater conditions. Well construction details are provided in Table 2.2.

As discussed in the 2022 AGWMCAR (GHD, 2023), in recent years, groundwater flow direction at the Monofill varied due to the stage height of the Missouri River and variable amounts of precipitation in the general area of the site. The upgradient, downgradient, and background classifications of the site monitoring wells as noted on Table 2.1 were based on the general groundwater flow direction inferred during the 2016 and 2017 baseline monitoring events. With the variable groundwater flow directions in more recent years, the classification of some monitoring wells may have varied during recent compliance groundwater monitoring events. In addition, expansion of the Monofill brought the CCR disposal unit in closer proximity to the original background monitoring well (MW-133).

With the variable groundwater flow direction and Monofill expansion, the currently classified upgradient and background monitoring wells could potentially be affected by leachate leakage or a release of CCR from the Monofill.

Baseline sampling for four new upgradient background monitoring wells (MW-34, MW-307, TW-1, and TW-2) was completed from July 2020 through April 2022 to more accurately represent the quality of background groundwater quality. Three of the 32 monitoring wells were constructed February 19 and 20, 2024, to address lower water table elevations due to drought conditions in the area. These three new deeper wells (MW-156D, MW-227D, and MW-307D) were sampled in April, June, and October 2024 as the first three of eight baseline sampling events. Well logs for the three new monitoring wells added to the Monofill network are provided in Appendix A.

All monitoring wells in the groundwater monitoring system consist of 2-inch nominal inner-diameter polyvinyl chloride (PVC) casing and screen. Monitoring well construction included placement of clean silica sand in the screened interval and an annular seal of bentonite to the near surface. Monitoring well surface completions consist of either a lockable stick-up surface casing set in a concrete pad and placement of protective bollards in locations where traffic may be of concern, or a flush mount cover with a watertight well plug in high traffic areas where a stick-up well is not suitable. Review of monitoring records and well inspections indicate the monitoring wells have been operated and maintained adequately to meet the design specifications of the monitoring program.

2.2 Monitoring Well Inspection

During each sampling event, the monitoring wells were visually inspected, and deficient conditions of the monitoring wells (if present) were noted on the field forms (Appendix B). Wells are maintained with a well cap and a lockable protective casing. Observations include the condition of the protective casing/vault and surrounding ground surface. The wells were found to be in generally good condition, with no issues affecting well or sample integrity. Locks were noted to be missing on some wells and were replaced.

On an annual basis, the total well depth of each well in the monitoring network is measured to evaluate the well condition and potential sediment accumulation in the well. Total well depth measurements and screen occlusion calculations from the 2024 total depth measurements are presented in Table 2.3. If screen occlusion greater than 10 percent is verified to be present, the well will be redeveloped prior to the next sampling event. All wells were below 10% screen occlusion.

Some of the monitoring wells were measured at total depths greater than the total well depth on the original monitoring well logs, which results in a negative percent screen occlusion. It is assumed the recent total depth measurements are correct and reflect final well construction.

2.3 Sample Collection

Sampling was conducted using dedicated bladder pumps to purge water and collect samples using low-flow sampling techniques. Due to drought conditions, some wells did not contain sufficient water for sampling (MW-156 MW-227, and MW-307 during the April 2024 event).

Prior to sample collection, temperature, conductivity, pH, oxidation-reduction potential (ORP), dissolved oxygen, and turbidity of the purge water were measured using a calibrated multiparameter water quality instrument and flow cell. The readings were recorded on well sampling records or in a field notebook. Upon stabilization, unfiltered samples were collected in laboratory-supplied containers. Copies of the groundwater sampling records for the 2024 monitoring events are included in Appendix B. During the April and October 2024 monitoring events, field duplicate samples were collected from monitoring well MW-105 and MW-240R for quality assurance/quality control (QA/QC) purposes. No duplicates were collected during the June 2024 verification event. A duplicate was collected at MW-227 during the December 2024 verification event.

2.4 Analytical Parameters

Groundwater samples were analyzed for the parameters specified in 40 CFR Part 257 Appendix III (Table 2.4) for the two detection monitoring events. The three new wells (MW-156D, MW-227D, and MW-307D) where baseline monitoring is being conducted were analyzed for both Appendix III and Appendix IV parameters. The laboratory analyses were conducted by Eurofins Environment Testing North Central, LLC (Eurofins) in Cedar Falls, Iowa; the

radium 226 and 228 (combined) analyses were conducted by Eurofins in St. Louis, Missouri. Analyses were conducted by the laboratory in accordance with the procedures and methods described in the United States Environmental Protection Agency (USEPA) Manual SW-846, “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (September 1986),” as updated and/or in accordance with other approved testing procedures. Eurofins provided prepared sample containers for each monitoring event. Analytical reports from each sampling event report total (i.e., unfiltered) sample results in accordance with the Federal CCR rule.

The Appendix IV analytes (applicable to baseline and assessment monitoring events) are listed in Table 2.5. Table 2.6 summarizes the number of groundwater samples collected for analysis from each monitoring well, the dates the samples were collected, and whether the sample was required by the baseline, detection monitoring, or assessment monitoring programs.

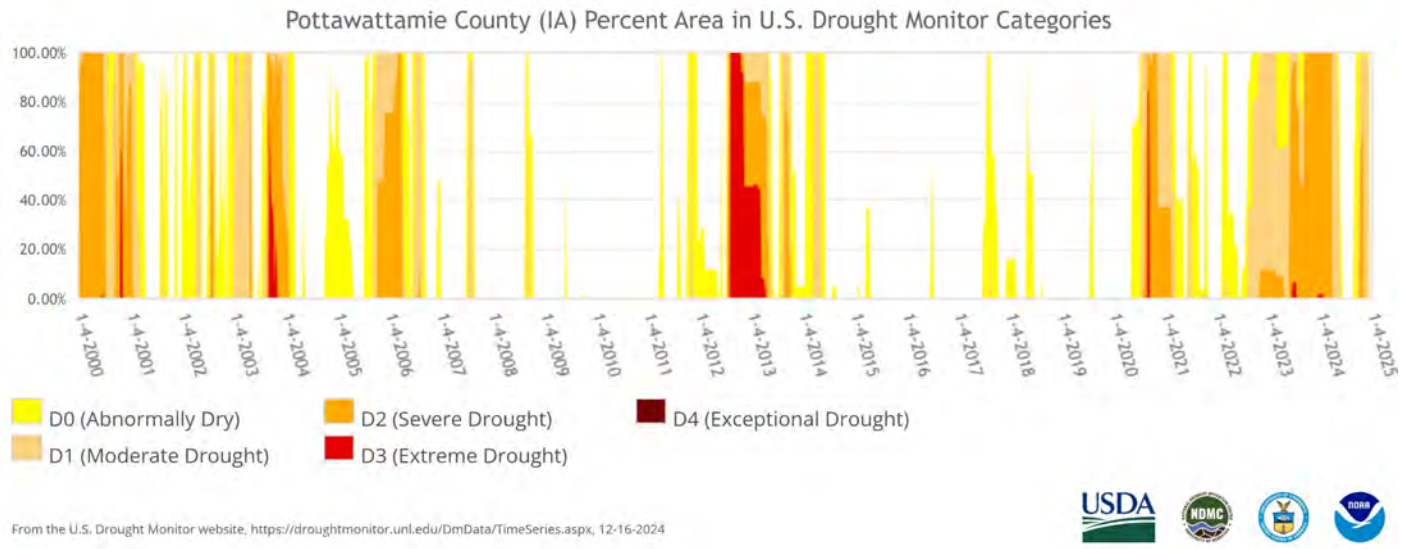
Following receipt of the final laboratory analytical reports from each round of sampling, GHD completed an analytical data quality assessment and validation for the groundwater and field quality assurance samples collected during the baseline and initial detection monitoring events. Based on these assessments, the data are acceptable for use as reported by the laboratories.

3. Groundwater Flow Conditions

Groundwater levels were measured at each of the monitoring wells included in the monitoring network during each monitoring event. Table 3.1 presents groundwater elevations measured in wells during the April 2024, June 2024, September/October 2024, and December 2024 monitoring events as well as past gauging events.

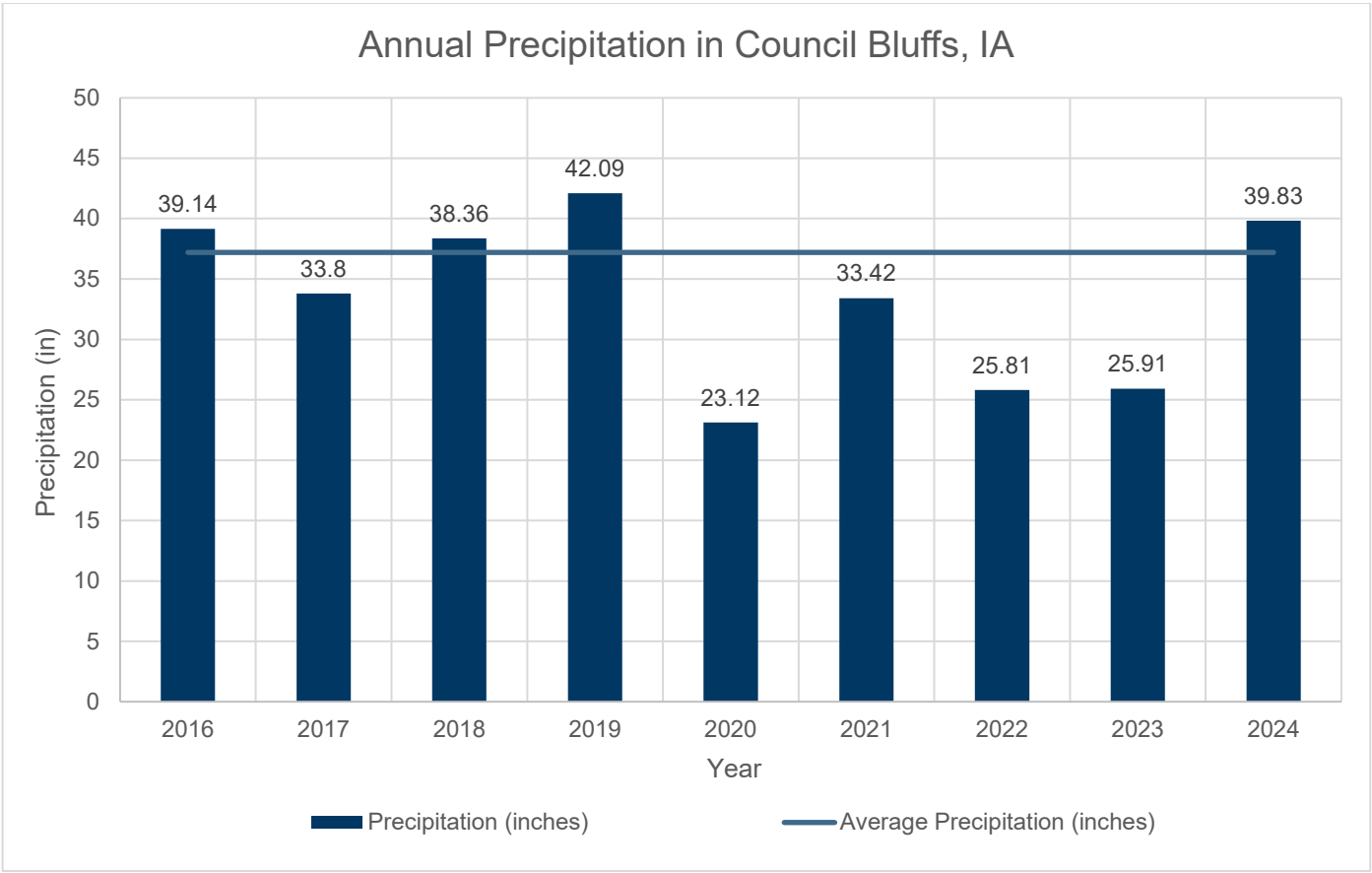
3.1 Drought Conditions

Groundwater level data have been collected from 2016 through 2024; the groundwater elevations declined in the last few years, reflecting drought conditions in the area. As shown in Inset 1, the U.S. Drought Monitor reported 100 percent of the land in Pottawattamie County as D2 Severe Drought or D1 Moderate Drought throughout a large part of 2020 and early 2021. In late 2020, a large portion of the county was classified as D3 Extreme Drought. The dry conditions continued from mid-2020 through mid-2021 and then fluctuate for the rest of the year and into 2022 with the classification of D0 Abnormally Dry. From mid-2022 to the present, the entire county is reported to be dry, significant enough to warrant a D0 or higher rating. During 2023, the U.S. Drought Monitor showed 100 percent of land area in Pottawattamie County in a D2 Severe Drought or worse. Despite precipitation above the average in 2024, during December 2024, 98.57 percent of land area in Pottawattamie County is still classified in a D1 moderate drought, with 100 percent classified as D0 abnormally dry.



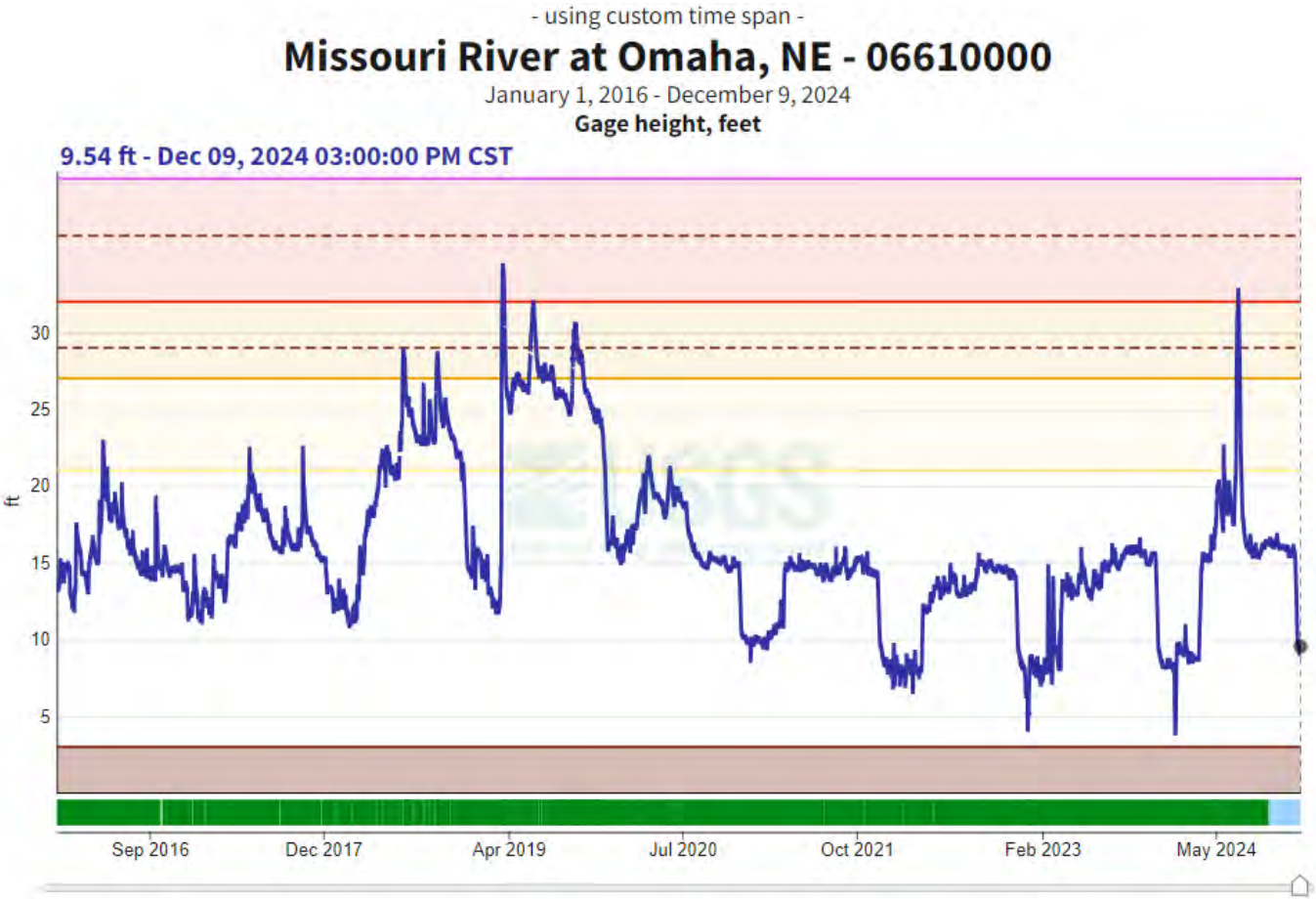
Inset 1. Drought conditions for Pottawattamie County. Time Series | U.S. Drought Monitor

The average rainfall for the Council Bluffs area is 37.2 inches (1991 through 2021); annual precipitation since 2016 (when groundwater monitoring began under the Federal CCR rule) is shown in Inset 2. Over the 2016 through 2024 period, annual precipitation was below average during 2017 and 2020 through 2023. During 2024, precipitation levels returned to higher than average, but the area remained in drought conditions for most of the year (Inset 1).



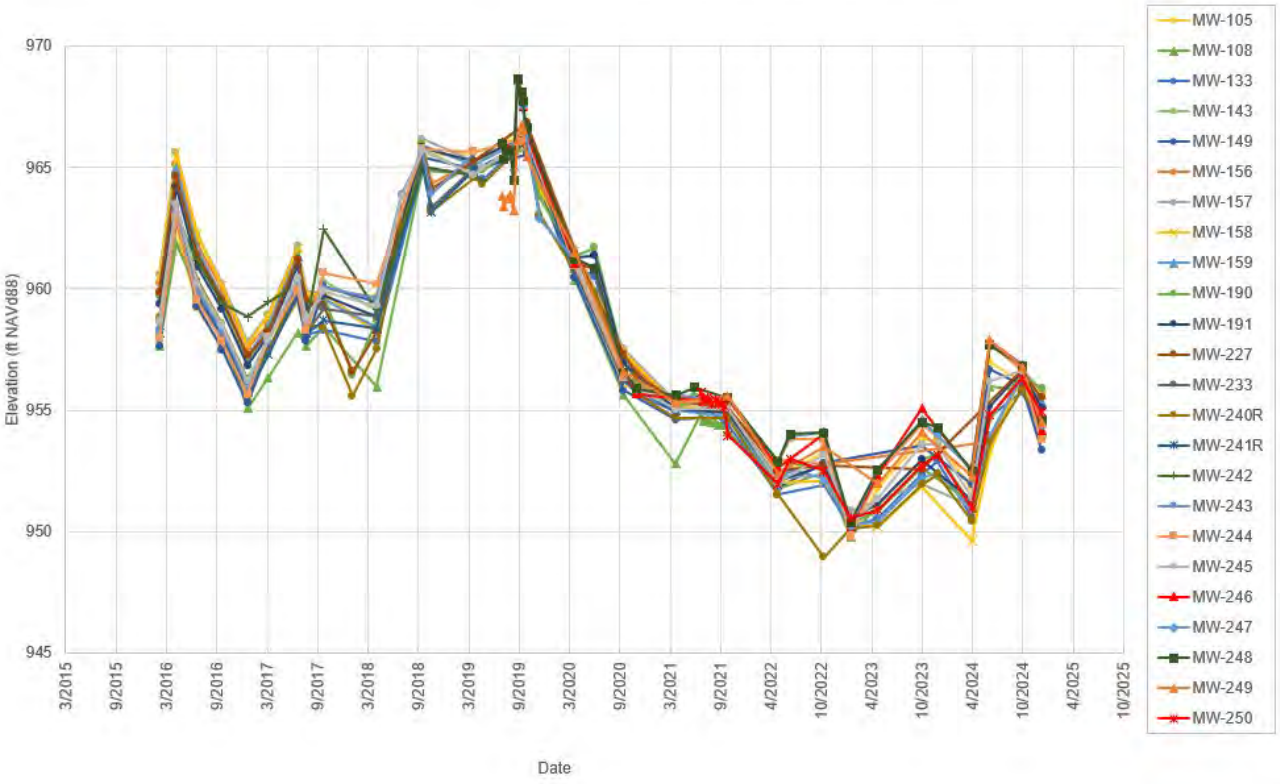
Inset 2. Precipitation in Council Bluffs area through 2024. https://hprcc.unl.edu/stationtool/explore.php?sid=IAPT0013

During 2018 and 2019, releases from the Missouri River reservoir system upstream to the site were higher than average. During 2020 and continuing through 2023, releases into the Missouri River from the reservoir system decreased river stage near the site (Inset 3) and reduced precipitation occurred (Inset 2).



Inset 3. Missouri River elevations at Omaha, Nebraska. https://waterdata.usgs.gov/monitoring-location/06610000/#startDT=2016-01-01&endDT=2024-12-09&dataTypeId=continuous-00065-0&showMedian=false

Inset 4 illustrates groundwater elevations at the Monofill. The highest groundwater elevations over the monitoring period were generally observed during 2019 followed by a decline in elevations with the drought. The lowest groundwater elevations were measured in late 2022 into early 2024. There was an increase in groundwater elevations during the latter portion of 2024 compared to recent years, but elevations remained below the highs observed in 2019.



Inset 4. Hydrograph of Monofil monitoring wells.

As a result of the reduced releases from the Missouri River reservoir system and reduced precipitation, groundwater elevations measured in site monitoring wells decreased during 2020 through 2024 compared to 2019.

3.2 Horizontal Groundwater Flow

Groundwater levels were measured at each of the monitoring wells included in the monitoring network during each monitoring event. Table 3.1 presents groundwater elevations measured in wells from the April 2024, June 2024, September 2024, and December 2024 gauging events. Groundwater flow maps were prepared using water level measurements from all four WSEC CCR Monofill monitoring events (Figures 3.1 through 3.4).

The groundwater flow direction varied during the 2024 monitoring period. During the April and June monitoring and verification events, groundwater flow direction was from the Missouri River across site toward the southeast. The groundwater flow direction during the September 2024 monitoring event was split across the site with flow to the northeast on the northern portion of the Monofill and to the south-southwest on the southern portion of the Monofill. During the December verification event, groundwater flow reversed, flowing from the southeast towards the Missouri River. Groundwater flow during the 2016 and 2017 background monitoring events was generally to the northwest at the site. Variable groundwater flow directions observed during the 2018 and 2019 compliance monitoring events when compared to the background monitoring events could have been influenced by higher-than-average surface elevation

(stage) of the Missouri River. During 2018 and 2019, releases from the Missouri River reservoir system upstream to the site were higher than average due to higher runoff in the river basin.

3.3 Horizontal Gradient and Groundwater Flow Velocity

Based on in-situ permeability tests conducted at the site, hydraulic conductivity at the site is approximately 2.87 meters per day (m/day) [9.41 feet per day (ft/day)] in the upper portion of the water table aquifer.

The average horizontal linear groundwater velocity was estimated based on hydraulic conductivity, horizontal gradient, and the estimated porosity of the formation using the following equation:

$$V = Ki/n$$

Where V equals the average horizontal linear velocity; K equals the geometric mean hydraulic conductivity (2.87 m/day); i equals the average horizontal hydraulic gradient; and n equals the effective porosity (estimated at 0.3). During the 2024 monitoring events at the WSEC CCR Monofill, the average linear groundwater velocity was estimated to range between 0.01 m/day (approximately 15 feet per year) during the September 2024 monitoring event and 0.02 m/day (approximately 25 feet per year) during the June 2024 monitoring event. The estimated horizontal gradients and average linear groundwater flow velocities for each of the monitoring events are summarized in Table 3.2.

3.4 Monitoring Well Network Assessment

The WSEC CCR Monofill monitoring network meets the Federal CCR rule requirements of having at least one upgradient monitoring well and three downgradient monitoring wells, and the groundwater monitoring network meets the design and construction requirements of 40 CFR §257.91 (GHD, 2024).

4. Groundwater Monitoring

Groundwater sample collection records for the 2024 monitoring events are provided in Appendix B and the associated laboratory analytical reports are provided in Appendix C. Appendix D includes time series graphs of concentration versus time for each analyte in the current monitoring program. Cumulative analytical results for groundwater samples collected over the course of monitoring under the Federal CCR rule (March 2016 through 2024) are presented in Table 4.1. Data from the 2024 monitoring events are presented in Table 4.2.

Under the Federal CCR rule, data obtained are to be subjected to statistical evaluation to demonstrate compliance with monitoring goals. Specifically, requirements for groundwater monitoring and corrective action are presented in 40 CFR §257.90 through 257.98, and the statistical methods used in the evaluation are presented in the Groundwater Statistical Methods Certification (Methods Certification) (Terracon, 2017). The procedures in the Methods Certification were selected in accordance with the Federal CCR rule, using methodology presented in the USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance (Unified Guidance) (USEPA, 2009). Details of the evaluation approach and findings are presented below.

4.1 Statistical Analysis Overview

As part of assessment and reporting requirements under the Federal CCR rule, groundwater monitoring data are subjected to statistical evaluation to demonstrate compliance with monitoring goals. Groundwater monitoring at WSEC Monofill is currently conducted under Detection Monitoring status under the Federal CCR rule. As per the Methods Certification, the evaluation components include:

– Intra-well prediction interval comparisons (current vs. baseline conditions at a given well), including statistical summaries for the baseline data sets

- Assessment of statistical trends over time (Sen's Slope Estimator/Mann Kendall Test), including the preparation of trend plots (concentration vs. time)
- Detection verification (confirming any initial increases with a verification resample)

Although not specified in the statistical certification, the occurrence of previously undetected monitoring parameters at a given well, should this occur, would be evaluated using USEPA's Double Quantification Rule (DQR) to identify statistically significant increases above baseline (USEPA, 2009). The DQR specifies that two consecutive detected concentrations (i.e., above the reporting limit) indicate a statistically significant increase above a baseline consisting of entirely non detect (or J-qualified below the laboratory reporting limit) data.

The results of the intra-well UPL comparisons are used in conjunction with detection verification to identify statistically significant increases (SSIs). The results of trend tests are used in conjunction with the SSI determinations to provide an overall assessment of evidence for or against any impact of the CCR Monofill on groundwater.

As noted in the Method Certification, if changes in governing regulations, guidance, regional groundwater conditions or other influential factors are noted, the statistical approach could change. If such a change is warranted, a modification to the statistical approach consistent with the CCR Rule would be recommended for one or more constituents and/or monitoring wells.

4.2 Intra-Well Prediction Interval Comparisons

In the Methods Certification, the use of intra-well upper prediction limits (UPLs) was selected as appropriate for assessment of groundwater monitoring data for the WSEC Monofill. A UPL is a statistically based value above which one or more future sample measurements are unlikely to occur if future conditions remain consistent with the reference population. Intra-well comparisons utilizing baseline UPLs consist of two actions:

i) Calculating UPL values for each parameter at each well based on a baseline data set

ii) Comparing individual post baseline data against the UPL values to determine if an increase occurred

Methods for assessing, testing and accommodating each of these assumptions / data characteristics are provided in the Unified Guidance (USEPA, 2009).

4.2.1 Baseline Data

The specific statistical calculation method for each UPL value takes into consideration data characteristics, such as the observed data distribution, the presence of statistical outliers, the occurrence of censored data (non-detect results), and non-stationarity within the baseline period (i.e., trends).

Statistical UPLs were calculated for each monitoring constituent at each well considering the baseline period data, against which future monitoring results from the same well were compared. For any monitoring constituents that are not detected above the laboratory reporting limit during the baseline period, the reporting limit is used as the UPL.

The number of baseline data required for establishing an intra-well UPL is not specified in the Statistical Method Certification, however a minimum of 8 data points is typically recommended under the Unified Guidance (USEPA, 2009).

Originally, baseline monitoring under the Federal CCR rule occurred at the WSEC Monofill during eight monitoring events conducted between March 2016 and August 2017. Due to varying flow regimes and monofill expansion, new background wells were identified: MW-34, MW-307, TW-1, and TW-2 (Figure 1.3). Baseline sampling of these locations was initiated in July 2020 and completed in April 2022 for most locations (low groundwater elevations precluded collection of the eighth baseline sample from MW-307). In the 2021 Annual Report (Terracon, 2022), the baseline period for most of the downgradient wells (all but MW-105, MW-108 and MW-250) was extended to include the first 12 sampling events at each of the wells. The baseline data for all wells are indicated in the cumulative data summary provided in Table 4.1.

If additional changes (i.e., trends) in regional conditions continue in the future, the baseline assessment may be revised accordingly (e.g., by extending or updating the baseline period). Assessment of the baseline data for WSEC Monofill is presented in the following sections.

4.2.2 Stability Assessment/Baseline Period Trend Analysis

The assessment of temporal trends is included as a precursor to intra-well comparisons, as the statistical methods for these comparisons assume that a stable condition is present in the reference data set (i.e., the baseline period). Where a trend is identified, the comparison procedures must be adjusted to take this into account. Trend tests were carried out according to the same methods described below in Section 4.3.

Significant trends were identified for several of the intra-well baseline data sets (Table 4.3), which are summarized below:

Increasing trends in the baseline data set were found for the following wells/constituents:

- Boron at MW-108 and MW-158
- Calcium at background well TW-2 and MW-190
- Chloride at background well TW-1, MW-133, MW-156, MW-157, and MW-227
- Sulfate at background well TW-1, MW-105, MW-190, MW-227, and MW-245
- TDS at MW-190

Decreasing trends were found for the following wells/constituents:

- Chloride at MW-247
- Fluoride at MW-248
- pH at MW-247 and MW-248
- Sulfate at MW-156
- TDS at MW-108

Where temporal trends were identified over the baseline period, prediction limits are not calculated due to violation of the statistical assumptions of the UPL calculations, and a baseline range is provided as a reference. For such data sets, future sample results are to be compared both against the baseline range and what would be expected based on the observed trend over the baseline period.

4.2.3 Intra-Well UPL Calculations

The intra-well statistical UPLs are based on a “1-of-2” retesting plan and cumulative annual site-wide false positive rate (SWFPR) of 0.10, as described in Chapter 19 of USEPA’s Unified Guidance (USEPA, 2009 – see page 19-11). This means there is 90 percent confidence site-wide (for 17 downgradient wells, 7 Appendix III constituents, and semiannual sampling) that constituent concentrations above the baseline UPL in both original and verification resampling samples indicate a true SSI. Note that in cases where a non-parametric (rank-based) UPL is required (due to high proportions of non-detects, the presence of statistical outlier(s) in baseline, and/or non-normal data distributions), the level of statistical confidence is lower than this target.

Similarly, for constituents that are not detected during the baseline period, the DQR identifies an SSI when both regular monitoring and subsequent resampling event samples have constituent concentrations above the reporting limit where the corresponding baseline data set consists entirely of non-detect results (including estimated J-qualified results below the reporting limit).

Calculations of UPLs for intra-well comparisons were completed using the logic and methodology presented in USEPA’s Technical Guide for its ProUCL software (USEPA, 2022, version 5.2). The calculated intra-well baseline values (UPLs) for each constituent at each well are provided in Table 4.3.

4.3 Trend Testing

As noted in the Methods Certification, trends tests are included in the groundwater monitoring data assessment. Specifically, the Mann-Kendall (M-K) trend test and Sen's Slope Estimator are used. The Mann-Kendall test is commonly applied to environmental monitoring data (USEPA, 2009; United States Geological Survey (USGS), 2020).

It is a non-parametric (rank-based) method that evaluates a set of data for a monotonic (unidirectional) trend result. The procedure makes no assumptions regarding the shape of the trend (e.g., linear, log linear), except that the trend is in a single direction (i.e., either consistently upward or downward).

In implementing the Mann-Kendall trend test, a two-sided significance level of 0.05 (i.e., 95 percent confidence) was used. Performing the trend tests at a confidence level of 0.05 results in a false positive rate (concluding a significant trend when none is present) of 5 percent.

The following approach was used to accommodate the presence of censored data (non-detect results) in many data sets. If a given data set contained more than 50 percent non-detects or had fewer than 4 detected results, no trend testing was performed. Otherwise, any non-detect results were considered to be tied (of equal value) and having lower concentrations than any detected values. This assumption was made to prevent any variation in detection limits influencing the Mann-Kendall trend test results. The data were also screened for any cases where low-level detections (e.g., J-qualified estimated values) were present below reporting limits resulting in ambiguous comparisons with non-detect results and required accommodation on a case-by-case basis (e.g., treating the low detect as a non-detect or excluding non-detect results from the trend test). If a dataset consisted entirely of non-detects, or had less than 4 detected results, no trend test was performed.

Field duplicate results were averaged prior to completing the trend analyses. If one field duplicate was a detected value and the other a non-detect, the detected result was conservatively retained to represent a maximum estimate of the analyte concentration.

The Mann-Kendall trend test requires that sampling frequencies be consistent, at least approximately, over the time frame considered. In the data sets considered, this assumption was generally not met, with variation in sampling frequencies observed during the earlier period (2016 to 2018) and during verification sampling events, where not all analytes were sampled. The approach used to accommodate variation in sampling frequency was to pre-process the data to obtain a more consistent time interval based on the current sampling frequency. Verification sampling events were not included in the trend tests.

4.4 Evaluation of 2024 Detection Monitoring Data

The 2024 monitoring data for the WSEC Monofill are presented in Table 4.2. Groundwater monitoring at the WSEC Monofill is currently conducted under Detection Monitoring status per the Federal CCR rule. As such, the seven Appendix III constituents were analyzed in samples collected during two 2024 detection monitoring events (April and October) at background and downgradient wells. Verification sampling events were conducted in June and December 2024 for select Appendix III constituents that were previously detected above comparison values in accordance with 40 CFR §257.95(d)(1). The specific wells that were resampled during the verification events are identified in Table 2.6.

Appendix III constituent data sets from sampling conducted during 2024 (two detection monitoring events and two verification events) are presented in Table 4.2 and summarized below. Appendix IV analytes were not analyzed in the majority of samples collected during the 2024 monitoring events, since they are not required for a detection monitoring program; Appendix IV analytes were analyzed for wells where baseline conditions are currently being evaluated (MW-156D, MW-227D, and MW-307D) and at the background wells (MW-34, MW-307, TW-1, and TW-2), which also serve as background wells for the WSEC North-South Impoundment CCR unit.

4.4.1 Intra-well Comparisons (vs. Well-Specific Baseline Values)

Intra-well comparisons of current monitoring data are conducted by comparing monitoring results from the 2024 sampling events to the baseline period UPLs for each given well. These comparisons are presented in Table 4.4 which also includes 2023 data to illustrate well-constituent combinations where verification in 2024 was needed to assess a potential SSI.

During 2024, fluoride results had a reporting limit of 1 milligrams per liter (mg/L), which was above the 0.5 mg/L reporting limit during the baseline monitoring results; all 2024 fluoride results were non detect. The October 2024 detection monitoring event also had a boron reporting limit of 0.500 mg/L, where dilutions were required, which is higher than the established baseline UPLs at multiple locations. The results of the 2024 intra-well comparisons indicate the Appendix III constituent concentrations listed below are above those observed during the baseline period:

- Boron at MW-108 and MW-133
- Calcium at MW-105, MW-156, MW-190, MW-191, MW-227, MW-244, MW-245, MW-247, and MW-250
- Chloride at MW-105, MW-108, MW-133, MW-157, MW-247, and MW-250
- Sulfate at MW-105, MW-156, MW-191, MW-227, MW-244, MW-245, MW-247 and MW-250
- TDS at MW-105, MW-108, MW-247, and MW-250

Of these 2024 observations, the following data sets represent SSIs, having two consecutive results exceeding their respective intra-well UPLs:

- Boron at MW-133
- Calcium at MW-105, MW-156, MW-190, MW-227, MW-245, MW-247, and MW-250
- Chloride at MW-105, MW-108, MW-133, MW-157, MW-247, and MW-250
- Sulfate at MW-105, MW-156, MW-191, MW-227, MW-245, MW-247, and MW-250
- TDS at MW-105, MW-108, MW-247, and MW-250

4.4.2 Trend Tests Results

M-K Trends Tests for each upgradient/background and downgradient well are presented in Table 4.5. Trend tests were performed considering all available data, varying for each well. Statistically significant tends ($P<0.05$, i.e., greater than 95 percent confidence) were identified for the following data sets:

Increasing trends were found for the following wells/constituents:

- Boron at MW-133, MW-191, MW-227, and MW-244
- Calcium at background well MW-190 and MW-191
- Chloride at background well TW-1, MW-105, MW-133, MW-156, MW-157, MW-247, and MW-250
- Sulfate at background well TW-1, MW-191, and MW-250
- TDS at MW-105 and MW-250

Decreasing trends were found for the following wells/constituents:

- Boron at MW-307
- Calcium at MW-158
- Chloride at MW-245 and MW-246
- Fluoride at MW-191
- Sulfate at MW-158 and MW-245
- TDS at MW-158 and MW-240R

4.4.3 Descriptive Statistics and Water Quality Standards Comparisons

Where available, it is appropriate to compare the water quality parameter concentrations against applicable water quality criteria. Most of the Appendix III parameters in the CCR Rule (all but fluoride) do not have published maximum contaminant levels (MCLs). Note that should the Appendix IV parameters be analyzed in the future, the Appendix IV parameters will be compared to the corresponding MCL or Groundwater Protection Standard specified in the Federal CCR rule. Descriptive statistics by parameter are presented below, as well as an MCL comparison for fluoride.

- Boron. No MCL has been established for boron. The maximum boron concentration detected in 2024 was 0.803 mg/L at MW-158 (October 2024).
- Calcium. No MCL has been established for calcium. The maximum calcium concentration detected in 2024 was 342 mg/L at well MW-156D (October 2024).
- Chloride. No MCL has been established for chloride. The maximum chloride concentration detected in the 2024 detection samples was 109 mg/L at well MW-133 (April 2024).
- Fluoride. The MCL for fluoride is 4.0 mg/L. Fluoride was not detected above the laboratory reporting limit of 1.00 mg/L in any of the samples collected during 2024.
- pH. No MCL has been established for pH. The lowest and highest pH measurement recorded in 2024 were 6.8 J at MW-156, MW-158, and MW-250 (April 2024) and 9.1 J at wells MW-227D (October 2024), respectively.
- Sulfate. No MCL has been established for sulfate. The maximum sulfate concentration detected in 2024 was 722 mg/L at MW-156D (October 2024).
- Total Dissolved Solids (TDS). No MCL has been established for TDS. The maximum TDS concentration in 2024 was 1,620 mg/L at MW-156D (October 2024).

4.4.4 Discussion and Summary of Statistical Data Assessment

Combining the results of the various statistical assessment elements presented above, conclusions are presented in detail below for each of the Appendix III parameters.

- Boron. An increasing trend in boron concentrations was reported at MW-133, MW-191, MW-227, and MW-244; the 2024 results are not above the intra-well UPL except at MW-133, where an Alternate Source Determination (ASD) was completed (GHD, 2023). No further verification or evaluation is required for boron data.
- Calcium. The 2024 monitoring data includes at least one result above the intra-well UPL for calcium at MW-105, MW-156, MW-190, MW-227, MW-244, MW-245, MW-247, and MW-250. Increasing trends were noted at MW-190 and MW-191. These confirmed SSIs above the intra-well UPLs and have been addressed in ASDs (GHD, 2023 and 2024). There are no unconfirmed SSIs for calcium requiring verification.
- Chloride. During 2024, chloride SSIs were confirmed at MW-105, MW-108, MW-133, MW-157, MW-247, and MW-250. Increasing trends across the data set were noted for background well TW-1, MW-105, MW-133, MW-156, MW-157, MW-247, and MW-250. ASDs address these exceedances (GHD, 2023 and 2024). There are no unconfirmed SSIs requiring verification.
- Fluoride. In 2024, fluoride was not detected in downgradient wells above the reporting limit of 1.0 mg/L. No increasing trends in fluoride were identified.
- pH. Across the 2024 monitoring program, pH was below the intra-well UPLs. No statistically significant trends are observed in the pH data and no verification sampling is required for pH.
- Sulfate. During 2024, sulfate SSIs were confirmed for MW-105, MW-156, MW-191, MW-227, MW-245, MW-247, and MW-250 and have been addressed in ASDs (GHD, 2023 and 2024). No verification sampling is required for sulfate.
- TDS. SSIs for TDS were confirmed at MW-105, MW-108, MW-247, and MW-250 during the 2024 monitoring period. These exceedances have been addressed in ASDs (GHD, 2023 and 2024). No further verification sampling is required for sulfate.

5. Alternate Source Determination

As described in 40 CFR §257.94(e)(2), statistically significant differences from background levels for a constituent may be evaluated to demonstrate that a source other than the CCR unit has caused the SSI or resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Alternate source determinations have been completed for the WSEC Monofill to demonstrate natural variability in background concentrations and changes due to variability in groundwater flow direction are the cause of select SSIs. In addition, a discharge of treated wastewater from the CBWPCP into the drainage way immediately adjacent to the Monofill occurred in 2019 and 2024 and appears to continue to be contributing to elevated concentrations at wells near the wastewater release.

5.1 New SSIs To Be Evaluated

SSIs not previously demonstrated to be from an alternate source are summarized below:

- MW-105 Chloride and TDS
- MW-133 Chloride
- MW-190 Calcium

The identified SSIs are attributed to natural variability in groundwater quality, variations in groundwater flow directions, and the release of treated wastewater from the CBWPCP. An ASD for these constituents is provided in Appendix E.

As demonstrated in previous ASDs, there are large temporal and spatial variations in background concentrations in groundwater across the site. The chloride concentrations at MW-105 (23.4/23.3 and 34.3/38.9 mg/L) are above the intra-well UPL of 17.7 mg/L but are within the range of chloride concentrations observed in background wells (<5.00 to 56.9 mg/L). The TDS concentrations at MW-105 (738/722 and 884/882 mg/L) are above the intra-well UPL of 723 mg/L but are within the range of TDS concentrations in background wells (340 to 1520 mg/L). These background conditions and location of MW-105 in comparison to groundwater flow direction all points to natural variation and changes in the groundwater flow directions being the cause of the SSIs.

5.2 Description of Alternate Source Determination

Although SSIs were identified in groundwater, the lined WSEC Monofill is not believed to be the source of the SSIs due to the nature of the WSEC Monofill construction and operation methods. Due to changes in groundwater flow from upstream releases of stored flood waters into the Missouri river by the United States Army Corps of Engineers, natural variability in groundwater quality, infiltration of treated wastewater whish was discharged into drainage ways immediately adjacent to the site by Council Bluffs Water Pollution Control Plant, and the limited time frame in which the line Monofill has been receiving CCR material, it has been determined that the Monofill is not the source of groundwater impacts.

5.3 Monofill Is Not Source of Groundwater Impacts

As demonstrated by the ASDs, the verified SSIs are not the result of a release from the site, but due to natural variability in groundwater quality due to variations in groundwater flow directions measured during compliance events compared to groundwater flow directions measured during respective background monitoring events for site wells. Also, discharge of treated wastewater from the CBWPCP into drainage ways immediately adjacent to the site resulted in elevated concentrations of chloride observed at monitoring well MW-133 during the 2019 monitoring events and its residual impact coupled with a new release in 2024 is likely impacting groundwater conditions.. As a result of this ASD, the detection monitoring program will continue at the site in accordance with 40 CFR §257.94.

5.4 Alternate Source Determination Conclusion

As demonstrated in this alternate source determination evaluation, the lined WSEC Monofill is not the source of the observed SSIs in groundwater. As a result of this demonstration, the WSEC Monofill will continue with a detection monitoring program under 40 CFR §257.94(e)(2).

6. Conclusions and Recommendations

6.1 Groundwater Flow and Evaluation of the Monitoring Network

The groundwater flow direction varied during the 2024 monitoring events. Flowing from the Missouri River toward the southeast during the April and June events, and then reversing during the December event flowing from the southeast toward the Missouri River. The groundwater flow direction during the September 2024 monitoring event was split across site with flow to the northeast on the northern portion of the Monofill and to the south-southwest on the southern portion of the Monofill.

The groundwater flow evaluation (see Figures 3.1 through 3.4) indicates the monitoring network is sufficient and has appropriately located upgradient and downgradient well locations.

6.2 Groundwater Quality

The statistical evaluation of groundwater monitoring data collected during the baseline period was conducted in accordance with the Federal CCR rule and Unified Guidance for assessing groundwater data (USEPA, 2009). This evaluation was successful in characterizing the baseline data sets, assessing the baseline data for trends, and generating inter-well upgradient background reference values and intra-well baseline values against which future monitoring data may be evaluated.

An assessment of monitoring data from samples collected during the 2024 detection monitoring events has been conducted. Key results of the evaluation include:

- Intra-well UPLs using the updated baseline data were compared to the 2024 detection monitoring event data. Inter-well baseline values (UPLs) were calculated on a per-constituent, per-well basis.
- Assessment of the data from the 2024 detection monitoring events indicate that:

  Intra-well comparisons indicated Appendix III constituent concentrations of boron at MW-133; calcium at MW-105, MW-156, MW-190, MW-227, MW-245, MW-247, and MW-250; chloride at MW-105, MW-108, MW-133, MW-157, MW-247, and MW-250; sulfate at MW-105, MW-156, MW-191, MW-227, MW-245, MW-247, and MW-250; TDS at MW-105, MW-108, MW-247, and MW-250 are greater than the associated UPL for at least two consecutive results.

  ASDs demonstrate these SSIs are due to natural variation in groundwater quality and discharge of treated wastewater from the CBWPCP.
- As demonstrated in the alternate source determination evaluation, the WSEC Monofill is not the source of the observed SSIs in groundwater.
- No fluoride results were above the MCL and no MCL or groundwater protection standards are established for the other Appendix III analytes.

6.3 Recommendations

Based on the evaluation findings, the WSEC Monofill remains in detection monitoring. No changes to the monitoring network or sampling procedures are necessary.

7. References

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Tables

Table 2.1

Groundwater Monitoring Well Network
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Monitoring Well	Use in Monitoring Network	Role in Monitoring Network	Installation Date	Decommissioning Date
MW-105	Gauged and Sampled	Downgradient	8/10/2006	
MW-108	Gauged and Sampled	Downgradient	8/11/2006	
MW-133	Gauged and Sampled	Downgradient	8/25/2006	
MW-149	Gauged Only	Gauging Location	6/14/2007	
MW-156	Gauged and Sampled	Downgradient	11/13/2007	
MW-156D	Gauged and Sampled	Downgradient	2/20/2024	
MW-157	Gauged and Sampled	Downgradient	11/13/2007	
MW-158	Gauged and Sampled	Downgradient	11/13/2007	
MW-159	Gauged and Sampled	Downgradient	11/13/2007	
MW-190	Gauged and Sampled	Downgradient	10/21/2008	
MW-191	Gauged and Sampled	Downgradient	10/20/2008	
MW-227	Gauged and Sampled	Downgradient	10/18/2010	
MW-227D	Gauged and Sampled	Downgradient	2/21/2024	
MW-240R	Gauged and Sampled	Downgradient	6/13/2013	
MW-244	Gauged and Sampled	Downgradient	10/2015	
MW-245	Gauged and Sampled	Downgradient	10/2015	
MW-246	Gauged and Sampled	Downgradient	7/19/2019	
MW-247	Gauged and Sampled	Downgradient	7/19/2019	
MW-248	Gauged and Sampled	Downgradient	7/19/2019	
MW-249	Gauged Only	Gauging Location	7/19/2019	
MW-250	Gauged and Sampled	Upgradient	6/28/2021	
MW-301	Gauged Only	Gauging Location	1/16/2012	
MW-302	Gauged Only	Gauging Location	12/5/2011	
MW-303	Gauged Only	Gauging Location	12/5/2011	
MW-304	Gauged Only	Gauging Location	12/7/2011	
MW-305	Gauged Only	Gauging Location	1/16/2012	
MW-306	Gauged Only	Gauging Location	12/7/2011	
MW-307	Gauged and Sampled	Background	12/7/2011	
MW-307D	Gauged and Sampled	Background	2/20/2024	
TW-1	Gauged and Sampled	Background	7/9/2020	
TW-2	Gauged and Sampled	Background	7/9/2020	
MW-34	Gauged and Sampled	Background	7/9/2020	
Decommissioned Wells				
MW-143	Gauged Only	Gauging Location	6/15/2007	5/17/2019
MW-233	Gauged and Sampled	Downgradient	07/2011	6/6/2019
MW-241R	Gauged and Sampled	Downgradient	06/2013	6/10/2021
MW-242	Gauged and Sampled	Downgradient	07/2012	7/17/2019
MW-243	Gauged and Sampled	Downgradient	10/2015	6/6/2019

Note:
Decommissioned wells were removed to accommodate Monofill expansion.

Table 2.2

Well Construction Details
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

			Monitoring Well Construction					
Well Identification	Northing	Easting	Ground Surface Elevation (NAVD88)	Top of Casing (NAVD88)	Total Depth (feet BTOC)	Screen Length (feet)	Top of Screen (NAVD88)	Bottom of Screen (NAVD88)
MW-105	434564.1	997125.2	965.50	968.78	25.50	15	958.3	943.3
MW-108	434557.3	997626.0	965.50	968.60	25.50	10	953.1	943.1
MW-133	434536.1	998167.0	967.80	970.71	25.46	10	955.3	945.3
MW-149	431660.1	994728.5	967.30	970.12	19.50	10	960.6	950.6
MW-156	432282.9	998161.0	972.90	975.68	23.00	10	962.7	952.7
MW-156D	432288.8	998161.0	974.31	976.40	31.50	15	959.9	944.9
MW-157	431781.0	998161.2	972.30	975.10	25.30	10	959.8	949.8
MW-158	431489.4	997946.4	971.10	973.60	25.40	10	958.2	948.2
MW-159	431496.0	997288.7	971.40	973.60	25.30	15	963.3	948.3
MW-190	431790.7	997092.5	972.60	975.22	24.60	10	960.6	950.6
MW-191	432280.7	997097.1	973.80	976.48	24.00	15	967.5	952.5
MW-227	432979.8	998177.3	974.00	976.45	21.70	10	964.8	954.8
MW-227D	432985.7	998177.6	974.08	976.56	32.65	15	958.9	943.9
MW-240R	433583.0	998167.9	972.70	975.60	28.00	15	962.6	947.6
MW-244	432969.5	996165.3	977.50	980.06	29.00	15	966.1	951.1
MW-245	432488.7	996645.8	980.80	983.34	31.00	15	967.3	952.3
MW-246	433264.8	996440.1	981.50	983.46	31.00	15	967.5	952.5
MW-247	433571.8	996661.7	980.10	982.30	31.00	15	966.3	951.3
MW-248	434160.4	996951.4	979.80	982.91	31.00	15	966.9	951.9
MW-249	432203.2	99596.9	966.80	970.00	15.00	15	970.0	955.0
MW-250	434190.6	998128.6	975.72	978.54	29.00	15	964.5	949.5
MW-301	431353.4	995149.2	966.70	969.77	53.07	10	926.7	916.7
MW-302	430811.7	994480.0	968.60	971.59	20.99	10	960.6	950.6
MW-303	430840.8	996145.1	968.30	971.42	20.12	10	961.3	951.3
MW-304	429701.3	994466.4	969.20	972.27	20.07	10	962.2	952.2
MW-305	429627.1	996862.4	970.30	973.48	53.25	10	930.2	920.2
MW-306	429499.1	995449.2	970.10	973.14	20.04	10	963.1	953.1
MW-307	428741.0	996863.5	968.40	971.36	19.96	10	961.4	951.4
MW-307D	428746.4	996856.5	969.32	971.36	27.10	15	959.3	944.3
TW-1	438040.7	1001945.0	965.34	967.14	20.43	10	956.7	946.7
TW-2	436631.1	1001322.3	967.02	968.57	20.40	10	958.2	948.2
MW-34	438412.0	1002842.1	967.67	971.27	21.96	10	959.3	949.3
Decommissioned Wells								
MW-143	432220.7	996015.8	966.00	968.66	20.20	10	958.5	948.5
MW-233	433260.3	997047.8	972.30	975.50	22.65	10	962.9	952.9
MW-241R	434068.4	997660.6	967.49	970.43	24.96	15	960.5	945.5
MW-242	433708.5	997144.1	965.40	967.96	16.36	10	961.6	951.6
MW-243	433159.6	996727.1	966.50	969.10	26.47	15	957.6	942.6

Table 2.3

Monitoring Well Screen Occlusion Evaluation
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Well	Top of Casing Elevation (NAVD88)	Total Well Depth Below Top of Casing (feet BTOC)	Screen Length (feet)	10-Oct-2022 Measured Well Depth (feet)	10-Oct-2022 Screen Occlusion (%)	2-Oct-2023 Measured Well Depth (feet)	2-Oct-2023 Screen Occlusion (%)	30-Sep-2024 Measured Well Depth (feet)	30-Sep-2024 Screen Occlusion (%)
MW-105	968.78	25.48	15	23.94	10.3%	24.00	9.9%	24.04	9.6%
MW-108	968.31	25.46	10	24.53	9.3%	24.60	8.6%	24.62	8.4%
MW-133	970.71	25.46	10	24.74	7.2%	24.83	6.3%	24.92	5.4%
MW-149	970.12	19.50	10	18.89	6.1%	18.75	7.5%	19.23	2.7%
MW-156	975.68	23.00	10	22.96	0.4%	23.00	0.0%	23.00	0.0%
MW-157	975.10	25.30	10	25.48	-1.8%	25.48	-1.8%	25.36	-0.6%
MW-158	973.60	25.35	10	25.45	-1.0%	25.47	-1.2%	25.48	-1.3%
MW-159	973.60	25.30	10	25.35	-0.5%	25.35	-0.5%	25.31	-0.1%
MW-190	975.22	27.24	10	27.29	-0.5%	27.30	-0.6%	27.71	-4.7%
MW-191	976.48	26.16	10	26.25	-0.9%	26.26	-1.0%	26.41	-2.5%
MW-227	976.45	24.15	10	24.92	-7.7%	24.92	-7.7%	25.03	-8.8%
MW-240R	975.60	30.36	15	30.88	-3.5%	30.89	-3.5%	30.40	-0.3%
MW-244	980.06	31.90	15	32.51	-4.1%	32.51	-4.1%	32.40	-3.3%
MW-245	983.34	33.80	15	34.47	-4.5%	34.48	-4.5%	34.34	-3.6%
MW-246	983.46	33.00	15	33.71	-4.7%	34.74	-11.6%	33.08	-0.5%
MW-247	982.30	33.20	15	33.70	-3.3%	33.70	-3.3%	33.48	-1.9%
MW-248	982.91	34.10	15	34.30	-1.3%	34.44	-2.3%	34.10	0.0%
MW-249	969.35	17.60	15	18.29	-4.6%	18.25	-4.3%	18.32	-4.8%
MW-250	978.54	30.80	15	31.52	-4.8%	31.56	-5.1%	31.42	-4.1%
MW-307	971.36	19.96	10	NA	NA	21.96	-20.0%	20.13	-1.7%
TW-1	967.14	20.43	10	NA	NA	21.22	-7.9%	21.43	-10.0%
TW-2	968.57	20.40	10	NA	NA	21.31	-9.1%	21.33	-9.3%
MW-34	971.27	21.96	10	NA	NA	22.12	-1.6%	21.98	-0.2%

Notes:
% - Percent.
NA - Not available.

Table 2.4

Appendix III Parameters (Detection Monitoring)
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Analyte	Analytical Method
Boron	EPA 6020A
Calcium	EPA 6020A
Chloride	EPA 9056A
Fluoride	EPA 9056A
pH	SM 4500 H+B
Sulfate	EPA 9056A
Total Dissolved Solids (TDS)	SM 2540C

Table 2.5

Appendix IV Parameters (Assessment Monitoring)
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Analyte	Analytical Method
Antimony	EPA 6020A
Arsenic	EPA 6020A
Barium	EPA 6020A
Beryllium	EPA 6020A
Cadmium	EPA 6020A
Chromium	EPA 6020A
Cobalt	EPA 6020A
Fluoride	EPA 9056A
Lead	EPA 6020A
Lithium	EPA 6020A
Mercury	EPA 7470A
Molybdenum	EPA 6020A
Selenium	EPA 6020A
Thallium	EPA 6020A
Radium 226 and 228 combined	EPA 9315/9320

Table 2.6

Summary of Groundwater Monitoring Events
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Sampling Dates	MW-105	MW-108	MW-133	MW-156	MW-156D	MW-157	MW-158	MW-159	MW-190	MW-191	MW-227	MW-227D	MW-233 (Plugged)	MW-240R
March 16 -17, 2016	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
May 16-18, 2016	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
July 18-20, 2016	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
October 4-6, 2017	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
January 30 - February 1, 2017	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
April 10-12, 2017	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
July 11-12, 2017	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
August 14-16, 2017	-	-	Baseline	Baseline	-	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	Baseline	Baseline
October 10-11, 2017	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	Detection	Detection
May 1-2, 2018	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	Detection	Detection
October 10-12, 2018	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	Detection	Detection
April 16-18, 2019	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	Detection	Detection
July 29, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August 5, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August 19, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
August 28, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September 9, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
September 24, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October 8, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October 14, 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October 28-30, 2019	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	-	Detection
April 20-22, 2020	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	-	Detection
June 29-30, 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July 27, 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
October 12-14, 2020	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	-	Detection
November 16, 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
December 1, 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April 19-22, 2021	-	-	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	-	Detection
May 3, 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
July 30, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
August 2, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
August 16, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
August 30, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
September 13, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
September 30, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
October 6, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
October 14, 2021	Baseline	Baseline	-	-	-	-	-	-	-	-	-	-	-	-
October 25-27, 2021	Detection	Detection	Detection	Detection	-	Detection	Detection	Detection	Detection	Detection	Detection	-	-	Detection
November 3, 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
November 18, 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
April 26-28, 2022	Detection	Detection	Detection	NS	-	NS	NS	Detection	Detection	NS	NS	-	-	Detection
June 10-13, 2022	-	-	-	-	-	-	-	Verification	Verification	-	-	-	-	-
October 10-12, 2022	Detection	Detection	Detection	NS	-	Detection	Detection	Detection	Detection	Detection	NS	-	-	Detection
November 8, 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-
January 16-17, 2023	Verification	-	Verification	-	-	-	-	NS	NS	NS	-	-	-	-
April 24-27, 2023	Detection	Detection	Detection	NS	-	NS	Detection	Detection	Detection	NS	NS	-	-	Detection
June 27, 2023	-	-	Verification	-	-	-	-	-	-	-	-	-	-	-
October 2-5, 2023	Detection	Detection	Detection	NS	-	Detection	Detection	Detection	Detection	Detection	NS	-	-	Detection
November 29, 2023	Verification	Verification	Verification	-	-	-	-	Verification	-	-	-	-	-	Verification
April 1-4, 2024	Detection	Detection	Detection	NS	Baseline	Detection	Detection	Detection	Detection	Detection	NS	Baseline	-	Detection
June 3-5, 2024	-	Verification	-	-	Baseline	-	-	-	Verification	-	-	Baseline	-	-
September 30 - October 3, 2024	Detection	Detection	Detection	Detection	Baseline	Detection	Detection	Detection	Detection	Detection	Detection	Baseline	-	Detection
December 10, 2024	Verification	Verification	-	Verification	-	Verification	-	-	-	Verification	Verification	-	-	-
Number of Samples														
Appendix III Analytes	15	15	23	18	3	21	22	23	23	21	18	3	12	23
Appendix IV Analytes	8	8	8	8	3	8	8	8	8	8	8	3	8	8

Table 2.6

Summary of Groundwater Monitoring Events
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Sampling Dates	MW-241R (Plugged)	MW-242 (Plugged)	MW-243 (Plugged)	MW-244	MW-245	MW-246	MW-247	MW-248	MW-250	MW-34	MW-307	MW-307D	TW-1	TW-2
March 16 -17, 2016	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
May 16-18, 2016	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
July 18-20, 2016	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
October 4-6, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
January 30 - February 1, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
April 10-12, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
July 11-12, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
August 14-16, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-	-	-	-	-	-	-
October 10-11, 2017	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-	-	-	-	-
May 1-2, 2018	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-	-	-	-	-
October 10-12, 2018	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-	-	-	-	-
April 16-18, 2019	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-	-	-	-	-
July 29, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
August 5, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
August 19, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
August 28, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
September 9, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
September 24, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
October 8, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
October 14, 2019	-	-	-	-	-	Baseline	Baseline	Baseline	-	-	-	-	-	-
October 28-30, 2019	Detection	-	-	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-	-
April 20-22, 2020	Detection	-	-	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-	-
June 29-30, 2020	-	-	-	-	-	-	Detection	-	-	-	-	-	-	-
July 27, 2020	-	-	-	-	-	-	-	-	-	Baseline	Baseline	-	Baseline	Baseline
October 12-14, 2020	Detection	-	-	Detection	Detection	Detection	Detection	Detection	-	Baseline	Baseline	-	Baseline	Baseline
November 16, 2020	-	-	-	-	-	-	-	-	-	Baseline	Baseline	-	Baseline	Baseline
December 1, 2020	-	-	-	-	-	-	Detection	-	-	-	-	-	-	-
April 19-22, 2021	Detection	-	-	Detection	Detection	Detection	Detection	Detection	-	Baseline	Baseline	-	Baseline	Baseline
May 3, 2021	-	-	-	-	-	-	-	-	-	Baseline	Baseline	-	Baseline	Baseline
July 30, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
August 2, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
August 16, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
August 30, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
September 13, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
September 30, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
October 6, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
October 14, 2021	-	-	-	-	-	-	-	-	Baseline	-	-	-	-	-
October 25-27, 2021	-	-	-	Detection	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-
November 3, 2021	-	-	-	-	-	-	-	-	-	Baseline	Baseline	-	Baseline	Baseline
November 18, 2021	-	-	-	-	-	-	-	-	-	Baseline	Baseline	-	Baseline	Baseline
April 26-28, 2022	-	-	-	Detection	NS	NS	Detection	Detection	Detection	Baseline	NS	-	Baseline	Baseline
June 10-13, 2022	-	-	-	Verification	-	-	Verification	Verification	Verification	-	-	-	-	-
October 10-12, 2022	-	-	-	Detection	Detection	Detection	Detection	Detection	Detection	-	-	-	-	-
November 8, 2022	-	-	-	-	-	-	-	-	-	Assessment	NS	-	Assessment	Assessment
January 16-17, 2023	-	-	-	-	NS	NS	NS	-	Verification	-	-	-	-	-
April 24-27, 2023	-	-	-	Detection	Detection	Detection	Detection	Detection	Detection	Assessment	NS	-	Assessment	Assessment
June 27, 2023	-	-	-	-	Verification	-	-	-	Verification	-	-	-	-	-
October 2-5, 2023	-	-	-	Detection	Detection	Detection	Detection	Detection	Detection	Assessment	NS	-	Assessment	Assessment
November 29, 2023	-	-	-	Verification	Verification	-	Verification	Verification	Verification	-	-	-	-	-
April 1-4, 2024	-	-	-	Detection	Detection	Detection	Detection	Detection	Detection	Assessment	NS	Baseline	Assessment	Assessment
June 3-5, 2024	-	-	-	-	-	-	Verification	-	-	-	-	Baseline	-	-
September 30 - October 3, 2024	-	-	-	Detection	Detection	Detection	Detection	Detection	Detection	Assessment	Baseline	Baseline	Assessment	Assessment
December 10, 2024	-	-	-	-	Verification	-	Verification	-	-	-	-	-	-	-
Number of Samples														
Appendix III Analytes	16	12	12	23	22	18	21	19	15	13	8	3	13	13
Appendix IV Analytes	8	8	8	8	8	8	8	8	8	13	8	3	13	13

Notes:
1. Baseline monitoring events include analysis of both Appendix III (Detection Monitoring) and Appendix IV (Assessment Monitoring) analytes.
2. Detection monitoring events include the analysis of Appendix III analytes only.
3. Assessment monitoring events include analysis of both Appendix III and Appendix IV analytes.
4. Verification and Supplemental monitoring events not included in total number of samples per well.
5. NS = Not Sampled, well contained insufficient water to allow sampling during the monitoring event.

Table 3.1

Groundwater Elevation Summary
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Well	Top of Casing Elevation (NAVD88)	Total Well Depth Below Top of Casing (feet BTOC)	14-Mar-2016 (NAVD88)	16-May-2016 (NAVD88)	4-Oct-2016 (NAVD88)	30-Jan-2017 (NAVD88)	10-Apr-2017 (NAVD88)	11-Jul-2017 (NAVD88)	14-Aug-2017 (NAVD88)	10-Oct-2017 (NAVD88)	1-May-2018 (NAVD88)	10-Oct-2018 (NAVD88)	6-Jun-2018 (NAVD88)	16-Apr-2019 (NAVD88)	28-Oct-2019 (NAVD88)	12-Dec-2019 (NAVD88)	20-Apr-2020 (NAVD88)	12-Oct-2020 (NAVD88)	1-Dec-2020 (NAVD88)
MW-34	971.27	21.96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	961.37	-
MW-105	968.78	25.48	957.62	962.51	957.57	955.43	957.61	959.46	957.87	959.97	959.69	965.48	960.32	965.60	966.35	-	960.81	956.06	-
MW-108	968.60	25.46	957.62	961.86	958.18	955.07	956.34	958.20	957.64	958.42	955.98	964.87	959.38	964.73	965.82	-	960.37	955.61	-
MW-133	970.71	25.46	958.27	962.79	958.09	955.96	957.54	959.70	958.12	958.30	957.80	964.96	959.24	964.71	966.17	962.98	960.95	956.27	955.63
MW-149	970.12	19.50	957.62	963.10	957.48	955.28	957.49	959.63	957.85	960.13	959.45	965.43	960.19	964.92	965.54	-	960.44	955.81	-
MW-156	975.68	23.00	960.24	965.12	959.93	957.58	958.55	961.52	959.73	959.59	958.28	965.95	959.73	965.27	966.77	-	961.62	957.40	956.64
MW-156D	976.40	31.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-157	975.10	25.30	960.57	965.58	960.20	957.81	958.95	961.73	959.88	959.83	958.28	966.16	959.69	965.25	966.76	964.06	961.62	957.50	-
MW-158	973.60	25.35	960.47	965.60	960.11	957.68	958.89	961.63	959.73	959.83	958.23	965.93	959.57	965.09	966.48	-	961.56	957.41	-
MW-159	973.60	25.30	959.95	964.96	959.62	957.25	958.45	961.33	959.48	959.56	958.42	965.93	959.76	965.07	966.22	964.05	961.37	957.09	-
MW-190	975.22	27.24	959.68	964.58	959.43	957.06	958.26	961.17	959.40	959.70	958.68	965.92	959.90	965.12	966.28	-	961.33	956.97	956.22
MW-191	976.48	26.16	959.36	964.19	959.13	956.83	958.08	960.93	959.20	959.70	958.88	965.80	960.03	965.26	966.33	963.74	961.30	956.91	-
MW-227	976.45	24.15	959.88	964.61	959.55	957.25	958.23	961.22	959.52	959.29	958.23	965.76	959.71	965.25	966.83	-	961.49	957.30	956.46
MW-227D	976.56	32.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-240R	975.60	30.36	958.81	963.46	958.54	956.26	957.39	960.20	958.52	958.40	957.52	965.02	959.02	964.55	966.09	963.08	960.72	956.39	955.65
MW-244	980.06	31.90	957.94	962.89	957.85	955.65	958.00	959.96	958.27	960.66	960.19	965.76	960.82	965.66	966.24	-	960.93	956.33	-
MW-245	983.34	33.80	958.68	963.50	958.50	956.22	957.94	960.47	958.76	959.90	959.31	965.70	960.21	964.71	966.18	-	961.09	956.54	955.87
MW-246	983.46	33.00	-	-	-	-	-	-	-	-	-	-	-	-	966.37	-	961.06	956.60	955.66
MW-247	982.30	33.20	-	-	-	-	-	-	-	-	-	-	-	-	966.34	962.88	961.21	956.51	955.85
MW-248	982.91	34.10	-	-	-	-	-	-	-	-	-	-	-	-	966.62	-	961.24	956.56	955.89
MW-249	969.35	17.60	-	-	-	-	-	-	-	-	-	-	-	-	965.44	-	961.51	956.57	-
MW-250	978.54	30.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-301	969.77	53.10	958.37	963.42	958.17	955.88	-	960.28	-	-	959.24	-	-	964.75	966.62	-	960.82	956.23	-
MW-302	971.59	21.00	958.28	963.42	958.06	955.77	-	960.18	-	-	958.80	-	-	964.80	965.54	-	960.62	956.10	-
MW-303	971.42	20.10	959.65	964.57	959.31	956.95	-	961.36	-	-	958.59	-	-	964.97	966.00	-	961.36	956.93	-
MW-304	972.27	20.10	958.77	963.60	958.45	956.14	-	960.48	-	-	957.87	-	-	964.36	965.22	-	960.63	956.09	-
MW-305	973.48	53.20	960.80	965.78	960.32	957.80	-	961.92	-	-	958.30	-	-	965.07	966.23	-	961.61	957.21	-
MW-306	973.14	20.00	959.58	964.52	959.22	956.80	-	961.06	-	-	957.73	-	-	964.54	965.57	-	960.96	956.63	-
MW-307	971.36	20.00	964.01	967.77	961.39	958.42	-	962.11	-	-	958.47	-	-	967.16	968.21	-	961.96	957.27	-
MW-307D	971.36	27.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TW-1	967.14	20.43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	959.96	-
TW-2	968.57	20.40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	960.67	-

Table 3.1

Groundwater Elevation Summary
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Well	Top of Casing Elevation (NAVD88)	Total Well Depth Below Top of Casing (feet BTOC)	19-Apr-2021 (NAVD88)	25-Oct-2021 (NAVD88)	3-Nov-2021 (NAVD88)	25-Apr-2022 (NAVD88)	10-Jun-2022 (NAVD88)	10-Oct-2022 (NAVD88)	16-Jan-2023 (NAVD88)	24-Apr-2023 (NAVD88)	2-Oct-2023 (NAVD88)	29-Nov-2023 (NAVD88)	1-Apr-2024 (NAVD88)	3-Jun-2024 (NAVD88)	30-Sep-2024 (NAVD88)	10-Dec-2024 (NAVD88)
MW-34	971.27	21.96	-	-	962.81	959.99	-	-	957.84	959.22	958.02	-	959.41	963.59	961.94	961.63
MW-105	968.78	25.48	955.18	954.84	-	952.22	-	953.26	949.75	951.79	953.79	953.74	951.77	956.97	956.20	953.90
MW-108	968.60	25.46	952.80	954.13	-	951.73	-	952.48	949.78	951.10	952.96	953.21	951.09	955.96	955.84	954.03
MW-133	970.71	25.46	954.95	954.41	-	951.53	-	951.92	950.18	950.55	952.34	952.90	950.61	954.72	955.76	954.32
MW-149	970.12	19.50	954.61	954.72	-	951.81	-	952.83	Dry	Dry	953.56	-	951.96	956.67	956.01	953.37
MW-156	975.68	23.00	955.42	955.01	-	952.94	-	952.78	Dry	Dry	Dry	-	Dry	953.71	956.68	955.56
MW-156D	976.40	31.50	-	-	-	-	-	-	-	-	-	-	951.06	953.69	956.65	955.62
MW-157	975.10	25.30	955.41	955.03	-	952.22	-	952.30	950.84	Dry	951.97	-	951.03	953.34	956.74	955.76
MW-158	973.60	25.35	955.23	954.88	-	952.02	-	952.06	950.38	950.19	951.85	-	949.61	953.28	956.45	955.62
MW-159	973.60	25.30	954.98	954.71	-	951.87	952.57	952.17	950.27	950.42	952.19	952.45	950.94	953.97	956.36	955.32
MW-190	975.22	27.24	955.06	954.91	-	951.99	952.85	952.54	950.36	950.83	952.64	-	951.19	954.65	956.50	955.90
MW-191	976.48	26.16	955.07	954.91	-	952.09	-	952.74	950.49	951.16	952.95	-	951.34	955.15	956.56	955.09
MW-227	976.45	24.15	955.38	955.10	-	952.49	-	952.72	Dry	Dry	952.56	-	Dry	Dry	956.64	955.51
MW-227D	976.56	32.65	-	-	-	-	-	-	-	-	-	-	951.25	954.17	956.77	955.63
MW-240R	975.60	30.36	954.68	954.68	-	951.52	-	948.94	950.15	950.24	951.93	952.35	950.43	953.71	955.83	954.56
MW-244	980.06	31.90	955.31	955.40	-	952.82	953.84	953.79	949.79	952.35	954.41	953.93	952.61	957.76	956.65	953.76
MW-245	983.34	33.80	955.05	955.07	-	952.05	-	953.17	950.26	951.37	953.59	953.59	951.40	956.18	956.61	954.65
MW-246	983.46	33.00	955.51	955.47	-	952.62	-	954.03	950.21	952.34	955.08	-	952.49	957.82	956.88	954.17
MW-247	982.30	33.20	955.58	955.51	-	952.87	953.94	954.10	950.21	952.55	954.58	954.00	952.57	957.78	956.90	954.39
MW-248	982.91	34.10	955.61	955.51	-	952.89	954.01	954.06	950.37	952.56	954.51	954.30	952.49	957.68	956.84	954.61
MW-249	969.35	17.60	955.32	955.59	-	952.38	-	953.49	Dry	951.99	954.10	-	952.28	957.88	956.77	954.50
MW-250	978.54	30.80	-	953.96	-	951.95	952.99	952.50	950.57	950.90	952.71	953.15	950.99	954.81	956.29	954.92
MW-301	969.77	53.10	954.68	-	954.81	951.74	-	952.65	949.63	951.12	953.21	-	951.67	955.99	956.17	954.24
MW-302	971.59	21.00	954.13	-	954.06	951.05	-	951.94	Dry	Dry	952.56	-	Dry	954.92	-	954.30
MW-303	971.42	20.10	954.84	-	954.92	951.82	-	952.14	Dry	951.77	952.49	-	Dry	954.60	-	955.30
MW-304	972.27	20.10	953.59	-	953.19	952.08	-	952.04	Dry	952.01	Dry	-	Dry	953.20	-	954.71
MW-305	973.48	53.20	954.53	-	954.24	951.05	-	950.65	949.28	949.11	950.97	-	950.77	952.64	955.90	955.49
MW-306	973.14	20.00	953.92	-	953.39	952.99	-	952.97	Dry	952.96	952.98	-	Dry	Dry	-	954.99
MW-307	971.36	20.00	954.66	-	953.24	951.37	-	951.12	Dry	Dry	Dry	-	Dry	951.95	955.80	955.40
MW-307D	971.36	27.10	-	-	-	-	-	-	-	-	-	-	950.39	951.60	955.44	954.44
TW-1	967.14	20.43	-	-	964.39	963.61	-	-	957.98	960.22	957.65	-	956.43	962.75	960.65	961.90
TW-2	968.57	20.40	-	-	961.15	956.87	-	-	954.93	955.57	954.43	-	954.85	959.14	958.90	958.18

Table 3.2

Horizontal Gradients and Average Groundwater Flow Velocities
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Date	Monitoring Wells	Horizontal Hydraulic Gradient (unitless)	Average Linear Groundwater Flow Velocity (meters/day)	Average Linear Groundwater Flow Velocity (feet/year)
25-Apr-2022	MW-244 to MW-245	0.001	0.010	12
10-Oct-2022	MW-244 to MW-245	0.001	0.008	10
16-Jan-2023	MW-250 to MW-105	0.001	0.008	9
24-Apr-2023	MW-245 to MW-191	0.0005	0.004	5
2-Oct-2023	MW-244 to MW-158	0.001	0.010	13
1-Apr-2024	MW-244 to MW-245	0.002	0.016	19
3-Jun-2024	MW-244 to MW-245	0.002	0.021	25
30-Sep-2024	MW-248 to MW-108	0.001	0.013	15
10-Dec-2024	MW-190 to MW-159	0.001	0.014	17

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:				MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105
Sample ID:				MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW-105	MW105-GW-1022	MW105-GW-0123	MW105-GW-0423	DP03-GW-0423	MW105-GW-1023	DP03-GW-1023	MW105-GW-1123	MW105-GW-0424
Sample Date:		MCL [a]	GWPS [b]	7/30/2021	8/2/2021	8/16/2021	8/30/2021	9/13/2021	9/20/2021	10/6/2021	10/14/2021	10/25/2021	4/27/2022	10/11/2022	1/17/2023	4/27/2023	4/27/2023 (Duplicate)	10/4/2023	10/4/2023 (Duplicate)	11/29/2023	4/3/2024
Parameters	**Units**	**40 CFR 257.95(h)(1)**	**40 CFR 257.95(h)(2)**																		
Appendix III																					
Boron	mg/L	NA	NA	0.174	0.181	0.141	0.149	0.165	0.161	0.204	0.207	0.163	0.186	0.173	--	0.161	0.155	0.189	0.206	--	0.174
Calcium	mg/L	NA	NA	152	146	156	150	154	163	141	157	152	164	174	156	173	174	159	164	--	168
Chloride	mg/L	NA	NA	15	16.4	16.5	16.4	15.6	15.4	16.5	15.7	16.1	17.0	15.4	--	18.3	18.2	22.7	22.9	24.0	23.4
Fluoride	mg/L	4.0	NA	<0.500	0.618	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--	<1.00	<1.00	<1.00	<1.00	--	<1.00
pH, lab	s.u.	NA	NA	7.2	7.2	7.1	7.2	7.1	7.1	7.1	7.1	7.1	7.2 J	7.1 J	--	7.3 J	7.2 J	7.9 J	7.9 J	7.2 J	7.1 J
Sulfate	mg/L	NA	NA	136	141	143	143	143	144	146	144	148	141	138	--	149 J-	148 J-	126	127	--	128
Total dissolved solids (TDS)	mg/L	NA	NA	664	672	674	666	608	640	656	630	622	692	724	692	700	710	730	730	768	738
Appendix IV																					
Antimony	mg/L	0.006	NA	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	0.01	NA	0.0114	0.0148	0.0155	0.0134	0.0125	0.0118	0.0115	0.0132	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	2.0	NA	0.123	0.135	0.147	0.138	0.137	0.143	0.121	0.136	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	0.004	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	0.005	NA	<0.0001	0.000444	<0.0001	0.000101	<0.0001	<0.0001	<0.0001	<0.0001	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	0.1	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	NA	0.006	0.0015	0.00235	0.00244	0.00228	0.00263	0.0021	0.0018	0.0018	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	NA	0.015	<0.0005	0.000888	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	NA	0.040	0.062	0.0544	0.0556	0.0552	0.0588	0.0555	0.0502	0.0614	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	0.002	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	NA	0.100	0.00264	0.00431	0.00401	0.00412	0.00332	0.00302	0.00317	0.00304	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	5	NA	0.247	1.4	1.73	0.258	0.63	0.781	0.913	1.54	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	0.05	NA	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	0.002	NA	<0.001	0.00139	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--

Footnotes:
J - Estimated concentration.
< - Not detected at the associated reporting limit.
J+ - Estimated concentration, result may be biased high.
J- - Estimated concentration, result may be biased low
GWPS - Groundwater Protection Standard.
MCL - Maximum Contaminant Level.
NA - Not applicable.
[a] Maximum contaminant level (MCL).
[b] Groundwater protection standard (GWPS) established under 40 CFR 257.95(h)(2).

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-105	MW-105	MW-105	MW-105	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108
Sample ID:		DP03-GW-0424	MW105-GW-1024	DP03-GW-1024	MW105-GW-1224	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW-108	MW108-GW-1022	DP02-GW-1022	MW108-GW-0423	MW108-GW-1023	MW108-GW-1123	MW108-GW-0424
Sample Date:		4/3/2024	10/2/2024	10/2/2024	12/10/2024	7/30/2021	8/2/2021	8/16/2021	8/30/2021	9/13/2021	9/20/2021	10/6/2021	10/14/2021	10/25/2021	4/27/2022	10/11/2022	10/11/2022	4/26/2023	10/4/2023	11/29/2023	4/3/2024
		(Duplicate)		(Duplicate)													(Duplicate)				
Parameters	**Units**																				
Appendix III																					
Boron	mg/L	0.187	0.211	<0.500	--	0.175	0.176	0.157	0.178	0.18	0.18	0.224	0.218	0.185	0.202	0.190	0.175	0.221	0.224	--	0.227
Calcium	mg/L	165	196	209	221	140	126	131	126	130	135	118	125	121	137	147	145	139	109	--	112
Chloride	mg/L	23.3	34.3	38.9	--	21.5	21.1	19.6	19.7	19.5	18.9	19.5	20	19.9	20.7	19.1	18.5	18.0	16.7	--	18.3
Fluoride	mg/L	<1.00	<1.00	<1.00	--	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	--	<1.00
pH, lab	s.u.	7.2 J	7.0 J	7.0 J	--	7.1	7	7	7	7	7.1	7	7.1	7.1	7.1 J	7.1 J	7.1 J	7.1 J	7.9 J	7.1 J	7.1 J
Sulfate	mg/L	128	171	173	176	12.3	15.3	7.2	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	6.43	<5.00	<5.00	<5.00 J	<5.00	--	<5.00
Total dissolved solids (TDS)	mg/L	722	884	882	--	646	668	638	628	694	608	600	590	608	624	676	662	624	614	--	620
Appendix IV																					
Antimony	mg/L	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	0.247	0.236	0.28	0.288	0.305	0.261	0.26	0.249	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	0.492	0.45	0.469	0.434	0.399	0.399	0.366	0.381	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	0.00168	0.00185	0.00141	0.00123	0.00126	0.00113	0.00119	0.00126	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	0.0106	<0.01	0.0107	0.0113	0.0137	0.0124	0.0103	0.0137	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	0.00449	0.00311	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	0.89	1.38	1.85	0.539	0.894	2.15	1.17	1.79	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-108	MW-108	MW-108	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133
Sample ID:		MW108-GW-0624	MW108-GW-1024	MW108-GW-1224	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133
Sample Date:		6/4/2024	10/2/2024	12/10/2024	3/16/2016	5/16/2016	5/31/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	5/1/2018	7/30/2018	10/10/2018	4/15/2019	4/16/2019	5/20/2019	9/18/2019	10/7/2019	10/28/2019	12/9/2019
Parameters	**Units**																							
Appendix III																								
Boron	mg/L	0.160	0.222	--	<0.200	<0.200	--	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200 Dup <0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	--	--	0.217	<0.200	<0.200
Calcium	mg/L	--	145	--	177	172	--	173	181	141	135	171	184	150	158	168	170	224	214	--	--	179	163	202
Chloride	mg/L	--	25.2	23.7	7.64	6.57	--	9.86	11.6	10.8	8.74	13.4	17.5	13.1	14.5	18.6	21	46.1	36.3	36.9	--	30.5	25.8	46.6
Fluoride	mg/L	--	<1.00	--	<0.500	<0.500	--	<0.500	<0.500	0.517	1.3	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	2.47	<0.500	--	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	--	7.0 J	--	7.27	7.06	--	7.1	7.4	7.1	7.1	7	7	7.2	7.2	7.1	7.2	7.2	7	--	--	7.1	7.2	6.9
Sulfate	mg/L	--	<5.00	--	220	214	--	229	216	207	157	231	268	190	174	178	198	275	294	--	--	232	210	273
Total dissolved solids (TDS)	mg/L	--	702	796	836	836	820	1390	862	836	740	894	1240	978	718	728	776	972	926	--	--	874	772	988
Appendix IV																								
Antimony	mg/L	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	<0.001	--	--	<0.001	--	--	--
Arsenic	mg/L	--	--	--	0.00574	0.0143	--	0.00703	0.00569	0.00452	0.0139	0.0113	0.00438	--	--	0.0174	--	0.00244	--	--	0.0113	0.0066	--	0.00208
Barium	mg/L	--	--	--	0.079	0.188	--	0.0881	0.0828	0.0704	0.198	0.152	0.062	--	--	0.208	--	0.069	--	--	0.163	0.117	--	0.062
Beryllium	mg/L	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	<0.001	--	--	<0.001	--	--	--
Cadmium	mg/L	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	<0.0005	--	--	<0.0001	--	--	0.000121
Chromium	mg/L	--	--	--	<0.005	<0.005	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	<0.005	--	--	<0.005	--	--	--
Cobalt	mg/L	--	--	--	0.00147	0.00152	--	0.00167	0.00181	0.00197	<0.0005	0.00157	0.00254	--	--	0.00103	--	0.00332	--	--	0.00153	0.00192	--	0.00147
Lead	mg/L	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	<0.0005	--	--	<0.0005	--	--	<0.0005
Lithium	mg/L	--	--	--	0.0892	0.0875	--	0.0829	0.0779	0.081	0.0766	0.0767	0.0951	--	--	0.0745	--	0.0901	--	--	0.0829	0.0818	--	0.0847
Mercury	mg/L	--	--	--	<0.0002	<0.0002	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	<0.0002	--	--	<0.0002	--	--	--
Molybdenum	mg/L	--	--	--	<0.002	<0.002	--	<0.002	<0.002	<0.002	<0.002	0.00319	<0.002	--	--	<0.002	--	<0.002	--	--	<0.002	<0.002	--	<0.002
Radium-226 & 228	pCi/L	--	--	--	0.313	0.642	--	0.456	0.597	0.487	0.466	0.537	0.348	--	--	0.792	--	0.215	--	--	0.708	0.397	--	0.142
Selenium	mg/L	--	--	--	<0.005	<0.005	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	<0.005	--	--	<0.005	<0.005	--	<0.005
Thallium	mg/L	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	<0.001	--	--	<0.001	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133	MW-133
Sample ID:		**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133**	**MW-133-GW-1022**	**MW133-GW-1122**	**MW133-GW-0123**	**MW133-GW-0423**	**MW133-GW-0623**	**DP01-GW-0623**	**MW133-GW-1023**
Sample Date:		**12/12/2019**	**2/10/2020**	**4/20/2020**	**6/29/2020**	**10/12/2020**	**11/16/2020**	**12/1/2020**	**4/19/2021**	**5/3/2021**	**6/29/2021**	**10/25/2021**	**11/8/2021**	**4/27/2022**	**6/9/2022**	**10/12/2022**	**11/10/2022**	**1/17/2023**	**4/26/2023**	**6/27/2023**	**6/27/2023 (Duplicate)**	**10/4/2023**
Parameters	**Units**																					
Appendix III																						
Boron	mg/L	--	<0.200	0.155	--	0.139	0.11	--	0.167	0.128	--	0.161	0.161	0.118	0.140	0.151	0.289	--	0.289	0.451	0.418	0.524
Calcium	mg/L	--	215	180	--	217	177	--	130	144	--	135	135	142	138	187	200	--	232	192	194	162
Chloride	mg/L	52.1	50.8	36.7	29	78.8	87	101	142	152	140	137	123	153	134	107	88.8	--	107	--	--	104
Fluoride	mg/L	--	<0.500	<0.500	--	<0.500	<0.500	--	<0.500	<0.500	--	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--	<1.00	--	--	<1.00
pH, lab	s.u.	--	7.1	7	--	7	7.1	--	7.2	7.1	--	7.2	7.2	7.4 J	7.3 J	7.3 J	7.4 J	--	7.4 J	--	--	7.8 J
Sulfate	mg/L	--	331	260	--	271	221	--	133	146	--	146	152	148	157	219	214	--	269 J-	--	--	148
Total dissolved solids (TDS)	mg/L	--	1000	852	--	960	876	--	742	742	--	672	680	728	830	920	906	--	1070	--	--	810
Appendix IV																						
Antimony	mg/L	--	--	--	--	--	<0.001	--	--	<0.002	--	--	<0.002	--	<0.00200	--	<0.00200	--	--	--	--	--
Arsenic	mg/L	--	<0.002	--	--	--	0.00205	--	--	0.008	--	--	0.00443	--	0.0152	--	0.0156	--	--	--	--	--
Barium	mg/L	--	0.0517	--	--	--	0.0562	--	--	0.189	--	--	0.102	--	0.249	--	0.212	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	<0.001	--	--	<0.001	--	--	<0.001	--	<0.00100	--	<0.00100	--	--	--	--	--
Cadmium	mg/L	--	0.000156	--	--	--	0.000116	--	--	0.000102	--	--	<0.0001	--	<0.000100	--	<0.000100	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	<0.005	--	--	<0.005	--	--	<0.005	--	<0.00500	--	<0.00500	--	--	--	--	--
Cobalt	mg/L	--	0.00276	--	--	--	0.0041	--	--	0.00332	--	--	0.00183	--	<0.000500	--	0.00128	--	--	--	--	--
Lead	mg/L	--	<0.0005	--	--	--	<0.0005	--	--	<0.0005	--	--	<0.0005	--	<0.000500	--	<0.000500	--	--	--	--	--
Lithium	mg/L	--	0.0847	--	--	--	0.0823	--	--	0.0741	--	--	0.0662	--	0.0768	--	0.0764	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	<0.0002	--	--	<0.0002	--	--	<0.0002	--	<0.000200	--	--	<0.000200	--	--	--	--
Molybdenum	mg/L	--	<0.002	--	--	--	<0.002	--	--	<0.002	--	--	<0.002	--	<0.00200	--	<0.00200	--	--	--	--	--
Radium-226 & 228	pCi/L	--	0.114	--	--	--	0.25	--	--	0.00961	--	--	0.537	--	0.404	--	<0.398	--	--	--	--	--
Selenium	mg/L	--	<0.005	--	--	--	<0.005	--	--	<0.005	--	--	<0.005	--	<0.00500	--	<0.00500	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	<0.001	--	--	<0.001	--	--	<0.001	--	<0.00100	--	<0.00100	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-133	MW-133	MW-133	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156
Sample ID:		MW133-GW-1123	MW133-GW-0424	MW133-GW-1024	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156	MW-156
Sample Date:		11/29/2023	4/3/2024	10/2/2024	3/16/2016	5/16/2016	5/31/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	5/1/2018	10/10/2018	11/14/2018	4/16/2019	10/28/2019	12/12/2019	4/20/2020	10/12/2020	12/1/2020	4/19/2021	10/25/2021
Parameters	**Units**																							
Appendix III																								
Boron	mg/L	--	0.493	0.385	0.224	0.226	--	0.23	0.242	0.228	0.229	<0.200	0.223	0.227	<0.200	0.374	0.217	0.252	0.215	--	0.238	0.219	--	0.19	0.15
Calcium	mg/L	--	161	192	210	204	--	218	222	184	214	215	203	197	203	220	--	202	205	--	186	210	--	195	218
Chloride	mg/L	--	109	76.7	10.1	8.14	--	12.5	17.2	20	13.6	24.3	23.3	17.1	26.3	65.8	27.2	24	67.6	86.7	28.1	39.9	41.7	24.9	46.6
Fluoride	mg/L	--	<1.00	<1.00	<0.500	<0.500	--	<0.500	<0.500	0.531	1.21	<0.500	0.526	<0.500	0.566	0.543	--	<0.500	<0.500	--	<0.500	<0.500	--	<0.500	<0.500
pH, lab	s.u.	7.2 J	7.1 J	7.0 J	7	6.87	--	6.95	7.2	7	6.9	6.9	7	7	7.1	7.2	--	6.9	7.1	--	6.9	7	--	7	7
Sulfate	mg/L	--	131	189	242	202	--	247	232	223	198	208	213	197	201	191	--	204	213	--	270	250	--	193	231
Total dissolved solids (TDS)	mg/L	--	780	916	898	878	920	1140	904	890	890	986	1020	902	936	956	--	898	1000	--	904	870	--	886	798
Appendix IV																								
Antimony	mg/L	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	<0.002	<0.002	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	0.112	0.0944	--	0.101	0.111	0.099	0.102	0.105	0.109	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	<0.005	<0.005	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	0.0751	0.0739	--	0.0671	0.0615	0.0666	0.0676	0.062	0.072	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	<0.0002	<0.0002	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	<0.002	<0.002	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	0.532	0.144	--	0.639	0.189	0.828	0.357	0.0848	0.395	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	0.0263	0.0125	--	0.0202	0.0259	0.0103	0.0146	0.0215	0.0209	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-156	MW-156	MW-156D	MW-156D	MW-156D	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157	MW-157
Sample ID:		**MW156-GW-1024**	**MW156-GW-1224**	**MW156D-GW-0424**	**MW156D-GW-0624**	**MW156D-GW-1024**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**	**MW-157**
Sample Date:		**10/3/2024**	**12/10/2024**	**4/3/2024**	**6/4/2024**	**10/3/2024**	**3/16/2016**	**5/16/2016**	**7/18/2016**	**10/4/2016**	**1/30/2017**	**4/10/2017**	**7/11/2017**	**8/14/2017**	**10/10/2017**	**5/1/2018**	**10/10/2018**	**4/16/2019**	**10/28/2019**	**4/20/2020**	**10/12/2020**	**4/19/2021**	**10/25/2021**
Parameters	**Units**																					
Appendix III																						
Boron	mg/L	0.192	--	0.131	0.105	0.215	<0.200	<0.200	0.327	0.217	0.208	<0.200	0.412	0.275	0.221	<0.200	0.211	0.249	0.287	0.173	0.29	0.21	0.221
Calcium	mg/L	274	296	192	305	342	207	218	209	222	203	212	221	210	195	207	220	225	196	180	226	175	198
Chloride	mg/L	36.6	--	21.5	37.5	46.6	10.3	9.49	11.1	8.08	8.7	7.25	41.1	14.3	11.2	11.9	27.8	39.9	40.6	17.1	41.5	24.3	74.9
Fluoride	mg/L	<1.00	--	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	0.664	<0.500	0.572	<0.500	0.608	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	6.8 J	--	7.2 J	7.3 J	6.8 J	6.94	6.82	6.81	7.1	6.9	6.9	6.7	7.9	7	7	7.5	7.8	6.9	6.9	7.2	7	7
Sulfate	mg/L	393	368	186	474	722	226	163	226	198	221	189	217	204	218	200	221	196	222	186	200	156	179
Total dissolved solids (TDS)	mg/L	1150	--	780	1290	1620	950	948	1030	946	996	848	1100	1070	1020	906	928	966	948	846	886	786	792
Appendix IV																							
Antimony	mg/L	--	--	<0.00200	<0.00200	<0.00200	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	0.0198	0.0202	0.00491	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	0.262	0.348	0.0640	0.105	0.0873	0.0931	0.106	0.107	0.0989	0.104	0.107	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	<0.00100	<0.00100	<0.00100	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	<0.000200	<0.000200	<0.000200	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	<0.00500	<0.00500	<0.00500	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	0.00148	0.000685	0.00907	0.00056	<0.0005	<0.0005	0.000522	0.000746	0.00106	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	<0.000500	<0.000500	<0.000500	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	0.0856	0.0936	0.0993	0.0908	0.0877	0.0794	0.0759	0.083	0.0801	0.0704	0.0861	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	<0.000200	<0.000200	<0.000200	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	0.00211	<0.00200	<0.00200	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	1.59	0.861 J	1.06	0.272	0.651	0.394	0.708	0.532	0.652	0.419	0.303	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	<0.00500	<0.00500	0.00648	0.0218	0.0164	0.00823	0.0151	0.0131	0.0159	<0.005	0.00659	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	<0.00100	<0.00100	0.00116	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-157	MW-157	MW-157	MW-157	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158
Sample ID:		MW157-GW-1022	MW157-GW-1023	MW157-GW-1024	MW157-GW-1224	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158	MW-158
Sample Date:		10/12/2022	10/5/2023	10/3/2024	12/10/2024	3/16/2016	5/16/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	5/1/2018	10/10/2018	4/16/2019	10/28/2019	12/12/2019	4/20/2020	10/12/2020	4/19/2021	10/25/2021	4/28/2022
Parameters	**Units**																						
Appendix III																							
Boron	mg/L	0.325	0.355	<0.500	--	0.333	0.437	0.827	0.616	0.447	0.519	0.734	0.527	0.753	0.606	0.965	1.04	0.765	--	0.977	0.799	0.703	0.872	0.707
Calcium	mg/L	238	211	221	--	371	414	490	356	304	306	344	283	307	253	325	316	262	--	278	271	185	235	196
Chloride	mg/L	74.9	63.7	51.3	57.8	28.8	31.9	101	28	26.7	27.1	65	29.5	38.3	23.3	51.2	50.2	35.1	--	48.6	38.1	33.3	40.9	38.0
Fluoride	mg/L	<0.500	<1.00	<1.00	--	<0.500	<0.500	<0.500	<0.500	<0.500	0.762	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	1.04	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	7.1 J	7.7 J	6.9 J	--	6.83	6.69	6.74	7	6.7	6.7	6.8	7.9	6.9	6.9	6.9	6.9	7	--	6.8	7.2	6.9	6.8	7.0 J
Sulfate	mg/L	162	212	186	--	845	754	994	707	771	735	809	564	692	482	694	736	505	--	701	418	294	436	248
Total dissolved solids (TDS)	mg/L	796	942	958	--	1810	1730	2290	1690	1720	1640	1960	1770	1780	1200	1600	1860	1250	--	1520	1120	930	1030	790
Appendix IV																								
Antimony	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	0.00252	0.0036	<0.002	0.00251	0.00346	0.00276	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	0.0308	0.0311	0.0285	0.0331	0.0341	0.026	0.0226	0.0268	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	0.00328	0.00207	0.00108	0.00456	0.00546	0.00366	0.00127	0.00165	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	0.118	0.119	0.129	0.105	0.119	0.105	0.0977	0.103	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	<0.002	<0.002	<0.002	0.00205	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	0.0438	0.239	0.0871	0.301	0.457	0.322	0.163	0.421	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-158	MW-158	MW-158	MW-158	MW-158	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159
Sample ID:		**MW158-GW-1022**	**MW158-GW-0423**	**MW158-GW-1023**	**MW158-GW-0424**	**MW158-GW-1024**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**	**MW-159**
Sample Date:		**10/10/2022**	**4/26/2023**	**10/4/2023**	**4/3/2024**	**10/3/2024**	**3/16/2016**	**5/16/2016**	**7/18/2016**	**10/4/2016**	**1/30/2017**	**4/10/2017**	**7/11/2017**	**8/14/2017**	**10/10/2017**	**5/1/2018**	**10/10/2018**	**4/16/2019**	**10/28/2019**	**4/20/2020**	**10/12/2020**	**4/19/2021**	**10/25/2021**	**4/28/2022**
Parameters	**Units**																						
Appendix III																							
Boron	mg/L	0.913	0.407	0.406	0.467	0.803	<0.200	<0.200	0.208	0.347	0.203	<0.200	0.254	0.348	0.274	<0.200	<0.200	0.284	<0.200	0.313	0.246	0.176	0.194	0.361
Calcium	mg/L	279	234	237	279	276	162	183	206	223	162	166	195	197	181	155	165	176	188	171	179	158	173	192
Chloride	mg/L	42.1	39.2	40.1	44.3	27.8	14	16.1	17.8	17.7	17.3	27.6	19.3	17	16.3	18.5	16.4	12.8	18.2	13.9	20.3	15.5	20.8	19.8
Fluoride	mg/L	<0.500	<1.00	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	0.895	0.602	0.531	0.654	<0.500	1.18	0.598	<0.500	0.75	<0.500	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	7.0 J	7.1 J	7.7 J	6.9 J	6.8 J	7.22	6.88	6.94	7.2	7.3	7	6.9	7	7	7	7	7.3	7.1	7.1	7.1	7	7.1	7.2 J
Sulfate	mg/L	273	303 J-	361	398	355	157	168	232	287	136	113	223	222	184	101	116	236	130	181	136	112	133	208
Total dissolved solids (TDS)	mg/L	954	988	1130	1210	1150	748	836	968	968	768	722	1020	1010	892	650	672	890	710	754	670	670	588	712
Appendix IV																								
Antimony	mg/L	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	--	0.123	0.106	0.102	0.101	0.122	0.109	0.0894	0.1	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00187	<0.0005	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	--	0.0537	0.0727	0.0705	0.0686	0.0594	<0.0500	0.0683	0.0772	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	0.557	0.32	0.533	0.557	0.446	0.023	0.27	0.784	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--	0.00773	0.00851	0.0114	0.00757	0.00521	<0.005	0.00789	0.00802	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-159	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190
Sample ID:		DUP-1	MW-159	MW159-GW-1022	MW159-GW-0423	MW159-GW-1023	MW159-GW-1123	MW159-GW-0424	MW159-GW-1024	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190
Sample Date:		4/28/2022	6/10/2022	10/11/2022	4/27/2023	10/4/2023	11/29/2023	4/3/2024	10/3/2024	3/16/2016	5/16/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	2/13/2018	5/1/2018	10/10/2018	11/14/2018	4/16/2019
		(Duplicate)																				
Parameters	**Units**																					
Appendix III																						
Boron	mg/L	0.361	0.375	0.511	0.356	0.289	--	0.301	<0.500	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	--	<0.200	<0.200	--	<0.200
Calcium	mg/L	181	--	244	183	194	--	212	231	104	127	113	133	119	139	136	137	184	163	145	166	150	147
Chloride	mg/L	20.5	--	17.1	16.8	18.6	--	18.9	16.2	8.27	10.8	13.2	11.6	7.78	11.6	10.3	11.3	34	8.29	8.46	16.3	12.1	14.1
Fluoride	mg/L	<0.500	--	<0.500	<1.00	<1.00	--	<1.00	<1.00	<0.500	<0.500	0.613	<0.500	<0.500	0.774	0.698	0.574	<0.500	--	0.676	0.653	--	<0.500
pH, lab	s.u.	7.1 J	--	7.1 J	7.1 J	7.8 J	7.0 J	7.0 J	6.9 J	7.27	7.08	7.1	7.3	7.2	7.1	7.1	8	7	7.2	7.1	7.6	--	7
Sulfate	mg/L	159	--	180	171 J-	219	--	267	255	102	127	136	139	121	159	135	154	403	153	153	227	184	220
Total dissolved solids (TDS)	mg/L	686	--	802	688	864	--	880	874	484	572	684	614	584	688	708	868	1240	726	688	804	--	834
Appendix IV																							
Antimony	mg/L	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	--	--	--	--	0.0911	0.076	0.0657	0.082	0.0983	0.103	0.0951	0.101	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	--	--	--	<0.0005	<0.0005	0.00111	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	--	--	--	--	0.0537	0.0633	0.0582	0.0574	0.0541	0.0563	0.0511	0.0632	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--	0.294	0.117	0.505	0.361	0.4	0.516	0.298	0.969	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190	MW-190
Sample ID:		**MW-190**	**MW-190**	**MW-190**	**MW-190**	**MW-190**	**MW-190**	**MW-190**	**MW-190**	**MW-190**	**MW-190**	**MW-190**	**DUP-2**	**MW-190**	**Dup-1**	**MW190-GW-1022**	**DP01-GW-1022**	**MW190-GW-0423**	**MW190-GW-1023**	**MW190-GW-0424**	**MW190-GW-0624**	**MW190-GW-1024**
Sample Date:		**5/20/2019**	**10/28/2019**	**12/12/2019**	**4/20/2020**	**6/29/2020**	**10/12/2020**	**12/1/2020**	**4/19/2021**	**6/29/2021**	**10/25/2021**	**4/26/2022**	**4/26/2022 (Duplicate)**	**6/10/2022**	**6/10/2022 (Duplicate)**	**10/11/2022**	**10/11/2022 (Duplicate)**	**4/26/2023**	**10/4/2023**	**4/3/2024**	**6/4/2024**	**10/3/2024**
Parameters	**Units**																					
Appendix III																						
Boron	mg/L	--	<0.200	--	0.208	0.197	0.169	--	0.148	--	0.148	0.156	0.127	--	--	0.141	<0.100	0.128	0.122	0.109	--	<0.500
Calcium	mg/L	--	201	171	150	--	188	148	140	--	158	185	175	160	161	250	204	190	161	187	195	176
Chloride	mg/L	--	18.2	18.3	19.4	17.5	16.5	12	9.4	--	13.7	20.6	11.7	12.0	11.3	10.8	10.9	11.0	9.94	11.2	--	9.60
Fluoride	mg/L	--	0.583	--	<0.500	--	<0.500	--	<0.500	--	<0.500	<0.500	<0.500	--	--	<0.500	<0.500	<1.00	<1.00	<1.00	--	<1.00
pH, lab	s.u.	7.2	7.1	--	7.1	--	7.2	--	7.1	--	7.1	7.3 J	7.2 J	--	--	7.2 J	7.2 J	7.2 J	7.9 J	7.0 J	--	7.0 J
Sulfate	mg/L	224	290	309	284	272	246	176	129	--	222	159	175	--	--	242	245	165 J-	169	211	177	169
Total dissolved solids (TDS)	mg/L	--	962	--	926	--	834	--	650	742	720	670	692	--	--	834	830	742	740	770	--	750
Appendix IV																						
Antimony	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-227
Sample ID:		MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW-191	MW191-GW-1022	MW191-GW-1023	MW191-GW-1024	MW191-GW-1224	MW-227
Sample Date:		3/16/2016	5/16/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	5/1/2018	10/10/2018	4/16/2019	10/28/2019	4/20/2020	6/29/2020	10/12/2020	4/19/2021	10/25/2021	10/11/2022	10/4/2023	10/3/2024	12/10/2024	3/16/2016
Parameters	**Units**																							
Appendix III																								
Boron	mg/L	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.133	--	0.134	0.163	0.131	0.168	0.128	<0.500	--	<0.200
Calcium	mg/L	129	170	143	152	132	136	141	130	125	132	145	139	162	147	--	164	149	157	233	165	182	--	149
Chloride	mg/L	9.12	8.88	12.5	12.3	10.2	12.4	11.9	11	11.6	10.9	10.3	11.2	10.2	10.8	--	11.9	10.5	12	10.6	13.2	11.1	--	<5.00
Fluoride	mg/L	<0.500	<0.500	0.714	0.875	<0.500	0.686	<0.500	0.609	<0.500	0.712	0.618	<0.500	0.6	<0.500	--	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	--	<0.500
pH, lab	s.u.	7.29	6.94	6.98	7.1	7	7.1	7.1	8	7.1	7.1	7.1	7	7.1	7	--	7.3	7.3	7.2	7.3 J	7.9 J	7.0 J	--	7.37
Sulfate	mg/L	143	152	156	157	160	151	148	152	149	138	148	155	151	172	171	162	157	167	219	196	220	233	85.8
Total dissolved solids (TDS)	mg/L	694	780	836	760	730	680	858	838	740	684	694	698	754	784	--	692	722	640	806	792	764	--	600
Appendix IV																								
Antimony	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.001
Arsenic	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.002
Barium	mg/L	0.155	0.136	0.152	0.172	0.157	0.129	0.142	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.143
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.001
Cadmium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0005
Chromium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.005
Cobalt	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0005
Lead	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0005
Lithium	mg/L	0.0792	0.0848	0.0818	0.08	0.0787	0.0884	0.075	0.0881	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0763
Mercury	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0002
Molybdenum	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.002
Radium-226 & 228	pCi/L	0.155	0.442	0.673	0.179	0.284	0.353	0.225	0.504	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.385
Selenium	mg/L	0.00631	0.0101	0.0074	0.0216	0.00632	<0.005	0.00567	0.00657	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0288
Thallium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.001

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227	MW-227D
Sample ID:		**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW-227**	**MW227-GW-1024**	**MW227-GW-1224**	**MW227D-GW-0424**
Sample Date:		**5/16/2016**	**5/31/2016**	**7/18/2016**	**10/4/2016**	**1/30/2017**	**4/10/2017**	**7/11/2017**	**8/14/2017**	**10/10/2017**	**2/13/2018**	**5/1/2018**	**7/31/2018**	**10/10/2018**	**11/14/2018**	**4/16/2019**	**10/28/2019**	**4/20/2020**	**10/12/2020**	**12/1/2020**	**4/19/2021**	**10/25/2021**	**10/2/2024**	**12/10/2024**	**4/4/2024**
Parameters	**Units**																							
Appendix III																								
Boron	mg/L	<0.200	--	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	--	<0.200	--	<0.200	--	<0.200	<0.200	0.12	0.17	--	0.179	0.143	<0.500	--	0.110
Calcium	mg/L	144	--	154	152	132	151	168	145	140	--	149	--	185	168	147	156	128	188	159	115	160	226	205	154
Chloride	mg/L	<5.00	--	7.17	<5.00	<5.00	7.98	10.8	8.5	28.3	8.07	23.3	11.1	18.1	--	6.98	5.71	11.3	20.2	20.6	6.55	15.5	20.2	--	12.3
Fluoride	mg/L	<0.500	--	<0.500	<0.500	<0.500	0.642	<0.500	0.603	<0.500	--	0.752	<0.500	<0.500	--	<0.500	0.58	<0.500	<0.500	--	<0.500	<0.500	<1.00	--	<1.00
pH, lab	s.u.	7.1	--	7.1	7.2	7.7	7.1	7.1	7.3	7.2	--	7.1	--	7.4	--	7.1	7.3	7.2	7.2	--	7.3	7.1	7.0 J	--	7.1 J
Sulfate	mg/L	65.3	--	90.4	74.6	96.9	113	137	110	101	--	116	--	206	189	110	89.4	89	150	--	46.7	112	284	237	195
Total dissolved solids (TDS)	mg/L	568	644	812	598	686	684	834	716	928	--	700	--	784	--	604	608	600	716	--	492	570	918	--	690
Appendix IV																									
Antimony	mg/L	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00200
Arsenic	mg/L	<0.002	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0129
Barium	mg/L	0.139	--	0.131	0.142	0.153	0.153	0.159	0.145	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.412
Beryllium	mg/L	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00100
Cadmium	mg/L	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.000200
Chromium	mg/L	<0.005	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00500
Cobalt	mg/L	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00110
Lead	mg/L	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.000500
Lithium	mg/L	0.0702	--	0.0741	0.0719	0.0727	0.0645	0.0733	0.0773	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0654
Mercury	mg/L	<0.0002	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.000200
Molybdenum	mg/L	<0.002	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00251
Radium-226 & 228	pCi/L	0.171	--	0.642	0.248	0.61	0.468	0.304	0.656	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.30
Selenium	mg/L	0.00883	--	0.021	0.0112	0.0105	<0.005	0.0207	0.0105	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00500
Thallium	mg/L	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00100

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-227D	MW-227D	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R
Sample ID:		MW227D-GW-0624	MW227D-GW-1024	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-233	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R
Sample Date:		6/5/2024	10/2/2024	3/16/2016	5/16/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	5/1/2018	10/10/2018	11/14/2018	4/16/2019	3/16/2016	5/16/2016	5/31/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017
Parameters	**Units**																								
Appendix III																									
Boron	mg/L	<0.100	0.109	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.205	0.18	<0.200	0.273	0.249	--	0.269	0.303	0.245	0.318	0.254	0.306	0.267
Calcium	mg/L	166	157	166	174	171	189	176	202	187	182	177	190	187	--	177	135	197	--	166	176	165	164	167	171	141
Chloride	mg/L	11.9	16.2	6.25	12.2	8.58	7.56	8.81	11.3	11.8	10.2	12.4	11.1	11.1	--	11	12.2	24.3	--	17	13.6	24.7	12.3	19.3	22.7	16
Fluoride	mg/L	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.712	0.529	<0.500	<0.500	--	<0.500	<0.500	<0.500	--	<0.500	<0.500	<0.500	0.708	0.578	0.642	0.823
pH, lab	s.u.	7.3 J	9.1 J	7.23	6.97	6.85	7	7	6.9	6.9	7	7	7	7.2	--	7	7.17	6.93	--	6.98	7.2	7.1	7	7.1	7	7.1
Sulfate	mg/L	219	199	110	184	131	99.7	132	201	173	149	173	170	157	--	170	198	202	--	176	183	215	218	181	195	166
Total dissolved solids (TDS)	mg/L	778	758	764	842	892	808	868	912	892	858	848	832	738	--	854	894	1140	1100	1130	870	870	944	1090	1080	912
Appendix IV																									
Antimony	mg/L	<0.00200	<0.00200	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--
Arsenic	mg/L	0.0136	0.0111	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	<0.002	<0.002	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--
Barium	mg/L	0.480	0.373	0.158	0.147	0.146	0.185	0.174	0.171	0.153	0.17	--	--	--	--	--	0.157	0.123	--	0.11	0.144	0.142	0.152	0.142	0.15	--
Beryllium	mg/L	<0.00100	<0.00100	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--
Cadmium	mg/L	<0.000200	<0.000200	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--
Chromium	mg/L	<0.00500	<0.00500	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	<0.005	<0.005	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--
Cobalt	mg/L	<0.000500	0.000570	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--
Lead	mg/L	<0.000500	<0.000500	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	<0.0005	<0.0005	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--
Lithium	mg/L	0.0654	0.0672	0.0833	0.108	0.0843	0.0817	0.0897	0.0906	0.0823	0.0883	--	--	--	--	--	0.126	0.166	--	0.139	0.115	0.15	0.115	0.129	0.157	--
Mercury	mg/L	<0.000200	<0.000200	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	<0.0002	<0.0002	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--
Molybdenum	mg/L	0.00327	<0.00200	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	<0.002	<0.002	--	<0.002	0.00297	<0.002	0.003	<0.002	<0.002	--
Radium-226 & 228	pCi/L	1.07 J	1.16	0.422	0.396	0.224	0.299	0.869	0.421	0.419	0.164	--	--	--	--	--	0.457	0.337	--	0.235	0.58	0.647	0.723	0.579	0.28	--
Selenium	mg/L	<0.00500	<0.00500	0.00653	<0.005	<0.005	0.0241	0.017	<0.005	<0.005	0.00528	--	--	--	--	--	0.0124	0.0927	--	0.0605	0.0379	0.084	<0.005	0.0294	0.0455	--
Thallium	mg/L	<0.00100	<0.00100	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	<0.001	<0.001	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R	MW-240R
Sample ID:		**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW-240R**	**MW240R-GW-1022**	**MW240R-GW-0423**	**DP04-GW-0423**	**MW240R-GW-1023**	**DP04-GW-1023**	**MW240R-GW-1123**
Sample Date:		**2/13/2018**	**5/1/2018**	**7/31/2018**	**10/10/2018**	**11/14/2018**	**4/16/2019**	**5/20/2019**	**10/28/2019**	**12/12/2019**	**4/20/2020**	**6/29/2020**	**10/12/2020**	**12/1/2020**	**4/19/2021**	**10/25/2021**	**4/27/2022**	**10/12/2022**	**4/26/2023**	**4/26/2023 (Duplicate)**	**10/5/2023**	**10/5/2023 (Duplicate)**	**11/29/2023**
Parameters	**Units**																						
Appendix III																							
Boron	mg/L	--	0.246	--	0.277	--	0.258	--	0.289	--	0.301	--	0.303	--	0.3	0.206	0.281	0.328	0.256	0.238	0.284	0.280	--
Calcium	mg/L	--	159	--	180	--	158	--	192	--	172	--	202	--	158	99.9	183	203	180	175	156	155	--
Chloride	mg/L	--	11.5	--	41.2	46.6	41.5	41.6	48.5	48.7	51.6	50.2	68.3	61.3	15.2	6.68	12.2	17.0	23.2	22.9	27.5	27.4	--
Fluoride	mg/L	0.273	0.809	<0.500	<0.500	--	<0.500	--	0.647	--	<0.500	--	<0.500	--	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	--
pH, lab	s.u.	--	7.1	--	7.1	--	6.9	--	7.3	--	7	--	6.9	--	7.1	7.1	7.2 J	7.2 J	7.2 J	7.1 J	7.9 J	7.9 J	7.2 J
Sulfate	mg/L	--	161	--	160	--	183	--	169	--	194	--	212	--	226	75.2	179	183	218 J-	211 J-	194	195	--
Total dissolved solids (TDS)	mg/L	--	784	--	856	--	1010	--	994	--	966	--	940	--	870	412	818	760	860	812	758	772	--
Appendix IV																							
Antimony	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-240R	MW-240R	MW-240R	MW-240R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-242	MW-242
Sample ID:		MW240R-GW-0424	DP04-GW-0424	MW240R-GW-1024	DP04-GW-1024	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-241R	MW-242	MW-242
Sample Date:		4/4/2024	4/4/2024 (Duplicate)	10/2/2024	10/2/2024 (Duplicate)	3/16/2016	5/16/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	5/1/2018	10/10/2018	11/14/2018	4/16/2019	10/28/2019	4/20/2020	10/12/2020	4/19/2021	3/16/2016	5/16/2016
Parameters	**Units**																						
Appendix III																							
Boron	mg/L	0.287	0.330	<0.500	<0.500	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.204	0.222	<0.200	<0.200	0.224	0.19	<0.200	<0.200	0.185	0.203	0.218	<0.200	<0.200
Calcium	mg/L	172	179	175	171	172	118	145	215	180	215	188	183	148	164	173	--	138	134	128	192	204	268	282
Chloride	mg/L	33.7	33.1	6.90	8.60	18.2	11.2	14.7	21.7	49.8	20.8	18.5	16.2	16	14.7	13.2	--	13.2	12.1	9.94	14.5	16.3	24.7	26
Fluoride	mg/L	<1.00	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	3.53	<0.500	<0.500	<0.500	<0.500	0.745	0.571	--	0.59	0.731	0.51	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	7.1 J	7.1 J	7.0 J	7.1 J	7.12	7.1	7.12	7.2	7.5	7	7.1	7.1	7.1	7.1	7.2	--	7.1	7.2	7.2	7.2	7.2	7.05	6.89
Sulfate	mg/L	211	208	233	230	216	116	150	251	329	327	269	283	196	201	209	--	167	137	125	227	312	364	351
Total dissolved solids (TDS)	mg/L	866	862	814	850	884	618	1060	908	948	1010	966	1000	892	828	744	--	690	636	614	780	1010	1300	1390
Appendix IV																							
Antimony	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	<0.001	<0.001
Arsenic	mg/L	--	--	--	--	0.00943	0.0409	0.0273	0.0419	0.044	0.0518	0.012	0.016	--	--	--	--	--	--	--	--	--	0.00275	<0.002
Barium	mg/L	--	--	--	--	0.0972	0.18	0.166	0.241	0.178	0.234	0.105	0.0952	--	--	--	--	--	--	--	--	--	0.125	0.103
Beryllium	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	<0.001	<0.001
Cadmium	mg/L	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	<0.0005	<0.0005
Chromium	mg/L	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	<0.005	<0.005
Cobalt	mg/L	--	--	--	--	0.00186	<0.0005	0.000868	0.0013	0.000976	0.00055	0.000915	0.000802	--	--	--	--	--	--	--	--	--	0.000508	<0.0005
Lead	mg/L	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	<0.0005	<0.0005
Lithium	mg/L	--	--	--	--	0.0967	0.1	0.0928	0.0939	0.0959	0.094	0.083	0.0965	--	--	--	--	--	--	--	--	--	<0.0500	<0.0500
Mercury	mg/L	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	<0.0002	<0.0002
Molybdenum	mg/L	--	--	--	--	<0.002	0.00262	0.00236	0.00226	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	<0.002	<0.002
Radium-226 & 228	pCi/L	--	--	--	--	0.223	0.444	0.47	0.402	0.662	0.509	0.249	0.376	--	--	--	--	--	--	--	--	--	0.558	0.455
Selenium	mg/L	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	<0.005	<0.005
Thallium	mg/L	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	<0.001	<0.001

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-242	MW-242	MW-242	MW-242	MW-242	MW-242	MW-242	MW-242	MW-242	MW-242	MW-242	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-243	MW-244
Sample ID:		**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-242**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-243**	**MW-244**
Sample Date:		**7/18/2016**	**10/4/2016**	**1/30/2017**	**4/10/2017**	**7/11/2017**	**8/14/2017**	**10/10/2017**	**5/1/2018**	**10/10/2018**	**4/16/2019**	**5/20/2019**	**3/16/2016**	**5/16/2016**	**7/18/2016**	**10/4/2016**	**1/30/2017**	**4/10/2017**	**7/11/2017**	**8/14/2017**	**10/10/2017**	**5/1/2018**	**7/31/2018**	**10/10/2018**	**11/14/2018**	**4/16/2019**	**3/16/2016**
Parameters	**Units**																										
Appendix III																											
Boron	mg/L	<0.200	0.213	<0.200	<0.200	<0.200	0.235	0.206	<0.200	<0.200	<0.200	--	<0.200	<0.200	<0.200	<0.200	<0.200	0.216	<0.200	0.235	0.2	<0.200	--	<0.200	--	<0.200	<0.200
Calcium	mg/L	287	261	228	284	262	258	270	259	270	231	--	148	162	155	159	137	157	140	142	129	129	--	130	--	119	129
Chloride	mg/L	28.3	28.4	31	30.1	33.5	31.1	32.9	35.7	37	40.7	41.8	15.3	16.5	15.4	14.1	14.8	14	15	15.8	14.4	15.2	--	13	--	13.1	10.5
Fluoride	mg/L	<0.500	0.973	1.51	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--	<0.500	<0.500	<0.500	<0.500	<0.500	0.563	0.576	<0.500	<0.500	1.05	<0.500	0.705	<0.500	<0.500	0.803
pH, lab	s.u.	6.89	7.2	7	6.9	6.9	6.9	6.9	6.9	7.2	6.8	6.9	7.6	7.1	7.1	7	7.1	7.1	7	6.8	7.2	7.2	--	7.3	--	7.2	7.12
Sulfate	mg/L	313	281	350	369	367	334	390	342	359	400	--	149	154	150	130	146	138	128	132	130	118	--	116	--	114	65.5
Total dissolved solids (TDS)	mg/L	1470	1160	1360	1530	1630	1540	1460	1260	1290	1220	--	746	820	872	774	724	902	818	780	846	888	--	614	--	602	620
Appendix IV																											
Antimony	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	<0.001
Arsenic	mg/L	0.00256	0.0289	0.0294	0.00716	0.00311	0.00549	--	--	--	--	--	0.00453	0.00356	0.00283	0.0048	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	0.13
Barium	mg/L	0.117	0.24	0.239	0.153	0.115	0.152	--	--	--	--	--	0.243	0.248	0.225	0.241	0.241	0.236	0.216	0.228	--	--	--	--	--	--	0.56
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	<0.001
Cadmium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	<0.0005
Chromium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	<0.005
Cobalt	mg/L	<0.0005	0.00121	0.000695	0.0006	0.000559	0.0012	--	--	--	--	--	0.00146	0.00173	0.00163	0.00145	0.00183	0.00173	0.00193	0.00185	--	--	--	--	--	--	<0.0005
Lead	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	<0.0005	<0.0005	<0.0005	0.000552	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	<0.0005
Lithium	mg/L	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	--	--	--	--	--	0.0873	0.0966	0.0863	0.083	0.098	0.0933	0.0921	0.098	--	--	--	--	--	--	<0.0500
Mercury	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	<0.0002
Molybdenum	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	0.00243	0.00279	0.00243	0.0026	0.00246	0.00229	0.00241	0.00232	--	--	--	--	--	--	0.00258
Radium-226 & 228	pCi/L	0.819	0.4	1.42	0.723	0.38	1.68	--	--	--	--	--	0.575	0.419	0.54	0.502	1.61	0.869	0.915	1.6	--	--	--	--	--	--	0.997
Selenium	mg/L	<0.005	<0.005	<0.005	0.0109	<0.005	<0.005	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	<0.005
Thallium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	<0.001

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244	MW-244
Sample ID:		**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW-244**	**MW244-GW-1022**	**MW244-GW-0423**	**MW244-GW-1023**	**MW244-GW-1123**	**MW244-GW-0424**
Sample Date:		**5/16/2016**	**7/18/2016**	**10/4/2016**	**1/30/2017**	**4/10/2017**	**7/11/2017**	**8/14/2017**	**10/10/2017**	**5/1/2018**	**10/10/2018**	**4/16/2019**	**10/28/2019**	**4/20/2020**	**10/12/2020**	**4/19/2021**	**10/25/2021**	**4/26/2022**	**6/13/2022**	**10/11/2022**	**4/27/2023**	**10/5/2023**	**11/29/2023**	**4/3/2024**
Parameters	**Units**																							
Appendix III																								
Boron	mg/L	<0.200	<0.200	<0.200	0.269	<0.200	<0.200	0.213	<0.200	<0.200	<0.200	<0.200	<0.200	0.121	0.194	0.118	0.108	0.100	--	0.205	0.176	0.170	--	0.180
Calcium	mg/L	131	134	137	116	138	126	126	122	120	136	121	132	147	151	147	149	176	165	208	132	132	--	120
Chloride	mg/L	36.1	9.18	10.5	8.83	9.66	10	9.88	9.38	9.88	9.37	11	9.5	11.5	10.4	11.8	12	11.6	--	9.33	9.93	11.8	--	11.4
Fluoride	mg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.55	<0.500	<0.500	0.531	0.712	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--	<0.500	<1.00	<1.00	--	<1.00
pH, lab	s.u.	6.98	6.94	7.3	7.2	6.9	7	7.6	7	7	7.2	7	7.1	7	7	7.1	7.2	7.3 J	--	7.2 J	7.2 J	7.9 J	7.1 J	7.0 J
Sulfate	mg/L	90.2	69.4	45	45	56.9	66.7	58.4	47.6	36.1	52.5	52.5	56.5	71.2	43.2	83.3	66.6	102	--	21.0	8.02 J-	79.6	--	40.6
Total dissolved solids (TDS)	mg/L	638	800	660	606	658	668	696	708	598	614	600	600	700	616	722	668	716	--	616	526	580	--	592
Appendix IV																								
Antimony	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	0.126	0.129	0.13	0.133	0.127	0.0975	0.109	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	0.504	0.505	0.529	0.566	0.525	0.465	0.522	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	0.00207	0.0026	0.00249	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	1.3	1.11	1.49	2.81	1.55	0.998	1.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-244	MW-244	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245
Sample ID:		MW244-GW-1024	MW244-GW-1224	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW245-GW-1022
Sample Date:		10/2/2024	12/10/2024	3/16/2016	5/16/2016	7/18/2016	10/4/2016	1/30/2017	4/10/2017	7/11/2017	8/14/2017	10/10/2017	5/1/2018	7/31/2018	10/10/2018	4/16/2019	5/20/2019	10/28/2019	4/20/2020	10/12/2020	12/1/2020	4/19/2021	10/25/2021	10/11/2022
Parameters	**Units**																							
Appendix III																								
Boron	mg/L	<0.500	--	0.262	0.271	0.283	0.267	0.364	0.297	0.28	0.327	0.286	0.256	--	0.256	0.256	--	0.229	0.272	0.298	--	0.302	0.299	0.391
Calcium	mg/L	188	147	167	184	170	186	161	189	175	179	175	170	--	175	172	--	192	166	207	171	159	172	182
Chloride	mg/L	12.1	--	14.1	12.3	13.3	11.3	11.1	12.6	19.5	12.1	12.3	18.5	--	12.9	12.3	--	10.9	10.6	10.1	--	10.6	11.5	10.3
Fluoride	mg/L	<1.00	--	0.654	<0.500	<0.500	<0.500	<0.500	0.677	<0.500	0.609	<0.500	4.54	<0.500	0.506	0.773	1.03	0.612	<0.500	<0.500	--	<0.500	<0.500	<0.500
pH, lab	s.u.	7.1 J	--	7.03	6.98	6.94	7.1	7.4	6.9	6.9	6.9	7	7	--	7.1	6.9	--	7	7	6.9	--	7	7.1	7.1 J
Sulfate	mg/L	115	56.4	261	226	239	245	266	288	267	270	277	276	--	261	294	--	274	240	198	--	193	214	174
Total dissolved solids (TDS)	mg/L	790	--	954	924	1690	990	1020	1030	1050	1140	1340	1010	--	962	998	--	1070	976	888	--	906	824	924
Appendix IV																								
Antimony	mg/L	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	0.0116	0.00639	0.0051	0.00294	0.00412	0.00904	0.00621	0.00599	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	0.209	0.251	0.208	0.168	0.192	0.232	0.204	0.189	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	0.00115	0.000671	0.00104	0.00296	0.000929	0.00066	0.00268	0.00312	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	0.000854	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	0.138	0.155	0.145	0.13	0.151	0.151	0.135	0.167	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	0.00292	0.00283	0.00269	0.00237	0.00295	0.0036	0.00281	0.0024	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	1.13	0.816	0.817	0.517	1.58	1.3	1.24	1.98	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-245	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246	MW-246
Sample ID:		**MW245-GW-0423**	**MW245-GW-0623**	**MW245-GW-1023**	**MW245-GW-1123**	**MW245-GW-0424**	**MW245-GW-1024**	**MW245-GW-1224**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**	**MW-246**
Sample Date:		**4/27/2023**	**6/27/2023**	**10/4/2023**	**11/29/2023**	**4/3/2024**	**10/2/2024**	**12/10/2024**	**7/29/2019**	**8/5/2019**	**8/19/2019**	**8/28/2019**	**9/9/2019**	**9/24/2019**	**10/8/2019**	**10/14/2019**	**10/28/2019**	**4/20/2020**	**6/29/2020**	**10/12/2020**	**12/1/2020**	**4/19/2021**	**10/25/2021**
Parameters	**Units**																						
Appendix III																							
Boron	mg/L	0.349	--	0.334	--	0.327	<0.500	--	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.165	--	0.156	--	0.187	0.137
Calcium	mg/L	205	179	180	--	189	257	271	155	138	138	146	138	126	136	132	137	183	196	220	181	128	199
Chloride	mg/L	10.6	--	9.34	--	9.57	9.89	--	16.6	18.1	17.9	17.9	17.1	16.1	17.2	18.3	17.3	14.8	--	14.7	--	14.4	14.1
Fluoride	mg/L	<1.00	--	<1.00	--	<1.00	<1.00	--	<0.500	0.565	<0.500	0.51	0.509	<0.500	<0.500	<0.500	<0.500	<0.500	--	<0.500	--	<0.500	<0.500
pH, lab	s.u.	7.2 J	--	7.7 J	7.0 J	7.0 J	7.0 J	--	7.1	7	7.1	7.5	7.7	7.2	7.2	7	7	6.9	--	6.9	--	7.1	7.1
Sulfate	mg/L	190 J-	--	166	--	169	303	357	54	54.9	55.4	56.9	57.7	54.5	56.2	58.1	54.4	99.5	64	81.1	91.4	46.5	88.4
Total dissolved solids (TDS)	mg/L	936	--	952	--	962	1130	--	622	606	668	640	662	634	654	620	632	838	760	832	842	626	730
Appendix IV																							
Antimony	mg/L	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	--	--	0.17	0.169	0.185	0.211	0.189	0.227	0.234	0.233	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	--	--	--	0.5	0.418	0.45	0.431	0.434	0.409	0.392	0.386	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	--	--	0.0078	0.00644	0.00522	0.00494	0.00487	0.004	0.00399	0.00349	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	--	--	--	0.0421	0.036	0.0331	0.0347	0.033	0.0326	0.0323	0.0314	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	--	--	0.00621	0.00541	0.00536	0.00589	0.0055	0.00586	0.00535	0.00689	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	0.802	0.657	0.889	0.545	1.35	0.791	1.56	0.833	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-246	MW-246	MW-246	MW-246	MW-246	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247
Sample ID:		MW246-GW-1022	MW246-GW-0423	MW246-GW-1023	MW246-GW-0424	MW246-GW-1024	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247
Sample Date:		10/11/2022	4/27/2023	10/5/2023	4/3/2024	10/3/2024	7/29/2019	8/5/2019	8/19/2019	8/28/2019	9/9/2019	9/24/2019	10/8/2019	10/14/2019	10/28/2019	12/12/2019	4/20/2020	6/29/2020	10/12/2020	12/1/2020	4/19/2021	10/25/2021	4/26/2022	6/13/2022
Parameters	**Units**																						
Appendix III																							
Boron	mg/L	0.210	0.169	0.158	0.191	<0.500	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	--	0.201	0.218	0.207	0.19	0.192	0.175	0.206	0.175
Calcium	mg/L	167	164	184	154	200	163	163	138	139	146	138	148	142	153	--	160	--	152	--	121	143	165	--
Chloride	mg/L	13.6	14.5	13.5	16.8	12.4	13.7	14.8	14.5	14.2	13.1	12.9	13.8	14.2	13.8	--	13.4	--	12.9	--	12.4	14.5	13.9	--
Fluoride	mg/L	<0.500	<1.00	<1.00	<1.00	<1.00	<0.500	0.602	0.555	0.524	<0.500	<0.500	<0.500	<0.500	0.703	<0.500	<0.500	--	<0.500	--	<0.500	<0.500	<0.500	--
pH, lab	s.u.	7.1 J	7.1 J	7.8 J	7.0 J	7.0 J	7.2	7.2	7.4	7.5	7.5	7.3	7.1	7	7.1	--	7	--	7	--	7.1	7.1	7.1 J	--
Sulfate	mg/L	70.3	66.6 J-	62.7	62.6	57.4	108	115	117	117	111	109	115	121	107	--	125	--	95.7	--	85.9	106	58.9	--
Total dissolved solids (TDS)	mg/L	684	622	758	666	808	662	656	684	600	714	658	702	660	648	--	748	--	644	--	582	568	622	--
Appendix IV																								
Antimony	mg/L	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	0.0134	0.013	0.0138	0.0152	0.0153	0.017	0.0169	0.0163	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	--	0.335	0.293	0.266	0.25	0.278	0.287	0.255	0.253	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	0.00582	0.00533	0.00451	0.00469	0.00523	0.00496	0.00465	0.00452	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	--	0.0647	0.0588	0.0506	0.0515	0.0519	0.0539	0.0533	0.0515	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	0.00395	0.00336	0.00275	0.00299	0.00315	0.00341	0.00287	0.00309	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	0.708	0.464	0.798	0.515	1.09	0.734	0.923	0.735	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-247	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248
Sample ID:		**MW247-GW-1022**	**MW247-GW-0423**	**MW247-GW-1023**	**MW247-GW-1123**	**MW247-GW-0424**	**MW247-GW-0624**	**MW247-GW-1024**	**MW247-GW-1224**	**DP01-GW-1224**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**
Sample Date:		**10/11/2022**	**4/27/2023**	**10/5/2023**	**11/29/2023**	**4/3/2024**	**6/4/2024**	**10/3/2024**	**12/10/2024**	**12/10/2024 (Duplicate)**	**7/29/2019**	**8/5/2019**	**8/19/2019**	**8/28/2019**	**9/9/2019**	**9/24/2019**	**10/8/2019**	**10/14/2019**	**10/28/2019**	**4/20/2020**	**6/29/2020**	**10/12/2020**
Parameters	**Units**																					
Appendix III																						
Boron	mg/L	0.209	0.170	0.196	--	0.197	--	<0.500	--	--	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	0.166	--	0.175
Calcium	mg/L	191	165	156	--	161	--	205	204	202	122	113	108	106	112	99.3	106	113	112	109	--	136
Chloride	mg/L	13.9	14.4	14.4	--	14.9	13.6	61.9	28.4	28.2	9.99	9.86	9.84	9.61	8.37	8.18	8.63	9.03	9.01	9.96	--	11.3
Fluoride	mg/L	<0.500	<1.00	<1.00	--	<1.00	--	<1.00	--	--	0.596	0.69	0.634	0.632	0.572	<0.500	<0.500	<0.500	0.505	0.505	--	<0.500
pH, lab	s.u.	7.1 J	7.1 J	7.9 J	7.1 J	7.1 J	--	6.9 J	--	--	7.3	7.2	7.4	7.7	7.6	7.2	7.2	7.1	7.2	7.1	--	7.2
Sulfate	mg/L	93.0	98.8 J-	111	--	115	--	171	150	140	58.8	60.5	62.3	63.7	60.4	59.6	59.5	61	54.4	69	73.2	96.2
Total dissolved solids (TDS)	mg/L	690	626	682	--	686	--	882	866	846	496	488	538	660	528	494	532	424	476	524	--	554
Appendix IV																						
Antimony	mg/L	--	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	--	--	--	--	0.0158	0.0172	0.0212	0.0224	0.0238	0.0263	0.0241	0.0254	--	--	--	--
Barium	mg/L	--	--	--	--	--	--	--	--	--	0.286	0.238	0.233	0.225	0.251	0.219	0.213	0.231	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	--	--	--	--
Chromium	mg/L	--	--	--	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	--	--	--	--	0.00658	0.00571	0.00525	0.00523	0.00563	0.00326	0.00343	0.00353	--	--	--	--
Lead	mg/L	--	--	--	--	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--
Lithium	mg/L	--	--	--	--	--	--	--	--	--	0.0585	0.0491	0.0449	0.0438	0.0468	0.0463	0.047	0.0468	--	--	--	--
Mercury	mg/L	--	--	--	--	--	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	--	--	--	--	0.00477	0.00382	0.00412	0.0042	0.00463	0.00499	0.00462	0.00527	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--	--	1.55	0.854	0.646	1.07	1.03	1.11	0.908	1.3	--	--	--	--
Selenium	mg/L	--	--	--	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--
Thallium	mg/L	--	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-248	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250
Sample ID:		**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW-248**	**MW248-GW-1022**	**MW248-GW-0423**	**MW248-GW-1023**	**MW248-GW-1123**	**MW248-GW-0424**	**MW248-GW-1024**	**MW-250**	**MW-250**	**MW-250**	**MW-250**	**MW-250**	**MW-250**	**MW-250**	**MW-250**	**MW-250**
Sample Date:		**12/1/2020**	**4/19/2021**	**6/29/2021**	**10/25/2021**	**4/26/2022**	**6/13/2022**	**10/11/2022**	**4/27/2023**	**10/5/2023**	**11/29/2023**	**4/3/2024**	**10/3/2024**	**7/30/2021**	**8/2/2021**	**8/16/2021**	**8/30/2021**	**9/13/2021**	**9/20/2021**	**10/6/2021**	**10/14/2021**	**10/25/2021**	**4/27/2022**
Parameters	**Units**																						
Appendix III																							
Boron	mg/L	--	0.184	--	0.157	0.189	--	0.189	0.160	0.160	--	0.182	<0.500	0.266	0.256	0.256	0.244	0.268	0.264	0.272	0.286	0.238	0.304
Calcium	mg/L	117	132	136	132	153	160	165	146	121	--	126	125	174	158	165	162	164	184	160	153	161	166
Chloride	mg/L	--	15	13.6	14.3	14.1	13.8	10.2	10.9	11.7	--	11.7	12.3	6.68	6.43	5.99	5.84	6.59	6.52	6.98	6.58	6.76	7.47
Fluoride	mg/L	--	<0.500	--	<0.500	<0.500	--	<0.500	<1.00	<1.00	--	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	--	7.1	--	7.1	7.1 J	--	7.2 J	7.2 J	7.9 J	7.1 J	7.1 J	7.0 J	7	7.1	6.9	6.9	7.2	6.9	7	6.9	6.9	7.0 J
Sulfate	mg/L	95.9	132	122	120	110	59.9	67.4	92.6 J-	64.9	--	93.9	86.9	93.7	91.8	87.2	88.3	87.5	96.3	87.2	86	99.3	73.4
Total dissolved solids (TDS)	mg/L	--	662	--	588	578	--	556	552	518	--	578	548	618	626	628	664	572	638	640	604	578	628
Appendix IV																							
Antimony	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Arsenic	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Barium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.106	0.104	0.11	0.105	0.102	0.108	0.0963	0.0987	--	--
Beryllium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--
Cadmium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	--	--
Chromium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	--	--
Cobalt	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.00226	0.00214	0.00239	0.00234	0.00261	0.00191	0.00191	0.00214	--	--
Lead	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--
Lithium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.072	0.0702	0.0746	0.0713	0.0729	0.0696	0.08	0.0766	--	--
Mercury	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	--	--
Molybdenum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	0.463	0.76	0.859	0.63	1.05	0.818	0.784	0.97	--	--
Selenium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	0.0103	0.00862	<0.005	<0.005	<0.005	0.012	<0.005	<0.005	--	--
Thallium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	--	--

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-250	MW-307	MW-307	MW-307	MW-307	MW-307	MW-307	MW-307	MW-307	MW-307D
Sample ID:		MW-250	MW250-GW-1022	MW250-GW-0123	DP01-GW-0123	MW250-GW-0423	MW250-GW-0623	MW250-GW-1023	MW250-GW-1123	MW250-GW-0424	MW250-GW-1024	MW-307	MW-307	MW-307	MW-307	MW-307	MW-307	MW-307	MW307-GW-1024	MW307D-GW-0424
Sample Date:		6/13/2022	10/12/2022	1/17/2023	1/17/2023 (Duplicate)	4/26/2023	6/27/2023	10/5/2023	11/29/2023	4/3/2024	10/2/2024	7/27/2020	10/12/2020	11/16/2020	4/22/2021	5/6/2021	11/3/2021	11/18/2021	10/3/2024	4/2/2024
Parameters	**Units**																			
Appendix III																				
Boron	mg/L	0.255	0.245	--	--	0.234	--	0.215	--	0.246	<0.500	<0.100	0.148	<0.100	0.123	0.102	0.154	0.157	0.169	0.193
Calcium	mg/L	--	210	199	185	241	--	211	--	220	209	95.1	93.4	82.4	103	108	87.4	99.8	130	121
Chloride	mg/L	--	5.41	--	--	7.86	8.26	9.32	--	9.59	12.1	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Fluoride	mg/L	--	<0.500	--	--	<1.00	--	<1.00	--	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00
pH, lab	s.u.	--	7.0 J	--	--	6.9 J	--	7.8 J	7.0 J	6.9 J	6.8 J	7.3 J	7.0 J	7.2 J	7.2 J	7.3 J	7.0 J	7.3 J	7.1 J	7.3 J
Sulfate	mg/L	--	151	177	179	306 J-	--	211	--	178	253	10.9	12.3	13.7	20.4	19.7	14.4	14.9	97.0	27.1
Total dissolved solids (TDS)	mg/L	--	784	818	846	1040	--	928	--	880	968	370	358	402	426	402	340	370	532	390
Appendix IV																				
Antimony	mg/L	--	--	--	--	--	--	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	--	--	--	--	--	--	--	--	--	--	0.00215	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.0173
Barium	mg/L	--	--	--	--	--	--	--	--	--	--	0.250	0.238	0.199	0.257	0.242	0.197	0.230	0.282	0.473
Beryllium	mg/L	--	--	--	--	--	--	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	--	--	--	--	--	--	--	--	--	--	0.000134	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000200	<0.000200
Chromium	mg/L	--	--	--	--	--	--	--	--	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	--	--	--	--	--	--	--	--	--	--	0.000526	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.00288
Lead	mg/L	--	--	--	--	--	--	--	--	--	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	--	--	--	--	--	--	--	--	--	--	0.0298	0.0426	0.0413	0.0443	0.0508	0.0506	0.0577	0.0779	0.0741
Mercury	mg/L	--	--	--	--	--	--	--	--	--	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	--	--	--	--	--	--	--	--	--	--	0.00256	0.00207	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.00520
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--	--	--	0.368	0.492	0.364	0.415	0.580	0.345	1.51	0.554	1.40
Selenium	mg/L	--	--	--	--	--	--	--	--	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	--	--	--	--	--	--	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-307D	MW-307D	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1
Sample ID:		MW307D-GW-0624	MW307D-GW-1024	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW-34	MW34-GW-1122	MW34-GW-0423	MW34-GW-1023	MW34-GW-0424	MW34-GW-1024	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1
Sample Date:		6/4/2024	10/1/2024	7/27/2020	10/12/2020	11/16/2020	4/22/2021	5/5/2021	11/3/2021	11/16/2021	4/29/2022	11/9/2022	4/24/2023	10/4/2023	4/1/2024	10/1/2024	7/27/2020	10/12/2020	11/16/2020	4/22/2021	5/5/2021	11/3/2021
Parameters	**Units**																					
Appendix III																						
Boron	mg/L	0.191	0.214	<0.100	0.192	<0.100	0.132	0.104	0.105	0.125	<0.100	0.118	0.113	0.101	<0.100	0.105	0.273	0.426 F1	0.467	0.292	0.272	0.232
Calcium	mg/L	113	127	99.9	120	112	98.7	106	89.6	126	173	95.2	95.7	91.6	86.3	107	202	164	156	211	186	224
Chloride	mg/L	<5.00	<5.00	5.59	5.37	6.12	<5.00	5.49	5.73	7.46	9.32	5.14	<5.00	5.60	6.23	7.31	<5.00	11.8	10.6	12.4	14.1	56.9
Fluoride	mg/L	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	7.3 J	6.9 J	7.0 J	7.3 J	7.7 J	7.1 J	7.0 J	7.1 J	7.1 J	7.3 J	7.2 J	7.2 J	7.5 J	7.1 J	7.1 J	6.8 J	7.2 J	7.0 J	7.0 J	6.9 J	7.1 J
Sulfate	mg/L	25.9	59.2	43.6	73.6	81.0	72.0	72.0	51.2	75.1	104	20.8	12.0	24.7	29.7	38.3	6.82	85.9	81.0	151	189	578
Total dissolved solids (TDS)	mg/L	476	476	542	578	646	522	536	438	552	646	390	460	446	422	452	960	766	794	842	966	1520
Appendix IV																						
Antimony	mg/L	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	0.0192	<0.00200	0.0727	0.0817	0.0773	0.0769	0.0773	0.0745	0.0275	0.0871	0.0918	0.0805	0.143	0.105	0.0879	0.00580	0.0449	0.0475	0.0605	0.0538	0.0101
Barium	mg/L	0.477	0.192	0.584	0.714	0.653	0.650	0.636	0.527	0.347	0.317	0.683	0.361	0.955	0.496	0.633	0.292	0.433	0.434	0.550	0.460	0.111
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	<0.000200	<0.000200	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000200	<0.000200	<0.000200	<0.000200	<0.000100	<0.000100	<0.000100	0.000118	<0.000100	<0.000100
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.00156	<0.000500	0.000703	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.000946	0.00144	0.00160	0.000643	0.000586	<0.000500	<0.000500	0.00405	0.00848	0.00632	0.00350	0.00260	0.00173
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.000522	0.000542	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.000601
Lithium	mg/L	0.0677	0.0808	0.0343	0.0394	0.0377	0.0334	0.0381	0.0321	0.0402	0.0335	0.0342	0.0367	0.0352	0.0356	0.0364	0.0474	0.0377	0.0424	0.0544	0.0502	0.132
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	0.00473	<0.00200	0.00476	0.00461	0.00428	0.00368	0.00440	0.00386	0.00528	0.00587	0.00296	0.00455	0.00268	0.00434	0.00418	0.00483	0.00242	0.00251	0.00349	0.00281	0.00990
Radium-226 & 228	pCi/L	<0.823	0.426	1.39	0.712	1.42	0.901	1.42	0.580	1.16	1.30	2.59	<0.566	5.02	1.44	1.38	2.96	4.23	3.43	3.44	2.50	3.12
Selenium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0113	0.0364	<0.00500	<0.00500	<0.00500	<0.00500	0.00729	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.162
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	0.00899	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	0.00206	<0.00100	<0.00100

Table 4.1

Cumulative Groundwater Analytical Data Summary
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-1	TW-2	TW-2	TW-2	TW-2	TW-2	TW-2	TW-2	TW-2	TW-2	TW-2	TW-2	TW-2
Sample ID:		**TW-1**	**TW-1**	**TW1-GW-1122**	**TW1-GW-0423**	**TW1-GW-1023**	**TW1-GW-0424**	**TW1-GW-1024**	**TW-2**	**TW-2**	**TW-2**	**TW-2**	**TW-2**	**TW-2**	**TW-2**	**TW-2**	**TW2-GW-1122**	**TW2-GW-0423**	**TW2-GW-1023**	**TW2-GW-0424**	**TW2-GW-1024**
Sample Date:		**11/18/2021**	**4/28/2022**	**11/9/2022**	**4/25/2023**	**10/3/2023**	**4/1/2024**	**10/3/2024**	**7/27/2020**	**10/12/2020**	**11/16/2020**	**4/22/2021**	**5/5/2021**	**11/3/2021**	**11/18/2021**	**4/28/2022**	**11/9/2022**	**4/24/2023**	**10/3/2023**	**4/1/2024**	**10/3/2024**
Parameters	**Units**																				
Appendix III																					
Boron	mg/L	0.344	0.194	0.285	0.175	0.328	0.380	0.201	0.391	0.439	0.416	0.205	0.240	0.271	0.244	0.246	0.388	0.430	0.443	0.423	0.330
Calcium	mg/L	186	232	182	239	182	169	241	89.7	103	103	199	183	196	227	228	129	125	144	169	156
Chloride	mg/L	15.8	19.0	15.1	21.6	17.7	13.2	25.1	14.7	5.93	7.26	39.0	32.6	18.0	47.8	32.3	10.4	6.32	13.5	18.2	19.3
Fluoride	mg/L	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	7.0 J	7.3 J	7.1 J	7.1 J	7.0 J	7.0 J	7.1 J	7.2 J	7.1 J	7.2 J	7.2 J	7.2 J	6.9 J	7.1 J	7.4 J	7.1 J	7.3 J	7.1 J	7.4 J	7.2 J
Sulfate	mg/L	184	264	137	325	188	88.4	386	150	17.3	29.2	367	332	238	432	269	63.7	7.15	<5.00	46.0	20.9
Total dissolved solids (TDS)	mg/L	830	1010	826	1100	928	736	1190	474	504	590	1180	1160	964	1320	1070	654	566	704	794	768
Appendix IV																					
Antimony	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	0.0439	0.0459	0.0530	0.0159	0.0463	0.0570	0.0235	0.166	0.195	0.136	0.0185	0.00994	0.0507	0.0362	0.0529	0.122	0.170	0.122	0.0873	0.0778
Barium	mg/L	0.393	0.335	0.387	0.371	0.537	0.497	0.297	0.354	0.395	0.335	0.156	0.153	0.427	0.137	0.234	0.164	0.196	0.291	0.370	0.218
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	<0.000100	<0.000100	<0.000100	<0.000200	<0.000200	<0.000200	<0.000200	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000200	<0.000200	<0.000200	<0.000200
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.00251	0.00236	0.00156	0.00115	0.000936	0.000732	0.000913	0.000972	0.00101	0.00138	0.00158	0.00176	0.00248	0.00171	0.00146	0.000717	0.000640	0.000606	0.000673	<0.000500
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.000505	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.0507	0.0490	0.0438	0.0539	0.0473	0.0419	0.0581	0.0284	0.0305	0.0394	0.109	0.0970	0.0515	0.124	0.0842	0.0510	0.0395	0.0562	0.0572	0.0702
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	0.00332	0.00318	<0.00200	0.00407	<0.00200	<0.00200	0.00761	0.00981	0.00706	0.00558	0.00767	0.00630	0.00436	0.00840	0.00358	0.00280	0.00534	<0.00200	<0.00200	0.00217
Radium-226 & 228	pCi/L	3.55	3.21	4.59	1.96	3.16	2.09	2.25	1.03	0.943	0.482	1.41	1.44	2.93	4.68	1.68	1.04	1.14	1.78	1.20	3.00
Selenium	mg/L	<0.00500	<0.00500	<0.00500	0.127	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0658	0.0342	<0.00500	0.0183	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	0.00157	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Table 4.2

2024 Groundwater Analytical Data
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:				MW-105	MW-105	MW-105	MW-105	MW-105	MW-108	MW-108	MW-108	MW-108	MW-133	MW-133	MW-156
Sample ID:				MW105-GW-0424	DP03-GW-0424	MW105-GW-1024	DP03-GW-1024	MW105-GW-1224	MW108-GW-0424	MW108-GW-0624	MW108-GW-1024	MW108-GW-1224	MW133-GW-0424	MW133-GW-1024	MW156-GW-1024
Sample Date:		MCL [a]	GWPS [b]	4/3/2024	4/3/2024	10/2/2024	10/2/2024	12/10/2024	4/3/2024	6/4/2024	10/2/2024	12/10/2024	4/3/2024	10/2/2024	10/3/2024
		40 CFR 257.95(h)(1)	40 CFR 257.95(h)(2)		(Duplicate)		(Duplicate)								
Parameters	**Units**														
Appendix III															
Boron	mg/L	NA	NA	0.174	0.187	0.211	<0.500	--	0.227	0.160	0.222	--	0.493	0.385	0.192
Calcium	mg/L	NA	NA	168	165	196	209	221	112	--	145	--	161	192	274
Chloride	mg/L	NA	NA	23.4	23.3	34.3	38.9	--	18.3	--	25.2	23.7	109	76.7	36.6
Fluoride	mg/L	4.0	NA	<1.00	<1.00	<1.00	<1.00	--	<1.00	--	<1.00	--	<1.00	<1.00	<1.00
pH, lab	s.u.	NA	NA	7.1 J	7.2 J	7.0 J	7.0 J	--	7.1 J	--	7.0 J	--	7.1 J	7.0 J	6.8 J
Sulfate	mg/L	NA	NA	128	128	171	173	176	<5.00	--	<5.00	--	131	189	393
Total dissolved solids (TDS)	mg/L	NA	NA	738	722	884	882	--	620	--	702	796	780	916	1150
Appendix IV															
Antimony	mg/L	0.006	NA	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	0.01	NA	--	--	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	2.0	NA	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	0.004	NA	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	0.005	NA	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	0.1	NA	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	NA	0.006	--	--	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	NA	0.015	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	NA	0.040	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	0.002	NA	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	NA	0.100	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	5	NA	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	0.05	NA	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	0.002	NA	--	--	--	--	--	--	--	--	--	--	--	--

Footnotes:
J - Estimated concentration.
< - Not detected at the associated reporting limit.
J+ - Estimated concentration, result may be biased high.
J- - Estimated concentration, result may be biased low
GWPS - Groundwater Protection Standard.
MCL - Maximum Contaminant Level.
NA - Not applicable.
[a] Maximum contaminant level (MCL).
[b] Groundwater protection standard (GWPS) established under 40 CFR 257.95(h)(2).

Table 4.2

2024 Groundwater Analytical Data
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-156	MW-156D	MW-156D	MW-156D	MW-157	MW-157	MW-158	MW-158	MW-159	MW-159	MW-190	MW-190	MW-190	MW-191
Sample ID:		**MW156-GW-1224**	**MW156D-GW-0424**	**MW156D-GW-0624**	**MW156D-GW-1024**	**MW157-GW-1024**	**MW157-GW-1224**	**MW158-GW-0424**	**MW158-GW-1024**	**MW159-GW-0424**	**MW159-GW-1024**	**MW190-GW-0424**	**MW190-GW-0624**	**MW190-GW-1024**	**MW191-GW-1024**
Sample Date:		**12/10/2024**	**4/3/2024**	**6/4/2024**	**10/3/2024**	**10/3/2024**	**12/10/2024**	**4/3/2024**	**10/3/2024**	**4/3/2024**	**10/3/2024**	**4/3/2024**	**6/4/2024**	**10/3/2024**	**10/3/2024**
Parameters	**Units**														
Appendix III															
Boron	mg/L	--	0.131	0.105	0.215	<0.500	--	0.467	0.803	0.301	<0.500	0.109	--	<0.500	<0.500
Calcium	mg/L	296	192	305	342	221	--	279	276	212	231	187	195	176	182
Chloride	mg/L	--	21.5	37.5	46.6	51.3	57.8	44.3	27.8	18.9	16.2	11.2	--	9.60	11.1
Fluoride	mg/L	--	<1.00	<1.00	<1.00	<1.00	--	<1.00	<1.00	<1.00	<1.00	<1.00	--	<1.00	<1.00
pH, lab	s.u.	--	7.2 J	7.3 J	6.8 J	6.9 J	--	6.9 J	6.8 J	7.0 J	6.9 J	7.0 J	--	7.0 J	7.0 J
Sulfate	mg/L	368	186	474	722	186	--	398	355	267	255	211	177	169	220
Total dissolved solids (TDS)	mg/L	--	780	1290	1620	958	--	1210	1150	880	874	770	--	750	764
Appendix IV															
Antimony	mg/L	--	<0.00200	<0.00200	<0.00200	--	--	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	0.0198	0.0202	0.00491	--	--	--	--	--	--	--	--	--	--
Barium	mg/L	--	0.262	0.348	0.0640	--	--	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	<0.00100	<0.00100	<0.00100	--	--	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	<0.000200	<0.000200	<0.000200	--	--	--	--	--	--	--	--	--	--
Chromium	mg/L	--	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	0.00148	0.000685	0.00907	--	--	--	--	--	--	--	--	--	--
Lead	mg/L	--	<0.000500	<0.000500	<0.000500	--	--	--	--	--	--	--	--	--	--
Lithium	mg/L	--	0.0856	0.0936	0.0993	--	--	--	--	--	--	--	--	--	--
Mercury	mg/L	--	<0.000200	<0.000200	<0.000200	--	--	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	0.00211	<0.00200	<0.00200	--	--	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	1.59	0.861 J	1.06	--	--	--	--	--	--	--	--	--	--
Selenium	mg/L	--	<0.00500	<0.00500	0.00648	--	--	--	--	--	--	--	--	--	--
Thallium	mg/L	--	<0.00100	<0.00100	0.00116	--	--	--	--	--	--	--	--	--	--

Table 4.2

2024 Groundwater Analytical Data
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-191	MW-227	MW-227	MW-227D	MW-227D	MW-227D	MW-240R	MW-240R	MW-240R	MW-240R	MW-244	MW-244	MW-244	MW-245
Sample ID:		MW191-GW-1224	MW227-GW-1024	MW227-GW-1224	MW227D-GW-0424	MW227D-GW-0624	MW227D-GW-1024	MW240R-GW-0424	DP04-GW-0424	MW240R-GW-1024	DP04-GW-1024	MW244-GW-0424	MW244-GW-1024	MW244-GW-1224	MW245-GW-0424
Sample Date:		12/10/2024	10/2/2024	12/10/2024	4/4/2024	6/5/2024	10/2/2024	4/4/2024	4/4/2024 (Duplicate)	10/2/2024	10/2/2024 (Duplicate)	4/3/2024	10/2/2024	12/10/2024	4/3/2024
Parameters	**Units**														
Appendix III															
Boron	mg/L	--	<0.500	--	0.110	<0.100	0.109	0.287	0.330	<0.500	<0.500	0.180	<0.500	--	0.327
Calcium	mg/L	--	226	205	154	166	157	172	179	175	171	120	188	147	189
Chloride	mg/L	--	20.2	--	12.3	11.9	16.2	33.7	33.1	6.90	8.60	11.4	12.1	--	9.57
Fluoride	mg/L	--	<1.00	--	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--	<1.00
pH, lab	s.u.	--	7.0 J	--	7.1 J	7.3 J	9.1 J	7.1 J	7.1 J	7.0 J	7.1 J	7.0 J	7.1 J	--	7.0 J
Sulfate	mg/L	233	284	237	195	219	199	211	208	233	230	40.6	115	56.4	169
Total dissolved solids (TDS)	mg/L	--	918	--	690	778	758	866	862	814	850	592	790	--	962
Appendix IV															
Antimony	mg/L	--	--	--	<0.00200	<0.00200	<0.00200	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	0.0129	0.0136	0.0111	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	0.412	0.480	0.373	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	<0.00100	<0.00100	<0.00100	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	<0.000200	<0.000200	<0.000200	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	0.00110	<0.000500	0.000570	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	<0.000500	<0.000500	<0.000500	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	0.0654	0.0654	0.0672	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	<0.000200	<0.000200	<0.000200	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	0.00251	0.00327	<0.00200	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	1.30	1.07 J	1.16	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	<0.00100	<0.00100	<0.00100	--	--	--	--	--	--	--	--

Table 4.2

2024 Groundwater Analytical Data
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-245	MW-245	MW-246	MW-246	MW-247	MW-247	MW-247	MW-247	MW-247	MW-248	MW-248	MW-250	MW-250	MW-307
Sample ID:		MW245-GW-1024	MW245-GW-1224	MW246-GW-0424	MW246-GW-1024	MW247-GW-0424	MW247-GW-0624	MW247-GW-1024	MW247-GW-1224	DP01-GW-1224	MW248-GW-0424	MW248-GW-1024	MW250-GW-0424	MW250-GW-1024	MW307-GW-1024
Sample Date:		10/2/2024	12/10/2024	4/3/2024	10/3/2024	4/3/2024	6/4/2024	10/3/2024	12/10/2024	12/10/2024 (Duplicate)	4/3/2024	10/3/2024	4/3/2024	10/2/2024	10/3/2024
Parameters	**Units**														
Appendix III															
Boron	mg/L	<0.500	--	0.191	<0.500	0.197	--	<0.500	--	--	0.182	<0.500	0.246	<0.500	0.169
Calcium	mg/L	257	271	154	200	161	--	205	204	202	126	125	220	209	130
Chloride	mg/L	9.89	--	16.8	12.4	14.9	13.6	61.9	28.4	28.2	11.7	12.3	9.59	12.1	<5.00
Fluoride	mg/L	<1.00	--	<1.00	<1.00	<1.00	--	<1.00	--	--	<1.00	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	7.0 J	--	7.0 J	7.0 J	7.1 J	--	6.9 J	--	--	7.1 J	7.0 J	6.9 J	6.8 J	7.1 J
Sulfate	mg/L	303	357	62.6	57.4	115	--	171	150	140	93.9	86.9	178	253	97.0
Total dissolved solids (TDS)	mg/L	1130	--	666	808	686	--	882	866	846	578	548	880	968	532
Appendix IV															
Antimony	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00200
Arsenic	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00200
Barium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	0.282
Beryllium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00100
Cadmium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.000200
Chromium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00500
Cobalt	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.000500
Lead	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.000500
Lithium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0779
Mercury	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.000200
Molybdenum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00200
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--	0.554
Selenium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00500
Thallium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00100

Table 4.2

2024 Groundwater Analytical Data
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Sample Location:		MW-307D	MW-307D	MW-307D	MW-34	MW-34	TW-1	TW-1	TW-2	TW-2
Sample ID:		MW307D-GW-0424	MW307D-GW-0624	MW307D-GW-1024	MW34-GW-0424	MW34-GW-1024	TW1-GW-0424	TW1-GW-1024	TW2-GW-0424	TW2-GW-1024
Sample Date:		4/2/2024	6/4/2024	10/1/2024	4/1/2024	10/1/2024	4/1/2024	10/3/2024	4/1/2024	10/3/2024
Parameters	**Units**									
Appendix III										
Boron	mg/L	0.193	0.191	0.214	<0.100	0.105	0.380	0.201	0.423	0.330
Calcium	mg/L	121	113	127	86.3	107	169	241	169	156
Chloride	mg/L	<5.00	<5.00	<5.00	6.23	7.31	13.2	25.1	18.2	19.3
Fluoride	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	7.3 J	7.3 J	6.9 J	7.1 J	7.1 J	7.0 J	7.1 J	7.4 J	7.2 J
Sulfate	mg/L	27.1	25.9	59.2	29.7	38.3	88.4	386	46.0	20.9
Total dissolved solids (TDS)	mg/L	390	476	476	422	452	736	1190	794	768
Appendix IV										
Antimony	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	0.0173	0.0192	<0.00200	0.105	0.0879	0.0570	0.0235	0.0873	0.0778
Barium	mg/L	0.473	0.477	0.192	0.496	0.633	0.497	0.297	0.370	0.218
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.00288	0.00156	<0.000500	<0.000500	<0.000500	0.000732	0.000913	0.000673	<0.000500
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.0741	0.0677	0.0808	0.0356	0.0364	0.0419	0.0581	0.0572	0.0702
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	0.00520	0.00473	<0.00200	0.00434	0.00418	<0.00200	0.00761	<0.00200	0.00217
Radium-226 & 228	pCi/L	1.40	<0.823	0.426	1.44	1.38	2.09	2.25	1.20	3.00
Selenium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	0.00729	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	0.00157	<0.00100	<0.00100

Table 4.3

Intra-Well Comparison Values
(Statistical Upper Prediction Limits based on Baseline Period Data at Each Well)
Walter Scott Jr. Energy Center
WSEC CCR Monofill
Pottawattamie County, Iowa

Well	Analyte	Unit	Date Range	N	Percent ND	Minimum	Maximum	Statistical Outliers	Data Distribution	M-K Trend Test Result	Sen's Slope	Upper Prediction Limit (UPL) Method	UPL
Upgradient Wells													
TW-1	Boron	mg/L	7/2020 - 4/2022	8	0%	0.194	0.467	0	Normal	No trend	--	Normal-UPL	0.553
TW-1	Calcium	mg/L	7/2020 - 4/2022	8	0%	156	232	0	Normal	No trend	--	Normal-UPL	265
TW-1	Chloride	mg/L	7/2020 - 4/2022	8	13%	<5.00	56.9	2	Gamma	**Increasing**	0.02	Range	<5.00 - 56.9
TW-1	Fluoride	mg/L	7/2020 - 4/2022	8	100%	<0.500	<0.500	--	--	100% ND	--	Non-Parametric	<0.500
TW-1	pH, lab	s.u.	7/2020 - 4/2022	8	0%	6.8H	7.3H	0	Normal	No trend	--	Normal-UPL	6.63 - 7.45
TW-1	Sulfate	mg/L	7/2020 - 4/2022	8	0%	6.82	578	1	Normal	**Increasing**	0.42	Range	6.82 - 578
TW-1	TDS	mg/L	7/2020 - 4/2022	8	0%	766	1520	1	Lognormal	No trend	--	Lognormal-UPL	1643
TW-2	Boron	mg/L	3/2016 - 7/2017	8	0%	0.205	0.439	0	Normal	No trend	--	Normal-UPL	0.544
TW-2	Calcium	mg/L	3/2016 - 7/2017	8	0%	89.7	228	0	Normal	**Increasing**	0.30	Range	89.7 - 228
TW-2	Chloride	mg/L	3/2016 - 7/2017	8	0%	5.93	47.8	0	Normal	No trend	--	Normal-UPL	64.1
TW-2	Fluoride	mg/L	3/2016 - 7/2017	8	100%	<0.500	<0.500	--	--	100% ND	--	Non-Parametric	<0.500
TW-2	pH, lab	s.u.	3/2016 - 7/2017	8	0%	6.9H	7.4H	2	Normal	No trend	--	Normal-UPL	6.80 - 7.52
TW-2	Sulfate	mg/L	3/2016 - 7/2017	8	0%	17.3	432	0	Gamma	No trend	--	Gamma-UPL	1142
TW-2	TDS	mg/L	3/2016 - 7/2017	8	0%	474	1320	0	Normal	No trend	--	Normal-UPL	1766
MW-34	Boron	mg/L	7/2020 - 4/2022	8	38%	<0.100	0.192	0	Normal	No trend	--	KM Normal-UPL	0.196
MW-34	Calcium	mg/L	7/2020 - 4/2022	8	0%	89.6	173	1	Normal	No trend	--	Normal-UPL	182
MW-34	Chloride	mg/L	7/2020 - 4/2022	8	13%	<5.00	9.32	1	Normal	No trend	--	KM Normal-UPL	9.70
MW-34	Fluoride	mg/L	7/2020 - 4/2022	8	100%	<0.500	<0.500	--	--	100% ND	--	Non-Parametric	<0.500
MW-34	pH, lab	s.u.	7/2020 - 4/2022	8	0%	7.0H	7.7H	1	Normal ‡	No trend	--	Normal-UPL	6.60 - 7.80
MW-34	Sulfate	mg/L	7/2020 - 4/2022	8	0%	43.6	104	0	Normal	No trend	--	Normal-UPL	118
MW-34	TDS	mg/L	7/2020 - 4/2022	8	0%	438	646	0	Normal	No trend	--	Normal-UPL	731
MW-307	Boron	mg/L	7/2020 - 11/2021	7	29%	<0.100	0.157	0	Normal	No trend	--	KM Normal-UPL	0.194
MW-307	Calcium	mg/L	7/2020 - 11/2021	7	0%	82.4	108	0	Normal	No trend	--	Normal-UPL	120
MW-307	Chloride	mg/L	7/2020 - 11/2021	7	100%	<5.00	<5.00	--	--	100% ND	--	Non-Parametric	<5.00
MW-307	Fluoride	mg/L	7/2020 - 11/2021	7	100%	<0.500	<0.500	--	--	100% ND	--	Non-Parametric	<0.500
MW-307	pH, lab	s.u.	7/2020 - 11/2021	7	0%	7.0H	7.3H	0	Normal (assumed)	No trend	--	Normal-UPL	6.81 - 7.56
MW-307	Sulfate	mg/L	7/2020 - 11/2021	7	0%	10.9	20.4	0	Normal	No trend	--	Normal-UPL	25.2
MW-307	TDS	mg/L	7/2020 - 11/2021	7	0%	340	426	0	Normal	No trend	--	Normal-UPL	464

Table 4.3

Intra-Well Comparison Values
(Statistical Upper Prediction Limits based on Baseline Period Data at Each Well)
Walter Scott Jr. Energy Center
WSEC CCR Monofill
Pottawattamie County, Iowa

Well	Analyte	Unit	Date Range	N	Percent ND	Minimum	Maximum	Statistical Outliers	Data Distribution	M-K Trend Test Result	Sen's Slope	Upper Prediction Limit (UPL) Method	UPL
Downgradient Wells													
MW-105	Boron	mg/L	7/2021 - 10/2021	9	0%	0.141	0.207	0	Normal	No trend	--	Normal-UPL	0.242
MW-105	Calcium	mg/L	7/2021 - 10/2021	9	0%	141	163	0	Normal	No trend	--	Normal-UPL	172
MW-105	Chloride	mg/L	7/2021 - 10/2021	9	0%	15	16.5	0	Normal	No trend	--	Normal-UPL	17.7
MW-105	Fluoride	mg/L	7/2021 - 10/2021	9	89%	<0.500	0.618	--	--	<4 detects	--	Non-Parametric	0.618
MW-105	pH, lab	s.u.	7/2021 - 10/2021	9	0%	7.1	7.2	0	Normal (assumed)	No trend	--	Normal-UPL	6.98 - 7.29
MW-105	Sulfate	mg/L	7/2021 - 10/2021	9	0%	136	148	0	Normal	Increasing	0.08	Range	136 - 148
MW-105	TDS	mg/L	7/2021 - 10/2021	9	0%	608	674	0	Normal	No trend	--	Normal-UPL	723
MW-108	Boron	mg/L	7/2021 - 10/2021	9	0%	0.157	0.224	0	Normal	Increasing	1E-04	Range	0.157 - 0.224
MW-108	Calcium	mg/L	7/2021 - 10/2021	9	0%	118	140	0	Normal	No trend	--	Normal-UPL	149
MW-108	Chloride	mg/L	7/2021 - 10/2021	9	0%	18.9	21.5	0	Normal	No trend	--	Normal-UPL	22.5
MW-108	Fluoride	mg/L	7/2021 - 10/2021	9	100%	<0.500	<0.500	--	--	100% ND	--	Non-Parametric	<0.500
MW-108	pH, lab	s.u.	7/2021 - 10/2021	9	0%	7	7.1	0	Normal (assumed)	No trend	--	Normal-UPL	6.88 - 7.21
MW-108	Sulfate	mg/L	7/2021 - 10/2021	9	67%	<5.00	15.3	--	--	<4 detects	--	Non-Parametric	15.3
MW-108	TDS	mg/L	7/2021 - 10/2021	9	0%	590	694	0	Normal	Decreasing	-0.73	Range	590 - 694
MW-133	Boron	mg/L	3/2016 - 10/2018	12	100%	<0.200	<0.200	--	--	100% ND	--	Non-Parametric	<0.200
MW-133	Calcium	mg/L	3/2016 - 10/2018	12	0%	135	184	0	Normal	No trend	--	Normal-UPL	208
MW-133	Chloride	mg/L	3/2016 - 10/2018	12	0%	6.57	21	0	Normal	Increasing	0.01	Range	6.57 - 21
MW-133	Fluoride	mg/L	3/2016 - 10/2018	12	83%	<0.500	1.3	--	--	<4 detects	--	Non-Parametric	1.30
MW-133	pH, lab	s.u.	3/2016 - 10/2018	12	0%	7	7.4	0	Normal	No trend	--	Normal-UPL	6.83 - 7.46
MW-133	Sulfate	mg/L	3/2016 - 10/2018	12	0%	157	268	0	Normal	No trend	--	Normal-UPL	289
MW-133	TDS	mg/L	3/2016 - 10/2018	12	0%	718	1390	1	Approx. Gamma ‡	No trend	--	Gamma-UPL	1525
MW-156	Boron	mg/L	3/2016 - 4/2019	12	17%	<0.200	0.374	1	Normal ‡	No trend	--	KM Normal-UPL	0.357
MW-156	Calcium	mg/L	3/2016 - 4/2019	12	0%	184	222	0	Normal	No trend	--	Normal-UPL	238
MW-156	Chloride	mg/L	3/2016 - 4/2019	12	0%	8.14	65.8	1	Gamma	Increasing	0.02	Range	8.14 - 65.8
MW-156	Fluoride	mg/L	3/2016 - 4/2019	12	58%	<0.500	1.21	--	Normal	No trend	--	KM Normal-UPL	1.10
MW-156	pH, lab	s.u.	3/2016 - 4/2019	12	0%	6.87	7.2	0	Normal	No trend	--	Normal-UPL	6.69 - 7.31
MW-156	Sulfate	mg/L	3/2016 - 4/2019	12	0%	191	247	0	Normal	Decreasing	-0.049	Range	191 - 247
MW-156	TDS	mg/L	3/2016 - 4/2019	12	0%	878	1140	1	Gamma §	No trend	--	Gamma-UPL	1156

Table 4.3

Intra-Well Comparison Values
(Statistical Upper Prediction Limits based on Baseline Period Data at Each Well)
Walter Scott Jr. Energy Center
WSEC CCR Monofill
Pottawattamie County, Iowa

Well	Analyte	Unit	Date Range	N	Percent ND	Minimum	Maximum	Statistical Outliers	Data Distribution	M-K Trend Test Result	Sen's Slope	Upper Prediction Limit (UPL) Method	UPL
Downgradient Wells (continued)													
MW-157	Boron	mg/L	5/2016 - 10/2019	12	25%	<0.200	0.412	0	Normal	No trend	--	KM Normal-UPL	0.423
MW-157	Calcium	mg/L	5/2016 - 10/2019	12	0%	195	225	0	Normal	No trend	--	Normal-UPL	239
MW-157	Chloride	mg/L	5/2016 - 10/2019	12	0%	7.25	41.1	0	Not Normal	**Increasing**	0.02	Range	7.25 - 41.1
MW-157	Fluoride	mg/L	5/2016 - 10/2019	12	75%	<0.500	0.664	--	--	<4 detects	--	Non-Parametric	0.664
MW-157	pH, lab	s.u.	5/2016 - 10/2019	12	0%	6.7	7.9	0	Approx. Normal *	No trend	--	Normal-UPL	6.01 - 8.21
MW-157	Sulfate	mg/L	5/2016 - 10/2019	12	0%	163	226	1	Normal	No trend	--	Normal-UPL	257
MW-157	TDS	mg/L	5/2016 - 10/2019	12	0%	848	1100	0	Normal	No trend	--	Normal-UPL	1171
MW-158	Boron	mg/L	3/2016 - 4/2019	12	0%	0.333	1.04	0	Normal	**Increasing**	5E-04	Range	0.333 - 1.04
MW-158	Calcium	mg/L	3/2016 - 4/2019	12	0%	253	490	1	Normal	No trend	--	Normal-UPL	514
MW-158	Chloride	mg/L	3/2016 - 4/2019	12	0%	23.3	101	0	Lognormal	No trend	--	Lognormal-UPL	127
MW-158	Fluoride	mg/L	3/2016 - 4/2019	12	92%	<0.500	0.762	--	--	<4 detects	--	Non-Parametric	0.762
MW-158	pH, lab	s.u.	3/2016 - 4/2019	12	0%	6.69	7.9	1	Normal ‡	No trend	--	Normal-UPL	6.02 - 7.81
MW-158	Sulfate	mg/L	3/2016 - 4/2019	12	0%	482	994	1	Normal	No trend	--	Normal-UPL	1087
MW-158	TDS	mg/L	3/2016 - 4/2019	12	0%	1200	2290	2	Normal	No trend	--	Normal-UPL	2445
MW-159	Boron	mg/L	3/2016 - 4/2019	12	42%	<0.200	0.348	0	Normal ‡	No trend	--	KM Normal-UPL	0.395
MW-159	Calcium	mg/L	3/2016 - 4/2019	12	0%	155	223	0	Normal	No trend	--	Normal-UPL	238
MW-159	Chloride	mg/L	3/2016 - 4/2019	12	0%	12.8	27.6	2	Lognormal	No trend	--	Lognormal-UPL	28.9
MW-159	Fluoride	mg/L	3/2016 - 4/2019	12	50%	<0.500	1.18	1	Normal ‡	No trend	--	KM Normal-UPL	1.17
MW-159	pH, lab	s.u.	3/2016 - 4/2019	12	0%	6.88	7.3	0	Normal §	No trend	--	Normal-UPL	6.65 - 7.48
MW-159	Sulfate	mg/L	3/2016 - 4/2019	12	0%	101	287	0	Normal	No trend	--	Normal-UPL	344
MW-159	TDS	mg/L	3/2016 - 4/2019	12	0%	650	1020	0	Normal	No trend	--	Normal-UPL	1208
MW-190	Boron	mg/L	3/2016 - 4/2019	12	100%	<0.200	<0.200	--	--	100% ND	--	Non-Parametric	<0.200
MW-190	Calcium	mg/L	3/2016 - 4/2019	12	0%	104	184	0	Normal	**Increasing**	0.04	Range	104 - 184
MW-190	Chloride	mg/L	3/2016 - 4/2019	12	0%	7.78	34	1	Normal ‡	No trend	--	Normal-UPL	32.5
MW-190	Fluoride	mg/L	3/2016 - 4/2019	12	50%	<0.500	0.774	0	Normal ‡	No trend	--	KM Normal-UPL	0.840
MW-190	pH, lab	s.u.	3/2016 - 4/2019	12	0%	7	8	1	Normal ‡	No trend	--	Normal-UPL	6.44 - 8.04
MW-190	Sulfate	mg/L	3/2016 - 4/2019	12	0%	102	403	1	Not Normal	**Increasing**	0.09	Range	102 - 403
MW-190	TDS	mg/L	3/2016 - 4/2019	12	0%	484	1240	1	Normal	**Increasing**	0.31	Range	484 - 1240

Table 4.3

Intra-Well Comparison Values
(Statistical Upper Prediction Limits based on Baseline Period Data at Each Well)
Walter Scott Jr. Energy Center
WSEC CCR Monofill
Pottawattamie County, Iowa

Well	Analyte	Unit	Date Range	N	Percent ND	Minimum	Maximum	Statistical Outliers	Data Distribution	M-K Trend Test Result	Sen's Slope	Upper Prediction Limit (UPL) Method	UPL
Downgradient Wells (continued)													
MW-191	Boron	mg/L	3/2016 - 4/2019	12	100%	<0.200	<0.200	--	--	100% ND	--	Non-Parametric	<0.200
MW-191	Calcium	mg/L	3/2016 - 4/2019	12	0%	125	170	1	Normal	No trend	--	Normal-UPL	173
MW-191	Chloride	mg/L	3/2016 - 4/2019	12	0%	8.88	12.5	0	Normal	No trend	--	Normal-UPL	14.4
MW-191	Fluoride	mg/L	3/2016 - 4/2019	12	50%	<0.500	0.875	0	Normal ‡	No trend	--	KM Normal-UPL	0.928
MW-191	pH, lab	s.u.	3/2016 - 4/2019	12	0%	6.94	8	1	Normal (assumed)	No trend	--	Normal-UPL	6.94 - 7.93
MW-191	Sulfate	mg/L	3/2016 - 4/2019	12	0%	138	160	0	Normal	No trend	--	Normal-UPL	168
MW-191	TDS	mg/L	3/2016 - 4/2019	12	0%	680	858	0	Normal	No trend	--	Normal-UPL	928
MW-227	Boron	mg/L	3/2016 - 4/2019	12	100%	<0.200	<0.200	--	--	100% ND	--	Non-Parametric	<0.200
MW-227	Calcium	mg/L	3/2016 - 4/2019	12	0%	132	185	1	Normal	No trend	--	Normal-UPL	189
MW-227	Chloride	mg/L	3/2016 - 4/2019	12	33%	<5.00	28.3	0	Gamma	**Increasing**	0.02	Range	<5.00 - 28.3
MW-227	Fluoride	mg/L	3/2016 - 4/2019	12	75%	<0.500	0.752	--	--	<4 detects	--	Non-Parametric	0.752
MW-227	pH, lab	s.u.	3/2016 - 4/2019	12	0%	7.1	7.7	1	Normal §	No trend	--	Normal-UPL	6.72 - 7.74
MW-227	Sulfate	mg/L	3/2016 - 4/2019	12	0%	65.3	206	1	Gamma	**Increasing**	0.058	Range	65.3 - 206
MW-227	TDS	mg/L	3/2016 - 4/2019	12	0%	568	928	0	Normal	No trend	--	Normal-UPL	1016
MW-240R	Boron	mg/L	3/2016 - 4/2019	12	0%	0.245	0.318	0	Normal	No trend	--	Normal-UPL	0.340
MW-240R	Calcium	mg/L	3/2016 - 4/2019	12	0%	135	197	0	Normal	No trend	--	Normal-UPL	210
MW-240R	Chloride	mg/L	3/2016 - 4/2019	12	0%	11.5	41.5	0	Gamma	No trend	--	Gamma-UPL	57.5
MW-240R	Fluoride	mg/L	3/2016 - 4/2019	12	58%	<0.500	0.823	--	Normal ‡	No trend	--	KM Normal-UPL	0.921
MW-240R	pH, lab	s.u.	3/2016 - 4/2019	12	0%	6.9	7.2	0	Normal	No trend	--	Normal-UPL	6.80 - 7.31
MW-240R	Sulfate	mg/L	3/2016 - 4/2019	12	0%	160	218	0	Normal	No trend	--	Normal-UPL	240
MW-240R	TDS	mg/L	3/2016 - 4/2019	12	0%	784	1140	0	Normal	No trend	--	Normal-UPL	1296
MW-244	Boron	mg/L	3/2016 - 4/2019	12	83%	<0.200	0.269	--	--	<4 detects	--	Non-Parametric	0.269
MW-244	Calcium	mg/L	3/2016 - 4/2019	12	0%	116	138	0	Normal	No trend	--	Normal-UPL	148
MW-244	Chloride	mg/L	3/2016 - 4/2019	12	0%	8.83	36.1	1	Approx. Lognormal ‡	No trend	--	Lognormal-UPL	31.2
MW-244	Fluoride	mg/L	3/2016 - 4/2019	12	67%	<0.500	0.803	--	Normal ‡	No trend	--	KM Normal-UPL	0.814
MW-244	pH, lab	s.u.	3/2016 - 4/2019	12	0%	6.9	7.6	1	Normal ‡	No trend	--	Normal-UPL	6.56 - 7.65
MW-244	Sulfate	mg/L	3/2016 - 4/2019	12	0%	36.1	90.2	0	Normal	No trend	--	Normal-UPL	96.7
MW-244	TDS	mg/L	3/2016 - 4/2019	12	0%	598	800	0	Normal	No trend	--	Normal-UPL	816

Table 4.3

Intra-Well Comparison Values
(Statistical Upper Prediction Limits based on Baseline Period Data at Each Well)
Walter Scott Jr. Energy Center
WSEC CCR Monofill
Pottawattamie County, Iowa

Well	Analyte	Unit	Date Range	N	Percent ND	Minimum	Maximum	Statistical Outliers	Data Distribution	M-K Trend Test Result	Sen's Slope	Upper Prediction Limit (UPL) Method	UPL
Downgradient Wells (continued)													
MW-245	Boron	mg/L	3/2016 - 4/2019	12	0%	0.256	0.364	1	Approx. Normal ‡	No trend	--	Normal-UPL	0.374
MW-245	Calcium	mg/L	3/2016 - 4/2019	12	0%	161	189	0	Normal	No trend	--	Normal-UPL	198
MW-245	Chloride	mg/L	3/2016 - 4/2019	12	0%	11.1	19.5	1	Gamma §	No trend	--	Gamma-UPL	21.4
MW-245	Fluoride	mg/L	3/2016 - 4/2019	12	50%	<0.500	4.54	1	Normal ǂ	No trend	--	Normal-UPL	3.93
MW-245	pH, lab	s.u.	3/2016 - 4/2019	12	0%	6.9	7.4	1	Approx. Normal ‡	No trend	--	Normal-UPL	6.62 - 7.40
MW-245	Sulfate	mg/L	3/2016 - 4/2019	12	0%	226	294	0	Normal	Increasing	0.041	Range	226 - 294
MW-245	TDS	mg/L	3/2016 - 4/2019	12	0%	924	1690	1	Approx Lognormal*	No trend	--	Lognormal-UPL	1730
MW-246	Boron	mg/L	7/2019 - 4/2021	12	75%	0.156	<0.200	--	--	<4 detects	--	Non-Parametric	<0.200
MW-246	Calcium	mg/L	7/2019 - 4/2021	12	0%	126	220	1	Gamma §	No trend	--	Gamma-UPL	226
MW-246	Chloride	mg/L	7/2019 - 4/2021	12	0%	14.4	18.3	0	Normal	No trend	--	Normal-UPL	20.5
MW-246	Fluoride	mg/L	7/2019 - 4/2021	12	75%	<0.500	0.565	--	--	<4 detects	--	Non-Parametric	0.565
MW-246	pH, lab	s.u.	7/2019 - 4/2021	12	0%	6.9	7.7	1	Approx. Normal ‡	No trend	--	Normal-UPL	6.48 - 7.80
MW-246	Sulfate	mg/L	7/2019 - 4/2021	12	0%	46.5	99.5	1	Normal ǂ	No trend	--	Normal-UPL	101
MW-246	TDS	mg/L	7/2019 - 4/2021	12	0%	606	838	1	Gamma §	No trend	--	Gamma-UPL	895
MW-247	Boron	mg/L	7/2019 - 4/2021	12	75%	0.192	0.207	--	--	<4 detects	--	Non-Parametric	0.207
MW-247	Calcium	mg/L	7/2019 - 4/2021	12	0%	121	163	0	Normal	No trend	--	Normal-UPL	181
MW-247	Chloride	mg/L	7/2019 - 4/2021	12	0%	12.4	14.8	0	Normal	Decreasing	-0.003	Range	12.4 - 14.8
MW-247	Fluoride	mg/L	7/2019 - 4/2021	12	67%	<0.500	0.703	--	Normal ‡	No trend	--	KM Normal-UPL	0.697
MW-247	pH, lab	s.u.	7/2019 - 4/2021	12	0%	7	7.5	0	Normal	Decreasing	-7E-04	Range	7.00 - 7.50
MW-247	Sulfate	mg/L	7/2019 - 4/2021	12	0%	85.9	125	1	Normal	No trend	--	Normal-UPL	140
MW-247	TDS	mg/L	7/2019 - 4/2021	12	0%	582	748	0	Normal	No trend	--	Normal-UPL	789
MW-248	Boron	mg/L	7/2019 - 4/2021	12	75%	0.166	<0.200	--	--	<4 detects	--	Non-Parametric	<0.200
MW-248	Calcium	mg/L	7/2019 - 4/2021	12	0%	99.3	136	0	Normal	No trend	--	Normal-UPL	144
MW-248	Chloride	mg/L	7/2019 - 4/2021	12	0%	8.18	15	1	Normal ǂ	No trend	--	Normal-UPL	14.9
MW-248	Fluoride	mg/L	7/2019 - 4/2021	12	42%	<0.500	0.69	0	Not Normal	Decreasing	-0.001	Range	<0.500 - 0.69
MW-248	pH, lab	s.u.	7/2019 - 4/2021	12	0%	7.1	7.7	0	Not Normal	Decreasing	-5E-04	Range	7.10 - 7.70
MW-248	Sulfate	mg/L	7/2019 - 4/2021	12	0%	54.4	132	1	Normal ǂ	No trend	--	Normal-UPL	131
MW-248	TDS	mg/L	7/2019 - 4/2021	12	0%	424	662	1	Normal	No trend	--	Normal-UPL	723

Table 4.3

Intra-Well Comparison Values
(Statistical Upper Prediction Limits based on Baseline Period Data at Each Well)
Walter Scott Jr. Energy Center
WSEC CCR Monofill
Pottawattamie County, Iowa

Well	Analyte	Unit	Date Range	N	Percent ND	Minimum	Maximum	Statistical Outliers	Data Distribution	M-K Trend Test Result	Sen's Slope	Upper Prediction Limit (UPL) Method	UPL
Downgradient Wells (continued)													
MW-250	Boron	mg/L	7/2021 - 10/2021	9	0%	0.238	0.286	0	Normal	No trend	--	Normal-UPL	0.307
MW-250	Calcium	mg/L	7/2021 - 10/2021	9	0%	153	184	0	Normal	No trend	--	Normal-UPL	194
MW-250	Chloride	mg/L	7/2021 - 10/2021	9	0%	5.84	6.98	0	Normal	No trend	--	Normal-UPL	7.62
MW-250	Fluoride	mg/L	7/2021 - 10/2021	9	100%	<0.500	<0.500	--	--	100% ND	--	Non-Parametric	<0.500
MW-250	pH, lab	s.u.	7/2021 - 10/2021	9	0%	6.9	7.2	0	Normal §	No trend	--	Normal-UPL	6.64 - 7.32
MW-250	Sulfate	mg/L	7/2021 - 10/2021	9	0%	86	99.3	0	Normal	No trend	--	Normal-UPL	106
MW-250	TDS	mg/L	7/2021 - 10/2021	9	0%	572	664	0	Normal	No trend	--	Normal-UPL	712

Notes:
N Number of Baseline Samples
<0.100 - Not detected at the associated reporting limit.
H - Sample was prepped or analyzed beyond the specified holding time.
UPL - Upper Prediction Limits were calculated following the methodS found in the Unified Guidance.
For pH, the Lower Prediction Limit (LPL) is also shown.
When a statistically signifcant trend (increasing or decreasing) was found in the data, or when there were less than 4 detected values, the UPL is the minimum and maximum values.
Data distributions were determined by using the Shapiro-Wilk test, except for:
§ The distribution with the highest Correlation Coefficient (R) from the Goodness-of-Fit test (GOF), run by ProUCL.
* Using probability plots.
⁑ Data distribution was determined without outlier(s).
‡ By ProUCL (using detects only).

Table 4.4

Intra-Well Comparisons of 2023-2024 Monitoring Data vs. Baseline UPLs
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Site Well	Sample Date	Event Type	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
		MCL/GWPS:	None	None	None	4.0 [a]	None	None	None
Upgradient Wells									
TW-1	Baseline UPL	--	0.553	265	<5.00 - 56.9	<0.500	6.63 - 7.45	6.82 - 578	1643
TW-2	Baseline UPL	--	0.544	89.7 - 228	64.1	<0.500	6.80 - 7.52	1142	1766
MW-34	Baseline UPL	--	0.196	182	9.7	<0.500	6.60 - 7.80	118	731
MW-307	Baseline UPL	--	0.194	120	<5.00	<0.500	6.81 - 7.56	25.2	464
Downgradient Wells									
MW-105	Baseline UPL	--	0.242	172	17.7	0.618	6.98 - 7.29	136 - 148	723
	01/17/2023	Verification	--	156	--	--	--	--	692
	04/27/2023	Detection	0.161/0.155	**173/174**	**18.3/18.2**	<1.00/<1.00	7.3 J/7.2 J	**149**/148	700/710
	10/4/2023	Detection	0.189/0.206	159/164	**22.7/22.9**	<1.00/<1.00	**7.9 J/7.9 J**	126/127	**730/730**
	11/29/2023	Verification	--	--	**24.0**	--	7.2 J	--	**768**
	04/03/2024	Detection	0.174/0.187	168/165	**23.4/23.3**	<1.00/<1.00	7.1 J/7.2 J	128/128	**738**/722
	10/02/2024	Detection	0.211/<0.500	**196/209**	**34.3/38.9**	<1.00/<1.00	7.0 J/7.0 J	**171/173**	**884/882**
	12/10/2024	Verification	--	**221**	--	--	--	**176**	--
MW-108	Baseline UPL	--	0.157 - 0.224	149	22.5	<0.500	6.88 - 7.21	15.3	590 - 694
	4/26/2023	Detection	0.221	139	18	<1.00	7.1 J	<5.00	624
	10/4/2023	Detection	0.224	109	16.7	<1.00	**7.9 J**	<5.00	614
	11/29/2023	Verification	--	--	--	--	7.1 J	--	--
	04/03/2024	Detection	**0.227**	112	18.3	<1.00	7.1 J	<5.00	620
	06/04/2024	Verification	0.160	--	--	--	--	--	--
	10/02/2024	Detection	0.222	145	**25.2**	<1.00	7.0 J	<5.00	**702**
	12/10/2024	Verification	--	--	**23.7**	--	--	--	**796**

Table 4.4

Intra-Well Comparisons of 2023-2024 Monitoring Data vs. Baseline UPLs
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Site Well	Sample Date	Event Type	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
		MCL/GWPS:	None	None	None	4.0 [a]	None	None	None
MW-133	Baseline UPL	--	<0.200	208	6.57 - 21	1.3	6.83 - 7.46	289	1525
	04/26/2023	Detection	**0.289**	**232**	**107**	<1.00	7.4 J	269	1070
	06/27/2023	Verification	**0.451/0.418**	192/194	--	--	--	--	--
	10/4/2023	Detection	**0.524**	162	**104**	<1.00	**7.8 J**	148	810
	11/29/2023	Verification	--	--	--	--	7.2 J	--	--
	04/03/2024	Detection	**0.493**	161	**109**	<1.00	7.1 J	131	780
	10/02/2024	Detection	**0.385**	192	**76.7**	<1.00	7.0 J	189	913
MW-156	Baseline UPL	--	0.357	238	8.14 - 65.8	1.105	6.69 - 7.31	191 - 247	1156
	04/03/2024	Detection	0.131	192	21.5	<1.00	7.2 J	186	780
	10/03/2024	Detection	0.192	**274**	36.6	<1.00	6.8 J	**393**	1150
	12/10/2024	Verification	--	**296**	--	--	--	**368**	--
MW-157	Baseline UPL	--	0.423	239	7.25 - 41.1	0.664	6.01 - 8.21	257	1171
	04/2023	Detection	<< Well dry -- no sample April 2023 >>						
	10/5/2023	Detection	0.355	211	**63.7**	<1.00	7.7 J	212	942
	04/2024	Detection	<< Well dry -- no sample April 2024 >>						
	10/03/2024	Detection	<0.500	221	**51.3**	<1.00	6.9 J	186	958
	12/10/2024	Verification	--	--	**57.8**	--	--	--	--

Table 4.4

Intra-Well Comparisons of 2023-2024 Monitoring Data vs. Baseline UPLs
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Site Well	Sample Date	Event Type	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
		MCL/GWPS:	None	None	None	4.0 [a]	None	None	None
MW-158	Baseline UPL	--	0.333 - 1.04	514	127	0.762	6.02 - 7.81	1087	2445
	04/26/2023	Detection	0.407	234	39.2	<1.00	7.1 J	303	988
	10/4/2023	Detection	0.406	237	40.1	<1.00	7.7 J	361	1130
	04/03/2024	Detection	0.467	279	44.3	<1.00	6.9 J	398	1210
	10/03/2024	Detection	0.803	276	27.8	<1.00	6.8 J	355	1150
MW-159	Baseline UPL	--	0.395	238	28.9	1.17	6.65 - 7.48	344	1208
	04/27/2023	Detection	0.356	183	16.8	<1.00	7.1 J	171	688
	10/4/2023	Detection	0.289	194	18.6	<1.00	**7.8 J**	219	864
	11/29/2023	Verification	--	--	--	--	7.0 J	--	--
	04/03/2024	Detection	0.301	212	18.9	<1.00	7.0 J	267	880
	10/03/2024	Detection	<0.500	231	16.2	<1.00	6.9 J	255	874
MW-190	Baseline UPL	--	<0.200	104 - 184	32.5	0.840	6.44 - 8.04	102 - 403	484 - 1240
	04/26/2023	Detection	0.128	**190**	11	<1.00	7.2 J	165	742
	10/4/2023	Detection	0.122	161	9.94	<1.00	7.9 J	169	740
	04/03/2024	Detection	0.109	**187**	11.2	<1.00	7.0 J	211	770
	06/04/2024	Verification	--	**195**	--	--	--	177	--
	10/03/2024	Detection	<0.500	176	9.60	<1.00	7.0 J	169	750

Table 4.4

Intra-Well Comparisons of 2023-2024 Monitoring Data vs. Baseline UPLs
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Site Well	Sample Date	Event Type	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
		MCL/GWPS:	None	None	None	4.0 [a]	None	None	None
MW-191	Baseline UPL	--	<0.200	173	14.4	0.928	6.94 - 7.93	168	928
	04/2023	Detection	<< Well dry -- no sample April 2023 >>						
	10/4/2023	Detection	0.128	165	13.2	<1.00	7.9 J	**196**	792
	04/2024	Detection	<< Well dry -- no sample April 2024 >>						
	10/03/2024	Detection	<0.500	**182**	11.1	<1.00	7.0 J	**220**	764
	12/10/2024	Verification	--	--	--	--	--	**233**	--
MW-227	Baseline UPL	--	<0.200	189	<5.00 - 28.3	0.752	6.72 - 7.74	65.3 - 206	1016
			<< Well dry -- no samples during 2022-2023 >>						
	04/04/2024	Detection	0.110	154	12.3	<1.00	7.1 J	195	690
	10/02/2024	Detection	<0.500	**226**	20.2	<1.00	7.0 J	**284**	918
	12/10/2024	Verification	--	**205**	--	--	--	**237**	--
MW-240R	Baseline UPL	--	0.340	210	57.5	0.92	6.80 - 7.31	240	1296
	04/26/2023	Detection	0.256/0.238	180/175	23.2/22.9	<1.00/<1.00	7.2 J/7.1 J	218/211	860/812
	10/5/2023	Detection	0.284/0.280	156/155	27.5/27.4	<1.00/<1.00	**7.9 J/7.9 J**	194/195	758/772
	11/29/2023	Verification	--	--	--	--	7.2 J	--	--
	04/04/2024	Detection	0.287/0.330	172/179	33.7/33.1	<1.00/<1.00	7.1 J/7.1 J	211/208	866/862
	10/02/2024	Detection	<0.500	171	8.6	<1.00	7.1 J	230	850

Table 4.4

Intra-Well Comparisons of 2023-2024 Monitoring Data vs. Baseline UPLs
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Site Well	Sample Date	Event Type	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
		MCL/GWPS:	None	None	None	4.0 [a]	None	None	None
MW-244	Baseline UPL	--	0.269	148	31.2	0.814	6.56 - 7.65	96.7	816
	04/27/2023	Detection	0.176	132	9.93	<1.00	7.2 J	8.02	526
	10/5/2023	Detection	0.170	132	11.8	<1.00	**7.9 J**	79.6	580
	11/29/2023	Verification	--	--	--	--	7.1 J	--	--
	04/03/2024	Detection	0.180	120	11.4	<1.00	7.0 J	40.6	592
	10/02/2024	Detection	<0.500	**188**	12.1	<1.00	7.1 J	**115**	790
	12/10/2024	Verification	--	147	--	--	--	56.4	--
MW-245	Baseline UPL	--	0.374	198	21.4	3.93	6.62 - 7.40	226 - 294	1730
	04/27/2023	Detection	0.349	**205**	10.6	<1.00	7.2 J	190	936
	06/27/2023	Verification	--	179	--	--	--	--	--
	10/4/2023	Detection	0.334	180	9.34	<1.00	**7.7 J**	166	952
	11/29/2023	Verification	--	--	--	--	7.0 J	--	--
	04/03/2024	Detection	0.327	189	9.57	<1.00	7.0 J	169	962
	10/02/2024	Detection	<0.500	**257**	9.89	<1.00	7.0 J	**303**	1130
	12/10/2024	Verification	--	**271**	--	--	--	**357**	--
MW-246	Baseline UPL	--	<0.200	226	20.5	0.565	6.48 - 7.80	101	895
	4/27/2023	Detection	0.169	164	14.5	<1.00	7.1 J	66.6	622
	10/5/2023	Detection	0.158	184	13.5	<1.00	7.8 J	62.7	758
	04/03/2024	Detection	0.191	154	16.8	<1.00	7.0 J	62.6	666
	10/03/2024	Detection	<0.500	200	12.4	<1.00	7.0 J	57.4	808

Table 4.4

Intra-Well Comparisons of 2023-2024 Monitoring Data vs. Baseline UPLs
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Site Well	Sample Date	Event Type	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
		MCL/GWPS:	None	None	None	4.0 [a]	None	None	None
MW-247	Baseline UPL	--	0.207	181	12.4 - 14.8	0.697	7.00 - 7.50	140	789
	04/27/2023	Detection	0.170	165	14.4	<1.00	7.1 J	98.8	626
	10/5/2023	Detection	0.196	156	14.4	<1.00	**7.9 J**	111	682
	11/29/2023	Verification	--	--	--	--	7.1 J	--	--
	04/03/2024	Detection	0.197	161	**14.9**	<1.00	7.1 J	115	686
	06/04/2024	Verification	--	--	13.6	--	--	--	--
	10/03/2024	Detection	<0.500	**205**	**61.9**	<1.00	**6.9 J**	**171**	**882**
	12/10/2024	Verification	--	**204/202**	**28.4/28.2**	--	--	**150**/140	**866/846**
MW-248	Baseline UPL	--	<0.200	144	14.9	<0.500 - 0.69	7.10 - 7.70	131	723
	4/27/2023	Detection	0.160	**146**	10.9	<1.00	7.2 J	92.6	552
	10/5/2023	Detection	0.160	121	11.7	<1.00	**7.9 J**	64.9	518
	11/29/2023	Verification	--	--	--	--	7.1 J	--	--
	04/03/2024	Detection	0.182	126	11.7	<1.00	7.1 J	93.9	578
	10/03/2024	Detection	<0.500	125	12.3	<1.00	**7.0 J**	86.9	548

Table 4.4

Intra-Well Comparisons of 2023-2024 Monitoring Data vs. Baseline UPLs
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

Site Well	Sample Date	Event Type	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
		MCL/GWPS:	None	None	None	4.0 [a]	None	None	None
MW-250	Baseline UPL	--	0.307	194	7.6	<0.500	6.64 - 7.32	106	712
	01/17/2023	Verification	--	**199** / 185	--	--	--	**177 / 179**	**818 / 846**
	04/26/2023	Detection	0.234	**241**	**7.86**	<1.00	6.9 J	**306**	**1040**
	06/27/2023	Verification	--	--	**8.26**	--	--	--	--
	10/5/2023	Detection	0.215	**211**	**9.32**	<1.00	**7.8 J**	**211**	**928**
	11/29/2023	Verification	--	--	--	--	7.0 J	--	--
	04/03/2024	Detection	0.246	**220**	**9.59**	<1.00	6.9 J	**178**	**880**
	10/02/2024	Detection	<0.500	**209**	**12.1**	<1.00	6.8 J	**253**	**968**

Notes:

[a] Maximum contaminant level (MCL) established under 40 CFR 257.95(h)(1).

[b] Groundwater protection standard (GWPS) established under 40 CFR 257.95(h)(2).

0.19 /0.175 - Field duplicate results.

<0.500 - Not detected at the associated reporting limit.

J - Estimated concentration.

174 Value exceeds intra-well baseline UPL (or is outside the baseline pH range).

§ - Trend present during baseline period and therefore no UPL was calculated but the baseline concentration range is listed for comparison.

Table 4.5

Trend Test Results
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

				All Data		Data Used for the Mann-Kendall Trend Test						
Well	Analyte	Unit	Date Range	Number of Samples	Percent ND	Number of Samples[1]	Percent ND[2]	Minimum	Maximum	Statistic	Probability	Conclusion
Upgradient Wells												
TW-1	Boron	mg/L	7/2020 - 10/2024	12	0%	10	0%	0.175	0.467	-5	0.720	No trend
TW-1	Calcium	mg/L	7/2020 - 10/2024	13	0%	10	0%	156	241	6	0.654	No trend
TW-1	Chloride	mg/L	7/2020 - 10/2024	13	8%	10	10%	ND	25.1	27	0.020	**Increasing**
TW-1	Fluoride	mg/L	7/2020 - 10/2024	13	100%	10	100%	ND	ND	-	-	100% ND
TW-1	pH, lab	s.u.	7/2020 - 10/2024	13	0%	10	0%	6.8	7.3	14	0.204	No trend
TW-1	Sulfate	mg/L	7/2020 - 10/2024	13	0%	10	0%	6.82	386	23	0.049	**Increasing**
TW-1	TDS	mg/L	7/2020 - 10/2024	13	0%	10	0%	736	1190	7	0.592	No trend
TW-2	Boron	mg/L	3/2016 - 10/2024	13	0%	10	0%	0.205	0.443	13	0.284	No trend
TW-2	Calcium	mg/L	3/2016 - 10/2024	13	0%	10	0%	89.7	228	11	0.372	No trend
TW-2	Chloride	mg/L	3/2016 - 10/2024	13	0%	10	0%	6.32	47.8	-1	1.000	No trend
TW-2	Fluoride	mg/L	3/2016 - 10/2024	13	100%	10	100%	ND	ND	-	-	100% ND
TW-2	pH, lab	s.u.	3/2016 - 10/2024	13	0%	10	0%	7.1	7.4	3	0.850	No trend
TW-2	Sulfate	mg/L	3/2016 - 10/2024	13	8%	10	10%	ND	432	-19	0.107	No trend
TW-2	TDS	mg/L	3/2016 - 10/2024	13	0%	10	0%	474	1320	5	0.720	No trend
MW-34	Boron	mg/L	7/2020 - 10/2024	13	31%	10	40%	ND	0.132	-3	0.852	No trend
MW-34	Calcium	mg/L	7/2020 - 10/2024	13	0%	10	0%	86.3	173	-15	0.210	No trend
MW-34	Chloride	mg/L	7/2020 - 10/2024	13	15%	10	20%	ND	9.32	8	0.530	No trend
MW-34	Fluoride	mg/L	7/2020 - 10/2024	13	100%	10	100%	ND	ND	-	-	100% ND
MW-34	pH, lab	s.u.	7/2020 - 10/2024	13	0%	10	0%	7.0	7.7	2	0.060	No trend
MW-34	Sulfate	mg/L	7/2020 - 10/2024	13	0%	10	0%	12	104	-11	0.372	No trend
MW-34	TDS	mg/L	7/2020 - 10/2024	13	0%	10	0%	390	646	-20	0.088	No trend
MW-307	Boron	mg/L	7/2020 - 10/2024	8	25%	5	40%	ND	0.169	9	0.043	**Decreasing**
MW-307	Calcium	mg/L	7/2020 - 10/2024	8	0%	5	0%	82.4	130	6	0.220	No trend
MW-307	Chloride	mg/L	7/2020 - 10/2024	8	100%	5	100%	ND	ND	-	-	100% ND
MW-307	Fluoride	mg/L	7/2020 - 10/2024	8	100%	5	100%	ND	ND	-	-	100% ND
MW-307	pH, lab	s.u.	7/2020 - 10/2024	8	0%	5	0%	7.1	7.3	-4	0.434	No trend
MW-307	Sulfate	mg/L	7/2020 - 10/2024	8	0%	5	0%	10.9	97	8	0.086	No trend
MW-307	TDS	mg/L	7/2020 - 10/2024	8	0%	5	0%	370	532	5	0.312	No trend

Table 4.5

Trend Test Results
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

				All Data		Data Used for the Mann-Kendall Trend Test						
Well	Analyte	Unit	Date Range	Number of Samples	Percent ND	Number of Samples[1]	Percent ND[2]	Minimum	Maximum	Statistic	Probability	Conclusion
Downgradient Wells												
MW-105	Boron	mg/L	7/2021 - 12/2024	15	0%	8	0%	0.161	0.211	3	0.804	No trend
MW-105	Calcium	mg/L	7/2021 - 12/2024	16	0%	9	0%	152	196	18	0.076	No trend
MW-105	Chloride	mg/L	7/2021 - 12/2024	16	0%	9	0%	15	34.3	30	0.003	**Increasing**
MW-105	Fluoride	mg/L	7/2021 - 12/2024	15	93%	8	100%	ND	ND	-	-	100% ND
MW-105	pH, lab	s.u.	7/2021 - 12/2024	16	0%	9	0%	7.0	7.9	-6	0.586	No trend
MW-105	Sulfate	mg/L	7/2021 - 12/2024	15	0%	8	0%	126	171	2	0.902	No trend
MW-105	TDS	mg/L	7/2021 - 12/2024	17	0%	10	0%	630	884	36	0.002	**Increasing**
MW-108	Boron	mg/L	7/2021 - 12/2024	16	0%	9	0%	0.16	0.227	12	0.252	No trend
MW-108	Calcium	mg/L	7/2021 - 12/2024	15	0%	8	0%	109	147	-2	0.902	No trend
MW-108	Chloride	mg/L	7/2021 - 12/2024	15	0%	8	0%	16.7	25.2	-8	0.386	No trend
MW-108	Fluoride	mg/L	7/2021 - 12/2024	15	100%	8	100%	ND	ND	-	-	100% ND
MW-108	pH, lab	s.u.	7/2021 - 12/2024	16	0%	9	0%	7.0	7.9	-5	0.562	No trend
MW-108	Sulfate	mg/L	7/2021 - 12/2024	15	73%	8	75%	ND	12.3	-11	0.100	No trend
MW-108	TDS	mg/L	7/2021 - 12/2024	15	0%	8	0%	590	702	3	0.804	No trend
MW-133	Boron	mg/L	3/2016 - 10/2024	34	50%	18	44%	ND	0.524	4	2E-05	**Increasing**
MW-133	Calcium	mg/L	3/2016 - 10/2024	34	0%	18	0%	130	232	13	0.648	No trend
MW-133	Chloride	mg/L	3/2016 - 10/2024	38	0%	18	0%	7.64	153	103	1E-04	**Increasing**
MW-133	Fluoride	mg/L	3/2016 - 10/2024	34	91%	18	94%	ND	1.3	-13	0.248	No trend
MW-133	pH, lab	s.u.	3/2016 - 10/2024	34	0%	18	0%	7.0	7.4	7	0.814	No trend
MW-133	Sulfate	mg/L	3/2016 - 10/2024	33	0%	18	0%	131	294	-33	0.224	No trend
MW-133	TDS	mg/L	3/2016 - 10/2024	34	0%	18	0%	680	1070	11	0.704	No trend
MW-156	Boron	mg/L	3/2016 - 12/2024	19	11%	13	8%	ND	0.252	-28	0.100	No trend
MW-156	Calcium	mg/L	3/2016 - 12/2024	18	0%	13	0%	186	274	2	0.952	No trend
MW-156	Chloride	mg/L	3/2016 - 12/2024	21	0%	13	0%	8.14	86.7	48	0.004	**Increasing**
MW-156	Fluoride	mg/L	3/2016 - 12/2024	18	72%	13	77%	ND	1.21	-17	0.182	No trend
MW-156	pH, lab	s.u.	3/2016 - 12/2024	18	0%	13	0%	6.8	7.2	-9	0.616	No trend
MW-156	Sulfate	mg/L	3/2016 - 12/2024	18	0%	13	0%	191	393	24	0.161	No trend
MW-156	TDS	mg/L	3/2016 - 12/2024	19	0%	13	0%	798	1150	3	0.902	No trend

Table 4.5

Trend Test Results
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

				All Data		Data Used for the Mann-Kendall Trend Test						
Well	Analyte	Unit	Date Range	Number of Samples	Percent ND	Number of Samples[1]	Percent ND[2]	Minimum	Maximum	Statistic	Probability	Conclusion
Downgradient Wells (continued)												
MW-157	Boron	mg/L	5/2016 - 12/2024	20	25%	15	27%	ND	0.355	38	0.064	No trend
MW-157	Calcium	mg/L	5/2016 - 12/2024	20	0%	15	0%	175	238	3	0.922	No trend
MW-157	Chloride	mg/L	5/2016 - 12/2024	20	0%	15	0%	7.25	74.9	74	3E-04	**Increasing**
MW-157	Fluoride	mg/L	5/2016 - 12/2024	20	85%	15	87%	ND	0.664	-17	0.176	No trend
MW-157	pH, lab	s.u.	5/2016 - 12/2024	20	0%	15	0%	6.8	7.8	18	0.390	No trend
MW-157	Sulfate	mg/L	5/2016 - 12/2024	20	0%	15	0%	156	222	-13	0.552	No trend
MW-157	TDS	mg/L	5/2016 - 12/2024	20	0%	15	0%	786	1020	-24	0.254	No trend
MW-158	Boron	mg/L	3/2016 - 10/2024	23	0%	18	0%	0.406	1.04	3	0.940	No trend
MW-158	Calcium	mg/L	3/2016 - 10/2024	23	0%	18	0%	185	414	-64	0.017	**Decreasing**
MW-158	Chloride	mg/L	3/2016 - 10/2024	23	0%	18	0%	23.3	51.2	27	0.324	No trend
MW-158	Fluoride	mg/L	3/2016 - 10/2024	24	92%	18	94%	ND	0.762	-13	0.248	No trend
MW-158	pH, lab	s.u.	3/2016 - 10/2024	23	0%	18	0%	6.7	7.7	39	0.138	No trend
MW-158	Sulfate	mg/L	3/2016 - 10/2024	23	0%	18	0%	248	754	-89	0.001	**Decreasing**
MW-158	TDS	mg/L	3/2016 - 10/2024	23	0%	18	0%	790	1860	-73	0.006	**Decreasing**
MW-159	Boron	mg/L	3/2016 - 10/2024	24	29%	18	33%	ND	0.511	40	0.132	No trend
MW-159	Calcium	mg/L	3/2016 - 10/2024	23	0%	18	0%	155	244	52	0.053	No trend
MW-159	Chloride	mg/L	3/2016 - 10/2024	23	0%	18	0%	12.8	27.6	13	0.650	No trend
MW-159	Fluoride	mg/L	3/2016 - 10/2024	23	70%	18	78%	ND	1.18	-32	0.104	No trend
MW-159	pH, lab	s.u.	3/2016 - 10/2024	24	0%	18	0%	6.9	7.3	0	-	No trend
MW-159	Sulfate	mg/L	3/2016 - 10/2024	23	0%	18	0%	101	287	41	0.130	No trend
MW-159	TDS	mg/L	3/2016 - 10/2024	23	0%	18	0%	588	968	-4	0.910	No trend
MW-190	Boron	mg/L	3/2016 - 10/2024	24	58%	18	50%	ND	0.208	32	0.208	No trend
MW-190	Calcium	mg/L	3/2016 - 10/2024	29	0%	18	0%	127	250	86	0.001	**Increasing**
MW-190	Chloride	mg/L	3/2016 - 10/2024	29	0%	18	0%	8.46	34	-19	0.494	No trend
MW-190	Fluoride	mg/L	3/2016 - 10/2024	23	70%	18	78%	ND	0.774	-38	0.052	No trend
MW-190	pH, lab	s.u.	3/2016 - 10/2024	25	0%	18	0%	7.0	7.9	14	0.612	No trend
MW-190	Sulfate	mg/L	3/2016 - 10/2024	30	0%	18	0%	127	403	21	0.448	No trend
MW-190	TDS	mg/L	3/2016 - 10/2024	25	0%	18	0%	572	1240	19	0.494	No trend

Table 4.5

Trend Test Results
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

				All Data		Data Used for the Mann-Kendall Trend Test						
Well	Analyte	Unit	Date Range	Number of Samples	Percent ND	Number of Samples[1]	Percent ND[2]	Minimum	Maximum	Statistic	Probability	Conclusion
Downgradient Wells (continued)												
MW-191	Boron	mg/L	3/2016 - 12/2024	20	70%	15	60%	ND	0.168	41	0.025	Increasing
MW-191	Calcium	mg/L	3/2016 - 12/2024	20	0%	15	0%	125	233	47	0.023	Increasing
MW-191	Chloride	mg/L	3/2016 - 12/2024	20	0%	15	0%	8.88	13.2	7	0.766	No trend
MW-191	Fluoride	mg/L	3/2016 - 12/2024	20	65%	15	67%	ND	0.875	-40	0.021	Decreasing
MW-191	pH, lab	s.u.	3/2016 - 12/2024	20	0%	15	0%	6.9	7.9	36	0.070	No trend
MW-191	Sulfate	mg/L	3/2016 - 12/2024	21	0%	15	0%	138	220	59	0.004	Increasing
MW-191	TDS	mg/L	3/2016 - 12/2024	20	0%	15	0%	640	806	17	0.428	No trend
MW-227	Boron	mg/L	3/2016 - 12/2024	18	78%	13	69%	ND	0.179	30	0.029	Increasing
MW-227	Calcium	mg/L	3/2016 - 12/2024	20	0%	13	0%	115	226	16	0.360	No trend
MW-227	Chloride	mg/L	3/2016 - 12/2024	21	19%	13	15%	ND	28.3	15	0.392	No trend
MW-227	Fluoride	mg/L	3/2016 - 12/2024	19	79%	13	77%	ND	0.752	-11	0.404	No trend
MW-227	pH, lab	s.u.	3/2016 - 12/2024	18	0%	13	0%	7.0	7.4	-1	1.000	No trend
MW-227	Sulfate	mg/L	3/2016 - 12/2024	19	0%	13	0%	46.7	284	18	0.300	No trend
MW-227	TDS	mg/L	3/2016 - 12/2024	19	0%	13	0%	492	928	2	0.952	No trend
MW-240R	Boron	mg/L	3/2016 - 10/2024	23	4%	18	6%	ND	0.328	-8	0.790	No trend
MW-240R	Calcium	mg/L	3/2016 - 10/2024	23	0%	18	0%	99.9	203	-2	0.970	No trend
MW-240R	Chloride	mg/L	3/2016 - 10/2024	28	0%	18	0%	6.68	68.3	3	0.940	No trend
MW-240R	Fluoride	mg/L	3/2016 - 10/2024	25	72%	18	78%	ND	0.823	-38	0.052	No trend
MW-240R	pH, lab	s.u.	3/2016 - 10/2024	24	0%	19	0%	6.9	7.9	38	0.182	No trend
MW-240R	Sulfate	mg/L	3/2016 - 10/2024	23	0%	18	0%	75.2	233	38	0.159	No trend
MW-240R	TDS	mg/L	3/2016 - 10/2024	24	0%	18	0%	412	1140	-64	0.017	Decreasing
MW-244	Boron	mg/L	3/2016 - 10/2024	23	52%	18	50%	ND	0.205	67	0.007	Increasing
MW-244	Calcium	mg/L	3/2016 - 10/2024	24	0%	18	0%	120	208	42	0.119	No trend
MW-244	Chloride	mg/L	3/2016 - 10/2024	23	0%	18	0%	9.33	36.1	34	0.210	No trend
MW-244	Fluoride	mg/L	3/2016 - 10/2024	23	83%	18	89%	ND	0.712	-11	0.484	No trend
MW-244	pH, lab	s.u.	3/2016 - 10/2024	24	0%	18	0%	6.9	7.3	39	0.136	No trend
MW-244	Sulfate	mg/L	3/2016 - 10/2024	23	0%	18	0%	8.02	115	12	0.676	No trend
MW-244	TDS	mg/L	3/2016 - 10/2024	23	0%	18	0%	526	790	-7	0.820	No trend

Table 4.5

Trend Test Results
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

				All Data		Data Used for the Mann-Kendall Trend Test						
Well	Analyte	Unit	Date Range	Number of Samples	Percent ND	Number of Samples[1]	Percent ND[2]	Minimum	Maximum	Statistic	Probability	Conclusion
Downgradient Wells (continued)												
MW-245	Boron	mg/L	3/2016 - 12/2024	22	5%	17	6%	ND	0.391	41	0.098	No trend
MW-245	Calcium	mg/L	3/2016 - 12/2024	24	0%	17	0%	159	257	17	0.508	No trend
MW-245	Chloride	mg/L	3/2016 - 12/2024	22	0%	17	0%	9.34	18.5	-82	0.001	**Decreasing**
MW-245	Fluoride	mg/L	3/2016 - 12/2024	24	67%	17	71%	ND	4.54	-34	0.089	No trend
MW-245	pH, lab	s.u.	3/2016 - 12/2024	23	0%	17	0%	6.9	7.2	25	0.288	No trend
MW-245	Sulfate	mg/L	3/2016 - 12/2024	22	0%	17	0%	166	303	-58	0.019	**Decreasing**
MW-245	TDS	mg/L	3/2016 - 12/2024	22	0%	17	0%	824	1340	-20	0.434	No trend
MW-246	Boron	mg/L	7/2019 - 10/2024	18	56%	11	27%	ND	0.21	14	0.306	No trend
MW-246	Calcium	mg/L	7/2019 - 10/2024	20	0%	11	0%	128	200	13	0.350	No trend
MW-246	Chloride	mg/L	7/2019 - 10/2024	18	0%	11	0%	12.4	18.3	-31	0.020	**Decreasing**
MW-246	Fluoride	mg/L	7/2019 - 10/2024	18	83%	11	100%	ND	ND	-	-	100% ND
MW-246	pH, lab	s.u.	7/2019 - 10/2024	18	0%	11	0%	6.9	7.8	7	0.616	No trend
MW-246	Sulfate	mg/L	7/2019 - 10/2024	20	0%	11	0%	46.5	99.5	-11	0.436	No trend
MW-246	TDS	mg/L	7/2019 - 10/2024	20	0%	11	0%	620	842	10	0.482	No trend
MW-247	Boron	mg/L	7/2019 - 12/2024	22	45%	12	25%	ND	0.209	11	0.490	No trend
MW-247	Calcium	mg/L	7/2019 - 12/2024	19	0%	12	0%	121	205	23	0.130	No trend
MW-247	Chloride	mg/L	7/2019 - 12/2024	20	0%	12	0%	12.4	61.9	34	0.023	**Increasing**
MW-247	Fluoride	mg/L	7/2019 - 12/2024	20	80%	12	92%	ND	0.703	-9	0.246	No trend
MW-247	pH, lab	s.u.	7/2019 - 12/2024	20	0%	12	0%	6.9	7.2	0	-	No trend
MW-247	Sulfate	mg/L	7/2019 - 12/2024	19	0%	12	0%	58.9	171	8	0.632	No trend
MW-247	TDS	mg/L	7/2019 - 12/2024	19	0%	12	0%	568	882	12	0.450	No trend
MW-248	Boron	mg/L	7/2019 - 10/2024	19	53%	12	25%	ND	0.189	11	0.488	No trend
MW-248	Calcium	mg/L	7/2019 - 10/2024	22	0%	12	0%	109	165	19	0.216	No trend
MW-248	Chloride	mg/L	7/2019 - 10/2024	21	0%	12	0%	9.03	15	21	0.169	No trend
MW-248	Fluoride	mg/L	7/2019 - 10/2024	19	63%	12	83%	ND	0.596	-19	0.055	No trend
MW-248	pH, lab	s.u.	7/2019 - 10/2024	20	0%	12	0%	7.0	7.3	-18	0.185	No trend
MW-248	Sulfate	mg/L	7/2019 - 10/2024	23	0%	12	0%	58.8	132	8	0.632	No trend
MW-248	TDS	mg/L	7/2019 - 10/2024	19	0%	12	0%	424	662	9	0.582	No trend

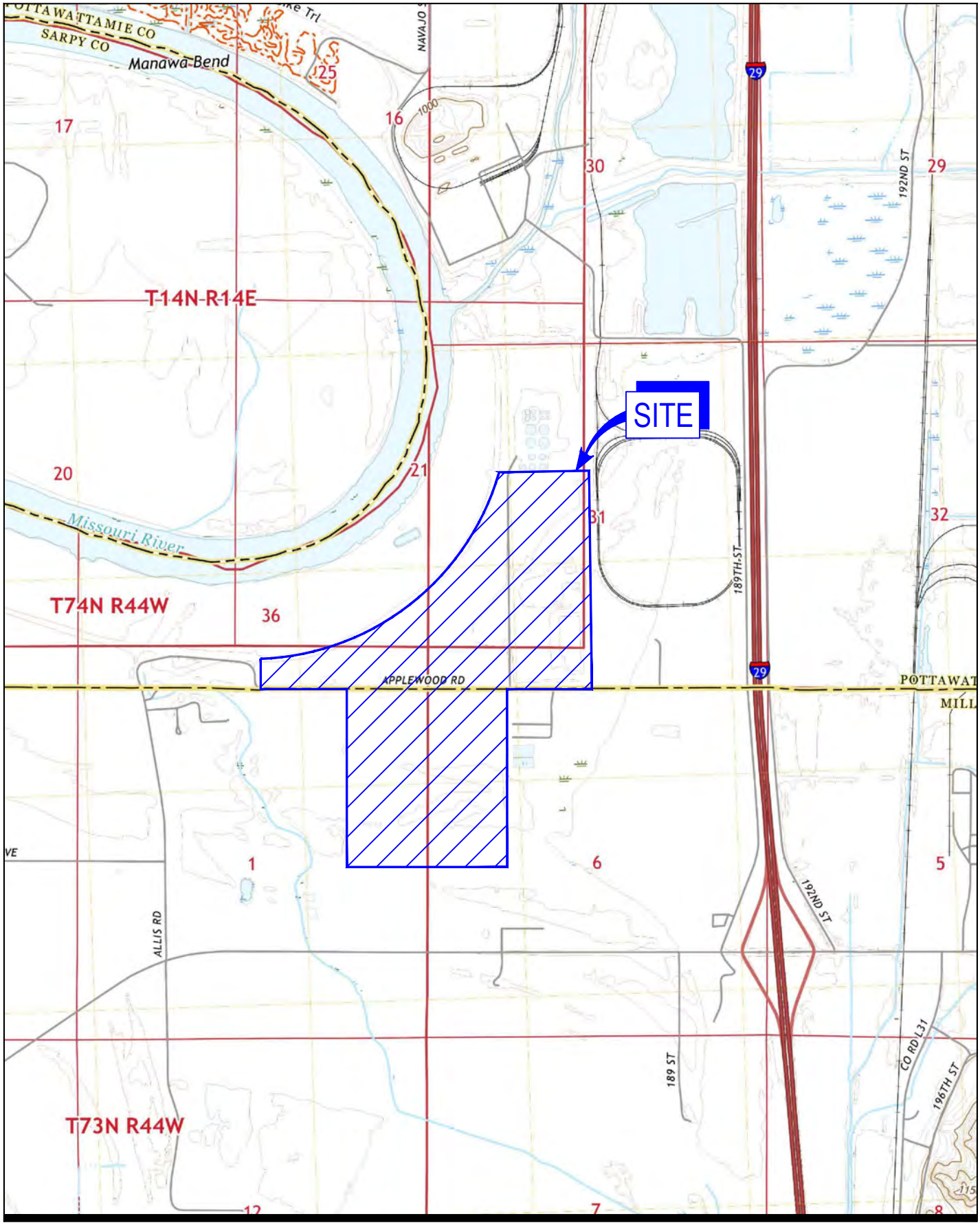
Table 4.5

Trend Test Results
Walter Scott Jr. Energy Center
WSEC CCR Monofill - Council Bluffs, Iowa

				All Data		Data Used for the Mann-Kendall Trend Test						
Well	Analyte	Unit	Date Range	Number of Samples	Percent ND	Number of Samples[1]	Percent ND[2]	Minimum	Maximum	Statistic	Probability	Conclusion
Downgradient Wells (continued)												
MW-250	Boron	mg/L	7/2021 - 10/2024	16	6%	8	13%	ND	0.304	-14	0.108	No trend
MW-250	Calcium	mg/L	7/2021 - 10/2024	16	0%	8	0%	161	220	16	0.063	No trend
MW-250	Chloride	mg/L	7/2021 - 10/2024	16	0%	8	0%	5.41	12.1	22	0.009	**Increasing**
MW-250	Fluoride	mg/L	7/2021 - 10/2024	15	100%	8	100%	ND	ND	-	-	100% ND
MW-250	pH, lab	s.u.	7/2021 - 10/2024	16	0%	8	0%	6.8	7.0	-11	0.170	No trend
MW-250	Sulfate	mg/L	7/2021 - 10/2024	16	0%	8	0%	73.4	253	22	0.009	**Increasing**
MW-250	TDS	mg/L	7/2021 - 10/2024	16	0%	8	0%	578	968	24	0.004	**Increasing**

Notes:
<5.00 - Not detected at the associated reporting limit.
19.1 /18.5 - field duplicate results.
H - Sample was prepped or analyzed beyond the specified holding time.
100% ND: no detected values in the data set; no test performed.
Statistic: calculated as the sum of the signs of all possible pair-wise data comparisons
Probability of significance: A value less than 0.05 indicates greater than 95 percent confidence of a statistically significant trend for data sets with more than 4 observations. A value less than 0.1 indicates greater than 90 percent confidence of a statistically significant trend for data sets with 4 observations
[1] Due to differences in sampling frequency during the earlier period (quarterly, in most cases), data were removed to match the current sampling frequency (semi-annual).
[2] Non-detects with detection limits above some detected values were excluded from the trend test.

Figures



0 1000 2000 ft

1" = 2000 ft

Coordinate System:
I83-SF

N

GHD

MIDAMERICAN ENERGY COMAPNY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

Project No. **12592594**
Date **January 2025**

SITE LOCATION MAP

FIGURE 1.1

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT022\12592594-GHD-00-00-RPT-EN-D001.1_GB-022.dwg
Plot Date: 14 January 2025 3:08 PM

Data Source: USGS Quadrangle Map, Council Bluffs South, IA (2022).

CITY OF COUNCIL BLUFFS
WATER POLLUTION CONTROL
PLANT (CBWPCP)

MISSOURI RIVER

CROPLAND

LEVEE

MW-105
MW-108
MW-133
MW-248
MW-250
MW-241R
MW-242
MW-247
MW-240R
LS-3
MW-246
MW-233
MW-243
MW-244
MW-227D
MW-227
LS-2
MW-245
DW-1
MW-191
MW-156D
MW-156
MW-249
MW-143
DW-2
MW-190
LS-1
MW-157
MW-159
MW-158
MW-149
MW-301
MW-302
MW-303
MW-304
MW-305
MW-306
MW-307D
MW-307

CELL 9
CELL 8
CELL 6
CELL 5
CELL 7
CELL 4
CELL 3N
CELL 2
CELL 3S
CELL 1

LEACHATE POND

LEACHATE MANAGEMENT POND

DETENTION BASIN

LEGEND

- PROPERTY BOUNDARY
- FENCING
- MW-245 MONITORING WELL
- MW-233 DECOMMISSIONED WELL
- DW-1 DEWATERING WELL
- LS-1 LEACHATE LIFT STATION
- DOWNGRADIENT SAMPLING LOCATION
- BACKGROUND SAMPLING LOCATION
- GAUGING LOCATION

0 250 500 ft
1" = 500 ft

Coordinate System:
IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

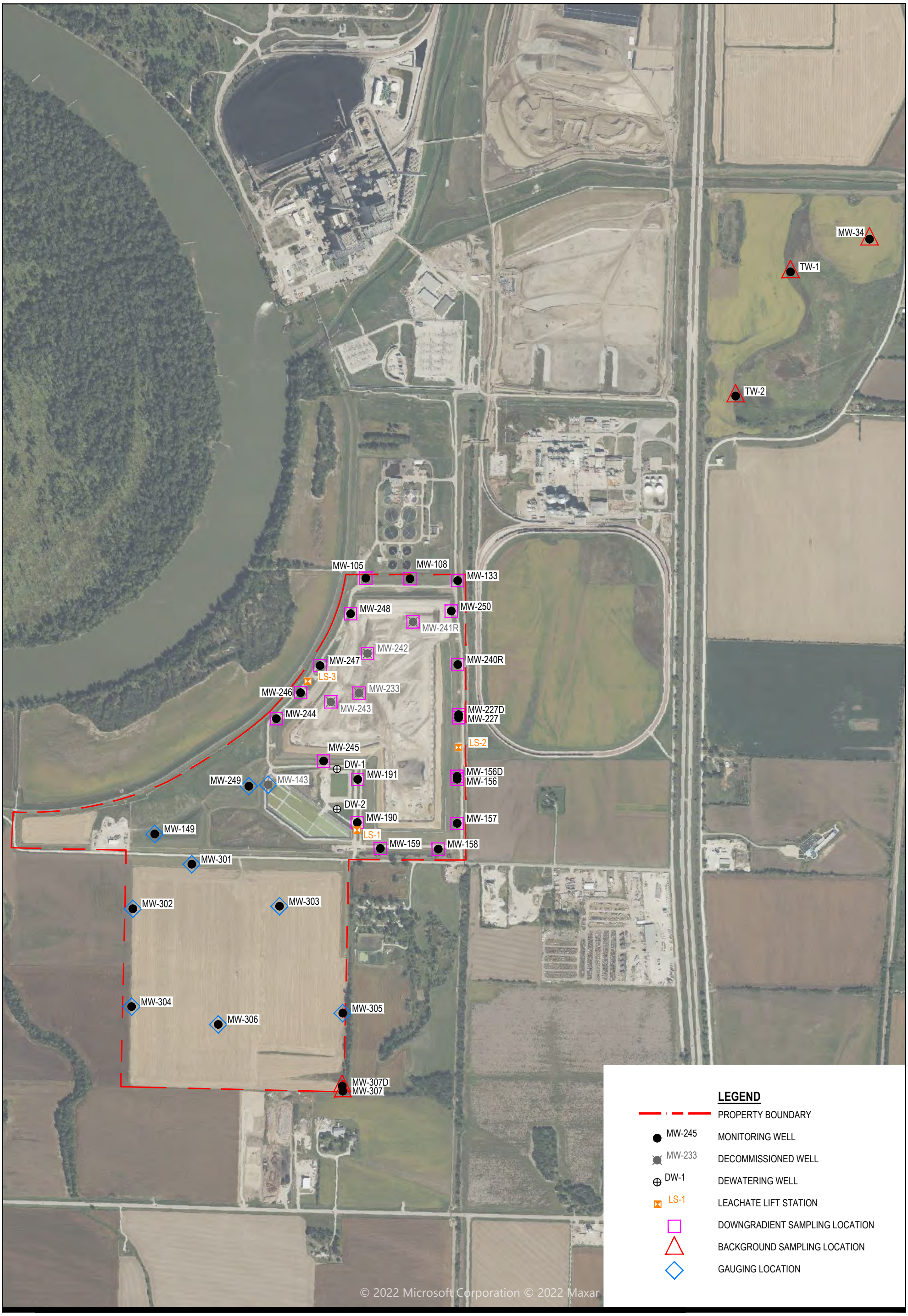
SITE MAP AND MONITORING NETWORK

Project No. **12592594**
Date **January 2025**

FIGURE 1.2

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT022\12592594-GHD-00-00-RPT-EN-D101.2_GB-022.dwg
Plot Date: 14 January 2025 3:08 PM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



0 500 1000 ft

1" = 1000 ft

Coordinate System:
IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

AERIAL PHOTO AND BACKGROUND MONITORING WELL LOCATIONS

Project No. **12592594**
Date **January 2025**

FIGURE 1.3

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT022\12592594-GHD-00-00-RPT-EN-D101.3_GB-022.dwg
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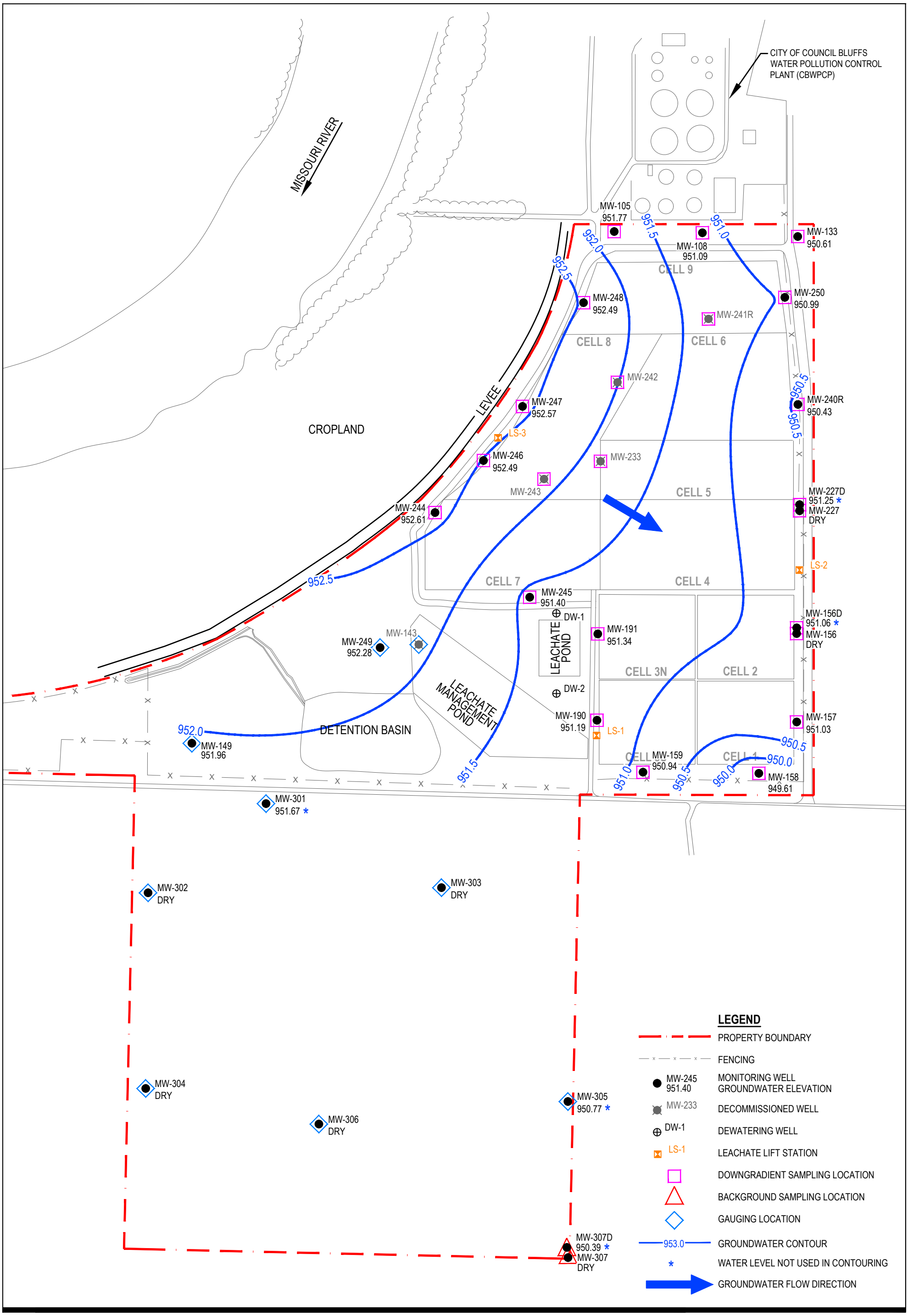

0 250 500 ft

1" = 500 ft

Coordinate System: IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER FLOW MAP
APRIL 1, 2024

Project No. **12592594**
Date **May 2024**

FIGURE 3.1

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\PRES001\12592594-GHD-00-00-PRE-EN-D103.1_GB-001.dwg
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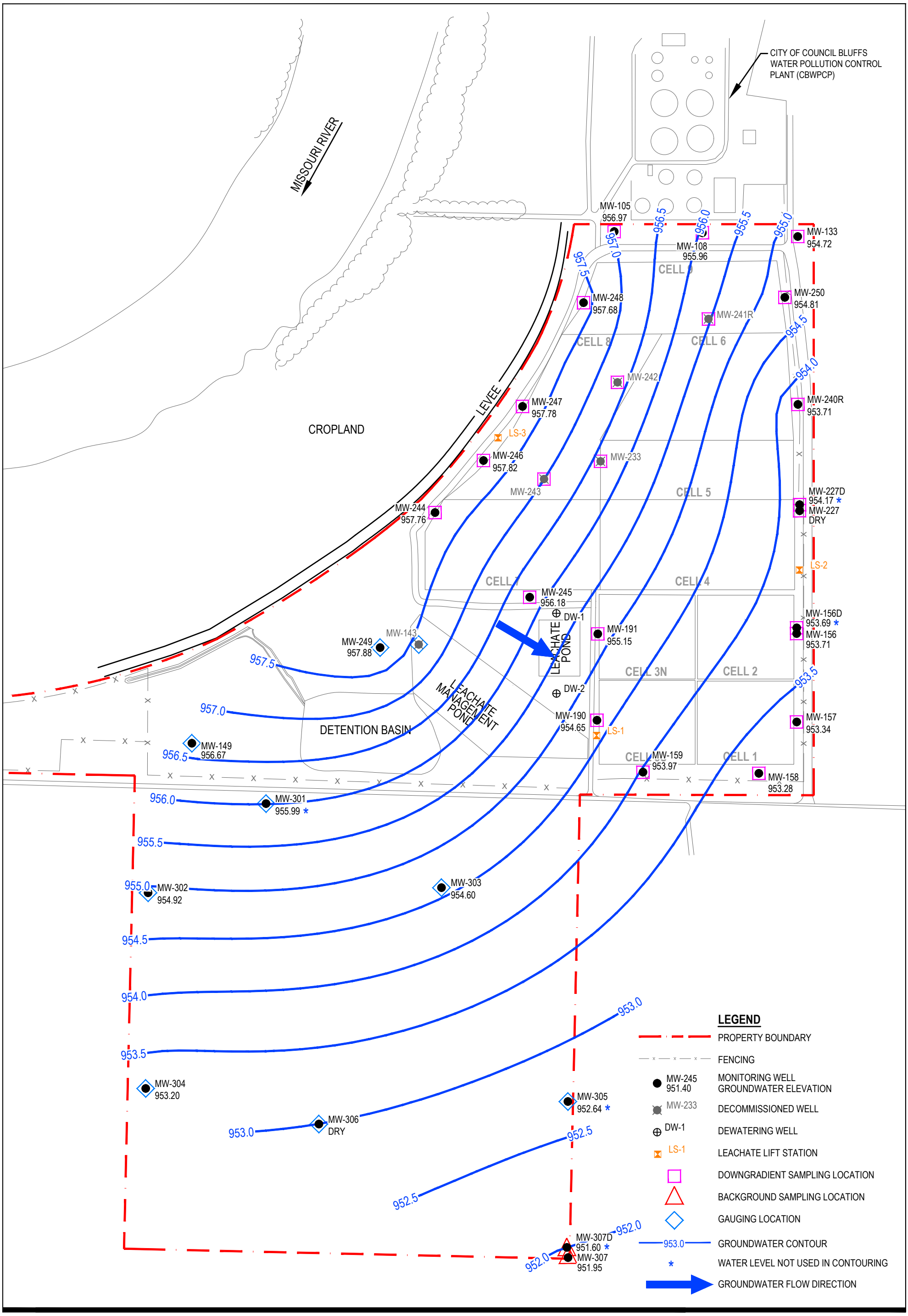
Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



0 250 500 ft

1" = 500 ft

Coordinate System: IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER FLOW MAP JUNE 3, 2024

Project No. **12592594**
Date **January 2025**

FIGURE 3.2

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\PRE002\12592594-GHD-00-00-PRE-EN-D101_WA-002.dwg
Plot Date: 08 January 2025 11:51 AM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022

CITY OF COUNCIL BLUFFS
WATER POLLUTION CONTROL
PLANT (CBWPCP)

MISSOURI RIVER

CROPLAND

LEVEE

MW-105
956.20

MW-108
955.84

MW-133
955.76

956.0

956.5

CELL 9

MW-248
956.84

MW-250
956.29

MW-241R

CELL 8

CELL 6

MW-242

MW-247
956.90

MW-240R
955.83

LS-3

MW-246
956.88

MW-243

MW-233

CELL 5

MW-227D *
956.77

MW-227
956.64

MW-244
956.65

LS-2

CELL 7

CELL 4

MW-245
956.61

DW-1

MW-156D *
956.65

MW-156
956.68

MW-249
956.77

MW-143

LEACHATE POND

MW-191
956.56

CELL 3N

CELL 2

DW-2

LEACHATE MANAGEMENT POND

DETENTION BASIN

MW-190
956.50

LS-1

MW-157
956.74

MW-149
956.01

CELL 3S

CELL 1

MW-159
956.36

MW-158
956.45

MW-301 *
956.17

MW-302

MW-303

MW-304

MW-305 *
955.90

MW-306

MW-307D *
955.44

MW-307
955.80

LEGEND

- PROPERTY BOUNDARY
- FENCING
- MW-245 956.61 — MONITORING WELL ID GROUNDWATER ELEVATION
- MW-233 — DECOMMISSIONED WELL
- DW-1 — DEWATERING WELL
- LS-1 — LEACHATE LIFT STATION
- 955.85 — GROUNDWATER CONTOUR
- * — WATER LEVEL NOT USED IN CONTOURING
- GROUNDWATER FLOW DIRECTION
- DOWNGRADIENT SAMPLING LOCATION
- BACKGROUND SAMPLING LOCATION
- GAUGING LOCATION

0 250 500 ft
1" = 500 ft

Coordinate System:
IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER FLOW MAP
SEPTEMBER 30, 2024

Project No. **12592594**
Date **January 2025**

FIGURE 3.3

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT022\12592594-GHD-00-00-RPT-EN-D101_DE-022.dwg
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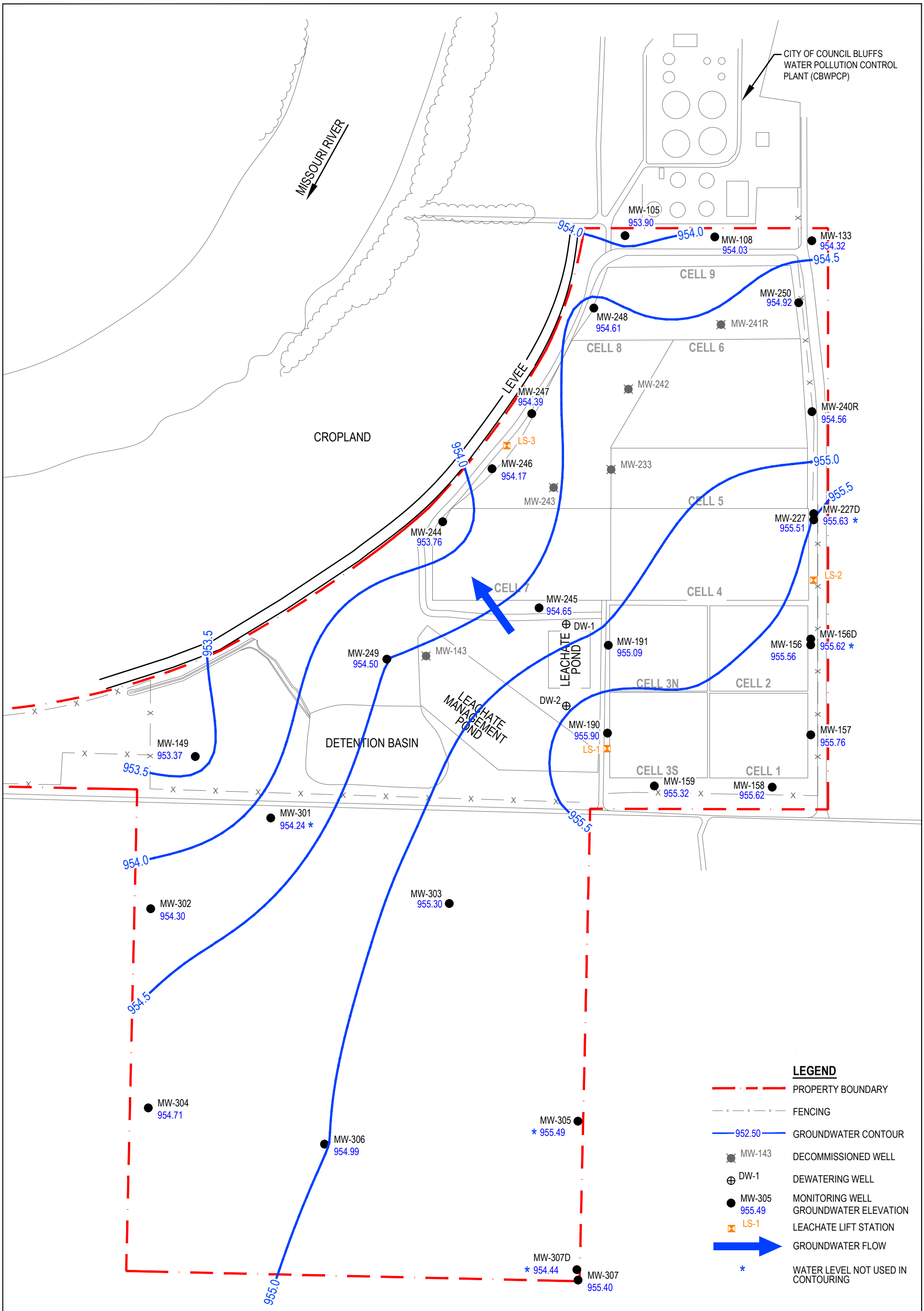

0 250 500 ft

1" = 500 ft

Coordinate System: IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER FLOW MAP
DECEMBER 10, 2024

Project No. **12592594**
Date **January 2025**

FIGURE 3.4

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT022\12592594-GHD-00-00-RPT-EN-D103.4_GB-022.dwg
Plot Date: 08 January 2025 11:34 AM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022

Appendices

Appendix A

Well Construction Diagrams

STRATIGRAPHIC AND INSTRUMENTATION RECORD

MW-156D

Project No: 12592594

Client: MidAmerican Energy Company
Project: Water Scott Jr. Energy Center (WSEC)
Location: Council Bluffs, Iowa

Drill Co.: Below Ground Surface Inc.
Drilling Method(s): Geoprobe/Hollow Stem Auger
Logged By: Brooke Wasson

Easting: 998160.98 E **Northing:** 432288.80 N
Horiz. Datum: NAD 1983 StatePlane Iowa South FIPS 1402 Feet
Elevation: 974.31 ft AMSL
Reference Elevation: 976.40 ft AMSL
Vert. Datum: Above Mean Sea Level
Hole Diameter(s): 8.25in.

Date Started: 02/20/2024
Date Completed: 02/20/2024

Depth (Feet)	Elevation (Feet)	Strat Symbol	Stratigraphy	Method	Run Number	Recovery %	Water Level(s)	Monitoring Well
0.00	974.31		VOID - Hand Auger/air knife, no recovery	DP/HSA	DP1			
5.00	969.31		CL - CLAY, trace silt, brown, stiff, moist - very dark brown at 5.90ft BGS - brown, iron staining throughout at 8.20ft BGS		DP2	100		
10.20	964.11		GP - GRAVEL with concrete and clay, large, poorly sorted		DP3	78		
10.60	963.71		CL - CLAY, stiff, dark brown, moist, iron staining throughout					
11.40	962.91		SW - SAND, fine grained, well sorted, dark brown, moist					
11.50	962.81		CL - CLAY, stiff, dark brown, moist, iron staining					
11.80	962.51		SP - SAND, fine grained, moderately sorted, tan, moist/dry					
12.20	962.11		CL - CLAY, trace sand, medium stiff, gray/brown, moist - soft, wet at 12.80ft BGS					
13.30	961.01		SW - SAND, with silt, very fine grained, well sorted, brown, wet - coarse sand, well sorted, light tan, dry at 13.40ft BGS					
13.90	960.41		No sample recovery					
15.00	959.31		CL - CLAY, trace sand, medium stiff, dark brown, moist		DP4	82		
16.20	958.11		CL - CLAY with sand and gravel, light brown, medium stiff, dry/moist					
16.40	957.91		SW - SAND with clay, fine grained, well sorted, very soft, tan/brown, dry/moist					
16.90	957.41		SP - SAND, moderately sorted, coarse grained, light tan, dry					
19.10	955.21		No sample recovery					
20.00	954.31		SP - SAND, moderately sorted, coarse grained, light tan, dry - dark tan, wet at 20.90ft BGS - dark gray at 21.70ft BGS		DP5	62		
23.10	951.21		No sample recovery					
25.00	949.31		SP - SAND, coarse grained, moderately well sorted, dark tan, wet		DP6	60		
26.30	948.01		SP - SAND with clay, fine grained, moderately well sorted, dark tan, wet					
26.60	947.71		SP - SAND, moderately well sorted, coarse grained, dark gray, wet					
28.00	946.31		No sample recovery					
30.00	944.31		End of Drilling at 30.00 ft.					

Legend:
Measuring Point Elevation may change; Refer to Current Elevation Table
▽ At Time of Drilling:
▼ After Drilling:

Screened Interval:
Length: 15 ft
13.00 to 28.00 ft BGS
961.31 to 946.31 ft Above Mean Sea Level
Diameter: 2 inch
Slot Size: 0.01
Material: SLOTTED PVC

Backfill Details

Description	From(ft BGS)	To(ft BGS)
Concrete	0.00	2.15
Bentonite Chips	2.15	11.00
Sand	11.00	30.00

STRATIGRAPHIC AND INSTRUMENTATION RECORD

MW-227D

Project No: 12592594

Client: MidAmerican Energy Company
Project: Water Scott Jr. Energy Center (WSEC)
Location: Council Bluffs, Iowa

Drill Co.: Below Ground Surface Inc.
Drilling Method(s): Geoprobe/Hollow Stem Auger
Logged By: Brooke Wasson

Easting: 998177.64 E **Northing:** 432985.72 N
Horiz. Datum: NAD 1983 StatePlane Iowa South FIPS 1402 Feet
Elevation: 974.08 ft AMSL
Reference Elevation: 976.56 ft AMSL
Vert. Datum: Above Mean Sea Level
Hole Diameter(s): 8.25in.

Date Started: 02/21/2024
Date Completed: 02/21/2024

Depth (Feet)	Elevation (Feet)	Strat Symbol	Stratigraphy	Method	Run Number	Recovery %	Water Level(s)	Monitoring Well
0.00	974.08		CL - CLAY, trace sand, stiff, light brown, dry/moist, trace iron staining - dark brown at 1.30ft BGS	DP/HSA	DP1	86		
4.30	969.78		No sample recovery					
5.00	969.08		CL - CLAY, trace sand, stiff, dark brown, moist, iron staining					
5.60	968.48		CL - CLAY with sand, stiff, dark brown/gray, dry		DP2	46		
7.30	966.78		No sample recovery					
10.00	964.08		CL - CLAY, soft, dark brown, moist, ocasional light tan sand pockets - light brown, moist/wet at 10.70ft BGS					
11.70	962.38		SW - SAND with clay, light brown, soft, moist, well sorted, coarse grained - light tan, dry/moist at 12.00ft BGS		DP3	70		
13.50	960.58		No sample recovery					
15.00	959.08		SW - SAND with clay, coarse grained, well sorted, medium stiff, light brown/tan, dry/moist					
15.50	958.58		SW - SAND, coarse grained, well sorted, light tan, dry - light tan, dry, coarse grained at 15.50ft BGS - moist from 15.90ft BGS to 16.60ft BGS		DP4	64		
18.20	955.88		No sample recovery					
20.00	954.08		SW - SAND, coarse grained, well sorted, light tan, dry					
20.40	953.68		CL - CLAY, dark brown, soft, moist					
20.85	953.23		SP - SAND, moderately well sorted, coarse grained, light tan, dry - moist from 21.30ft BGS to 21.50ft BGS - moist from 22.40ft BGS to 22.90ft BGS - gray, wet at 22.90ft BGS		DP5	80		
24.00	950.08		No sample recovery					
25.00	949.08		SP - SAND, moderately well sorted, coarse grained, gray, wet - fine grained at 27.00ft BGS		DP6	56		
27.80	946.28		No sample recovery					
30.00	944.08		End of Drilling at 30.00 ft.					

Legend:
Measuring Point Elevation may change; Refer to Current Elevation Table
▽ At Time of Drilling:
▼ After Drilling:

Screened Interval:
Length: 15 ft
14.60 to 29.60 ft BGS
959.48 to 944.48 ft Above Mean Sea Level
Diameter: 2 inch
Slot Size: 0.01
Material: SLOTTED PVC

Backfill Details

Description	From(ft BGS)	To(ft BGS)
Concrete	0.00	2.00
Bentonite Chips	2.00	12.50
Sand	12.50	30.00

STRATIGRAPHIC AND INSTRUMENTATION RECORD

MW-307D

Project No: 12592594

Client: MidAmerican Energy Company
Project: Water Scott Jr. Energy Center (WSEC)
Location: Council Bluffs, Iowa

Drill Co.: Below Ground Surface Inc.
Drilling Method(s): Geoprobe/Hollow Stem Auger
Logged By: Brooke Wasson

Easting: 996856.53 E **Northing:** 428746.45 N
Horiz. Datum: NAD 1983 StatePlane Iowa South FIPS 1402 Feet
Elevation: 969.32 ft AMSL
Reference Elevation: 971.36 ft AMSL
Vert. Datum: Above Mean Sea Level
Hole Diameter(s): 8.25in.

Date Started: 02/20/2024
Date Completed: 02/20/2024

Depth (Feet)	Elevation (Feet)	Strat Symbol	Stratigraphy	Method	Run Number	Recovery %	Water Level(s)	Monitoring Well
0.00	969.32							
			CL - CLAY, trace fine sand, soft, dark brown, moist, trace iron staining	DP/HSA				
1.50	967.82		CL - CLAY with sand, very soft, light brown, wet/moist, trace iron staining		DP1	66		
2.80	966.52		SP - SAND, trace fines, light tan, dry, heavier iron staining					
3.30	966.02		No sample recovery					
5.00	964.32		SP - SAND with clay, light brown, moist/dry, heavy iron staining					
6.00	963.32		SW - SAND, fine grained, well sorted, light tan, dry, iron staining					
6.10	963.22		SP - SAND, trace fines, light brown, moist/dry, iron staining					
6.60	962.72		SW - SAND, fine grained, well sorted, light tan, dry, trace iron staining		DP2	74		
7.85	961.47		CL - CLAY, trace sand, soft, brown, moist/dry, iron staining					
8.00	961.32		SW - SAND, light tan, well sorted, dry, iron staining					
8.70	960.62		No sample recovery					
10.00	959.32		SW - SAND, fine grained, well sorted, light tan, dry					
11.00	958.32		SP - SAND, trace fines, dark tan, moist, some iron staining					
11.40	957.92		CL - CLAY, trace silt, very soft, gray, wet/moist		DP3	74		
12.70	956.62		SP - SAND with clay, dark tan, moist, some iron staining					
12.90	956.42		CL - CLAY, trace silt, very soft, gray, wet/moist					
13.30	956.02		SW - SAND, fine grained, well sorted, brown/tan, moist					
13.70	955.62		No sample recovery					
15.00	954.32		SW - SAND, fine grained, well sorted, light tan, dry					
15.20	954.12		CL - CLAY with sand, soft, light brown, moist					
15.40	953.92		CL - CLAY, very soft, gray, moist/wet					
15.80	953.52		CL - CLAY with sand, medium stiff, dark brown, dry					
16.00	953.32		SW - SAND, well sorted, light brown, moist		DP4	64		
18.20	951.12		No sample recovery					
20.00	949.32		SW - SAND with clay, well sorted, brown, moist					
20.80	948.52		SW - SAND, fine grained, well sorted, tan, wet					
			- coarse grained, gray at 22.10ft BGS		DP5	66		
23.30	946.02		No sample recovery					
25.00	944.32		End of Drilling at 25.00 ft.					

Legend:
Measuring Point Elevation may change; Refer to Current Elevation Table
▽ At Time of Drilling:
▼ After Drilling:

Screened Interval:
Length: 15 ft
9.50 to 24.50 ft BGS
959.82 to 944.82 ft Above Mean Sea Level
Diameter: 2 inch
Slot Size: 0.01
Material: SLOTTED PVC

Backfill Details

Description	From(ft BGS)	To(ft BGS)
Concrete	0.00	2.00
Bentonite Chips	2.00	7.50
Sand	7.50	25.00

Appendix B

Groundwater Sample Collection Records

Low-Flow Test Report:

Test Date / Time: 4/3/2024 5:26:25 PM
Project: MEC Waterloo MW-105
Operator Name: Brooke Wasson

Location Name: MW-105 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16.3 ft** **Total Depth: 26.5 ft** **Initial Depth to Water: 16.77 ft**	**Pump Type: QED 1.75" Portable Sample Pro Bladder Pump** **Tubing Type: 1/4" x 1/4" twin-bonded tubing** **Tubing Inner Diameter: 0.1875 in** **Tubing Length: 20.07 ft** **Pump Intake From TOC: 21.3 ft** **Estimated Total Volume Pumped: 9551.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1815
Collected DP03

Weather Conditions:
53 degrees F sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 5	
4/3/2024 5:26 PM	00:00	7.17 pH	12.58 °C	1,339.9 µS/cm	8.65 mg/L	74.53 NTU	-14.9 mV	16.77 ft	300.00 ml/min
4/3/2024 5:27 PM	01:29	7.05 pH	12.79 °C	1,305.5 µS/cm	1.38 mg/L	181.44 NTU	-7.7 mV	16.82 ft	200.00 ml/min
4/3/2024 5:29 PM	02:58	7.05 pH	12.70 °C	1,302.8 µS/cm	0.83 mg/L	174.85 NTU	-8.4 mV	16.82 ft	200.00 ml/min
4/3/2024 5:30 PM	04:27	7.05 pH	12.71 °C	1,301.8 µS/cm	0.88 mg/L	148.62 NTU	-9.1 mV	16.82 ft	200.00 ml/min
4/3/2024 5:32 PM	05:56	7.06 pH	12.69 °C	1,303.8 µS/cm	0.93 mg/L	150.02 NTU	-9.7 mV	16.82 ft	200.00 ml/min
4/3/2024 5:33 PM	07:25	7.05 pH	12.69 °C	1,306.1 µS/cm	0.81 mg/L	153.66 NTU	-10.3 mV	16.82 ft	200.00 ml/min
4/3/2024 5:35 PM	08:54	7.05 pH	12.71 °C	1,311.2 µS/cm	0.69 mg/L	150.71 NTU	-11.0 mV	16.82 ft	200.00 ml/min
4/3/2024 5:36 PM	10:23	7.06 pH	12.67 °C	1,311.5 µS/cm	0.75 mg/L	148.25 NTU	-11.8 mV	16.82 ft	200.00 ml/min
4/3/2024 5:38 PM	11:52	7.06 pH	12.69 °C	1,308.9 µS/cm	0.63 mg/L	114.83 NTU	-13.3 mV	16.80 ft	200.00 ml/min
4/3/2024 5:39 PM	13:21	7.06 pH	12.70 °C	1,310.8 µS/cm	0.61 mg/L	109.65 NTU	-14.8 mV	16.80 ft	200.00 ml/min

4/3/2024 5:41 PM	14:50	7.06 pH	12.68 °C	1,313.3 µS/cm	0.61 mg/L	89.34 NTU	-16.1 mV	16.80 ft	200.00 ml/min
4/3/2024 5:42 PM	16:19	7.06 pH	12.67 °C	1,312.0 µS/cm	0.53 mg/L	73.54 NTU	-17.3 mV	16.80 ft	200.00 ml/min
4/3/2024 5:44 PM	17:48	7.06 pH	12.67 °C	1,310.7 µS/cm	0.54 mg/L	60.13 NTU	-18.5 mV	16.80 ft	200.00 ml/min
4/3/2024 5:45 PM	19:17	7.06 pH	12.66 °C	1,311.8 µS/cm	0.48 mg/L	48.13 NTU	-19.4 mV	16.80 ft	200.00 ml/min
4/3/2024 5:47 PM	20:46	7.06 pH	12.61 °C	1,313.4 µS/cm	0.66 mg/L	38.06 NTU	-20.1 mV	16.80 ft	200.00 ml/min
4/3/2024 5:48 PM	22:15	7.06 pH	12.60 °C	1,311.7 µS/cm	0.52 mg/L	37.66 NTU	-21.1 mV	16.80 ft	200.00 ml/min
4/3/2024 5:50 PM	23:44	7.06 pH	12.62 °C	1,313.3 µS/cm	0.45 mg/L	29.97 NTU	-21.9 mV	16.80 ft	200.00 ml/min
4/3/2024 5:51 PM	25:13	7.06 pH	12.62 °C	1,313.8 µS/cm	0.48 mg/L	24.98 NTU	-22.5 mV	16.80 ft	200.00 ml/min
4/3/2024 5:53 PM	26:42	7.06 pH	12.65 °C	1,313.2 µS/cm	0.42 mg/L	22.23 NTU	-23.0 mV	16.80 ft	200.00 ml/min
4/3/2024 5:54 PM	28:11	7.06 pH	12.61 °C	1,312.8 µS/cm	0.40 mg/L	19.67 NTU	-23.5 mV	16.80 ft	200.00 ml/min
4/3/2024 5:56 PM	29:40	7.06 pH	12.64 °C	1,313.0 µS/cm	0.39 mg/L	16.47 NTU	-23.9 mV	16.80 ft	200.00 ml/min
4/3/2024 5:57 PM	31:09	7.06 pH	12.63 °C	1,314.7 µS/cm	0.40 mg/L	11.53 NTU	-24.3 mV	16.80 ft	200.00 ml/min
4/3/2024 5:59 PM	32:38	7.06 pH	12.65 °C	1,314.7 µS/cm	0.36 mg/L	12.26 NTU	-24.6 mV	16.80 ft	200.00 ml/min
4/3/2024 6:00 PM	34:07	7.06 pH	12.62 °C	1,315.1 µS/cm	0.43 mg/L	12.06 NTU	-24.9 mV	16.80 ft	200.00 ml/min
4/3/2024 6:02 PM	35:36	7.06 pH	12.62 °C	1,315.2 µS/cm	0.41 mg/L	9.35 NTU	-25.1 mV	16.80 ft	200.00 ml/min
4/3/2024 6:03 PM	37:05	7.06 pH	12.61 °C	1,315.0 µS/cm	0.46 mg/L	7.39 NTU	-25.4 mV	16.80 ft	200.00 ml/min
4/3/2024 6:04 PM	38:34	7.06 pH	12.59 °C	1,316.5 µS/cm	0.43 mg/L	8.55 NTU	-25.5 mV	16.80 ft	200.00 ml/min
4/3/2024 6:06 PM	40:03	7.06 pH	12.59 °C	1,316.4 µS/cm	0.41 mg/L	5.93 NTU	-25.8 mV	16.80 ft	200.00 ml/min
4/3/2024 6:07 PM	41:32	7.06 pH	12.57 °C	1,314.1 µS/cm	0.43 mg/L	5.89 NTU	-26.0 mV	16.80 ft	200.00 ml/min
4/3/2024 6:09 PM	43:01	7.06 pH	12.54 °C	1,314.7 µS/cm	0.40 mg/L	5.42 NTU	-26.1 mV	16.80 ft	200.00 ml/min
4/3/2024 6:10 PM	44:30	7.06 pH	12.58 °C	1,316.2 µS/cm	0.44 mg/L	4.69 NTU	-26.2 mV	16.80 ft	200.00 ml/min
4/3/2024 6:13 PM	47:01	7.33 pH	12.59 °C	1.46 µS/cm	10.71 mg/L	0.00 NTU	-29.8 mV	16.80 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-105-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved
DP03-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid

Low-Flow Test Report:

Test Date / Time: 4/3/2024 6:26:14 PM
Project: WSEC MW-108
Operator Name: Paige Richards

Location Name: MW-108 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.46 ft** **Total Depth: 25.46 ft** **Initial Depth to Water: 18 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.45 ft** **Pump Intake From TOC: 23.3 ft** **Estimated Total Volume Pumped: 9970.833 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.58 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 809048**

Test Notes:
Sample time: 1955

Weather Conditions:
Sunny, windy, 55 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 6:26 PM	00:00	6.95 pH	13.91 °C	0.00 mS/cm	7.63 mg/L	0.00 NTU	-116.1 mV	18.00 ft	400.00 ml/min
4/3/2024 6:28 PM	02:20	6.94 pH	12.98 °C	0.08 mS/cm	5.28 mg/L		-114.4 mV	18.35 ft	400.00 ml/min
4/3/2024 6:30 PM	04:40	6.94 pH	12.95 °C	0.01 mS/cm	5.48 mg/L	5.15 NTU	-111.2 mV	18.52 ft	350.00 ml/min
4/3/2024 6:33 PM	07:00	6.96 pH	13.10 °C	0.00 mS/cm	5.55 mg/L	0.00 NTU	-109.5 mV	18.65 ft	250.00 ml/min
4/3/2024 6:35 PM	09:20	6.95 pH	13.27 °C	0.00 mS/cm	5.38 mg/L	1.85 NTU	-108.2 mV	18.65 ft	250.00 ml/min
4/3/2024 6:37 PM	11:40	6.97 pH	13.04 °C	0.01 mS/cm	5.42 mg/L	1.15 NTU	-110.4 mV	18.65 ft	250.00 ml/min
4/3/2024 6:38 PM	12:21	6.96 pH	13.12 °C	0.00 mS/cm	5.83 mg/L	3.31 NTU	-108.2 mV	18.65 ft	250.00 ml/min
4/3/2024 6:40 PM	14:41	7.00 pH	13.06 °C	0.01 mS/cm	6.70 mg/L	13.92 NTU	-108.9 mV	18.65 ft	250.00 ml/min
4/3/2024 6:43 PM	17:01	7.00 pH	13.15 °C	0.00 mS/cm	6.00 mg/L	4.20 NTU	-108.2 mV	18.65 ft	250.00 ml/min
4/3/2024 6:45 PM	19:21	6.97 pH	13.34 °C	0.00 mS/cm	7.00 mg/L	0.00 NTU	-111.6 mV	19.03 ft	100.00 ml/min
4/3/2024 6:47 PM	21:41	7.03 pH	13.56 °C	0.01 mS/cm	6.43 mg/L	6.37 NTU	-110.6 mV	19.03 ft	100.00 ml/min
4/3/2024 6:50 PM	24:01	7.05 pH	13.69 °C	0.00 mS/cm	8.09 mg/L	15.12 NTU	-110.9 mV	19.03 ft	100.00 ml/min

4/3/2024 6:52 PM	26:21	7.04 pH	13.92 °C	0.00 mS/cm	7.35 mg/L	1.89 NTU	-111.2 mV	19.03 ft	100.00 ml/min
4/3/2024 6:54 PM	28:41	7.04 pH	14.28 °C	0.00 mS/cm	7.57 mg/L	27.51 NTU	-108.9 mV	19.03 ft	100.00 ml/min
4/3/2024 6:57 PM	31:01	7.08 pH	14.04 °C	0.00 mS/cm	6.92 mg/L	7.01 NTU	-106.1 mV	19.03 ft	100.00 ml/min
4/3/2024 6:59 PM	33:21	7.07 pH	13.87 °C	0.00 mS/cm	7.92 mg/L	3.18 NTU	-108.1 mV	19.03 ft	100.00 ml/min
4/3/2024 7:01 PM	35:41	7.09 pH	13.21 °C	1.16 mS/cm	4.68 mg/L	1.33 NTU	-119.9 mV	18.74 ft	100.00 ml/min
4/3/2024 7:04 PM	38:01	7.10 pH	13.12 °C	1.16 mS/cm	3.41 mg/L	4.61 NTU	-123.9 mV	18.74 ft	100.00 ml/min
4/3/2024 7:06 PM	40:21	7.11 pH	12.99 °C	1.16 mS/cm	3.53 mg/L	2.47 NTU	-124.7 mV	18.74 ft	100.00 ml/min
4/3/2024 7:08 PM	42:41	7.14 pH	12.89 °C	1.15 mS/cm	3.73 mg/L	2.35 NTU	-126.3 mV	18.74 ft	100.00 ml/min
4/3/2024 7:11 PM	45:01	7.14 pH	12.74 °C	1.15 mS/cm	4.16 mg/L	1.40 NTU	-122.6 mV	18.74 ft	100.00 ml/min
4/3/2024 7:13 PM	47:21	7.14 pH	12.73 °C	1.15 mS/cm	3.24 mg/L	0.00 NTU	-128.4 mV	18.74 ft	100.00 ml/min
4/3/2024 7:15 PM	49:41	7.13 pH	12.67 °C	1.15 mS/cm	2.94 mg/L	0.00 NTU	-127.2 mV	18.74 ft	100.00 ml/min
4/3/2024 7:18 PM	52:01	7.13 pH	12.63 °C	1.15 mS/cm	2.38 mg/L	0.29 NTU	-132.0 mV	18.74 ft	100.00 ml/min
4/3/2024 7:20 PM	54:21	7.16 pH	12.51 °C	1.15 mS/cm	3.95 mg/L	0.00 NTU	-129.0 mV	18.74 ft	100.00 ml/min
4/3/2024 7:22 PM	56:41	7.16 pH	12.43 °C	1.15 mS/cm	4.55 mg/L	0.25 NTU	-124.8 mV	18.61 ft	100.00 ml/min
4/3/2024 7:25 PM	59:01	7.19 pH	12.34 °C	1.15 mS/cm	5.43 mg/L	3.23 NTU	-123.7 mV	18.61 ft	100.00 ml/min
4/3/2024 7:27 PM	01:01:21	7.17 pH	12.18 °C	1.15 mS/cm	5.29 mg/L	2.89 NTU	-119.7 mV	18.58 ft	100.00 ml/min

3.90 mg/L
(live reading at 1930)

Samples

Sample ID:	Description:
MW108-GW-0424	1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 4/3/2024 6:35:15 PM
Project: WSEC MW-133
Operator Name: Brooke Wasson

Location Name: MW-133
Well Diameter: 2 in
Casing Type: PVC
Screen Length: 10 ft
Top of Screen: 15.46 ft
Total Depth: 25.46 ft
Initial Depth to Water: 19.98 ft

Pump Type: Geotech 166PVC18 Bladder Pump
Tubing Type: Twin bonded 1/4" x 1/4" tubing
Tubing Inner Diameter: 0.125 in
Tubing Length: 21.76 ft
Pump Intake From TOC: 23.6 ft
Estimated Total Volume Pumped: 5006.667 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 200 ml/min
Final Draw Down: 0.02 ft

Instrument Used: Aqua TROLL 600 Vented
Serial Number: 1050309

Test Notes:
Sampled 1900

Weather Conditions:
51 degrees F sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 6:35 PM	00:00	7.23 pH	12.48 °C	1.36 mS/cm	6.90 mg/L	135.49 NTU	11.1 mV	19.98 ft	200.00 ml/min
4/3/2024 6:36 PM	01:14	7.19 pH	13.10 °C	1.43 mS/cm	1.72 mg/L	217.41 NTU	6.1 mV	19.98 ft	200.00 ml/min
4/3/2024 6:37 PM	02:28	7.20 pH	13.22 °C	1.44 mS/cm	0.85 mg/L	190.05 NTU	-6.8 mV	19.98 ft	200.00 ml/min
4/3/2024 6:38 PM	03:42	7.21 pH	13.24 °C	1.44 mS/cm	0.60 mg/L	133.94 NTU	-20.8 mV	19.98 ft	200.00 ml/min
4/3/2024 6:40 PM	04:56	7.21 pH	13.28 °C	1.44 mS/cm	0.47 mg/L	90.03 NTU	-32.0 mV	19.98 ft	200.00 ml/min
4/3/2024 6:41 PM	06:10	7.21 pH	13.31 °C	1.44 mS/cm	0.39 mg/L	68.55 NTU	-40.4 mV	19.98 ft	200.00 ml/min
4/3/2024 6:42 PM	07:24	7.21 pH	13.28 °C	1.44 mS/cm	0.34 mg/L	58.14 NTU	-46.6 mV	19.98 ft	200.00 ml/min
4/3/2024 6:43 PM	08:38	7.21 pH	13.26 °C	1.44 mS/cm	0.31 mg/L	42.44 NTU	-51.5 mV	19.98 ft	200.00 ml/min
4/3/2024 6:45 PM	09:52	7.20 pH	13.26 °C	1.44 mS/cm	0.31 mg/L	36.41 NTU	-54.4 mV	19.98 ft	200.00 ml/min
4/3/2024 6:46 PM	11:06	7.19 pH	13.27 °C	1.44 mS/cm	0.31 mg/L	27.69 NTU	-56.2 mV	19.98 ft	200.00 ml/min
4/3/2024 6:47 PM	12:20	7.19 pH	13.26 °C	1.44 mS/cm	0.29 mg/L	24.54 NTU	-57.6 mV	20.00 ft	200.00 ml/min

4/3/2024 6:48 PM	13:34	7.19 pH	13.27 °C	1.44 mS/cm	0.28 mg/L	20.83 NTU	-59.0 mV	20.00 ft	200.00 ml/min
4/3/2024 6:50 PM	14:48	7.19 pH	13.28 °C	1.44 mS/cm	0.25 mg/L	18.98 NTU	-60.3 mV	20.00 ft	200.00 ml/min
4/3/2024 6:51 PM	16:02	7.19 pH	13.25 °C	1.44 mS/cm	0.23 mg/L	16.83 NTU	-61.5 mV	20.00 ft	200.00 ml/min
4/3/2024 6:52 PM	17:16	7.19 pH	13.24 °C	1.44 mS/cm	0.21 mg/L	14.78 NTU	-62.7 mV	20.00 ft	200.00 ml/min
4/3/2024 6:53 PM	18:30	7.19 pH	13.27 °C	1.45 mS/cm	0.20 mg/L	12.46 NTU	-63.8 mV	20.00 ft	200.00 ml/min
4/3/2024 6:54 PM	19:44	7.19 pH	13.30 °C	1.45 mS/cm	0.18 mg/L	9.29 NTU	-64.8 mV	20.00 ft	200.00 ml/min
4/3/2024 6:56 PM	20:58	7.18 pH	13.29 °C	1.45 mS/cm	0.17 mg/L	8.81 NTU	-65.7 mV	20.00 ft	200.00 ml/min
4/3/2024 6:57 PM	22:12	7.19 pH	13.28 °C	1.45 mS/cm	0.16 mg/L	6.02 NTU	-66.5 mV	20.00 ft	200.00 ml/min
4/3/2024 6:58 PM	23:26	7.19 pH	13.28 °C	1.45 mS/cm	0.15 mg/L	5.08 NTU	-67.4 mV	20.00 ft	200.00 ml/min
4/3/2024 6:59 PM	24:40	7.19 pH	13.29 °C	1.45 mS/cm	0.14 mg/L	4.15 NTU	-68.1 mV	20.00 ft	200.00 ml/min
4/3/2024 7:00 PM	25:02	7.19 pH	13.28 °C	1.45 mS/cm	0.14 mg/L	4.28 NTU	-68.3 mV	20.00 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-133-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid

Low-Flow Test Report:

Test Date / Time: 4/3/2024 4:34:31 PM
Project: WSEC MW-156D
Operator Name: Paige Richards

Location Name: MW-156D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 16.5 ft** **Total Depth: 31.5 ft** **Initial Depth to Water: 25.22 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 27.5 ft** **Pump Intake From TOC: 29.5 ft** **Estimated Total Volume Pumped: 4457.5 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 809048**

Test Notes:
Sample time: 1725

Weather Conditions:
Sunny, windy, 53 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 4:34 PM	00:00	7.07 pH	13.50 °C	1.08 mS/cm	0.17 mg/L	14.61 NTU	-58.8 mV	25.22 ft	150.00 ml/min
4/3/2024 4:36 PM	02:18	7.06 pH	13.31 °C	1.08 mS/cm	0.22 mg/L	13.48 NTU	-70.8 mV	25.22 ft	150.00 ml/min
4/3/2024 4:38 PM	04:25	7.10 pH	13.30 °C	1.08 mS/cm	0.21 mg/L	64.43 NTU	-79.2 mV	25.22 ft	150.00 ml/min
4/3/2024 4:41 PM	06:43	7.05 pH	13.09 °C	1.08 mS/cm	0.20 mg/L	10.53 NTU	-84.5 mV	25.22 ft	150.00 ml/min
4/3/2024 4:43 PM	09:01	7.05 pH	12.85 °C	1.08 mS/cm	0.17 mg/L	9.84 NTU	-88.5 mV	25.22 ft	150.00 ml/min
4/3/2024 4:45 PM	11:19	7.05 pH	13.01 °C	1.08 mS/cm	0.15 mg/L	9.37 NTU	-91.3 mV	25.22 ft	150.00 ml/min
4/3/2024 4:48 PM	13:37	7.05 pH	12.93 °C	1.08 mS/cm	0.14 mg/L	7.53 NTU	-93.8 mV	25.22 ft	150.00 ml/min
4/3/2024 4:50 PM	15:55	7.04 pH	12.98 °C	1.08 mS/cm	0.12 mg/L	12.83 NTU	-95.8 mV	25.22 ft	150.00 ml/min
4/3/2024 4:52 PM	18:13	7.05 pH	12.86 °C	1.08 mS/cm	0.12 mg/L	7.29 NTU	-97.4 mV	25.22 ft	150.00 ml/min
4/3/2024 4:55 PM	20:31	7.05 pH	12.88 °C	1.08 mS/cm	0.12 mg/L	7.74 NTU	-98.4 mV	25.22 ft	150.00 ml/min
4/3/2024 4:57 PM	22:49	7.05 pH	12.73 °C	1.08 mS/cm	0.11 mg/L	6.61 NTU	-99.1 mV	25.22 ft	150.00 ml/min

4/3/2024 4:59 PM	25:07	7.05 pH	12.70 °C	1.08 mS/cm	0.10 mg/L	7.38 NTU	-100.4 mV	25.22 ft	150.00 ml/min
4/3/2024 5:01 PM	27:25	7.06 pH	12.79 °C	1.08 mS/cm	0.09 mg/L	9.26 NTU	-101.4 mV	25.22 ft	150.00 ml/min
4/3/2024 5:04 PM	29:43	7.05 pH	12.83 °C	1.08 mS/cm	0.09 mg/L	2.58 NTU	-102.1 mV	25.22 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW156D-GW-0424	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 4/3/2024 3:04:49 PM
Project: WSEC MW-158
Operator Name: Paige Richards

Location Name: MW-158 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.35 ft** **Total Depth: 25.35 ft** **Initial Depth to Water: 23.99 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.77 ft** **Pump Intake From TOC: 23.6 ft** **Estimated Total Volume Pumped: 14000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 400 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 809048**

Test Notes:
Sample time: 1600

DTW below pump, DTW after sample collection: 22.74ft

Weather Conditions:
Sunny, windy, 52 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 3:04 PM	00:00	6.74 pH	14.36 °C	1.49 mS/cm	1.53 mg/L	58.89 NTU	71.8 mV	23.99 ft	400.00 ml/min
4/3/2024 3:07 PM	02:20	6.78 pH	14.08 °C	1.50 mS/cm	0.26 mg/L	38.56 NTU	68.0 mV	23.99 ft	400.00 ml/min
4/3/2024 3:09 PM	04:40	6.76 pH	14.06 °C	1.50 mS/cm	0.18 mg/L	38.08 NTU	68.0 mV	23.99 ft	400.00 ml/min
4/3/2024 3:11 PM	07:00	6.74 pH	14.04 °C	1.50 mS/cm	0.19 mg/L	24.62 NTU	67.1 mV	23.99 ft	400.00 ml/min
4/3/2024 3:14 PM	09:20	6.73 pH	13.88 °C	1.50 mS/cm	0.14 mg/L	14.36 NTU	66.4 mV	23.99 ft	400.00 ml/min
4/3/2024 3:16 PM	11:40	6.73 pH	13.93 °C	1.51 mS/cm	0.15 mg/L	13.62 NTU	66.8 mV	23.99 ft	400.00 ml/min
4/3/2024 3:18 PM	14:00	6.72 pH	13.97 °C	1.50 mS/cm	0.14 mg/L	12.62 NTU	65.1 mV	23.99 ft	400.00 ml/min
4/3/2024 3:21 PM	16:20	6.73 pH	13.84 °C	1.50 mS/cm	0.15 mg/L	18.06 NTU	64.3 mV	23.99 ft	400.00 ml/min
4/3/2024 3:23 PM	18:40	6.73 pH	13.95 °C	1.50 mS/cm	0.14 mg/L	8.31 NTU	63.7 mV	23.99 ft	400.00 ml/min
4/3/2024 3:25 PM	21:00	6.75 pH	13.84 °C	1.50 mS/cm	0.15 mg/L	7.22 NTU	62.9 mV	23.99 ft	400.00 ml/min

4/3/2024 3:28 PM	23:20	6.74 pH	13.91 °C	1.51 mS/cm	0.15 mg/L	7.85 NTU	62.1 mV	23.99 ft	400.00 ml/min
4/3/2024 3:30 PM	25:40	6.75 pH	13.89 °C	1.51 mS/cm	0.14 mg/L	6.29 NTU	61.6 mV	23.99 ft	400.00 ml/min
4/3/2024 3:32 PM	28:00	6.76 pH	13.94 °C	1.50 mS/cm	0.15 mg/L	11.26 NTU	61.2 mV	23.99 ft	400.00 ml/min
4/3/2024 3:35 PM	30:20	6.76 pH	13.90 °C	1.51 mS/cm	0.15 mg/L	10.18 NTU	60.5 mV	23.99 ft	400.00 ml/min
4/3/2024 3:37 PM	32:40	6.77 pH	13.89 °C	1.50 mS/cm	0.15 mg/L	7.12 NTU	60.4 mV	23.99 ft	400.00 ml/min
4/3/2024 3:39 PM	35:00	6.77 pH	13.89 °C	1.50 mS/cm	0.15 mg/L	2.89 NTU	60.1 mV	23.99 ft	400.00 ml/min

Samples

Sample ID:	Description:
MW158-GW-0424	1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 4/3/2024 1:21:26 PM
Project: WSEC MW-159
Operator Name: Paige Richards

Location Name: MW-159 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.3 ft** **Total Depth: 25.3 ft** **Initial Depth to Water: 22.66 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 22.26 ft** **Pump Intake From TOC: 24.1 ft** **Estimated Total Volume Pumped: 6533.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 809048**

Test Notes:
Sample time: 1500

DTW below pump, DTW after sample collection: 22.45ft

Weather Conditions:
Sunny, 48 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 1:21 PM	00:00	6.83 pH	14.30 °C	1.12 mS/cm	5.77 mg/L	21.12 NTU	55.2 mV	22.66 ft	100.00 ml/min
4/3/2024 1:23 PM	02:20	6.85 pH	14.56 °C	1.13 mS/cm	3.14 mg/L	25.29 NTU	50.7 mV	22.66 ft	100.00 ml/min
4/3/2024 1:26 PM	04:40	6.84 pH	14.80 °C	1.13 mS/cm	2.47 mg/L	16.30 NTU	48.9 mV	22.66 ft	100.00 ml/min
4/3/2024 1:28 PM	07:00	6.86 pH	14.92 °C	1.14 mS/cm	2.33 mg/L	9.98 NTU	46.7 mV	22.66 ft	100.00 ml/min
4/3/2024 1:30 PM	09:20	6.87 pH	15.20 °C	1.14 mS/cm	2.11 mg/L	5.72 NTU	45.2 mV	22.66 ft	100.00 ml/min
4/3/2024 1:33 PM	11:40	6.84 pH	14.96 °C	1.14 mS/cm	1.99 mg/L	17.08 NTU	47.4 mV	22.66 ft	100.00 ml/min
4/3/2024 1:35 PM	14:00	6.86 pH	14.76 °C	1.14 mS/cm	1.96 mg/L	11.68 NTU	45.6 mV	22.66 ft	100.00 ml/min
4/3/2024 1:37 PM	16:20	6.88 pH	14.87 °C	1.14 mS/cm	1.99 mg/L	10.12 NTU	45.7 mV	22.66 ft	100.00 ml/min
4/3/2024 1:40 PM	18:40	6.82 pH	14.93 °C	1.14 mS/cm	2.02 mg/L	9.55 NTU	48.6 mV	22.66 ft	100.00 ml/min
4/3/2024 1:42 PM	21:00	6.87 pH	14.75 °C	1.14 mS/cm	2.02 mg/L	9.06 NTU	45.6 mV	22.66 ft	100.00 ml/min

4/3/2024 1:44 PM	23:20	6.88 pH	15.01 °C	1.14 mS/cm	1.95 mg/L	8.84 NTU	45.2 mV	22.66 ft	100.00 ml/min
4/3/2024 1:47 PM	25:40	6.88 pH	15.25 °C	1.14 mS/cm	1.95 mg/L	8.40 NTU	45.5 mV	22.66 ft	100.00 ml/min
4/3/2024 1:49 PM	28:00	6.87 pH	15.28 °C	1.14 mS/cm	1.96 mg/L	7.55 NTU	46.0 mV	22.66 ft	100.00 ml/min
4/3/2024 1:51 PM	30:20	6.89 pH	15.33 °C	1.14 mS/cm	2.05 mg/L	7.28 NTU	45.0 mV	22.66 ft	100.00 ml/min
4/3/2024 1:54 PM	32:40	6.90 pH	15.32 °C	1.14 mS/cm	1.88 mg/L	7.37 NTU	45.3 mV	22.66 ft	100.00 ml/min
4/3/2024 1:56 PM	35:00	6.86 pH	15.57 °C	1.14 mS/cm	1.94 mg/L	8.82 NTU	45.6 mV	22.66 ft	100.00 ml/min
4/3/2024 1:58 PM	37:20	6.89 pH	15.43 °C	1.14 mS/cm	1.92 mg/L	7.09 NTU	45.9 mV	22.66 ft	100.00 ml/min
4/3/2024 2:01 PM	39:40	6.90 pH	15.51 °C	1.14 mS/cm	1.93 mg/L	6.77 NTU	44.6 mV	22.66 ft	100.00 ml/min
4/3/2024 2:03 PM	42:00	6.86 pH	15.65 °C	1.14 mS/cm	1.89 mg/L	6.62 NTU	46.8 mV	22.66 ft	100.00 ml/min
4/3/2024 2:05 PM	44:20	6.89 pH	15.41 °C	1.14 mS/cm	1.98 mg/L	6.49 NTU	45.5 mV	22.66 ft	100.00 ml/min
4/3/2024 2:08 PM	46:40	6.90 pH	15.34 °C	1.14 mS/cm	1.89 mg/L	6.49 NTU	44.8 mV	22.66 ft	100.00 ml/min
4/3/2024 2:10 PM	49:00	6.87 pH	15.46 °C	1.14 mS/cm	1.88 mg/L	6.88 NTU	47.9 mV	22.66 ft	100.00 ml/min
4/3/2024 2:12 PM	51:20	6.89 pH	15.30 °C	1.14 mS/cm	1.86 mg/L	7.24 NTU	46.0 mV	22.66 ft	100.00 ml/min
4/3/2024 2:15 PM	53:40	6.90 pH	15.31 °C	1.14 mS/cm	1.82 mg/L	7.61 NTU	45.3 mV	22.66 ft	100.00 ml/min
4/3/2024 2:17 PM	56:00	6.85 pH	14.67 °C	1.14 mS/cm	1.93 mg/L	7.81 NTU	49.5 mV	22.66 ft	100.00 ml/min
4/3/2024 2:19 PM	58:20	6.90 pH	14.96 °C	1.14 mS/cm	1.86 mg/L	7.99 NTU	47.3 mV	22.66 ft	100.00 ml/min
4/3/2024 2:22 PM	01:00:40	6.90 pH	15.21 °C	1.14 mS/cm	1.82 mg/L	8.14 NTU	46.4 mV	22.66 ft	100.00 ml/min
4/3/2024 2:24 PM	01:03:00	6.91 pH	15.39 °C	1.14 mS/cm	1.84 mg/L	8.63 NTU	45.6 mV	22.66 ft	100.00 ml/min
4/3/2024 2:26 PM	01:05:20	6.88 pH	15.27 °C	1.14 mS/cm	1.82 mg/L	5.70 NTU	46.9 mV	22.66 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW159-GW-0424	1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 4/3/2024 12:10:32 PM
Project: WSEC MW-190
Operator Name: Paige Richards

Location Name: MW-190 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 17.24 ft** **Total Depth: 27.24 ft** **Initial Depth to Water: 23.95 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.84 ft** **Pump Intake From TOC: 25.7 ft** **Estimated Total Volume Pumped: 2056.25 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 125 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 809048**

Test Notes:
Sample time: 1255

Weather Conditions:
Partly cloudy, windy, 45 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 12:10 PM	00:00	6.82 pH	12.86 °C	1.03 mS/cm	1.32 mg/L	60.82 NTU	46.4 mV	23.95 ft	125.00 ml/min
4/3/2024 12:12 PM	02:21	6.87 pH	12.83 °C	1.04 mS/cm	0.49 mg/L	44.90 NTU	45.9 mV	23.95 ft	125.00 ml/min
4/3/2024 12:15 PM	04:42	6.87 pH	12.99 °C	1.04 mS/cm	0.30 mg/L	21.40 NTU	45.5 mV	23.95 ft	125.00 ml/min
4/3/2024 12:17 PM	07:03	6.89 pH	12.83 °C	1.04 mS/cm	0.27 mg/L	14.77 NTU	46.2 mV	23.95 ft	125.00 ml/min
4/3/2024 12:19 PM	09:24	6.88 pH	12.84 °C	1.04 mS/cm	0.25 mg/L	11.90 NTU	44.3 mV	23.95 ft	125.00 ml/min
4/3/2024 12:22 PM	11:45	6.89 pH	12.95 °C	1.05 mS/cm	0.24 mg/L	7.07 NTU	44.8 mV	23.95 ft	125.00 ml/min
4/3/2024 12:24 PM	14:06	6.89 pH	12.94 °C	1.04 mS/cm	0.24 mg/L	5.02 NTU	44.0 mV	23.95 ft	125.00 ml/min
4/3/2024 12:26 PM	16:27	6.90 pH	12.90 °C	1.05 mS/cm	0.25 mg/L	2.79 NTU	43.2 mV	23.95 ft	125.00 ml/min

Samples

Sample ID:	Description:

MW190-GW-0424	1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 4/4/2024 8:17:36 AM
Project: WSEC MW-227D
Operator Name: Brooke Wasson

Location Name: MW-227D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 17.65 ft** **Total Depth: 32.65 ft** **Initial Depth to Water: 25.24 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 28.65 ft** **Pump Intake From TOC: 30.65 ft** **Estimated Total Volume Pumped: 7000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.01 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 0855

Weather Conditions:
33 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/4/2024 8:17 AM	00:00	7.10 pH	9.79 °C	1.12 mS/cm	10.20 mg/L	205.42 NTU	196.0 mV	25.24 ft	200.00 ml/min
4/4/2024 8:19 AM	02:20	7.07 pH	11.11 °C	1.07 mS/cm	1.64 mg/L	78.86 NTU	165.3 mV	25.25 ft	200.00 ml/min
4/4/2024 8:22 AM	04:40	7.13 pH	11.06 °C	1.06 mS/cm	1.64 mg/L	38.94 NTU	130.3 mV	25.25 ft	200.00 ml/min
4/4/2024 8:24 AM	07:00	7.15 pH	11.23 °C	1.06 mS/cm	1.58 mg/L	35.51 NTU	65.9 mV	25.25 ft	200.00 ml/min
4/4/2024 8:26 AM	09:20	7.16 pH	11.19 °C	1.06 mS/cm	1.59 mg/L	30.76 NTU	21.7 mV	25.25 ft	200.00 ml/min
4/4/2024 8:29 AM	11:40	7.15 pH	11.35 °C	1.06 mS/cm	1.61 mg/L	28.95 NTU	-0.3 mV	25.25 ft	200.00 ml/min
4/4/2024 8:31 AM	14:00	7.16 pH	11.43 °C	1.06 mS/cm	1.58 mg/L	23.75 NTU	-13.7 mV	25.25 ft	200.00 ml/min
4/4/2024 8:33 AM	16:20	7.17 pH	11.33 °C	1.06 mS/cm	1.57 mg/L	17.09 NTU	-22.6 mV	25.25 ft	200.00 ml/min
4/4/2024 8:36 AM	18:40	7.18 pH	11.29 °C	1.06 mS/cm	1.58 mg/L	2,054.3 NTU	-28.6 mV	25.25 ft	200.00 ml/min
4/4/2024 8:38 AM	21:00	7.17 pH	11.40 °C	1.06 mS/cm	1.56 mg/L	14.64 NTU	-32.3 mV	25.25 ft	200.00 ml/min
4/4/2024 8:40 AM	23:20	7.18 pH	11.35 °C	1.06 mS/cm	1.63 mg/L	12.72 NTU	-35.8 mV	25.25 ft	200.00 ml/min

4/4/2024 8:43 AM	25:40	7.18 pH	11.42 °C	1.06 mS/cm	1.59 mg/L	8.34 NTU	-38.4 mV	25.25 ft	200.00 ml/min
4/4/2024 8:45 AM	28:00	7.16 pH	11.49 °C	1.06 mS/cm	1.56 mg/L	7.48 NTU	-39.3 mV	25.25 ft	200.00 ml/min
4/4/2024 8:47 AM	30:20	7.18 pH	11.38 °C	1.06 mS/cm	1.61 mg/L	9.62 NTU	-41.8 mV	25.25 ft	200.00 ml/min
4/4/2024 8:50 AM	32:40	7.19 pH	11.44 °C	1.07 mS/cm	1.60 mg/L	5.61 NTU	-43.0 mV	25.25 ft	200.00 ml/min
4/4/2024 8:52 AM	35:00	7.17 pH	11.50 °C	1.07 mS/cm	1.62 mg/L	4.23 NTU	-43.5 mV	25.25 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW227D-GW-0424	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 4/4/2024 8:12:53 AM
Project: WSEC MW-240R
Operator Name: Paige Richards

Location Name: MW-240R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 15.36 ft** **Total Depth: 30.36 ft** **Initial Depth to Water: 25.05 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 27.7 ft** **Pump Intake From TOC: 29.6 ft** **Estimated Total Volume Pumped: 4680 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 809048**

Test Notes:
Sample time: 0850

Weather Conditions:
Sunny, 33 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/4/2024 8:12 AM	00:00	5.68 pH	11.89 °C	0.01 mS/cm	10.05 mg/L	0.00 NTU	145.9 mV	25.05 ft	450.00 ml/min
4/4/2024 8:15 AM	02:24	5.71 pH	12.31 °C	0.00 mS/cm	9.04 mg/L	0.00 NTU	137.1 mV	25.05 ft	300.00 ml/min
4/4/2024 8:17 AM	04:48	5.68 pH	12.30 °C	0.01 mS/cm	7.89 mg/L	0.00 NTU	106.7 mV	25.05 ft	300.00 ml/min
4/4/2024 8:20 AM	07:12	6.69 pH	11.92 °C	1.24 mS/cm	0.71 mg/L	1.82 NTU	66.9 mV	25.05 ft	300.00 ml/min
4/4/2024 8:22 AM	09:36	6.77 pH	11.99 °C	1.24 mS/cm	0.46 mg/L	0.00 NTU	64.0 mV	25.05 ft	300.00 ml/min
4/4/2024 8:24 AM	12:00	6.79 pH	11.90 °C	1.24 mS/cm	0.46 mg/L	0.00 NTU	61.6 mV	25.05 ft	300.00 ml/min
4/4/2024 8:27 AM	14:24	6.82 pH	12.04 °C	1.24 mS/cm	0.42 mg/L	0.00 NTU	58.6 mV	25.05 ft	300.00 ml/min

Samples

Sample ID:	Description:

MW240R-GW-0424	1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1
DP04-GW-0424	

Low-Flow Test Report:

Test Date / Time: 4/3/2024 3:11:40 PM
Project: WSEC MW-244 (5)
Operator Name: Paige LaPlant

Location Name: MW-244 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 16.9 ft** **Total Depth: 31.9 ft** **Initial Depth to Water: 27.23 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 28.82 ft** **Pump Intake From TOC: 30.7 ft** **Estimated Total Volume Pumped: 3141.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0.09 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1525

Weather Conditions:
52 degrees F sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 3:11 PM	00:00	6.85 pH	17.95 °C	1.73 mS/cm	4.06 mg/L	9.66 NTU	0.1 mV	27.23 ft	100.00 ml/min
4/3/2024 3:14 PM	02:25	6.80 pH	13.35 °C	1.21 mS/cm	2.50 mg/L	68.12 NTU	9.5 mV	27.32 ft	300.00 ml/min
4/3/2024 3:16 PM	04:50	7.10 pH	13.35 °C	1.23 mS/cm	0.39 mg/L	5.57 NTU	-74.5 mV	27.32 ft	300.00 ml/min
4/3/2024 3:18 PM	07:15	7.12 pH	13.27 °C	1.23 mS/cm	0.29 mg/L	1.51 NTU	-102.1 mV	27.32 ft	300.00 ml/min
4/3/2024 3:21 PM	09:40	7.13 pH	13.26 °C	1.23 mS/cm	0.24 mg/L	2.12 NTU	-110.2 mV	27.32 ft	300.00 ml/min
4/3/2024 3:23 PM	12:05	7.13 pH	13.21 °C	1.23 mS/cm	0.20 mg/L	0.04 NTU	-114.2 mV	27.32 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW244-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid

Low-Flow Test Report:

Test Date / Time: 4/3/2024 12:22:00 PM
Project: WSEC MW-245 (4)
Operator Name: Paige LaPlant

Location Name: MW-245 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18.8 ft** **Total Depth: 33.8 ft** **Initial Depth to Water: 31.94 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.95 ft** **Pump Intake From TOC: 32.8 ft** **Estimated Total Volume Pumped: 13153.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1405
Collected MS/MSD

Weather Conditions:
44 degrees F mostly sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 12:22 PM	00:00	6.99 pH	12.79 °C	1.67 mS/cm	7.31 mg/L	38.43 NTU	57.6 mV	31.94 ft	200.00 ml/min
4/3/2024 12:24 PM	02:26	6.84 pH	13.88 °C	1.70 mS/cm	4.95 mg/L	19.46 NTU	76.3 mV	31.94 ft	200.00 ml/min
4/3/2024 12:26 PM	04:52	6.85 pH	14.74 °C	1.70 mS/cm	5.23 mg/L	16.44 NTU	76.4 mV	31.94 ft	200.00 ml/min
4/3/2024 12:29 PM	07:18	6.88 pH	15.36 °C	1.70 mS/cm	5.02 mg/L	17.19 NTU	73.6 mV	31.94 ft	200.00 ml/min
4/3/2024 12:31 PM	09:44	6.87 pH	15.41 °C	1.70 mS/cm	4.64 mg/L	16.45 NTU	70.4 mV	31.94 ft	200.00 ml/min
4/3/2024 12:34 PM	12:10	6.87 pH	15.69 °C	1.70 mS/cm	4.85 mg/L	14.93 NTU	65.9 mV	31.94 ft	200.00 ml/min
4/3/2024 12:36 PM	14:36	6.88 pH	15.98 °C	1.70 mS/cm	5.08 mg/L	15.30 NTU	61.7 mV	31.94 ft	200.00 ml/min
4/3/2024 12:48 PM	26:50	6.85 pH	13.34 °C	1.68 mS/cm	3.66 mg/L	15.67 NTU	50.9 mV	31.94 ft	200.00 ml/min
4/3/2024 12:51 PM	29:16	6.80 pH	13.64 °C	1.67 mS/cm	3.63 mg/L	4.31 NTU	50.2 mV	31.94 ft	200.00 ml/min
4/3/2024 12:53 PM	31:42	6.80 pH	14.01 °C	1.63 mS/cm	3.36 mg/L	13.36 NTU	49.5 mV	31.94 ft	100.00 ml/min
4/3/2024 12:56 PM	34:08	6.84 pH	13.97 °C	1.51 mS/cm	2.56 mg/L	3.94 NTU	46.6 mV	31.94 ft	100.00 ml/min

4/3/2024 12:58 PM	36:34	6.85 pH	13.88 °C	1.48 mS/cm	1.91 mg/L	2.23 NTU	42.1 mV	31.94 ft	100.00 ml/min
4/3/2024 1:01 PM	39:00	6.87 pH	14.13 °C	1.38 mS/cm	1.84 mg/L	12.31 NTU	35.4 mV	31.94 ft	100.00 ml/min
4/3/2024 1:03 PM	41:26	6.83 pH	14.08 °C	1.67 mS/cm	4.22 mg/L	11.22 NTU	33.4 mV	31.94 ft	100.00 ml/min
4/3/2024 1:05 PM	43:52	6.82 pH	13.97 °C	1.59 mS/cm	4.43 mg/L	7.13 NTU	30.8 mV	31.94 ft	100.00 ml/min
4/3/2024 1:08 PM	46:18	6.82 pH	13.74 °C	1.13 mS/cm	4.42 mg/L	7.21 NTU	28.1 mV	31.94 ft	100.00 ml/min
4/3/2024 1:10 PM	48:44	6.83 pH	13.90 °C	1.69 mS/cm	4.35 mg/L	6.36 NTU	25.3 mV	31.94 ft	100.00 ml/min
4/3/2024 1:13 PM	51:10	6.83 pH	13.90 °C	1.71 mS/cm	4.37 mg/L	3.95 NTU	22.9 mV	31.94 ft	100.00 ml/min
4/3/2024 1:15 PM	53:36	6.83 pH	13.99 °C	1.59 mS/cm	4.46 mg/L	3.81 NTU	20.6 mV	31.94 ft	100.00 ml/min
4/3/2024 1:18 PM	56:02	6.83 pH	14.27 °C	1.52 mS/cm	4.42 mg/L	2.53 NTU	18.2 mV	31.94 ft	100.00 ml/min
4/3/2024 1:20 PM	58:28	6.84 pH	14.11 °C	1.69 mS/cm	4.41 mg/L	0.96 NTU	16.3 mV	31.94 ft	100.00 ml/min
4/3/2024 1:22 PM	01:00:54	6.84 pH	13.96 °C	1.65 mS/cm	4.42 mg/L	2.50 NTU	14.8 mV	31.94 ft	100.00 ml/min
4/3/2024 1:25 PM	01:03:20	6.84 pH	14.20 °C	1.56 mS/cm	4.38 mg/L	1.38 NTU	13.4 mV	31.94 ft	100.00 ml/min
4/3/2024 1:27 PM	01:05:46	6.84 pH	14.21 °C	1.56 mS/cm	4.39 mg/L	0.71 NTU	12.1 mV	31.94 ft	100.00 ml/min
4/3/2024 1:30 PM	01:08:12	6.84 pH	14.32 °C	1.66 mS/cm	4.40 mg/L	0.37 NTU	10.8 mV	31.94 ft	100.00 ml/min
4/3/2024 1:32 PM	01:10:38	6.84 pH	14.18 °C	1.42 mS/cm	4.39 mg/L	0.19 NTU	9.9 mV	31.94 ft	100.00 ml/min
4/3/2024 1:35 PM	01:13:04	6.84 pH	14.41 °C	1.52 mS/cm	4.37 mg/L	0.30 NTU	8.8 mV	31.94 ft	100.00 ml/min
4/3/2024 1:37 PM	01:15:30	6.84 pH	14.45 °C	1.58 mS/cm	4.37 mg/L	0.31 NTU	8.1 mV	31.94 ft	100.00 ml/min
4/3/2024 1:39 PM	01:17:56	6.84 pH	14.33 °C	1.59 mS/cm	4.36 mg/L	0.00 NTU	7.4 mV	31.94 ft	100.00 ml/min
4/3/2024 1:42 PM	01:20:22	6.84 pH	14.56 °C	1.49 mS/cm	4.29 mg/L	0.00 NTU	6.7 mV	31.94 ft	100.00 ml/min
4/3/2024 1:44 PM	01:22:48	6.84 pH	14.62 °C	1.52 mS/cm	4.35 mg/L	0.14 NTU	6.0 mV	31.94 ft	100.00 ml/min
4/3/2024 1:47 PM	01:25:14	6.84 pH	14.66 °C	1.56 mS/cm	4.34 mg/L	0.00 NTU	5.4 mV	31.94 ft	100.00 ml/min
4/3/2024 1:49 PM	01:27:40	6.84 pH	14.51 °C	1.51 mS/cm	4.37 mg/L	0.81 NTU	5.2 mV	31.94 ft	100.00 ml/min
4/3/2024 1:52 PM	01:30:06	6.84 pH	14.91 °C	1.63 mS/cm	4.34 mg/L	0.00 NTU	4.2 mV	31.94 ft	100.00 ml/min
4/3/2024 1:54 PM	01:32:32	6.84 pH	14.88 °C	1.49 mS/cm	4.34 mg/L	0.00 NTU	3.7 mV	31.94 ft	100.00 ml/min
4/3/2024 1:56 PM	01:34:58	6.84 pH	14.64 °C	1.72 mS/cm	4.32 mg/L	0.10 NTU	3.5 mV	31.94 ft	100.00 ml/min
4/3/2024 1:59 PM	01:37:24	6.84 pH	14.36 °C	1.72 mS/cm	4.30 mg/L	0.00 NTU	3.2 mV	31.94 ft	100.00 ml/min
4/3/2024 2:01 PM	01:39:50	6.84 pH	14.13 °C	1.73 mS/cm	4.32 mg/L	0.00 NTU	3.2 mV	31.94 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW245-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid
MW245-GW-0424-MS2	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid
MW245-GW-0424-MSD2	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid

Low-Flow Test Report:

Test Date / Time: 4/3/2024 3:42:01 PM
Project: WSEC MW-246 (4)
Operator Name: Paige LaPlant

Location Name: MW-246 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18 ft** **Total Depth: 33 ft** **Initial Depth to Water: 30.97 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.68 ft** **Pump Intake From TOC: 32.6 ft** **Estimated Total Volume Pumped: 2433.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1555

Weather Conditions:
52 degrees F sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 3:42 PM	00:00	6.87 pH	13.09 °C	1.34 mS/cm	3.51 mg/L	21.62 NTU	-7.4 mV	30.97 ft	200.00 ml/min
4/3/2024 3:44 PM	02:26	6.95 pH	13.20 °C	1.30 mS/cm	0.40 mg/L	15.56 NTU	-14.3 mV	30.97 ft	200.00 ml/min
4/3/2024 3:46 PM	04:52	6.99 pH	13.10 °C	1.30 mS/cm	0.19 mg/L	9.17 NTU	-22.7 mV	30.97 ft	200.00 ml/min
4/3/2024 3:49 PM	07:18	6.99 pH	13.20 °C	1.30 mS/cm	0.13 mg/L	2.77 NTU	-29.1 mV	30.97 ft	200.00 ml/min
4/3/2024 3:51 PM	09:44	6.99 pH	13.26 °C	1.30 mS/cm	0.10 mg/L	4.04 NTU	-33.9 mV	30.97 ft	200.00 ml/min
4/3/2024 3:54 PM	12:10	6.99 pH	13.37 °C	1.30 mS/cm	0.09 mg/L	0.00 NTU	-37.7 mV	30.97 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW246-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 4/3/2024 4:12:00 PM
Project: WSEC MW-247
Operator Name: Brooke Wasson

Location Name: MW-247 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18.2 ft** **Total Depth: 33.2 ft** **Initial Depth to Water: 29.73 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.46 ft** **Pump Intake From TOC: 32.3 ft** **Estimated Total Volume Pumped: 1946.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1625

Weather Conditions:
52 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 4:12 PM	00:00	7.02 pH	12.86 °C	1.20 mS/cm	3.61 mg/L	5.02 NTU	6.3 mV	29.73 ft	200.00 ml/min
4/3/2024 4:14 PM	02:26	6.97 pH	13.25 °C	1.24 mS/cm	0.27 mg/L	9.95 NTU	5.5 mV	29.73 ft	200.00 ml/min
4/3/2024 4:16 PM	04:52	6.98 pH	13.32 °C	1.23 mS/cm	0.05 mg/L	2.93 NTU	4.4 mV	29.73 ft	200.00 ml/min
4/3/2024 4:19 PM	07:18	6.98 pH	13.24 °C	1.24 mS/cm	0.02 mg/L	8.70 NTU	3.9 mV	29.73 ft	200.00 ml/min
4/3/2024 4:21 PM	09:44	6.97 pH	13.06 °C	1.23 mS/cm	0.00 mg/L	4.75 NTU	3.5 mV	29.73 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-247-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid

Low-Flow Test Report:

Test Date / Time: 4/3/2024 4:39:59 PM
Project: WSEC MW-248 (5)
Operator Name: Paige LaPlant

Location Name: MW-248 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 29.1 ft** **Total Depth: 34.1 ft** **Initial Depth to Water: 30.17 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 31.24 ft** **Pump Intake From TOC: 33.1 ft** **Estimated Total Volume Pumped: 6370 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.02 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1715

Weather Conditions:
53 degrees F sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 4:39 PM	00:00	7.31 pH	12.86 °C	1.01 mS/cm	3.99 mg/L	62.97 NTU	6.2 mV	30.17 ft	200.00 ml/min
4/3/2024 4:42 PM	02:27	7.09 pH	13.28 °C	1.08 mS/cm	0.32 mg/L	25.95 NTU	9.9 mV	30.20 ft	200.00 ml/min
4/3/2024 4:44 PM	04:54	7.13 pH	13.26 °C	1.08 mS/cm	0.10 mg/L	47.90 NTU	-12.0 mV	30.20 ft	200.00 ml/min
4/3/2024 4:47 PM	07:21	7.14 pH	13.26 °C	1.08 mS/cm	0.05 mg/L	46.17 NTU	-29.4 mV	30.19 ft	200.00 ml/min
4/3/2024 4:49 PM	09:48	7.14 pH	13.29 °C	1.08 mS/cm	0.03 mg/L	36.56 NTU	-40.5 mV	30.19 ft	200.00 ml/min
4/3/2024 4:52 PM	12:15	7.15 pH	13.27 °C	1.08 mS/cm	0.02 mg/L	22.41 NTU	-47.7 mV	30.19 ft	200.00 ml/min
4/3/2024 4:54 PM	14:42	7.15 pH	13.23 °C	1.08 mS/cm	0.02 mg/L	17.03 NTU	-52.4 mV	30.19 ft	200.00 ml/min
4/3/2024 4:57 PM	17:09	7.15 pH	13.13 °C	1.08 mS/cm	0.01 mg/L	14.75 NTU	-55.7 mV	30.19 ft	200.00 ml/min
4/3/2024 4:59 PM	19:36	7.14 pH	13.19 °C	1.09 mS/cm	0.01 mg/L	12.62 NTU	-58.2 mV	30.19 ft	200.00 ml/min
4/3/2024 5:02 PM	22:03	7.15 pH	13.19 °C	1.08 mS/cm	0.02 mg/L	14.29 NTU	-60.3 mV	30.19 ft	200.00 ml/min
4/3/2024 5:04 PM	24:30	7.15 pH	13.22 °C	1.09 mS/cm	0.01 mg/L	6.57 NTU	-62.1 mV	30.19 ft	200.00 ml/min
4/3/2024 5:06 PM	26:57	7.15 pH	13.22 °C	1.09 mS/cm	0.01 mg/L	6.67 NTU	-63.4 mV	30.19 ft	200.00 ml/min

4/3/2024 5:09 PM	29:24	7.14 pH	13.22 °C	1.09 mS/cm	0.01 mg/L	5.27 NTU	-64.5 mV	30.19 ft	200.00 ml/min
4/3/2024 5:11 PM	31:51	7.14 pH	13.27 °C	1.09 mS/cm	0.01 mg/L	4.49 NTU	-65.5 mV	30.19 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-248-GW-0424	1 plastic 1 liter unpreserved 1 plastic 250mL unpreserved 1 plastic 250mL nitric acid

Low-Flow Test Report:

Test Date / Time: 4/3/2024 5:39:21 PM
Project: WSEC MW-250
Operator Name: Paige Richards

Location Name: MW-250 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 15.8 ft** **Total Depth: 30.8 ft** **Initial Depth to Water: 27.55 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 27.05 ft** **Pump Intake From TOC: 28.9 ft** **Estimated Total Volume Pumped: 2400 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 250 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 809048**

Test Notes:
Sample time: 1815

DTW below pump, DTW after sample collection: 27.29ft

Weather Conditions:
Sunny, windy, 55 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/3/2024 5:39 PM	00:00	6.81 pH	13.67 °C	0.00 mS/cm	6.02 mg/L	0.00 NTU	33.3 mV	27.55 ft	250.00 ml/min
4/3/2024 5:41 PM	02:24	6.77 pH	13.68 °C	0.00 mS/cm	5.85 mg/L	0.00 NTU	32.4 mV	27.55 ft	250.00 ml/min
4/3/2024 5:44 PM	04:48	6.75 pH	13.60 °C	0.00 mS/cm	5.87 mg/L	0.00 NTU	33.1 mV	27.55 ft	250.00 ml/min
4/3/2024 5:46 PM	07:12	6.73 pH	13.56 °C	0.00 mS/cm	5.76 mg/L	0.00 NTU	35.1 mV	27.55 ft	250.00 ml/min
4/3/2024 5:48 PM	09:36	6.75 pH	13.51 °C	0.00 mS/cm	5.81 mg/L	0.00 NTU	37.8 mV	27.55 ft	250.00 ml/min

1.41 mS/cm
(live reading at 1805)

Samples

Sample ID:	Description:
MW250-GW-0424	1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 4/1/2024 1:42:40 PM
Project: WSEC MW-34 (3)
Operator Name: Brooke Wasson

Location Name: MW-34 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 11.57 ft** **Total Depth: 18 ft** **Initial Depth to Water: 11.86 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 15.5 ft** **Pump Intake From TOC: 17 ft** **Estimated Total Volume Pumped: 31970 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.04 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1625

Weather Conditions:
50 degrees F overcast

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/1/2024 1:42 PM	00:00	6.93 pH	12.81 °C	0.88 mS/cm	9.76 mg/L	64.18 NTU	224.9 mV	11.86 ft	200.00 ml/min
4/1/2024 1:43 PM	01:09	6.78 pH	12.20 °C	0.94 mS/cm	5.03 mg/L	1,748.8 NTU	-47.8 mV	11.90 ft	200.00 ml/min
4/1/2024 1:44 PM	02:18	6.78 pH	11.96 °C	0.93 mS/cm	0.40 mg/L	2,015.0 NTU	-73.4 mV	11.90 ft	200.00 ml/min
4/1/2024 1:46 PM	03:27	6.77 pH	11.73 °C	0.92 mS/cm	0.22 mg/L	1,603.0 NTU	-77.7 mV	11.92 ft	200.00 ml/min
4/1/2024 1:47 PM	04:36	6.77 pH	11.78 °C	0.92 mS/cm	0.20 mg/L	1,189.5 NTU	-80.2 mV	11.92 ft	200.00 ml/min
4/1/2024 1:48 PM	05:45	6.78 pH	11.65 °C	0.92 mS/cm	0.20 mg/L	866.35 NTU	-81.7 mV	11.92 ft	200.00 ml/min
4/1/2024 1:49 PM	06:54	6.78 pH	11.68 °C	0.92 mS/cm	0.19 mg/L	683.18 NTU	-82.9 mV	11.92 ft	200.00 ml/min
4/1/2024 1:50 PM	08:03	6.78 pH	11.64 °C	0.92 mS/cm	0.18 mg/L	574.26 NTU	-83.9 mV	11.92 ft	200.00 ml/min
4/1/2024 1:51 PM	09:12	6.79 pH	11.63 °C	0.92 mS/cm	0.18 mg/L	561.04 NTU	-84.4 mV	11.92 ft	200.00 ml/min
4/1/2024 1:53 PM	10:21	6.78 pH	11.67 °C	0.92 mS/cm	0.17 mg/L	474.74 NTU	-84.9 mV	11.92 ft	200.00 ml/min
4/1/2024 1:54 PM	11:30	6.78 pH	11.60 °C	0.92 mS/cm	0.16 mg/L	399.19 NTU	-85.2 mV	11.91 ft	200.00 ml/min

4/1/2024 1:55 PM	12:39	6.79 pH	11.65 °C	0.92 mS/cm	0.13 mg/L	307.19 NTU	-85.7 mV	11.90 ft	200.00 ml/min
4/1/2024 1:56 PM	13:48	6.79 pH	11.60 °C	0.92 mS/cm	0.11 mg/L	282.20 NTU	-86.1 mV	11.90 ft	200.00 ml/min
4/1/2024 1:57 PM	14:57	6.78 pH	11.56 °C	0.92 mS/cm	0.13 mg/L	239.57 NTU	-86.3 mV	11.90 ft	200.00 ml/min
4/1/2024 1:58 PM	16:06	6.79 pH	11.61 °C	0.92 mS/cm	0.10 mg/L	230.36 NTU	-86.7 mV	11.90 ft	200.00 ml/min
4/1/2024 1:59 PM	17:15	6.79 pH	11.58 °C	0.92 mS/cm	0.10 mg/L	212.43 NTU	-87.1 mV	11.90 ft	200.00 ml/min
4/1/2024 2:01 PM	18:24	6.80 pH	11.59 °C	0.92 mS/cm	0.10 mg/L	198.63 NTU	-87.4 mV	11.90 ft	200.00 ml/min
4/1/2024 2:02 PM	19:33	6.80 pH	11.58 °C	0.92 mS/cm	0.08 mg/L	170.67 NTU	-87.8 mV	11.90 ft	200.00 ml/min
4/1/2024 2:03 PM	20:42	6.80 pH	11.59 °C	0.92 mS/cm	0.07 mg/L	150.46 NTU	-88.2 mV	11.90 ft	200.00 ml/min
4/1/2024 2:04 PM	21:51	6.81 pH	11.58 °C	0.92 mS/cm	0.08 mg/L	125.96 NTU	-88.5 mV	11.90 ft	200.00 ml/min
4/1/2024 2:05 PM	23:00	6.81 pH	11.54 °C	0.92 mS/cm	0.07 mg/L	131.70 NTU	-88.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:06 PM	24:09	6.82 pH	11.57 °C	0.92 mS/cm	0.06 mg/L	116.89 NTU	-89.4 mV	11.90 ft	200.00 ml/min
4/1/2024 2:07 PM	25:18	6.82 pH	11.55 °C	0.92 mS/cm	0.05 mg/L	105.31 NTU	-89.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:09 PM	26:27	6.83 pH	11.56 °C	0.92 mS/cm	0.05 mg/L	111.71 NTU	-90.2 mV	11.90 ft	200.00 ml/min
4/1/2024 2:10 PM	27:36	6.83 pH	11.55 °C	0.92 mS/cm	0.05 mg/L	99.39 NTU	-90.7 mV	11.90 ft	200.00 ml/min
4/1/2024 2:11 PM	28:45	6.84 pH	11.53 °C	0.92 mS/cm	0.05 mg/L	96.70 NTU	-91.0 mV	11.90 ft	200.00 ml/min
4/1/2024 2:12 PM	29:54	6.84 pH	11.55 °C	0.92 mS/cm	0.04 mg/L	88.71 NTU	-91.4 mV	11.90 ft	200.00 ml/min
4/1/2024 2:13 PM	31:03	6.85 pH	11.55 °C	0.92 mS/cm	0.04 mg/L	76.33 NTU	-91.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:14 PM	32:12	6.85 pH	11.56 °C	0.92 mS/cm	0.04 mg/L	85.77 NTU	-92.1 mV	11.90 ft	200.00 ml/min
4/1/2024 2:16 PM	33:21	6.86 pH	11.56 °C	0.92 mS/cm	0.04 mg/L	79.44 NTU	-92.5 mV	11.90 ft	200.00 ml/min
4/1/2024 2:17 PM	34:30	6.86 pH	11.55 °C	0.92 mS/cm	0.03 mg/L	81.75 NTU	-92.8 mV	11.90 ft	200.00 ml/min
4/1/2024 2:18 PM	35:39	6.87 pH	11.55 °C	0.92 mS/cm	0.03 mg/L	69.68 NTU	-93.2 mV	11.90 ft	200.00 ml/min
4/1/2024 2:19 PM	36:48	6.87 pH	11.54 °C	0.92 mS/cm	0.03 mg/L	77.33 NTU	-93.4 mV	11.90 ft	200.00 ml/min
4/1/2024 2:20 PM	37:57	6.87 pH	11.57 °C	0.92 mS/cm	0.03 mg/L	74.49 NTU	-93.7 mV	11.90 ft	200.00 ml/min
4/1/2024 2:21 PM	39:06	6.87 pH	11.57 °C	0.92 mS/cm	0.02 mg/L	73.23 NTU	-94.0 mV	11.90 ft	200.00 ml/min
4/1/2024 2:22 PM	40:15	6.88 pH	11.57 °C	0.92 mS/cm	0.03 mg/L	87.92 NTU	-94.3 mV	11.90 ft	200.00 ml/min
4/1/2024 2:24 PM	41:24	6.88 pH	11.60 °C	0.92 mS/cm	0.02 mg/L	73.04 NTU	-94.6 mV	11.90 ft	200.00 ml/min
4/1/2024 2:25 PM	42:33	6.89 pH	11.57 °C	0.92 mS/cm	0.02 mg/L	68.54 NTU	-94.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:26 PM	43:42	6.89 pH	11.58 °C	0.92 mS/cm	0.02 mg/L	68.21 NTU	-95.3 mV	11.90 ft	200.00 ml/min
4/1/2024 2:27 PM	44:51	6.89 pH	11.58 °C	0.92 mS/cm	0.02 mg/L	69.88 NTU	-95.5 mV	11.90 ft	200.00 ml/min

4/1/2024 2:28 PM	46:00	6.90 pH	11.58 °C	0.92 mS/cm	0.02 mg/L	64.76 NTU	-95.8 mV	11.90 ft	200.00 ml/min
4/1/2024 2:29 PM	47:09	6.90 pH	11.59 °C	0.92 mS/cm	0.02 mg/L	70.46 NTU	-96.1 mV	11.90 ft	200.00 ml/min
4/1/2024 2:30 PM	48:18	6.91 pH	11.59 °C	0.91 mS/cm	0.02 mg/L	68.97 NTU	-96.3 mV	11.90 ft	200.00 ml/min
4/1/2024 2:32 PM	49:27	6.91 pH	11.58 °C	0.92 mS/cm	0.01 mg/L	61.55 NTU	-96.7 mV	11.90 ft	200.00 ml/min
4/1/2024 2:33 PM	50:36	6.91 pH	11.55 °C	0.91 mS/cm	0.01 mg/L	70.78 NTU	-96.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:34 PM	51:45	6.92 pH	11.56 °C	0.91 mS/cm	0.02 mg/L	67.01 NTU	-97.1 mV	11.90 ft	200.00 ml/min
4/1/2024 2:35 PM	52:54	6.92 pH	11.55 °C	0.91 mS/cm	0.01 mg/L	61.49 NTU	-97.5 mV	11.90 ft	200.00 ml/min
4/1/2024 2:36 PM	54:03	6.93 pH	11.55 °C	0.91 mS/cm	0.01 mg/L	67.88 NTU	-97.7 mV	11.90 ft	200.00 ml/min
4/1/2024 2:37 PM	55:12	6.93 pH	11.56 °C	0.91 mS/cm	0.01 mg/L	65.75 NTU	-98.0 mV	11.90 ft	200.00 ml/min
4/1/2024 2:39 PM	56:21	6.93 pH	11.56 °C	0.91 mS/cm	0.01 mg/L	62.49 NTU	-98.2 mV	11.90 ft	200.00 ml/min
4/1/2024 2:40 PM	57:30	6.94 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	64.70 NTU	-98.4 mV	11.90 ft	200.00 ml/min
4/1/2024 2:41 PM	58:39	6.94 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	65.07 NTU	-98.7 mV	11.90 ft	200.00 ml/min
4/1/2024 2:42 PM	59:48	6.95 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	56.89 NTU	-98.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:43 PM	01:00:57	6.95 pH	11.57 °C	0.91 mS/cm	0.00 mg/L	61.42 NTU	-99.1 mV	11.90 ft	200.00 ml/min
4/1/2024 2:44 PM	01:02:06	6.95 pH	11.56 °C	0.91 mS/cm	0.00 mg/L	57.13 NTU	-99.3 mV	11.90 ft	200.00 ml/min
4/1/2024 2:45 PM	01:03:15	6.96 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	54.47 NTU	-99.6 mV	11.90 ft	200.00 ml/min
4/1/2024 2:47 PM	01:04:24	6.96 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	50.27 NTU	-99.8 mV	11.90 ft	200.00 ml/min
4/1/2024 2:48 PM	01:05:33	6.96 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	51.99 NTU	-100.0 mV	11.90 ft	200.00 ml/min
4/1/2024 2:49 PM	01:06:42	6.97 pH	11.59 °C	0.91 mS/cm	0.02 mg/L	55.55 NTU	-100.1 mV	11.90 ft	200.00 ml/min
4/1/2024 2:50 PM	01:07:51	6.97 pH	11.62 °C	0.91 mS/cm	0.01 mg/L	50.62 NTU	-100.3 mV	11.90 ft	200.00 ml/min
4/1/2024 2:51 PM	01:09:00	6.97 pH	11.63 °C	0.91 mS/cm	0.00 mg/L	45.56 NTU	-100.6 mV	11.90 ft	200.00 ml/min
4/1/2024 2:52 PM	01:10:09	6.98 pH	11.63 °C	0.91 mS/cm	0.00 mg/L	53.02 NTU	-100.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:53 PM	01:11:18	6.98 pH	11.62 °C	0.91 mS/cm	0.04 mg/L	163.19 NTU	-101.0 mV	11.90 ft	200.00 ml/min
4/1/2024 2:55 PM	01:12:27	6.99 pH	11.62 °C	0.91 mS/cm	0.01 mg/L	74.82 NTU	-101.3 mV	11.90 ft	200.00 ml/min
4/1/2024 2:56 PM	01:13:36	6.99 pH	11.64 °C	0.91 mS/cm	0.00 mg/L	55.35 NTU	-101.5 mV	11.90 ft	200.00 ml/min
4/1/2024 2:57 PM	01:14:45	6.99 pH	11.63 °C	0.91 mS/cm	0.00 mg/L	45.59 NTU	-101.8 mV	11.90 ft	200.00 ml/min
4/1/2024 2:58 PM	01:15:54	6.99 pH	11.64 °C	0.91 mS/cm	0.00 mg/L	48.38 NTU	-101.9 mV	11.90 ft	200.00 ml/min
4/1/2024 2:59 PM	01:17:03	7.00 pH	11.64 °C	0.91 mS/cm	0.00 mg/L	38.08 NTU	-102.2 mV	11.90 ft	200.00 ml/min
4/1/2024 3:00 PM	01:18:12	7.00 pH	11.61 °C	0.91 mS/cm	0.00 mg/L	37.23 NTU	-102.3 mV	11.90 ft	200.00 ml/min

4/1/2024 3:02 PM	01:19:21	7.00 pH	11.62 °C	0.91 mS/cm	0.00 mg/L	38.34 NTU	-102.5 mV	11.90 ft	200.00 ml/min
4/1/2024 3:03 PM	01:20:30	7.01 pH	11.62 °C	0.91 mS/cm	0.00 mg/L	30.35 NTU	-102.7 mV	11.90 ft	200.00 ml/min
4/1/2024 3:04 PM	01:21:39	7.01 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	30.92 NTU	-102.9 mV	11.90 ft	200.00 ml/min
4/1/2024 3:05 PM	01:22:48	7.01 pH	11.61 °C	0.91 mS/cm	0.00 mg/L	31.18 NTU	-103.0 mV	11.90 ft	200.00 ml/min
4/1/2024 3:06 PM	01:23:57	7.01 pH	11.61 °C	0.91 mS/cm	0.00 mg/L	29.76 NTU	-103.2 mV	11.90 ft	200.00 ml/min
4/1/2024 3:07 PM	01:25:06	7.02 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	31.07 NTU	-103.3 mV	11.90 ft	200.00 ml/min
4/1/2024 3:08 PM	01:26:15	7.02 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	29.07 NTU	-103.5 mV	11.90 ft	200.00 ml/min
4/1/2024 3:10 PM	01:27:24	7.02 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	29.33 NTU	-103.6 mV	11.90 ft	200.00 ml/min
4/1/2024 3:11 PM	01:28:33	7.02 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	28.14 NTU	-103.8 mV	11.90 ft	200.00 ml/min
4/1/2024 3:12 PM	01:29:42	7.02 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	22.02 NTU	-103.8 mV	11.90 ft	200.00 ml/min
4/1/2024 3:13 PM	01:30:51	7.03 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	26.09 NTU	-104.0 mV	11.90 ft	200.00 ml/min
4/1/2024 3:14 PM	01:32:00	7.03 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	26.29 NTU	-104.0 mV	11.90 ft	200.00 ml/min
4/1/2024 3:15 PM	01:33:09	7.03 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	21.38 NTU	-104.2 mV	11.90 ft	200.00 ml/min
4/1/2024 3:16 PM	01:34:18	7.03 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	22.23 NTU	-104.3 mV	11.90 ft	200.00 ml/min
4/1/2024 3:18 PM	01:35:27	7.03 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	26.45 NTU	-104.4 mV	11.90 ft	200.00 ml/min
4/1/2024 3:19 PM	01:36:36	7.04 pH	11.57 °C	0.91 mS/cm	0.00 mg/L	24.00 NTU	-104.4 mV	11.90 ft	200.00 ml/min
4/1/2024 3:20 PM	01:37:45	7.04 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	23.90 NTU	-104.6 mV	11.90 ft	200.00 ml/min
4/1/2024 3:21 PM	01:38:54	7.04 pH	11.61 °C	0.91 mS/cm	0.00 mg/L	28.06 NTU	-104.8 mV	11.90 ft	200.00 ml/min
4/1/2024 3:22 PM	01:40:03	7.04 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	28.83 NTU	-104.9 mV	11.90 ft	200.00 ml/min
4/1/2024 3:23 PM	01:41:12	7.04 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	24.00 NTU	-105.0 mV	11.90 ft	200.00 ml/min
4/1/2024 3:25 PM	01:42:21	7.05 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	23.33 NTU	-105.1 mV	11.90 ft	200.00 ml/min
4/1/2024 3:26 PM	01:43:30	7.05 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	21.03 NTU	-105.2 mV	11.90 ft	200.00 ml/min
4/1/2024 3:27 PM	01:44:39	7.05 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	21.00 NTU	-105.3 mV	11.90 ft	200.00 ml/min
4/1/2024 3:28 PM	01:45:48	7.05 pH	11.57 °C	0.91 mS/cm	0.00 mg/L	18.99 NTU	-105.5 mV	11.90 ft	200.00 ml/min
4/1/2024 3:29 PM	01:46:57	7.05 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	21.02 NTU	-105.5 mV	11.90 ft	200.00 ml/min
4/1/2024 3:30 PM	01:48:06	7.06 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	25.12 NTU	-105.7 mV	11.90 ft	200.00 ml/min
4/1/2024 3:31 PM	01:49:15	7.06 pH	11.57 °C	0.91 mS/cm	0.00 mg/L	27.25 NTU	-105.8 mV	11.90 ft	200.00 ml/min
4/1/2024 3:33 PM	01:50:24	7.06 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	27.38 NTU	-105.9 mV	11.90 ft	200.00 ml/min
4/1/2024 3:34 PM	01:51:33	7.18 pH	11.46 °C	0.00 mS/cm	6.86 mg/L	0.00 NTU	-94.5 mV	11.90 ft	200.00 ml/min

4/1/2024 3:35 PM	01:52:42	7.07 pH	11.60 °C	0.91 mS/cm	0.71 mg/L	31.83 NTU	-94.2 mV	11.90 ft	200.00 ml/min
4/1/2024 3:36 PM	01:53:51	7.06 pH	11.60 °C	0.91 mS/cm	0.06 mg/L	29.12 NTU	-97.5 mV	11.90 ft	200.00 ml/min
4/1/2024 3:37 PM	01:55:00	7.06 pH	11.59 °C	0.91 mS/cm	0.01 mg/L	22.47 NTU	-99.6 mV	11.90 ft	200.00 ml/min
4/1/2024 3:38 PM	01:56:09	7.07 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	18.59 NTU	-100.9 mV	11.90 ft	200.00 ml/min
4/1/2024 3:39 PM	01:57:18	7.07 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	15.43 NTU	-101.9 mV	11.90 ft	200.00 ml/min
4/1/2024 3:41 PM	01:58:27	7.07 pH	11.55 °C	0.91 mS/cm	0.00 mg/L	17.71 NTU	-102.7 mV	11.90 ft	200.00 ml/min
4/1/2024 3:42 PM	01:59:36	7.07 pH	11.57 °C	0.91 mS/cm	0.00 mg/L	13.72 NTU	-103.4 mV	11.90 ft	200.00 ml/min
4/1/2024 3:43 PM	02:00:45	7.07 pH	11.56 °C	0.91 mS/cm	0.00 mg/L	17.18 NTU	-103.9 mV	11.90 ft	200.00 ml/min
4/1/2024 3:44 PM	02:01:54	7.08 pH	11.57 °C	0.91 mS/cm	0.00 mg/L	14.77 NTU	-104.4 mV	11.90 ft	200.00 ml/min
4/1/2024 3:45 PM	02:03:03	7.07 pH	11.56 °C	0.91 mS/cm	0.00 mg/L	14.88 NTU	-104.7 mV	11.90 ft	200.00 ml/min
4/1/2024 3:46 PM	02:04:12	7.08 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	15.87 NTU	-105.0 mV	11.90 ft	200.00 ml/min
4/1/2024 3:48 PM	02:05:21	7.08 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	13.98 NTU	-105.3 mV	11.90 ft	200.00 ml/min
4/1/2024 3:49 PM	02:06:30	7.08 pH	11.62 °C	0.91 mS/cm	0.00 mg/L	13.85 NTU	-105.6 mV	11.90 ft	200.00 ml/min
4/1/2024 3:50 PM	02:07:39	7.08 pH	11.62 °C	0.91 mS/cm	0.00 mg/L	13.18 NTU	-105.8 mV	11.90 ft	200.00 ml/min
4/1/2024 3:51 PM	02:08:48	7.08 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	12.73 NTU	-106.1 mV	11.90 ft	200.00 ml/min
4/1/2024 3:52 PM	02:09:57	7.08 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	15.03 NTU	-106.2 mV	11.90 ft	200.00 ml/min
4/1/2024 3:53 PM	02:11:06	7.08 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	14.09 NTU	-106.4 mV	11.90 ft	200.00 ml/min
4/1/2024 3:54 PM	02:12:15	7.08 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	15.35 NTU	-106.6 mV	11.90 ft	200.00 ml/min
4/1/2024 3:56 PM	02:13:24	7.09 pH	11.60 °C	0.91 mS/cm	0.00 mg/L	11.98 NTU	-106.7 mV	11.90 ft	200.00 ml/min
4/1/2024 3:57 PM	02:14:33	7.09 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	13.69 NTU	-106.9 mV	11.90 ft	200.00 ml/min
4/1/2024 3:58 PM	02:15:42	7.09 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	15.40 NTU	-107.0 mV	11.90 ft	200.00 ml/min
4/1/2024 3:59 PM	02:16:51	7.09 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	13.05 NTU	-107.2 mV	11.90 ft	200.00 ml/min
4/1/2024 4:00 PM	02:18:00	7.09 pH	11.59 °C	0.91 mS/cm	0.00 mg/L	14.58 NTU	-107.3 mV	11.90 ft	200.00 ml/min
4/1/2024 4:01 PM	02:19:09	7.13 pH	11.58 °C	0.91 mS/cm	2.99 mg/L	23.81 NTU	-95.1 mV	11.90 ft	200.00 ml/min
4/1/2024 4:02 PM	02:20:18	7.09 pH	11.57 °C	0.91 mS/cm	0.24 mg/L	17.42 NTU	-99.0 mV	11.90 ft	200.00 ml/min
4/1/2024 4:04 PM	02:21:27	7.09 pH	11.59 °C	0.91 mS/cm	0.03 mg/L	14.42 NTU	-101.1 mV	11.90 ft	200.00 ml/min
4/1/2024 4:05 PM	02:22:36	7.09 pH	11.58 °C	0.91 mS/cm	0.00 mg/L	12.03 NTU	-102.4 mV	11.90 ft	200.00 ml/min
4/1/2024 4:06 PM	02:23:45	7.09 pH	11.57 °C	0.91 mS/cm	0.00 mg/L	13.70 NTU	-103.4 mV	11.90 ft	200.00 ml/min
4/1/2024 4:07 PM	02:24:54	7.09 pH	11.56 °C	0.91 mS/cm	0.00 mg/L	12.56 NTU	-104.1 mV	11.90 ft	200.00 ml/min

4/1/2024 4:08 PM	02:26:03	7.09 pH	11.53 °C	0.91 mS/cm	0.00 mg/L	13.10 NTU	-104.6 mV	11.90 ft	200.00 ml/min
4/1/2024 4:09 PM	02:27:12	7.09 pH	11.50 °C	0.91 mS/cm	0.00 mg/L	14.60 NTU	-105.0 mV	11.90 ft	200.00 ml/min
4/1/2024 4:11 PM	02:28:21	7.09 pH	11.49 °C	0.91 mS/cm	0.00 mg/L	12.25 NTU	-105.2 mV	11.90 ft	200.00 ml/min
4/1/2024 4:12 PM	02:29:30	7.09 pH	11.51 °C	0.91 mS/cm	0.00 mg/L	10.98 NTU	-105.5 mV	11.90 ft	200.00 ml/min
4/1/2024 4:13 PM	02:30:39	7.09 pH	11.51 °C	0.91 mS/cm	0.00 mg/L	13.88 NTU	-105.8 mV	11.90 ft	200.00 ml/min
4/1/2024 4:14 PM	02:31:48	7.09 pH	11.50 °C	0.91 mS/cm	0.00 mg/L	9.27 NTU	-106.1 mV	11.90 ft	200.00 ml/min
4/1/2024 4:15 PM	02:32:57	7.09 pH	11.51 °C	0.91 mS/cm	0.00 mg/L	8.73 NTU	-106.3 mV	11.90 ft	200.00 ml/min
4/1/2024 4:16 PM	02:34:06	7.09 pH	11.48 °C	0.91 mS/cm	0.00 mg/L	10.03 NTU	-106.4 mV	11.90 ft	200.00 ml/min
4/1/2024 4:17 PM	02:35:15	7.10 pH	11.51 °C	0.91 mS/cm	0.00 mg/L	10.35 NTU	-106.7 mV	11.90 ft	200.00 ml/min
4/1/2024 4:19 PM	02:36:24	7.10 pH	11.49 °C	0.91 mS/cm	0.00 mg/L	9.27 NTU	-106.8 mV	11.90 ft	200.00 ml/min
4/1/2024 4:20 PM	02:37:33	7.10 pH	11.50 °C	0.91 mS/cm	0.00 mg/L	12.63 NTU	-106.9 mV	11.90 ft	200.00 ml/min
4/1/2024 4:21 PM	02:38:42	7.10 pH	11.48 °C	0.91 mS/cm	0.00 mg/L	12.18 NTU	-107.0 mV	11.90 ft	200.00 ml/min
4/1/2024 4:22 PM	02:39:51	7.10 pH	11.47 °C	0.91 mS/cm	0.00 mg/L	9.17 NTU	-107.1 mV	11.90 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW34-GW-0424	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 4/1/2024 4:26:12 PM
Project: WSEC TW-1
Operator Name: Paige Richards

Location Name: TW-1 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 8 ft** **Total Depth: 18 ft** **Initial Depth to Water: 10.64 ft**	**Pump Type: QED 1.75" Portable SamplePro Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 15.5 ft** **Pump Intake From TOC: 17 ft** **Estimated Total Volume Pumped: 10965 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 225 ml/min** **Final Draw Down: 3.78 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sample time: 1735

Weather Conditions:
Cloudy, 51 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/1/2024 4:26 PM	00:00	6.74 pH	11.47 °C	1.20 mS/cm	2.73 mg/L	264.32 NTU	29.2 mV	10.64 ft	225.00 ml/min
4/1/2024 4:27 PM	01:08	6.81 pH	11.48 °C	1.21 mS/cm	0.39 mg/L	275.18 NTU	-3.5 mV	10.64 ft	225.00 ml/min
4/1/2024 4:28 PM	02:16	6.84 pH	11.11 °C	1.21 mS/cm	0.15 mg/L	185.79 NTU	-27.4 mV	10.64 ft	225.00 ml/min
4/1/2024 4:29 PM	03:24	6.85 pH	10.97 °C	1.21 mS/cm	0.12 mg/L	162.55 NTU	-47.6 mV	10.64 ft	225.00 ml/min
4/1/2024 4:30 PM	04:32	6.85 pH	10.86 °C	1.21 mS/cm	0.11 mg/L	120.09 NTU	-62.5 mV	10.64 ft	225.00 ml/min
4/1/2024 4:31 PM	05:40	6.86 pH	10.88 °C	1.21 mS/cm	0.12 mg/L	108.85 NTU	-72.5 mV	10.64 ft	225.00 ml/min
4/1/2024 4:33 PM	06:48	6.86 pH	10.81 °C	1.21 mS/cm	0.12 mg/L	99.96 NTU	-81.9 mV	10.64 ft	225.00 ml/min
4/1/2024 4:34 PM	07:56	6.87 pH	10.80 °C	1.21 mS/cm	0.11 mg/L	67.19 NTU	-88.8 mV	10.64 ft	225.00 ml/min
4/1/2024 4:35 PM	09:04	6.87 pH	10.79 °C	1.21 mS/cm	0.10 mg/L	74.15 NTU	-93.1 mV	10.64 ft	225.00 ml/min
4/1/2024 4:36 PM	10:12	6.87 pH	10.80 °C	1.21 mS/cm	0.10 mg/L	46.26 NTU	-96.4 mV	10.64 ft	225.00 ml/min
4/1/2024 4:37 PM	11:20	6.88 pH	10.71 °C	1.21 mS/cm	0.08 mg/L	50.92 NTU	-98.9 mV	10.64 ft	225.00 ml/min

4/1/2024 4:38 PM	12:28	6.88 pH	10.61 °C	1.21 mS/cm	0.09 mg/L	36.05 NTU	-100.9 mV	11.87 ft	225.00 ml/min
4/1/2024 4:39 PM	13:36	6.88 pH	10.59 °C	1.21 mS/cm	0.08 mg/L	32.71 NTU	-102.4 mV	11.87 ft	225.00 ml/min
4/1/2024 4:40 PM	14:44	6.88 pH	10.53 °C	1.21 mS/cm	0.08 mg/L	29.62 NTU	-104.3 mV	11.87 ft	225.00 ml/min
4/1/2024 4:42 PM	15:52	6.88 pH	10.57 °C	1.21 mS/cm	0.07 mg/L	34.43 NTU	-105.8 mV	11.87 ft	225.00 ml/min
4/1/2024 4:43 PM	17:00	6.88 pH	10.57 °C	1.22 mS/cm	0.07 mg/L	26.80 NTU	-107.5 mV	11.87 ft	225.00 ml/min
4/1/2024 4:44 PM	18:08	6.88 pH	10.62 °C	1.22 mS/cm	0.06 mg/L	25.01 NTU	-109.0 mV	11.87 ft	225.00 ml/min
4/1/2024 4:45 PM	19:16	6.88 pH	10.58 °C	1.21 mS/cm	0.06 mg/L	26.16 NTU	-109.7 mV	11.87 ft	225.00 ml/min
4/1/2024 4:46 PM	20:24	6.88 pH	10.59 °C	1.22 mS/cm	0.05 mg/L	22.09 NTU	-111.1 mV	11.87 ft	225.00 ml/min
4/1/2024 4:47 PM	21:32	6.88 pH	10.57 °C	1.22 mS/cm	0.05 mg/L	18.65 NTU	-112.6 mV	11.87 ft	225.00 ml/min
4/1/2024 4:48 PM	22:40	6.89 pH	10.57 °C	1.22 mS/cm	0.05 mg/L	19.02 NTU	-114.2 mV	11.87 ft	225.00 ml/min
4/1/2024 4:50 PM	23:48	6.89 pH	10.52 °C	1.22 mS/cm	0.05 mg/L	22.00 NTU	-115.0 mV	11.87 ft	225.00 ml/min
4/1/2024 4:51 PM	24:56	6.89 pH	10.53 °C	1.22 mS/cm	0.05 mg/L	20.59 NTU	-116.1 mV	12.75 ft	225.00 ml/min
4/1/2024 4:52 PM	26:04	6.89 pH	10.52 °C	1.22 mS/cm	0.04 mg/L	16.96 NTU	-117.3 mV	12.75 ft	225.00 ml/min
4/1/2024 4:53 PM	27:12	6.88 pH	10.54 °C	1.22 mS/cm	0.04 mg/L	15.55 NTU	-118.5 mV	12.75 ft	225.00 ml/min
4/1/2024 4:54 PM	28:20	6.89 pH	10.55 °C	1.22 mS/cm	0.04 mg/L	15.45 NTU	-119.7 mV	12.75 ft	225.00 ml/min
4/1/2024 4:55 PM	29:28	6.88 pH	10.57 °C	1.22 mS/cm	0.05 mg/L	15.18 NTU	-120.5 mV	12.75 ft	225.00 ml/min
4/1/2024 4:56 PM	30:36	6.89 pH	10.55 °C	1.22 mS/cm	0.04 mg/L	13.98 NTU	-121.9 mV	12.75 ft	225.00 ml/min
4/1/2024 4:57 PM	31:44	6.88 pH	10.52 °C	1.22 mS/cm	0.03 mg/L	13.59 NTU	-123.0 mV	12.75 ft	225.00 ml/min
4/1/2024 4:59 PM	32:52	6.89 pH	10.49 °C	1.23 mS/cm	0.04 mg/L	13.11 NTU	-124.2 mV	12.75 ft	225.00 ml/min
4/1/2024 5:00 PM	34:00	6.89 pH	10.50 °C	1.22 mS/cm	0.03 mg/L	14.35 NTU	-124.7 mV	12.75 ft	225.00 ml/min
4/1/2024 5:01 PM	35:08	6.89 pH	10.51 °C	1.22 mS/cm	0.03 mg/L	16.59 NTU	-125.4 mV	12.75 ft	225.00 ml/min
4/1/2024 5:02 PM	36:16	6.88 pH	10.55 °C	1.23 mS/cm	0.03 mg/L	12.17 NTU	-127.0 mV	12.75 ft	225.00 ml/min
4/1/2024 5:03 PM	37:24	6.88 pH	10.55 °C	1.23 mS/cm	0.03 mg/L	9.71 NTU	-129.0 mV	12.75 ft	225.00 ml/min
4/1/2024 5:04 PM	38:32	6.88 pH	10.55 °C	1.23 mS/cm	0.03 mg/L	6.77 NTU	-130.5 mV	12.75 ft	225.00 ml/min
4/1/2024 5:05 PM	39:40	6.88 pH	10.53 °C	1.23 mS/cm	0.02 mg/L	7.16 NTU	-131.8 mV	12.75 ft	225.00 ml/min
4/1/2024 5:07 PM	40:48	6.88 pH	10.50 °C	1.23 mS/cm	0.03 mg/L	5.37 NTU	-132.8 mV	13.80 ft	225.00 ml/min
4/1/2024 5:08 PM	41:56	6.88 pH	10.52 °C	1.22 mS/cm	0.02 mg/L	6.81 NTU	-133.9 mV	13.80 ft	225.00 ml/min
4/1/2024 5:09 PM	43:04	6.88 pH	10.53 °C	1.22 mS/cm	0.03 mg/L	5.52 NTU	-134.6 mV	13.80 ft	225.00 ml/min
4/1/2024 5:10 PM	44:12	6.88 pH	10.51 °C	1.22 mS/cm	0.03 mg/L	6.00 NTU	-135.4 mV	13.80 ft	225.00 ml/min

4/1/2024 5:11 PM	45:20	6.88 pH	10.48 °C	1.22 mS/cm	0.03 mg/L	5.40 NTU	-136.1 mV	13.80 ft	225.00 ml/min
4/1/2024 5:12 PM	46:28	6.88 pH	10.48 °C	1.22 mS/cm	0.03 mg/L	6.55 NTU	-136.8 mV	13.80 ft	225.00 ml/min
4/1/2024 5:13 PM	47:36	6.88 pH	10.47 °C	1.21 mS/cm	0.03 mg/L	5.30 NTU	-137.5 mV	13.80 ft	225.00 ml/min
4/1/2024 5:14 PM	48:44	6.88 pH	10.43 °C	1.21 mS/cm	0.02 mg/L	4.48 NTU	-138.6 mV	14.42 ft	225.00 ml/min

Samples

Sample ID:	Description:
TW1-GW-0424	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 4/1/2024 4:58:32 PM
Project: WSEC TW-2 (5)
Operator Name: Brooke Wasson

Location Name: TW-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 8 ft** **Total Depth: 18 ft** **Initial Depth to Water: 13.74 ft**	**Pump Type: QED 1.75" Portable SamplePro Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 15.5 ft** **Pump Intake From TOC: 17 ft** **Estimated Total Volume Pumped: 2436.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 0.61 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1720

Weather Conditions:
50 degrees F overcast breezy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/1/2024 4:58 PM	00:00	7.35 pH	10.90 °C	1.54 mS/cm	1.74 mg/L	76.87 NTU	-31.4 mV	13.74 ft	400.00 ml/min
4/1/2024 4:59 PM	01:08	7.38 pH	11.23 °C	1.54 mS/cm	0.98 mg/L	5.33 NTU	-78.4 mV	14.20 ft	350.00 ml/min
4/1/2024 5:00 PM	02:16	7.40 pH	11.00 °C	1.55 mS/cm	1.34 mg/L	4.74 NTU	-93.2 mV	14.35 ft	100.00 ml/min
4/1/2024 5:01 PM	03:24	7.41 pH	10.68 °C	1.55 mS/cm	1.18 mg/L	4.89 NTU	-99.1 mV	14.35 ft	100.00 ml/min
4/1/2024 5:03 PM	04:32	7.42 pH	10.61 °C	1.55 mS/cm	1.80 mg/L	3.21 NTU	-103.0 mV	14.35 ft	100.00 ml/min
4/1/2024 5:04 PM	05:40	7.41 pH	10.57 °C	1.55 mS/cm	1.09 mg/L	2.37 NTU	-104.9 mV	14.35 ft	100.00 ml/min
4/1/2024 5:05 PM	06:48	7.41 pH	10.61 °C	1.55 mS/cm	1.21 mg/L	3.48 NTU	-105.9 mV	14.35 ft	100.00 ml/min
4/1/2024 5:06 PM	07:56	7.40 pH	10.57 °C	1.55 mS/cm	1.24 mg/L	2.39 NTU	-106.4 mV	14.35 ft	100.00 ml/min
4/1/2024 5:07 PM	09:04	7.40 pH	10.51 °C	1.55 mS/cm	1.46 mg/L	2.32 NTU	-106.5 mV	14.35 ft	100.00 ml/min
4/1/2024 5:08 PM	10:12	7.40 pH	10.45 °C	1.55 mS/cm	1.15 mg/L	1.27 NTU	-107.0 mV	14.35 ft	100.00 ml/min
4/1/2024 5:09 PM	11:20	7.40 pH	10.45 °C	1.55 mS/cm	0.90 mg/L	1.20 NTU	-107.7 mV	14.35 ft	100.00 ml/min

4/1/2024 5:11 PM	12:28	7.40 pH	10.43 °C	1.55 mS/cm	1.49 mg/L	1.35 NTU	-108.0 mV	14.35 ft	100.00 ml/min
4/1/2024 5:12 PM	13:36	7.40 pH	10.38 °C	1.55 mS/cm	1.22 mg/L	0.97 NTU	-107.6 mV	14.35 ft	100.00 ml/min
4/1/2024 5:13 PM	14:44	7.39 pH	10.43 °C	1.55 mS/cm	0.91 mg/L	1.65 NTU	-108.1 mV	14.35 ft	100.00 ml/min
4/1/2024 5:14 PM	15:52	7.39 pH	10.42 °C	1.56 mS/cm	1.30 mg/L	3.41 NTU	-108.2 mV	14.35 ft	100.00 ml/min
4/1/2024 5:15 PM	17:00	7.39 pH	10.41 °C	1.55 mS/cm	1.22 mg/L	0.32 NTU	-108.2 mV	14.35 ft	100.00 ml/min
4/1/2024 5:16 PM	18:08	7.39 pH	10.40 °C	1.55 mS/cm	1.10 mg/L	1.01 NTU	-107.6 mV	14.35 ft	100.00 ml/min

Samples

Sample ID:	Description:
TW2-GW-0424	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 4/2/2024 1:30:45 PM
Project: WSEC MW-307D (3)
Operator Name: Brooke Wasson

Location Name: MW-307D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 12.1 ft** **Total Depth: 27.1 ft** **Initial Depth to Water: 21.11 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.1 ft** **Pump Intake From TOC: 25.1 ft** **Estimated Total Volume Pumped: 2130 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 1050309**

Test Notes:
Sampled 1345
Collected MS/MSD3

Weather Conditions:
46 degrees F partly cloudy windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
4/2/2024 1:30 PM	00:00	7.04 pH	12.76 °C	0.91 mS/cm	3.03 mg/L	7.50 NTU	-26.8 mV	21.11 ft	200.00 ml/min
4/2/2024 1:31 PM	01:11	7.03 pH	12.80 °C	0.91 mS/cm	2.96 mg/L	7.46 NTU	-25.9 mV	21.14 ft	200.00 ml/min
4/2/2024 1:33 PM	02:22	7.04 pH	12.63 °C	0.91 mS/cm	2.90 mg/L	7.34 NTU	-25.5 mV	21.14 ft	200.00 ml/min
4/2/2024 1:34 PM	03:33	7.04 pH	12.85 °C	0.91 mS/cm	2.98 mg/L	9.03 NTU	-25.4 mV	21.14 ft	200.00 ml/min
4/2/2024 1:35 PM	04:44	7.04 pH	12.79 °C	0.91 mS/cm	2.85 mg/L	7.26 NTU	-25.0 mV	21.14 ft	200.00 ml/min
4/2/2024 1:36 PM	05:55	7.05 pH	12.85 °C	0.91 mS/cm	2.93 mg/L	7.59 NTU	-25.2 mV	21.14 ft	200.00 ml/min
4/2/2024 1:37 PM	07:06	7.05 pH	12.80 °C	0.91 mS/cm	2.74 mg/L	6.43 NTU	-25.1 mV	21.14 ft	200.00 ml/min
4/2/2024 1:39 PM	08:17	7.06 pH	12.84 °C	0.91 mS/cm	2.97 mg/L	4.32 NTU	-25.4 mV	21.14 ft	200.00 ml/min
4/2/2024 1:40 PM	09:28	7.06 pH	12.83 °C	0.92 mS/cm	2.87 mg/L	4.07 NTU	-25.4 mV	21.14 ft	200.00 ml/min
4/2/2024 1:41 PM	10:39	7.07 pH	12.78 °C	0.91 mS/cm	2.96 mg/L	5.05 NTU	-25.9 mV	21.14 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW307D-GW-0424	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved
MW307D-GW-0424-MS3	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved
MW307D-GW-0424-MSD3	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 6/4/2024 12:44:01 PM
Project: WSEC MW-108 (5)
Operator Name: Paige LaPlant

Location Name: MW-108 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 11 ft** **Top of Screen: 25.4 ft** **Total Depth: 26.4 ft** **Initial Depth to Water: 12.59 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.45 ft** **Pump Intake From TOC: 23.3 ft** **Estimated Total Volume Pumped: 5133.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 2.06 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1330

Weather Conditions:
82 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/4/2024 12:44 PM	00:00	6.83 pH	16.82 °C	1.19 mS/cm	1.64 mg/L	185.21 NTU	-44.5 mV	12.59 ft	150.00 ml/min
6/4/2024 12:46 PM	02:20	6.68 pH	14.92 °C	1.28 mS/cm	0.25 mg/L	149.43 NTU	-20.2 mV	13.06 ft	250.00 ml/min
6/4/2024 12:48 PM	04:40	6.64 pH	14.33 °C	1.28 mS/cm	0.19 mg/L	98.17 NTU	-18.9 mV	13.60 ft	300.00 ml/min
6/4/2024 12:51 PM	07:00	6.63 pH	14.25 °C	1.28 mS/cm	0.16 mg/L	86.34 NTU	-30.1 mV	14.75 ft	100.00 ml/min
6/4/2024 12:53 PM	09:20	6.61 pH	15.12 °C	1.30 mS/cm	0.14 mg/L	72.17 NTU	-42.5 mV	14.79 ft	100.00 ml/min
6/4/2024 12:55 PM	11:40	6.61 pH	16.25 °C	1.30 mS/cm	0.43 mg/L	60.15 NTU	-56.1 mV	14.65 ft	100.00 ml/min
6/4/2024 12:58 PM	14:00	6.61 pH	16.14 °C	1.30 mS/cm	0.34 mg/L	43.04 NTU	-73.1 mV	14.65 ft	100.00 ml/min
6/4/2024 1:00 PM	16:20	6.63 pH	16.54 °C	1.30 mS/cm	0.38 mg/L	27.93 NTU	-85.5 mV	14.65 ft	100.00 ml/min
6/4/2024 1:02 PM	18:40	6.65 pH	16.48 °C	1.30 mS/cm	0.30 mg/L	22.18 NTU	-95.4 mV	14.65 ft	100.00 ml/min
6/4/2024 1:05 PM	21:00	6.66 pH	16.68 °C	1.31 mS/cm	0.24 mg/L	14.04 NTU	-101.9 mV	14.65 ft	100.00 ml/min
6/4/2024 1:07 PM	23:20	6.68 pH	16.91 °C	1.31 mS/cm	0.21 mg/L	9.92 NTU	-106.7 mV	14.65 ft	100.00 ml/min
6/4/2024 1:09 PM	25:40	6.69 pH	17.32 °C	1.31 mS/cm	0.16 mg/L	11.91 NTU	-110.9 mV	14.65 ft	100.00 ml/min

6/4/2024 1:12 PM	28:00	6.72 pH	16.45 °C	1.30 mS/cm	0.11 mg/L	6.99 NTU	-114.0 mV	14.65 ft	100.00 ml/min
6/4/2024 1:14 PM	30:20	6.73 pH	16.79 °C	1.30 mS/cm	0.11 mg/L	6.35 NTU	-115.8 mV	14.65 ft	100.00 ml/min
6/4/2024 1:16 PM	32:40	6.75 pH	16.75 °C	1.31 mS/cm	0.09 mg/L	6.17 NTU	-118.3 mV	14.65 ft	100.00 ml/min
6/4/2024 1:19 PM	35:00	6.76 pH	17.31 °C	1.31 mS/cm	0.09 mg/L	11.95 NTU	-120.6 mV	14.65 ft	100.00 ml/min
6/4/2024 1:21 PM	37:20	6.79 pH	16.82 °C	1.31 mS/cm	0.06 mg/L	7.00 NTU	-124.1 mV	14.65 ft	100.00 ml/min
6/4/2024 1:23 PM	39:40	6.80 pH	17.72 °C	1.31 mS/cm	0.07 mg/L	6.22 NTU	-126.3 mV	14.65 ft	100.00 ml/min
6/4/2024 1:26 PM	42:00	6.83 pH	17.29 °C	1.30 mS/cm	0.06 mg/L	4.37 NTU	-129.0 mV	14.65 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW108-GW-0624	1 plastic 250mL nitric acid

Low-Flow Test Report:

Test Date / Time: 6/4/2024 4:51:20 PM
Project: WSEC MW-156D (2)
Operator Name: Paige Richards

Location Name: MW-156D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 16.5 ft** **Total Depth: 31.5 ft** **Initial Depth to Water: 22.71 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 27.5 ft** **Pump Intake From TOC: 29.5 ft** **Estimated Total Volume Pumped: 16560 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1820

Weather Conditions:
79 degrees F partly sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/4/2024 4:51 PM	00:00	6.89 pH	19.37 °C	1.21 mS/cm	3.31 mg/L	34.89 NTU	-29.9 mV	22.71 ft	200.00 ml/min
6/4/2024 4:53 PM	02:18	6.94 pH	17.08 °C	1.92 mS/cm	1.77 mg/L	57.20 NTU	-99.0 mV	22.71 ft	200.00 ml/min
6/4/2024 4:55 PM	04:36	6.91 pH	16.96 °C	1.43 mS/cm	1.63 mg/L	24.73 NTU	-105.8 mV	22.71 ft	200.00 ml/min
6/4/2024 4:58 PM	06:54	6.90 pH	16.55 °C	1.94 mS/cm	1.55 mg/L	12.18 NTU	-106.9 mV	22.71 ft	200.00 ml/min
6/4/2024 5:00 PM	09:12	6.92 pH	16.42 °C	1.86 mS/cm	1.59 mg/L	28.40 NTU	-108.4 mV	22.71 ft	200.00 ml/min
6/4/2024 5:02 PM	11:30	6.91 pH	16.31 °C	1.92 mS/cm	1.56 mg/L	48.76 NTU	-108.9 mV	22.71 ft	200.00 ml/min
6/4/2024 5:05 PM	13:48	6.92 pH	16.22 °C	1.92 mS/cm	1.60 mg/L	39.46 NTU	-109.1 mV	22.71 ft	200.00 ml/min
6/4/2024 5:07 PM	16:06	6.93 pH	16.08 °C	1.71 mS/cm	1.59 mg/L	37.84 NTU	-109.3 mV	22.71 ft	200.00 ml/min
6/4/2024 5:09 PM	18:24	6.93 pH	16.03 °C	0.76 mS/cm	1.57 mg/L	36.80 NTU	-109.3 mV	22.71 ft	200.00 ml/min
6/4/2024 5:12 PM	20:42	6.94 pH	16.18 °C	1.83 mS/cm	1.62 mg/L	32.82 NTU	-109.6 mV	22.71 ft	200.00 ml/min
6/4/2024 5:14 PM	23:00	6.94 pH	16.17 °C	1.91 mS/cm	1.60 mg/L	25.05 NTU	-109.7 mV	22.71 ft	200.00 ml/min

6/4/2024 5:16 PM	25:18	6.95 pH	16.23 °C	1.71 mS/cm	1.57 mg/L	19.10 NTU	-110.1 mV	22.71 ft	200.00 ml/min
6/4/2024 5:18 PM	27:36	6.96 pH	16.10 °C	1.86 mS/cm	1.58 mg/L	20.82 NTU	-110.4 mV	22.71 ft	200.00 ml/min
6/4/2024 5:21 PM	29:54	6.95 pH	16.39 °C	1.86 mS/cm	1.21 mg/L	19.78 NTU	-109.8 mV	22.71 ft	200.00 ml/min
6/4/2024 5:23 PM	32:12	6.93 pH	15.99 °C	1.86 mS/cm	0.39 mg/L	20.25 NTU	-109.9 mV	22.71 ft	200.00 ml/min
6/4/2024 5:25 PM	34:30	6.94 pH	15.98 °C	1.84 mS/cm	0.36 mg/L	33.96 NTU	-111.1 mV	22.71 ft	200.00 ml/min
6/4/2024 5:28 PM	36:48	6.95 pH	15.88 °C	1.84 mS/cm	0.37 mg/L	41.15 NTU	-112.3 mV	22.71 ft	200.00 ml/min
6/4/2024 5:30 PM	39:06	6.96 pH	15.91 °C	1.81 mS/cm	0.34 mg/L	21.87 NTU	-113.1 mV	22.71 ft	200.00 ml/min
6/4/2024 5:32 PM	41:24	6.97 pH	15.99 °C	1.81 mS/cm	0.31 mg/L	17.90 NTU	-113.8 mV	22.71 ft	200.00 ml/min
6/4/2024 5:35 PM	43:42	6.97 pH	16.03 °C	1.70 mS/cm	0.31 mg/L	19.88 NTU	-114.6 mV	22.71 ft	200.00 ml/min
6/4/2024 5:37 PM	46:00	6.98 pH	15.94 °C	1.69 mS/cm	0.31 mg/L	20.97 NTU	-115.3 mV	22.71 ft	200.00 ml/min
6/4/2024 5:39 PM	48:18	6.99 pH	15.93 °C	1.90 mS/cm	0.29 mg/L	17.96 NTU	-115.6 mV	22.71 ft	200.00 ml/min
6/4/2024 5:41 PM	50:36	6.99 pH	15.92 °C	1.70 mS/cm	0.32 mg/L	17.71 NTU	-116.2 mV	22.71 ft	200.00 ml/min
6/4/2024 5:44 PM	52:54	7.00 pH	15.79 °C	1.67 mS/cm	0.30 mg/L	15.45 NTU	-116.6 mV	22.71 ft	200.00 ml/min
6/4/2024 5:46 PM	55:12	7.01 pH	15.69 °C	1.82 mS/cm	0.29 mg/L	12.98 NTU	-116.9 mV	22.71 ft	200.00 ml/min
6/4/2024 5:48 PM	57:30	7.01 pH	15.66 °C	1.54 mS/cm	0.33 mg/L	11.51 NTU	-117.1 mV	22.71 ft	200.00 ml/min
6/4/2024 5:51 PM	59:48	7.02 pH	15.64 °C	1.53 mS/cm	0.30 mg/L	11.21 NTU	-117.2 mV	22.71 ft	200.00 ml/min
6/4/2024 5:53 PM	01:02:06	7.02 pH	15.80 °C	1.76 mS/cm	0.32 mg/L	10.97 NTU	-117.3 mV	22.71 ft	200.00 ml/min
6/4/2024 5:55 PM	01:04:24	7.03 pH	15.73 °C	1.69 mS/cm	0.31 mg/L	9.30 NTU	-117.6 mV	22.71 ft	200.00 ml/min
6/4/2024 5:58 PM	01:06:42	7.03 pH	15.78 °C	1.65 mS/cm	0.34 mg/L	8.63 NTU	-117.6 mV	22.71 ft	200.00 ml/min
6/4/2024 6:00 PM	01:09:00	7.04 pH	15.78 °C	1.62 mS/cm	0.34 mg/L	7.30 NTU	-117.7 mV	22.71 ft	200.00 ml/min
6/4/2024 6:02 PM	01:11:18	7.04 pH	15.62 °C	1.88 mS/cm	0.36 mg/L	4.86 NTU	-117.6 mV	22.71 ft	200.00 ml/min
6/4/2024 6:04 PM	01:13:36	7.04 pH	15.65 °C	1.68 mS/cm	0.36 mg/L	5.04 NTU	-117.7 mV	22.71 ft	200.00 ml/min
6/4/2024 6:07 PM	01:15:54	7.05 pH	15.74 °C	1.50 mS/cm	0.39 mg/L	5.05 NTU	-117.8 mV	22.71 ft	200.00 ml/min
6/4/2024 6:09 PM	01:18:12	7.05 pH	15.71 °C	1.79 mS/cm	0.41 mg/L	3.27 NTU	-117.8 mV	22.71 ft	200.00 ml/min
6/4/2024 6:11 PM	01:20:30	7.05 pH	15.62 °C	1.85 mS/cm	0.42 mg/L	3.24 NTU	-117.6 mV	22.71 ft	200.00 ml/min
6/4/2024 6:14 PM	01:22:48	7.06 pH	15.75 °C	1.82 mS/cm	0.38 mg/L	2.45 NTU	-117.3 mV	22.71 ft	200.00 ml/min

Samples

Sample ID:	Description:

MW156D-GW-0624	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved
MW156DMS-GW-0624	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved
MW156DMSD-GW-0624	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 6/4/2024 2:24:29 PM
Project: WSEC MW-190
Operator Name: Brooke Wasson

Location Name: MW-190 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 17.24 ft** **Total Depth: 27.24 ft** **Initial Depth to Water: 20.54 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.84 ft** **Pump Intake From TOC: 25.7 ft** **Estimated Total Volume Pumped: 2115 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1445

Weather Conditions:
83 degrees F overcast

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/4/2024 2:24 PM	00:00	6.79 pH	18.14 °C	1.19 mS/cm	3.29 mg/L	1.57 NTU	-14.5 mV	20.54 ft	150.00 ml/min
6/4/2024 2:26 PM	02:21	6.90 pH	16.30 °C	1.26 mS/cm	0.27 mg/L	8.98 NTU	-7.9 mV	20.54 ft	150.00 ml/min
6/4/2024 2:29 PM	04:42	6.90 pH	16.12 °C	1.26 mS/cm	0.10 mg/L	7.89 NTU	-3.6 mV	20.54 ft	150.00 ml/min
6/4/2024 2:31 PM	07:03	6.90 pH	15.65 °C	1.26 mS/cm	0.06 mg/L	6.45 NTU	-0.7 mV	20.54 ft	150.00 ml/min
6/4/2024 2:33 PM	09:24	6.89 pH	15.65 °C	1.26 mS/cm	0.04 mg/L	4.34 NTU	1.4 mV	20.54 ft	150.00 ml/min
6/4/2024 2:36 PM	11:45	6.89 pH	15.53 °C	1.26 mS/cm	0.02 mg/L	3.80 NTU	3.1 mV	20.54 ft	150.00 ml/min
6/4/2024 2:38 PM	14:06	6.89 pH	15.56 °C	1.26 mS/cm	0.02 mg/L	1.81 NTU	4.5 mV	20.54 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW190-GW-0624	1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 6/5/2024 9:16:36 AM
Project: WSEC MW-227D
Operator Name: Brooke Wasson

Location Name: MW-227D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 17.65 ft** **Total Depth: 32.65 ft** **Initial Depth to Water: 22.31 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 28.65 ft** **Pump Intake From TOC: 30.65 ft** **Estimated Total Volume Pumped: 14466.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.02 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1030

Weather Conditions:
62 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/5/2024 9:16 AM	00:00	7.09 pH	18.80 °C	1.04 mS/cm	6.33 mg/L	104.02 NTU	-24.6 mV	22.31 ft	200.00 ml/min
6/5/2024 9:18 AM	02:20	7.07 pH	15.10 °C	0.87 mS/cm	1.23 mg/L	208.86 NTU	-117.0 mV	22.36 ft	200.00 ml/min
6/5/2024 9:21 AM	04:40	7.04 pH	14.85 °C	1.02 mS/cm	0.78 mg/L	255.21 NTU	-133.7 mV	22.36 ft	200.00 ml/min
6/5/2024 9:23 AM	07:00	7.03 pH	14.76 °C	1.04 mS/cm	0.69 mg/L	213.88 NTU	-137.8 mV	22.33 ft	200.00 ml/min
6/5/2024 9:25 AM	09:20	7.03 pH	14.67 °C	1.07 mS/cm	0.67 mg/L	159.61 NTU	-140.1 mV	22.33 ft	200.00 ml/min
6/5/2024 9:28 AM	11:40	7.04 pH	14.81 °C	0.84 mS/cm	0.62 mg/L	135.48 NTU	-142.0 mV	22.33 ft	200.00 ml/min
6/5/2024 9:30 AM	14:00	7.06 pH	14.66 °C	1.06 mS/cm	0.83 mg/L	106.24 NTU	-142.6 mV	22.33 ft	200.00 ml/min
6/5/2024 9:32 AM	16:20	7.07 pH	14.78 °C	1.02 mS/cm	0.69 mg/L	84.34 NTU	-143.6 mV	22.33 ft	200.00 ml/min
6/5/2024 9:35 AM	18:40	7.09 pH	14.87 °C	0.99 mS/cm	0.67 mg/L	77.29 NTU	-144.8 mV	22.33 ft	200.00 ml/min
6/5/2024 9:37 AM	21:00	7.11 pH	14.80 °C	1.11 mS/cm	0.68 mg/L	64.90 NTU	-145.7 mV	22.33 ft	200.00 ml/min
6/5/2024 9:39 AM	23:20	7.12 pH	14.85 °C	1.12 mS/cm	0.62 mg/L	54.77 NTU	-146.4 mV	22.33 ft	200.00 ml/min

6/5/2024 9:42 AM	25:40	7.13 pH	14.92 °C	1.12 mS/cm	0.62 mg/L	45.84 NTU	-147.1 mV	22.33 ft	200.00 ml/min
6/5/2024 9:44 AM	28:00	7.13 pH	14.97 °C	1.09 mS/cm	0.61 mg/L	38.29 NTU	-147.3 mV	22.33 ft	200.00 ml/min
6/5/2024 9:46 AM	30:20	7.14 pH	14.94 °C	1.13 mS/cm	0.58 mg/L	35.43 NTU	-147.5 mV	22.33 ft	200.00 ml/min
6/5/2024 9:49 AM	32:40	7.14 pH	15.00 °C	1.06 mS/cm	0.59 mg/L	28.67 NTU	-147.5 mV	22.33 ft	200.00 ml/min
6/5/2024 9:51 AM	35:00	7.14 pH	15.06 °C	1.10 mS/cm	0.58 mg/L	25.58 NTU	-147.4 mV	22.33 ft	200.00 ml/min
6/5/2024 9:53 AM	37:20	7.14 pH	15.12 °C	1.01 mS/cm	0.55 mg/L	22.27 NTU	-147.4 mV	22.33 ft	200.00 ml/min
6/5/2024 9:56 AM	39:40	7.14 pH	15.03 °C	1.04 mS/cm	0.56 mg/L	19.29 NTU	-147.1 mV	22.33 ft	200.00 ml/min
6/5/2024 9:58 AM	42:00	7.14 pH	15.01 °C	0.92 mS/cm	0.57 mg/L	16.97 NTU	-146.8 mV	22.33 ft	200.00 ml/min
6/5/2024 10:00 AM	44:20	7.14 pH	14.96 °C	1.11 mS/cm	0.57 mg/L	14.77 NTU	-146.6 mV	22.33 ft	200.00 ml/min
6/5/2024 10:03 AM	46:40	7.14 pH	15.01 °C	1.12 mS/cm	0.55 mg/L	13.75 NTU	-146.3 mV	22.33 ft	200.00 ml/min
6/5/2024 10:05 AM	49:00	7.14 pH	15.04 °C	1.14 mS/cm	0.58 mg/L	10.48 NTU	-146.1 mV	22.33 ft	200.00 ml/min
6/5/2024 10:07 AM	51:20	7.13 pH	14.97 °C	1.11 mS/cm	0.57 mg/L	9.41 NTU	-145.8 mV	22.33 ft	200.00 ml/min
6/5/2024 10:10 AM	53:40	7.13 pH	15.07 °C	0.99 mS/cm	0.55 mg/L	8.34 NTU	-145.3 mV	22.33 ft	200.00 ml/min
6/5/2024 10:12 AM	56:00	7.12 pH	15.08 °C	1.15 mS/cm	0.57 mg/L	6.10 NTU	-144.9 mV	22.33 ft	200.00 ml/min
6/5/2024 10:14 AM	58:20	7.12 pH	15.16 °C	1.12 mS/cm	0.54 mg/L	6.77 NTU	-144.7 mV	22.33 ft	200.00 ml/min
6/5/2024 10:17 AM	01:00:40	7.12 pH	15.13 °C	1.10 mS/cm	0.56 mg/L	5.12 NTU	-144.4 mV	22.33 ft	200.00 ml/min
6/5/2024 10:19 AM	01:03:00	7.11 pH	15.16 °C	0.99 mS/cm	0.52 mg/L	4.09 NTU	-144.2 mV	22.33 ft	200.00 ml/min
6/5/2024 10:21 AM	01:05:20	7.12 pH	15.23 °C	0.92 mS/cm	0.52 mg/L	4.01 NTU	-144.0 mV	22.33 ft	200.00 ml/min
6/5/2024 10:24 AM	01:07:40	7.10 pH	15.06 °C	1.15 mS/cm	0.17 mg/L	3.72 NTU	-144.2 mV	22.33 ft	200.00 ml/min
6/5/2024 10:26 AM	01:10:00	7.11 pH	15.07 °C	1.15 mS/cm	0.01 mg/L	2.29 NTU	-146.6 mV	22.33 ft	200.00 ml/min
6/5/2024 10:28 AM	01:12:20	7.11 pH	15.00 °C	1.15 mS/cm	0.00 mg/L	2.28 NTU	-147.7 mV	22.33 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW227D-GW-0624	2 plastic 1 liter nitric acid 1 plastic 1 liter unpreserved 1 plastic 250mL nitric acid 1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 6/4/2024 1:41:23 PM
Project: WSEC MW-247
Operator Name: Brooke Wasson

Location Name: MW-247 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18.2 ft** **Total Depth: 33.2 ft** **Initial Depth to Water: 24.45 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.46 ft** **Pump Intake From TOC: 32.3 ft** **Estimated Total Volume Pumped: 5353.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.09 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1410

Weather Conditions:
83 degrees F cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/4/2024 1:41 PM	00:00	6.89 pH	20.24 °C	1.15 mS/cm	5.70 mg/L	6.17 NTU	-47.0 mV	24.45 ft	200.00 ml/min
6/4/2024 1:43 PM	02:26	6.80 pH	15.92 °C	1.24 mS/cm	0.86 mg/L	121.21 NTU	-23.2 mV	24.54 ft	200.00 ml/min
6/4/2024 1:46 PM	04:52	6.74 pH	18.28 °C	1.24 mS/cm	0.70 mg/L	93.99 NTU	-17.3 mV	24.54 ft	200.00 ml/min
6/4/2024 1:48 PM	07:18	6.76 pH	19.83 °C	1.23 mS/cm	0.77 mg/L	82.59 NTU	-16.4 mV	24.54 ft	200.00 ml/min
6/4/2024 1:51 PM	09:44	6.87 pH	16.14 °C	1.20 mS/cm	0.46 mg/L	57.83 NTU	-24.1 mV	24.54 ft	200.00 ml/min
6/4/2024 1:53 PM	12:10	6.85 pH	15.61 °C	1.21 mS/cm	0.26 mg/L	55.99 NTU	-28.8 mV	24.54 ft	200.00 ml/min
6/4/2024 1:55 PM	14:36	6.86 pH	15.67 °C	1.21 mS/cm	0.22 mg/L	37.39 NTU	-34.6 mV	24.54 ft	200.00 ml/min
6/4/2024 1:58 PM	17:02	6.86 pH	15.41 °C	1.20 mS/cm	0.19 mg/L	26.36 NTU	-40.3 mV	24.54 ft	200.00 ml/min
6/4/2024 2:00 PM	19:28	6.87 pH	15.48 °C	1.20 mS/cm	0.17 mg/L	19.91 NTU	-44.9 mV	24.54 ft	200.00 ml/min
6/4/2024 2:03 PM	21:54	6.87 pH	15.48 °C	1.20 mS/cm	0.15 mg/L	10.41 NTU	-48.5 mV	24.54 ft	200.00 ml/min
6/4/2024 2:05 PM	24:20	6.88 pH	15.42 °C	1.20 mS/cm	0.14 mg/L	6.54 NTU	-51.2 mV	24.54 ft	200.00 ml/min
6/4/2024 2:08 PM	26:46	6.89 pH	15.55 °C	1.20 mS/cm	0.13 mg/L	2.75 NTU	-54.1 mV	24.54 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW247-GW-0624	1 plastic 250mL unpreserved

Low-Flow Test Report:

Test Date / Time: 6/4/2024 9:51:23 AM
Project: WSEC MW-307D
Operator Name: Brooke Wasson

Location Name: MW-307D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 12.1 ft** **Total Depth: 27.1 ft** **Initial Depth to Water: 19.84 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.1 ft** **Pump Intake From TOC: 25.1 ft** **Estimated Total Volume Pumped: 13490 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1040
DTW 19.80

Weather Conditions:
72 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/4/2024 9:51 AM	00:00	6.86 pH	14.18 °C	0.96 mS/cm	0.45 mg/L	124.67 NTU	-101.1 mV	19.84 ft	300.00 ml/min
6/4/2024 9:52 AM	01:11	6.84 pH	13.62 °C	0.96 mS/cm	0.41 mg/L	126.39 NTU	-101.0 mV	19.84 ft	300.00 ml/min
6/4/2024 9:53 AM	02:22	6.84 pH	13.83 °C	0.95 mS/cm	0.47 mg/L	99.85 NTU	-101.8 mV	19.84 ft	300.00 ml/min
6/4/2024 9:54 AM	03:33	6.84 pH	13.66 °C	0.95 mS/cm	0.49 mg/L	106.04 NTU	-102.7 mV	19.84 ft	300.00 ml/min
6/4/2024 9:56 AM	04:44	6.84 pH	13.79 °C	0.95 mS/cm	0.48 mg/L	78.93 NTU	-103.1 mV	19.84 ft	300.00 ml/min
6/4/2024 9:57 AM	05:55	6.84 pH	13.68 °C	0.95 mS/cm	0.49 mg/L	93.29 NTU	-103.4 mV	19.84 ft	300.00 ml/min
6/4/2024 9:58 AM	07:06	6.84 pH	13.72 °C	0.95 mS/cm	0.50 mg/L	88.13 NTU	-103.9 mV	19.84 ft	300.00 ml/min
6/4/2024 9:59 AM	08:17	6.85 pH	13.79 °C	0.95 mS/cm	0.48 mg/L	82.09 NTU	-104.4 mV	19.84 ft	300.00 ml/min
6/4/2024 10:00 AM	09:28	6.85 pH	13.68 °C	0.95 mS/cm	0.47 mg/L	87.76 NTU	-104.6 mV	19.84 ft	300.00 ml/min
6/4/2024 10:02 AM	10:39	6.85 pH	13.83 °C	0.95 mS/cm	0.48 mg/L	63.84 NTU	-105.2 mV	19.84 ft	300.00 ml/min

6/4/2024 10:03 AM	11:50	6.86 pH	13.68 °C	0.95 mS/cm	0.49 mg/L	69.31 NTU	-105.5 mV	19.84 ft	300.00 ml/min
6/4/2024 10:04 AM	13:01	6.86 pH	13.83 °C	0.95 mS/cm	0.45 mg/L	66.98 NTU	-105.6 mV	19.84 ft	300.00 ml/min
6/4/2024 10:05 AM	14:12	6.86 pH	13.82 °C	0.95 mS/cm	0.49 mg/L	78.74 NTU	-105.9 mV	19.84 ft	300.00 ml/min
6/4/2024 10:06 AM	15:23	6.87 pH	13.84 °C	0.95 mS/cm	0.45 mg/L	57.34 NTU	-105.8 mV	19.84 ft	300.00 ml/min
6/4/2024 10:07 AM	16:34	6.87 pH	13.82 °C	0.95 mS/cm	0.47 mg/L	56.52 NTU	-105.9 mV	19.84 ft	300.00 ml/min
6/4/2024 10:09 AM	17:45	6.87 pH	13.79 °C	0.95 mS/cm	0.44 mg/L	54.40 NTU	-106.0 mV	19.84 ft	300.00 ml/min
6/4/2024 10:10 AM	18:56	6.88 pH	13.90 °C	0.95 mS/cm	0.46 mg/L	42.33 NTU	-106.2 mV	19.84 ft	300.00 ml/min
6/4/2024 10:11 AM	20:07	6.88 pH	13.88 °C	0.95 mS/cm	0.47 mg/L	46.96 NTU	-106.5 mV	19.84 ft	300.00 ml/min
6/4/2024 10:12 AM	21:18	6.89 pH	13.92 °C	0.95 mS/cm	0.46 mg/L	46.86 NTU	-106.7 mV	19.84 ft	300.00 ml/min
6/4/2024 10:13 AM	22:29	6.89 pH	13.84 °C	0.95 mS/cm	0.47 mg/L	59.49 NTU	-106.9 mV	19.84 ft	300.00 ml/min
6/4/2024 10:15 AM	23:40	6.90 pH	13.80 °C	0.95 mS/cm	0.44 mg/L	61.17 NTU	-107.0 mV	19.84 ft	300.00 ml/min
6/4/2024 10:16 AM	24:51	6.90 pH	13.86 °C	0.95 mS/cm	0.41 mg/L	53.91 NTU	-107.2 mV	19.84 ft	300.00 ml/min
6/4/2024 10:17 AM	26:02	6.91 pH	13.74 °C	0.95 mS/cm	0.44 mg/L	45.92 NTU	-107.4 mV	19.84 ft	300.00 ml/min
6/4/2024 10:18 AM	27:13	6.92 pH	13.92 °C	0.95 mS/cm	0.43 mg/L	47.63 NTU	-107.9 mV	19.84 ft	300.00 ml/min
6/4/2024 10:19 AM	28:24	6.92 pH	13.83 °C	0.95 mS/cm	0.42 mg/L	30.77 NTU	-108.3 mV	19.84 ft	300.00 ml/min
6/4/2024 10:20 AM	29:35	6.93 pH	13.97 °C	0.95 mS/cm	0.39 mg/L	39.25 NTU	-108.7 mV	19.84 ft	300.00 ml/min
6/4/2024 10:22 AM	30:46	6.94 pH	13.86 °C	0.95 mS/cm	0.39 mg/L	31.10 NTU	-109.1 mV	19.84 ft	300.00 ml/min
6/4/2024 10:23 AM	31:57	6.94 pH	13.92 °C	0.95 mS/cm	0.37 mg/L	28.71 NTU	-109.4 mV	19.84 ft	300.00 ml/min
6/4/2024 10:24 AM	33:08	6.95 pH	13.92 °C	0.95 mS/cm	0.35 mg/L	28.98 NTU	-109.7 mV	19.84 ft	300.00 ml/min
6/4/2024 10:25 AM	34:19	6.96 pH	13.74 °C	0.95 mS/cm	0.38 mg/L	22.94 NTU	-110.1 mV	19.84 ft	300.00 ml/min
6/4/2024 10:26 AM	35:30	6.97 pH	13.91 °C	0.95 mS/cm	0.39 mg/L	20.41 NTU	-110.5 mV	19.84 ft	300.00 ml/min
6/4/2024 10:28 AM	36:41	6.97 pH	13.80 °C	0.95 mS/cm	0.36 mg/L	14.05 NTU	-111.0 mV	19.84 ft	300.00 ml/min
6/4/2024 10:29 AM	37:52	6.98 pH	13.93 °C	0.95 mS/cm	0.38 mg/L	12.86 NTU	-111.4 mV	19.84 ft	300.00 ml/min
6/4/2024 10:30 AM	39:03	6.99 pH	13.81 °C	0.95 mS/cm	0.36 mg/L	11.77 NTU	-112.0 mV	19.84 ft	300.00 ml/min
6/4/2024 10:31 AM	40:14	7.00 pH	13.87 °C	0.95 mS/cm	0.36 mg/L	16.96 NTU	-112.5 mV	19.84 ft	300.00 ml/min
6/4/2024 10:32 AM	41:25	7.01 pH	13.94 °C	0.95 mS/cm	0.38 mg/L	8.32 NTU	-113.0 mV	19.84 ft	300.00 ml/min
6/4/2024 10:33 AM	42:36	7.01 pH	13.80 °C	0.95 mS/cm	0.36 mg/L	10.11 NTU	-113.4 mV	19.84 ft	300.00 ml/min
6/4/2024 10:35 AM	43:47	7.02 pH	13.83 °C	0.95 mS/cm	0.31 mg/L	7.80 NTU	-113.7 mV	19.84 ft	300.00 ml/min
6/4/2024 10:36 AM	44:58	7.03 pH	13.81 °C	0.95 mS/cm	0.35 mg/L	5.70 NTU	-114.3 mV	19.84 ft	300.00 ml/min

Samples

Sample ID:	Description:
M307D-GW-0624	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 12:35:32 PM
Project: WSEC MW-105
Operator Name: Brooke Wasson

Location Name: MW-105 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16.3 ft** **Total Depth: 26.5 ft** **Initial Depth to Water: 12.69 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 20.64 ft** **Pump Intake From TOC: 22.5 ft** **Estimated Total Volume Pumped: 13900 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1325

Weather Conditions:
72 degrees F sunny breezy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 12:35 PM	00:00	6.60 pH	25.74 °C			385.81 NTU	2.2 mV	12.69 ft	300.00 ml/min
10/2/2024 12:37 PM	02:19	6.50 pH	16.99 °C	1.76 mS/cm	2.02 mg/L	136.02 NTU	39.8 mV	12.69 ft	300.00 ml/min
10/2/2024 12:40 PM	04:38	6.55 pH	17.04 °C	1.61 mS/cm	1.93 mg/L	64.91 NTU	54.8 mV	12.69 ft	300.00 ml/min
10/2/2024 12:42 PM	06:57	6.54 pH	17.08 °C	1.58 mS/cm	1.77 mg/L	45.89 NTU	62.7 mV	12.69 ft	300.00 ml/min
10/2/2024 12:44 PM	09:16	6.54 pH	17.27 °C	1.57 mS/cm	1.64 mg/L	48.68 NTU	67.7 mV	12.69 ft	300.00 ml/min
10/2/2024 12:47 PM	11:35	6.55 pH	17.37 °C	1.55 mS/cm	1.55 mg/L	59.95 NTU	71.1 mV	12.69 ft	300.00 ml/min
10/2/2024 12:49 PM	13:54	6.56 pH	17.19 °C	1.55 mS/cm	1.41 mg/L	50.95 NTU	73.7 mV	12.69 ft	300.00 ml/min
10/2/2024 12:51 PM	16:13	6.56 pH	17.22 °C	1.53 mS/cm	1.42 mg/L	47.70 NTU	75.5 mV	12.69 ft	300.00 ml/min
10/2/2024 12:54 PM	18:32	6.56 pH	17.40 °C	1.45 mS/cm	1.42 mg/L	48.58 NTU	77.4 mV	12.69 ft	300.00 ml/min
10/2/2024 12:56 PM	20:51	6.58 pH	17.52 °C	1.44 mS/cm	1.49 mg/L	36.19 NTU	78.6 mV	12.69 ft	300.00 ml/min
10/2/2024 12:58 PM	23:10	6.57 pH	17.46 °C	1.47 mS/cm	1.29 mg/L	33.69 NTU	80.1 mV	12.69 ft	300.00 ml/min
10/2/2024 1:01 PM	25:29	6.59 pH	17.55 °C	1.41 mS/cm	1.41 mg/L	31.07 NTU	80.8 mV	12.69 ft	300.00 ml/min

10/2/2024 1:03 PM	27:48	6.60 pH	17.50 °C	1.42 mS/cm	1.27 mg/L	34.43 NTU	81.8 mV	12.69 ft	300.00 ml/min
10/2/2024 1:05 PM	30:07	6.59 pH	17.59 °C	1.40 mS/cm	1.17 mg/L	54.74 NTU	82.4 mV	12.69 ft	300.00 ml/min
10/2/2024 1:07 PM	32:26	6.60 pH	17.73 °C	1.38 mS/cm	1.25 mg/L	53.16 NTU	83.6 mV	12.69 ft	300.00 ml/min
10/2/2024 1:10 PM	34:45	6.61 pH	17.14 °C	1.70 mS/cm	1.51 mg/L	10.55 NTU	82.3 mV	12.69 ft	300.00 ml/min
10/2/2024 1:12 PM	37:04	6.61 pH	17.46 °C	1.70 mS/cm	1.37 mg/L	9.23 NTU	83.5 mV	12.69 ft	300.00 ml/min
10/2/2024 1:14 PM	39:23	6.60 pH	17.27 °C	1.70 mS/cm	1.16 mg/L	8.01 NTU	84.7 mV	12.69 ft	300.00 ml/min
10/2/2024 1:17 PM	41:42	6.61 pH	17.36 °C	1.69 mS/cm	1.12 mg/L	6.59 NTU	86.0 mV	12.69 ft	300.00 ml/min
10/2/2024 1:19 PM	44:01	6.61 pH	17.28 °C	1.69 mS/cm	1.18 mg/L	6.73 NTU	86.8 mV	12.69 ft	300.00 ml/min
10/2/2024 1:21 PM	46:20	6.62 pH	17.26 °C	1.70 mS/cm	1.18 mg/L	4.72 NTU	87.5 mV	12.69 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW105-GW-1024	
DP03-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 1:44:34 PM
Project: WSEC MW-108
Operator Name: Brooke Wasson

Location Name: MW-108 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 11 ft** **Top of Screen: 25.4 ft** **Total Depth: 26.4 ft** **Initial Depth to Water: 12.76 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.45 ft** **Pump Intake From TOC: 23.3 ft** **Estimated Total Volume Pumped: 2216.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 1.09 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1355

Weather Conditions:
76 degrees F sunny breezy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 1:44 PM	00:00	6.60 pH	17.03 °C	1.53 mS/cm	1.69 mg/L	50.40 NTU	-131.8 mV	13.35 ft	350.00 ml/min
10/2/2024 1:46 PM	02:20	6.74 pH	16.35 °C	1.57 mS/cm	0.41 mg/L	23.96 NTU	-152.9 mV	13.85 ft	200.00 ml/min
10/2/2024 1:49 PM	04:40	6.74 pH	17.89 °C	1.56 mS/cm	0.58 mg/L	8.70 NTU	-152.9 mV	13.85 ft	100.00 ml/min
10/2/2024 1:51 PM	07:00	6.73 pH	18.84 °C	1.61 mS/cm	0.79 mg/L	5.75 NTU	-150.0 mV	13.85 ft	100.00 ml/min
10/2/2024 1:53 PM	09:20	6.74 pH	18.38 °C	1.61 mS/cm	0.39 mg/L	3.34 NTU	-155.9 mV	13.85 ft	100.00 ml/min
10/2/2024 1:56 PM	11:40	6.75 pH	18.16 °C	1.61 mS/cm	0.27 mg/L	1.79 NTU	-159.8 mV	13.85 ft	100.00 ml/min
10/2/2024 1:58 PM	14:00	6.74 pH	18.43 °C	1.61 mS/cm	0.29 mg/L	1.52 NTU	-160.4 mV	13.85 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW108-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 2:23:52 PM
Project: WSEC MW-133
Operator Name: Brooke Wasson

Location Name: MW-133 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.46 ft** **Total Depth: 25.46 ft** **Initial Depth to Water: 15.04 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.76 ft** **Pump Intake From TOC: 23.6 ft** **Estimated Total Volume Pumped: 6166.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1500

Weather Conditions:
77 degrees F sunny breezy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 2:23 PM	00:00	6.76 pH	21.24 °C	1.58 mS/cm	6.98 mg/L	72.76 NTU	-23.5 mV	15.04 ft	200.00 ml/min
10/2/2024 2:25 PM	01:14	6.63 pH	18.36 °C	1.87 mS/cm	1.42 mg/L	701.39 NTU	-41.7 mV	15.04 ft	200.00 ml/min
10/2/2024 2:26 PM	02:28	6.63 pH	17.71 °C	1.91 mS/cm	0.50 mg/L	672.95 NTU	-43.5 mV	15.04 ft	200.00 ml/min
10/2/2024 2:27 PM	03:42	6.63 pH	17.55 °C	1.90 mS/cm	0.35 mg/L	302.11 NTU	-46.4 mV	15.04 ft	200.00 ml/min
10/2/2024 2:28 PM	04:56	6.63 pH	17.46 °C	1.89 mS/cm	0.29 mg/L	161.91 NTU	-48.7 mV	15.04 ft	200.00 ml/min
10/2/2024 2:30 PM	06:10	6.64 pH	17.35 °C	1.89 mS/cm	0.23 mg/L	98.42 NTU	-50.3 mV	15.04 ft	200.00 ml/min
10/2/2024 2:31 PM	07:24	6.64 pH	17.32 °C	1.88 mS/cm	0.20 mg/L	74.66 NTU	-52.2 mV	15.04 ft	200.00 ml/min
10/2/2024 2:32 PM	08:38	6.65 pH	17.32 °C	1.86 mS/cm	0.17 mg/L	45.63 NTU	-54.4 mV	15.04 ft	200.00 ml/min
10/2/2024 2:33 PM	09:52	6.65 pH	17.29 °C	1.85 mS/cm	0.15 mg/L	48.99 NTU	-56.9 mV	15.04 ft	200.00 ml/min
10/2/2024 2:34 PM	11:06	6.67 pH	17.23 °C	1.83 mS/cm	0.13 mg/L	37.64 NTU	-58.8 mV	15.04 ft	200.00 ml/min
10/2/2024 2:36 PM	12:20	6.68 pH	17.21 °C	1.81 mS/cm	0.12 mg/L	28.56 NTU	-60.6 mV	15.04 ft	200.00 ml/min

10/2/2024 2:37 PM	13:34	6.68 pH	17.27 °C	1.80 mS/cm	0.11 mg/L	20.35 NTU	-62.3 mV	15.04 ft	200.00 ml/min
10/2/2024 2:38 PM	14:48	6.69 pH	17.21 °C	1.79 mS/cm	0.10 mg/L	17.47 NTU	-63.7 mV	15.04 ft	200.00 ml/min
10/2/2024 2:39 PM	16:02	6.70 pH	17.25 °C	1.76 mS/cm	0.09 mg/L	17.87 NTU	-65.0 mV	15.04 ft	200.00 ml/min
10/2/2024 2:41 PM	17:16	6.71 pH	17.41 °C	1.76 mS/cm	0.08 mg/L	14.33 NTU	-66.5 mV	15.04 ft	200.00 ml/min
10/2/2024 2:42 PM	18:30	6.71 pH	17.40 °C	1.75 mS/cm	0.08 mg/L	14.65 NTU	-67.9 mV	15.04 ft	200.00 ml/min
10/2/2024 2:43 PM	19:44	6.73 pH	17.35 °C	1.74 mS/cm	0.08 mg/L	10.53 NTU	-69.2 mV	15.04 ft	200.00 ml/min
10/2/2024 2:44 PM	20:58	6.72 pH	17.34 °C	1.73 mS/cm	0.08 mg/L	9.83 NTU	-70.2 mV	15.04 ft	200.00 ml/min
10/2/2024 2:46 PM	22:12	6.73 pH	17.33 °C	1.73 mS/cm	0.07 mg/L	6.41 NTU	-71.4 mV	15.04 ft	200.00 ml/min
10/2/2024 2:47 PM	23:26	6.73 pH	17.41 °C	1.72 mS/cm	0.07 mg/L	10.28 NTU	-72.5 mV	15.04 ft	200.00 ml/min
10/2/2024 2:48 PM	24:40	6.74 pH	17.34 °C	1.72 mS/cm	0.07 mg/L	6.36 NTU	-73.6 mV	15.04 ft	200.00 ml/min
10/2/2024 2:49 PM	25:54	6.74 pH	17.40 °C	1.71 mS/cm	0.07 mg/L	10.75 NTU	-74.5 mV	15.04 ft	200.00 ml/min
10/2/2024 2:51 PM	27:08	6.75 pH	17.28 °C	1.70 mS/cm	0.07 mg/L	5.93 NTU	-75.4 mV	15.04 ft	200.00 ml/min
10/2/2024 2:52 PM	28:22	6.75 pH	17.26 °C	1.70 mS/cm	0.06 mg/L	5.53 NTU	-76.1 mV	15.04 ft	200.00 ml/min
10/2/2024 2:53 PM	29:36	6.75 pH	17.31 °C	1.71 mS/cm	0.06 mg/L	7.86 NTU	-76.9 mV	15.04 ft	200.00 ml/min
10/2/2024 2:54 PM	30:50	6.75 pH	17.25 °C	1.70 mS/cm	0.06 mg/L	4.60 NTU	-77.7 mV	15.04 ft	200.00 ml/min

Samples

Sample ID:	Description:
Mw133-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 11:51:51 AM
Project: WSEC MW-156
Operator Name: Brooke Wasson

Location Name: MW-156 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 13 ft** **Total Depth: 23 ft** **Initial Depth to Water: 19.22 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 19.8 ft** **Pump Intake From TOC: 21.7 ft** **Estimated Total Volume Pumped: 1840 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1200

Weather Conditions:
72 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 11:51 AM	00:00	6.33 pH	16.30 °C	1.57 mS/cm	1.04 mg/L	0.88 NTU	77.8 mV	19.22 ft	200.00 ml/min
10/3/2024 11:54 AM	02:18	6.51 pH	15.83 °C	1.56 mS/cm	0.27 mg/L	0.59 NTU	89.1 mV	19.22 ft	200.00 ml/min
10/3/2024 11:56 AM	04:36	6.50 pH	15.77 °C	1.56 mS/cm	0.24 mg/L	0.64 NTU	95.3 mV	19.22 ft	200.00 ml/min
10/3/2024 11:58 AM	06:54	6.49 pH	15.73 °C	1.57 mS/cm	0.21 mg/L	0.54 NTU	99.3 mV	19.22 ft	200.00 ml/min
10/3/2024 12:01 PM	09:12	6.50 pH	15.65 °C	1.57 mS/cm	0.19 mg/L	0.52 NTU	102.2 mV	19.22 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW156-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 12:07:35 PM
Project: WSEC MW-156D
Operator Name: Brooke Wasson

Location Name: MW-156D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 16.5 ft** **Total Depth: 31.5 ft** **Initial Depth to Water: 19.9 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 27.5 ft** **Pump Intake From TOC: 29.5 ft** **Estimated Total Volume Pumped: 6026.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1240

Weather Conditions:
74 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 12:07 PM	00:00	6.37 pH	16.78 °C	1.84 mS/cm	2.55 mg/L	101.90 NTU	56.7 mV	19.90 ft	200.00 ml/min
10/3/2024 12:09 PM	02:18	6.52 pH	15.51 °C	2.00 mS/cm	0.91 mg/L	67.88 NTU	9.5 mV	19.90 ft	200.00 ml/min
10/3/2024 12:12 PM	04:36	6.52 pH	15.46 °C	2.01 mS/cm	0.83 mg/L	25.79 NTU	5.5 mV	19.90 ft	200.00 ml/min
10/3/2024 12:14 PM	06:54	6.51 pH	15.38 °C	2.01 mS/cm	0.80 mg/L	15.85 NTU	-1.4 mV	19.90 ft	200.00 ml/min
10/3/2024 12:16 PM	09:12	6.51 pH	15.60 °C	2.00 mS/cm	0.82 mg/L	11.72 NTU	-5.6 mV	19.90 ft	200.00 ml/min
10/3/2024 12:19 PM	11:30	7.09 pH	16.65 °C	0.00 mS/cm	9.32 mg/L	3.21 NTU	-36.4 mV	19.90 ft	200.00 ml/min
10/3/2024 12:21 PM	13:48	7.28 pH	17.71 °C	0.00 mS/cm	9.15 mg/L	3.10 NTU	-28.6 mV	19.90 ft	200.00 ml/min
10/3/2024 12:23 PM	16:06	7.31 pH	18.55 °C	0.00 mS/cm	8.97 mg/L	2.97 NTU	-15.3 mV	19.90 ft	200.00 ml/min
10/3/2024 12:25 PM	18:24	7.27 pH	19.27 °C	0.00 mS/cm	8.84 mg/L	2.73 NTU	-3.7 mV	19.90 ft	200.00 ml/min
10/3/2024 12:28 PM	20:42	7.21 pH	19.92 °C	0.00 mS/cm	8.72 mg/L	2.36 NTU	7.4 mV	19.90 ft	200.00 ml/min
10/3/2024 12:30 PM	23:14	6.58 pH	18.02 °C	1.99 mS/cm	6.36 mg/L	3,990.0 NTU	-16.0 mV	19.90 ft	200.00 ml/min

10/3/2024 12:33 PM	25:32	6.55 pH	15.46 °C	2.02 mS/cm	1.05 mg/L	2.65 NTU	-17.0 mV	19.90 ft	200.00 ml/min
10/3/2024 12:35 PM	27:50	6.54 pH	15.50 °C	2.04 mS/cm	1.05 mg/L	1.78 NTU	-17.6 mV	19.90 ft	200.00 ml/min
10/3/2024 12:37 PM	30:08	6.53 pH	15.39 °C	2.03 mS/cm	1.07 mg/L	2.62 NTU	-17.8 mV	19.90 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW156D-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 7:32:23 AM
Project: WSEC MW-157
Operator Name: Brooke Wasson

Location Name: MW-157 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.3 ft** **Total Depth: 25.3 ft** **Initial Depth to Water: 18.62 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 22.1 ft** **Pump Intake From TOC: 24 ft** **Estimated Total Volume Pumped: 2260 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 0745

Weather Conditions:
55 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 7:32 AM	00:00	5.95 pH	14.55 °C	1.46 mS/cm	1.04 mg/L	0.39 NTU	111.4 mV	18.62 ft	200.00 ml/min
10/3/2024 7:35 AM	02:42	6.42 pH	13.96 °C	1.45 mS/cm	0.09 mg/L	1.73 NTU	115.0 mV	18.62 ft	200.00 ml/min
10/3/2024 7:36 AM	04:18	6.11 pH	14.02 °C	1.45 mS/cm	0.02 mg/L	0.41 NTU	117.2 mV	18.62 ft	200.00 ml/min
10/3/2024 7:39 AM	06:38	6.39 pH	14.04 °C	1.45 mS/cm	0.00 mg/L	0.30 NTU	118.9 mV	18.62 ft	200.00 ml/min
10/3/2024 7:41 AM	08:58	6.40 pH	13.99 °C	1.45 mS/cm	0.00 mg/L	0.26 NTU	121.0 mV	18.62 ft	200.00 ml/min
10/3/2024 7:43 AM	11:18	6.42 pH	14.00 °C	1.45 mS/cm	0.00 mg/L	0.27 NTU	123.0 mV	18.62 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW157-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 7:59:12 AM
Project: WSEC MW-158
Operator Name: Brooke Wasson

Location Name: MW-158 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.35 ft** **Total Depth: 25.35 ft** **Initial Depth to Water: 17.3 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.77 ft** **Pump Intake From TOC: 23.6 ft** **Estimated Total Volume Pumped: 1866.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 0810

Weather Conditions:
57 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 7:59 AM	00:00	6.27 pH	14.75 °C	1.66 mS/cm	0.73 mg/L	49.04 NTU	117.9 mV	17.30 ft	200.00 ml/min
10/3/2024 8:01 AM	02:20	6.43 pH	14.73 °C	1.67 mS/cm	0.13 mg/L	23.38 NTU	122.0 mV	17.30 ft	200.00 ml/min
10/3/2024 8:03 AM	04:40	6.42 pH	14.82 °C	1.67 mS/cm	0.09 mg/L	12.61 NTU	124.4 mV	17.30 ft	200.00 ml/min
10/3/2024 8:06 AM	07:00	6.42 pH	14.87 °C	1.67 mS/cm	0.06 mg/L	4.32 NTU	126.0 mV	17.30 ft	200.00 ml/min
10/3/2024 8:08 AM	09:20	6.42 pH	14.92 °C	1.67 mS/cm	0.04 mg/L	2.30 NTU	127.2 mV	17.30 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW158-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 8:25:11 AM
Project: WSEC MW-159
Operator Name: Brooke Wasson

Location Name: MW-159 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.3 ft** **Total Depth: 25.3 ft** **Initial Depth to Water: 17.33 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 22.26 ft** **Pump Intake From TOC: 24.1 ft** **Estimated Total Volume Pumped: 1866.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 0835

Weather Conditions:
57 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 8:25 AM	00:00	6.87 pH	15.63 °C	0.00 mS/cm	8.06 mg/L	2.91 NTU	56.2 mV	17.33 ft	200.00 ml/min
10/3/2024 8:27 AM	02:20	6.56 pH	15.47 °C	1.32 mS/cm	1.69 mg/L	0.91 NTU	124.4 mV	17.33 ft	200.00 ml/min
10/3/2024 8:29 AM	04:40	6.55 pH	15.17 °C	1.32 mS/cm	1.47 mg/L	0.59 NTU	121.5 mV	17.33 ft	200.00 ml/min
10/3/2024 8:32 AM	07:00	6.54 pH	15.26 °C	1.32 mS/cm	1.43 mg/L	0.27 NTU	119.3 mV	17.33 ft	200.00 ml/min
10/3/2024 8:34 AM	09:20	6.54 pH	15.36 °C	1.32 mS/cm	1.40 mg/L	0.33 NTU	117.7 mV	17.33 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW159-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 8:55:23 AM
Project: WSEC MW-190
Operator Name: Brooke Wasson

Location Name: MW-190 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 17.24 ft** **Total Depth: 27.24 ft** **Initial Depth to Water: 18.85 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.84 ft** **Pump Intake From TOC: 25.7 ft** **Estimated Total Volume Pumped: 1880 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 0905

Weather Conditions:
57 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 8:55 AM	00:00	6.98 pH	16.77 °C	0.00 mS/cm	8.12 mg/L	2.81 NTU	92.8 mV	18.85 ft	200.00 ml/min
10/3/2024 8:57 AM	02:21	6.60 pH	14.87 °C	1.25 mS/cm	0.22 mg/L	2.80 NTU	113.0 mV	18.85 ft	200.00 ml/min
10/3/2024 9:00 AM	04:42	6.58 pH	14.63 °C	1.26 mS/cm	0.06 mg/L	2.64 NTU	113.1 mV	18.85 ft	200.00 ml/min
10/3/2024 9:02 AM	07:03	6.58 pH	14.64 °C	1.26 mS/cm	0.02 mg/L	2.19 NTU	112.6 mV	18.85 ft	200.00 ml/min
10/3/2024 9:04 AM	09:24	6.58 pH	14.56 °C	1.26 mS/cm	0.00 mg/L	1.50 NTU	112.0 mV	18.85 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW190-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 9:27:36 AM
Project: WSEC MW-191
Operator Name: Brooke Wasson

Location Name: MW-191 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16.16 ft** **Total Depth: 26.16 ft** **Initial Depth to Water: 20.05 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.03 ft** **Pump Intake From TOC: 24.9 ft** **Estimated Total Volume Pumped: 1863.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 0935

Weather Conditions:
61 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 9:27 AM	00:00	6.56 pH	15.99 °C	1.17 mS/cm	4.47 mg/L	5.89 NTU	102.7 mV	20.05 ft	200.00 ml/min
10/3/2024 9:27 AM	00:19	6.59 pH	15.59 °C	1.18 mS/cm	4.05 mg/L	3.85 NTU	104.7 mV	20.05 ft	200.00 ml/min
10/3/2024 9:29 AM	02:16	6.48 pH	15.18 °C	1.19 mS/cm	3.60 mg/L	3.58 NTU	109.9 mV	20.05 ft	200.00 ml/min
10/3/2024 9:32 AM	04:37	6.62 pH	15.02 °C	1.19 mS/cm	3.58 mg/L	0.98 NTU	112.2 mV	20.05 ft	200.00 ml/min
10/3/2024 9:34 AM	06:58	6.61 pH	15.02 °C	1.19 mS/cm	3.57 mg/L	0.51 NTU	113.2 mV	20.05 ft	200.00 ml/min
10/3/2024 9:36 AM	09:19	6.62 pH	15.04 °C	1.19 mS/cm	3.57 mg/L	0.30 NTU	113.8 mV	20.05 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW191-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 5:31:46 PM
Project: WSEC MW-227 (2)
Operator Name: Paige LaPlant

Location Name: MW-227 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 14.15 ft** **Total Depth: 24.15 ft** **Initial Depth to Water: 19.85 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.75 ft** **Pump Intake From TOC: 23.6 ft** **Estimated Total Volume Pumped: 1866.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1745

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 5:31 PM	00:00	6.68 pH	18.77 °C	0.01 mS/cm	2.19 mg/L	8.44 NTU	94.2 mV	19.85 ft	200.00 ml/min
10/2/2024 5:34 PM	02:20	6.59 pH	17.90 °C	1.61 mS/cm	1.32 mg/L	2.19 NTU	96.5 mV	19.85 ft	200.00 ml/min
10/2/2024 5:36 PM	04:40	6.59 pH	18.02 °C	1.61 mS/cm	1.27 mg/L	1.40 NTU	97.4 mV	19.85 ft	200.00 ml/min
10/2/2024 5:38 PM	07:00	6.60 pH	18.11 °C	1.61 mS/cm	1.25 mg/L	1.42 NTU	98.2 mV	19.85 ft	200.00 ml/min
10/2/2024 5:41 PM	09:20	6.60 pH	17.99 °C	1.60 mS/cm	1.21 mg/L	1.12 NTU	99.1 mV	19.85 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW227-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 5:54:31 PM
Project: WSEC MW-227D
Operator Name: Brooke Wasson

Location Name: MW-227D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 17.65 ft** **Total Depth: 32.65 ft** **Initial Depth to Water: 19.85 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 28.65 ft** **Pump Intake From TOC: 30.65 ft** **Estimated Total Volume Pumped: 16740 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1920

Weather Conditions:
80 degrees f sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 5:54 PM	00:00	7.02 pH	21.86 °C	0.01 mS/cm	6.34 mg/L	2.66 NTU	7.3 mV	19.85 ft	200.00 ml/min
10/2/2024 5:56 PM	02:20	6.91 pH	16.35 °C	1.20 mS/cm	0.46 mg/L	1,995.8 NTU	-119.8 mV	19.85 ft	200.00 ml/min
10/2/2024 5:59 PM	04:40	6.93 pH	15.97 °C	1.19 mS/cm	0.48 mg/L	554.48 NTU	-127.5 mV	19.85 ft	200.00 ml/min
10/2/2024 6:01 PM	07:00	6.93 pH	15.88 °C	1.33 mS/cm	0.47 mg/L	378.59 NTU	-129.6 mV	19.85 ft	200.00 ml/min
10/2/2024 6:03 PM	09:20	6.94 pH	15.76 °C	1.33 mS/cm	0.46 mg/L	195.30 NTU	-131.0 mV	19.85 ft	200.00 ml/min
10/2/2024 6:06 PM	11:40	6.93 pH	15.71 °C	1.33 mS/cm	0.49 mg/L	144.09 NTU	-131.8 mV	19.85 ft	200.00 ml/min
10/2/2024 6:08 PM	14:00	6.93 pH	15.52 °C	1.33 mS/cm	0.49 mg/L	105.56 NTU	-131.7 mV	19.85 ft	200.00 ml/min
10/2/2024 6:10 PM	16:20	6.93 pH	15.44 °C	1.33 mS/cm	0.44 mg/L	84.05 NTU	-131.6 mV	19.85 ft	200.00 ml/min
10/2/2024 6:13 PM	18:40	6.93 pH	15.49 °C	1.33 mS/cm	0.47 mg/L	80.23 NTU	-132.1 mV	19.85 ft	200.00 ml/min
10/2/2024 6:15 PM	21:00	6.94 pH	15.43 °C	1.25 mS/cm	0.48 mg/L	67.41 NTU	-132.5 mV	19.85 ft	200.00 ml/min
10/2/2024 6:17 PM	23:20	6.93 pH	15.47 °C	1.25 mS/cm	0.48 mg/L	56.64 NTU	-132.4 mV	19.85 ft	200.00 ml/min

10/2/2024 6:20 PM	25:40	6.93 pH	15.37 °C	1.25 mS/cm	0.49 mg/L	48.82 NTU	-132.3 mV	19.85 ft	200.00 ml/min
10/2/2024 6:22 PM	28:00	6.93 pH	15.28 °C	1.25 mS/cm	0.47 mg/L	43.41 NTU	-132.2 mV	19.85 ft	200.00 ml/min
10/2/2024 6:24 PM	30:20	6.93 pH	15.39 °C	1.24 mS/cm	0.47 mg/L	39.75 NTU	-132.2 mV	19.85 ft	200.00 ml/min
10/2/2024 6:27 PM	32:40	6.93 pH	15.26 °C	1.24 mS/cm	0.45 mg/L	46.88 NTU	-131.8 mV	19.85 ft	200.00 ml/min
10/2/2024 6:29 PM	34:36	7.00 pH	15.21 °C	1.32 mS/cm	2.43 mg/L	47.59 NTU	-122.3 mV	19.85 ft	200.00 ml/min
10/2/2024 6:31 PM	36:56	6.94 pH	15.16 °C	1.32 mS/cm	0.64 mg/L	30.71 NTU	-127.9 mV	19.85 ft	200.00 ml/min
10/2/2024 6:33 PM	39:16	6.93 pH	15.03 °C	1.32 mS/cm	0.64 mg/L	29.65 NTU	-128.8 mV	19.85 ft	200.00 ml/min
10/2/2024 6:36 PM	41:36	6.92 pH	15.03 °C	1.31 mS/cm	0.61 mg/L	22.35 NTU	-129.0 mV	19.85 ft	200.00 ml/min
10/2/2024 6:38 PM	43:56	6.92 pH	15.15 °C	1.32 mS/cm	0.58 mg/L	20.39 NTU	-129.1 mV	19.85 ft	200.00 ml/min
10/2/2024 6:40 PM	46:16	6.92 pH	14.97 °C	1.29 mS/cm	0.60 mg/L	18.79 NTU	-128.8 mV	19.85 ft	200.00 ml/min
10/2/2024 6:43 PM	48:36	6.92 pH	14.98 °C	1.32 mS/cm	0.60 mg/L	19.30 NTU	-129.0 mV	19.85 ft	200.00 ml/min
10/2/2024 6:45 PM	50:56	6.92 pH	15.04 °C	1.32 mS/cm	0.58 mg/L	14.95 NTU	-129.4 mV	19.85 ft	200.00 ml/min
10/2/2024 6:47 PM	53:16	6.92 pH	15.01 °C	1.32 mS/cm	0.60 mg/L	13.66 NTU	-129.5 mV	19.85 ft	200.00 ml/min
10/2/2024 6:50 PM	55:36	6.92 pH	14.98 °C	1.32 mS/cm	0.57 mg/L	12.95 NTU	-129.2 mV	19.85 ft	200.00 ml/min
10/2/2024 6:52 PM	57:56	6.92 pH	15.01 °C	1.32 mS/cm	0.56 mg/L	13.57 NTU	-128.9 mV	19.85 ft	200.00 ml/min
10/2/2024 6:54 PM	01:00:16	6.91 pH	14.88 °C	1.32 mS/cm	0.59 mg/L	12.62 NTU	-128.6 mV	19.85 ft	200.00 ml/min
10/2/2024 6:57 PM	01:02:36	6.91 pH	14.91 °C	1.32 mS/cm	0.59 mg/L	15.35 NTU	-128.5 mV	19.85 ft	200.00 ml/min
10/2/2024 6:59 PM	01:04:56	6.91 pH	14.90 °C	1.32 mS/cm	0.56 mg/L	18.69 NTU	-127.8 mV	19.85 ft	200.00 ml/min
10/2/2024 7:01 PM	01:07:16	6.91 pH	14.91 °C	1.28 mS/cm	0.54 mg/L	17.24 NTU	-127.3 mV	19.85 ft	200.00 ml/min
10/2/2024 7:04 PM	01:09:36	6.90 pH	14.79 °C	1.31 mS/cm	0.53 mg/L	20.82 NTU	-126.2 mV	19.85 ft	200.00 ml/min
10/2/2024 7:06 PM	01:11:56	6.91 pH	14.79 °C	1.32 mS/cm	0.53 mg/L	24.51 NTU	-126.1 mV	19.85 ft	200.00 ml/min
10/2/2024 7:08 PM	01:14:16	6.91 pH	14.79 °C	1.21 mS/cm	0.50 mg/L	31.64 NTU	-125.9 mV	19.85 ft	200.00 ml/min
10/2/2024 7:11 PM	01:16:36	6.90 pH	14.72 °C	1.27 mS/cm	0.52 mg/L	34.75 NTU	-125.6 mV	19.85 ft	200.00 ml/min
10/2/2024 7:15 PM	01:21:02	6.97 pH	14.65 °C	1.32 mS/cm	0.54 mg/L	10.14 NTU	-121.2 mV	19.85 ft	200.00 ml/min
10/2/2024 7:15 PM	01:21:22	6.88 pH	14.63 °C	1.32 mS/cm	0.65 mg/L	7.63 NTU	-121.0 mV	19.85 ft	200.00 ml/min
10/2/2024 7:18 PM	01:23:42	6.90 pH	14.61 °C	1.32 mS/cm	0.45 mg/L	5.82 NTU	-123.5 mV	19.85 ft	200.00 ml/min

Samples

Sample ID:	Description:

MW227D-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 4:17:20 PM
Project: WSEC MW-240R
Operator Name: Brooke Wasson

Location Name: MW-240R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 15.36 ft** **Total Depth: 30.36 ft** **Initial Depth to Water: 19.82 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 27.7 ft** **Pump Intake From TOC: 29.6 ft** **Estimated Total Volume Pumped: 2880 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1635

Weather Conditions:
79 degrees F sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 4:17 PM	00:00	7.09 pH	27.58 °C	0.00 mS/cm	5.45 mg/L	1.85 NTU	-6.2 mV	19.82 ft	200.00 ml/min
10/2/2024 4:19 PM	02:24	6.60 pH	11.74 °C	1.55 mS/cm			115.7 mV	19.85 ft	200.00 ml/min
10/2/2024 4:22 PM	04:48	6.61 pH	17.41 °C	1.46 mS/cm	1.41 mg/L	14.27 NTU	103.8 mV	19.85 ft	200.00 ml/min
10/2/2024 4:24 PM	07:12	6.60 pH	17.42 °C	1.45 mS/cm	1.33 mg/L	12.56 NTU	99.6 mV	19.85 ft	200.00 ml/min
10/2/2024 4:26 PM	09:36	6.60 pH	17.21 °C	1.45 mS/cm	1.32 mg/L	13.13 NTU	97.6 mV	19.85 ft	200.00 ml/min
10/2/2024 4:29 PM	12:00	6.60 pH	17.06 °C	1.45 mS/cm	1.31 mg/L	6.84 NTU	96.9 mV	19.85 ft	200.00 ml/min
10/2/2024 4:31 PM	14:24	6.60 pH	17.17 °C	1.45 mS/cm	1.30 mg/L	3.20 NTU	96.6 mV	19.85 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW240R-GW-1024	

DP04-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 5:35:26 PM
Project: WSEC MW-244
Operator Name: Paige Richards

Location Name: MW-244 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 16.9 ft** **Total Depth: 31.9 ft** **Initial Depth to Water: 23.34 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 28.82 ft** **Pump Intake From TOC: 30.7 ft** **Estimated Total Volume Pumped: 4833.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 250 ml/min** **Final Draw Down: 0.06 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 955645**

Test Notes:
Sample time: 1805

Water visually clear

Weather Conditions:
Sunny, windy, 80 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 5:35 PM	00:00	6.87 pH	15.26 °C	1.23 mS/cm	1.55 mg/L	106.30 NTU	48.3 mV	23.34 ft	250.00 ml/min
10/2/2024 5:37 PM	02:25	6.77 pH	15.31 °C	1.26 mS/cm	0.75 mg/L	44.38 NTU	68.7 mV	23.34 ft	250.00 ml/min
10/2/2024 5:40 PM	04:50	6.72 pH	15.66 °C	1.26 mS/cm	0.58 mg/L	25.64 NTU	80.3 mV	23.34 ft	250.00 ml/min
10/2/2024 5:42 PM	07:15	6.72 pH	15.31 °C	1.26 mS/cm	0.48 mg/L	17.38 NTU	86.2 mV	23.34 ft	250.00 ml/min
10/2/2024 5:45 PM	09:40	6.72 pH	15.11 °C	1.25 mS/cm	0.41 mg/L	10.36 NTU	89.6 mV	23.34 ft	250.00 ml/min
10/2/2024 5:47 PM	12:05	6.72 pH	15.27 °C	1.26 mS/cm	0.35 mg/L	6.79 NTU	90.6 mV	23.34 ft	250.00 ml/min
10/2/2024 5:49 PM	14:30	6.71 pH	15.32 °C	1.26 mS/cm	0.33 mg/L	4.06 NTU	90.3 mV	23.34 ft	250.00 ml/min
10/2/2024 5:52 PM	16:55	6.72 pH	15.34 °C	1.25 mS/cm	0.31 mg/L	5.03 NTU	88.8 mV	23.34 ft	250.00 ml/min
10/2/2024 5:54 PM	19:20	6.72 pH	15.34 °C	1.26 mS/cm	0.30 mg/L	1.73 NTU	86.7 mV	23.40 ft	250.00 ml/min

Samples

Sample ID:	Description:
MW244-GW-1024	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 10/2/2024 4:07:33 PM
Project: WSEC MW-245
Operator Name: Paige Richards

Location Name: MW-245 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18.8 ft** **Total Depth: 33.8 ft** **Initial Depth to Water: 26.63 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.95 ft** **Pump Intake From TOC: 32.8 ft** **Estimated Total Volume Pumped: 5475 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 100 ml/min** **Final Draw Down: 1.42 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 955645**

Test Notes:
Sample time: 1710

Water visually clear

Weather Conditions:
Sunny, windy, 80 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 4:07 PM	00:00	6.68 pH	16.70 °C	1.67 mS/cm	0.82 mg/L	92.93 NTU	24.8 mV	26.63 ft	500.00 ml/min
10/2/2024 4:09 PM	02:26	6.57 pH	17.12 °C	1.70 mS/cm	0.29 mg/L	19.83 NTU	18.5 mV	26.63 ft	250.00 ml/min
10/2/2024 4:12 PM	04:52	6.58 pH	17.50 °C	1.68 mS/cm	0.29 mg/L	9.20 NTU	-3.4 mV	26.63 ft	250.00 ml/min
10/2/2024 4:14 PM	07:18	6.59 pH	17.52 °C	1.69 mS/cm	0.34 mg/L	6.42 NTU	-16.5 mV	26.63 ft	250.00 ml/min
10/2/2024 4:17 PM	09:44	6.60 pH	17.29 °C	1.69 mS/cm	0.44 mg/L	7.65 NTU	-21.8 mV	26.63 ft	250.00 ml/min
10/2/2024 4:19 PM	12:10	6.60 pH	17.22 °C	1.69 mS/cm	0.43 mg/L	6.90 NTU	-26.5 mV	28.20 ft	250.00 ml/min
10/2/2024 4:22 PM	14:36	6.60 pH	18.50 °C	1.69 mS/cm	0.40 mg/L	5.07 NTU	-32.1 mV	28.20 ft	100.00 ml/min
10/2/2024 4:24 PM	17:02	6.61 pH	20.11 °C	1.69 mS/cm	0.40 mg/L	4.22 NTU	-36.8 mV	28.20 ft	100.00 ml/min
10/2/2024 4:27 PM	19:28	6.66 pH	20.21 °C	1.68 mS/cm	0.32 mg/L	2.16 NTU	-51.2 mV	28.11 ft	100.00 ml/min
10/2/2024 4:29 PM	21:54	6.69 pH	20.42 °C	1.67 mS/cm	0.27 mg/L	2.30 NTU	-60.1 mV	28.11 ft	100.00 ml/min

10/2/2024 4:31 PM	24:20	6.72 pH	20.44 °C	1.67 mS/cm	0.24 mg/L	1.86 NTU	-65.3 mV	28.11 ft	100.00 ml/min
10/2/2024 4:34 PM	26:46	6.75 pH	20.36 °C	1.66 mS/cm	0.23 mg/L	2.19 NTU	-69.5 mV	28.05 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW245-GW-1024	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1
MS/MSD	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 9:57:01 AM
Project: WSEC MW-246
Operator Name: Brooke Wasson

Location Name: MW-246 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18 ft** **Total Depth: 33 ft** **Initial Depth to Water: 26.7 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.68 ft** **Pump Intake From TOC: 32.6 ft** **Estimated Total Volume Pumped: 1946.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.2 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1010

Weather Conditions:
61 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 9:57 AM	00:00	6.77 pH	17.73 °C	1.13 mS/cm	6.48 mg/L	12.08 NTU	56.6 mV	26.70 ft	200.00 ml/min
10/3/2024 9:59 AM	02:26	6.56 pH	14.61 °C	1.39 mS/cm	0.16 mg/L	9.58 NTU	-60.8 mV	26.90 ft	200.00 ml/min
10/3/2024 10:01 AM	04:52	6.56 pH	14.36 °C	1.41 mS/cm	0.05 mg/L	5.07 NTU	-62.3 mV	26.90 ft	200.00 ml/min
10/3/2024 10:04 AM	07:18	6.57 pH	14.25 °C	1.42 mS/cm	0.02 mg/L	1.65 NTU	-68.1 mV	26.90 ft	200.00 ml/min
10/3/2024 10:06 AM	09:44	6.57 pH	14.24 °C	1.43 mS/cm	0.01 mg/L	0.94 NTU	-73.5 mV	26.90 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW246-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 10:24:58 AM
Project: WSEC MW-247
Operator Name: Brooke Wasson

Location Name: MW-247 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18.2 ft** **Total Depth: 33.2 ft** **Initial Depth to Water: 25.5 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.46 ft** **Pump Intake From TOC: 32.3 ft** **Estimated Total Volume Pumped: 2433.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.2 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1035

Weather Conditions:
65 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 10:24 AM	00:00	6.73 pH	17.85 °C	1.10 mS/cm	6.75 mg/L	3.18 NTU	52.7 mV	25.50 ft	200.00 ml/min
10/3/2024 10:27 AM	02:26	6.43 pH	15.00 °C	1.46 mS/cm	0.83 mg/L	27.23 NTU	75.7 mV	25.70 ft	200.00 ml/min
10/3/2024 10:29 AM	04:52	6.43 pH	14.78 °C	1.47 mS/cm	0.42 mg/L	10.53 NTU	65.7 mV	25.70 ft	200.00 ml/min
10/3/2024 10:32 AM	07:18	6.45 pH	14.73 °C	1.46 mS/cm	0.31 mg/L	2.13 NTU	53.6 mV	25.70 ft	200.00 ml/min
10/3/2024 10:34 AM	09:44	6.26 pH	14.73 °C	1.46 mS/cm	0.25 mg/L	0.00 NTU	44.6 mV	25.70 ft	200.00 ml/min
10/3/2024 10:37 AM	12:10	6.27 pH	14.75 °C	1.45 mS/cm	0.21 mg/L	0.29 NTU	37.5 mV	25.70 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW247-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 10:55:26 AM
Project: WSEC MW-248
Operator Name: Brooke Wasson

Location Name: MW-248 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 29.1 ft** **Total Depth: 34.1 ft** **Initial Depth to Water: 26.25 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 31.24 ft** **Pump Intake From TOC: 33.1 ft** **Estimated Total Volume Pumped: 3456.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1115

Weather Conditions:
67 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 10:55 AM	00:00	6.87 pH	16.51 °C	0.00 mS/cm	3.88 mg/L	3.80 NTU	41.7 mV	26.25 ft	200.00 ml/min
10/3/2024 10:57 AM	02:27	6.70 pH	15.28 °C	0.95 mS/cm	0.84 mg/L	21.00 NTU	45.5 mV	26.25 ft	200.00 ml/min
10/3/2024 11:00 AM	04:54	6.69 pH	15.14 °C	0.95 mS/cm	0.38 mg/L	8.59 NTU	41.5 mV	26.25 ft	200.00 ml/min
10/3/2024 11:02 AM	06:51	6.59 pH	15.03 °C	0.95 mS/cm	0.31 mg/L	20.33 NTU	34.6 mV	26.25 ft	200.00 ml/min
10/3/2024 11:02 AM	07:29	6.79 pH	15.08 °C	0.95 mS/cm	0.30 mg/L	12.68 NTU	26.6 mV	26.25 ft	200.00 ml/min
10/3/2024 11:05 AM	09:56	6.72 pH	14.91 °C	0.94 mS/cm	0.22 mg/L	5.40 NTU	2.3 mV	26.25 ft	200.00 ml/min
10/3/2024 11:07 AM	12:23	6.73 pH	15.04 °C	0.95 mS/cm	0.24 mg/L	4.47 NTU	-10.1 mV	26.25 ft	200.00 ml/min
10/3/2024 11:10 AM	14:50	6.73 pH	15.13 °C	0.95 mS/cm	0.19 mg/L	3.35 NTU	-20.7 mV	26.25 ft	200.00 ml/min
10/3/2024 11:12 AM	17:17	6.73 pH	15.24 °C	0.95 mS/cm	0.18 mg/L	1.42 NTU	-22.6 mV	26.25 ft	200.00 ml/min

Samples

Sample ID:	Description:

MW248-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/2/2024 3:07:58 PM
Project: WSEC MW-250
Operator Name: Brooke Wasson

Location Name: MW-250 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 15.8 ft** **Total Depth: 30.8 ft** **Initial Depth to Water: 22.32 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 27.05 ft** **Pump Intake From TOC: 28.9 ft** **Estimated Total Volume Pumped: 1920 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.08 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1520

Weather Conditions:
79 degrees F sunny windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/2/2024 3:07 PM	00:00	6.65 pH	24.56 °C	0.00 mS/cm	6.60 mg/L	2.25 NTU	-7.5 mV	22.32 ft	200.00 ml/min
10/2/2024 3:10 PM	02:24	6.51 pH	18.17 °C	1.50 mS/cm	0.80 mg/L	1.98 NTU	48.8 mV	22.40 ft	200.00 ml/min
10/2/2024 3:12 PM	04:48	6.50 pH	17.50 °C	1.50 mS/cm	0.44 mg/L	1.05 NTU	62.7 mV	22.40 ft	200.00 ml/min
10/2/2024 3:15 PM	07:12	6.50 pH	17.43 °C	1.51 mS/cm	0.31 mg/L	0.87 NTU	71.1 mV	22.40 ft	200.00 ml/min
10/2/2024 3:17 PM	09:36	6.49 pH	17.51 °C	1.51 mS/cm	0.24 mg/L	1.06 NTU	76.8 mV	22.40 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW250-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 2:18:05 PM
Project: WSEC MW-307
Operator Name: Brooke Wasson

Location Name: MW-307 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 5 ft** **Top of Screen: 91.4 ft** **Total Depth: 96.4 ft** **Initial Depth to Water: 15.71 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 17.5 ft** **Pump Intake From TOC: 19 ft** **Estimated Total Volume Pumped: 1636.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1430

Weather Conditions:
79 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 2:18 PM	00:00	6.81 pH	20.96 °C	0.86 mS/cm	4.25 mg/L	34.92 NTU	28.8 mV	15.71 ft	200.00 ml/min
10/3/2024 2:18 PM	00:32	6.77 pH	20.48 °C	0.85 mS/cm	3.70 mg/L	39.11 NTU	34.5 mV	15.71 ft	200.00 ml/min
10/3/2024 2:19 PM	01:22	6.76 pH	19.53 °C	0.84 mS/cm	3.29 mg/L	35.56 NTU	41.8 mV	15.71 ft	200.00 ml/min
10/3/2024 2:20 PM	02:19	6.76 pH	19.46 °C	0.85 mS/cm	3.16 mg/L	23.27 NTU	47.3 mV	15.71 ft	200.00 ml/min
10/3/2024 2:21 PM	03:15	6.76 pH	19.14 °C	0.86 mS/cm	2.99 mg/L	16.53 NTU	51.3 mV	15.71 ft	200.00 ml/min
10/3/2024 2:23 PM	05:05	6.65 pH	19.17 °C	0.86 mS/cm	2.82 mg/L	6.46 NTU	57.6 mV	15.71 ft	200.00 ml/min
10/3/2024 2:23 PM	05:30	6.74 pH	19.08 °C	0.87 mS/cm	2.87 mg/L	9.14 NTU	58.4 mV	15.71 ft	200.00 ml/min
10/3/2024 2:24 PM	06:12	6.72 pH	18.83 °C	0.87 mS/cm	2.47 mg/L	3.48 NTU	60.3 mV	15.71 ft	200.00 ml/min
10/3/2024 2:25 PM	07:00	6.76 pH	18.79 °C	0.87 mS/cm	2.58 mg/L	2.46 NTU	61.2 mV	15.71 ft	200.00 ml/min
10/3/2024 2:26 PM	08:11	6.72 pH	18.79 °C	0.87 mS/cm	2.62 mg/L	3.25 NTU	64.4 mV	15.71 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW307-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/1/2024 9:17:04 AM
Project: WSEC MW-307D
Operator Name: Paige Richards

Location Name: MW-307D **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 12.1 ft** **Total Depth: 27.1 ft** **Initial Depth to Water: 16.16 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.1 ft** **Pump Intake From TOC: 25.1 ft** **Estimated Total Volume Pumped: 3550 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 250 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 955645**

Test Notes:
Sample time: 1000

Water visually clear

Weather Conditions:
Sunny, 54 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/1/2024 9:17 AM	00:00	6.98 pH	15.05 °C	0.76 mS/cm	6.09 mg/L	88.94 NTU	12.3 mV	16.16 ft	250.00 ml/min
10/1/2024 9:18 AM	01:11	6.82 pH	14.34 °C	0.75 mS/cm	2.26 mg/L	53.08 NTU	26.8 mV	16.16 ft	250.00 ml/min
10/1/2024 9:19 AM	02:22	6.83 pH	14.24 °C	0.75 mS/cm	0.61 mg/L	28.29 NTU	29.2 mV	16.16 ft	250.00 ml/min
10/1/2024 9:20 AM	03:33	6.82 pH	14.21 °C	0.75 mS/cm	0.44 mg/L	15.77 NTU	32.4 mV	16.16 ft	250.00 ml/min
10/1/2024 9:21 AM	04:44	6.82 pH	14.25 °C	0.75 mS/cm	0.64 mg/L	11.46 NTU	35.3 mV	16.16 ft	250.00 ml/min
10/1/2024 9:22 AM	05:55	6.83 pH	14.35 °C	0.75 mS/cm	0.86 mg/L	5.30 NTU	37.1 mV	16.16 ft	250.00 ml/min
10/1/2024 9:24 AM	07:06	6.83 pH	14.35 °C	0.75 mS/cm	0.95 mg/L	5.18 NTU	39.5 mV	16.16 ft	250.00 ml/min
10/1/2024 9:25 AM	08:17	6.83 pH	14.32 °C	0.75 mS/cm	0.87 mg/L	3.58 NTU	41.7 mV	16.16 ft	250.00 ml/min
10/1/2024 9:26 AM	09:28	6.82 pH	14.33 °C	0.76 mS/cm	0.74 mg/L	2.50 NTU	44.0 mV	16.16 ft	250.00 ml/min
10/1/2024 9:27 AM	10:39	6.85 pH	14.36 °C	0.76 mS/cm	1.66 mg/L	3.85 NTU	45.1 mV	16.16 ft	250.00 ml/min

10/1/2024 9:28 AM	11:50	6.84 pH	14.35 °C	0.76 mS/cm	1.37 mg/L	8.10 NTU	47.3 mV	16.16 ft	250.00 ml/min
10/1/2024 9:30 AM	13:01	6.84 pH	14.33 °C	0.76 mS/cm	1.29 mg/L	2.84 NTU	49.2 mV	16.16 ft	250.00 ml/min
10/1/2024 9:31 AM	14:12	6.85 pH	14.36 °C	0.76 mS/cm	1.22 mg/L	4.70 NTU	50.1 mV	16.16 ft	250.00 ml/min

Samples

Sample ID:	Description:
MW307D-GW-1024	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1
MS/MSD	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 1:22:19 PM
Project: WSEC TW-1
Operator Name: Brooke Wasson

Location Name: TW-1 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 8 ft** **Total Depth: 18 ft** **Initial Depth to Water: 6.56 ft**	**Pump Type: QED 1.75" Portable SamplePro Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 15.5 ft** **Pump Intake From TOC: 17 ft** **Estimated Total Volume Pumped: 4423.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 876572**

Test Notes:
Sampled 1345

Weather Conditions:
77 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 1:22 PM	00:00	6.99 pH	23.13 °C	0.01 mS/cm	5.64 mg/L	4.88 NTU	-72.7 mV	6.56 ft	200.00 ml/min
10/3/2024 1:24 PM	01:46	6.68 pH	15.94 °C	0.72 mS/cm	1.74 mg/L	407.34 NTU	-101.9 mV	6.56 ft	200.00 ml/min
10/3/2024 1:24 PM	02:11	6.73 pH	16.28 °C	1.49 mS/cm	3.28 mg/L	51.10 NTU	-106.1 mV	6.56 ft	200.00 ml/min
10/3/2024 1:26 PM	03:46	6.89 pH	16.16 °C	0.51 mS/cm	0.94 mg/L	3.30 NTU	-111.7 mV	6.56 ft	200.00 ml/min
10/3/2024 1:28 PM	06:34	6.88 pH	16.50 °C	0.01 mS/cm	6.69 mg/L	3.75 NTU	-111.1 mV	6.56 ft	200.00 ml/min
10/3/2024 1:29 PM	07:31	6.85 pH	16.54 °C	1.49 mS/cm	2.61 mg/L	23.30 NTU	-106.0 mV	6.56 ft	200.00 ml/min
10/3/2024 1:30 PM	08:39	6.73 pH	16.52 °C	1.49 mS/cm	1.23 mg/L	11.86 NTU	-110.5 mV	6.56 ft	200.00 ml/min
10/3/2024 1:31 PM	09:39	6.82 pH	16.50 °C	1.48 mS/cm	1.02 mg/L	13.30 NTU	-110.8 mV	6.56 ft	200.00 ml/min
10/3/2024 1:33 PM	10:47	6.72 pH	16.73 °C	1.48 mS/cm	1.10 mg/L	12.62 NTU	-111.8 mV	6.56 ft	200.00 ml/min
10/3/2024 1:34 PM	11:55	6.73 pH	16.80 °C	1.48 mS/cm	1.07 mg/L	13.89 NTU	-111.1 mV	6.56 ft	200.00 ml/min
10/3/2024 1:35 PM	13:03	6.72 pH	16.86 °C	1.48 mS/cm	1.12 mg/L	15.33 NTU	-109.8 mV	6.56 ft	200.00 ml/min

10/3/2024 1:36 PM	14:11	6.74 pH	16.88 °C	1.49 mS/cm	1.02 mg/L	9.86 NTU	-109.7 mV	6.56 ft	200.00 ml/min
10/3/2024 1:37 PM	15:19	6.73 pH	16.96 °C	1.49 mS/cm	1.22 mg/L	9.90 NTU	-107.3 mV	6.56 ft	200.00 ml/min
10/3/2024 1:38 PM	16:27	6.74 pH	17.08 °C	1.51 mS/cm	0.96 mg/L	9.65 NTU	-106.7 mV	6.56 ft	200.00 ml/min
10/3/2024 1:39 PM	17:35	6.74 pH	16.97 °C	1.52 mS/cm	1.15 mg/L	8.83 NTU	-105.5 mV	6.56 ft	200.00 ml/min
10/3/2024 1:41 PM	18:43	6.75 pH	17.16 °C	1.53 mS/cm	1.00 mg/L	7.95 NTU	-105.9 mV	6.56 ft	200.00 ml/min
10/3/2024 1:42 PM	19:51	6.75 pH	17.15 °C	1.55 mS/cm	0.97 mg/L	8.77 NTU	-105.8 mV	6.56 ft	200.00 ml/min
10/3/2024 1:43 PM	20:59	6.75 pH	17.26 °C	1.56 mS/cm	1.03 mg/L	8.11 NTU	-106.2 mV	6.56 ft	200.00 ml/min
10/3/2024 1:44 PM	22:07	6.75 pH	17.06 °C	1.58 mS/cm	0.95 mg/L	5.21 NTU	-104.9 mV	6.56 ft	200.00 ml/min

Samples

Sample ID:	Description:
TW1-GW-1024	

Low-Flow Test Report:

Test Date / Time: 10/3/2024 1:52:02 PM
Project: WSEC TW-2
Operator Name: Paige Richards

Location Name: TW-2 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 8 ft** **Total Depth: 18 ft** **Initial Depth to Water: 9.84 ft**	**Pump Type: QED 1.75" Portable SamplePro Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 15.5 ft** **Pump Intake From TOC: 17 ft** **Estimated Total Volume Pumped: 13886.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 175 ml/min** **Final Draw Down: 3.39 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 955645**

Test Notes:
Sample time: 1530

Water cloudy, large black sediment present in sample and throughout stabilization

Weather Conditions:
Sunny, 78 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
10/3/2024 1:52 PM	00:00	6.73 pH	24.59 °C	1.55 mS/cm	6.29 mg/L	101.29 NTU	-96.1 mV	9.84 ft	225.00 ml/min
10/3/2024 1:53 PM	01:08	6.80 pH	19.92 °C	1.40 mS/cm	2.23 mg/L	83.10 NTU	-128.1 mV	9.84 ft	225.00 ml/min
10/3/2024 1:54 PM	02:16	6.78 pH	18.67 °C	1.38 mS/cm	0.83 mg/L	75.18 NTU	-136.7 mV	9.84 ft	225.00 ml/min
10/3/2024 1:55 PM	03:24	6.76 pH	18.75 °C	1.37 mS/cm	0.39 mg/L	53.97 NTU	-142.2 mV	9.84 ft	225.00 ml/min
10/3/2024 1:56 PM	04:32	6.75 pH	18.47 °C	1.37 mS/cm	0.27 mg/L	47.82 NTU	-146.4 mV	9.84 ft	225.00 ml/min
10/3/2024 1:57 PM	05:40	6.80 pH	18.58 °C	1.35 mS/cm	0.23 mg/L	41.35 NTU	-149.6 mV	9.84 ft	225.00 ml/min
10/3/2024 1:58 PM	06:48	6.74 pH	18.48 °C	1.36 mS/cm	0.18 mg/L	40.10 NTU	-152.3 mV	9.84 ft	225.00 ml/min
10/3/2024 1:59 PM	07:56	6.78 pH	18.33 °C	1.34 mS/cm	0.14 mg/L	37.96 NTU	-155.1 mV	9.84 ft	225.00 ml/min
10/3/2024 2:01 PM	09:04	6.75 pH	18.37 °C	1.35 mS/cm	0.15 mg/L	38.61 NTU	-157.6 mV	9.84 ft	225.00 ml/min
10/3/2024 2:02 PM	10:12	6.74 pH	18.17 °C	1.35 mS/cm	0.11 mg/L	36.03 NTU	-159.9 mV	11.06 ft	225.00 ml/min

10/3/2024 2:03 PM	11:20	6.76 pH	18.45 °C	1.34 mS/cm	0.08 mg/L	35.82 NTU	-162.2 mV	11.06 ft	225.00 ml/min
10/3/2024 2:04 PM	12:28	6.76 pH	17.82 °C	1.33 mS/cm	0.07 mg/L	36.38 NTU	-164.0 mV	11.06 ft	225.00 ml/min
10/3/2024 2:05 PM	13:36	6.76 pH	18.51 °C	1.35 mS/cm	0.38 mg/L	44.74 NTU	-164.9 mV	11.06 ft	175.00 ml/min
10/3/2024 2:06 PM	14:44	6.75 pH	19.06 °C	1.34 mS/cm	0.35 mg/L	38.93 NTU	-165.1 mV	11.06 ft	175.00 ml/min
10/3/2024 2:07 PM	15:52	6.75 pH	19.40 °C	1.34 mS/cm	0.17 mg/L	37.68 NTU	-168.4 mV	11.06 ft	175.00 ml/min
10/3/2024 2:09 PM	17:00	6.75 pH	19.40 °C	1.35 mS/cm	0.08 mg/L	39.88 NTU	-171.4 mV	11.06 ft	175.00 ml/min
10/3/2024 2:10 PM	18:08	6.75 pH	19.67 °C	1.35 mS/cm	0.06 mg/L	39.89 NTU	-174.4 mV	11.06 ft	175.00 ml/min
10/3/2024 2:11 PM	19:16	6.76 pH	19.71 °C	1.35 mS/cm	0.05 mg/L	43.00 NTU	-177.0 mV	11.06 ft	175.00 ml/min
10/3/2024 2:12 PM	20:24	6.76 pH	19.48 °C	1.35 mS/cm	0.07 mg/L	46.33 NTU	-179.4 mV	11.06 ft	175.00 ml/min
10/3/2024 2:13 PM	21:32	6.77 pH	19.51 °C	1.35 mS/cm	0.06 mg/L	45.03 NTU	-181.8 mV	11.06 ft	175.00 ml/min
10/3/2024 2:14 PM	22:40	6.77 pH	19.20 °C	1.36 mS/cm	0.06 mg/L	46.53 NTU	-183.6 mV	11.06 ft	175.00 ml/min
10/3/2024 2:15 PM	23:48	6.78 pH	19.17 °C	1.36 mS/cm	0.08 mg/L	47.02 NTU	-185.5 mV	11.06 ft	175.00 ml/min
10/3/2024 2:16 PM	24:56	6.78 pH	19.27 °C	1.36 mS/cm	0.04 mg/L	49.66 NTU	-187.6 mV	11.06 ft	175.00 ml/min
10/3/2024 2:18 PM	26:04	6.78 pH	19.31 °C	1.36 mS/cm	0.06 mg/L	48.42 NTU	-189.1 mV	11.06 ft	175.00 ml/min
10/3/2024 2:19 PM	27:12	6.79 pH	19.45 °C	1.36 mS/cm	0.06 mg/L	49.80 NTU	-191.0 mV	11.06 ft	175.00 ml/min
10/3/2024 2:20 PM	28:20	6.77 pH	19.30 °C	1.37 mS/cm	0.05 mg/L	52.76 NTU	-192.4 mV	11.85 ft	175.00 ml/min
10/3/2024 2:21 PM	29:28	6.79 pH	19.37 °C	1.37 mS/cm	0.03 mg/L	53.05 NTU	-193.7 mV	11.85 ft	175.00 ml/min
10/3/2024 2:22 PM	30:36	6.80 pH	19.44 °C	1.38 mS/cm	0.02 mg/L	53.78 NTU	-195.1 mV	11.85 ft	175.00 ml/min
10/3/2024 2:23 PM	31:44	6.80 pH	19.38 °C	1.37 mS/cm	0.05 mg/L	56.45 NTU	-195.9 mV	11.85 ft	175.00 ml/min
10/3/2024 2:24 PM	32:52	6.80 pH	19.46 °C	1.37 mS/cm	0.03 mg/L	53.61 NTU	-197.2 mV	11.85 ft	175.00 ml/min
10/3/2024 2:26 PM	34:00	6.84 pH	19.30 °C	1.36 mS/cm	0.07 mg/L	59.15 NTU	-198.4 mV	11.85 ft	175.00 ml/min
10/3/2024 2:27 PM	35:08	6.81 pH	19.40 °C	1.37 mS/cm	0.04 mg/L	55.42 NTU	-199.0 mV	11.85 ft	175.00 ml/min
10/3/2024 2:28 PM	36:16	6.82 pH	19.46 °C	1.37 mS/cm	0.03 mg/L	57.06 NTU	-200.5 mV	11.85 ft	175.00 ml/min
10/3/2024 2:30 PM	38:04	6.94 pH	19.10 °C	1.36 mS/cm	3.34 mg/L	66.29 NTU	-174.5 mV	11.85 ft	175.00 ml/min
10/3/2024 2:31 PM	39:12	6.86 pH	19.14 °C	1.36 mS/cm	0.77 mg/L	65.50 NTU	-191.1 mV	11.85 ft	175.00 ml/min
10/3/2024 2:32 PM	40:20	6.85 pH	19.12 °C	1.36 mS/cm	0.19 mg/L	60.20 NTU	-198.8 mV	11.85 ft	175.00 ml/min
10/3/2024 2:33 PM	41:28	6.85 pH	19.06 °C	1.35 mS/cm	0.06 mg/L	61.29 NTU	-202.2 mV	11.85 ft	175.00 ml/min
10/3/2024 2:34 PM	42:36	6.85 pH	19.11 °C	1.34 mS/cm	0.03 mg/L	56.66 NTU	-204.1 mV	11.85 ft	175.00 ml/min
10/3/2024 2:35 PM	43:44	6.86 pH	18.59 °C	1.33 mS/cm	0.02 mg/L	61.05 NTU	-205.0 mV	11.85 ft	175.00 ml/min

10/3/2024 2:36 PM	44:52	6.87 pH	18.93 °C	1.33 mS/cm	0.02 mg/L	58.49 NTU	-206.2 mV	11.85 ft	175.00 ml/min
10/3/2024 2:38 PM	46:00	6.87 pH	19.02 °C	1.32 mS/cm	0.04 mg/L	57.23 NTU	-207.1 mV	11.85 ft	175.00 ml/min
10/3/2024 2:39 PM	47:08	6.88 pH	19.00 °C	1.31 mS/cm	0.02 mg/L	55.35 NTU	-208.1 mV	11.85 ft	175.00 ml/min
10/3/2024 2:40 PM	48:16	6.88 pH	19.12 °C	1.30 mS/cm	0.00 mg/L	56.49 NTU	-209.1 mV	11.85 ft	175.00 ml/min
10/3/2024 2:41 PM	49:24	6.87 pH	18.79 °C	1.32 mS/cm	0.02 mg/L	56.26 NTU	-209.2 mV	11.85 ft	175.00 ml/min
10/3/2024 2:42 PM	50:32	6.88 pH	19.01 °C	1.31 mS/cm	0.00 mg/L	56.95 NTU	-210.6 mV	11.85 ft	175.00 ml/min
10/3/2024 2:43 PM	51:40	6.89 pH	18.97 °C	1.31 mS/cm	0.00 mg/L	56.73 NTU	-211.5 mV	11.85 ft	175.00 ml/min
10/3/2024 2:44 PM	52:48	6.89 pH	18.72 °C	1.31 mS/cm	0.02 mg/L	55.27 NTU	-212.1 mV	11.85 ft	175.00 ml/min
10/3/2024 2:45 PM	53:56	6.90 pH	18.78 °C	1.30 mS/cm	0.00 mg/L	53.32 NTU	-212.9 mV	11.85 ft	175.00 ml/min
10/3/2024 2:47 PM	55:04	6.88 pH	18.42 °C	1.30 mS/cm	0.00 mg/L	55.06 NTU	-213.6 mV	11.85 ft	175.00 ml/min
10/3/2024 2:48 PM	56:12	6.91 pH	18.71 °C	1.29 mS/cm	0.00 mg/L	53.17 NTU	-214.2 mV	11.85 ft	175.00 ml/min
10/3/2024 2:49 PM	57:20	6.91 pH	18.81 °C	1.29 mS/cm	0.00 mg/L	50.22 NTU	-215.0 mV	11.85 ft	175.00 ml/min
10/3/2024 2:50 PM	58:28	6.91 pH	18.70 °C	1.29 mS/cm	0.00 mg/L	49.20 NTU	-215.5 mV	11.85 ft	175.00 ml/min
10/3/2024 2:51 PM	59:36	6.91 pH	18.81 °C	1.28 mS/cm	0.00 mg/L	49.24 NTU	-216.3 mV	12.90 ft	175.00 ml/min
10/3/2024 2:52 PM	01:00:44	6.94 pH	18.55 °C	1.28 mS/cm	0.00 mg/L	51.85 NTU	-217.0 mV	12.90 ft	175.00 ml/min
10/3/2024 2:53 PM	01:01:52	6.92 pH	18.79 °C	1.29 mS/cm	0.00 mg/L	47.80 NTU	-217.6 mV	12.90 ft	175.00 ml/min
10/3/2024 2:55 PM	01:03:00	6.92 pH	18.95 °C	1.27 mS/cm	0.00 mg/L	45.13 NTU	-218.5 mV	12.90 ft	175.00 ml/min
10/3/2024 2:56 PM	01:04:08	6.92 pH	18.76 °C	1.27 mS/cm	0.00 mg/L	47.12 NTU	-219.0 mV	12.90 ft	175.00 ml/min
10/3/2024 2:57 PM	01:05:16	6.93 pH	18.79 °C	1.27 mS/cm	0.00 mg/L	44.41 NTU	-219.8 mV	12.90 ft	175.00 ml/min
10/3/2024 2:58 PM	01:06:24	6.93 pH	18.78 °C	1.27 mS/cm	0.00 mg/L	43.43 NTU	-220.4 mV	12.90 ft	175.00 ml/min
10/3/2024 2:59 PM	01:07:32	6.93 pH	18.80 °C	1.27 mS/cm	0.00 mg/L	45.15 NTU	-220.8 mV	12.90 ft	175.00 ml/min
10/3/2024 3:00 PM	01:08:40	6.93 pH	18.77 °C	1.27 mS/cm	0.00 mg/L	43.02 NTU	-221.2 mV	12.90 ft	175.00 ml/min
10/3/2024 3:01 PM	01:09:48	6.94 pH	18.42 °C	1.27 mS/cm	0.00 mg/L	43.71 NTU	-221.5 mV	12.90 ft	175.00 ml/min
10/3/2024 3:02 PM	01:10:56	6.94 pH	18.73 °C	1.27 mS/cm	0.00 mg/L	44.08 NTU	-222.3 mV	12.90 ft	175.00 ml/min
10/3/2024 3:04 PM	01:12:04	6.94 pH	18.93 °C	1.27 mS/cm	0.00 mg/L	42.08 NTU	-222.8 mV	12.90 ft	175.00 ml/min
10/3/2024 3:05 PM	01:13:12	6.94 pH	18.74 °C	1.27 mS/cm	0.00 mg/L	41.21 NTU	-223.0 mV	12.90 ft	175.00 ml/min
10/3/2024 3:06 PM	01:14:20	6.94 pH	18.78 °C	1.26 mS/cm	0.02 mg/L	40.28 NTU	-222.3 mV	12.90 ft	175.00 ml/min
10/3/2024 3:07 PM	01:15:28	6.95 pH	18.31 °C	1.26 mS/cm	0.00 mg/L	38.56 NTU	-223.3 mV	13.23 ft	175.00 ml/min

Samples

Sample ID:	Description:
TW02-GW-1024	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/30/2024 5:03:10 PM
Project: WSEC MW-34
Operator Name: Paige Richards

Location Name: MW-34 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 11.57 ft** **Total Depth: 18 ft** **Initial Depth to Water: 9.24 ft**	**Pump Type: Geotech 166PVC18 Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 15.5 ft** **Pump Intake From TOC: 17 ft** **Estimated Total Volume Pumped: 314264.156 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.22 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 955645**

Test Notes:
Sample time: 0835

Water visually clear, pale yellow

Weather Conditions:
Sunny, 90 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/30/2024 5:03 PM	00:00	6.83 pH	15.31 °C	0.83 mS/cm	0.70 mg/L	796.41 NTU	-126.7 mV	9.24 ft	350.00 ml/min
9/30/2024 5:04 PM	01:09	6.80 pH	14.61 °C	0.83 mS/cm	0.20 mg/L	534.08 NTU	-132.6 mV	9.24 ft	350.00 ml/min
9/30/2024 5:05 PM	02:18	6.78 pH	15.02 °C	0.84 mS/cm	0.13 mg/L	403.74 NTU	-138.9 mV	9.24 ft	350.00 ml/min
9/30/2024 5:06 PM	03:27	6.79 pH	15.35 °C	0.84 mS/cm	0.44 mg/L	336.94 NTU	-135.3 mV	9.29 ft	350.00 ml/min
9/30/2024 5:07 PM	04:36	6.79 pH	15.46 °C	0.84 mS/cm	0.45 mg/L	266.78 NTU	-131.6 mV	9.29 ft	350.00 ml/min
9/30/2024 5:08 PM	05:45	6.79 pH	15.54 °C	0.84 mS/cm	0.39 mg/L	271.06 NTU	-132.8 mV	9.29 ft	350.00 ml/min
9/30/2024 5:10 PM	06:54	6.80 pH	15.43 °C	0.84 mS/cm	0.43 mg/L	223.50 NTU	-131.8 mV	9.29 ft	350.00 ml/min
9/30/2024 5:11 PM	08:03	6.81 pH	15.44 °C	0.84 mS/cm	0.46 mg/L	189.96 NTU	-131.0 mV	9.29 ft	350.00 ml/min
9/30/2024 5:12 PM	09:12	6.80 pH	15.65 °C	0.84 mS/cm	0.48 mg/L	176.94 NTU	-131.0 mV	9.29 ft	350.00 ml/min
9/30/2024 5:13 PM	10:21	6.80 pH	15.52 °C	0.83 mS/cm	0.34 mg/L	157.72 NTU	-132.4 mV	9.29 ft	350.00 ml/min

9/30/2024 5:14 PM	11:30	6.80 pH	15.78 °C	0.83 mS/cm	0.39 mg/L	146.93 NTU	-131.6 mV	9.29 ft	350.00 ml/min
9/30/2024 5:15 PM	12:39	6.80 pH	15.74 °C	0.83 mS/cm	0.39 mg/L	140.55 NTU	-131.8 mV	9.29 ft	350.00 ml/min
9/30/2024 5:16 PM	13:48	6.83 pH	15.53 °C	0.83 mS/cm	0.41 mg/L	141.53 NTU	-131.6 mV	9.29 ft	350.00 ml/min
9/30/2024 5:18 PM	14:57	6.81 pH	15.76 °C	0.82 mS/cm	0.47 mg/L	140.79 NTU	-131.0 mV	9.29 ft	350.00 ml/min
9/30/2024 5:19 PM	16:06	6.82 pH	15.65 °C	0.82 mS/cm	0.50 mg/L	118.72 NTU	-130.5 mV	9.29 ft	350.00 ml/min
9/30/2024 5:20 PM	17:15	6.82 pH	15.72 °C	0.82 mS/cm	0.53 mg/L	116.37 NTU	-130.0 mV	9.29 ft	350.00 ml/min
9/30/2024 5:21 PM	18:24	6.83 pH	15.55 °C	0.82 mS/cm	0.45 mg/L	113.55 NTU	-131.5 mV	9.29 ft	350.00 ml/min
9/30/2024 5:22 PM	19:33	6.85 pH	15.60 °C	0.81 mS/cm	0.53 mg/L	96.76 NTU	-130.3 mV	9.29 ft	350.00 ml/min
9/30/2024 5:23 PM	20:42	6.83 pH	15.64 °C	0.82 mS/cm	0.44 mg/L	99.71 NTU	-131.3 mV	9.29 ft	350.00 ml/min
9/30/2024 5:25 PM	21:51	6.84 pH	15.44 °C	0.81 mS/cm	0.35 mg/L	95.17 NTU	-133.1 mV	9.29 ft	350.00 ml/min
9/30/2024 5:26 PM	23:00	6.84 pH	15.50 °C	0.81 mS/cm	0.35 mg/L	86.28 NTU	-133.5 mV	9.29 ft	350.00 ml/min
9/30/2024 5:27 PM	24:09	6.85 pH	15.37 °C	0.81 mS/cm	0.34 mg/L	88.93 NTU	-134.0 mV	9.29 ft	350.00 ml/min
9/30/2024 5:28 PM	25:18	6.85 pH	15.38 °C	0.81 mS/cm	0.39 mg/L	90.07 NTU	-133.6 mV	9.29 ft	350.00 ml/min
9/30/2024 5:29 PM	26:27	6.86 pH	15.39 °C	0.81 mS/cm	0.51 mg/L	71.69 NTU	-132.8 mV	9.29 ft	350.00 ml/min
9/30/2024 5:30 PM	27:36	6.87 pH	15.20 °C	0.80 mS/cm	0.39 mg/L	69.63 NTU	-134.2 mV	9.29 ft	350.00 ml/min
9/30/2024 5:31 PM	28:45	6.87 pH	15.25 °C	0.81 mS/cm	0.57 mg/L	67.57 NTU	-132.8 mV	9.29 ft	350.00 ml/min
9/30/2024 5:33 PM	29:54	6.87 pH	15.15 °C	0.80 mS/cm	0.36 mg/L	69.97 NTU	-135.2 mV	9.29 ft	350.00 ml/min
9/30/2024 5:34 PM	31:03	6.88 pH	15.34 °C	0.80 mS/cm	0.53 mg/L	64.97 NTU	-133.9 mV	9.29 ft	350.00 ml/min
9/30/2024 5:35 PM	32:35	6.93 pH	15.25 °C	0.80 mS/cm	2.52 mg/L	62.74 NTU	-122.4 mV	9.29 ft	350.00 ml/min
9/30/2024 5:36 PM	33:44	6.89 pH	15.24 °C	0.80 mS/cm	0.49 mg/L	58.48 NTU	-132.4 mV	9.29 ft	350.00 ml/min
9/30/2024 5:38 PM	34:53	6.89 pH	15.28 °C	0.80 mS/cm	0.45 mg/L	55.33 NTU	-134.5 mV	9.29 ft	350.00 ml/min
9/30/2024 5:39 PM	36:02	6.90 pH	15.24 °C	0.80 mS/cm	0.47 mg/L	52.26 NTU	-135.2 mV	9.29 ft	350.00 ml/min
9/30/2024 5:40 PM	37:11	6.90 pH	15.24 °C	0.80 mS/cm	0.46 mg/L	52.29 NTU	-136.5 mV	9.29 ft	350.00 ml/min
9/30/2024 5:41 PM	38:20	6.90 pH	15.42 °C	0.80 mS/cm	0.51 mg/L	59.95 NTU	-136.5 mV	9.29 ft	350.00 ml/min
9/30/2024 5:42 PM	39:29	6.91 pH	15.24 °C	0.80 mS/cm	0.46 mg/L	61.32 NTU	-137.5 mV	9.29 ft	350.00 ml/min
9/30/2024 5:43 PM	40:38	6.93 pH	15.10 °C	0.79 mS/cm	0.32 mg/L	66.69 NTU	-139.4 mV	9.29 ft	350.00 ml/min
9/30/2024 5:44 PM	41:47	6.92 pH	15.19 °C	0.80 mS/cm	0.48 mg/L	56.94 NTU	-138.4 mV	9.29 ft	350.00 ml/min
9/30/2024 5:46 PM	42:56	6.92 pH	15.26 °C	0.80 mS/cm	0.50 mg/L	47.59 NTU	-138.2 mV	9.29 ft	350.00 ml/min
9/30/2024 5:47 PM	44:05	6.93 pH	15.32 °C	0.79 mS/cm	0.42 mg/L	51.53 NTU	-139.4 mV	9.29 ft	350.00 ml/min

9/30/2024 5:48 PM	45:14	6.93 pH	15.12 °C	0.80 mS/cm	0.40 mg/L	52.88 NTU	-140.0 mV	9.29 ft	350.00 ml/min
9/30/2024 5:49 PM	46:23	6.95 pH	14.91 °C	0.79 mS/cm	0.33 mg/L	55.38 NTU	-141.4 mV	9.29 ft	350.00 ml/min
9/30/2024 5:50 PM	47:32	6.95 pH	15.12 °C	0.79 mS/cm	0.47 mg/L	56.52 NTU	-140.2 mV	9.29 ft	350.00 ml/min
9/30/2024 5:51 PM	48:41	6.95 pH	15.02 °C	0.79 mS/cm	0.43 mg/L	41.47 NTU	-140.9 mV	9.29 ft	350.00 ml/min
9/30/2024 5:53 PM	49:50	6.95 pH	15.03 °C	0.79 mS/cm	0.44 mg/L	40.32 NTU	-140.7 mV	9.29 ft	350.00 ml/min
9/30/2024 5:54 PM	50:59	6.96 pH	15.00 °C	0.79 mS/cm	0.30 mg/L	40.64 NTU	-142.6 mV	9.29 ft	350.00 ml/min
9/30/2024 5:55 PM	52:08	6.97 pH	15.11 °C	0.78 mS/cm	0.24 mg/L	42.01 NTU	-143.7 mV	9.29 ft	350.00 ml/min
9/30/2024 5:56 PM	53:17	6.97 pH	15.07 °C	0.79 mS/cm	0.40 mg/L	42.99 NTU	-142.9 mV	9.29 ft	350.00 ml/min
9/30/2024 5:57 PM	54:26	6.97 pH	15.08 °C	0.79 mS/cm	0.46 mg/L	39.67 NTU	-142.3 mV	9.29 ft	350.00 ml/min
9/30/2024 5:58 PM	55:35	6.97 pH	15.12 °C	0.79 mS/cm	0.39 mg/L	36.06 NTU	-143.3 mV	9.29 ft	350.00 ml/min
9/30/2024 5:59 PM	56:44	6.98 pH	15.06 °C	0.79 mS/cm	0.32 mg/L	39.86 NTU	-144.3 mV	9.29 ft	350.00 ml/min
9/30/2024 6:01 PM	57:53	6.98 pH	15.02 °C	0.79 mS/cm	0.30 mg/L	55.02 NTU	-145.0 mV	9.29 ft	350.00 ml/min
9/30/2024 6:02 PM	59:02	6.99 pH	15.19 °C	0.79 mS/cm	0.43 mg/L	38.93 NTU	-144.4 mV	9.29 ft	350.00 ml/min
9/30/2024 6:03 PM	01:00:11	7.00 pH	15.06 °C	0.79 mS/cm	0.50 mg/L	38.77 NTU	-143.8 mV	9.29 ft	350.00 ml/min
9/30/2024 6:04 PM	01:01:35	7.07 pH	14.98 °C	0.79 mS/cm	2.95 mg/L	34.65 NTU	-129.5 mV	9.29 ft	350.00 ml/min
9/30/2024 6:05 PM	01:02:44	7.01 pH	14.86 °C	0.79 mS/cm	0.71 mg/L	35.12 NTU	-138.6 mV	9.29 ft	350.00 ml/min
9/30/2024 6:07 PM	01:03:53	7.01 pH	14.91 °C	0.79 mS/cm	0.50 mg/L	35.73 NTU	-140.9 mV	9.29 ft	350.00 ml/min
9/30/2024 6:08 PM	01:05:02	7.01 pH	14.88 °C	0.78 mS/cm	0.53 mg/L	41.94 NTU	-142.2 mV	9.29 ft	350.00 ml/min
9/30/2024 6:09 PM	01:06:11	7.03 pH	14.74 °C	0.78 mS/cm	0.49 mg/L	37.46 NTU	-143.1 mV	9.29 ft	350.00 ml/min
9/30/2024 6:10 PM	01:07:20	7.02 pH	14.85 °C	0.78 mS/cm	0.39 mg/L	43.40 NTU	-144.3 mV	9.29 ft	350.00 ml/min
9/30/2024 6:11 PM	01:08:29	7.03 pH	14.86 °C	0.78 mS/cm	0.57 mg/L	45.08 NTU	-143.8 mV	9.29 ft	350.00 ml/min
9/30/2024 6:12 PM	01:09:38	7.03 pH	14.93 °C	0.78 mS/cm	0.55 mg/L	45.38 NTU	-143.7 mV	9.29 ft	350.00 ml/min
9/30/2024 6:13 PM	01:10:47	7.03 pH	14.84 °C	0.78 mS/cm	0.52 mg/L	34.07 NTU	-144.7 mV	9.29 ft	350.00 ml/min
9/30/2024 6:15 PM	01:11:56	7.04 pH	14.93 °C	0.78 mS/cm	0.58 mg/L	35.21 NTU	-144.1 mV	9.29 ft	350.00 ml/min
9/30/2024 6:16 PM	01:13:05	7.04 pH	14.85 °C	0.78 mS/cm	0.45 mg/L	35.89 NTU	-145.3 mV	9.29 ft	350.00 ml/min
9/30/2024 6:17 PM	01:14:14	7.04 pH	14.84 °C	0.78 mS/cm	0.46 mg/L	31.26 NTU	-146.0 mV	9.29 ft	350.00 ml/min
9/30/2024 6:18 PM	01:15:23	7.05 pH	14.88 °C	0.78 mS/cm	0.49 mg/L	36.34 NTU	-145.8 mV	9.29 ft	350.00 ml/min
9/30/2024 6:19 PM	01:16:32	7.05 pH	14.81 °C	0.78 mS/cm	0.46 mg/L	32.97 NTU	-146.3 mV	9.29 ft	350.00 ml/min
9/30/2024 6:20 PM	01:17:41	7.05 pH	14.90 °C	0.78 mS/cm	0.38 mg/L	42.13 NTU	-146.9 mV	9.29 ft	350.00 ml/min

9/30/2024 6:22 PM	01:18:50	7.05 pH	14.82 °C	0.78 mS/cm	0.41 mg/L	32.39 NTU	-147.3 mV	9.29 ft	350.00 ml/min
9/30/2024 6:23 PM	01:19:59	7.07 pH	14.83 °C	0.78 mS/cm	0.50 mg/L	40.77 NTU	-147.2 mV	9.29 ft	350.00 ml/min
9/30/2024 6:24 PM	01:21:08	7.06 pH	14.77 °C	0.77 mS/cm	0.39 mg/L	36.11 NTU	-147.9 mV	9.29 ft	350.00 ml/min
9/30/2024 6:25 PM	01:22:17	7.06 pH	14.76 °C	0.78 mS/cm	0.57 mg/L	29.78 NTU	-146.7 mV	9.29 ft	350.00 ml/min
9/30/2024 6:26 PM	01:23:26	7.07 pH	14.83 °C	0.77 mS/cm	0.54 mg/L	32.51 NTU	-146.5 mV	9.29 ft	350.00 ml/min
9/30/2024 6:27 PM	01:24:35	7.07 pH	14.73 °C	0.78 mS/cm	0.60 mg/L	35.55 NTU	-146.3 mV	9.29 ft	350.00 ml/min
9/30/2024 6:28 PM	01:25:44	7.08 pH	14.54 °C	0.78 mS/cm	0.42 mg/L	43.19 NTU	-147.2 mV	9.29 ft	350.00 ml/min
9/30/2024 6:30 PM	01:26:53	7.08 pH	14.63 °C	0.77 mS/cm	0.41 mg/L	40.63 NTU	-147.9 mV	9.29 ft	350.00 ml/min
9/30/2024 6:31 PM	01:28:02	7.08 pH	14.67 °C	0.77 mS/cm	0.58 mg/L	39.13 NTU	-147.4 mV	9.29 ft	350.00 ml/min
9/30/2024 6:32 PM	01:29:11	7.08 pH	14.72 °C	0.77 mS/cm	0.46 mg/L	35.53 NTU	-148.2 mV	9.29 ft	350.00 ml/min
9/30/2024 6:33 PM	01:30:20	7.08 pH	14.70 °C	0.77 mS/cm	0.31 mg/L	38.61 NTU	-149.0 mV	9.29 ft	350.00 ml/min
9/30/2024 6:34 PM	01:31:29	7.09 pH	14.67 °C	0.77 mS/cm	0.03 mg/L	36.54 NTU	-152.4 mV	9.29 ft	350.00 ml/min
9/30/2024 6:36 PM	01:33:36	7.12 pH	14.67 °C	0.77 mS/cm	2.60 mg/L	28.86 NTU	-137.0 mV	9.29 ft	350.00 ml/min
9/30/2024 6:37 PM	01:34:45	7.10 pH	14.49 °C	0.77 mS/cm	0.38 mg/L	25.70 NTU	-145.6 mV	9.29 ft	350.00 ml/min
9/30/2024 6:39 PM	01:35:54	7.09 pH	14.69 °C	0.77 mS/cm	0.45 mg/L	28.47 NTU	-147.8 mV	9.29 ft	350.00 ml/min
9/30/2024 6:40 PM	01:37:03	7.09 pH	14.56 °C	0.77 mS/cm	0.40 mg/L	24.94 NTU	-148.9 mV	9.29 ft	350.00 ml/min
9/30/2024 6:41 PM	01:38:12	7.10 pH	14.45 °C	0.77 mS/cm	0.29 mg/L	26.83 NTU	-150.2 mV	9.29 ft	350.00 ml/min
9/30/2024 6:42 PM	01:39:21	7.10 pH	14.49 °C	0.77 mS/cm	0.34 mg/L	24.36 NTU	-151.0 mV	9.29 ft	350.00 ml/min
9/30/2024 6:43 PM	01:40:30	7.10 pH	14.57 °C	0.77 mS/cm	0.29 mg/L	30.71 NTU	-151.5 mV	9.29 ft	350.00 ml/min
9/30/2024 6:44 PM	01:41:39	7.10 pH	14.48 °C	0.77 mS/cm	0.19 mg/L	27.92 NTU	-152.7 mV	9.29 ft	350.00 ml/min
9/30/2024 6:45 PM	01:42:48	7.10 pH	14.51 °C	0.77 mS/cm	0.36 mg/L	32.08 NTU	-152.3 mV	9.29 ft	350.00 ml/min
9/30/2024 6:47 PM	01:43:57	7.10 pH	14.61 °C	0.77 mS/cm	0.28 mg/L	32.43 NTU	-151.8 mV	9.29 ft	350.00 ml/min
9/30/2024 6:48 PM	01:45:06	7.10 pH	14.41 °C	0.77 mS/cm	0.38 mg/L	33.62 NTU	-152.0 mV	9.29 ft	350.00 ml/min
9/30/2024 6:49 PM	01:46:15	7.10 pH	14.59 °C	0.77 mS/cm	0.35 mg/L	38.14 NTU	-152.2 mV	9.29 ft	350.00 ml/min
9/30/2024 6:50 PM	01:47:24	7.11 pH	14.55 °C	0.77 mS/cm	0.40 mg/L	32.63 NTU	-152.2 mV	9.29 ft	350.00 ml/min
9/30/2024 6:51 PM	01:48:33	7.11 pH	14.46 °C	0.77 mS/cm	0.20 mg/L	35.69 NTU	-152.7 mV	9.29 ft	350.00 ml/min
9/30/2024 6:52 PM	01:49:42	7.10 pH	14.45 °C	0.77 mS/cm	0.10 mg/L	28.53 NTU	-154.5 mV	9.29 ft	350.00 ml/min
9/30/2024 6:54 PM	01:50:51	7.11 pH	14.42 °C	0.77 mS/cm	0.18 mg/L	26.34 NTU	-154.9 mV	9.29 ft	350.00 ml/min
9/30/2024 6:55 PM	01:52:00	7.11 pH	14.44 °C	0.77 mS/cm	0.15 mg/L	26.79 NTU	-155.3 mV	9.29 ft	350.00 ml/min

9/30/2024 6:56 PM	01:53:09	7.11 pH	14.45 °C	0.76 mS/cm	0.18 mg/L	25.78 NTU	-155.5 mV	9.29 ft	350.00 ml/min
9/30/2024 6:57 PM	01:54:18	7.11 pH	14.34 °C	0.76 mS/cm	0.18 mg/L	27.12 NTU	-155.6 mV	9.29 ft	350.00 ml/min
9/30/2024 6:58 PM	01:55:27	7.11 pH	14.40 °C	0.77 mS/cm	0.17 mg/L	25.51 NTU	-155.6 mV	9.29 ft	350.00 ml/min
9/30/2024 6:59 PM	01:56:36	7.11 pH	14.56 °C	0.77 mS/cm	0.11 mg/L	27.46 NTU	-156.6 mV	9.29 ft	350.00 ml/min
9/30/2024 7:00 PM	01:57:45	7.11 pH	14.58 °C	0.77 mS/cm	0.12 mg/L	27.79 NTU	-156.6 mV	9.29 ft	350.00 ml/min
9/30/2024 7:02 PM	01:58:54	7.11 pH	14.47 °C	0.76 mS/cm	0.18 mg/L	27.93 NTU	-155.7 mV	9.29 ft	350.00 ml/min
9/30/2024 7:03 PM	02:00:03	7.11 pH	14.50 °C	0.76 mS/cm	0.17 mg/L	28.13 NTU	-156.1 mV	9.29 ft	350.00 ml/min
10/1/2024 7:40 AM	14:37:02	6.64 pH	14.11 °C	0.80 mS/cm	5.42 mg/L	202.27 NTU	-109.3 mV	9.42 ft	350.00 ml/min
10/1/2024 7:41 AM	14:38:11	6.78 pH	13.34 °C	0.82 mS/cm	1.01 mg/L	153.34 NTU	-128.7 mV	9.42 ft	200.00 ml/min
10/1/2024 7:42 AM	14:39:20	6.81 pH	13.14 °C	0.82 mS/cm	0.71 mg/L	147.07 NTU	-131.5 mV	9.42 ft	200.00 ml/min
10/1/2024 7:43 AM	14:40:29	6.83 pH	13.22 °C	0.82 mS/cm	0.75 mg/L	136.73 NTU	-134.1 mV	9.42 ft	200.00 ml/min
10/1/2024 7:44 AM	14:41:38	6.85 pH	13.20 °C	0.82 mS/cm	0.73 mg/L	124.78 NTU	-135.7 mV	9.42 ft	200.00 ml/min
10/1/2024 7:45 AM	14:42:47	6.86 pH	13.21 °C	0.82 mS/cm	0.67 mg/L	126.15 NTU	-137.5 mV	9.42 ft	200.00 ml/min
10/1/2024 7:47 AM	14:43:56	6.87 pH	13.10 °C	0.82 mS/cm	0.59 mg/L	122.23 NTU	-137.6 mV	9.42 ft	200.00 ml/min
10/1/2024 7:48 AM	14:45:05	6.88 pH	13.07 °C	0.82 mS/cm	0.56 mg/L	123.94 NTU	-136.5 mV	9.42 ft	200.00 ml/min
10/1/2024 7:49 AM	14:46:14	6.89 pH	13.08 °C	0.82 mS/cm	0.66 mg/L	114.45 NTU	-135.8 mV	9.42 ft	200.00 ml/min
10/1/2024 7:50 AM	14:47:23	6.89 pH	13.05 °C	0.82 mS/cm	0.66 mg/L	103.73 NTU	-135.1 mV	9.42 ft	200.00 ml/min
10/1/2024 7:51 AM	14:48:32	6.90 pH	13.08 °C	0.81 mS/cm	0.63 mg/L	98.90 NTU	-135.0 mV	9.42 ft	200.00 ml/min
10/1/2024 7:52 AM	14:49:41	6.90 pH	13.08 °C	0.81 mS/cm	0.60 mg/L	90.60 NTU	-135.4 mV	9.46 ft	200.00 ml/min
10/1/2024 7:54 AM	14:50:50	6.91 pH	13.08 °C	0.81 mS/cm	0.61 mg/L	93.77 NTU	-135.8 mV	9.46 ft	200.00 ml/min
10/1/2024 7:55 AM	14:51:59	6.92 pH	13.07 °C	0.81 mS/cm	0.56 mg/L	90.03 NTU	-135.6 mV	9.46 ft	200.00 ml/min
10/1/2024 7:56 AM	14:53:08	6.92 pH	13.04 °C	0.81 mS/cm	0.58 mg/L	79.48 NTU	-136.0 mV	9.46 ft	200.00 ml/min
10/1/2024 7:57 AM	14:54:17	6.93 pH	13.04 °C	0.81 mS/cm	0.62 mg/L	73.36 NTU	-136.0 mV	9.46 ft	200.00 ml/min
10/1/2024 7:58 AM	14:55:26	6.93 pH	13.03 °C	0.80 mS/cm	0.55 mg/L	64.02 NTU	-136.1 mV	9.46 ft	200.00 ml/min
10/1/2024 7:59 AM	14:56:35	6.93 pH	13.02 °C	0.80 mS/cm	0.61 mg/L	68.50 NTU	-136.1 mV	9.46 ft	200.00 ml/min
10/1/2024 8:00 AM	14:57:44	6.94 pH	13.00 °C	0.80 mS/cm	0.57 mg/L	65.01 NTU	-136.5 mV	9.46 ft	200.00 ml/min
10/1/2024 8:02 AM	14:58:53	6.94 pH	13.00 °C	0.80 mS/cm	0.55 mg/L	63.09 NTU	-136.6 mV	9.46 ft	200.00 ml/min
10/1/2024 8:03 AM	15:00:02	6.94 pH	12.98 °C	0.80 mS/cm	0.63 mg/L	54.96 NTU	-137.1 mV	9.46 ft	200.00 ml/min
10/1/2024 8:04 AM	15:01:11	6.95 pH	12.96 °C	0.79 mS/cm	0.60 mg/L	56.08 NTU	-136.9 mV	9.46 ft	200.00 ml/min

10/1/2024 8:05 AM	15:02:20	6.95 pH	12.98 °C	0.79 mS/cm	0.62 mg/L	55.86 NTU	-137.1 mV	9.46 ft	200.00 ml/min
10/1/2024 8:06 AM	15:03:29	6.95 pH	12.97 °C	0.79 mS/cm	0.54 mg/L	53.59 NTU	-137.8 mV	9.46 ft	200.00 ml/min
10/1/2024 8:07 AM	15:04:38	6.96 pH	12.93 °C	0.79 mS/cm	0.52 mg/L	52.76 NTU	-137.8 mV	9.46 ft	200.00 ml/min
10/1/2024 8:08 AM	15:05:47	6.96 pH	12.92 °C	0.79 mS/cm	0.52 mg/L	44.92 NTU	-138.1 mV	9.46 ft	200.00 ml/min
10/1/2024 8:10 AM	15:06:56	6.96 pH	12.93 °C	0.78 mS/cm	0.53 mg/L	42.72 NTU	-137.9 mV	9.46 ft	200.00 ml/min
10/1/2024 8:11 AM	15:08:05	6.96 pH	12.94 °C	0.78 mS/cm	0.51 mg/L	38.72 NTU	-138.3 mV	9.46 ft	200.00 ml/min
10/1/2024 8:12 AM	15:09:14	6.96 pH	12.93 °C	0.78 mS/cm	0.53 mg/L	37.73 NTU	-138.4 mV	9.46 ft	200.00 ml/min
10/1/2024 8:13 AM	15:10:23	6.97 pH	12.93 °C	0.78 mS/cm	0.54 mg/L	39.93 NTU	-138.8 mV	9.46 ft	200.00 ml/min
10/1/2024 8:14 AM	15:11:32	6.97 pH	12.93 °C	0.78 mS/cm	0.58 mg/L	40.60 NTU	-138.7 mV	9.46 ft	200.00 ml/min
10/1/2024 8:15 AM	15:12:41	6.97 pH	12.94 °C	0.77 mS/cm	0.51 mg/L	32.49 NTU	-138.9 mV	9.46 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW34-GW-1024	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 12/10/2024 3:54:42 PM
Project: WSEC MW-105
Operator Name: Brooke Wasson

Location Name: MW-105 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16.3 ft** **Total Depth: 26.5 ft** **Initial Depth to Water: 14.95 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 20.64 ft** **Pump Intake From TOC: 22.5 ft** **Estimated Total Volume Pumped: 15985 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 300 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1650

Weather Conditions:
39 degrees F cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 3:54 PM	00:00	6.87 pH	14.34 °C	1.52 mS/cm	3.31 mg/L	90.46 NTU	20.4 mV	14.95 ft	300.00 ml/min
12/10/2024 3:57 PM	02:19	6.86 pH	14.56 °C	1.52 mS/cm	2.67 mg/L	51.63 NTU	19.1 mV	14.95 ft	300.00 ml/min
12/10/2024 3:59 PM	04:38	6.85 pH	14.50 °C	1.52 mS/cm	2.75 mg/L	39.44 NTU	19.6 mV	14.95 ft	300.00 ml/min
12/10/2024 4:01 PM	06:57	6.85 pH	14.52 °C	1.52 mS/cm	2.55 mg/L	27.10 NTU	19.8 mV	14.95 ft	300.00 ml/min
12/10/2024 4:03 PM	09:16	6.85 pH	14.41 °C	1.52 mS/cm	2.51 mg/L	26.58 NTU	19.9 mV	14.95 ft	300.00 ml/min
12/10/2024 4:06 PM	11:35	6.85 pH	14.40 °C	1.52 mS/cm	2.29 mg/L	31.40 NTU	20.1 mV	14.95 ft	300.00 ml/min
12/10/2024 4:08 PM	13:54	6.85 pH	14.50 °C	1.52 mS/cm	2.16 mg/L	35.71 NTU	20.7 mV	14.95 ft	300.00 ml/min
12/10/2024 4:10 PM	16:13	6.84 pH	14.56 °C	1.52 mS/cm	2.23 mg/L	32.40 NTU	21.0 mV	14.95 ft	300.00 ml/min
12/10/2024 4:13 PM	18:32	6.84 pH	14.59 °C	1.52 mS/cm	2.20 mg/L	29.63 NTU	20.9 mV	14.95 ft	300.00 ml/min
12/10/2024 4:15 PM	20:51	6.84 pH	14.63 °C	1.51 mS/cm	2.02 mg/L	21.51 NTU	21.2 mV	14.95 ft	300.00 ml/min
12/10/2024 4:17 PM	23:10	6.84 pH	14.52 °C	1.51 mS/cm	2.13 mg/L	20.41 NTU	21.5 mV	14.95 ft	300.00 ml/min
12/10/2024 4:20 PM	25:29	6.85 pH	14.43 °C	1.51 mS/cm	2.57 mg/L	18.84 NTU	22.1 mV	14.95 ft	300.00 ml/min

12/10/2024 4:22 PM	27:48	6.84 pH	14.55 °C	1.51 mS/cm	2.07 mg/L	16.66 NTU	21.8 mV	14.95 ft	300.00 ml/min
12/10/2024 4:24 PM	30:07	6.85 pH	14.46 °C	1.51 mS/cm	2.04 mg/L	17.73 NTU	21.9 mV	14.95 ft	300.00 ml/min
12/10/2024 4:27 PM	32:26	6.85 pH	14.48 °C	1.50 mS/cm	2.04 mg/L	15.30 NTU	22.0 mV	14.95 ft	300.00 ml/min
12/10/2024 4:29 PM	34:45	6.84 pH	14.34 °C	1.50 mS/cm	1.98 mg/L	16.05 NTU	22.2 mV	14.95 ft	300.00 ml/min
12/10/2024 4:31 PM	37:04	6.85 pH	14.30 °C	1.50 mS/cm	1.89 mg/L	10.30 NTU	22.1 mV	14.95 ft	300.00 ml/min
12/10/2024 4:34 PM	39:23	6.85 pH	14.28 °C	1.50 mS/cm	2.07 mg/L	9.97 NTU	22.3 mV	14.95 ft	300.00 ml/min
12/10/2024 4:36 PM	41:42	6.85 pH	14.20 °C	1.50 mS/cm	1.83 mg/L	8.99 NTU	22.3 mV	14.95 ft	300.00 ml/min
12/10/2024 4:38 PM	44:01	6.85 pH	14.00 °C	1.50 mS/cm	2.00 mg/L	10.61 NTU	22.6 mV	14.95 ft	300.00 ml/min
12/10/2024 4:41 PM	46:20	6.85 pH	14.12 °C	1.50 mS/cm	1.96 mg/L	8.28 NTU	22.7 mV	14.95 ft	300.00 ml/min
12/10/2024 4:43 PM	48:39	6.84 pH	14.14 °C	1.50 mS/cm	1.78 mg/L	8.79 NTU	22.7 mV	14.95 ft	300.00 ml/min
12/10/2024 4:45 PM	50:58	6.85 pH	14.05 °C	1.50 mS/cm	1.78 mg/L	6.80 NTU	22.6 mV	14.95 ft	300.00 ml/min
12/10/2024 4:47 PM	53:17	6.84 pH	14.04 °C	1.50 mS/cm	1.72 mg/L	6.19 NTU	22.7 mV	14.95 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW105-GW-1224	

Low-Flow Test Report:

Test Date / Time: 12/10/2024 4:57:57 PM
Project: WSEC MW-108
Operator Name: Brooke Wasson

Location Name: MW-108 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 11 ft** **Top of Screen: 25.4 ft** **Total Depth: 26.4 ft** **Initial Depth to Water: 14.7 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.45 ft** **Pump Intake From TOC: 23.3 ft** **Estimated Total Volume Pumped: 1633.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.35 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1705

Weather Conditions:
36 degrees F mostly sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 4:57 PM	00:00	6.94 pH	12.30 °C	1.34 mS/cm	1.29 mg/L	43.74 NTU	-207.3 mV	14.70 ft	300.00 ml/min
12/10/2024 5:00 PM	02:20	6.97 pH	12.59 °C	1.36 mS/cm	0.20 mg/L	10.72 NTU	-248.1 mV	15.05 ft	200.00 ml/min
12/10/2024 5:02 PM	04:40	6.97 pH	12.67 °C	1.36 mS/cm	0.13 mg/L	3.45 NTU	-252.5 mV	15.05 ft	200.00 ml/min
12/10/2024 5:04 PM	07:00	6.97 pH	12.72 °C	1.36 mS/cm	0.15 mg/L	0.20 NTU	-251.2 mV	15.05 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW108-GW-1224	

Low-Flow Test Report:

Test Date / Time: 12/10/2024 6:00:51 PM
Project: WSEC MW-156
Operator Name: Brooke Wasson

Location Name: MW-156 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 13 ft** **Total Depth: 23 ft** **Initial Depth to Water: 20.12 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 19.8 ft** **Pump Intake From TOC: 21.7 ft** **Estimated Total Volume Pumped: 2760 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
WL below pump
Sampled 1815

Weather Conditions:
36 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 6:00 PM	00:00	7.09 pH	9.70 °C	0.18 mS/cm	9.07 mg/L	0.00 NTU	-11.8 mV	20.12 ft	300.00 ml/min
12/10/2024 6:03 PM	02:18	6.71 pH	12.71 °C	1.60 mS/cm	1.17 mg/L	4.60 NTU	-2.7 mV	20.12 ft	300.00 ml/min
12/10/2024 6:05 PM	04:36	6.72 pH	12.95 °C	1.60 mS/cm	0.60 mg/L	0.00 NTU	-3.1 mV	20.12 ft	200.00 ml/min
12/10/2024 6:07 PM	06:54	6.73 pH	12.28 °C	1.60 mS/cm	0.36 mg/L	0.00 NTU	-2.6 mV	20.12 ft	200.00 ml/min
12/10/2024 6:10 PM	09:12	6.73 pH	12.13 °C	1.61 mS/cm	0.32 mg/L	0.00 NTU	-2.0 mV	20.12 ft	200.00 ml/min
12/10/2024 6:12 PM	11:30	6.73 pH	12.22 °C	1.61 mS/cm	0.30 mg/L	0.00 NTU	-1.5 mV	20.12 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW156-GW-1224	

Low-Flow Test Report:

Test Date / Time: 12/10/2024 5:43:00 PM
Project: WSEC MW-157
Operator Name: Brooke Wasson

Location Name: MW-157 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 15.3 ft** **Total Depth: 25.3 ft** **Initial Depth to Water: 19.15 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 22.1 ft** **Pump Intake From TOC: 24 ft** **Estimated Total Volume Pumped: 1750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0.25 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1755

Weather Conditions:
36 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 5:43 PM	00:00	6.70 pH	10.22 °C	1.08 mS/cm	4.78 mg/L	2.59 NTU	-37.2 mV	19.15 ft	300.00 ml/min
12/10/2024 5:45 PM	02:20	6.63 pH	11.63 °C	1.28 mS/cm	0.39 mg/L	6.50 NTU	-24.2 mV	19.40 ft	150.00 ml/min
12/10/2024 5:47 PM	04:40	6.64 pH	11.71 °C	1.29 mS/cm	0.16 mg/L	2.45 NTU	-20.6 mV	19.40 ft	150.00 ml/min
12/10/2024 5:50 PM	07:00	6.65 pH	11.82 °C	1.29 mS/cm	0.10 mg/L	0.19 NTU	-18.0 mV	19.40 ft	150.00 ml/min
12/10/2024 5:52 PM	09:20	6.65 pH	11.95 °C	1.29 mS/cm	0.06 mg/L	0.00 NTU	-16.2 mV	19.40 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW156-GW-1224	

Low-Flow Test Report:

Test Date / Time: 12/10/2024 5:21:11 PM
Project: WSEC MW-191
Operator Name: Brooke Wasson

Location Name: MW-191 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 16.16 ft** **Total Depth: 26.16 ft** **Initial Depth to Water: 21.41 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 23.03 ft** **Pump Intake From TOC: 24.9 ft** **Estimated Total Volume Pumped: 2350 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.12 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1535

Weather Conditions:
36 degrees F dusk

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 5:21 PM	00:00	6.87 pH	12.08 °C	1.26 mS/cm	5.83 mg/L	6.82 NTU	-102.1 mV	21.41 ft	200.00 ml/min
12/10/2024 5:23 PM	02:21	6.85 pH	12.51 °C	1.27 mS/cm	3.97 mg/L	1.54 NTU	-73.5 mV	21.51 ft	200.00 ml/min
12/10/2024 5:25 PM	04:42	6.86 pH	12.75 °C	1.27 mS/cm	3.69 mg/L	0.64 NTU	-56.2 mV	21.53 ft	200.00 ml/min
12/10/2024 5:28 PM	07:03	6.86 pH	12.68 °C	1.27 mS/cm	3.58 mg/L	0.00 NTU	-42.7 mV	21.53 ft	200.00 ml/min
12/10/2024 5:30 PM	09:24	6.86 pH	12.57 °C	1.27 mS/cm	3.56 mg/L	0.00 NTU	-31.7 mV	21.53 ft	200.00 ml/min
12/10/2024 5:32 PM	11:45	6.86 pH	12.61 °C	1.26 mS/cm	3.50 mg/L	0.00 NTU	-23.1 mV	21.53 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW191-GW-1224	

Low-Flow Test Report:

Test Date / Time: 12/10/2024 6:21:06 PM
Project: WSEC MW-227
Operator Name: Brooke Wasson

Location Name: MW-227 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 10 ft** **Top of Screen: 14.15 ft** **Total Depth: 24.15 ft** **Initial Depth to Water: 21 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 21.75 ft** **Pump Intake From TOC: 23.6 ft** **Estimated Total Volume Pumped: 2333.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 250 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1835

Weather Conditions:
35 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 6:21 PM	00:00	6.90 pH	11.80 °C	1.33 mS/cm	5.87 mg/L	0.36 NTU	52.3 mV	21.00 ft	250.00 ml/min
12/10/2024 6:23 PM	02:20	6.85 pH	13.07 °C	1.28 mS/cm	1.22 mg/L	0.24 NTU	37.6 mV	21.03 ft	250.00 ml/min
12/10/2024 6:25 PM	04:40	6.85 pH	12.99 °C	1.27 mS/cm	0.77 mg/L	0.64 NTU	31.2 mV	21.03 ft	250.00 ml/min
12/10/2024 6:28 PM	07:00	6.85 pH	13.32 °C	1.27 mS/cm	0.65 mg/L	0.00 NTU	28.0 mV	21.03 ft	250.00 ml/min
12/10/2024 6:30 PM	09:20	6.85 pH	13.36 °C	1.27 mS/cm	0.62 mg/L	0.00 NTU	25.9 mV	21.03 ft	250.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 12/10/2024 2:40:59 PM
Project: WSEC MW-244
Operator Name: Brooke Wasson

Location Name: MW-244 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 16.9 ft** **Total Depth: 31.9 ft** **Initial Depth to Water: 26.29 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 28.82 ft** **Pump Intake From TOC: 30.7 ft** **Estimated Total Volume Pumped: 3383.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.07 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1500

Weather Conditions:
40 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 2:40 PM	00:00	6.98 pH	12.23 °C	1.40 mS/cm	5.09 mg/L	2.83 NTU	-12.4 mV	26.29 ft	200.00 ml/min
12/10/2024 2:43 PM	02:25	7.01 pH	12.19 °C	1.24 mS/cm	0.66 mg/L	76.80 NTU	-104.8 mV	26.35 ft	200.00 ml/min
12/10/2024 2:45 PM	04:50	7.03 pH	12.33 °C	1.20 mS/cm	0.25 mg/L	48.53 NTU	-107.9 mV	26.36 ft	200.00 ml/min
12/10/2024 2:48 PM	07:15	7.04 pH	12.20 °C	1.18 mS/cm	0.13 mg/L	23.80 NTU	-108.3 mV	26.36 ft	200.00 ml/min
12/10/2024 2:50 PM	09:40	7.04 pH	12.04 °C	1.18 mS/cm	0.08 mg/L	18.19 NTU	-108.9 mV	26.36 ft	200.00 ml/min
12/10/2024 2:53 PM	12:05	7.04 pH	12.03 °C	1.18 mS/cm	0.06 mg/L	11.28 NTU	-109.5 mV	26.36 ft	200.00 ml/min
12/10/2024 2:55 PM	14:30	7.03 pH	12.03 °C	1.18 mS/cm	0.04 mg/L	6.15 NTU	-109.2 mV	26.36 ft	200.00 ml/min
12/10/2024 2:57 PM	16:55	7.03 pH	12.05 °C	1.18 mS/cm	0.04 mg/L	3.82 NTU	-108.9 mV	26.36 ft	200.00 ml/min

Samples

Sample ID:	Description:

MW244-GW-1224	

Low-Flow Test Report:

Test Date / Time: 12/10/2024 2:17:23 PM
Project: WSEC MW-245
Operator Name: Brooke Wasson

Location Name: MW-245 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18.8 ft** **Total Depth: 33.8 ft** **Initial Depth to Water: 28.69 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.95 ft** **Pump Intake From TOC: 32.8 ft** **Estimated Total Volume Pumped: 2676.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.84 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1430

Weather Conditions:
40 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 2:17 PM	00:00	6.94 pH	13.24 °C	1.89 mS/cm	5.12 mg/L	48.59 NTU	-5.4 mV	29.30 ft	300.00 ml/min
12/10/2024 2:19 PM	02:26	6.81 pH	13.35 °C	1.90 mS/cm	0.60 mg/L	44.44 NTU	-3.4 mV	29.40 ft	200.00 ml/min
12/10/2024 2:22 PM	04:52	6.81 pH	13.36 °C	1.89 mS/cm	0.61 mg/L	21.07 NTU	-6.3 mV	29.40 ft	200.00 ml/min
12/10/2024 2:24 PM	07:18	6.82 pH	13.13 °C	1.89 mS/cm	0.62 mg/L	7.67 NTU	-16.2 mV	29.53 ft	200.00 ml/min
12/10/2024 2:27 PM	09:44	6.82 pH	12.96 °C	1.89 mS/cm	0.70 mg/L	4.90 NTU	-25.3 mV	29.53 ft	200.00 ml/min
12/10/2024 2:29 PM	12:10	6.82 pH	12.89 °C	1.89 mS/cm	0.62 mg/L	2.50 NTU	-32.2 mV	29.53 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW245-GW-1224	

Low-Flow Test Report:

Test Date / Time: 12/10/2024 3:08:12 PM
Project: WSEC MW-247
Operator Name: Brooke Wasson

Location Name: MW-247 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 18.2 ft** **Total Depth: 33.2 ft** **Initial Depth to Water: 27.89 ft**	**Pump Type: Geotech Bladder Pump** **Tubing Type: Twin bonded 1/4" x 1/4" tubing** **Tubing Inner Diameter: 0.125 in** **Tubing Length: 30.46 ft** **Pump Intake From TOC: 32.3 ft** **Estimated Total Volume Pumped: 2433.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.21 ft**	**Instrument Used: Aqua TROLL 600** **Serial Number: 1031091**

Test Notes:
Sampled 1520

Weather Conditions:
40 degrees F sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
12/10/2024 3:08 PM	00:00	7.07 pH	11.34 °C	1.30 mS/cm	6.24 mg/L	11.10 NTU	-40.8 mV	28.10 ft	200.00 ml/min
12/10/2024 3:10 PM	02:26	6.78 pH	12.36 °C	1.34 mS/cm	1.13 mg/L	16.93 NTU	-3.2 mV	28.10 ft	200.00 ml/min
12/10/2024 3:13 PM	04:52	6.80 pH	12.39 °C	1.33 mS/cm	0.46 mg/L	7.14 NTU	0.8 mV	28.10 ft	200.00 ml/min
12/10/2024 3:15 PM	07:18	6.81 pH	12.37 °C	1.32 mS/cm	0.26 mg/L	2.47 NTU	-0.0 mV	28.10 ft	200.00 ml/min
12/10/2024 3:17 PM	09:44	6.83 pH	12.40 °C	1.32 mS/cm	0.18 mg/L	0.00 NTU	-2.4 mV	28.10 ft	200.00 ml/min
12/10/2024 3:20 PM	12:10	6.84 pH	12.25 °C	1.31 mS/cm	0.13 mg/L	0.00 NTU	-5.2 mV	28.10 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW247-GW-1224	
DP01-GW-1224	
MW247-GW-1224 MS	

MW247-GW-1224 MSD	

Appendix C

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 4/30/2024 2:41:41 PM

JOB DESCRIPTION

MidAmerican WSEC CCR Background

JOB NUMBER

310-278034-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

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

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

Authorization

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4/30/2024 2:41:41 PM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

Table of Contents

Job ID: 310-278034-1 Eurofins Cedar Falls

Job Narrative
310-278034-1

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

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

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

Receipt
The samples were received on 4/3/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 1.1°C.

HPLC/IC
Method 9056A_ORGFM_28D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 310-418131 recovered outside control limits for the following analytes: fluoride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 9056A_ORGFM_28D: The continuing calibration verification (CCV) associated with batch 310-418131 recovered above the upper control limit for fluoride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: TW1-GW-0424 (310-278034-1), TW2-GW-0424 (310-278034-2), MW34-GW-0424 (310-278034-3) and MW307D-GW-0424 (310-278034-4).

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: TW1-GW-0424 (310-278034-1), TW2-GW-0424 (310-278034-2), MW34-GW-0424 (310-278034-3) and MW307D-GW-0424 (310-278034-4). Elevated reporting limits (RLs) are provided.

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

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

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

Job ID: 310-278034-2 Eurofins Cedar Falls

Job Narrative
310-278034-2

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

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

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

Receipt
The samples were received on 4/3/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.9°C and 1.1°C.

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

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

Sample Summary

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-278034-1	TW1-GW-0424	Water	04/01/24 17:35	04/03/24 09:40
310-278034-2	TW2-GW-0424	Water	04/01/24 17:20	04/03/24 09:40
310-278034-3	MW34-GW-0424	Water	04/01/24 16:25	04/03/24 09:40
310-278034-4	MW307D-GW-0424	Water	04/02/24 13:45	04/03/24 09:40

Detection Summary

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW1-GW-0424 — Lab Sample ID: 310-278034-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	88.4		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0570		0.00200		mg/L	1		6020B	Total/NA
Barium	0.497		0.00200		mg/L	1		6020B	Total/NA
Boron	0.380		0.100		mg/L	1		6020B	Total/NA
Calcium	169		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000732		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0419		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	736		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: TW2-GW-0424 — Lab Sample ID: 310-278034-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	46.0		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0873		0.00200		mg/L	1		6020B	Total/NA
Barium	0.370		0.00200		mg/L	1		6020B	Total/NA
Boron	0.423		0.100		mg/L	1		6020B	Total/NA
Calcium	169		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000673		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0572		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	794		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW34-GW-0424 — Lab Sample ID: 310-278034-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.23		5.00		mg/L	5		9056A	Total/NA
Sulfate	29.7		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.105		0.00200		mg/L	1		6020B	Total/NA
Barium	0.496		0.00200		mg/L	1		6020B	Total/NA
Calcium	86.3		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0356		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00434		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	422		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW307D-GW-0424 — Lab Sample ID: 310-278034-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	27.1		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0173		0.00200		mg/L	1		6020B	Total/NA
Barium	0.473		0.00200		mg/L	1		6020B	Total/NA
Boron	0.193		0.100		mg/L	1		6020B	Total/NA
Calcium	121		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00288		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0741		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00520		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	390		250		mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: TW1-GW-0424 — Lab Sample ID: 310-278034-1

Date Collected: 04/01/24 17:35 — **Matrix: Water**
Date Received: 04/03/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**13.2**		5.00		mg/L			04/04/24 19:10	5
Fluoride	<1.00	*+	1.00		mg/L			04/04/24 19:10	5
Sulfate	**88.4**		5.00		mg/L			04/04/24 19:10	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:37	1
Arsenic	**0.0570**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:37	1
Barium	**0.497**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:37	1
Beryllium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:37	1
Boron	**0.380**		0.100		mg/L		04/09/24 09:00	04/10/24 20:37	1
Cadmium	<0.000200		0.000200		mg/L		04/09/24 09:00	04/10/24 20:37	1
Calcium	**169**		0.500		mg/L		04/09/24 09:00	04/10/24 20:37	1
Chromium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:37	1
Cobalt	**0.000732**		0.000500		mg/L		04/09/24 09:00	04/10/24 20:37	1
Lithium	**0.0419**		0.0100		mg/L		04/09/24 09:00	04/10/24 20:37	1
Lead	<0.000500		0.000500		mg/L		04/09/24 09:00	04/10/24 20:37	1
Molybdenum	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:37	1
Selenium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:37	1
Thallium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:37	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/08/24 14:07	04/09/24 17:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**736**		50.0		mg/L			04/03/24 16:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**	**HF**	1.0		SU			04/03/24 11:56	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.421**		0.142	0.147	1.00	0.159	pCi/L	04/05/24 10:55	04/29/24 16:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*92.8*		*30 - 110*	*04/05/24 10:55*	*04/29/24 16:22*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.67**		0.526	0.548	1.00	0.591	pCi/L	04/05/24 10:58	04/22/24 11:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*92.8*		*30 - 110*	*04/05/24 10:58*	*04/22/24 11:59*	*1*
Y Carrier	*67.7*		*30 - 110*	*04/05/24 10:58*	*04/22/24 11:59*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW1-GW-0424
Lab Sample ID: 310-278034-1
Date Collected: 04/01/24 17:35
Matrix: Water
Date Received: 04/03/24 09:40

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.09		0.545	0.567	5.00	0.591	pCi/L		04/30/24 11:08	1

Client Sample ID: TW2-GW-0424 — Lab Sample ID: 310-278034-2

Date Collected: 04/01/24 17:20 — **Matrix: Water**
Date Received: 04/03/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18.2**		5.00		mg/L			04/04/24 19:24	5
Fluoride	<1.00	*+	1.00		mg/L			04/04/24 19:24	5
Sulfate	**46.0**		5.00		mg/L			04/04/24 19:24	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:39	1
Arsenic	**0.0873**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:39	1
Barium	**0.370**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:39	1
Beryllium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:39	1
Boron	**0.423**		0.100		mg/L		04/09/24 09:00	04/10/24 20:39	1
Cadmium	<0.000200		0.000200		mg/L		04/09/24 09:00	04/10/24 20:39	1
Calcium	**169**		0.500		mg/L		04/09/24 09:00	04/10/24 20:39	1
Chromium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:39	1
Cobalt	**0.000673**		0.000500		mg/L		04/09/24 09:00	04/10/24 20:39	1
Lithium	**0.0572**		0.0100		mg/L		04/09/24 09:00	04/10/24 20:39	1
Lead	<0.000500		0.000500		mg/L		04/09/24 09:00	04/10/24 20:39	1
Molybdenum	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:39	1
Selenium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:39	1
Thallium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:39	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/08/24 14:07	04/09/24 17:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**794**		50.0		mg/L			04/03/24 16:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU			04/03/24 11:57	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.418**		0.187	0.191	1.00	0.226	pCi/L	04/05/24 10:55	04/29/24 16:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*77.0*		*30 - 110*	*04/05/24 10:55*	*04/29/24 16:22*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.883	U	0.580	0.584	1.00	0.883	pCi/L	04/05/24 10:58	04/22/24 11:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*77.0*		*30 - 110*	*04/05/24 10:58*	*04/22/24 11:59*	*1*
Y Carrier	*78.1*		*30 - 110*	*04/05/24 10:58*	*04/22/24 11:59*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW2-GW-0424
Lab Sample ID: 310-278034-2

Date Collected: 04/01/24 17:20
Matrix: Water
Date Received: 04/03/24 09:40

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.20		0.609	0.614	5.00	0.883	pCi/L		04/30/24 11:08	1

Client Sample ID: MW34-GW-0424 — Lab Sample ID: 310-278034-3

Date Collected: 04/01/24 16:25 — **Matrix: Water**
Date Received: 04/03/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.23**		5.00		mg/L			04/04/24 19:38	5
Fluoride	<1.00	*+	1.00		mg/L			04/04/24 19:38	5
Sulfate	**29.7**		5.00		mg/L			04/04/24 19:38	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:41	1
Arsenic	**0.105**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:41	1
Barium	**0.496**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:41	1
Beryllium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:41	1
Boron	<0.100		0.100		mg/L		04/09/24 09:00	04/10/24 20:41	1
Cadmium	<0.000200		0.000200		mg/L		04/09/24 09:00	04/10/24 20:41	1
Calcium	**86.3**		0.500		mg/L		04/09/24 09:00	04/10/24 20:41	1
Chromium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:41	1
Cobalt	<0.000500		0.000500		mg/L		04/09/24 09:00	04/10/24 20:41	1
Lithium	**0.0356**		0.0100		mg/L		04/09/24 09:00	04/10/24 20:41	1
Lead	<0.000500		0.000500		mg/L		04/09/24 09:00	04/10/24 20:41	1
Molybdenum	**0.00434**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:41	1
Selenium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:41	1
Thallium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:41	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/08/24 14:07	04/09/24 17:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**422**		50.0		mg/L			04/03/24 16:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			04/03/24 12:02	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.415**		0.132	0.137	1.00	0.131	pCi/L	04/05/24 10:55	04/29/24 16:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*86.8*		*30 - 110*	*04/05/24 10:55*	*04/29/24 16:16*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.02**		0.435	0.445	1.00	0.567	pCi/L	04/05/24 10:58	04/22/24 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*86.8*		*30 - 110*	*04/05/24 10:58*	*04/22/24 12:00*	*1*
Y Carrier	*79.6*		*30 - 110*	*04/05/24 10:58*	*04/22/24 12:00*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: MW34-GW-0424
Lab Sample ID: 310-278034-3

Date Collected: 04/01/24 16:25
Matrix: Water
Date Received: 04/03/24 09:40

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.44		0.455	0.466	5.00	0.567	pCi/L		04/30/24 13:29	1

Client Sample ID: MW307D-GW-0424 Lab Sample ID: 310-278034-4

Date Collected: 04/02/24 13:45 **Matrix: Water**
Date Received: 04/03/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/04/24 19:52	5
Fluoride	<1.00	*+	1.00		mg/L			04/04/24 19:52	5
Sulfate	**27.1**		5.00		mg/L			04/04/24 19:52	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:44	1
Arsenic	**0.0173**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:44	1
Barium	**0.473**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:44	1
Beryllium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:44	1
Boron	**0.193**		0.100		mg/L		04/09/24 09:00	04/10/24 20:44	1
Cadmium	<0.000200		0.000200		mg/L		04/09/24 09:00	04/10/24 20:44	1
Calcium	**121**		0.500		mg/L		04/09/24 09:00	04/10/24 20:44	1
Chromium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:44	1
Cobalt	**0.00288**		0.000500		mg/L		04/09/24 09:00	04/10/24 20:44	1
Lithium	**0.0741**		0.0100		mg/L		04/09/24 09:00	04/10/24 20:44	1
Lead	<0.000500		0.000500		mg/L		04/09/24 09:00	04/10/24 20:44	1
Molybdenum	**0.00520**		0.00200		mg/L		04/09/24 09:00	04/10/24 20:44	1
Selenium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:44	1
Thallium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:44	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	F1 F2	0.000200		mg/L		04/08/24 14:07	04/09/24 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**390**		250		mg/L			04/04/24 10:51	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			04/03/24 12:00	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.397**		0.131	0.136	1.00	0.136	pCi/L	04/05/24 10:55	04/29/24 16:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.0*		*30 - 110*	*04/05/24 10:55*	*04/29/24 16:17*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.01**		0.425	0.435	1.00	0.544	pCi/L	04/05/24 10:58	04/22/24 12:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.0*		*30 - 110*	*04/05/24 10:58*	*04/22/24 12:00*	*1*
Y Carrier	*77.4*		*30 - 110*	*04/05/24 10:58*	*04/22/24 12:00*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: MW307D-GW-0424
Lab Sample ID: 310-278034-4

Date Collected: 04/02/24 13:45
Matrix: Water
Date Received: 04/03/24 09:40

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.40		0.445	0.456	5.00	0.544	pCi/L		04/30/24 13:29	1

Definitions/Glossary

Client: GHD Services Inc. Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-418131/3
Matrix: Water
Analysis Batch: 418131

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/04/24 18:13	1
Fluoride	<0.200		0.200		mg/L			04/04/24 18:13	1
Sulfate	<1.00		1.00		mg/L			04/04/24 18:13	1

Lab Sample ID: LCS 310-418131/4
Matrix: Water
Analysis Batch: 418131

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.12		mg/L		101	90 - 110
Fluoride	2.00	2.244	*+	mg/L		112	90 - 110
Sulfate	10.0	10.97		mg/L		110	90 - 110

Lab Sample ID: 310-278034-4 MS
Matrix: Water
Analysis Batch: 418131

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	<5.00		25.0	28.69		mg/L		98	80 - 120
Fluoride	<1.00	*+	5.00	5.872		mg/L		117	80 - 120
Sulfate	27.1		25.0	54.06		mg/L		108	80 - 120

Lab Sample ID: 310-278034-4 MSD
Matrix: Water
Analysis Batch: 418131

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<5.00		25.0	28.90		mg/L		99	80 - 120	1	15
Fluoride	<1.00	*+	5.00	5.895		mg/L		118	80 - 120	0	15
Sulfate	27.1		25.0	54.22		mg/L		108	80 - 120	0	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-418155/1-A
Matrix: Water
Analysis Batch: 418441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418155

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:32	1
Arsenic	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:32	1
Barium	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:32	1
Beryllium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:32	1
Boron	<0.100		0.100		mg/L		04/09/24 09:00	04/10/24 20:32	1
Cadmium	<0.000200		0.000200		mg/L		04/09/24 09:00	04/10/24 20:32	1
Calcium	<0.500		0.500		mg/L		04/09/24 09:00	04/10/24 20:32	1
Chromium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:32	1
Cobalt	<0.000500		0.000500		mg/L		04/09/24 09:00	04/10/24 20:32	1
Lithium	<0.0100		0.0100		mg/L		04/09/24 09:00	04/10/24 20:32	1
Lead	<0.000500		0.000500		mg/L		04/09/24 09:00	04/10/24 20:32	1
Molybdenum	<0.00200		0.00200		mg/L		04/09/24 09:00	04/10/24 20:32	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-418155/1-A
Matrix: Water
Analysis Batch: 418441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418155

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.00500		0.00500		mg/L		04/09/24 09:00	04/10/24 20:32	1
Thallium	<0.00100		0.00100		mg/L		04/09/24 09:00	04/10/24 20:32	1

Lab Sample ID: LCS 310-418155/2-A
Matrix: Water
Analysis Batch: 418441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2109		mg/L		105	80 - 120
Arsenic	0.200	0.2120		mg/L		106	80 - 120
Barium	0.100	0.1037		mg/L		104	80 - 120
Beryllium	0.100	0.09741		mg/L		97	80 - 120
Boron	0.200	0.1726		mg/L		86	80 - 120
Cadmium	0.100	0.1041		mg/L		104	80 - 120
Calcium	2.00	1.705		mg/L		85	80 - 120
Chromium	0.100	0.1061		mg/L		106	80 - 120
Cobalt	0.100	0.1075		mg/L		107	80 - 120
Lithium	0.200	0.2004		mg/L		100	80 - 120
Lead	0.200	0.2155		mg/L		108	80 - 120
Molybdenum	0.200	0.2059		mg/L		103	80 - 120
Selenium	0.400	0.3996		mg/L		100	80 - 120
Thallium	0.100	0.09915		mg/L		99	80 - 120

Lab Sample ID: 310-278034-4 MS
Matrix: Water
Analysis Batch: 418441

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA
Prep Batch: 418155

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200		0.200	0.2026		mg/L		101	75 - 125
Arsenic	0.0173		0.200	0.2257		mg/L		104	75 - 125
Barium	0.473		0.100	0.5866	4	mg/L		114	75 - 125
Beryllium	<0.00100		0.100	0.09894		mg/L		99	75 - 125
Boron	0.193		0.200	0.3898		mg/L		99	75 - 125
Cadmium	<0.000200		0.100	0.09832		mg/L		98	75 - 125
Calcium	121		2.00	123.2	4	mg/L		135	75 - 125
Chromium	<0.00500		0.100	0.1023		mg/L		102	75 - 125
Cobalt	0.00288		0.100	0.1048		mg/L		102	75 - 125
Lithium	0.0741		0.200	0.2795		mg/L		103	75 - 125
Lead	<0.000500		0.200	0.2068		mg/L		103	75 - 125
Molybdenum	0.00520		0.200	0.2142		mg/L		105	75 - 125
Selenium	<0.00500		0.400	0.3935		mg/L		98	75 - 125
Thallium	<0.00100		0.100	0.09782		mg/L		98	75 - 125

Lab Sample ID: 310-278034-4 MSD
Matrix: Water
Analysis Batch: 418441

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA
Prep Batch: 418155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200		0.200	0.2088		mg/L		104	75 - 125	3	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-278034-4 MSD
Client Sample ID: MW307D-GW-0424
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 418441
Prep Batch: 418155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0173		0.200	0.2334		mg/L		108	75 - 125	3	20
Barium	0.473		0.100	0.5875	4	mg/L		115	75 - 125	0	20
Beryllium	<0.00100		0.100	0.1026		mg/L		103	75 - 125	4	20
Boron	0.193		0.200	0.4094		mg/L		108	75 - 125	5	20
Cadmium	<0.000200		0.100	0.1012		mg/L		101	75 - 125	3	20
Calcium	121		2.00	123.7	4	mg/L		160	75 - 125	0	20
Chromium	<0.00500		0.100	0.1056		mg/L		106	75 - 125	3	20
Cobalt	0.00288		0.100	0.1086		mg/L		106	75 - 125	4	20
Lithium	0.0741		0.200	0.2849		mg/L		105	75 - 125	2	20
Lead	<0.000500		0.200	0.2109		mg/L		105	75 - 125	2	20
Molybdenum	0.00520		0.200	0.2200		mg/L		107	75 - 125	3	20
Selenium	<0.00500		0.400	0.4103		mg/L		103	75 - 125	4	20
Thallium	<0.00100		0.100	0.09855		mg/L		99	75 - 125	1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-418144/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 418276
Prep Batch: 418144

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/08/24 14:07	04/09/24 16:35	1

Lab Sample ID: LCS 310-418144/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 418276
Prep Batch: 418144

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00167	0.001488		mg/L		89	80 - 120		

Lab Sample ID: 310-278034-4 MS
Client Sample ID: MW307D-GW-0424
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 418276
Prep Batch: 418144

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	<0.000200	F1 F2	0.00167	0.001580		mg/L		95	80 - 120		

Lab Sample ID: 310-278034-4 MSD
Client Sample ID: MW307D-GW-0424
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 418276
Prep Batch: 418144

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000200	F1 F2	0.00167	0.001158	F1 F2	mg/L		69	80 - 120	31	20

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

Lab Sample ID: MB 310-417775/1
Matrix: Water
Analysis Batch: 417775

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/03/24 16:46	1

Lab Sample ID: LCS 310-417775/2
Matrix: Water
Analysis Batch: 417775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	934.0		mg/L		93	90 - 110

Lab Sample ID: MB 310-417855/1
Matrix: Water
Analysis Batch: 417855

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/04/24 10:51	1

Lab Sample ID: LCS 310-417855/2
Matrix: Water
Analysis Batch: 417855

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	946.0		mg/L		95	90 - 110

Lab Sample ID: 310-278034-4 DU
Matrix: Water
Analysis Batch: 417855

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	390		400.0		mg/L		3	20

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-417741/1
Matrix: Water
Analysis Batch: 417741

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	98 - 102

Lab Sample ID: 310-278034-4 DU
Matrix: Water
Analysis Batch: 417741

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.3	HF	7.2		SU		0.1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-655525/1-A
Matrix: Water
Analysis Batch: 659075

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 655525

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.0904	U	0.0624	0.0627	1.00	0.0904	pCi/L	04/05/24 10:55	04/29/24 16:21	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*101*		*30 - 110*	*04/05/24 10:55*	*04/29/24 16:21*	*1*

Lab Sample ID: LCS 160-655525/2-A
Matrix: Water
Analysis Batch: 659075

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 655525

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.23		1.07	1.00	0.0958	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*101*		*30 - 110*

Lab Sample ID: 310-278034-4 MS
Matrix: Water
Analysis Batch: 659076

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA
Prep Batch: 655525

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226	0.397		11.3	9.192		0.983	1.00	0.109	pCi/L	78	60 - 140		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Barium	*92.5*		*30 - 110*

Lab Sample ID: 310-278034-4 MSD
Matrix: Water
Analysis Batch: 659076

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA
Prep Batch: 655525

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	0.397		11.4	11.12		1.16	1.00	0.111	pCi/L	94	60 - 140	0.90	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Barium	*91.3*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-655526/1-A
Matrix: Water
Analysis Batch: 658079

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 655526

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.559	U	0.314	0.314	1.00	0.559	pCi/L	04/05/24 10:58	04/22/24 11:58	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	101		30 - 110	04/05/24 10:58	04/22/24 11:58	1
Y Carrier	77.0		30 - 110	04/05/24 10:58	04/22/24 11:58	1

Lab Sample ID: LCS 160-655526/2-A
Matrix: Water
Analysis Batch: 658079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 655526

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			9.01	10.26		1.33	1.00	0.429	pCi/L	114	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	101		30 - 110
Y Carrier	82.2		30 - 110

Lab Sample ID: 310-278034-4 MS
Matrix: Water
Analysis Batch: 658079

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA
Prep Batch: 655526

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228	1.01		8.97	12.15		1.59	1.00	0.569	pCi/L	124	60 - 140		

Carrier	MS %Yield	MS Qualifier	Limits
Barium	92.5		30 - 110
Y Carrier	74.0		30 - 110

Lab Sample ID: 310-278034-4 MSD
Matrix: Water
Analysis Batch: 658079

Client Sample ID: MW307D-GW-0424
Prep Type: Total/NA
Prep Batch: 655526

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	1.01		9.06	10.17		1.44	1.00	0.644	pCi/L	101	60 - 140	0.65	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Barium	91.3		30 - 110
Y Carrier	68.8		30 - 110

HPLC/IC

Analysis Batch: 418131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	9056A	
310-278034-2	TW2-GW-0424	Total/NA	Water	9056A	
310-278034-3	MW34-GW-0424	Total/NA	Water	9056A	
310-278034-4	MW307D-GW-0424	Total/NA	Water	9056A	
MB 310-418131/3	Method Blank	Total/NA	Water	9056A	
LCS 310-418131/4	Lab Control Sample	Total/NA	Water	9056A	
310-278034-4 MS	MW307D-GW-0424	Total/NA	Water	9056A	
310-278034-4 MSD	MW307D-GW-0424	Total/NA	Water	9056A	

Metals

Prep Batch: 418144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	7470A	
310-278034-2	TW2-GW-0424	Total/NA	Water	7470A	
310-278034-3	MW34-GW-0424	Total/NA	Water	7470A	
310-278034-4	MW307D-GW-0424	Total/NA	Water	7470A	
MB 310-418144/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-418144/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-278034-4 MS	MW307D-GW-0424	Total/NA	Water	7470A	
310-278034-4 MSD	MW307D-GW-0424	Total/NA	Water	7470A	

Prep Batch: 418155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	3005A	
310-278034-2	TW2-GW-0424	Total/NA	Water	3005A	
310-278034-3	MW34-GW-0424	Total/NA	Water	3005A	
310-278034-4	MW307D-GW-0424	Total/NA	Water	3005A	
MB 310-418155/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-418155/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-278034-4 MS	MW307D-GW-0424	Total/NA	Water	3005A	
310-278034-4 MSD	MW307D-GW-0424	Total/NA	Water	3005A	

Analysis Batch: 418276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	7470A	418144
310-278034-2	TW2-GW-0424	Total/NA	Water	7470A	418144
310-278034-3	MW34-GW-0424	Total/NA	Water	7470A	418144
310-278034-4	MW307D-GW-0424	Total/NA	Water	7470A	418144
MB 310-418144/1-A	Method Blank	Total/NA	Water	7470A	418144
LCS 310-418144/2-A	Lab Control Sample	Total/NA	Water	7470A	418144
310-278034-4 MS	MW307D-GW-0424	Total/NA	Water	7470A	418144
310-278034-4 MSD	MW307D-GW-0424	Total/NA	Water	7470A	418144

Analysis Batch: 418441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	6020B	418155
310-278034-2	TW2-GW-0424	Total/NA	Water	6020B	418155
310-278034-3	MW34-GW-0424	Total/NA	Water	6020B	418155
310-278034-4	MW307D-GW-0424	Total/NA	Water	6020B	418155
MB 310-418155/1-A	Method Blank	Total/NA	Water	6020B	418155

Metals (Continued)

Analysis Batch: 418441 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-418155/2-A	Lab Control Sample	Total/NA	Water	6020B	418155
310-278034-4 MS	MW307D-GW-0424	Total/NA	Water	6020B	418155
310-278034-4 MSD	MW307D-GW-0424	Total/NA	Water	6020B	418155

General Chemistry

Analysis Batch: 417741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278034-2	TW2-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278034-3	MW34-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278034-4	MW307D-GW-0424	Total/NA	Water	SM 4500 H+ B	
LCS 310-417741/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-278034-4 DU	MW307D-GW-0424	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 417775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	SM 2540C	
310-278034-2	TW2-GW-0424	Total/NA	Water	SM 2540C	
310-278034-3	MW34-GW-0424	Total/NA	Water	SM 2540C	
MB 310-417775/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-417775/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 417855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-4	MW307D-GW-0424	Total/NA	Water	SM 2540C	
MB 310-417855/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-417855/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-278034-4 DU	MW307D-GW-0424	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 655525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	PrecSep-21	
310-278034-2	TW2-GW-0424	Total/NA	Water	PrecSep-21	
310-278034-3	MW34-GW-0424	Total/NA	Water	PrecSep-21	
310-278034-4	MW307D-GW-0424	Total/NA	Water	PrecSep-21	
MB 160-655525/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-655525/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-278034-4 MS	MW307D-GW-0424	Total/NA	Water	PrecSep-21	
310-278034-4 MSD	MW307D-GW-0424	Total/NA	Water	PrecSep-21	

Prep Batch: 655526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-1	TW1-GW-0424	Total/NA	Water	PrecSep_0	
310-278034-2	TW2-GW-0424	Total/NA	Water	PrecSep_0	
310-278034-3	MW34-GW-0424	Total/NA	Water	PrecSep_0	
310-278034-4	MW307D-GW-0424	Total/NA	Water	PrecSep_0	
MB 160-655526/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-655526/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-278034-4 MS	MW307D-GW-0424	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 655526 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278034-4 MSD	MW307D-GW-0424	Total/NA	Water	PrecSep_0	

Client Sample ID: TW1-GW-0424 — Lab Sample ID: 310-278034-1

Date Collected: 04/01/24 17:35 — **Matrix: Water**
Date Received: 04/03/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418131	QTZ5	EET CF	04/04/24 19:10
Total/NA	Prep	3005A			418155	QTZ5	EET CF	04/09/24 09:00
Total/NA	Analysis	6020B		1	418441	NFT2	EET CF	04/10/24 20:37
Total/NA	Prep	7470A			418144	DHM5	EET CF	04/08/24 14:07
Total/NA	Analysis	7470A		1	418276	A6US	EET CF	04/09/24 17:14
Total/NA	Analysis	SM 2540C		1	417775	D7CP	EET CF	04/03/24 16:46
Total/NA	Analysis	SM 4500 H+ B		1	417741	W9YR	EET CF	04/03/24 11:56
Total/NA	Prep	PrecSep-21			655525	KAK	EET SL	04/05/24 10:55
Total/NA	Analysis	9315		1	659075	SWS	EET SL	04/29/24 16:22
Total/NA	Prep	PrecSep_0			655526	KAK	EET SL	04/05/24 10:58
Total/NA	Analysis	9320		1	658079	MLK	EET SL	04/22/24 11:59
Total/NA	Analysis	Ra226_Ra228		1	659290	FLC	EET SL	04/30/24 11:08

Client Sample ID: TW2-GW-0424 — Lab Sample ID: 310-278034-2

Date Collected: 04/01/24 17:20 — **Matrix: Water**
Date Received: 04/03/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418131	QTZ5	EET CF	04/04/24 19:24
Total/NA	Prep	3005A			418155	QTZ5	EET CF	04/09/24 09:00
Total/NA	Analysis	6020B		1	418441	NFT2	EET CF	04/10/24 20:39
Total/NA	Prep	7470A			418144	DHM5	EET CF	04/08/24 14:07
Total/NA	Analysis	7470A		1	418276	A6US	EET CF	04/09/24 17:20
Total/NA	Analysis	SM 2540C		1	417775	D7CP	EET CF	04/03/24 16:46
Total/NA	Analysis	SM 4500 H+ B		1	417741	W9YR	EET CF	04/03/24 11:57
Total/NA	Prep	PrecSep-21			655525	KAK	EET SL	04/05/24 10:55
Total/NA	Analysis	9315		1	659075	SWS	EET SL	04/29/24 16:22
Total/NA	Prep	PrecSep_0			655526	KAK	EET SL	04/05/24 10:58
Total/NA	Analysis	9320		1	658079	MLK	EET SL	04/22/24 11:59
Total/NA	Analysis	Ra226_Ra228		1	659290	FLC	EET SL	04/30/24 11:08

Client Sample ID: MW34-GW-0424 — Lab Sample ID: 310-278034-3

Date Collected: 04/01/24 16:25 — **Matrix: Water**
Date Received: 04/03/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418131	QTZ5	EET CF	04/04/24 19:38
Total/NA	Prep	3005A			418155	QTZ5	EET CF	04/09/24 09:00
Total/NA	Analysis	6020B		1	418441	NFT2	EET CF	04/10/24 20:41
Total/NA	Prep	7470A			418144	DHM5	EET CF	04/08/24 14:07
Total/NA	Analysis	7470A		1	418276	A6US	EET CF	04/09/24 17:22
Total/NA	Analysis	SM 2540C		1	417775	D7CP	EET CF	04/03/24 16:46
Total/NA	Analysis	SM 4500 H+ B		1	417741	W9YR	EET CF	04/03/24 12:02

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: MW34-GW-0424 Lab Sample ID: 310-278034-3

Date Collected: 04/01/24 16:25 **Matrix: Water**
Date Received: 04/03/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			655525	KAK	EET SL	04/05/24 10:55
Total/NA	Analysis	9315		1	659076	SCB	EET SL	04/29/24 16:16
Total/NA	Prep	PrecSep_0			655526	KAK	EET SL	04/05/24 10:58
Total/NA	Analysis	9320		1	658079	MLK	EET SL	04/22/24 12:00
Total/NA	Analysis	Ra226_Ra228		1	659290	FLC	EET SL	04/30/24 13:29

Client Sample ID: MW307D-GW-0424 Lab Sample ID: 310-278034-4

Date Collected: 04/02/24 13:45 **Matrix: Water**
Date Received: 04/03/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418131	QTZ5	EET CF	04/04/24 19:52
Total/NA	Prep	3005A			418155	QTZ5	EET CF	04/09/24 09:00
Total/NA	Analysis	6020B		1	418441	NFT2	EET CF	04/10/24 20:44
Total/NA	Prep	7470A			418144	DHM5	EET CF	04/08/24 14:07
Total/NA	Analysis	7470A		1	418276	A6US	EET CF	04/09/24 17:24
Total/NA	Analysis	SM 2540C		1	417855	DGU1	EET CF	04/04/24 10:51
Total/NA	Analysis	SM 4500 H+ B		1	417741	W9YR	EET CF	04/03/24 12:00
Total/NA	Prep	PrecSep-21			655525	KAK	EET SL	04/05/24 10:55
Total/NA	Analysis	9315		1	659076	SCB	EET SL	04/29/24 16:17
Total/NA	Prep	PrecSep_0			655526	KAK	EET SL	04/05/24 10:58
Total/NA	Analysis	9320		1	658079	MLK	EET SL	04/22/24 12:00
Total/NA	Analysis	Ra226_Ra228		1	659290	FLC	EET SL	04/30/24 13:29

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24

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

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	381	10-31-24

Method Summary

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

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310-278034 Chain of Custody

Cooler/Sample Receipt and Temperature

Client Information

Client: GHD

City/State: CITY | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 4-3-24 | TIME 940 | Received By: MC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 1 of 2
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.1 | Corrected Temp (°C): 1.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE: 4-3-24 | TIME: 940 | Received By: MC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.9 | Corrected Temp (°C): 0.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Testamerica Des Moines SC
214

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s)	COC No.
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 1 of 1
Company: GHD Services Inc.				Job #: 12592594

Address: 11228 Aurora Avenue	Due Date Requested	Analysis Requested
City: Des Moines	TAT Requested (days): Standard	
State, Zip: IA, 50322-7905		
Phone: 515-414-3935	PO #: 340-016858	
Email: Kevin.Armstrong@ghd.com	WO #:	
Project Name: MidAmerican WSEC CCR Background	Eurofins Project #: 31017236	
Project Number: 12592594 DEL.001	SSOW#: 12592594-002	

Preservation Codes

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	Rad226/Rad228/Rad228/228 combined	6020A CCR Metals List, 7470A Mercury	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH	Total Number of containers	Special Instructions/Note:
			Preservation Code.				D	D	N	N	N		
TW1-GW-0424	4/1/24	1735	G	W	N	N	X	X	X	X	X	5	
TW2-GW-0424	4/1/24	1720	G	W	N	N	X	X	X	X	X	5	
MW34-GW-0424	4/1/24	1625	G	W	N	N	X	X	X	X	X	5	
~~MW307-GW-0424~~			G	W	N		X	X	X	X	X		
MW307D-GW-0424	4/2/24	1345	G	W	N	Y	X	X	X	X	X	15	

Brooke Wasson

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements. Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Brooke Wasson	4/2/24 1500	GHD			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/3/24 0940	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-278034-1
SDG Number:

Login Number: 278034
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: GHD Services Inc.
Job ID: 310-278034-1
Project/Site: MidAmerican WSEC CCR Background

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
310-278034-1	TW1-GW-0424	92.8
310-278034-2	TW2-GW-0424	77.0
310-278034-3	MW34-GW-0424	86.8
310-278034-4	MW307D-GW-0424	89.0
310-278034-4 MS	MW307D-GW-0424	92.5
310-278034-4 MSD	MW307D-GW-0424	91.3
LCS 160-655525/2-A	Lab Control Sample	101
MB 160-655525/1-A	Method Blank	101

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-278034-1	TW1-GW-0424	92.8	67.7
310-278034-2	TW2-GW-0424	77.0	78.1
310-278034-3	MW34-GW-0424	86.8	79.6
310-278034-4	MW307D-GW-0424	89.0	77.4
310-278034-4 MS	MW307D-GW-0424	92.5	74.0
310-278034-4 MSD	MW307D-GW-0424	91.3	68.8
LCS 160-655526/2-A	Lab Control Sample	101	82.2
MB 160-655526/1-A	Method Blank	101	77.0

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 5/6/2024 11:04:24 AM

JOB DESCRIPTION

MEC Walter Scott CCR (WSEC) Monofill
12592594.DEL.001

JOB NUMBER

310-278281-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

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

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

Authorization

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Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

Table of Contents

Job ID: 310-278281-1 Eurofins Cedar Falls

Job Narrative
310-278281-1

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

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

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

Receipt
The samples were received on 4/4/2024 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.4°C, -0.1°C and 1.5°C.

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW105-GW-0424 (310-278281-1), MW108-GW-0424 (310-278281-2), MW133-GW-0424 (310-278281-3), MW158-GW-0424 (310-278281-4), MW159-GW-0424 (310-278281-5), MW190-GW-0424 (310-278281-6), MW240R-GW-0424 (310-278281-7), MW244-GW-0424 (310-278281-8), MW245-GW-0424 (310-278281-9), MW246-GW-0424 (310-278281-10), MW247-GW-0424 (310-278281-11), MW248-GW-0424 (310-278281-12), MW250-GW-0424 (310-278281-13), DP03-GW-0424 (310-278281-14), DP04-GW-0424 (310-278281-15), MW156D-GW-0424 (310-278281-16) and MW227D-GW-0424 (310-278281-17). Elevated reporting limits (RLs) are provided.

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

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

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

Job ID: 310-278281-2 Eurofins Cedar Falls

Job Narrative
310-278281-2

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

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

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

Receipt
The samples were received on 4/4/2024 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.4°C, -0.1°C and 1.5°C.

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

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

Sample Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-278281-1	MW105-GW-0424	Water	04/03/24 18:15	04/04/24 16:00
310-278281-2	MW108-GW-0424	Water	04/03/24 19:55	04/04/24 16:00
310-278281-3	MW133-GW-0424	Water	04/03/24 19:00	04/04/24 16:00
310-278281-4	MW158-GW-0424	Water	04/03/24 16:00	04/04/24 16:00
310-278281-5	MW159-GW-0424	Water	04/03/24 15:00	04/04/24 16:00
310-278281-6	MW190-GW-0424	Water	04/03/24 12:55	04/04/24 16:00
310-278281-7	MW240R-GW-0424	Water	04/04/24 08:50	04/04/24 16:00
310-278281-8	MW244-GW-0424	Water	04/03/24 15:25	04/04/24 16:00
310-278281-9	MW245-GW-0424	Water	04/03/24 14:05	04/04/24 16:00
310-278281-10	MW246-GW-0424	Water	04/03/24 15:55	04/04/24 16:00
310-278281-11	MW247-GW-0424	Water	04/03/24 16:25	04/04/24 16:00
310-278281-12	MW248-GW-0424	Water	04/03/24 17:15	04/04/24 16:00
310-278281-13	MW250-GW-0424	Water	04/03/24 18:15	04/04/24 16:00
310-278281-14	DP03-GW-0424	Water	04/03/24 00:00	04/04/24 16:00
310-278281-15	DP04-GW-0424	Water	04/04/24 00:00	04/04/24 16:00
310-278281-16	MW156D-GW-0424	Water	04/03/24 17:25	04/04/24 16:00
310-278281-17	MW227D-GW-0424	Water	04/04/24 08:55	04/04/24 16:00

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW105-GW-0424 — Lab Sample ID: 310-278281-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23.4		5.00		mg/L	5		9056A	Total/NA
Sulfate	128		5.00		mg/L	5		9056A	Total/NA
Boron	0.174		0.100		mg/L	1		6020B	Total/NA
Calcium	168		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	738		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW108-GW-0424 — Lab Sample ID: 310-278281-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18.3		5.00		mg/L	5		9056A	Total/NA
Boron	0.227		0.100		mg/L	1		6020B	Total/NA
Calcium	112		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	620		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW133-GW-0424 — Lab Sample ID: 310-278281-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	109		5.00		mg/L	5		9056A	Total/NA
Sulfate	131		5.00		mg/L	5		9056A	Total/NA
Boron	0.493		0.100		mg/L	1		6020B	Total/NA
Calcium	161		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	780		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW158-GW-0424 — Lab Sample ID: 310-278281-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	44.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	398		5.00		mg/L	5		9056A	Total/NA
Boron	0.467		0.100		mg/L	1		6020B	Total/NA
Calcium	279		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1210		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW159-GW-0424 — Lab Sample ID: 310-278281-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	267		5.00		mg/L	5		9056A	Total/NA
Boron	0.301		0.100		mg/L	1		6020B	Total/NA
Calcium	212		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	880		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW190-GW-0424 — Lab Sample ID: 310-278281-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	211		5.00		mg/L	5		9056A	Total/NA
Boron	0.109		0.100		mg/L	1		6020B	Total/NA
Calcium	187		0.500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample ID: MW190-GW-0424 (Continued) — Lab Sample ID: 310-278281-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	770		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW240R-GW-0424 — Lab Sample ID: 310-278281-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	33.7		5.00		mg/L	5		9056A	Total/NA
Sulfate	211		5.00		mg/L	5		9056A	Total/NA
Boron	0.287		0.100		mg/L	1		6020B	Total/NA
Calcium	172		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	866		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW244-GW-0424 — Lab Sample ID: 310-278281-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.4		5.00		mg/L	5		9056A	Total/NA
Sulfate	40.6		5.00		mg/L	5		9056A	Total/NA
Boron	0.180		0.100		mg/L	1		6020B	Total/NA
Calcium	120		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	592		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW245-GW-0424 — Lab Sample ID: 310-278281-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.57		5.00		mg/L	5		9056A	Total/NA
Sulfate	169		5.00		mg/L	5		9056A	Total/NA
Boron	0.327		0.100		mg/L	1		6020B	Total/NA
Calcium	189		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	962		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW246-GW-0424 — Lab Sample ID: 310-278281-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	62.6		5.00		mg/L	5		9056A	Total/NA
Boron	0.191		0.100		mg/L	1		6020B	Total/NA
Calcium	154		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	666		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW247-GW-0424 — Lab Sample ID: 310-278281-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	115		5.00		mg/L	5		9056A	Total/NA
Boron	0.197		0.100		mg/L	1		6020B	Total/NA
Calcium	161		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	686		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW248-GW-0424 — Lab Sample ID: 310-278281-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.7		5.00		mg/L	5		9056A	Total/NA
Sulfate	93.9		5.00		mg/L	5		9056A	Total/NA
Boron	0.182		0.100		mg/L	1		6020B	Total/NA
Calcium	126		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	578		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW250-GW-0424 — Lab Sample ID: 310-278281-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.59		5.00		mg/L	5		9056A	Total/NA
Sulfate	178		5.00		mg/L	5		9056A	Total/NA
Boron	0.246		0.100		mg/L	1		6020B	Total/NA
Calcium	220		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	880		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DP03-GW-0424 — Lab Sample ID: 310-278281-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	128		5.00		mg/L	5		9056A	Total/NA
Boron	0.187		0.100		mg/L	1		6020B	Total/NA
Calcium	165		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	722		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DP04-GW-0424 — Lab Sample ID: 310-278281-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	33.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	208		5.00		mg/L	5		9056A	Total/NA
Boron	0.330		0.100		mg/L	1		6020B	Total/NA
Calcium	179		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	862		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW156D-GW-0424 — Lab Sample ID: 310-278281-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	21.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	186		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0198		0.00200		mg/L	1		6020B	Total/NA
Barium	0.262		0.00200		mg/L	1		6020B	Total/NA
Boron	0.131		0.100		mg/L	1		6020B	Total/NA
Calcium	192		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00148		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0856		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00211		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	780		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW227D-GW-0424

Lab Sample ID: 310-278281-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	195		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0129		0.00200		mg/L	1		6020B	Total/NA
Barium	0.412		0.00200		mg/L	1		6020B	Total/NA
Boron	0.110		0.100		mg/L	1		6020B	Total/NA
Calcium	154		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00110		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0654		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00251		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	690		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW105-GW-0424
Date Collected: 04/03/24 18:15
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-1
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.4		5.00		mg/L			04/08/24 10:26	5
Fluoride	<1.00		1.00		mg/L			04/08/24 10:26	5
Sulfate	128		5.00		mg/L			04/08/24 10:26	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.174		0.100		mg/L		04/08/24 09:00	04/15/24 15:16	1
Calcium	168		0.500		mg/L		04/08/24 09:00	04/12/24 17:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	738		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			04/05/24 13:45	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW108-GW-0424

Date Collected: 04/03/24 19:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-2

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18.3**		5.00		mg/L			04/08/24 10:38	5
Fluoride	<1.00		1.00		mg/L			04/08/24 10:38	5
Sulfate	<5.00		5.00		mg/L			04/08/24 10:38	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.227**		0.100		mg/L		04/08/24 09:00	04/15/24 15:30	1
Calcium	**112**		0.500		mg/L		04/08/24 09:00	04/12/24 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**620**		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			04/05/24 13:49	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW133-GW-0424

Date Collected: 04/03/24 19:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-3

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**109**		5.00		mg/L			04/08/24 10:51	5
Fluoride	<1.00		1.00		mg/L			04/08/24 10:51	5
Sulfate	**131**		5.00		mg/L			04/08/24 10:51	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.493**		0.100		mg/L		04/08/24 09:00	04/15/24 15:32	1
Calcium	**161**		0.500		mg/L		04/08/24 09:00	04/12/24 17:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**780**		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			04/05/24 13:53	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW158-GW-0424

Date Collected: 04/03/24 16:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-4

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.3		5.00		mg/L			04/08/24 11:03	5
Fluoride	<1.00		1.00		mg/L			04/08/24 11:03	5
Sulfate	398		5.00		mg/L			04/08/24 11:03	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.467		0.100		mg/L		04/08/24 09:00	04/15/24 15:34	1
Calcium	279		0.500		mg/L		04/08/24 09:00	04/12/24 17:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1210		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.9	HF	1.0		SU			04/05/24 13:56	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW159-GW-0424
Date Collected: 04/03/24 15:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-5
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18.9		5.00		mg/L			04/08/24 11:16	5
Fluoride	<1.00		1.00		mg/L			04/08/24 11:16	5
Sulfate	267		5.00		mg/L			04/08/24 11:16	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.301		0.100		mg/L		04/08/24 09:00	04/15/24 15:36	1
Calcium	212		0.500		mg/L		04/08/24 09:00	04/12/24 18:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	880		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			04/05/24 13:59	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW190-GW-0424

Date Collected: 04/03/24 12:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-6

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11.2**		5.00		mg/L			04/08/24 11:54	5
Fluoride	<1.00		1.00		mg/L			04/08/24 11:54	5
Sulfate	**211**		5.00		mg/L			04/08/24 11:54	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.109**		0.100		mg/L		04/08/24 09:00	04/15/24 15:39	1
Calcium	**187**		0.500		mg/L		04/08/24 09:00	04/12/24 18:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**770**		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**	**HF**	1.0		SU			04/05/24 14:02	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW240R-GW-0424

Date Collected: 04/04/24 08:50
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-7

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.7		5.00		mg/L			04/08/24 12:06	5
Fluoride	<1.00		1.00		mg/L			04/08/24 12:06	5
Sulfate	211		5.00		mg/L			04/08/24 12:06	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.287		0.100		mg/L		04/08/24 09:00	04/15/24 15:41	1
Calcium	172		0.500		mg/L		04/08/24 09:00	04/12/24 18:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	866		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			04/05/24 14:06	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW244-GW-0424

Date Collected: 04/03/24 15:25
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-8

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11.4**		5.00		mg/L			04/08/24 12:19	5
Fluoride	<1.00		1.00		mg/L			04/08/24 12:19	5
Sulfate	**40.6**		5.00		mg/L			04/08/24 12:19	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.180**		0.100		mg/L		04/08/24 09:00	04/15/24 15:43	1
Calcium	**120**		0.500		mg/L		04/08/24 09:00	04/12/24 18:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**592**		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**	**HF**	1.0		SU			04/05/24 14:09	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW245-GW-0424

Date Collected: 04/03/24 14:05
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-9

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.57		5.00		mg/L			04/08/24 12:32	5
Fluoride	<1.00		1.00		mg/L			04/08/24 12:32	5
Sulfate	169		5.00		mg/L			04/08/24 12:32	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.327		0.100		mg/L		04/08/24 09:00	04/15/24 15:45	1
Calcium	189		0.500		mg/L		04/08/24 09:00	04/12/24 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	962		50.0		mg/L			04/08/24 15:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			04/05/24 13:39	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW246-GW-0424
Date Collected: 04/03/24 15:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-10
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.8		5.00		mg/L			04/08/24 13:09	5
Fluoride	<1.00		1.00		mg/L			04/08/24 13:09	5
Sulfate	62.6		5.00		mg/L			04/08/24 13:09	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.191		0.100		mg/L		04/08/24 09:00	04/12/24 18:30	1
Calcium	154		0.500		mg/L		04/08/24 09:00	04/12/24 18:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	666		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			04/05/24 14:19	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW247-GW-0424

Date Collected: 04/03/24 16:25
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-11

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14.9		5.00		mg/L			04/08/24 13:22	5
Fluoride	<1.00		1.00		mg/L			04/08/24 13:22	5
Sulfate	115		5.00		mg/L			04/08/24 13:22	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.197		0.100		mg/L		04/08/24 09:00	04/12/24 18:32	1
Calcium	161		0.500		mg/L		04/08/24 09:00	04/12/24 18:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	686		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			04/05/24 14:22	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW248-GW-0424
Date Collected: 04/03/24 17:15
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-12
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.7		5.00		mg/L			04/08/24 13:34	5
Fluoride	<1.00		1.00		mg/L			04/08/24 13:34	5
Sulfate	93.9		5.00		mg/L			04/08/24 13:34	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.182		0.100		mg/L		04/08/24 09:00	04/12/24 18:34	1
Calcium	126		0.500		mg/L		04/08/24 09:00	04/12/24 18:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	578		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			04/05/24 14:29	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW250-GW-0424

Date Collected: 04/03/24 18:15
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-13

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.59		5.00		mg/L			04/08/24 13:47	5
Fluoride	<1.00		1.00		mg/L			04/08/24 13:47	5
Sulfate	178		5.00		mg/L			04/08/24 13:47	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.246		0.100		mg/L		04/08/24 09:00	04/12/24 18:36	1
Calcium	220		0.500		mg/L		04/08/24 09:00	04/12/24 18:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	880		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.9	HF	1.0		SU			04/05/24 14:33	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: DP03-GW-0424

Date Collected: 04/03/24 00:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-14

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.3		5.00		mg/L			04/08/24 14:25	5
Fluoride	<1.00		1.00		mg/L			04/08/24 14:25	5
Sulfate	128		5.00		mg/L			04/08/24 14:25	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.187		0.100		mg/L		04/08/24 09:00	04/12/24 18:39	1
Calcium	165		0.500		mg/L		04/08/24 09:00	04/12/24 18:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	722		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.2	HF	1.0		SU			04/05/24 14:36	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: DP04-GW-0424

Date Collected: 04/04/24 00:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-15

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33.1**		5.00		mg/L			04/08/24 14:37	5
Fluoride	<1.00		1.00		mg/L			04/08/24 14:37	5
Sulfate	**208**		5.00		mg/L			04/08/24 14:37	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.330**		0.100		mg/L		04/08/24 09:00	04/12/24 18:41	1
Calcium	**179**		0.500		mg/L		04/08/24 09:00	04/12/24 18:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**862**		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			04/05/24 14:39	1

Client Sample ID: MW156D-GW-0424

Date Collected: 04/03/24 17:25
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-16

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.5**		5.00		mg/L			04/08/24 14:50	5
Fluoride	<1.00		1.00		mg/L			04/08/24 14:50	5
Sulfate	**186**		5.00		mg/L			04/08/24 14:50	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/08/24 09:00	04/12/24 18:43	1
Arsenic	**0.0198**		0.00200		mg/L		04/08/24 09:00	04/12/24 18:43	1
Barium	**0.262**		0.00200		mg/L		04/08/24 09:00	04/12/24 18:43	1
Beryllium	<0.00100		0.00100		mg/L		04/08/24 09:00	04/12/24 18:43	1
Boron	**0.131**		0.100		mg/L		04/08/24 09:00	04/12/24 18:43	1
Cadmium	<0.000200		0.000200		mg/L		04/08/24 09:00	04/12/24 18:43	1
Calcium	**192**		0.500		mg/L		04/08/24 09:00	04/12/24 18:43	1
Chromium	<0.00500		0.00500		mg/L		04/08/24 09:00	04/12/24 18:43	1
Cobalt	**0.00148**		0.000500		mg/L		04/08/24 09:00	04/12/24 18:43	1
Lithium	**0.0856**		0.0100		mg/L		04/08/24 09:00	04/12/24 18:43	1
Lead	<0.000500		0.000500		mg/L		04/08/24 09:00	04/12/24 18:43	1
Molybdenum	**0.00211**		0.00200		mg/L		04/08/24 09:00	04/12/24 18:43	1
Selenium	<0.00500		0.00500		mg/L		04/08/24 09:00	04/12/24 18:43	1
Thallium	<0.00100		0.00100		mg/L		04/08/24 09:00	04/12/24 18:43	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/08/24 14:09	04/10/24 11:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**780**		50.0		mg/L			04/08/24 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.2**	**HF**	1.0		SU			04/05/24 14:43	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.589**		0.248	0.254	1.00	0.237	pCi/L	04/09/24 10:23	05/02/24 07:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*79.4*		*30 - 110*	*04/09/24 10:23*	*05/02/24 07:45*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.00**		0.449	0.458	1.00	0.588	pCi/L	04/09/24 10:39	05/01/24 16:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*79.4*		*30 - 110*	*04/09/24 10:39*	*05/01/24 16:14*	*1*
Y Carrier	*83.7*		*30 - 110*	*04/09/24 10:39*	*05/01/24 16:14*	*1*

Client Sample ID: MW156D-GW-0424

Lab Sample ID: 310-278281-16

Date Collected: 04/03/24 17:25

Matrix: Water

Date Received: 04/04/24 16:00

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.59		0.513	0.524	5.00	0.588	pCi/L		05/03/24 09:09	1

Client Sample ID: MW227D-GW-0424

Date Collected: 04/04/24 08:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-17

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12.3**		5.00		mg/L			04/08/24 15:03	5
Fluoride	<1.00		1.00		mg/L			04/08/24 15:03	5
Sulfate	**195**		5.00		mg/L			04/08/24 15:03	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/08/24 09:00	04/12/24 18:45	1
Arsenic	**0.0129**		0.00200		mg/L		04/08/24 09:00	04/12/24 18:45	1
Barium	**0.412**		0.00200		mg/L		04/08/24 09:00	04/12/24 18:45	1
Beryllium	<0.00100		0.00100		mg/L		04/08/24 09:00	04/12/24 18:45	1
Boron	**0.110**		0.100		mg/L		04/08/24 09:00	04/12/24 18:45	1
Cadmium	<0.000200		0.000200		mg/L		04/08/24 09:00	04/12/24 18:45	1
Calcium	**154**		0.500		mg/L		04/08/24 09:00	04/12/24 18:45	1
Chromium	<0.00500		0.00500		mg/L		04/08/24 09:00	04/12/24 18:45	1
Cobalt	**0.00110**		0.000500		mg/L		04/08/24 09:00	04/12/24 18:45	1
Lithium	**0.0654**		0.0100		mg/L		04/08/24 09:00	04/12/24 18:45	1
Lead	<0.000500		0.000500		mg/L		04/08/24 09:00	04/12/24 18:45	1
Molybdenum	**0.00251**		0.00200		mg/L		04/08/24 09:00	04/12/24 18:45	1
Selenium	<0.00500		0.00500		mg/L		04/08/24 09:00	04/12/24 18:45	1
Thallium	<0.00100		0.00100		mg/L		04/08/24 09:00	04/12/24 18:45	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/08/24 14:09	04/10/24 11:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**690**		50.0		mg/L			04/09/24 11:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			04/05/24 14:46	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.447**		0.203	0.207	1.00	0.196	pCi/L	04/09/24 10:23	05/02/24 07:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.1*		*30 - 110*	*04/09/24 10:23*	*05/02/24 07:45*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.857**		0.408	0.415	1.00	0.543	pCi/L	04/09/24 10:39	05/01/24 16:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.1*		*30 - 110*	*04/09/24 10:39*	*05/01/24 16:14*	*1*
Y Carrier	*83.4*		*30 - 110*	*04/09/24 10:39*	*05/01/24 16:14*	*1*

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW227D-GW-0424
Date Collected: 04/04/24 08:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-17
Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.30		0.456	0.464	5.00	0.543	pCi/L		05/03/24 09:09	1

Definitions/Glossary

Client: GHD Services Inc. Job ID: 310-278281-1
Project/Site: MEC Walter Scott CCR (WSEC) Monofill SDG: 12592594.DEL.001

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-418208/3
Matrix: Water
Analysis Batch: 418208

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/08/24 10:01	1
Fluoride	<0.200		0.200		mg/L			04/08/24 10:01	1
Sulfate	<1.00		1.00		mg/L			04/08/24 10:01	1

Lab Sample ID: LCS 310-418208/4
Matrix: Water
Analysis Batch: 418208

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.917		mg/L		99	90 - 110
Fluoride	2.00	2.076		mg/L		104	90 - 110
Sulfate	10.0	10.55		mg/L		105	90 - 110

Lab Sample ID: 310-278281-9 MS
Matrix: Water
Analysis Batch: 418208

Client Sample ID: MW245-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	9.57		25.0	33.62		mg/L		96	80 - 120
Fluoride	<1.00		5.00	5.444		mg/L		109	80 - 120
Sulfate	169		25.0	188.4	4	mg/L		79	80 - 120

Lab Sample ID: 310-278281-9 MSD
Matrix: Water
Analysis Batch: 418208

Client Sample ID: MW245-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	9.57		25.0	33.71		mg/L		97	80 - 120	0	15
Fluoride	<1.00		5.00	5.436		mg/L		109	80 - 120	0	15
Sulfate	169		25.0	188.9	4	mg/L		81	80 - 120	0	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-418027/1-A
Matrix: Water
Analysis Batch: 418695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418027

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		04/08/24 09:00	04/12/24 17:35	1
Arsenic	<0.00200		0.00200		mg/L		04/08/24 09:00	04/12/24 17:35	1
Barium	<0.00200		0.00200		mg/L		04/08/24 09:00	04/12/24 17:35	1
Beryllium	<0.00100		0.00100		mg/L		04/08/24 09:00	04/12/24 17:35	1
Cadmium	<0.000200		0.000200		mg/L		04/08/24 09:00	04/12/24 17:35	1
Calcium	<0.500		0.500		mg/L		04/08/24 09:00	04/12/24 17:35	1
Chromium	<0.00500		0.00500		mg/L		04/08/24 09:00	04/12/24 17:35	1
Cobalt	<0.000500		0.000500		mg/L		04/08/24 09:00	04/12/24 17:35	1
Lithium	<0.0100		0.0100		mg/L		04/08/24 09:00	04/12/24 17:35	1
Lead	<0.000500		0.000500		mg/L		04/08/24 09:00	04/12/24 17:35	1
Molybdenum	<0.00200		0.00200		mg/L		04/08/24 09:00	04/12/24 17:35	1
Selenium	<0.00500		0.00500		mg/L		04/08/24 09:00	04/12/24 17:35	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-418027/1-A
Matrix: Water
Analysis Batch: 418695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418027

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.00100		0.00100		mg/L		04/08/24 09:00	04/12/24 17:35	1

Lab Sample ID: MB 310-418027/1-A
Matrix: Water
Analysis Batch: 418822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418027

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.100		0.100		mg/L		04/08/24 09:00	04/15/24 15:12	1

Lab Sample ID: LCS 310-418027/2-A
Matrix: Water
Analysis Batch: 418695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2109		mg/L		105	80 - 120
Arsenic	0.200	0.2163		mg/L		108	80 - 120
Barium	0.100	0.1109		mg/L		111	80 - 120
Beryllium	0.100	0.1105		mg/L		110	80 - 120
Cadmium	0.100	0.1044		mg/L		104	80 - 120
Calcium	2.00	1.817		mg/L		91	80 - 120
Chromium	0.100	0.1069		mg/L		107	80 - 120
Cobalt	0.100	0.1089		mg/L		109	80 - 120
Lithium	0.200	0.2297		mg/L		115	80 - 120
Lead	0.200	0.2166		mg/L		108	80 - 120
Molybdenum	0.200	0.2092		mg/L		105	80 - 120
Selenium	0.400	0.3979		mg/L		99	80 - 120
Thallium	0.100	0.1046		mg/L		105	80 - 120

Lab Sample ID: LCS 310-418027/2-A
Matrix: Water
Analysis Batch: 418822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.200	0.2198		mg/L		110	80 - 120

Lab Sample ID: 310-278281-9 MS
Matrix: Water
Analysis Batch: 418695

Client Sample ID: MW245-GW-0424
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	189		2.00	187.3	4	mg/L		-80	75 - 125

Lab Sample ID: 310-278281-9 MS
Matrix: Water
Analysis Batch: 418822

Client Sample ID: MW245-GW-0424
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.327		0.200	0.5433		mg/L		108	75 - 125

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-278281-9 MSD
Matrix: Water
Analysis Batch: 418695

Client Sample ID: MW245-GW-0424
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	189		2.00	185.7	4	mg/L		-159	75 - 125	1	20

Lab Sample ID: 310-278281-9 MSD
Matrix: Water
Analysis Batch: 418822

Client Sample ID: MW245-GW-0424
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.327		0.200	0.5620		mg/L		117	75 - 125	3	20

Lab Sample ID: 310-278281-1 DU
Matrix: Water
Analysis Batch: 418695

Client Sample ID: MW105-GW-0424
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	0.0174		0.01616		mg/L		7	20
Barium	0.150		0.1411		mg/L		6	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Calcium	168		157.3		mg/L		7	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	0.00119		0.001096		mg/L		9	20
Lithium	0.0659		0.06196		mg/L		6	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Molybdenum	0.00472		0.004260		mg/L		10	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20

Lab Sample ID: 310-278281-1 DU
Matrix: Water
Analysis Batch: 418822

Client Sample ID: MW105-GW-0424
Prep Type: Total/NA
Prep Batch: 418027

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	0.174		0.1624		mg/L		7	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-418145/1-A
Matrix: Water
Analysis Batch: 418360

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 418145

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/08/24 14:09	04/10/24 10:26	1

Lab Sample ID: LCS 310-418145/2-A
Matrix: Water
Analysis Batch: 418360

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 418145

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001625		mg/L		97	80 - 120

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

Lab Sample ID: MB 310-418156/1
Matrix: Water
Analysis Batch: 418156

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/08/24 15:48	1

Lab Sample ID: LCS 310-418156/2
Matrix: Water
Analysis Batch: 418156

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	974.0		mg/L		97	90 - 110

Lab Sample ID: MB 310-418158/1
Matrix: Water
Analysis Batch: 418158

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/08/24 15:53	1

Lab Sample ID: LCS 310-418158/2
Matrix: Water
Analysis Batch: 418158

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	950.0		mg/L		95	90 - 110

Lab Sample ID: MB 310-418249/1
Matrix: Water
Analysis Batch: 418249

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/09/24 11:50	1

Lab Sample ID: LCS 310-418249/2
Matrix: Water
Analysis Batch: 418249

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	920.0		mg/L		92	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-418020/1
Matrix: Water
Analysis Batch: 418020

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	98 - 102

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

Lab Sample ID: 310-278281-9 DU
Matrix: Water
Analysis Batch: 418020

Client Sample ID: MW245-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.0	HF		7.0		SU				0.8	20

Lab Sample ID: 310-278281-11 DU
Matrix: Water
Analysis Batch: 418020

Client Sample ID: MW247-GW-0424
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.1	HF		7.1		SU				0.1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-656024/1-A
Matrix: Water
Analysis Batch: 659654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 656024

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.227	U	0.143	0.144	1.00	0.227	pCi/L	04/09/24 10:23	05/02/24 07:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*90.6*		*30 - 110*	*04/09/24 10:23*	*05/02/24 07:42*	*1*

Lab Sample ID: LCS 160-656024/2-A
Matrix: Water
Analysis Batch: 659654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 656024

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.55		1.31	1.00	0.241	pCi/L	93	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*86.8*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-656025/1-A
Matrix: Water
Analysis Batch: 659501

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 656025

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.8017		0.407	0.414	1.00	0.564	pCi/L	04/09/24 10:39	05/01/24 16:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*90.6*		*30 - 110*	*04/09/24 10:39*	*05/01/24 16:11*	*1*
Y Carrier	*80.7*		*30 - 110*	*04/09/24 10:39*	*05/01/24 16:11*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-656025/2-A
Matrix: Water
Analysis Batch: 659501

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 656025

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.98	10.27		1.42	1.00	0.574	pCi/L	114	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*86.8*		*30 - 110*
Y Carrier	*83.4*		*30 - 110*

HPLC/IC

Analysis Batch: 418208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-1	MW105-GW-0424	Total/NA	Water	9056A	
310-278281-2	MW108-GW-0424	Total/NA	Water	9056A	
310-278281-3	MW133-GW-0424	Total/NA	Water	9056A	
310-278281-4	MW158-GW-0424	Total/NA	Water	9056A	
310-278281-5	MW159-GW-0424	Total/NA	Water	9056A	
310-278281-6	MW190-GW-0424	Total/NA	Water	9056A	
310-278281-7	MW240R-GW-0424	Total/NA	Water	9056A	
310-278281-8	MW244-GW-0424	Total/NA	Water	9056A	
310-278281-9	MW245-GW-0424	Total/NA	Water	9056A	
310-278281-10	MW246-GW-0424	Total/NA	Water	9056A	
310-278281-11	MW247-GW-0424	Total/NA	Water	9056A	
310-278281-12	MW248-GW-0424	Total/NA	Water	9056A	
310-278281-13	MW250-GW-0424	Total/NA	Water	9056A	
310-278281-14	DP03-GW-0424	Total/NA	Water	9056A	
310-278281-15	DP04-GW-0424	Total/NA	Water	9056A	
310-278281-16	MW156D-GW-0424	Total/NA	Water	9056A	
310-278281-17	MW227D-GW-0424	Total/NA	Water	9056A	
MB 310-418208/3	Method Blank	Total/NA	Water	9056A	
LCS 310-418208/4	Lab Control Sample	Total/NA	Water	9056A	
310-278281-9 MS	MW245-GW-0424	Total/NA	Water	9056A	
310-278281-9 MSD	MW245-GW-0424	Total/NA	Water	9056A	

Metals

Prep Batch: 418027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-1	MW105-GW-0424	Total/NA	Water	3005A	
310-278281-2	MW108-GW-0424	Total/NA	Water	3005A	
310-278281-3	MW133-GW-0424	Total/NA	Water	3005A	
310-278281-4	MW158-GW-0424	Total/NA	Water	3005A	
310-278281-5	MW159-GW-0424	Total/NA	Water	3005A	
310-278281-6	MW190-GW-0424	Total/NA	Water	3005A	
310-278281-7	MW240R-GW-0424	Total/NA	Water	3005A	
310-278281-8	MW244-GW-0424	Total/NA	Water	3005A	
310-278281-9	MW245-GW-0424	Total/NA	Water	3005A	
310-278281-10	MW246-GW-0424	Total/NA	Water	3005A	
310-278281-11	MW247-GW-0424	Total/NA	Water	3005A	
310-278281-12	MW248-GW-0424	Total/NA	Water	3005A	
310-278281-13	MW250-GW-0424	Total/NA	Water	3005A	
310-278281-14	DP03-GW-0424	Total/NA	Water	3005A	
310-278281-15	DP04-GW-0424	Total/NA	Water	3005A	
310-278281-16	MW156D-GW-0424	Total/NA	Water	3005A	
310-278281-17	MW227D-GW-0424	Total/NA	Water	3005A	
MB 310-418027/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-418027/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-278281-9 MS	MW245-GW-0424	Total/NA	Water	3005A	
310-278281-9 MSD	MW245-GW-0424	Total/NA	Water	3005A	
310-278281-1 DU	MW105-GW-0424	Total/NA	Water	3005A	

Metals

Prep Batch: 418145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-16	MW156D-GW-0424	Total/NA	Water	7470A	
310-278281-17	MW227D-GW-0424	Total/NA	Water	7470A	
MB 310-418145/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-418145/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 418360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-16	MW156D-GW-0424	Total/NA	Water	7470A	418145
310-278281-17	MW227D-GW-0424	Total/NA	Water	7470A	418145
MB 310-418145/1-A	Method Blank	Total/NA	Water	7470A	418145
LCS 310-418145/2-A	Lab Control Sample	Total/NA	Water	7470A	418145

Analysis Batch: 418695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-1	MW105-GW-0424	Total/NA	Water	6020B	418027
310-278281-2	MW108-GW-0424	Total/NA	Water	6020B	418027
310-278281-3	MW133-GW-0424	Total/NA	Water	6020B	418027
310-278281-4	MW158-GW-0424	Total/NA	Water	6020B	418027
310-278281-5	MW159-GW-0424	Total/NA	Water	6020B	418027
310-278281-6	MW190-GW-0424	Total/NA	Water	6020B	418027
310-278281-7	MW240R-GW-0424	Total/NA	Water	6020B	418027
310-278281-8	MW244-GW-0424	Total/NA	Water	6020B	418027
310-278281-9	MW245-GW-0424	Total/NA	Water	6020B	418027
310-278281-10	MW246-GW-0424	Total/NA	Water	6020B	418027
310-278281-11	MW247-GW-0424	Total/NA	Water	6020B	418027
310-278281-12	MW248-GW-0424	Total/NA	Water	6020B	418027
310-278281-13	MW250-GW-0424	Total/NA	Water	6020B	418027
310-278281-14	DP03-GW-0424	Total/NA	Water	6020B	418027
310-278281-15	DP04-GW-0424	Total/NA	Water	6020B	418027
310-278281-16	MW156D-GW-0424	Total/NA	Water	6020B	418027
310-278281-17	MW227D-GW-0424	Total/NA	Water	6020B	418027
MB 310-418027/1-A	Method Blank	Total/NA	Water	6020B	418027
LCS 310-418027/2-A	Lab Control Sample	Total/NA	Water	6020B	418027
310-278281-9 MS	MW245-GW-0424	Total/NA	Water	6020B	418027
310-278281-9 MSD	MW245-GW-0424	Total/NA	Water	6020B	418027
310-278281-1 DU	MW105-GW-0424	Total/NA	Water	6020B	418027

Analysis Batch: 418822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-1	MW105-GW-0424	Total/NA	Water	6020B	418027
310-278281-2	MW108-GW-0424	Total/NA	Water	6020B	418027
310-278281-3	MW133-GW-0424	Total/NA	Water	6020B	418027
310-278281-4	MW158-GW-0424	Total/NA	Water	6020B	418027
310-278281-5	MW159-GW-0424	Total/NA	Water	6020B	418027
310-278281-6	MW190-GW-0424	Total/NA	Water	6020B	418027
310-278281-7	MW240R-GW-0424	Total/NA	Water	6020B	418027
310-278281-8	MW244-GW-0424	Total/NA	Water	6020B	418027
310-278281-9	MW245-GW-0424	Total/NA	Water	6020B	418027
MB 310-418027/1-A	Method Blank	Total/NA	Water	6020B	418027
LCS 310-418027/2-A	Lab Control Sample	Total/NA	Water	6020B	418027
310-278281-9 MS	MW245-GW-0424	Total/NA	Water	6020B	418027

Metals (Continued)

Analysis Batch: 418822 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-9 MSD	MW245-GW-0424	Total/NA	Water	6020B	418027
310-278281-1 DU	MW105-GW-0424	Total/NA	Water	6020B	418027

General Chemistry

Analysis Batch: 418020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-1	MW105-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-2	MW108-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-3	MW133-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-4	MW158-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-5	MW159-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-6	MW190-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-7	MW240R-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-8	MW244-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-9	MW245-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-10	MW246-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-11	MW247-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-12	MW248-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-13	MW250-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-14	DP03-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-15	DP04-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-16	MW156D-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-17	MW227D-GW-0424	Total/NA	Water	SM 4500 H+ B	
LCS 310-418020/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-278281-9 DU	MW245-GW-0424	Total/NA	Water	SM 4500 H+ B	
310-278281-11 DU	MW247-GW-0424	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 418156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-1	MW105-GW-0424	Total/NA	Water	SM 2540C	
310-278281-2	MW108-GW-0424	Total/NA	Water	SM 2540C	
310-278281-3	MW133-GW-0424	Total/NA	Water	SM 2540C	
310-278281-4	MW158-GW-0424	Total/NA	Water	SM 2540C	
310-278281-5	MW159-GW-0424	Total/NA	Water	SM 2540C	
310-278281-6	MW190-GW-0424	Total/NA	Water	SM 2540C	
310-278281-8	MW244-GW-0424	Total/NA	Water	SM 2540C	
310-278281-9	MW245-GW-0424	Total/NA	Water	SM 2540C	
MB 310-418156/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-418156/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 418158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-7	MW240R-GW-0424	Total/NA	Water	SM 2540C	
310-278281-10	MW246-GW-0424	Total/NA	Water	SM 2540C	
310-278281-11	MW247-GW-0424	Total/NA	Water	SM 2540C	
310-278281-12	MW248-GW-0424	Total/NA	Water	SM 2540C	
310-278281-13	MW250-GW-0424	Total/NA	Water	SM 2540C	
310-278281-14	DP03-GW-0424	Total/NA	Water	SM 2540C	
310-278281-15	DP04-GW-0424	Total/NA	Water	SM 2540C	
310-278281-16	MW156D-GW-0424	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 418158 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-418158/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-418158/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 418249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-17	MW227D-GW-0424	Total/NA	Water	SM 2540C	
MB 310-418249/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-418249/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 656024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-16	MW156D-GW-0424	Total/NA	Water	PrecSep-21	
310-278281-17	MW227D-GW-0424	Total/NA	Water	PrecSep-21	
MB 160-656024/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-656024/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 656025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278281-16	MW156D-GW-0424	Total/NA	Water	PrecSep_0	
310-278281-17	MW227D-GW-0424	Total/NA	Water	PrecSep_0	
MB 160-656025/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-656025/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW105-GW-0424
Date Collected: 04/03/24 18:15
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 10:26
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 17:40
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:16
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 13:45

Client Sample ID: MW108-GW-0424
Date Collected: 04/03/24 19:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 10:38
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 17:44
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:30
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 13:49

Client Sample ID: MW133-GW-0424
Date Collected: 04/03/24 19:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 10:51
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 17:47
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:32
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 13:53

Client Sample ID: MW158-GW-0424
Date Collected: 04/03/24 16:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 11:03
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 17:58
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:34

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW158-GW-0424

Lab Sample ID: 310-278281-4
Date Collected: 04/03/24 16:00
Matrix: Water
Date Received: 04/04/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 13:56

Client Sample ID: MW159-GW-0424

Lab Sample ID: 310-278281-5
Date Collected: 04/03/24 15:00
Matrix: Water
Date Received: 04/04/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 11:16
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:00
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:36
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 13:59

Client Sample ID: MW190-GW-0424

Lab Sample ID: 310-278281-6
Date Collected: 04/03/24 12:55
Matrix: Water
Date Received: 04/04/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 11:54
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:02
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:39
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:02

Client Sample ID: MW240R-GW-0424

Lab Sample ID: 310-278281-7
Date Collected: 04/04/24 08:50
Matrix: Water
Date Received: 04/04/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 12:06
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:05
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:41
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:06

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW244-GW-0424
Date Collected: 04/03/24 15:25
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 12:19
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:07
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:43
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:09

Client Sample ID: MW245-GW-0424
Date Collected: 04/03/24 14:05
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 12:32
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:09
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418822	NFT2	EET CF	04/15/24 15:45
Total/NA	Analysis	SM 2540C		1	418156	D7CP	EET CF	04/08/24 15:48
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 13:39

Client Sample ID: MW246-GW-0424
Date Collected: 04/03/24 15:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 13:09
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:30
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:19

Client Sample ID: MW247-GW-0424
Date Collected: 04/03/24 16:25
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 13:22
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:32
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:22

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW248-GW-0424
Date Collected: 04/03/24 17:15
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 13:34
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:34
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:29

Client Sample ID: MW250-GW-0424
Date Collected: 04/03/24 18:15
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 13:47
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:36
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:33

Client Sample ID: DP03-GW-0424
Date Collected: 04/03/24 00:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 14:25
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:39
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:36

Client Sample ID: DP04-GW-0424
Date Collected: 04/04/24 00:00
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 14:37
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:41
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:39

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Client Sample ID: MW156D-GW-0424

Date Collected: 04/03/24 17:25
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 14:50
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:43
Total/NA	Prep	7470A			418145	DHM5	EET CF	04/08/24 14:09
Total/NA	Analysis	7470A		1	418360	A6US	EET CF	04/10/24 11:04
Total/NA	Analysis	SM 2540C		1	418158	D7CP	EET CF	04/08/24 15:53
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:43
Total/NA	Prep	PrecSep-21			656024	KAK	EET SL	04/09/24 10:23
Total/NA	Analysis	9315		1	659654	SCB	EET SL	05/02/24 07:45
Total/NA	Prep	PrecSep_0			656025	KAK	EET SL	04/09/24 10:39
Total/NA	Analysis	9320		1	659501	SCB	EET SL	05/01/24 16:14
Total/NA	Analysis	Ra226_Ra228		1	659961	FLC	EET SL	05/03/24 09:09

Client Sample ID: MW227D-GW-0424

Date Collected: 04/04/24 08:55
Date Received: 04/04/24 16:00

Lab Sample ID: 310-278281-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	418208	QTZ5	EET CF	04/08/24 15:03
Total/NA	Prep	3005A			418027	QTZ5	EET CF	04/08/24 09:00
Total/NA	Analysis	6020B		1	418695	NFT2	EET CF	04/12/24 18:45
Total/NA	Prep	7470A			418145	DHM5	EET CF	04/08/24 14:09
Total/NA	Analysis	7470A		1	418360	A6US	EET CF	04/10/24 11:06
Total/NA	Analysis	SM 2540C		1	418249	DGU1	EET CF	04/09/24 11:50
Total/NA	Analysis	SM 4500 H+ B		1	418020	D7CP	EET CF	04/05/24 14:46
Total/NA	Prep	PrecSep-21			656024	KAK	EET SL	04/09/24 10:23
Total/NA	Analysis	9315		1	659654	SCB	EET SL	05/02/24 07:45
Total/NA	Prep	PrecSep_0			656025	KAK	EET SL	04/09/24 10:39
Total/NA	Analysis	9320		1	659501	SCB	EET SL	05/01/24 16:14
Total/NA	Analysis	Ra226_Ra228		1	659961	FLC	EET SL	05/03/24 09:09

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Job ID: 310-278281-1
Project/Site: MEC Walter Scott CCR (WSEC) Monofill
SDG: 12592594.DEL.001

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	381	10-31-24

Method Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

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310-278281 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 4/4/24 | TIME 1600 | Received By: AM

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 1 of 3
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.1 | Corrected Temp (°C): -0.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: OHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 9/4/24 | TIME 1600 | Received By: AM

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 3
Cooler Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -0.4 | Corrected Temp (°C): -0.4

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 4/14/24 | TIME 1600 | Received By: AM

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 3 of 3
Cooler Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: X | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.5 | Corrected Temp (°C): 1.5

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s):	COC No:
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 1 of 2
Company: GHD Services Inc.				Job #:
Address: 11228 Aurora Avenue	Due Date Requested:	Analysis Requested		
City: Des Moines	TAT Requested (days): Standard			
State, Zip: IA, 50322-7905				
Phone: 515-414-3935	PO #: 340-016858			
Email: Kevin.Armstrong@ghd.com	WO #:			
Project Name: MidAmerican WSEC CCR Monofill Monitoring	Eurofins Project #: 31017236			
Project Number: 12592594 DEL.001	SSOW#: 12592594-002			

Preservation Codes

A - HCL	M - Hexane
B - NaOH	N - None
C Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	6020 Boron and Calcium	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N		
MW105-GW-0424	4/3/24	1815	G	W	N	N	X	X	X	X		
MW108-GW-0424	4/3/24	1955	G	W	N		X	X	X	X		
MW133-GW-0424	4/3/24	1900	G	W	N		X	X	X	X		
~~MW156-GW-0424~~			~~G~~	~~W~~	~~N~~		~~X~~	~~X~~	~~X~~	~~X~~		
~~MW157-GW-0424~~			~~G~~	~~W~~	~~N~~		~~X~~	~~X~~	~~X~~	~~X~~		
MW158-GW-0424	4/3/24	1600	G	W	N		X	X	X	X		
MW159-GW-0424	4/3/24	1506	G	W	N		X	X	X	X		
MW190-GW-0424	4/3/24	1255	G	W	N		X	X	X	X		
~~MW191-GW-0424~~			~~G~~	~~W~~	~~N~~		~~X~~	~~X~~	~~X~~	~~X~~		
~~MW227-GW-0424~~			~~G~~	~~W~~	~~N~~		~~X~~	~~X~~	~~X~~	~~X~~		
MW240R-GW-0424	4/4/24	0850	G	W	N		X	X	X	X		

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements. Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Paige Richards	4/4/24 1207	GHD	[signature]	4/4/24 1207	Eurofins
2						
3				[signature]	4/4/24 1600	Eurofins

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks.

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5/6/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s)	COC No:
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 2 of 2
Company: GHD Services Inc.				Job #:
Address: 11228 Aurora Avenue	Due Date Requested:			
City: Des Moines	TAT Requested (days): Standard			
State, Zip: IA, 50322-7905				
Phone: 515-414-3935	PO #: 340-016858			
Email: Kevin.Armstrong@ghd.com	WO #:			
Project Name: MidAmerican WSEC CCR Monofill Monitoring	Eurofins Project #: 31017236			
Project Number: 12592594 DEL.001	SSOW#: 12592594-002			

Analysis Requested

Preservation Codes.

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	6020 Boron and Calcium	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH	Rad226/Rad228/Rad228/228 combined	6020A CCR Metals List, 7470A Mercury	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH					Total Number of containers	Special Instructions/Note.
			Preservation Code:				D	N	N	N	D	D	N	N	N						
MW244-GW-0424	4/3/24	1525	G	W	N	N	X	X	X	X											
MW245-GW-0424	4/3/24	1405	G	W	N	Y	X	X	X	X											
MW246-GW-0424	4/3/24	1555	G	W	N	N	X	X	X	X											
MW247-GW-0424	4/3/24	1625	G	W	N	|	X	X	X	X											
MW248-GW-0424	4/3/24	1715	G	W	N	|	X	X	X	X											
MW250-GW-0424	4/3/24	1815	G	W	N	|	X	X	X	X											
DP03-GW-0424	4/3/24	—	G	W	N	|	X	X	X	X											
DP04-GW-0424	4/4/24	—	G	W	N	|	X	X	X	X											
MW156D-GW-0424	4/3/24	1725	G	W	N	|					X	X	X	X	X						
MW227D-GW-0424	4/4/24	0855	G	W	N	↓					X	X	X	X	X						

KGA 4/4/24

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Paige Richards	4/4/24 1207	GHD	[illegible]	4/4/24 12.07	Eurofins
2						
3				Paige Muehling	4/4/24 1600	Eurofins

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-278281-1
SDG Number: 12592594.DEL.001

Login Number: 278281
List Number: 1
Creator: Muehling, Angela C

List Source: Eurofins Cedar Falls

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.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC) Monofill

Job ID: 310-278281-1
SDG: 12592594.DEL.001

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
310-278281-16	MW156D-GW-0424	79.4
310-278281-17	MW227D-GW-0424	89.1
LCS 160-656024/2-A	Lab Control Sample	86.8
MB 160-656024/1-A	Method Blank	90.6

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
310-278281-16	MW156D-GW-0424	79.4	83.7
310-278281-17	MW227D-GW-0424	89.1	83.4
LCS 160-656025/2-A	Lab Control Sample	86.8	83.4
MB 160-656025/1-A	Method Blank	90.6	80.7

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 7/29/2024 8:08:11 AM Revision 1

JOB DESCRIPTION

MEC Walter Scott CCR (WSEC)
MEC - WSEC - June 2024 CCR

JOB NUMBER

310-282928-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

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

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

Authorization

Generated
7/29/2024 8:08:11 AM
Revision 1

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

Table of Contents

Job Narrative
310-282928-1

Revision
The report being provided is a revision of the original report sent on 7/8/2024. The report (revision 1) is being revised due to: This report was revised 7/23/2024. Added NCM for Hg MS/MSD Recovery..

Receipt
The samples were received on 6/6/2024 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.3º C, 3.7º C and 5.3º C.

HPLC/IC
Methods 300.0, 9056A: The following samples were diluted due to the nature of the sample matrix: MW5D-GW-0624 (310-282928-1), MW22D-GW-0624 (310-282928-2), MW156D-GW-0624 (310-282928-3), MW227D-GW-0624 (310-282928-4), MW307D-GW-0624 (310-282928-5) and DP01-GW-0624 (310-282928-6). Elevated reporting limits (RLs) are provided.

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

Metals
Method 7470A: The matrix spike duplicate (MSD) recoveries for preparation batch 310-424088 and analytical batch 310-424367 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

Job ID: 310-282928-2 Eurofins Cedar Falls

Job Narrative
310-282928-2

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

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

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

Receipt
The samples were received on 6/6/2024 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.3°C, 3.7°C and 5.3°C.

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

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

Sample Summary

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-282928-1	MW5D-GW-0624	Water	06/04/24 15:50	06/06/24 16:10
310-282928-2	MW22D-GW-0624	Water	06/05/24 08:45	06/06/24 16:10
310-282928-3	MW156D-GW-0624	Water	06/04/24 18:20	06/06/24 16:10
310-282928-4	MW227D-GW-0624	Water	06/05/24 10:30	06/06/24 16:10
310-282928-5	MW307D-GW-0624	Water	06/04/24 10:40	06/06/24 16:10
310-282928-6	DP01-GW-0624	Water	06/04/24 00:00	06/06/24 16:10
310-282928-7	MW108-GW-0624	Water	06/04/24 13:30	06/06/24 16:10
310-282928-8	MW190-GW-0624	Water	06/04/24 14:45	06/06/24 16:10
310-282928-9	MW247-GW-0624	Water	06/04/24 14:10	06/06/24 16:10

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW5D-GW-0624 — Lab Sample ID: 310-282928-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	55.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	389		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0141		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0613		0.00200		mg/L	1		6020B	Total/NA
Boron	1.67		0.100		mg/L	1		6020B	Total/NA
Calcium	140		0.500		mg/L	1		6020B	Total/NA
Lead	0.00122		0.000500		mg/L	1		6020B	Total/NA
Molybdenum	0.0396		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	836		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW22D-GW-0624 — Lab Sample ID: 310-282928-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	186		5.00		mg/L	5		9056A	Total/NA
Sulfate	89.1		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0310		0.00200		mg/L	1		6020B	Total/NA
Barium	0.161		0.00200		mg/L	1		6020B	Total/NA
Boron	0.302		0.100		mg/L	1		6020B	Total/NA
Calcium	125		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000767		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0294		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00873		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	864		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW156D-GW-0624 — Lab Sample ID: 310-282928-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	37.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	474		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0202		0.00200		mg/L	1		6020B	Total/NA
Barium	0.348	F1	0.00200		mg/L	1		6020B	Total/NA
Boron	0.105		0.100		mg/L	1		6020B	Total/NA
Calcium	305		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000685		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0936		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1290		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW227D-GW-0624 — Lab Sample ID: 310-282928-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	219		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0136		0.00200		mg/L	1		6020B	Total/NA
Barium	0.480		0.00200		mg/L	1		6020B	Total/NA
Calcium	166		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0654		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00327		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	778		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW307D-GW-0624 — Lab Sample ID: 310-282928-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	25.9		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0192		0.00200		mg/L	1		6020B	Total/NA
Barium	0.477		0.00200		mg/L	1		6020B	Total/NA
Boron	0.191		0.100		mg/L	1		6020B	Total/NA
Calcium	113		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00156		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0677		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00473		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	476		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DP01-GW-0624 — Lab Sample ID: 310-282928-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	55.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	392		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0145		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0643		0.00200		mg/L	1		6020B	Total/NA
Boron	1.70		0.100		mg/L	1		6020B	Total/NA
Calcium	139		0.500		mg/L	1		6020B	Total/NA
Lead	0.00117		0.000500		mg/L	1		6020B	Total/NA
Molybdenum	0.0402		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	842		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW108-GW-0624 — Lab Sample ID: 310-282928-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.160		0.100		mg/L	1		6020B	Total/NA

Client Sample ID: MW190-GW-0624 — Lab Sample ID: 310-282928-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	177		5.00		mg/L	5		9056A	Total/NA
Calcium	195		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW247-GW-0624 — Lab Sample ID: 310-282928-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13.6		5.00		mg/L	5		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW5D-GW-0624

Date Collected: 06/04/24 15:50
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-1

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**55.5**		5.00		mg/L			06/12/24 18:30	5
Fluoride	<1.00		1.00		mg/L			06/12/24 18:30	5
Sulfate	**389**		5.00		mg/L			06/12/24 18:30	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 19:15	1
Arsenic	**0.0141**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:15	1
Barium	**0.0613**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:15	1
Beryllium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:15	1
Boron	**1.67**		0.100		mg/L		06/10/24 09:00	06/20/24 19:15	1
Cadmium	<0.000200		0.000200		mg/L		06/10/24 09:00	06/20/24 19:15	1
Calcium	**140**		0.500		mg/L		06/10/24 09:00	06/20/24 19:15	1
Chromium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:15	1
Cobalt	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 19:15	1
Lithium	<0.0100		0.0100		mg/L		06/10/24 09:00	06/20/24 19:15	1
Lead	**0.00122**		0.000500		mg/L		06/10/24 09:00	06/20/24 19:15	1
Molybdenum	**0.0396**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:15	1
Selenium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:15	1
Thallium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:15	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		06/10/24 15:41	06/12/24 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**836**		50.0		mg/L			06/07/24 14:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.9**	**HF**	1.0		SU			06/06/24 17:16	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.190**		0.123	0.124	1.00	0.173	pCi/L	06/11/24 08:06	07/05/24 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*94.6*		*30 - 110*	*06/11/24 08:06*	*07/05/24 13:04*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.779**		0.492	0.497	1.00	0.720	pCi/L	06/11/24 08:09	06/28/24 12:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*94.6*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:35*	*1*
Y Carrier	*81.5*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:35*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW5D-GW-0624

Date Collected: 06/04/24 15:50
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-1

Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.969		0.507	0.512	5.00	0.720	pCi/L		07/08/24 13:55	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW22D-GW-0624

Date Collected: 06/05/24 08:45
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-2

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**186**		5.00		mg/L			06/12/24 18:42	5
Fluoride	<1.00		1.00		mg/L			06/12/24 18:42	5
Sulfate	**89.1**		5.00		mg/L			06/12/24 18:42	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 19:19	1
Arsenic	**0.0310**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:19	1
Barium	**0.161**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:19	1
Beryllium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:19	1
Boron	**0.302**		0.100		mg/L		06/10/24 09:00	06/20/24 19:19	1
Cadmium	<0.000200		0.000200		mg/L		06/10/24 09:00	06/20/24 19:19	1
Calcium	**125**		0.500		mg/L		06/10/24 09:00	06/20/24 19:19	1
Chromium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:19	1
Cobalt	**0.000767**		0.000500		mg/L		06/10/24 09:00	06/20/24 19:19	1
Lithium	**0.0294**		0.0100		mg/L		06/10/24 09:00	06/20/24 19:19	1
Lead	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 19:19	1
Molybdenum	**0.00873**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:19	1
Selenium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:19	1
Thallium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:19	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		06/10/24 15:41	06/12/24 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**864**		50.0		mg/L			06/07/24 14:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.6**	**HF**	1.0		SU			06/06/24 17:17	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.136**		0.0784	0.0794	1.00	0.0957	pCi/L	06/11/24 08:06	07/05/24 15:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*95.0*		*30 - 110*	*06/11/24 08:06*	*07/05/24 15:04*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.792**		0.378	0.385	1.00	0.510	pCi/L	06/11/24 08:09	06/28/24 12:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*95.0*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:35*	*1*
Y Carrier	*83.4*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:35*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW22D-GW-0624

Date Collected: 06/05/24 08:45
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-2

Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.928		0.386	0.393	5.00	0.510	pCi/L		07/08/24 13:55	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW156D-GW-0624

Date Collected: 06/04/24 18:20
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-3

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37.5**		5.00		mg/L			06/12/24 18:55	5
Fluoride	<1.00		1.00		mg/L			06/12/24 18:55	5
Sulfate	**474**		5.00		mg/L			06/12/24 18:55	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 19:22	1
Arsenic	**0.0202**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:22	1
Barium	**0.348**	**F1**	0.00200		mg/L		06/10/24 09:00	06/20/24 19:22	1
Beryllium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:22	1
Boron	**0.105**		0.100		mg/L		06/10/24 09:00	06/20/24 19:22	1
Cadmium	<0.000200		0.000200		mg/L		06/10/24 09:00	06/20/24 19:22	1
Calcium	**305**		0.500		mg/L		06/10/24 09:00	06/20/24 19:22	1
Chromium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:22	1
Cobalt	**0.000685**		0.000500		mg/L		06/10/24 09:00	06/20/24 19:22	1
Lithium	**0.0936**		0.0100		mg/L		06/10/24 09:00	06/20/24 19:22	1
Lead	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 19:22	1
Molybdenum	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 19:22	1
Selenium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:22	1
Thallium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:22	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	F1	0.000200		mg/L		06/10/24 15:41	06/12/24 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1290**		50.0		mg/L			06/07/24 14:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			06/06/24 17:14	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.244**		0.112	0.115	1.00	0.141	pCi/L	06/11/24 08:06	07/05/24 15:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*95.5*		*30 - 110*	*06/11/24 08:06*	*07/05/24 15:04*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.617**		0.379	0.384	1.00	0.556	pCi/L	06/11/24 08:09	06/28/24 12:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*95.5*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:38*	*1*
Y Carrier	*82.6*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:38*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW156D-GW-0624
Date Collected: 06/04/24 18:20
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-3
Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.861		0.395	0.401	5.00	0.556	pCi/L		07/08/24 13:55	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW227D-GW-0624

Date Collected: 06/05/24 10:30
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-4

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11.9**		5.00		mg/L			06/12/24 19:58	5
Fluoride	<1.00		1.00		mg/L			06/12/24 19:58	5
Sulfate	**219**		5.00		mg/L			06/12/24 19:58	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 19:39	1
Arsenic	**0.0136**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:39	1
Barium	**0.480**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:39	1
Beryllium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:39	1
Boron	<0.100		0.100		mg/L		06/10/24 09:00	06/20/24 19:39	1
Cadmium	<0.000200		0.000200		mg/L		06/10/24 09:00	06/20/24 19:39	1
Calcium	**166**		0.500		mg/L		06/10/24 09:00	06/20/24 19:39	1
Chromium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:39	1
Cobalt	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 19:39	1
Lithium	**0.0654**		0.0100		mg/L		06/10/24 09:00	06/20/24 19:39	1
Lead	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 19:39	1
Molybdenum	**0.00327**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:39	1
Selenium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:39	1
Thallium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:39	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		06/10/24 15:41	06/12/24 14:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**778**		50.0		mg/L			06/11/24 08:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			06/06/24 17:18	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.493**		0.133	0.140	1.00	0.108	pCi/L	06/11/24 08:06	07/05/24 15:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*97.5*		*30 - 110*	*06/11/24 08:06*	*07/05/24 15:05*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.572**		0.330	0.334	1.00	0.467	pCi/L	06/11/24 08:09	06/28/24 12:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*97.5*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:36*	*1*
Y Carrier	*84.5*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:36*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW227D-GW-0624
Date Collected: 06/05/24 10:30
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-4
Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.07		0.356	0.362	5.00	0.467	pCi/L		07/08/24 13:55	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW307D-GW-0624

Lab Sample ID: 310-282928-5

Date Collected: 06/04/24 10:40

Matrix: Water

Date Received: 06/06/24 16:10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			06/12/24 20:11	5
Fluoride	<1.00		1.00		mg/L			06/12/24 20:11	5
Sulfate	**25.9**		5.00		mg/L			06/12/24 20:11	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 19:57	1
Arsenic	**0.0192**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:57	1
Barium	**0.477**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:57	1
Beryllium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:57	1
Boron	**0.191**		0.100		mg/L		06/10/24 09:00	06/20/24 19:57	1
Cadmium	<0.000200		0.000200		mg/L		06/10/24 09:00	06/20/24 19:57	1
Calcium	**113**		0.500		mg/L		06/10/24 09:00	06/20/24 19:57	1
Chromium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:57	1
Cobalt	**0.00156**		0.000500		mg/L		06/10/24 09:00	06/20/24 19:57	1
Lithium	**0.0677**		0.0100		mg/L		06/10/24 09:00	06/20/24 19:57	1
Lead	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 19:57	1
Molybdenum	**0.00473**		0.00200		mg/L		06/10/24 09:00	06/20/24 19:57	1
Selenium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 19:57	1
Thallium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 19:57	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		06/10/24 15:41	06/12/24 14:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**476**		50.0		mg/L			06/07/24 14:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			06/06/24 17:19	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.339**		0.132	0.135	1.00	0.134	pCi/L	06/11/24 08:06	07/05/24 15:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*100*		*30 - 110*	*06/11/24 08:06*	*07/05/24 15:05*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.657	U	0.417	0.420	1.00	0.657	pCi/L	06/11/24 08:09	06/28/24 12:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*100*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:36*	*1*
Y Carrier	*87.9*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:36*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW307D-GW-0624
Date Collected: 06/04/24 10:40
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-5
Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.823		0.437	0.441	5.00	0.657	pCi/L		07/08/24 13:55	1

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: DP01-GW-0624

Date Collected: 06/04/24 00:00
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-6

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**55.9**		5.00		mg/L			06/12/24 20:23	5
Fluoride	<1.00		1.00		mg/L			06/12/24 20:23	5
Sulfate	**392**		5.00		mg/L			06/12/24 20:23	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 20:00	1
Arsenic	**0.0145**		0.00200		mg/L		06/10/24 09:00	06/20/24 20:00	1
Barium	**0.0643**		0.00200		mg/L		06/10/24 09:00	06/20/24 20:00	1
Beryllium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 20:00	1
Boron	**1.70**		0.100		mg/L		06/10/24 09:00	06/20/24 20:00	1
Cadmium	<0.000200		0.000200		mg/L		06/10/24 09:00	06/20/24 20:00	1
Calcium	**139**		0.500		mg/L		06/10/24 09:00	06/20/24 20:00	1
Chromium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 20:00	1
Cobalt	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 20:00	1
Lithium	<0.0100		0.0100		mg/L		06/10/24 09:00	06/20/24 20:00	1
Lead	**0.00117**		0.000500		mg/L		06/10/24 09:00	06/20/24 20:00	1
Molybdenum	**0.0402**		0.00200		mg/L		06/10/24 09:00	06/20/24 20:00	1
Selenium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 20:00	1
Thallium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 20:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		06/10/24 15:41	06/12/24 14:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**842**		50.0		mg/L			06/07/24 14:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.8**	**HF**	1.0		SU			06/06/24 17:20	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.148**		0.105	0.106	1.00	0.143	pCi/L	06/11/24 08:06	07/05/24 15:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*88.6*		*30 - 110*	*06/11/24 08:06*	*07/05/24 15:05*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.06**		0.578	0.586	1.00	0.817	pCi/L	06/11/24 08:09	06/28/24 12:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*88.6*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:36*	*1*
Y Carrier	*79.3*		*30 - 110*	*06/11/24 08:09*	*06/28/24 12:36*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: DP01-GW-0624
Date Collected: 06/04/24 00:00
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-6
Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.21		0.587	0.596	5.00	0.817	pCi/L		07/08/24 13:55	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW108-GW-0624

Date Collected: 06/04/24 13:30
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-7

Matrix: Water

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.160		0.100		mg/L		06/10/24 09:00	06/20/24 20:04	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Walter Scott CCR (WSEC)

Job ID: 310-282928-1

Client Sample ID: MW190-GW-0624

Date Collected: 06/04/24 14:45
Date Received: 06/06/24 16:10

Lab Sample ID: 310-282928-8

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	177		5.00		mg/L			06/12/24 20:36	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	195		0.500		mg/L		06/10/24 09:00	06/20/24 20:08	1

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Client Sample ID: MW247-GW-0624
Lab Sample ID: 310-282928-9
Date Collected: 06/04/24 14:10
Matrix: Water
Date Received: 06/06/24 16:10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.6		5.00		mg/L			06/12/24 20:48	5

Definitions/Glossary

Client: GHD Services Inc. Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-424497/3
Matrix: Water
Analysis Batch: 424497

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			06/12/24 16:24	1
Fluoride	<0.200		0.200		mg/L			06/12/24 16:24	1
Sulfate	<1.00		1.00		mg/L			06/12/24 16:24	1

Lab Sample ID: LCS 310-424497/35
Matrix: Water
Analysis Batch: 424497

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.529		mg/L		95	90 - 110
Fluoride	2.00	1.995		mg/L		100	90 - 110
Sulfate	10.0	10.13		mg/L		101	90 - 110

Lab Sample ID: 310-282928-3 MS
Matrix: Water
Analysis Batch: 424497

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	37.5		25.0	60.18		mg/L		91	80 - 120
Fluoride	<1.00		5.00	5.272		mg/L		105	80 - 120
Sulfate	474		25.0	485.3	4	mg/L		43	80 - 120

Lab Sample ID: 310-282928-3 MSD
Matrix: Water
Analysis Batch: 424497

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	37.5		25.0	60.69		mg/L		93	80 - 120	1	15
Fluoride	<1.00		5.00	5.304		mg/L		106	80 - 120	1	15
Sulfate	474		25.0	487.3	4	mg/L		51	80 - 120	0	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-423979/1-A
Matrix: Water
Analysis Batch: 425254

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423979

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 18:47	1
Arsenic	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 18:47	1
Barium	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 18:47	1
Beryllium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 18:47	1
Boron	<0.100		0.100		mg/L		06/10/24 09:00	06/20/24 18:47	1
Cadmium	<0.000200		0.000200		mg/L		06/10/24 09:00	06/20/24 18:47	1
Calcium	<0.500		0.500		mg/L		06/10/24 09:00	06/20/24 18:47	1
Chromium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 18:47	1
Cobalt	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 18:47	1
Lithium	<0.0100		0.0100		mg/L		06/10/24 09:00	06/20/24 18:47	1
Lead	<0.000500		0.000500		mg/L		06/10/24 09:00	06/20/24 18:47	1
Molybdenum	<0.00200		0.00200		mg/L		06/10/24 09:00	06/20/24 18:47	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-423979/1-A
Matrix: Water
Analysis Batch: 425254

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423979

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.00500		0.00500		mg/L		06/10/24 09:00	06/20/24 18:47	1
Thallium	<0.00100		0.00100		mg/L		06/10/24 09:00	06/20/24 18:47	1

Lab Sample ID: LCS 310-423979/2-A
Matrix: Water
Analysis Batch: 425254

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 423979

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.1935		mg/L		97	80 - 120
Arsenic	0.200	0.1947		mg/L		97	80 - 120
Barium	0.100	0.09652		mg/L		97	80 - 120
Beryllium	0.100	0.1001		mg/L		100	80 - 120
Boron	0.200	0.1948		mg/L		97	80 - 120
Cadmium	0.100	0.09383		mg/L		94	80 - 120
Calcium	2.00	1.732		mg/L		87	80 - 120
Chromium	0.100	0.09573		mg/L		96	80 - 120
Cobalt	0.100	0.1010		mg/L		101	80 - 120
Lithium	0.200	0.2044		mg/L		102	80 - 120
Lead	0.200	0.2074		mg/L		104	80 - 120
Molybdenum	0.200	0.1938		mg/L		97	80 - 120
Selenium	0.400	0.3754		mg/L		94	80 - 120
Thallium	0.100	0.1007		mg/L		101	80 - 120

Lab Sample ID: 310-282928-3 MS
Matrix: Water
Analysis Batch: 425254

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA
Prep Batch: 423979

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200		0.200	0.2013		mg/L		101	75 - 125
Arsenic	0.0202		0.200	0.2330		mg/L		106	75 - 125
Barium	0.348	F1	0.100	0.4817	F1	mg/L		134	75 - 125
Beryllium	<0.00100		0.100	0.1000		mg/L		100	75 - 125
Boron	0.105		0.200	0.2995		mg/L		97	75 - 125
Cadmium	<0.000200		0.100	0.09842		mg/L		98	75 - 125
Calcium	305		2.00	303.4	4	mg/L		-82	75 - 125
Chromium	<0.00500		0.100	0.09937		mg/L		99	75 - 125
Cobalt	0.000685		0.100	0.1023		mg/L		102	75 - 125
Lithium	0.0936		0.200	0.2981		mg/L		102	75 - 125
Lead	<0.000500		0.200	0.2040		mg/L		102	75 - 125
Molybdenum	<0.00200		0.200	0.2194		mg/L		109	75 - 125
Selenium	<0.00500		0.400	0.4154		mg/L		104	75 - 125
Thallium	<0.00100		0.100	0.08677		mg/L		87	75 - 125

Lab Sample ID: 310-282928-3 MSD
Matrix: Water
Analysis Batch: 425254

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA
Prep Batch: 423979

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200		0.200	0.1908		mg/L		95	75 - 125	5	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-282928-3 MSD — **Client Sample ID: MW156D-GW-0624**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 425254 — **Prep Batch: 423979**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0202		0.200	0.2245		mg/L		102	75 - 125	4	20
Barium	0.348	F1	0.100	0.4533		mg/L		105	75 - 125	6	20
Beryllium	<0.00100		0.100	0.09620		mg/L		96	75 - 125	4	20
Boron	0.105		0.200	0.2802		mg/L		88	75 - 125	7	20
Cadmium	<0.000200		0.100	0.09432		mg/L		94	75 - 125	4	20
Calcium	305		2.00	287.2	4	mg/L		-889	75 - 125	5	20
Chromium	<0.00500		0.100	0.09484		mg/L		95	75 - 125	5	20
Cobalt	0.000685		0.100	0.09852		mg/L		98	75 - 125	4	20
Lithium	0.0936		0.200	0.2823		mg/L		94	75 - 125	5	20
Lead	<0.000500		0.200	0.1948		mg/L		97	75 - 125	5	20
Molybdenum	<0.00200		0.200	0.2022		mg/L		100	75 - 125	8	20
Selenium	<0.00500		0.400	0.4049		mg/L		101	75 - 125	3	20
Thallium	<0.00100		0.100	0.08133		mg/L		81	75 - 125	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-424088/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 424367 — **Prep Batch: 424088**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		06/10/24 15:41	06/12/24 14:38	1

Lab Sample ID: LCS 310-424088/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 424367 — **Prep Batch: 424088**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00167	0.001518		mg/L		91	80 - 120		

Lab Sample ID: 310-282928-3 MS — **Client Sample ID: MW156D-GW-0624**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 424367 — **Prep Batch: 424088**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	<0.000200	F1	0.00167	0.001487		mg/L		89	80 - 120		

Lab Sample ID: 310-282928-3 MSD — **Client Sample ID: MW156D-GW-0624**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 424367 — **Prep Batch: 424088**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000200	F1	0.00167	<0.000200	F1	mg/L		0	80 - 120	NC	20

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

Lab Sample ID: MB 310-423973/1
Matrix: Water
Analysis Batch: 423973

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			06/07/24 14:52	1

Lab Sample ID: LCS 310-423973/2
Matrix: Water
Analysis Batch: 423973

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	972.0		mg/L		97	88 - 110

Lab Sample ID: 310-282928-3 DU
Matrix: Water
Analysis Batch: 423973

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1290		1284		mg/L		0.6	16

Lab Sample ID: MB 310-424127/1
Matrix: Water
Analysis Batch: 424127

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			06/11/24 08:36	1

Lab Sample ID: 310-282928-4 DU
Matrix: Water
Analysis Batch: 424127

Client Sample ID: MW227D-GW-0624
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	778		780.0		mg/L		0.3	16

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-423698/28
Matrix: Water
Analysis Batch: 423698

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.1		SU		101	98 - 102

Lab Sample ID: 310-282928-3 DU
Matrix: Water
Analysis Batch: 423698

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.3	HF	7.3		SU		0.1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-665656/1-A
Matrix: Water
Analysis Batch: 669299

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665656

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.142	U	0.0810	0.0811	1.00	0.142	pCi/L	06/11/24 08:06	07/05/24 12:58	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*95.0*		*30 - 110*	*06/11/24 08:06*	*07/05/24 12:58*	*1*

Lab Sample ID: LCS 160-665656/2-A
Matrix: Water
Analysis Batch: 669299

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665656

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.958		1.05	1.00	0.113	pCi/L	88	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*99.3*		*30 - 110*

Lab Sample ID: 310-282928-3 MS
Matrix: Water
Analysis Batch: 669299

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA
Prep Batch: 665656

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226	0.244		11.3	9.498		1.01	1.00	0.114	pCi/L	82	60 - 140		

Carrier	*MS %Yield*	*MS Qualifier*	*Limits*
Barium	*97.5*		*30 - 110*

Lab Sample ID: 310-282928-3 MSD
Matrix: Water
Analysis Batch: 669299

Client Sample ID: MW156D-GW-0624
Prep Type: Total/NA
Prep Batch: 665656

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	0.244		11.3	10.43		1.10	1.00	0.0921	pCi/L	90	60 - 140	0.44	1

Carrier	*MSD %Yield*	*MSD Qualifier*	*Limits*
Barium	*93.8*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-665658/1-A
Matrix: Water
Analysis Batch: 668479

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665658

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.534	U	0.346	0.349	1.00	0.534	pCi/L	06/11/24 08:09	06/28/24 12:34	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	95.0		30 - 110	06/11/24 08:09	06/28/24 12:34	1
Y Carrier	83.4		30 - 110	06/11/24 08:09	06/28/24 12:34	1

Lab Sample ID: LCS 160-665658/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 668479 — **Prep Batch: 665658**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.81	9.678		1.29	1.00	0.475	pCi/L	110	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	99.3		30 - 110
Y Carrier	84.9		30 - 110

Lab Sample ID: 310-282928-3 MS — **Client Sample ID: MW156D-GW-0624**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 668479 — **Prep Batch: 665658**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228	0.617		8.83	8.664		1.18	1.00	0.449	pCi/L	91	60 - 140		

Carrier	MS %Yield	MS Qualifier	Limits
Barium	97.5		30 - 110
Y Carrier	89.0		30 - 110

Lab Sample ID: 310-282928-3 MSD — **Client Sample ID: MW156D-GW-0624**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 668479 — **Prep Batch: 665658**

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	0.617		8.80	9.620		1.31	1.00	0.505	pCi/L	102	60 - 140	0.38	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Barium	93.8		30 - 110
Y Carrier	84.5		30 - 110

QC Association Summary

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

HPLC/IC

Analysis Batch: 424497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	9056A	
310-282928-2	MW22D-GW-0624	Total/NA	Water	9056A	
310-282928-3	MW156D-GW-0624	Total/NA	Water	9056A	
310-282928-4	MW227D-GW-0624	Total/NA	Water	9056A	
310-282928-5	MW307D-GW-0624	Total/NA	Water	9056A	
310-282928-6	DP01-GW-0624	Total/NA	Water	9056A	
310-282928-8	MW190-GW-0624	Total/NA	Water	9056A	
310-282928-9	MW247-GW-0624	Total/NA	Water	9056A	
MB 310-424497/3	Method Blank	Total/NA	Water	9056A	
LCS 310-424497/35	Lab Control Sample	Total/NA	Water	9056A	
310-282928-3 MS	MW156D-GW-0624	Total/NA	Water	9056A	
310-282928-3 MSD	MW156D-GW-0624	Total/NA	Water	9056A	

Metals

Prep Batch: 423979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	3005A	
310-282928-2	MW22D-GW-0624	Total/NA	Water	3005A	
310-282928-3	MW156D-GW-0624	Total/NA	Water	3005A	
310-282928-4	MW227D-GW-0624	Total/NA	Water	3005A	
310-282928-5	MW307D-GW-0624	Total/NA	Water	3005A	
310-282928-6	DP01-GW-0624	Total/NA	Water	3005A	
310-282928-7	MW108-GW-0624	Total/NA	Water	3005A	
310-282928-8	MW190-GW-0624	Total/NA	Water	3005A	
MB 310-423979/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-423979/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-282928-3 MS	MW156D-GW-0624	Total/NA	Water	3005A	
310-282928-3 MSD	MW156D-GW-0624	Total/NA	Water	3005A	

Prep Batch: 424088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	7470A	
310-282928-2	MW22D-GW-0624	Total/NA	Water	7470A	
310-282928-3	MW156D-GW-0624	Total/NA	Water	7470A	
310-282928-4	MW227D-GW-0624	Total/NA	Water	7470A	
310-282928-5	MW307D-GW-0624	Total/NA	Water	7470A	
310-282928-6	DP01-GW-0624	Total/NA	Water	7470A	
MB 310-424088/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-424088/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-282928-3 MS	MW156D-GW-0624	Total/NA	Water	7470A	
310-282928-3 MSD	MW156D-GW-0624	Total/NA	Water	7470A	

Analysis Batch: 424367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	7470A	424088
310-282928-2	MW22D-GW-0624	Total/NA	Water	7470A	424088
310-282928-3	MW156D-GW-0624	Total/NA	Water	7470A	424088
310-282928-4	MW227D-GW-0624	Total/NA	Water	7470A	424088
310-282928-5	MW307D-GW-0624	Total/NA	Water	7470A	424088
310-282928-6	DP01-GW-0624	Total/NA	Water	7470A	424088

Metals (Continued)

Analysis Batch: 424367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-424088/1-A	Method Blank	Total/NA	Water	7470A	424088
LCS 310-424088/2-A	Lab Control Sample	Total/NA	Water	7470A	424088
310-282928-3 MS	MW156D-GW-0624	Total/NA	Water	7470A	424088
310-282928-3 MSD	MW156D-GW-0624	Total/NA	Water	7470A	424088

Analysis Batch: 425254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	6020B	423979
310-282928-2	MW22D-GW-0624	Total/NA	Water	6020B	423979
310-282928-3	MW156D-GW-0624	Total/NA	Water	6020B	423979
310-282928-4	MW227D-GW-0624	Total/NA	Water	6020B	423979
310-282928-5	MW307D-GW-0624	Total/NA	Water	6020B	423979
310-282928-6	DP01-GW-0624	Total/NA	Water	6020B	423979
310-282928-7	MW108-GW-0624	Total/NA	Water	6020B	423979
310-282928-8	MW190-GW-0624	Total/NA	Water	6020B	423979
MB 310-423979/1-A	Method Blank	Total/NA	Water	6020B	423979
LCS 310-423979/2-A	Lab Control Sample	Total/NA	Water	6020B	423979
310-282928-3 MS	MW156D-GW-0624	Total/NA	Water	6020B	423979
310-282928-3 MSD	MW156D-GW-0624	Total/NA	Water	6020B	423979

General Chemistry

Analysis Batch: 423698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	SM 4500 H+ B	
310-282928-2	MW22D-GW-0624	Total/NA	Water	SM 4500 H+ B	
310-282928-3	MW156D-GW-0624	Total/NA	Water	SM 4500 H+ B	
310-282928-4	MW227D-GW-0624	Total/NA	Water	SM 4500 H+ B	
310-282928-5	MW307D-GW-0624	Total/NA	Water	SM 4500 H+ B	
310-282928-6	DP01-GW-0624	Total/NA	Water	SM 4500 H+ B	
LCS 310-423698/28	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-282928-3 DU	MW156D-GW-0624	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 423973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	SM 2540C	
310-282928-2	MW22D-GW-0624	Total/NA	Water	SM 2540C	
310-282928-3	MW156D-GW-0624	Total/NA	Water	SM 2540C	
310-282928-5	MW307D-GW-0624	Total/NA	Water	SM 2540C	
310-282928-6	DP01-GW-0624	Total/NA	Water	SM 2540C	
MB 310-423973/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-423973/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-282928-3 DU	MW156D-GW-0624	Total/NA	Water	SM 2540C	

Analysis Batch: 424127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-4	MW227D-GW-0624	Total/NA	Water	SM 2540C	
MB 310-424127/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-424127/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-282928-4 DU	MW227D-GW-0624	Total/NA	Water	SM 2540C	

QC Association Summary

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Rad

Prep Batch: 665656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	PrecSep-21	
310-282928-2	MW22D-GW-0624	Total/NA	Water	PrecSep-21	
310-282928-3	MW156D-GW-0624	Total/NA	Water	PrecSep-21	
310-282928-4	MW227D-GW-0624	Total/NA	Water	PrecSep-21	
310-282928-5	MW307D-GW-0624	Total/NA	Water	PrecSep-21	
310-282928-6	DP01-GW-0624	Total/NA	Water	PrecSep-21	
MB 160-665656/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-665656/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-282928-3 MS	MW156D-GW-0624	Total/NA	Water	PrecSep-21	
310-282928-3 MSD	MW156D-GW-0624	Total/NA	Water	PrecSep-21	

Prep Batch: 665658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282928-1	MW5D-GW-0624	Total/NA	Water	PrecSep_0	
310-282928-2	MW22D-GW-0624	Total/NA	Water	PrecSep_0	
310-282928-3	MW156D-GW-0624	Total/NA	Water	PrecSep_0	
310-282928-4	MW227D-GW-0624	Total/NA	Water	PrecSep_0	
310-282928-5	MW307D-GW-0624	Total/NA	Water	PrecSep_0	
310-282928-6	DP01-GW-0624	Total/NA	Water	PrecSep_0	
MB 160-665658/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-665658/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-282928-3 MS	MW156D-GW-0624	Total/NA	Water	PrecSep_0	
310-282928-3 MSD	MW156D-GW-0624	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Client Sample ID: MW5D-GW-0624
Lab Sample ID: 310-282928-1
Date Collected: 06/04/24 15:50
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 18:30
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 19:15
Total/NA	Prep	7470A			424088	A6US	EET CF	06/10/24 15:41
Total/NA	Analysis	7470A		1	424367	A6US	EET CF	06/12/24 14:48
Total/NA	Analysis	SM 2540C		1	423973	D7CP	EET CF	06/07/24 14:52
Total/NA	Analysis	SM 4500 H+ B		1	423698	W9YR	EET CF	06/06/24 17:16
Total/NA	Prep	PrecSep-21			665656	MLT	EET SL	06/11/24 08:06
Total/NA	Analysis	9315		1	669425	SWS	EET SL	07/05/24 13:04
Total/NA	Prep	PrecSep_0			665658	MLT	EET SL	06/11/24 08:09
Total/NA	Analysis	9320		1	668479	SCB	EET SL	06/28/24 12:35
Total/NA	Analysis	Ra226_Ra228		1	669483	SCB	EET SL	07/08/24 13:55

Client Sample ID: MW22D-GW-0624
Lab Sample ID: 310-282928-2
Date Collected: 06/05/24 08:45
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 18:42
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 19:19
Total/NA	Prep	7470A			424088	A6US	EET CF	06/10/24 15:41
Total/NA	Analysis	7470A		1	424367	A6US	EET CF	06/12/24 14:50
Total/NA	Analysis	SM 2540C		1	423973	D7CP	EET CF	06/07/24 14:52
Total/NA	Analysis	SM 4500 H+ B		1	423698	W9YR	EET CF	06/06/24 17:17
Total/NA	Prep	PrecSep-21			665656	MLT	EET SL	06/11/24 08:06
Total/NA	Analysis	9315		1	669299	SWS	EET SL	07/05/24 15:04
Total/NA	Prep	PrecSep_0			665658	MLT	EET SL	06/11/24 08:09
Total/NA	Analysis	9320		1	668479	SCB	EET SL	06/28/24 12:35
Total/NA	Analysis	Ra226_Ra228		1	669483	SCB	EET SL	07/08/24 13:55

Client Sample ID: MW156D-GW-0624
Lab Sample ID: 310-282928-3
Date Collected: 06/04/24 18:20
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 18:55
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 19:22
Total/NA	Prep	7470A			424088	A6US	EET CF	06/10/24 15:41
Total/NA	Analysis	7470A		1	424367	A6US	EET CF	06/12/24 14:42
Total/NA	Analysis	SM 2540C		1	423973	D7CP	EET CF	06/07/24 14:52
Total/NA	Analysis	SM 4500 H+ B		1	423698	W9YR	EET CF	06/06/24 17:14

Lab Chronicle

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Client Sample ID: MW156D-GW-0624
Lab Sample ID: 310-282928-3
Date Collected: 06/04/24 18:20
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			665656	MLT	EET SL	06/11/24 08:06
Total/NA	Analysis	9315		1	669299	SWS	EET SL	07/05/24 15:04
Total/NA	Prep	PrecSep_0			665658	MLT	EET SL	06/11/24 08:09
Total/NA	Analysis	9320		1	668479	SCB	EET SL	06/28/24 12:38
Total/NA	Analysis	Ra226_Ra228		1	669483	SCB	EET SL	07/08/24 13:55

Client Sample ID: MW227D-GW-0624
Lab Sample ID: 310-282928-4
Date Collected: 06/05/24 10:30
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 19:58
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 19:39
Total/NA	Prep	7470A			424088	A6US	EET CF	06/10/24 15:41
Total/NA	Analysis	7470A		1	424367	A6US	EET CF	06/12/24 14:52
Total/NA	Analysis	SM 2540C		1	424127	WZC8	EET CF	06/11/24 08:36
Total/NA	Analysis	SM 4500 H+ B		1	423698	W9YR	EET CF	06/06/24 17:18
Total/NA	Prep	PrecSep-21			665656	MLT	EET SL	06/11/24 08:06
Total/NA	Analysis	9315		1	669299	SWS	EET SL	07/05/24 15:05
Total/NA	Prep	PrecSep_0			665658	MLT	EET SL	06/11/24 08:09
Total/NA	Analysis	9320		1	668479	SCB	EET SL	06/28/24 12:36
Total/NA	Analysis	Ra226_Ra228		1	669483	SCB	EET SL	07/08/24 13:55

Client Sample ID: MW307D-GW-0624
Lab Sample ID: 310-282928-5
Date Collected: 06/04/24 10:40
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 20:11
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 19:57
Total/NA	Prep	7470A			424088	A6US	EET CF	06/10/24 15:41
Total/NA	Analysis	7470A		1	424367	A6US	EET CF	06/12/24 14:54
Total/NA	Analysis	SM 2540C		1	423973	D7CP	EET CF	06/07/24 14:52
Total/NA	Analysis	SM 4500 H+ B		1	423698	W9YR	EET CF	06/06/24 17:19
Total/NA	Prep	PrecSep-21			665656	MLT	EET SL	06/11/24 08:06
Total/NA	Analysis	9315		1	669299	SWS	EET SL	07/05/24 15:05
Total/NA	Prep	PrecSep_0			665658	MLT	EET SL	06/11/24 08:09
Total/NA	Analysis	9320		1	668479	SCB	EET SL	06/28/24 12:36
Total/NA	Analysis	Ra226_Ra228		1	669483	SCB	EET SL	07/08/24 13:55

Lab Chronicle

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Client Sample ID: DP01-GW-0624
Lab Sample ID: 310-282928-6
Date Collected: 06/04/24 00:00
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 20:23
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 20:00
Total/NA	Prep	7470A			424088	A6US	EET CF	06/10/24 15:41
Total/NA	Analysis	7470A		1	424367	A6US	EET CF	06/12/24 14:56
Total/NA	Analysis	SM 2540C		1	423973	D7CP	EET CF	06/07/24 14:52
Total/NA	Analysis	SM 4500 H+ B		1	423698	W9YR	EET CF	06/06/24 17:20
Total/NA	Prep	PrecSep-21			665656	MLT	EET SL	06/11/24 08:06
Total/NA	Analysis	9315		1	669299	SWS	EET SL	07/05/24 15:05
Total/NA	Prep	PrecSep_0			665658	MLT	EET SL	06/11/24 08:09
Total/NA	Analysis	9320		1	668479	SCB	EET SL	06/28/24 12:36
Total/NA	Analysis	Ra226_Ra228		1	669483	SCB	EET SL	07/08/24 13:55

Client Sample ID: MW108-GW-0624
Lab Sample ID: 310-282928-7
Date Collected: 06/04/24 13:30
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 20:04

Client Sample ID: MW190-GW-0624
Lab Sample ID: 310-282928-8
Date Collected: 06/04/24 14:45
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 20:36
Total/NA	Prep	3005A			423979	DHM5	EET CF	06/10/24 09:00
Total/NA	Analysis	6020B		1	425254	NFT2	EET CF	06/20/24 20:08

Client Sample ID: MW247-GW-0624
Lab Sample ID: 310-282928-9
Date Collected: 06/04/24 14:10
Matrix: Water
Date Received: 06/06/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	424497	QTZ5	EET CF	06/12/24 20:48

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-25
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-25
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-25
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-24
New Jersey	NELAP	MO002	06-30-25
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-24 *
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-24
Virginia	NELAP	460230	06-14-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	10-31-24

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

Method Summary

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

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310-282928 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 6-6-24 | TIME 1600 | Received By: CC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 3

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: Y | Correction Factor (°C): 0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.7 | Corrected Temp (°C): 3.7

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 6-6-24 | TIME 1610 | Received By: CC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 3

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: Y | Correction Factor (°C): 0.0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 5.3 | Corrected Temp (°C): 5.3

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 6-6-24 | TIME 1600 | Received By: CC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 3 of 3

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: Y | Correction Factor (°C): 0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.2 | Corrected Temp (°C): 3.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Phone (319) 277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

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Client Information	Sampler: Brooke Wasson	Lab PM: Bindert, Zach T	Carrier Tracking No(s):	COC No: 310-93820-25754 1
Client Contact: Kevin Armstrong	Phone: 563 580-7524	E-Mail: Zach.Bindert@et.eurofinsus.com	State of Origin:	Page: Page 1 of 2
Company: GHD Services Inc.	PWSID:			Job #:
Address: 11228 Aurora Avenue	Due Date Requested:			
City: Des Moines	TAT Requested (days):			
State Zip: IA, 50322-7905	Compliance Project: Δ Yes Δ No			
Phone: 515-414-3935(Tel)	PO #: 340-016858			
Email: Kevin.Armstrong@ghd com	WO #: 12592594			
Project Name: MEC Walter Scott CCR - June 2024	Project #: 31017236			
Site: Iowa	SSOW#:			

Analysis Requested

Preservation Codes:
D - HNO3
N - None
Other:

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)	9316_Ra226 - Standard Target List	9320_Ra228 - Standard Target List	9056A_ORGFM_28D - Chloride, Fluoride & Sulfate	CCR Metals - 6020B, 7470A	2540C_Calcd, SM4500_H+	9056A_ORGFM_28D - Sulfate	6020B - Calcium	9056A_ORGFM_28D - Chloride	6020B - Boron					Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	D	N	N	D	N	D						
MW5D-GW-0624	6/4/24	1550	G	Water	N	N	X	X	X	X	X									5	
MW22D-GW-0624	6/5/24	0845	G	Water		N	X	X	X	X	X									5	
MW156D-GW-0624	6/4/24	1820	G	Water		Y	X	X	X	X	X									15	
MW227D-GW-0624	6/5/24	1030	G	Water		N	X	X	X	X	X									5	
MW307D-GW-0624	6/4/24	1040	G	Water		N	X	X	X	X	X									5	
DP01-GW-0624	6/4/24	—	G	Water		N	X	X	X	X	X									5	
MW108-GW-0624	6/4/24	1330	G	Water		N									X					1	Same bag as 247
MW190-GW-0624	6/4/24	1445	G	Water		N						X	X							2	
MW247-GW-0624	6/4/24	1410	G	Water		N								X						1	Same bag as 108

Possible Hazard Identification
☐ 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 ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	B. Wasson	6/5/24	GHD		6/6/24	Eurofins
2						
3				6-6-24 1600		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.

Cooler Temperature(s) °C and Other Remarks:

Ver 04/02/2024

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-282928-1

Login Number: 282928
List Number: 1
Creator: Calhoun, Conner M

List Source: Eurofins Cedar Falls

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.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: GHD Services Inc.
Job ID: 310-282928-1
Project/Site: MEC Walter Scott CCR (WSEC)

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
310-282928-1	MW5D-GW-0624	94.6
310-282928-2	MW22D-GW-0624	95.0
310-282928-3	MW156D-GW-0624	95.5
310-282928-3 MS	MW156D-GW-0624	97.5
310-282928-3 MSD	MW156D-GW-0624	93.8
310-282928-4	MW227D-GW-0624	97.5
310-282928-5	MW307D-GW-0624	100
310-282928-6	DP01-GW-0624	88.6
LCS 160-665656/2-A	Lab Control Sample	99.3
MB 160-665656/1-A	Method Blank	95.0

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
310-282928-1	MW5D-GW-0624	94.6	81.5
310-282928-2	MW22D-GW-0624	95.0	83.4
310-282928-3	MW156D-GW-0624	95.5	82.6
310-282928-3 MS	MW156D-GW-0624	97.5	89.0
310-282928-3 MSD	MW156D-GW-0624	93.8	84.5
310-282928-4	MW227D-GW-0624	97.5	84.5
310-282928-5	MW307D-GW-0624	100	87.9
310-282928-6	DP01-GW-0624	88.6	79.3
LCS 160-665658/2-A	Lab Control Sample	99.3	84.9
MB 160-665658/1-A	Method Blank	95.0	83.4

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 10/29/2024 4:14:57 PM

JOB DESCRIPTION

MidAmerican WSEC CCR Background
Background

JOB NUMBER

310-291747-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

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

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

Authorization

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10/29/2024 4:14:57 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

Table of Contents

Job ID: 310-291747-1 Eurofins Cedar Falls

Job Narrative
310-291747-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

Receipt
The samples were received on 10/2/2024 9:05 AM. 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 time was 2.9°C.

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW34-GW-1024 (310-291747-3) and MW307D-GW-1024 (310-291747-5). Elevated reporting limits (RLs) are provided.

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

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

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

Job ID: 310-291747-2 Eurofins Cedar Falls

Job Narrative
310-291747-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

Receipt
The samples were received on 10/2/2024 9:05 AM. 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 time was 2.9°C.

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

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

Sample Summary

Client: GHD Services Inc.
Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-291747-3	MW34-GW-1024	Water	10/01/24 08:45	10/02/24 09:05
310-291747-5	MW307D-GW-1024	Water	10/01/24 10:00	10/02/24 09:05

Detection Summary

Client: GHD Services Inc.
Project/Site: MidAmerican WSEC CCR Background

Job ID: 310-291747-1

Client Sample ID: MW34-GW-1024 — Lab Sample ID: 310-291747-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.31		5.00		mg/L	5		9056A	Total/NA
Sulfate	38.3		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0879		0.00200		mg/L	1		6020B	Total/NA
Barium	0.633		0.00200		mg/L	1		6020B	Total/NA
Boron	0.105		0.100		mg/L	1		6020B	Total/NA
Calcium	107		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0364		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00418		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00729		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	452		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW307D-GW-1024 — Lab Sample ID: 310-291747-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	59.2		5.00		mg/L	5		9056A	Total/NA
Barium	0.192		0.00200		mg/L	1		6020B	Total/NA
Boron	0.214		0.100		mg/L	1		6020B	Total/NA
Calcium	127		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0808		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	476		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW34-GW-1024 Lab Sample ID: 310-291747-3

Date Collected: 10/01/24 08:45 **Matrix: Water**
Date Received: 10/02/24 09:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.31**		5.00		mg/L			10/03/24 15:10	5
Fluoride	<1.00		1.00		mg/L			10/03/24 15:10	5
Sulfate	**38.3**		5.00		mg/L			10/03/24 15:10	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 19:31	1
Arsenic	**0.0879**		0.00200		mg/L		10/04/24 09:30	10/08/24 19:31	1
Barium	**0.633**		0.00200		mg/L		10/04/24 09:30	10/08/24 19:31	1
Beryllium	<0.00100		0.00100		mg/L		10/04/24 09:30	10/08/24 19:31	1
Boron	**0.105**		0.100		mg/L		10/04/24 09:30	10/08/24 19:31	1
Cadmium	<0.000200		0.000200		mg/L		10/04/24 09:30	10/08/24 19:31	1
Calcium	**107**		0.500		mg/L		10/04/24 09:30	10/08/24 19:31	1
Chromium	<0.00500		0.00500		mg/L		10/04/24 09:30	10/08/24 19:31	1
Cobalt	<0.000500		0.000500		mg/L		10/04/24 09:30	10/08/24 19:31	1
Lithium	**0.0364**		0.0100		mg/L		10/04/24 09:30	10/08/24 19:31	1
Lead	<0.000500		0.000500		mg/L		10/04/24 09:30	10/08/24 19:31	1
Molybdenum	**0.00418**		0.00200		mg/L		10/04/24 09:30	10/08/24 19:31	1
Selenium	**0.00729**		0.00500		mg/L		10/04/24 09:30	10/08/24 19:31	1
Thallium	<0.00100		0.00100		mg/L		10/04/24 09:30	10/08/24 19:31	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/09/24 16:10	10/10/24 10:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**452**		50.0		mg/L			10/03/24 18:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			10/02/24 10:18	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.481**		0.147	0.154	1.00	0.148	pCi/L	10/04/24 08:00	10/28/24 21:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*91.5*		*30 - 110*	*10/04/24 08:00*	*10/28/24 21:03*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.901**		0.500	0.507	1.00	0.722	pCi/L	10/04/24 08:05	10/23/24 12:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*91.5*		*30 - 110*	*10/04/24 08:05*	*10/23/24 12:11*	*1*
Y Carrier	*71.0*		*30 - 110*	*10/04/24 08:05*	*10/23/24 12:11*	*1*

Client: GHD Services Inc.
Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: MW34-GW-1024
Lab Sample ID: 310-291747-3
Date Collected: 10/01/24 08:45
Matrix: Water
Date Received: 10/02/24 09:05

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.38		0.521	0.530	5.00	0.722	pCi/L		10/29/24 16:01	1

Client Sample ID: MW307D-GW-1024 — Lab Sample ID: 310-291747-5

Date Collected: 10/01/24 10:00 — **Matrix: Water**
Date Received: 10/02/24 09:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/03/24 15:22	5
Fluoride	<1.00		1.00		mg/L			10/03/24 15:22	5
Sulfate	**59.2**		5.00		mg/L			10/03/24 15:22	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 19:33	1
Arsenic	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 19:33	1
Barium	**0.192**		0.00200		mg/L		10/04/24 09:30	10/08/24 19:33	1
Beryllium	<0.00100		0.00100		mg/L		10/04/24 09:30	10/08/24 19:33	1
Boron	**0.214**		0.100		mg/L		10/04/24 09:30	10/08/24 19:33	1
Cadmium	<0.000200		0.000200		mg/L		10/04/24 09:30	10/08/24 19:33	1
Calcium	**127**		0.500		mg/L		10/04/24 09:30	10/08/24 19:33	1
Chromium	<0.00500		0.00500		mg/L		10/04/24 09:30	10/08/24 19:33	1
Cobalt	<0.000500		0.000500		mg/L		10/04/24 09:30	10/08/24 19:33	1
Lithium	**0.0808**		0.0100		mg/L		10/04/24 09:30	10/08/24 19:33	1
Lead	<0.000500		0.000500		mg/L		10/04/24 09:30	10/08/24 19:33	1
Molybdenum	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 19:33	1
Selenium	<0.00500		0.00500		mg/L		10/04/24 09:30	10/08/24 19:33	1
Thallium	<0.00100		0.00100		mg/L		10/04/24 09:30	10/08/24 19:33	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/09/24 16:10	10/10/24 10:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**476**		50.0		mg/L			10/03/24 18:37	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.9**	**HF**	1.0		SU			10/02/24 10:21	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.154**		0.109	0.109	1.00	0.154	pCi/L	10/04/24 08:00	10/28/24 21:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*77.6*		*30 - 110*	*10/04/24 08:00*	*10/28/24 21:03*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.714	U	0.421	0.421	1.00	0.714	pCi/L	10/04/24 08:05	10/23/24 12:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*77.6*		*30 - 110*	*10/04/24 08:05*	*10/23/24 12:10*	*1*
Y Carrier	*78.1*		*30 - 110*	*10/04/24 08:05*	*10/23/24 12:10*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: MW307D-GW-1024
Lab Sample ID: 310-291747-5
Date Collected: 10/01/24 10:00
Matrix: Water
Date Received: 10/02/24 09:05

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	<0.714	U	0.435	0.435	5.00	0.714	pCi/L		10/29/24 16:01	1

Definitions/Glossary

Client: GHD Services Inc. Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-435266/3
Matrix: Water
Analysis Batch: 435266

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/03/24 11:21	1
Fluoride	<0.200		0.200		mg/L			10/03/24 11:21	1
Sulfate	<1.00		1.00		mg/L			10/03/24 11:21	1

Lab Sample ID: LCS 310-435266/4
Matrix: Water
Analysis Batch: 435266

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.947		mg/L		99	90 - 110
Fluoride	2.00	2.074		mg/L		104	90 - 110
Sulfate	10.0	10.27		mg/L		103	90 - 110

Lab Sample ID: 310-291747-5 MS
Matrix: Water
Analysis Batch: 435266

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	<5.00		25.0	25.60		mg/L		102	80 - 120
Fluoride	<1.00		5.00	5.507		mg/L		110	80 - 120
Sulfate	59.2		25.0	84.55		mg/L		101	80 - 120

Lab Sample ID: 310-291747-5 MSD
Matrix: Water
Analysis Batch: 435266

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<5.00		25.0	27.32		mg/L		109	80 - 120	7	15
Fluoride	<1.00		5.00	5.876		mg/L		118	80 - 120	6	15
Sulfate	59.2		25.0	84.65		mg/L		102	80 - 120	0	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435174/1-A
Matrix: Water
Analysis Batch: 435613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435174

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 18:33	1
Arsenic	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 18:33	1
Barium	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 18:33	1
Beryllium	<0.00100		0.00100		mg/L		10/04/24 09:30	10/08/24 18:33	1
Boron	<0.100		0.100		mg/L		10/04/24 09:30	10/08/24 18:33	1
Cadmium	<0.000200		0.000200		mg/L		10/04/24 09:30	10/08/24 18:33	1
Calcium	<0.500		0.500		mg/L		10/04/24 09:30	10/08/24 18:33	1
Chromium	<0.00500		0.00500		mg/L		10/04/24 09:30	10/08/24 18:33	1
Cobalt	<0.000500		0.000500		mg/L		10/04/24 09:30	10/08/24 18:33	1
Lithium	<0.0100		0.0100		mg/L		10/04/24 09:30	10/08/24 18:33	1
Lead	<0.000500		0.000500		mg/L		10/04/24 09:30	10/08/24 18:33	1
Molybdenum	<0.00200		0.00200		mg/L		10/04/24 09:30	10/08/24 18:33	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-435174/1-A
Matrix: Water
Analysis Batch: 435613

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435174

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.00500		0.00500		mg/L		10/04/24 09:30	10/08/24 18:33	1
Thallium	<0.00100		0.00100		mg/L		10/04/24 09:30	10/08/24 18:33	1

Lab Sample ID: LCS 310-435174/2-A
Matrix: Water
Analysis Batch: 435613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435174

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2234		mg/L		112	80 - 120
Arsenic	0.200	0.2131		mg/L		107	80 - 120
Barium	0.100	0.1013		mg/L		101	80 - 120
Beryllium	0.100	0.09358		mg/L		94	80 - 120
Boron	0.200	0.1962		mg/L		98	80 - 120
Cadmium	0.100	0.09916		mg/L		99	80 - 120
Calcium	2.00	1.857		mg/L		93	80 - 120
Chromium	0.100	0.09563		mg/L		96	80 - 120
Cobalt	0.100	0.1107		mg/L		111	80 - 120
Lithium	0.200	0.1990		mg/L		99	80 - 120
Lead	0.200	0.2065		mg/L		103	80 - 120
Molybdenum	0.200	0.1943		mg/L		97	80 - 120
Selenium	0.400	0.3982		mg/L		100	80 - 120
Thallium	0.100	0.09152		mg/L		92	80 - 120

Lab Sample ID: 310-291747-5 MS
Matrix: Water
Analysis Batch: 435613

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 435174

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200		0.200	0.2305		mg/L		115	75 - 125
Arsenic	<0.00200		0.200	0.2181		mg/L		109	75 - 125
Barium	0.192		0.100	0.2927		mg/L		101	75 - 125
Beryllium	<0.00100		0.100	0.1005		mg/L		100	75 - 125
Boron	0.214		0.200	0.4182		mg/L		102	75 - 125
Cadmium	<0.000200		0.100	0.1033		mg/L		103	75 - 125
Calcium	127		2.00	129.9	4	mg/L		120	75 - 125
Chromium	<0.00500		0.100	0.09617		mg/L		96	75 - 125
Cobalt	<0.000500		0.100	0.1076		mg/L		108	75 - 125
Lithium	0.0808		0.200	0.2857		mg/L		102	75 - 125
Lead	<0.000500		0.200	0.2084		mg/L		104	75 - 125
Molybdenum	<0.00200		0.200	0.2061		mg/L		103	75 - 125
Selenium	<0.00500		0.400	0.4121		mg/L		103	75 - 125
Thallium	<0.00100		0.100	0.08653		mg/L		87	75 - 125

Lab Sample ID: 310-291747-5 MSD
Matrix: Water
Analysis Batch: 435613

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 435174

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200		0.200	0.2314		mg/L		116	75 - 125	0	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-291747-5 MSD
Matrix: Water
Analysis Batch: 435613

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 435174

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	<0.00200		0.200	0.2236		mg/L		111	75 - 125	2	20
Barium	0.192		0.100	0.2914		mg/L		99	75 - 125	0	20
Beryllium	<0.00100		0.100	0.1022		mg/L		102	75 - 125	2	20
Boron	0.214		0.200	0.4279		mg/L		107	75 - 125	2	20
Cadmium	<0.000200		0.100	0.1033		mg/L		103	75 - 125	0	20
Calcium	127		2.00	131.4	4	mg/L		197	75 - 125	1	20
Chromium	<0.00500		0.100	0.09751		mg/L		98	75 - 125	1	20
Cobalt	<0.000500		0.100	0.1093		mg/L		109	75 - 125	2	20
Lithium	0.0808		0.200	0.2900		mg/L		105	75 - 125	2	20
Lead	<0.000500		0.200	0.2093		mg/L		105	75 - 125	0	20
Molybdenum	<0.00200		0.200	0.2070		mg/L		103	75 - 125	0	20
Selenium	<0.00500		0.400	0.4208		mg/L		105	75 - 125	2	20
Thallium	<0.00100		0.100	0.08907		mg/L		89	75 - 125	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-435714/1-A
Matrix: Water
Analysis Batch: 435867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435714

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/09/24 16:10	10/10/24 10:18	1

Lab Sample ID: LCS 310-435714/2-A
Matrix: Water
Analysis Batch: 435867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435714

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00167	0.001535		mg/L		92	80 - 120		

Lab Sample ID: 310-291747-5 MS
Matrix: Water
Analysis Batch: 435867

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 435714

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	<0.000200		0.00167	0.001772		mg/L		106	80 - 120		

Lab Sample ID: 310-291747-5 MSD
Matrix: Water
Analysis Batch: 435867

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 435714

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000200		0.00167	0.001710		mg/L		103	80 - 120	4	20

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

Lab Sample ID: MB 310-435181/1
Matrix: Water
Analysis Batch: 435181

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			10/03/24 18:37	1

Lab Sample ID: LCS 310-435181/2
Matrix: Water
Analysis Batch: 435181

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1026		mg/L		103	88 - 110

Lab Sample ID: 310-291747-5 DU
Matrix: Water
Analysis Batch: 435181

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	476		480.0		mg/L		0.8	16

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-434970/1
Matrix: Water
Analysis Batch: 434970

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.1		SU		101	98 - 102

Lab Sample ID: LCS 310-434970/27
Matrix: Water
Analysis Batch: 434970

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.1		SU		101	98 - 102

Lab Sample ID: 310-291747-5 DU
Matrix: Water
Analysis Batch: 434970

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.9	HF	7.0		SU		0.1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-682117/1-A
Matrix: Water
Analysis Batch: 685385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682117

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.101	U	0.0568	0.0569	1.00	0.101	pCi/L	10/04/24 08:00	10/28/24 20:57	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-682117/1-A
Matrix: Water
Analysis Batch: 685385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682117

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	99.7		30 - 110	10/04/24 08:00	10/28/24 20:57	1

Lab Sample ID: LCS 160-682117/2-A
Matrix: Water
Analysis Batch: 685385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 682117

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			9.58	7.861		0.872	1.00	0.114	pCi/L	82	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	98.7		30 - 110

Lab Sample ID: 310-291747-5 MS
Matrix: Water
Analysis Batch: 685399

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 682117

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226	0.154		9.53	10.76		1.16	1.00	0.140	pCi/L	111	60 - 140		

Carrier	MS %Yield	MS Qualifier	Limits
Barium	81.7		30 - 110

Lab Sample ID: 310-291747-5 MSD
Matrix: Water
Analysis Batch: 685399

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 682117

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	0.154		9.53	8.793		0.977	1.00	0.124	pCi/L	91	60 - 140	0.92	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Barium	83.8		30 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-682118/1-A
Matrix: Water
Analysis Batch: 684715

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682118

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.574	U	0.348	0.349	1.00	0.574	pCi/L	10/04/24 08:05	10/23/24 12:10	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	99.7		30 - 110	10/04/24 08:05	10/23/24 12:10	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-682118/1-A
Matrix: Water
Analysis Batch: 684715

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682118

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Y Carrier	78.1		30 - 110	10/04/24 08:05	10/23/24 12:10	1

Lab Sample ID: LCS 160-682118/2-A
Matrix: Water
Analysis Batch: 684715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 682118

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.41	8.024		1.15	1.00	0.499	pCi/L	95	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	98.7		30 - 110
Y Carrier	82.6		30 - 110

Lab Sample ID: 310-291747-5 MS
Matrix: Water
Analysis Batch: 684708

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 682118

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228	<0.714	U	8.36	9.604		1.38	1.00	0.610	pCi/L	112	60 - 140		

Carrier	MS %Yield	MS Qualifier	Limits
Barium	81.7		30 - 110
Y Carrier	81.1		30 - 110

Lab Sample ID: 310-291747-5 MSD
Matrix: Water
Analysis Batch: 684708

Client Sample ID: MW307D-GW-1024
Prep Type: Total/NA
Prep Batch: 682118

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	<0.714	U	8.37	9.987		1.42	1.00	0.671	pCi/L	116	60 - 140	0.14	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Barium	83.8		30 - 110
Y Carrier	79.6		30 - 110

HPLC/IC

Analysis Batch: 435266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	9056A	
310-291747-5	MW307D-GW-1024	Total/NA	Water	9056A	
MB 310-435266/3	Method Blank	Total/NA	Water	9056A	
LCS 310-435266/4	Lab Control Sample	Total/NA	Water	9056A	
310-291747-5 MS	MW307D-GW-1024	Total/NA	Water	9056A	
310-291747-5 MSD	MW307D-GW-1024	Total/NA	Water	9056A	

Metals

Prep Batch: 435174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	3005A	
310-291747-5	MW307D-GW-1024	Total/NA	Water	3005A	
MB 310-435174/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435174/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-291747-5 MS	MW307D-GW-1024	Total/NA	Water	3005A	
310-291747-5 MSD	MW307D-GW-1024	Total/NA	Water	3005A	

Analysis Batch: 435613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	6020B	435174
310-291747-5	MW307D-GW-1024	Total/NA	Water	6020B	435174
MB 310-435174/1-A	Method Blank	Total/NA	Water	6020B	435174
LCS 310-435174/2-A	Lab Control Sample	Total/NA	Water	6020B	435174
310-291747-5 MS	MW307D-GW-1024	Total/NA	Water	6020B	435174
310-291747-5 MSD	MW307D-GW-1024	Total/NA	Water	6020B	435174

Prep Batch: 435714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	7470A	
310-291747-5	MW307D-GW-1024	Total/NA	Water	7470A	
MB 310-435714/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-435714/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-291747-5 MS	MW307D-GW-1024	Total/NA	Water	7470A	
310-291747-5 MSD	MW307D-GW-1024	Total/NA	Water	7470A	

Analysis Batch: 435867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	7470A	435714
310-291747-5	MW307D-GW-1024	Total/NA	Water	7470A	435714
MB 310-435714/1-A	Method Blank	Total/NA	Water	7470A	435714
LCS 310-435714/2-A	Lab Control Sample	Total/NA	Water	7470A	435714
310-291747-5 MS	MW307D-GW-1024	Total/NA	Water	7470A	435714
310-291747-5 MSD	MW307D-GW-1024	Total/NA	Water	7470A	435714

General Chemistry

Analysis Batch: 434970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-291747-5	MW307D-GW-1024	Total/NA	Water	SM 4500 H+ B	
LCS 310-434970/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

General Chemistry (Continued)

Analysis Batch: 434970 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-434970/27	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-291747-5 DU	MW307D-GW-1024	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 435181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	SM 2540C	
310-291747-5	MW307D-GW-1024	Total/NA	Water	SM 2540C	
MB 310-435181/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-435181/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-291747-5 DU	MW307D-GW-1024	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 682117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	PrecSep-21	
310-291747-5	MW307D-GW-1024	Total/NA	Water	PrecSep-21	
MB 160-682117/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-682117/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-291747-5 MS	MW307D-GW-1024	Total/NA	Water	PrecSep-21	
310-291747-5 MSD	MW307D-GW-1024	Total/NA	Water	PrecSep-21	

Prep Batch: 682118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291747-3	MW34-GW-1024	Total/NA	Water	PrecSep_0	
310-291747-5	MW307D-GW-1024	Total/NA	Water	PrecSep_0	
MB 160-682118/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-682118/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-291747-5 MS	MW307D-GW-1024	Total/NA	Water	PrecSep_0	
310-291747-5 MSD	MW307D-GW-1024	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc.
Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: MW34-GW-1024
Lab Sample ID: 310-291747-3
Date Collected: 10/01/24 08:45
Matrix: Water
Date Received: 10/02/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	435266	HE7K	EET CF	10/03/24 15:10
Total/NA	Prep	3005A			435174	F5MW	EET CF	10/04/24 09:30
Total/NA	Analysis	6020B		1	435613	NFT2	EET CF	10/08/24 19:31
Total/NA	Prep	7470A			435714	QTZ5	EET CF	10/09/24 16:10
Total/NA	Analysis	7470A		1	435867	QTZ5	EET CF	10/10/24 10:52
Total/NA	Analysis	SM 2540C		1	435181	MDU9	EET CF	10/03/24 18:37
Total/NA	Analysis	SM 4500 H+ B		1	434970	W9YR	EET CF	10/02/24 10:18
Total/NA	Prep	PrecSep-21			682117	MLT	EET SL	10/04/24 08:00
Total/NA	Analysis	9315		1	685399	FLC	EET SL	10/28/24 21:03
Total/NA	Prep	PrecSep_0			682118	MLT	EET SL	10/04/24 08:05
Total/NA	Analysis	9320		1	684715	SWS	EET SL	10/23/24 12:11
Total/NA	Analysis	Ra226_Ra228		1	685822	FLC	EET SL	10/29/24 16:01

Client Sample ID: MW307D-GW-1024
Lab Sample ID: 310-291747-5
Date Collected: 10/01/24 10:00
Matrix: Water
Date Received: 10/02/24 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	435266	HE7K	EET CF	10/03/24 15:22
Total/NA	Prep	3005A			435174	F5MW	EET CF	10/04/24 09:30
Total/NA	Analysis	6020B		1	435613	NFT2	EET CF	10/08/24 19:33
Total/NA	Prep	7470A			435714	QTZ5	EET CF	10/09/24 16:10
Total/NA	Analysis	7470A		1	435867	QTZ5	EET CF	10/10/24 10:55
Total/NA	Analysis	SM 2540C		1	435181	MDU9	EET CF	10/03/24 18:37
Total/NA	Analysis	SM 4500 H+ B		1	434970	W9YR	EET CF	10/02/24 10:21
Total/NA	Prep	PrecSep-21			682117	MLT	EET SL	10/04/24 08:00
Total/NA	Analysis	9315		1	685399	FLC	EET SL	10/28/24 21:03
Total/NA	Prep	PrecSep_0			682118	MLT	EET SL	10/04/24 08:05
Total/NA	Analysis	9320		1	684708	SWS	EET SL	10/23/24 12:10
Total/NA	Analysis	Ra226_Ra228		1	685822	FLC	EET SL	10/29/24 16:01

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-25
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-25
HI - RadChem Recognition	State	n/a	06-30-25
Illinois	NELAP	200023	11-30-25
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-25
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-25
Massachusetts	State	M-MO054	06-30-25
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-25
New Jersey	NELAP	MO002	06-30-25
New Mexico	State	MO00054	06-30-25
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-25
North Dakota	State	R-207	12-31-24
Oregon	NELAP	4157	09-01-25
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-25
Texas	NELAP	T104704193	07-31-25
US Fish & Wildlife	US Federal Programs	058448	07-31-25
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-25
Virginia	NELAP	460230	06-14-25
Washington	State	C592	08-30-25
West Virginia DEP	State	381	10-31-25

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

Method Summary

Client: GHD Services Inc.
Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

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310 291747 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY Des Moines STATE IA Project:

Receipt Information

Date/Time Received: DATE 10/2/24 TIME 905 Received By: PH

Delivery Type: ☐ UPS ☑ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes:* Cooler custody seals intact? ☑ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 8 Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.9 Corrected Temp (°C): 2.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

MW-307, MS, MSD, MW-24 missing TW1, TW2, MW307

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica Des Mr
214

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s).	COC No:
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 1 of 1
Company: GHD Services Inc.				Job #:
Address: 11228 Aurora Avenue	Due Date Requested:			
City: Des Moines	TAT Requested (days): Standard			
State, Zip: IA, 50322-7905				
Phone: 515-414-3935	PO #: 340-016858			
Email: Kevin.Armstrong@ghd com	WO #:			
Project Name: MidAmerican WSEC CCR Background	Eurofins Project #: 31017236			
Project Number: 12592594 DEL.001	SSOW#: 12592594-002			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	Rad226/Rad228/Rad228/228 combined	6020A CCR Metals List, 7470A Mercury	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH										Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	N											
TW1-GW-1024	9/30/24	1525	G	W	N	N	X	X	X	X	X											
TW2-GW-1024	9/30/24	1815	G	W	N	N	X	X	X	X	X											
MW34-GW-1024	10/1/24	0845	G	W	N	N	X	X	X	X	X											
MW307-GW-1024	10/1/24	1045	G	W	N	N	X	X	X	X	X											
MW307D-GW-1024	10/1/24	1000	G	W	N	Y	X	X	X	X	X											

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/2/24 0905	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

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10/29/2024

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310-291747 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: GHD			
City/State: CITY		STATE	Project:
Receipt Information			
Date/Time Received	DATE 10.3.24	TIME 0910	Received By: CC

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID.
Multiple Coolers?	☐ Yes ☐ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present? No	☐ Yes ☐ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐
Sample Custody Seals Present? No	☐ Yes ☐ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes ☐ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 2	Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C):	Corrected Temp (°C):

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	1L NT	250 Nitric
Uncorrected Temp (°C):	7.1	9.4
Corrected Temp (°C):	7.1	9.4

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Missing Cooler

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-291747-1
SDG Number:

Login Number: 291747
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	MISSING COOLER - TW-1, TW-2 and MW307
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: GHD Services Inc.
Job ID: 310-291747-1
Project/Site: MidAmerican WSEC CCR Background

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
310-291747-3	MW34-GW-1024	91.5
310-291747-5	MW307D-GW-1024	77.6
310-291747-5 MS	MW307D-GW-1024	81.7
310-291747-5 MSD	MW307D-GW-1024	83.8
LCS 160-682117/2-A	Lab Control Sample	98.7
MB 160-682117/1-A	Method Blank	99.7

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-291747-3	MW34-GW-1024	91.5	71.0
310-291747-5	MW307D-GW-1024	77.6	78.1
310-291747-5 MS	MW307D-GW-1024	81.7	81.1
310-291747-5 MSD	MW307D-GW-1024	83.8	79.6
LCS 160-682118/2-A	Lab Control Sample	98.7	82.6
MB 160-682118/1-A	Method Blank	99.7	78.1

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 11/4/2024 3:56:53 PM

JOB DESCRIPTION

MidAmerican WSEC CCR Monofill Monitoring

JOB NUMBER

310-292105-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

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

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

Authorization

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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

Table of Contents

Job ID: 310-292105-1 Eurofins Cedar Falls

Job Narrative
310-292105-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

Receipt
The samples were received on 10/5/2024 4:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.3°C, 4.8°C and 5.3°C.

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW105-GW-1024 (310-292105-1), MW108-GW-1024 (310-292105-2), MW133-GW-1024 (310-292105-3), MW156-GW-1024 (310-292105-4), MW157-GW-1024 (310-292105-5), MW158-GW-1024 (310-292105-6), MW159-GW-1024 (310-292105-7), MW190-GW-1024 (310-292105-8), MW191-GW-1024 (310-292105-9) and MW227-GW-1024 (310-292105-10). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW240R-GW-1024 (310-292105-11), MW244-GW-1024 (310-292105-12), MW245-GW-1024 (310-292105-13), MW246-GW-1024 (310-292105-14), MW247-GW-1024 (310-292105-15), MW248-GW-1024 (310-292105-16), MW250-GW-1024 (310-292105-17), DP03-GW-1024 (310-292105-18), DP04-GW-1024 (310-292105-19), MW156D-GW-1024 (310-292105-20) and MW227D-GW-1024 (310-292105-21). Elevated reporting limits (RLs) are provided.

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

Metals
Method 6020B: The following samples were diluted due to the nature of the sample matrix: MW157-GW-1024 (310-292105-5), MW159-GW-1024 (310-292105-7), MW190-GW-1024 (310-292105-8), MW191-GW-1024 (310-292105-9), MW227-GW-1024 (310-292105-10), MW240R-GW-1024 (310-292105-11), MW244-GW-1024 (310-292105-12), MW245-GW-1024 (310-292105-13), MW245-GW-1024 (310-292105-13[MS]), MW245-GW-1024 (310-292105-13[MSD]), MW246-GW-1024 (310-292105-14), MW248-GW-1024 (310-292105-16), MW250-GW-1024 (310-292105-17), DP03-GW-1024 (310-292105-18) and DP04-GW-1024 (310-292105-19). Elevated reporting limits (RLs) are provided.

Method 6020B: The laboratory control sample (LCS) for preparation batch 310-435579 and analytical batch 310-436888 recovered outside control limits for the following analytes: Antimony. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

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

Job ID: 310-292105-2 Eurofins Cedar Falls

Job Narrative
310-292105-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

Receipt
The samples were received on 10/5/2024 4:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.3°C, 4.8°C and 5.3°C.

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

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

Sample Summary

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292105-1	MW105-GW-1024	Water	10/02/24 13:25	10/05/24 16:30
310-292105-2	MW108-GW-1024	Water	10/02/24 13:55	10/05/24 16:30
310-292105-3	MW133-GW-1024	Water	10/02/24 15:00	10/05/24 16:30
310-292105-4	MW156-GW-1024	Water	10/03/24 12:00	10/05/24 16:30
310-292105-5	MW157-GW-1024	Water	10/03/24 07:45	10/05/24 16:30
310-292105-6	MW158-GW-1024	Water	10/03/24 08:10	10/05/24 16:30
310-292105-7	MW159-GW-1024	Water	10/03/24 08:35	10/05/24 16:30
310-292105-8	MW190-GW-1024	Water	10/03/24 09:05	10/05/24 16:30
310-292105-9	MW191-GW-1024	Water	10/03/24 09:35	10/05/24 16:30
310-292105-10	MW227-GW-1024	Water	10/02/24 17:45	10/05/24 16:30
310-292105-11	MW240R-GW-1024	Water	10/02/24 16:35	10/05/24 16:30
310-292105-12	MW244-GW-1024	Water	10/02/24 18:05	10/05/24 16:30
310-292105-13	MW245-GW-1024	Water	10/02/24 17:10	10/05/24 16:30
310-292105-14	MW246-GW-1024	Water	10/03/24 10:10	10/05/24 16:30
310-292105-15	MW247-GW-1024	Water	10/03/24 10:35	10/05/24 16:30
310-292105-16	MW248-GW-1024	Water	10/03/24 11:15	10/05/24 16:30
310-292105-17	MW250-GW-1024	Water	10/02/24 15:20	10/05/24 16:30
310-292105-18	DP03-GW-1024	Water	10/02/24 00:00	10/05/24 16:30
310-292105-19	DP04-GW-1024	Water	10/02/24 00:00	10/05/24 16:30
310-292105-20	MW156D-GW-1024	Water	10/03/24 12:40	10/05/24 16:30
310-292105-21	MW227D-GW-1024	Water	10/02/24 19:20	10/05/24 16:30

Detection Summary

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW105-GW-1024 — Lab Sample ID: 310-292105-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	34.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	171		5.00		mg/L	5		9056A	Total/NA
Boron	0.211		0.100		mg/L	1		6020B	Total/NA
Calcium	196		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	884		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW108-GW-1024 — Lab Sample ID: 310-292105-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	25.2		5.00		mg/L	5		9056A	Total/NA
Boron	0.222		0.100		mg/L	1		6020B	Total/NA
Calcium	145		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	702		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW133-GW-1024 — Lab Sample ID: 310-292105-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	76.7		5.00		mg/L	5		9056A	Total/NA
Sulfate	189		5.00		mg/L	5		9056A	Total/NA
Boron	0.385		0.100		mg/L	1		6020B	Total/NA
Calcium	192		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	916		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW156-GW-1024 — Lab Sample ID: 310-292105-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	36.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	393		5.00		mg/L	5		9056A	Total/NA
Boron	0.192		0.100		mg/L	1		6020B	Total/NA
Calcium	274		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1150		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.8		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW157-GW-1024 — Lab Sample ID: 310-292105-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	51.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	186		5.00		mg/L	5		9056A	Total/NA
Calcium	221		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	958		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW158-GW-1024 — Lab Sample ID: 310-292105-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	355		5.00		mg/L	5		9056A	Total/NA
Boron	0.803		0.500		mg/L	5		6020B	Total/NA
Calcium	276		0.500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1150		50.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW158-GW-1024 (Continued) — Lab Sample ID: 310-292105-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.8		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW159-GW-1024 — Lab Sample ID: 310-292105-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	255		5.00		mg/L	5		9056A	Total/NA
Calcium	231		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	874		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW190-GW-1024 — Lab Sample ID: 310-292105-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.60		5.00		mg/L	5		9056A	Total/NA
Sulfate	169		5.00		mg/L	5		9056A	Total/NA
Calcium	176		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	750		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW191-GW-1024 — Lab Sample ID: 310-292105-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	220		5.00		mg/L	5		9056A	Total/NA
Calcium	182		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	764		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW227-GW-1024 — Lab Sample ID: 310-292105-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	284		5.00		mg/L	5		9056A	Total/NA
Calcium	226		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	918		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW240R-GW-1024 — Lab Sample ID: 310-292105-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.90		5.00		mg/L	5		9056A	Total/NA
Sulfate	233		5.00		mg/L	5		9056A	Total/NA
Calcium	175		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	814		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW244-GW-1024 — Lab Sample ID: 310-292105-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	115		5.00		mg/L	5		9056A	Total/NA
Calcium	188		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	790		50.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW244-GW-1024 (Continued) — Lab Sample ID: 310-292105-12

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.1		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW245-GW-1024 — Lab Sample ID: 310-292105-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.89		5.00		mg/L	5		9056A	Total/NA
Sulfate	303		5.00		mg/L	5		9056A	Total/NA
Calcium	257		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	1130		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW246-GW-1024 — Lab Sample ID: 310-292105-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12.4		5.00		mg/L	5		9056A	Total/NA
Sulfate	57.4		5.00		mg/L	5		9056A	Total/NA
Calcium	200		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	808		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW247-GW-1024 — Lab Sample ID: 310-292105-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	61.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	171		5.00		mg/L	5		9056A	Total/NA
Calcium	205		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	882		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW248-GW-1024 — Lab Sample ID: 310-292105-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	86.9		5.00		mg/L	5		9056A	Total/NA
Calcium	125		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	548		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW250-GW-1024 — Lab Sample ID: 310-292105-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	253		5.00		mg/L	5		9056A	Total/NA
Calcium	209		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	968		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.8		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DP03-GW-1024 — Lab Sample ID: 310-292105-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	38.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	173		5.00		mg/L	5		9056A	Total/NA
Calcium	209		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	882		50.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: DP03-GW-1024 (Continued)
Lab Sample ID: 310-292105-18

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.0		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DP04-GW-1024
Lab Sample ID: 310-292105-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.60		5.00		mg/L	5		9056A	Total/NA
Sulfate	230		5.00		mg/L	5		9056A	Total/NA
Calcium	171		2.50		mg/L	5		6020B	Total/NA
Total Dissolved Solids	850		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW156D-GW-1024
Lab Sample ID: 310-292105-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	46.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	722		20.0		mg/L	20		9056A	Total/NA
Arsenic	0.00491		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0640		0.00200		mg/L	1		6020B	Total/NA
Boron	0.215		0.100		mg/L	1		6020B	Total/NA
Calcium	342		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00907		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0993		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.00648		0.00500		mg/L	1		6020B	Total/NA
Thallium	0.00116		0.00100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1620		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.8		1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW227D-GW-1024
Lab Sample ID: 310-292105-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	199		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0111		0.00200		mg/L	1		6020B	Total/NA
Barium	0.373		0.00200		mg/L	1		6020B	Total/NA
Boron	0.109		0.100		mg/L	1		6020B	Total/NA
Calcium	157		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000570		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0672		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	758		50.0		mg/L	1		SM 2540C	Total/NA
pH	9.1		1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW105-GW-1024 Lab Sample ID: 310-292105-1

Date Collected: 10/02/24 13:25 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.3		5.00		mg/L			10/11/24 12:22	5
Fluoride	<1.00		1.00		mg/L			10/11/24 12:22	5
Sulfate	171		5.00		mg/L			10/11/24 12:22	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.211		0.100		mg/L		10/09/24 09:30	10/10/24 20:36	1
Calcium	196		0.500		mg/L		10/09/24 09:30	10/10/24 20:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	884		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0		1.0		SU			10/04/24 17:11	1

Client Sample Results

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW108-GW-1024 Lab Sample ID: 310-292105-2

Date Collected: 10/02/24 13:55 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**25.2**		5.00		mg/L			10/11/24 13:09	5
Fluoride	<1.00		1.00		mg/L			10/11/24 13:09	5
Sulfate	<5.00		5.00		mg/L			10/11/24 13:09	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.222**		0.100		mg/L		10/09/24 09:30	10/10/24 20:43	1
Calcium	**145**		0.500		mg/L		10/09/24 09:30	10/10/24 20:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**702**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:45	1

Client Sample Results

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW133-GW-1024 Lab Sample ID: 310-292105-3

Date Collected: 10/02/24 15:00 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	76.7		5.00		mg/L			10/11/24 13:56	5
Fluoride	<1.00		1.00		mg/L			10/11/24 13:56	5
Sulfate	189		5.00		mg/L			10/11/24 13:56	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.385		0.100		mg/L		10/09/24 09:30	10/10/24 20:47	1
Calcium	192		0.500		mg/L		10/09/24 09:30	10/10/24 20:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	916		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0		1.0		SU			10/04/24 17:44	1

Client Sample Results

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW156-GW-1024 Lab Sample ID: 310-292105-4

Date Collected: 10/03/24 12:00 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36.6		5.00		mg/L			10/11/24 14:11	5
Fluoride	<1.00		1.00		mg/L			10/11/24 14:11	5
Sulfate	393		5.00		mg/L			10/11/24 14:11	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.192		0.100		mg/L		10/09/24 09:30	10/10/24 20:51	1
Calcium	274		0.500		mg/L		10/09/24 09:30	10/10/24 20:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1150		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.8		1.0		SU			10/04/24 17:30	1

Client Sample Results

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW157-GW-1024 Lab Sample ID: 310-292105-5

Date Collected: 10/03/24 07:45 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**51.3**		5.00		mg/L			10/11/24 14:27	5
Fluoride	<1.00		1.00		mg/L			10/11/24 14:27	5
Sulfate	**186**		5.00		mg/L			10/11/24 14:27	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 14:37	5
Calcium	**221**		0.500		mg/L		10/09/24 09:30	10/10/24 20:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**958**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.9**		1.0		SU			10/04/24 17:43	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW158-GW-1024
Lab Sample ID: 310-292105-6

Date Collected: 10/03/24 08:10
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**27.8**		5.00		mg/L			10/11/24 14:42	5
Fluoride	<1.00		1.00		mg/L			10/11/24 14:42	5
Sulfate	**355**		5.00		mg/L			10/11/24 14:42	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**0.803**		0.500		mg/L		10/09/24 09:30	10/11/24 14:39	5
Calcium	**276**		0.500		mg/L		10/09/24 09:30	10/10/24 20:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1150**		50.0		mg/L			10/09/24 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.8**		1.0		SU			10/04/24 17:27	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW159-GW-1024
Lab Sample ID: 310-292105-7
Date Collected: 10/03/24 08:35
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16.2**		5.00		mg/L			10/11/24 14:58	5
Fluoride	<1.00		1.00		mg/L			10/11/24 14:58	5
Sulfate	**255**		5.00		mg/L			10/11/24 14:58	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 14:50	5
Calcium	**231**		2.50		mg/L		10/09/24 09:30	10/11/24 14:50	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**874**		50.0		mg/L			10/09/24 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.9**		1.0		SU			10/04/24 17:16	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW190-GW-1024
Lab Sample ID: 310-292105-8
Date Collected: 10/03/24 09:05
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.60**		5.00		mg/L			10/11/24 15:14	5
Fluoride	<1.00		1.00		mg/L			10/11/24 15:14	5
Sulfate	**169**		5.00		mg/L			10/11/24 15:14	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 14:52	5
Calcium	**176**		2.50		mg/L		10/09/24 09:30	10/11/24 14:52	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**750**		50.0		mg/L			10/09/24 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:24	1

Client Sample Results

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW191-GW-1024 Lab Sample ID: 310-292105-9

Date Collected: 10/03/24 09:35 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11.1**		5.00		mg/L			10/11/24 15:29	5
Fluoride	<1.00		1.00		mg/L			10/11/24 15:29	5
Sulfate	**220**		5.00		mg/L			10/11/24 15:29	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 14:54	5
Calcium	**182**		2.50		mg/L		10/09/24 09:30	10/11/24 14:54	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**764**		50.0		mg/L			10/09/24 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:22	1

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW227-GW-1024
Lab Sample ID: 310-292105-10
Date Collected: 10/02/24 17:45
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**20.2**		5.00		mg/L			10/11/24 15:45	5
Fluoride	<1.00		1.00		mg/L			10/11/24 15:45	5
Sulfate	**284**		5.00		mg/L			10/11/24 15:45	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 14:56	5
Calcium	**226**		2.50		mg/L		10/09/24 09:30	10/11/24 14:56	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**918**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:40	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW240R-GW-1024
Lab Sample ID: 310-292105-11
Date Collected: 10/02/24 16:35
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.90**		5.00		mg/L			10/15/24 11:41	5
Fluoride	<1.00		1.00		mg/L			10/15/24 11:41	5
Sulfate	**233**		5.00		mg/L			10/15/24 11:41	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 14:59	5
Calcium	**175**		2.50		mg/L		10/09/24 09:30	10/11/24 14:59	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**814**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:12	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW244-GW-1024
Lab Sample ID: 310-292105-12
Date Collected: 10/02/24 18:05
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12.1**		5.00		mg/L			10/15/24 11:53	5
Fluoride	<1.00		1.00		mg/L			10/15/24 11:53	5
Sulfate	**115**		5.00		mg/L			10/15/24 11:53	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 15:01	5
Calcium	**188**		2.50		mg/L		10/09/24 09:30	10/11/24 15:01	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**790**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**		1.0		SU			10/04/24 17:14	1

Client Sample Results

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW245-GW-1024 Lab Sample ID: 310-292105-13

Date Collected: 10/02/24 17:10 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.89**		5.00		mg/L			10/15/24 12:05	5
Fluoride	<1.00		1.00		mg/L			10/15/24 12:05	5
Sulfate	**303**		5.00		mg/L			10/15/24 12:05	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 15:03	5
Calcium	**257**		2.50		mg/L		10/09/24 09:30	10/11/24 15:03	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1130**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:15	1

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW246-GW-1024
Lab Sample ID: 310-292105-14
Date Collected: 10/03/24 10:10
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12.4**		5.00		mg/L			10/15/24 12:41	5
Fluoride	<1.00		1.00		mg/L			10/15/24 12:41	5
Sulfate	**57.4**		5.00		mg/L			10/15/24 12:41	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 15:11	5
Calcium	**200**		2.50		mg/L		10/09/24 09:30	10/11/24 15:11	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**808**		50.0		mg/L			10/09/24 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:26	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW247-GW-1024
Lab Sample ID: 310-292105-15
Date Collected: 10/03/24 10:35
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61.9**		5.00		mg/L			10/15/24 12:53	5
Fluoride	<1.00		1.00		mg/L			10/15/24 12:53	5
Sulfate	**171**		5.00		mg/L			10/15/24 12:53	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/22/24 13:59	5
Calcium	**205**		2.50		mg/L		10/09/24 09:30	10/22/24 13:59	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**882**		50.0		mg/L			10/09/24 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.9**		1.0		SU			10/04/24 17:19	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW248-GW-1024
Lab Sample ID: 310-292105-16
Date Collected: 10/03/24 11:15
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12.3**		5.00		mg/L			10/15/24 13:05	5
Fluoride	<1.00		1.00		mg/L			10/15/24 13:05	5
Sulfate	**86.9**		5.00		mg/L			10/15/24 13:05	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 15:24	5
Calcium	**125**		2.50		mg/L		10/09/24 09:30	10/11/24 15:24	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**548**		50.0		mg/L			10/09/24 12:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:20	1

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW250-GW-1024
Lab Sample ID: 310-292105-17
Date Collected: 10/02/24 15:20
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12.1**		5.00		mg/L			10/15/24 13:42	5
Fluoride	<1.00		1.00		mg/L			10/15/24 13:42	5
Sulfate	**253**		5.00		mg/L			10/15/24 13:42	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 15:22	5
Calcium	**209**		2.50		mg/L		10/09/24 09:30	10/11/24 15:22	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**968**		50.0		mg/L			10/07/24 20:15	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.8**		1.0		SU			10/04/24 17:28	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: DP03-GW-1024
Lab Sample ID: 310-292105-18
Date Collected: 10/02/24 00:00
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38.9**		5.00		mg/L			10/15/24 13:54	5
Fluoride	<1.00		1.00		mg/L			10/15/24 13:54	5
Sulfate	**173**		5.00		mg/L			10/15/24 13:54	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 15:28	5
Calcium	**209**		2.50		mg/L		10/09/24 09:30	10/11/24 15:28	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**882**		50.0		mg/L			10/07/24 20:15	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.0**		1.0		SU			10/04/24 17:09	1

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: DP04-GW-1024
Lab Sample ID: 310-292105-19
Date Collected: 10/02/24 00:00
Matrix: Water
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.60**		5.00		mg/L			10/15/24 14:06	5
Fluoride	<1.00		1.00		mg/L			10/15/24 14:06	5
Sulfate	**230**		5.00		mg/L			10/15/24 14:06	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 15:30	5
Calcium	**171**		2.50		mg/L		10/09/24 09:30	10/11/24 15:30	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**850**		50.0		mg/L			10/07/24 20:15	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**		1.0		SU			10/04/24 17:07	1

Client Sample ID: MW156D-GW-1024 Lab Sample ID: 310-292105-20

Date Collected: 10/03/24 12:40 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**46.6**		5.00		mg/L			10/15/24 14:18	5
Fluoride	<1.00		1.00		mg/L			10/15/24 14:18	5
Sulfate	**722**		20.0		mg/L			10/15/24 16:55	20

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/09/24 09:30	10/17/24 14:56	1
Arsenic	**0.00491**		0.00200		mg/L		10/09/24 09:30	10/11/24 22:18	1
Barium	**0.0640**		0.00200		mg/L		10/09/24 09:30	10/11/24 22:18	1
Beryllium	<0.00100		0.00100		mg/L		10/09/24 09:30	10/17/24 14:56	1
Boron	**0.215**		0.100		mg/L		10/09/24 09:30	10/17/24 14:56	1
Cadmium	<0.000200		0.000200		mg/L		10/09/24 09:30	10/11/24 22:18	1
Calcium	**342**		0.500		mg/L		10/09/24 09:30	10/17/24 14:56	1
Chromium	<0.00500		0.00500		mg/L		10/09/24 09:30	10/17/24 14:56	1
Cobalt	**0.00907**		0.000500		mg/L		10/09/24 09:30	10/18/24 14:38	1
Lithium	**0.0993**		0.0100		mg/L		10/09/24 09:30	10/18/24 14:38	1
Lead	<0.000500		0.000500		mg/L		10/09/24 09:30	10/11/24 22:18	1
Molybdenum	<0.00200		0.00200		mg/L		10/09/24 09:30	10/11/24 22:18	1
Selenium	**0.00648**		0.00500		mg/L		10/09/24 09:30	10/11/24 22:18	1
Thallium	**0.00116**		0.00100		mg/L		10/09/24 09:30	10/18/24 14:38	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/12/24 10:55	10/14/24 12:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1620**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.8**		1.0		SU			10/04/24 17:13	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.174**		0.0950	0.0962	1.00	0.117	pCi/L	10/09/24 08:16	11/01/24 09:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*84.3*		*30 - 110*	*10/09/24 08:16*	*11/01/24 09:35*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.885**		0.487	0.494	1.00	0.697	pCi/L	10/09/24 08:23	10/25/24 11:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*84.3*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:50*	*1*
Y Carrier	*72.9*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:50*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW156D-GW-1024
Lab Sample ID: 310-292105-20
Date Collected: 10/03/24 12:40
Matrix: Water
Date Received: 10/05/24 16:30

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.06		0.496	0.503	5.00	0.697	pCi/L		11/04/24 13:02	1

Client Sample ID: MW227D-GW-1024 Lab Sample ID: 310-292105-21

Date Collected: 10/02/24 19:20 **Matrix: Water**
Date Received: 10/05/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16.2**		5.00		mg/L			10/15/24 14:30	5
Fluoride	<1.00		1.00		mg/L			10/15/24 14:30	5
Sulfate	**199**		5.00		mg/L			10/15/24 14:30	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/09/24 09:30	10/17/24 14:59	1
Arsenic	**0.0111**		0.00200		mg/L		10/09/24 09:30	10/11/24 22:20	1
Barium	**0.373**		0.00200		mg/L		10/09/24 09:30	10/17/24 14:59	1
Beryllium	<0.00100		0.00100		mg/L		10/09/24 09:30	10/17/24 14:59	1
Boron	**0.109**		0.100		mg/L		10/09/24 09:30	10/17/24 14:59	1
Cadmium	<0.000200		0.000200		mg/L		10/09/24 09:30	10/18/24 14:40	1
Calcium	**157**		0.500		mg/L		10/09/24 09:30	10/17/24 14:59	1
Chromium	<0.00500		0.00500		mg/L		10/09/24 09:30	10/17/24 14:59	1
Cobalt	**0.000570**		0.000500		mg/L		10/09/24 09:30	10/18/24 14:40	1
Lithium	**0.0672**		0.0100		mg/L		10/09/24 09:30	10/18/24 14:40	1
Lead	<0.000500		0.000500		mg/L		10/09/24 09:30	10/17/24 14:59	1
Molybdenum	<0.00200		0.00200		mg/L		10/09/24 09:30	10/11/24 22:20	1
Selenium	<0.00500		0.00500		mg/L		10/09/24 09:30	10/11/24 22:20	1
Thallium	<0.00100		0.00100		mg/L		10/09/24 09:30	10/18/24 14:40	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/12/24 10:55	10/14/24 12:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**758**		50.0		mg/L			10/07/24 20:15	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**9.1**		1.0		SU			10/04/24 17:35	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.275**		0.103	0.106	1.00	0.0973	pCi/L	10/09/24 08:16	11/01/24 09:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*96.9*		*30 - 110*	*10/09/24 08:16*	*11/01/24 09:35*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.886**		0.392	0.401	1.00	0.522	pCi/L	10/09/24 08:23	10/25/24 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*96.9*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:53*	*1*
Y Carrier	*78.9*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:53*	*1*

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW227D-GW-1024
Lab Sample ID: 310-292105-21
Date Collected: 10/02/24 19:20
Matrix: Water
Date Received: 10/05/24 16:30

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.16		0.405	0.415	5.00	0.522	pCi/L		11/04/24 13:02	1

Definitions/Glossary

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-436062/3
Matrix: Water
Analysis Batch: 436062

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/11/24 09:41	1
Fluoride	<0.200		0.200		mg/L			10/11/24 09:41	1
Sulfate	<1.00		1.00		mg/L			10/11/24 09:41	1

Lab Sample ID: LCS 310-436062/4
Matrix: Water
Analysis Batch: 436062

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.686		mg/L		97	90 - 110
Fluoride	2.00	1.994		mg/L		100	90 - 110
Sulfate	10.0	10.07		mg/L		101	90 - 110

Lab Sample ID: 310-292105-1 MS
Matrix: Water
Analysis Batch: 436062

Client Sample ID: MW105-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	34.3		25.0	58.09		mg/L		95	80 - 120
Fluoride	<1.00		5.00	5.287		mg/L		106	80 - 120
Sulfate	171		25.0	194.6	4	mg/L		96	80 - 120

Lab Sample ID: 310-292105-1 MSD
Matrix: Water
Analysis Batch: 436062

Client Sample ID: MW105-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	34.3		25.0	58.66		mg/L		98	80 - 120	1	15
Fluoride	<1.00		5.00	5.459		mg/L		109	80 - 120	3	15
Sulfate	171		25.0	196.9	4	mg/L		105	80 - 120	1	15

Lab Sample ID: MB 310-436803/3
Matrix: Water
Analysis Batch: 436803

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/15/24 11:17	1
Fluoride	<0.200		0.200		mg/L			10/15/24 11:17	1
Sulfate	<1.00		1.00		mg/L			10/15/24 11:17	1

Lab Sample ID: LCS 310-436803/4
Matrix: Water
Analysis Batch: 436803

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.757		mg/L		98	90 - 110
Fluoride	2.00	2.022		mg/L		101	90 - 110
Sulfate	10.0	10.41		mg/L		104	90 - 110

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

Lab Sample ID: 310-292105-13 MS
Matrix: Water
Analysis Batch: 436803

Client Sample ID: MW245-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	9.89		25.0	33.13		mg/L		93	80 - 120		
Fluoride	<1.00		5.00	5.380		mg/L		108	80 - 120		
Sulfate	303		25.0	328.5	4	mg/L		103	80 - 120		

Lab Sample ID: 310-292105-13 MSD
Matrix: Water
Analysis Batch: 436803

Client Sample ID: MW245-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	9.89		25.0	32.65		mg/L		91	80 - 120	1	15
Fluoride	<1.00		5.00	5.255		mg/L		105	80 - 120	2	15
Sulfate	303		25.0	333.1	4	mg/L		121	80 - 120	1	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435578/1-A
Matrix: Water
Analysis Batch: 435911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435578

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.100		0.100		mg/L		10/09/24 09:30	10/10/24 20:28	1
Calcium	<0.500		0.500		mg/L		10/09/24 09:30	10/10/24 20:28	1

Lab Sample ID: LCS 310-435578/2-A
Matrix: Water
Analysis Batch: 435911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435578

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			0.200	0.2170		mg/L		108	80 - 120		
Calcium			2.00	1.859		mg/L		93	80 - 120		

Lab Sample ID: 310-292105-13 MS
Matrix: Water
Analysis Batch: 436014

Client Sample ID: MW245-GW-1024
Prep Type: Total/NA
Prep Batch: 435578

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	<0.500		0.200	<0.500		mg/L		NC	75 - 125		
Calcium	257		2.00	242.2	4	mg/L		-735	75 - 125		

Lab Sample ID: 310-292105-13 MSD
Matrix: Water
Analysis Batch: 436014

Client Sample ID: MW245-GW-1024
Prep Type: Total/NA
Prep Batch: 435578

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	<0.500		0.200	<0.500		mg/L		NC	75 - 125	2	20
Calcium	257		2.00	243.3	4	mg/L		-680	75 - 125	0	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-292105-1 DU
Client Sample ID: MW105-GW-1024
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 435911
Prep Batch: 435578

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	0.211		0.2072		mg/L		2	20
Calcium	196		195.2		mg/L		0.2	20

Lab Sample ID: MB 310-435579/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436085
Prep Batch: 435579

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/09/24 09:30	10/11/24 20:56	1
Arsenic	<0.00200		0.00200		mg/L		10/09/24 09:30	10/11/24 20:56	1
Barium	<0.00200		0.00200		mg/L		10/09/24 09:30	10/11/24 20:56	1
Boron	<0.100		0.100		mg/L		10/09/24 09:30	10/11/24 20:56	1
Cadmium	<0.000200		0.000200		mg/L		10/09/24 09:30	10/11/24 20:56	1
Calcium	<0.500		0.500		mg/L		10/09/24 09:30	10/11/24 20:56	1
Chromium	<0.00500		0.00500		mg/L		10/09/24 09:30	10/11/24 20:56	1
Cobalt	<0.000500		0.000500		mg/L		10/09/24 09:30	10/11/24 20:56	1
Lead	<0.000500		0.000500		mg/L		10/09/24 09:30	10/11/24 20:56	1
Molybdenum	<0.00200		0.00200		mg/L		10/09/24 09:30	10/11/24 20:56	1
Selenium	<0.00500		0.00500		mg/L		10/09/24 09:30	10/11/24 20:56	1

Lab Sample ID: MB 310-435579/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436697
Prep Batch: 435579

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.00100		0.00100		mg/L		10/09/24 09:30	10/17/24 14:15	1
Lithium	<0.0100		0.0100		mg/L		10/09/24 09:30	10/17/24 14:15	1

Lab Sample ID: MB 310-435579/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436888
Prep Batch: 435579

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.00100		0.00100		mg/L		10/09/24 09:30	10/18/24 14:03	1

Lab Sample ID: LCS 310-435579/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 436085
Prep Batch: 435579

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2289		mg/L		114	80 - 120
Barium	0.100	0.1081		mg/L		108	80 - 120
Boron	0.200	0.2279		mg/L		114	80 - 120
Cadmium	0.100	0.1085		mg/L		109	80 - 120
Calcium	2.00	1.924		mg/L		96	80 - 120
Lead	0.200	0.2359		mg/L		118	80 - 120
Molybdenum	0.200	0.2209		mg/L		110	80 - 120
Selenium	0.400	0.4332		mg/L		108	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-435579/2-A
Matrix: Water
Analysis Batch: 436697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435579

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2382		mg/L		119	80 - 120
Beryllium	0.100	0.1027		mg/L		103	80 - 120
Chromium	0.100	0.1150		mg/L		115	80 - 120
Lithium	0.200	0.2016		mg/L		101	80 - 120

Lab Sample ID: LCS 310-435579/2-A
Matrix: Water
Analysis Batch: 436888

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435579

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	0.100	0.1201		mg/L		120	80 - 120
Thallium	0.100	0.08344		mg/L		83	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-436040/1-A
Matrix: Water
Analysis Batch: 436171

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436040

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/12/24 10:55	10/14/24 11:35	1

Lab Sample ID: LCS 310-436040/2-A
Matrix: Water
Analysis Batch: 436171

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436040

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001803		mg/L		108	80 - 120

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

Lab Sample ID: MB 310-435464/1
Matrix: Water
Analysis Batch: 435464

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			10/07/24 20:15	1

Lab Sample ID: LCS 310-435464/2
Matrix: Water
Analysis Batch: 435464

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1054		mg/L		105	88 - 110

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

Lab Sample ID: 310-292105-17 DU
Matrix: Water
Analysis Batch: 435464

Client Sample ID: MW250-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	968			978.0		mg/L				1	16

Lab Sample ID: MB 310-435588/1
Matrix: Water
Analysis Batch: 435588

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			10/08/24 16:50	1

Lab Sample ID: LCS 310-435588/2
Matrix: Water
Analysis Batch: 435588

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1030		mg/L		103	88 - 110		

Lab Sample ID: 310-292105-5 DU
Matrix: Water
Analysis Batch: 435588

Client Sample ID: MW157-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	958			950.0		mg/L				0.8	16

Lab Sample ID: MB 310-435691/1
Matrix: Water
Analysis Batch: 435691

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			10/09/24 12:42	1

Lab Sample ID: LCS 310-435691/2
Matrix: Water
Analysis Batch: 435691

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1040		mg/L		104	88 - 110		

Lab Sample ID: 310-292105-6 DU
Matrix: Water
Analysis Batch: 435691

Client Sample ID: MW158-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1150			1222		mg/L				6	16

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-435322/1
Matrix: Water
Analysis Batch: 435322

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.0		SU		100	98 - 102		

Lab Sample ID: LCS 310-435322/28
Matrix: Water
Analysis Batch: 435322

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
pH			7.00	7.1		SU		101	98 - 102		

Lab Sample ID: 310-292105-2 DU
Matrix: Water
Analysis Batch: 435322

Client Sample ID: MW108-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.0			7.0		SU				0.3	20

Lab Sample ID: 310-292105-13 DU
Matrix: Water
Analysis Batch: 435322

Client Sample ID: MW245-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.0			7.0		SU				0.6	20

Lab Sample ID: 310-292105-16 DU
Matrix: Water
Analysis Batch: 435322

Client Sample ID: MW248-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.0			7.1		SU				0.1	20

Lab Sample ID: 310-292105-19 DU
Matrix: Water
Analysis Batch: 435322

Client Sample ID: DP04-GW-1024
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.1			7.1		SU				0.4	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-682845/1-A
Matrix: Water
Analysis Batch: 686242

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682845

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.122	U	0.0718	0.0719	1.00	0.122	pCi/L	10/09/24 08:16	11/01/24 07:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*84.8*		*30 - 110*	*10/09/24 08:16*	*11/01/24 07:48*	*1*

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-682845/2-A
Matrix: Water
Analysis Batch: 686242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 682845

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			9.58	9.438		1.04	1.00	0.154	pCi/L	99	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*86.3*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-682846/1-A
Matrix: Water
Analysis Batch: 685112

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682846

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.8104		0.398	0.405	1.00	0.550	pCi/L	10/09/24 08:23	10/25/24 11:52	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*84.8*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:52*	*1*
Y Carrier	*89.3*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:52*	*1*

Lab Sample ID: LCS 160-682846/2-A
Matrix: Water
Analysis Batch: 685112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 682846

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.40	9.467		1.35	1.00	0.591	pCi/L	113	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*86.3*		*30 - 110*
Y Carrier	*76.3*		*30 - 110*

HPLC/IC

Analysis Batch: 436062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-1	MW105-GW-1024	Total/NA	Water	9056A	
310-292105-2	MW108-GW-1024	Total/NA	Water	9056A	
310-292105-3	MW133-GW-1024	Total/NA	Water	9056A	
310-292105-4	MW156-GW-1024	Total/NA	Water	9056A	
310-292105-5	MW157-GW-1024	Total/NA	Water	9056A	
310-292105-6	MW158-GW-1024	Total/NA	Water	9056A	
310-292105-7	MW159-GW-1024	Total/NA	Water	9056A	
310-292105-8	MW190-GW-1024	Total/NA	Water	9056A	
310-292105-9	MW191-GW-1024	Total/NA	Water	9056A	
310-292105-10	MW227-GW-1024	Total/NA	Water	9056A	
MB 310-436062/3	Method Blank	Total/NA	Water	9056A	
LCS 310-436062/4	Lab Control Sample	Total/NA	Water	9056A	
310-292105-1 MS	MW105-GW-1024	Total/NA	Water	9056A	
310-292105-1 MSD	MW105-GW-1024	Total/NA	Water	9056A	

Analysis Batch: 436803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-11	MW240R-GW-1024	Total/NA	Water	9056A	
310-292105-12	MW244-GW-1024	Total/NA	Water	9056A	
310-292105-13	MW245-GW-1024	Total/NA	Water	9056A	
310-292105-14	MW246-GW-1024	Total/NA	Water	9056A	
310-292105-15	MW247-GW-1024	Total/NA	Water	9056A	
310-292105-16	MW248-GW-1024	Total/NA	Water	9056A	
310-292105-17	MW250-GW-1024	Total/NA	Water	9056A	
310-292105-18	DP03-GW-1024	Total/NA	Water	9056A	
310-292105-19	DP04-GW-1024	Total/NA	Water	9056A	
310-292105-20	MW156D-GW-1024	Total/NA	Water	9056A	
310-292105-20	MW156D-GW-1024	Total/NA	Water	9056A	
310-292105-21	MW227D-GW-1024	Total/NA	Water	9056A	
MB 310-436803/3	Method Blank	Total/NA	Water	9056A	
LCS 310-436803/4	Lab Control Sample	Total/NA	Water	9056A	
310-292105-13 MS	MW245-GW-1024	Total/NA	Water	9056A	
310-292105-13 MSD	MW245-GW-1024	Total/NA	Water	9056A	

Metals

Prep Batch: 435578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-1	MW105-GW-1024	Total/NA	Water	3005A	
310-292105-2	MW108-GW-1024	Total/NA	Water	3005A	
310-292105-3	MW133-GW-1024	Total/NA	Water	3005A	
310-292105-4	MW156-GW-1024	Total/NA	Water	3005A	
310-292105-5	MW157-GW-1024	Total/NA	Water	3005A	
310-292105-6	MW158-GW-1024	Total/NA	Water	3005A	
310-292105-7	MW159-GW-1024	Total/NA	Water	3005A	
310-292105-8	MW190-GW-1024	Total/NA	Water	3005A	
310-292105-9	MW191-GW-1024	Total/NA	Water	3005A	
310-292105-10	MW227-GW-1024	Total/NA	Water	3005A	
310-292105-11	MW240R-GW-1024	Total/NA	Water	3005A	
310-292105-12	MW244-GW-1024	Total/NA	Water	3005A	
310-292105-13	MW245-GW-1024	Total/NA	Water	3005A	

Metals (Continued)

Prep Batch: 435578 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-14	MW246-GW-1024	Total/NA	Water	3005A	
310-292105-15	MW247-GW-1024	Total/NA	Water	3005A	
310-292105-16	MW248-GW-1024	Total/NA	Water	3005A	
310-292105-17	MW250-GW-1024	Total/NA	Water	3005A	
310-292105-18	DP03-GW-1024	Total/NA	Water	3005A	
310-292105-19	DP04-GW-1024	Total/NA	Water	3005A	
MB 310-435578/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435578/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-292105-13 MS	MW245-GW-1024	Total/NA	Water	3005A	
310-292105-13 MSD	MW245-GW-1024	Total/NA	Water	3005A	
310-292105-1 DU	MW105-GW-1024	Total/NA	Water	3005A	

Prep Batch: 435579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	3005A	
310-292105-21	MW227D-GW-1024	Total/NA	Water	3005A	
MB 310-435579/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435579/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 435911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-1	MW105-GW-1024	Total/NA	Water	6020B	435578
310-292105-2	MW108-GW-1024	Total/NA	Water	6020B	435578
310-292105-3	MW133-GW-1024	Total/NA	Water	6020B	435578
310-292105-4	MW156-GW-1024	Total/NA	Water	6020B	435578
310-292105-5	MW157-GW-1024	Total/NA	Water	6020B	435578
310-292105-6	MW158-GW-1024	Total/NA	Water	6020B	435578
MB 310-435578/1-A	Method Blank	Total/NA	Water	6020B	435578
LCS 310-435578/2-A	Lab Control Sample	Total/NA	Water	6020B	435578
310-292105-1 DU	MW105-GW-1024	Total/NA	Water	6020B	435578

Analysis Batch: 436014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-5	MW157-GW-1024	Total/NA	Water	6020B	435578
310-292105-6	MW158-GW-1024	Total/NA	Water	6020B	435578
310-292105-7	MW159-GW-1024	Total/NA	Water	6020B	435578
310-292105-8	MW190-GW-1024	Total/NA	Water	6020B	435578
310-292105-9	MW191-GW-1024	Total/NA	Water	6020B	435578
310-292105-10	MW227-GW-1024	Total/NA	Water	6020B	435578
310-292105-11	MW240R-GW-1024	Total/NA	Water	6020B	435578
310-292105-12	MW244-GW-1024	Total/NA	Water	6020B	435578
310-292105-13	MW245-GW-1024	Total/NA	Water	6020B	435578
310-292105-14	MW246-GW-1024	Total/NA	Water	6020B	435578
310-292105-16	MW248-GW-1024	Total/NA	Water	6020B	435578
310-292105-17	MW250-GW-1024	Total/NA	Water	6020B	435578
310-292105-18	DP03-GW-1024	Total/NA	Water	6020B	435578
310-292105-19	DP04-GW-1024	Total/NA	Water	6020B	435578
310-292105-13 MS	MW245-GW-1024	Total/NA	Water	6020B	435578
310-292105-13 MSD	MW245-GW-1024	Total/NA	Water	6020B	435578

Metals

Prep Batch: 436040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	7470A	
310-292105-21	MW227D-GW-1024	Total/NA	Water	7470A	
MB 310-436040/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-436040/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 436085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	6020B	435579
310-292105-21	MW227D-GW-1024	Total/NA	Water	6020B	435579
MB 310-435579/1-A	Method Blank	Total/NA	Water	6020B	435579
LCS 310-435579/2-A	Lab Control Sample	Total/NA	Water	6020B	435579

Analysis Batch: 436171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	7470A	436040
310-292105-21	MW227D-GW-1024	Total/NA	Water	7470A	436040
MB 310-436040/1-A	Method Blank	Total/NA	Water	7470A	436040
LCS 310-436040/2-A	Lab Control Sample	Total/NA	Water	7470A	436040

Analysis Batch: 436697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	6020B	435579
310-292105-21	MW227D-GW-1024	Total/NA	Water	6020B	435579
MB 310-435579/1-A	Method Blank	Total/NA	Water	6020B	435579
LCS 310-435579/2-A	Lab Control Sample	Total/NA	Water	6020B	435579

Analysis Batch: 436888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	6020B	435579
310-292105-21	MW227D-GW-1024	Total/NA	Water	6020B	435579
MB 310-435579/1-A	Method Blank	Total/NA	Water	6020B	435579
LCS 310-435579/2-A	Lab Control Sample	Total/NA	Water	6020B	435579

Analysis Batch: 437173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-15	MW247-GW-1024	Total/NA	Water	6020B	435578

General Chemistry

Analysis Batch: 435322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-1	MW105-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-2	MW108-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-3	MW133-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-4	MW156-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-5	MW157-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-6	MW158-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-7	MW159-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-8	MW190-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-9	MW191-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-10	MW227-GW-1024	Total/NA	Water	SM 4500 H+ B	

General Chemistry (Continued)

Analysis Batch: 435322 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-11	MW240R-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-12	MW244-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-13	MW245-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-14	MW246-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-15	MW247-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-16	MW248-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-17	MW250-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-18	DP03-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-19	DP04-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-20	MW156D-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-21	MW227D-GW-1024	Total/NA	Water	SM 4500 H+ B	
LCS 310-435322/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 310-435322/28	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-292105-2 DU	MW108-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-13 DU	MW245-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-16 DU	MW248-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292105-19 DU	DP04-GW-1024	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 435464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-17	MW250-GW-1024	Total/NA	Water	SM 2540C	
310-292105-18	DP03-GW-1024	Total/NA	Water	SM 2540C	
310-292105-19	DP04-GW-1024	Total/NA	Water	SM 2540C	
310-292105-21	MW227D-GW-1024	Total/NA	Water	SM 2540C	
MB 310-435464/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-435464/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-292105-17 DU	MW250-GW-1024	Total/NA	Water	SM 2540C	

Analysis Batch: 435588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-1	MW105-GW-1024	Total/NA	Water	SM 2540C	
310-292105-2	MW108-GW-1024	Total/NA	Water	SM 2540C	
310-292105-3	MW133-GW-1024	Total/NA	Water	SM 2540C	
310-292105-4	MW156-GW-1024	Total/NA	Water	SM 2540C	
310-292105-5	MW157-GW-1024	Total/NA	Water	SM 2540C	
310-292105-10	MW227-GW-1024	Total/NA	Water	SM 2540C	
310-292105-11	MW240R-GW-1024	Total/NA	Water	SM 2540C	
310-292105-12	MW244-GW-1024	Total/NA	Water	SM 2540C	
310-292105-13	MW245-GW-1024	Total/NA	Water	SM 2540C	
310-292105-20	MW156D-GW-1024	Total/NA	Water	SM 2540C	
MB 310-435588/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-435588/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-292105-5 DU	MW157-GW-1024	Total/NA	Water	SM 2540C	

Analysis Batch: 435691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-6	MW158-GW-1024	Total/NA	Water	SM 2540C	
310-292105-7	MW159-GW-1024	Total/NA	Water	SM 2540C	
310-292105-8	MW190-GW-1024	Total/NA	Water	SM 2540C	
310-292105-9	MW191-GW-1024	Total/NA	Water	SM 2540C	
310-292105-14	MW246-GW-1024	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 435691 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-15	MW247-GW-1024	Total/NA	Water	SM 2540C	
310-292105-16	MW248-GW-1024	Total/NA	Water	SM 2540C	
MB 310-435691/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-435691/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-292105-6 DU	MW158-GW-1024	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 682845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	PrecSep-21	
310-292105-21	MW227D-GW-1024	Total/NA	Water	PrecSep-21	
MB 160-682845/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-682845/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 682846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292105-20	MW156D-GW-1024	Total/NA	Water	PrecSep_0	
310-292105-21	MW227D-GW-1024	Total/NA	Water	PrecSep_0	
MB 160-682846/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-682846/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW105-GW-1024 Lab Sample ID: 310-292105-1

Date Collected: 10/02/24 13:25 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 12:22
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	435911	NFT2	EET CF	10/10/24 20:36
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:11

Client Sample ID: MW108-GW-1024 Lab Sample ID: 310-292105-2

Date Collected: 10/02/24 13:55 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 13:09
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	435911	NFT2	EET CF	10/10/24 20:43
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:45

Client Sample ID: MW133-GW-1024 Lab Sample ID: 310-292105-3

Date Collected: 10/02/24 15:00 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 13:56
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	435911	NFT2	EET CF	10/10/24 20:47
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:44

Client Sample ID: MW156-GW-1024 Lab Sample ID: 310-292105-4

Date Collected: 10/03/24 12:00 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 14:11
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	435911	NFT2	EET CF	10/10/24 20:51
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:30

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW157-GW-1024 Lab Sample ID: 310-292105-5

Date Collected: 10/03/24 07:45 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 14:27
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	435911	NFT2	EET CF	10/10/24 20:55
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 14:37
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:43

Client Sample ID: MW158-GW-1024 Lab Sample ID: 310-292105-6

Date Collected: 10/03/24 08:10 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 14:42
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	435911	NFT2	EET CF	10/10/24 20:59
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 14:39
Total/NA	Analysis	SM 2540C		1	435691	DGU1	EET CF	10/09/24 12:42
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:27

Client Sample ID: MW159-GW-1024 Lab Sample ID: 310-292105-7

Date Collected: 10/03/24 08:35 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 14:58
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 14:50
Total/NA	Analysis	SM 2540C		1	435691	DGU1	EET CF	10/09/24 12:42
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:16

Client Sample ID: MW190-GW-1024 Lab Sample ID: 310-292105-8

Date Collected: 10/03/24 09:05 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 15:14
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 14:52
Total/NA	Analysis	SM 2540C		1	435691	DGU1	EET CF	10/09/24 12:42
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:24

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW191-GW-1024 Lab Sample ID: 310-292105-9

Date Collected: 10/03/24 09:35 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 15:29
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 14:54
Total/NA	Analysis	SM 2540C		1	435691	DGU1	EET CF	10/09/24 12:42
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:22

Client Sample ID: MW227-GW-1024 Lab Sample ID: 310-292105-10

Date Collected: 10/02/24 17:45 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436062	HE7K	EET CF	10/11/24 15:45
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 14:56
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:40

Client Sample ID: MW240R-GW-1024 Lab Sample ID: 310-292105-11

Date Collected: 10/02/24 16:35 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 11:41
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 14:59
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:12

Client Sample ID: MW244-GW-1024 Lab Sample ID: 310-292105-12

Date Collected: 10/02/24 18:05 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 11:53
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 15:01
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:14

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW245-GW-1024 Lab Sample ID: 310-292105-13

Date Collected: 10/02/24 17:10 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 12:05
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 15:03
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:15

Client Sample ID: MW246-GW-1024 Lab Sample ID: 310-292105-14

Date Collected: 10/03/24 10:10 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 12:41
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 15:11
Total/NA	Analysis	SM 2540C		1	435691	DGU1	EET CF	10/09/24 12:42
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:26

Client Sample ID: MW247-GW-1024 Lab Sample ID: 310-292105-15

Date Collected: 10/03/24 10:35 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 12:53
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	437173	A6US	EET CF	10/22/24 13:59
Total/NA	Analysis	SM 2540C		1	435691	DGU1	EET CF	10/09/24 12:42
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:19

Client Sample ID: MW248-GW-1024 Lab Sample ID: 310-292105-16

Date Collected: 10/03/24 11:15 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 13:05
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 15:24
Total/NA	Analysis	SM 2540C		1	435691	DGU1	EET CF	10/09/24 12:42
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:20

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW250-GW-1024 Lab Sample ID: 310-292105-17

Date Collected: 10/02/24 15:20 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 13:42
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 15:22
Total/NA	Analysis	SM 2540C		1	435464	MDU9	EET CF	10/07/24 20:15
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:28

Client Sample ID: DP03-GW-1024 Lab Sample ID: 310-292105-18

Date Collected: 10/02/24 00:00 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 13:54
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 15:28
Total/NA	Analysis	SM 2540C		1	435464	MDU9	EET CF	10/07/24 20:15
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:09

Client Sample ID: DP04-GW-1024 Lab Sample ID: 310-292105-19

Date Collected: 10/02/24 00:00 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 14:06
Total/NA	Prep	3005A			435578	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		5	436014	A6US	EET CF	10/11/24 15:30
Total/NA	Analysis	SM 2540C		1	435464	MDU9	EET CF	10/07/24 20:15
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:07

Client Sample ID: MW156D-GW-1024 Lab Sample ID: 310-292105-20

Date Collected: 10/03/24 12:40 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 14:18
Total/NA	Analysis	9056A		20	436803	ZRI4	EET CF	10/15/24 16:55
Total/NA	Prep	3005A			435579	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 22:18
Total/NA	Prep	3005A			435579	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436697	NFT2	EET CF	10/17/24 14:56
Total/NA	Prep	3005A			435579	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436888	NFT2	EET CF	10/18/24 14:38
Total/NA	Prep	7470A			436040	QTZ5	EET CF	10/12/24 10:55
Total/NA	Analysis	7470A		1	436171	QTZ5	EET CF	10/14/24 12:50
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Client Sample ID: MW156D-GW-1024 Lab Sample ID: 310-292105-20

Date Collected: 10/03/24 12:40 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:13
Total/NA	Prep	PrecSep-21			682845	BCE	EET SL	10/09/24 08:16
Total/NA	Analysis	9315		1	686236	SWS	EET SL	11/01/24 09:35
Total/NA	Prep	PrecSep_0			682846	BCE	EET SL	10/09/24 08:23
Total/NA	Analysis	9320		1	685112	SWS	EET SL	10/25/24 11:50
Total/NA	Analysis	Ra226_Ra228		1	686788	FLC	EET SL	11/04/24 13:02

Client Sample ID: MW227D-GW-1024 Lab Sample ID: 310-292105-21

Date Collected: 10/02/24 19:20 **Matrix: Water**
Date Received: 10/05/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	436803	ZRI4	EET CF	10/15/24 14:30
Total/NA	Prep	3005A			435579	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 22:20
Total/NA	Prep	3005A			435579	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436697	NFT2	EET CF	10/17/24 14:59
Total/NA	Prep	3005A			435579	F5MW	EET CF	10/09/24 09:30
Total/NA	Analysis	6020B		1	436888	NFT2	EET CF	10/18/24 14:40
Total/NA	Prep	7470A			436040	QTZ5	EET CF	10/12/24 10:55
Total/NA	Analysis	7470A		1	436171	QTZ5	EET CF	10/14/24 12:52
Total/NA	Analysis	SM 2540C		1	435464	MDU9	EET CF	10/07/24 20:15
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:35
Total/NA	Prep	PrecSep-21			682845	BCE	EET SL	10/09/24 08:16
Total/NA	Analysis	9315		1	686236	SWS	EET SL	11/01/24 09:35
Total/NA	Prep	PrecSep_0			682846	BCE	EET SL	10/09/24 08:23
Total/NA	Analysis	9320		1	685116	FLC	EET SL	10/25/24 11:53
Total/NA	Analysis	Ra226_Ra228		1	686788	FLC	EET SL	11/04/24 13:02

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-25
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-25
HI - RadChem Recognition	State	n/a	06-30-25
Illinois	NELAP	200023	11-30-25
Iowa	State	373	12-01-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-25
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-25
Massachusetts	State	M-MO054	06-30-25
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-25
New Jersey	NELAP	MO002	06-30-25
New Mexico	State	MO00054	06-30-25
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-25
North Dakota	State	R-207	12-31-24
Oregon	NELAP	4157	09-01-25
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-25
Texas	NELAP	T104704193	07-31-25
US Fish & Wildlife	US Federal Programs	058448	07-31-25
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-25
Virginia	NELAP	460230	06-14-25
Washington	State	C592	08-30-25
West Virginia DEP	State	381	10-31-25

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

Method Summary

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

eurofins | Environment Testing America

310-292105 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10/4/24 | TIME 1630 | Received By: XB

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 1 of 3
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 9 | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3 3 | Corrected Temp (°C): 3 3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10/4/24 | TIME 1630 | Received By: XB

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 3

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

• Temp Blank Temperature – *If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature*

Uncorrected Temp (°C): 4.8 | Corrected Temp (°C): 4.8

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10/4/24 | TIME 630 | Received By: XB

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☒ No *If yes:* Cooler # 3 of 3

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 5.3 | Corrected Temp (°C): 5.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

TestAmerica Des Moines SC
214

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s):	COC No:
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 2 of 2
Company: GHD Services Inc.				Job #:
Address: 11228 Aurora Avenue	Due Date Requested:			
City: Des Moines	TAT Requested (days): Standard			
State, Zip: IA, 50322-7905				
Phone: 515-414-3935	PO #: 340-016858			
Email: Kevin.Armstrong@ghd com	WO #:			
Project Name: MidAmerican WSEC CCR Monofill Monitoring	Eurofins Project #: 31017236			
Project Number: 12592594 DEL.001	SSOW#: 12592594-002			

Analysis Requested

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, Z - other (specify)
Other:

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)	6020 Boron and Calcium	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH	Rad226/Rad228/Rad228/228 combined	6020A CCR Metals List, 7470A Mercury	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH					Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N	D	D	N	N	N						
MW244-GW-1024	10/2/24	1805	G	W	N	N	X	X	X	X										3	
MW245-GW-1024	10/2/24	1710	G	W	N	Y	X	X	X	X										9	
MW246-GW-1024	10/3/24	1010	G	W	N	N	X	X	X	X										3	
MW247-GW-1024	10/3/24	1035	G	W	N	N	X	X	X	X										3	
MW248-GW-1024	10/3/24	1115	G	W	N	N	X	X	X	X										3	
MW250-GW-1024	10/2/24	1520	G	W	N	N	X	X	X	X										3	
DP03-GW-1024	10/2/24	—	G	W	N	N	X	X	X	X										3	
DP04-GW-1024	10/2/24	—	G	W	N	N	X	X	X	X										3	
MW156D-GW-1024	10/3/24	1240	G	W	N	N					X	X	X	X	X					5	
MW227D-GW-1024	10/2/24	1720	G	W	N	N					X	X	X	X	X					5	

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements. Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	Paige Richards	10/4/24 1030	GHD			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/4/24 1630	Company

Custody Seals Intact: △ Yes △ No
Custody Seal No.
Cooler Temperature(s) °C and Other Remarks:

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11/7/2024

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

TestAmerica Des Moines SC
214

Chain of Custody Record

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s):	COC No:
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 1 of 2
Company: GHD Services Inc.				Job #:

Address: 11228 Aurora Avenue	Due Date Requested:
City: Des Moines	TAT Requested (days): Standard
State, Zip: IA, 50322-7905	
Phone: 515-414-3935	PO #: 340-016858
Email: Kevin.Armstrong@ghd.com	WO #:
Project Name: MidAmerican WSEC CCR Monofill Monitoring	Eurofins Project #: 31017236
Project Number: 12592594 DEL.001	SSOW#: 12592594-002

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	6020 Boron and Calcium	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N	N		
MW105-GW-1024	10/2/24	1325	G	W	N	N	X	X	X	X	3	
MW108-GW-1024	10/2/24	1355	G	W	N		X	X	X	X	3	
MW133-GW-1024	10/2/24	1500	G	W	N		X	X	X	X	3	
MW156-GW-1024	10/3/24	1200	G	W	N		X	X	X	X	3	
MW157-GW-1024	10/3/24	0745	G	W	N		X	X	X	X	3	
MW158-GW-1024	10/3/24	0810	G	W	N		X	X	X	X	3	
MW159-GW-1024	10/3/24	0835	G	W	N		X	X	X	X	3	
MW190-GW-1024	10/3/24	0905	G	W	N		X	X	X	X	3	
MW191-GW-1024	10/3/24	0935	G	W	N		X	X	X	X	3	
MW227-GW-1024	10/2/24	1745	G	W	N		X	X	X	X	3	
MW240R-GW-1024	10/2/24	~~1720~~ 1035	G	W	N		X	X	X	X	3	

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements. Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Paige Richards	10/4/24 1030	GHD			
2						
3					10/5/24 1630	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

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11/4/2024

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-292105-1

Login Number: 292105
List Number: 1
Creator: Bunker, Xavier M

List Source: Eurofins Cedar Falls

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.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: GHD Services Inc.
Job ID: 310-292105-1
Project/Site: MidAmerican WSEC CCR Monofill Monitoring

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
310-292105-20	MW156D-GW-1024	84.3
310-292105-21	MW227D-GW-1024	96.9
LCS 160-682845/2-A	Lab Control Sample	86.3
MB 160-682845/1-A	Method Blank	84.8

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-292105-20	MW156D-GW-1024	84.3	72.9
310-292105-21	MW227D-GW-1024	96.9	78.9
LCS 160-682846/2-A	Lab Control Sample	86.3	76.3
MB 160-682846/1-A	Method Blank	84.8	89.3

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 11/4/2024 4:18:32 PM

JOB DESCRIPTION

MidAmerican WSEC CCR Background

JOB NUMBER

310-292116-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Eurofins Cedar Falls

Job Notes

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

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

Authorization

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11/4/2024 4:18:32 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

Table of Contents

Job ID: 310-292116-1 Eurofins Cedar Falls

Job Narrative
310-292116-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

Receipt
The samples were received on 10/4/2024 4:30 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 time was 2.1°C.

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: TW1-GW-1024 (310-292116-1), TW2-GW-1024 (310-292116-2) and MW307-GW-1024 (310-292116-3). Elevated reporting limits (RLs) are provided.

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

Metals
Method 6020B: The continuing calibration blank (CCB) for analytical batch 310-436228 contained Barium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6020B: The continuing calibration verification (CCV) associated with batch 310-436697 recovered above the upper control limit for Thallium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

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

Job ID: 310-292116-2 Eurofins Cedar Falls

Job Narrative
310-292116-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

Receipt
The samples were received on 10/4/2024 4:30 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 time was 2.1°C.

Gas Flow Proportional Counter
Method 9320_Ra228: Radium 228 batch 682846
The detection goal was not met for the following sample due to the reduced sample volume attributed to the presence of matrix interferences: TW2-GW-1024 (310-292116-2). Analytical results are reported with the detection limit achieved.

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

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

Sample Summary

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-292116-1	TW1-GW-1024	Water	10/03/24 13:45	10/04/24 16:30
310-292116-2	TW2-GW-1024	Water	10/03/24 15:30	10/04/24 16:30
310-292116-3	MW307-GW-1024	Water	10/03/24 14:30	10/04/24 16:30

Detection Summary

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW1-GW-1024
Lab Sample ID: 310-292116-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	25.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	386		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0235		0.00200		mg/L	1		6020B	Total/NA
Barium	0.297		0.00200		mg/L	1		6020B	Total/NA
Boron	0.201		0.100		mg/L	1		6020B	Total/NA
Calcium	241		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000913		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0581		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00761		0.00200		mg/L	1		6020B	Total/NA
Thallium	0.00157		0.00100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1190		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: TW2-GW-1024
Lab Sample ID: 310-292116-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	20.9		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0778		0.00200		mg/L	1		6020B	Total/NA
Barium	0.218	^2	0.00200		mg/L	1		6020B	Total/NA
Boron	0.330		0.100		mg/L	1		6020B	Total/NA
Calcium	156		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0702		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00217		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	768		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW307-GW-1024
Lab Sample ID: 310-292116-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	97.0		5.00		mg/L	5		9056A	Total/NA
Barium	0.282	^2	0.00200		mg/L	1		6020B	Total/NA
Boron	0.169		0.100		mg/L	1		6020B	Total/NA
Calcium	130		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0779		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	532		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW1-GW-1024
Lab Sample ID: 310-292116-1
Date Collected: 10/03/24 13:45
Matrix: Water
Date Received: 10/04/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**25.1**		5.00		mg/L			10/10/24 21:52	5
Fluoride	<1.00		1.00		mg/L			10/10/24 21:52	5
Sulfate	**386**		5.00		mg/L			10/10/24 21:52	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:46	1
Arsenic	**0.0235**		0.00200		mg/L		10/10/24 09:30	10/11/24 18:46	1
Barium	**0.297**		0.00200		mg/L		10/10/24 09:30	10/11/24 18:46	1
Beryllium	<0.00100		0.00100		mg/L		10/10/24 09:30	10/14/24 14:58	1
Boron	**0.201**		0.100		mg/L		10/10/24 09:30	10/17/24 12:52	1
Cadmium	<0.000200		0.000200		mg/L		10/10/24 09:30	10/11/24 18:46	1
Calcium	**241**		0.500		mg/L		10/10/24 09:30	10/11/24 18:46	1
Chromium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:46	1
Cobalt	**0.000913**		0.000500		mg/L		10/10/24 09:30	10/11/24 18:46	1
Lithium	**0.0581**		0.0100		mg/L		10/10/24 09:30	10/14/24 14:58	1
Lead	<0.000500		0.000500		mg/L		10/10/24 09:30	10/11/24 18:46	1
Molybdenum	**0.00761**		0.00200		mg/L		10/10/24 09:30	10/11/24 18:46	1
Selenium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:46	1
Thallium	**0.00157**		0.00100		mg/L		10/10/24 09:30	10/17/24 12:52	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/12/24 10:55	10/14/24 11:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1190**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			10/04/24 17:47	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.324**		0.162	0.165	1.00	0.209	pCi/L	10/09/24 08:16	11/01/24 07:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.9*		*30 - 110*	*10/09/24 08:16*	*11/01/24 07:48*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.93**		0.670	0.693	1.00	0.818	pCi/L	10/09/24 08:23	10/25/24 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*89.9*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:52*	*1*
Y Carrier	*74.8*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:52*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW1-GW-1024
Lab Sample ID: 310-292116-1
Date Collected: 10/03/24 13:45
Matrix: Water
Date Received: 10/04/24 16:30

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.25		0.689	0.712	5.00	0.818	pCi/L		11/04/24 13:02	1

Client Sample ID: TW2-GW-1024 — Lab Sample ID: 310-292116-2

Date Collected: 10/03/24 15:30 — **Matrix: Water**
Date Received: 10/04/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**19.3**		5.00		mg/L			10/10/24 22:04	5
Fluoride	<1.00		1.00		mg/L			10/10/24 22:04	5
Sulfate	**20.9**		5.00		mg/L			10/10/24 22:04	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:48	1
Arsenic	**0.0778**		0.00200		mg/L		10/10/24 09:30	10/11/24 18:48	1
Barium	**0.218**	**^2**	0.00200		mg/L		10/10/24 09:30	10/14/24 15:01	1
Beryllium	<0.00100		0.00100		mg/L		10/10/24 09:30	10/14/24 15:01	1
Boron	**0.330**		0.100		mg/L		10/10/24 09:30	10/17/24 12:54	1
Cadmium	<0.000200		0.000200		mg/L		10/10/24 09:30	10/11/24 18:48	1
Calcium	**156**		0.500		mg/L		10/10/24 09:30	10/11/24 18:48	1
Chromium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:48	1
Cobalt	<0.000500		0.000500		mg/L		10/10/24 09:30	10/11/24 18:48	1
Lithium	**0.0702**		0.0100		mg/L		10/10/24 09:30	10/14/24 15:01	1
Lead	<0.000500		0.000500		mg/L		10/10/24 09:30	10/11/24 18:48	1
Molybdenum	**0.00217**		0.00200		mg/L		10/10/24 09:30	10/11/24 18:48	1
Selenium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:48	1
Thallium	<0.00100		0.00100		mg/L		10/10/24 09:30	10/17/24 12:54	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/12/24 10:55	10/14/24 11:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**768**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.2**	**HF**	1.0		SU			10/04/24 17:46	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.292**		0.195	0.197	1.00	0.269	pCi/L	10/09/24 08:16	11/01/24 07:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*75.8*		*30 - 110*	*10/09/24 08:16*	*11/01/24 07:46*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**2.71**	**G**	1.04	1.07	1.00	1.31	pCi/L	10/09/24 08:23	10/25/24 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*75.8*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:48*	*1*
Y Carrier	*79.3*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:48*	*1*

Client Sample Results

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW2-GW-1024
Lab Sample ID: 310-292116-2

Date Collected: 10/03/24 15:30
Matrix: Water
Date Received: 10/04/24 16:30

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.00		1.06	1.09	5.00	1.31	pCi/L		11/04/24 13:02	1

Client Sample ID: MW307-GW-1024 Lab Sample ID: 310-292116-3

Date Collected: 10/03/24 14:30 **Matrix: Water**
Date Received: 10/04/24 16:30

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/10/24 22:17	5
Fluoride	<1.00		1.00		mg/L			10/10/24 22:17	5
Sulfate	**97.0**		5.00		mg/L			10/10/24 22:17	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/10/24 09:30	10/17/24 13:05	1
Arsenic	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:50	1
Barium	**0.282**	**^2**	0.00200		mg/L		10/10/24 09:30	10/14/24 15:05	1
Beryllium	<0.00100		0.00100		mg/L		10/10/24 09:30	10/14/24 15:05	1
Boron	**0.169**		0.100		mg/L		10/10/24 09:30	10/17/24 13:05	1
Cadmium	<0.000200		0.000200		mg/L		10/10/24 09:30	10/14/24 15:05	1
Calcium	**130**		0.500		mg/L		10/10/24 09:30	10/11/24 18:50	1
Chromium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:50	1
Cobalt	<0.000500		0.000500		mg/L		10/10/24 09:30	10/11/24 18:50	1
Lithium	**0.0779**		0.0100		mg/L		10/10/24 09:30	10/14/24 15:05	1
Lead	<0.000500		0.000500		mg/L		10/10/24 09:30	10/14/24 15:05	1
Molybdenum	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:50	1
Selenium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:50	1
Thallium	<0.00100	^+	0.00100		mg/L		10/10/24 09:30	10/17/24 13:05	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/12/24 10:55	10/14/24 11:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**532**		50.0		mg/L			10/08/24 16:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.1**	**HF**	1.0		SU			10/04/24 17:48	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.196**		0.0987	0.100	1.00	0.119	pCi/L	10/09/24 08:16	11/01/24 07:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*87.6*		*30 - 110*	*10/09/24 08:16*	*11/01/24 07:46*	*1*

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.704	U	0.427	0.428	1.00	0.704	pCi/L	10/09/24 08:23	10/25/24 11:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*87.6*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:49*	*1*
Y Carrier	*68.8*		*30 - 110*	*10/09/24 08:23*	*10/25/24 11:49*	*1*

Client Sample Results

Client: GHD Services Inc.
Project/Site: MidAmerican WSEC CCR Background

Job ID: 310-292116-1

Client Sample ID: MW307-GW-1024

Date Collected: 10/03/24 14:30
Date Received: 10/04/24 16:30

Lab Sample ID: 310-292116-3

Matrix: Water

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	<0.704	U	0.438	0.440	5.00	0.704	pCi/L		11/04/24 13:02	1

Definitions/Glossary

Client: GHD Services Inc. Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-435999/3
Matrix: Water
Analysis Batch: 435999

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/10/24 17:29	1
Fluoride	<0.200		0.200		mg/L			10/10/24 17:29	1
Sulfate	<1.00		1.00		mg/L			10/10/24 17:29	1

Lab Sample ID: LCS 310-435999/4
Matrix: Water
Analysis Batch: 435999

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.885		mg/L		99	90 - 110
Fluoride	2.00	2.049		mg/L		102	90 - 110
Sulfate	10.0	10.50		mg/L		105	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-435735/1-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:16	1
Arsenic	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:16	1
Barium	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:16	1
Boron	<0.100		0.100		mg/L		10/10/24 09:30	10/11/24 18:16	1
Cadmium	<0.000200		0.000200		mg/L		10/10/24 09:30	10/11/24 18:16	1
Calcium	<0.500		0.500		mg/L		10/10/24 09:30	10/11/24 18:16	1
Chromium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:16	1
Cobalt	<0.000500		0.000500		mg/L		10/10/24 09:30	10/11/24 18:16	1
Lead	<0.000500		0.000500		mg/L		10/10/24 09:30	10/11/24 18:16	1
Molybdenum	<0.00200		0.00200		mg/L		10/10/24 09:30	10/11/24 18:16	1
Selenium	<0.00500		0.00500		mg/L		10/10/24 09:30	10/11/24 18:16	1

Lab Sample ID: MB 310-435735/1-A
Matrix: Water
Analysis Batch: 436228

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.00100		0.00100		mg/L		10/10/24 09:30	10/14/24 14:39	1
Lithium	<0.0100		0.0100		mg/L		10/10/24 09:30	10/14/24 14:39	1

Lab Sample ID: MB 310-435735/1-A
Matrix: Water
Analysis Batch: 436697

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.00100		0.00100		mg/L		10/10/24 09:30	10/17/24 12:41	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-435735/2-A
Matrix: Water
Analysis Batch: 436085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2234		mg/L		112	80 - 120
Arsenic	0.200	0.2126		mg/L		106	80 - 120
Barium	0.100	0.1018		mg/L		102	80 - 120
Cadmium	0.100	0.1010		mg/L		101	80 - 120
Calcium	2.00	1.809		mg/L		90	80 - 120
Chromium	0.100	0.1049		mg/L		105	80 - 120
Cobalt	0.100	0.1132		mg/L		113	80 - 120
Lead	0.200	0.2119		mg/L		106	80 - 120
Molybdenum	0.200	0.2073		mg/L		104	80 - 120
Selenium	0.400	0.4020		mg/L		101	80 - 120

Lab Sample ID: LCS 310-435735/2-A
Matrix: Water
Analysis Batch: 436228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	0.100	0.09166		mg/L		92	80 - 120
Lithium	0.200	0.2029		mg/L		101	80 - 120

Lab Sample ID: LCS 310-435735/2-A
Matrix: Water
Analysis Batch: 436697

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.200	0.1892		mg/L		95	80 - 120
Thallium	0.100	0.08193		mg/L		82	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-436039/1-A
Matrix: Water
Analysis Batch: 436171

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436039

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/12/24 10:55	10/14/24 10:35	1

Lab Sample ID: LCS 310-436039/2-A
Matrix: Water
Analysis Batch: 436171

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436039

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001740		mg/L		104	80 - 120

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

Lab Sample ID: MB 310-435588/1
Matrix: Water
Analysis Batch: 435588

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			10/08/24 16:50	1

Lab Sample ID: LCS 310-435588/2
Matrix: Water
Analysis Batch: 435588

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1030		mg/L		103	88 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-435322/28
Matrix: Water
Analysis Batch: 435322

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.1		SU		101	98 - 102

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-682845/1-A
Matrix: Water
Analysis Batch: 686242

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682845

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.122	U	0.0718	0.0719	1.00	0.122	pCi/L	10/09/24 08:16	11/01/24 07:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Barium	*84.8*		*30 - 110*	*10/09/24 08:16*	*11/01/24 07:48*	*1*

Lab Sample ID: LCS 160-682845/2-A
Matrix: Water
Analysis Batch: 686242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 682845

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	9.58	9.438		1.04	1.00	0.154	pCi/L	99	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Barium	*86.3*		*30 - 110*

Lab Sample ID: 310-292116-1 DU
Matrix: Water
Analysis Batch: 686243

Client Sample ID: TW1-GW-1024
Prep Type: Total/NA
Prep Batch: 682845

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.324		0.4427		0.178	1.00	0.199	pCi/L	0.35	1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 310-292116-1 DU
Matrix: Water
Analysis Batch: 686243

Client Sample ID: TW1-GW-1024
Prep Type: Total/NA
Prep Batch: 682845

Carrier	DU %Yield	DU Qualifier	Limits
Barium	80.4		30 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-682846/1-A
Matrix: Water
Analysis Batch: 685112

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 682846

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.8104		0.398	0.405	1.00	0.550	pCi/L	10/09/24 08:23	10/25/24 11:52	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	84.8		30 - 110	10/09/24 08:23	10/25/24 11:52	1
Y Carrier	89.3		30 - 110	10/09/24 08:23	10/25/24 11:52	1

Lab Sample ID: LCS 160-682846/2-A
Matrix: Water
Analysis Batch: 685112

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 682846

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.40	9.467		1.35	1.00	0.591	pCi/L	113	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	86.3		30 - 110
Y Carrier	76.3		30 - 110

Lab Sample ID: 310-292116-1 DU
Matrix: Water
Analysis Batch: 685112

Client Sample ID: TW1-GW-1024
Prep Type: Total/NA
Prep Batch: 682846

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	1.93			3.512		0.895	1.00	0.839	pCi/L			1.0	1

Carrier	DU %Yield	DU Qualifier	Limits
Barium	80.4		30 - 110
Y Carrier	78.1		30 - 110

HPLC/IC

Analysis Batch: 435999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	9056A	
310-292116-2	TW2-GW-1024	Total/NA	Water	9056A	
310-292116-3	MW307-GW-1024	Total/NA	Water	9056A	
MB 310-435999/3	Method Blank	Total/NA	Water	9056A	
LCS 310-435999/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 435735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	3005A	
310-292116-2	TW2-GW-1024	Total/NA	Water	3005A	
310-292116-3	MW307-GW-1024	Total/NA	Water	3005A	
MB 310-435735/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 436039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	7470A	
310-292116-2	TW2-GW-1024	Total/NA	Water	7470A	
310-292116-3	MW307-GW-1024	Total/NA	Water	7470A	
MB 310-436039/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-436039/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 436085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	6020B	435735
310-292116-2	TW2-GW-1024	Total/NA	Water	6020B	435735
310-292116-3	MW307-GW-1024	Total/NA	Water	6020B	435735
MB 310-435735/1-A	Method Blank	Total/NA	Water	6020B	435735
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	6020B	435735

Analysis Batch: 436171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	7470A	436039
310-292116-2	TW2-GW-1024	Total/NA	Water	7470A	436039
310-292116-3	MW307-GW-1024	Total/NA	Water	7470A	436039
MB 310-436039/1-A	Method Blank	Total/NA	Water	7470A	436039
LCS 310-436039/2-A	Lab Control Sample	Total/NA	Water	7470A	436039

Analysis Batch: 436228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	6020B	435735
310-292116-2	TW2-GW-1024	Total/NA	Water	6020B	435735
310-292116-3	MW307-GW-1024	Total/NA	Water	6020B	435735
MB 310-435735/1-A	Method Blank	Total/NA	Water	6020B	435735
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	6020B	435735

Analysis Batch: 436697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	6020B	435735

Metals (Continued)

Analysis Batch: 436697 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-2	TW2-GW-1024	Total/NA	Water	6020B	435735
310-292116-3	MW307-GW-1024	Total/NA	Water	6020B	435735
MB 310-435735/1-A	Method Blank	Total/NA	Water	6020B	435735
LCS 310-435735/2-A	Lab Control Sample	Total/NA	Water	6020B	435735

General Chemistry

Analysis Batch: 435322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292116-2	TW2-GW-1024	Total/NA	Water	SM 4500 H+ B	
310-292116-3	MW307-GW-1024	Total/NA	Water	SM 4500 H+ B	
LCS 310-435322/28	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 435588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	SM 2540C	
310-292116-2	TW2-GW-1024	Total/NA	Water	SM 2540C	
310-292116-3	MW307-GW-1024	Total/NA	Water	SM 2540C	
MB 310-435588/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-435588/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 682845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	PrecSep-21	
310-292116-2	TW2-GW-1024	Total/NA	Water	PrecSep-21	
310-292116-3	MW307-GW-1024	Total/NA	Water	PrecSep-21	
MB 160-682845/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-682845/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-292116-1 DU	TW1-GW-1024	Total/NA	Water	PrecSep-21	

Prep Batch: 682846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-292116-1	TW1-GW-1024	Total/NA	Water	PrecSep_0	
310-292116-2	TW2-GW-1024	Total/NA	Water	PrecSep_0	
310-292116-3	MW307-GW-1024	Total/NA	Water	PrecSep_0	
MB 160-682846/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-682846/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-292116-1 DU	TW1-GW-1024	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: TW1-GW-1024
Lab Sample ID: 310-292116-1
Date Collected: 10/03/24 13:45
Matrix: Water
Date Received: 10/04/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	435999	HE7K	EET CF	10/10/24 21:52
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 14:58
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 18:46
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436697	NFT2	EET CF	10/17/24 12:52
Total/NA	Prep	7470A			436039	QTZ5	EET CF	10/12/24 10:55
Total/NA	Analysis	7470A		1	436171	QTZ5	EET CF	10/14/24 11:26
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:47
Total/NA	Prep	PrecSep-21			682845	BCE	EET SL	10/09/24 08:16
Total/NA	Analysis	9315		1	686242	SWS	EET SL	11/01/24 07:48
Total/NA	Prep	PrecSep_0			682846	BCE	EET SL	10/09/24 08:23
Total/NA	Analysis	9320		1	685112	SWS	EET SL	10/25/24 11:52
Total/NA	Analysis	Ra226_Ra228		1	686788	FLC	EET SL	11/04/24 13:02

Client Sample ID: TW2-GW-1024
Lab Sample ID: 310-292116-2
Date Collected: 10/03/24 15:30
Matrix: Water
Date Received: 10/04/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	435999	HE7K	EET CF	10/10/24 22:04
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 15:01
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 18:48
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436697	NFT2	EET CF	10/17/24 12:54
Total/NA	Prep	7470A			436039	QTZ5	EET CF	10/12/24 10:55
Total/NA	Analysis	7470A		1	436171	QTZ5	EET CF	10/14/24 11:28
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:46
Total/NA	Prep	PrecSep-21			682845	BCE	EET SL	10/09/24 08:16
Total/NA	Analysis	9315		1	686243	SWS	EET SL	11/01/24 07:46
Total/NA	Prep	PrecSep_0			682846	BCE	EET SL	10/09/24 08:23
Total/NA	Analysis	9320		1	685112	SWS	EET SL	10/25/24 11:48
Total/NA	Analysis	Ra226_Ra228		1	686788	FLC	EET SL	11/04/24 13:02

Lab Chronicle

Client: GHD Services Inc. Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Client Sample ID: MW307-GW-1024 Lab Sample ID: 310-292116-3

Date Collected: 10/03/24 14:30 **Matrix: Water**
Date Received: 10/04/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	435999	HE7K	EET CF	10/10/24 22:17
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436228	A6US	EET CF	10/14/24 15:05
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436085	A6US	EET CF	10/11/24 18:50
Total/NA	Prep	3005A			435735	F5MW	EET CF	10/10/24 09:30
Total/NA	Analysis	6020B		1	436697	NFT2	EET CF	10/17/24 13:05
Total/NA	Prep	7470A			436039	QTZ5	EET CF	10/12/24 10:55
Total/NA	Analysis	7470A		1	436171	QTZ5	EET CF	10/14/24 11:31
Total/NA	Analysis	SM 2540C		1	435588	MDU9	EET CF	10/08/24 16:50
Total/NA	Analysis	SM 4500 H+ B		1	435322	A3GU	EET CF	10/04/24 17:48
Total/NA	Prep	PrecSep-21			682845	BCE	EET SL	10/09/24 08:16
Total/NA	Analysis	9315		1	686243	SWS	EET SL	11/01/24 07:46
Total/NA	Prep	PrecSep_0			682846	BCE	EET SL	10/09/24 08:23
Total/NA	Analysis	9320		1	685112	SWS	EET SL	10/25/24 11:49
Total/NA	Analysis	Ra226_Ra228		1	686788	FLC	EET SL	11/04/24 13:02

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: GHD Services Inc. Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-25
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-25
HI - RadChem Recognition	State	n/a	06-30-25
Illinois	NELAP	200023	11-30-25
Iowa	State	373	12-01-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-25
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-25
Massachusetts	State	M-MO054	06-30-25
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-25
New Jersey	NELAP	MO002	06-30-25
New Mexico	State	MO00054	06-30-25
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-25
North Dakota	State	R-207	12-31-24
Oregon	NELAP	4157	09-01-25
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-25
Texas	NELAP	T104704193	07-31-25
US Fish & Wildlife	US Federal Programs	058448	07-31-25
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-25
Virginia	NELAP	460230	06-14-25
Washington	State	C592	08-30-25
West Virginia DEP	State	381	10-31-25

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

Method Summary

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

eurofins | Environment Testing America

310-292116 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD Services

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10.4.24 | TIME 1630 | Received By: CGC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.1 | Corrected Temp (°C): 2.1

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Test America Des Moines SC
21-

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s):	COC No:
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 1 of 1
Company: GHD Services Inc.				Job #:

Analysis Requested

Address: 11228 Aurora Avenue	Due Date Requested:		
City: Des Moines	TAT Requested (days): Standard		
State, Zip: IA, 50322-7905			
Phone: 515-414-3935	PO #: 340-016858		
Email: Kevin.Armstrong@ghd.com	WO #:		
Project Name: MidAmerican WSEC CCR Background	Eurofins Project #: 31017236		
Project Number: 12592594.DEL.001	SSOW#: 12592594-002		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	Rad226/Rad228/Rad226/228 combined	6020A CCR Metals List, 7470A Mercury	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	N		
TW1-GW-1024	10/3/24	1345	G	W	N	N	X	X	X	X	X	5	
TW2-GW-1024	10/3/24	1530	G	W	N	N	X	X	X	X	X	5	
~~MW34-GW-1024~~			G	W	N		X	X	X	X	X		
MW307-GW-1024	10/3/24	1430	G	W	N	N	X	X	X	X	X	5	
~~MW307D-GW-1024~~			G	W	N		X	X	X	X	X		

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements. Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Paige Richards	10/4/24 1030	GHD	CGC	10.4.24 1630	Eurofins
2						
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks:

11/4/2024

eurofins | Environment Testing America

310-292116 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: GHD Services

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 10.4.24 | TIME 1630 | Received By: CGC

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☑ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: P | Correction Factor (°C): 0

Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.1 | Corrected Temp (°C): 2.1

Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Test America Des Moines SC
21-

Client Information	Sampler: Brooke Wasson / Paige Richards	Lab PM: Zach Bindert	Carrier Tracking No(s):	COC No:
Client Contact: Kevin Armstrong	Phone: 515-414-3933	E-Mail: Zach.Bindert@ET.EurofinsUS.com		Page: 1 of 1
Company: GHD Services Inc.				Job #:

Analysis Requested

Address: 11228 Aurora Avenue	Due Date Requested:		
City: Des Moines	TAT Requested (days): Standard		
State, Zip: IA, 50322-7905			
Phone: 515-414-3935	PO #: 340-016858		
Email: Kevin.Armstrong@ghd.com	WO #:		
Project Name: MidAmerican WSEC CCR Background	Eurofins Project #: 31017236		
Project Number: 12592594.DEL.001	SSOW#: 12592594-002		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	Rad226/Rad228/Rad226/228 combined	6020A CCR Metals List, 7470A Mercury	2540C TDS	9056A Chloride, Fluoride, Sulfate	SM4500_H+ pH	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N	N		
TW1-GW-1024	10/3/24	1345	G	W	N	N	X	X	X	X	X	5	
TW2-GW-1024	10/3/24	1530	G	W	N	N	X	X	X	X	X	5	
~~MW34-GW-1024~~			G	W	N		X	X	X	X	X		
MW307-GW-1024	10/3/24	1430	G	W	N	N	X	X	X	X	X	5	
~~MW307D-GW-1024~~			G	W	N		X	X	X	X	X		

Possible Hazard Identification
☐ 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 ■ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify)

Special Instructions/QC Requirements. Database Facility Code GD-MidAmerican-01723

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by: Paige Richards	10/4/24 1030	GHD	CGC	10.4.24 1630	Eurofins
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	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-292116-1

Login Number: 292116
List Number: 1
Creator: Collins, Charlotte G

List Source: Eurofins Cedar Falls

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.	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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: GHD Services Inc.
Job ID: 310-292116-1
Project/Site: MidAmerican WSEC CCR Background

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
310-292116-1	TW1-GW-1024	89.9
310-292116-1 DU	TW1-GW-1024	80.4
310-292116-2	TW2-GW-1024	75.8
310-292116-3	MW307-GW-1024	87.6
LCS 160-682845/2-A	Lab Control Sample	86.3
MB 160-682845/1-A	Method Blank	84.8

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

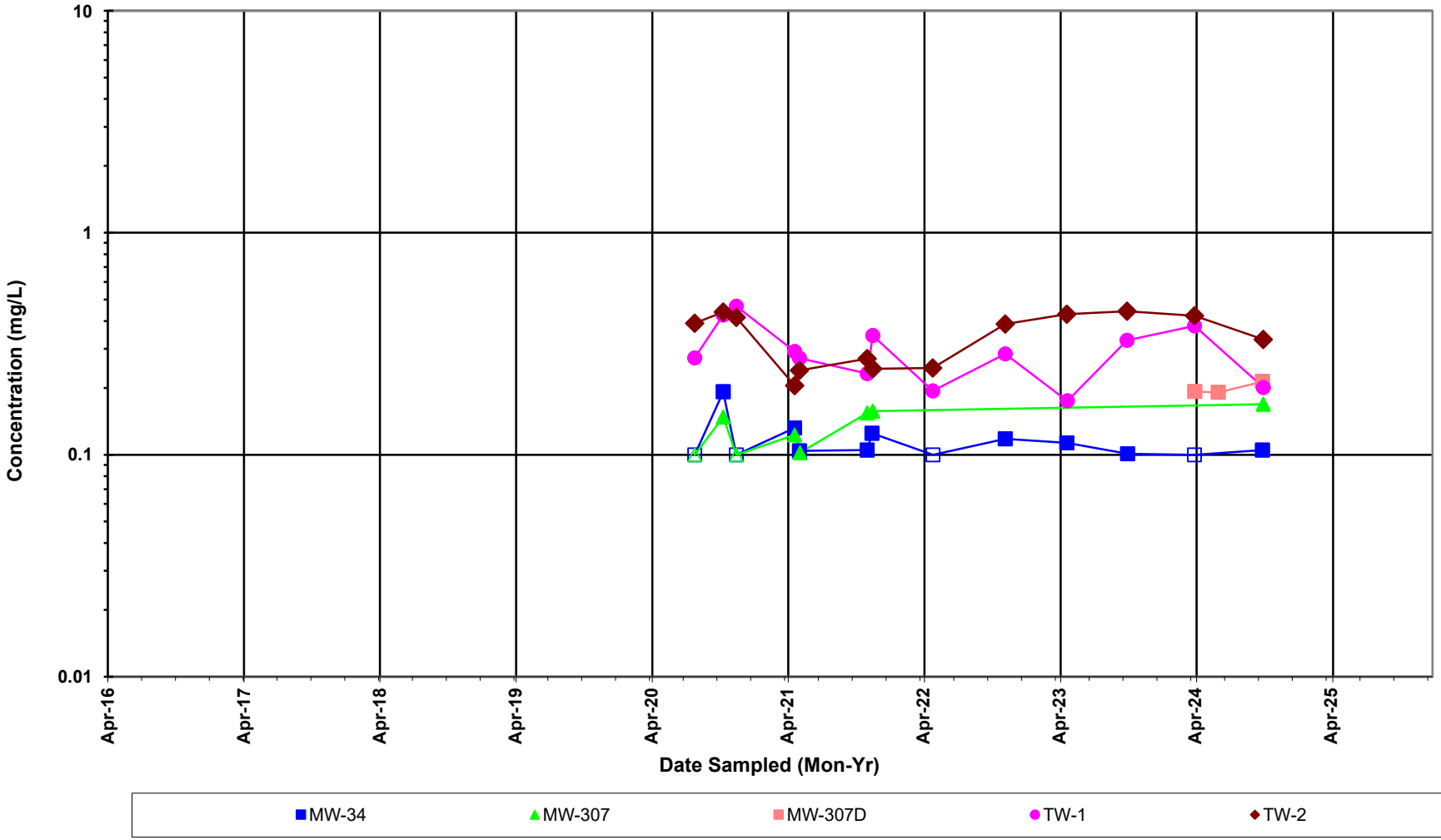
		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-292116-1	TW1-GW-1024	89.9	74.8
310-292116-1 DU	TW1-GW-1024	80.4	78.1
310-292116-2	TW2-GW-1024	75.8	79.3
310-292116-3	MW307-GW-1024	87.6	68.8
LCS 160-682846/2-A	Lab Control Sample	86.3	76.3
MB 160-682846/1-A	Method Blank	84.8	89.3

Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

Appendix D

Time Series Graphs



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

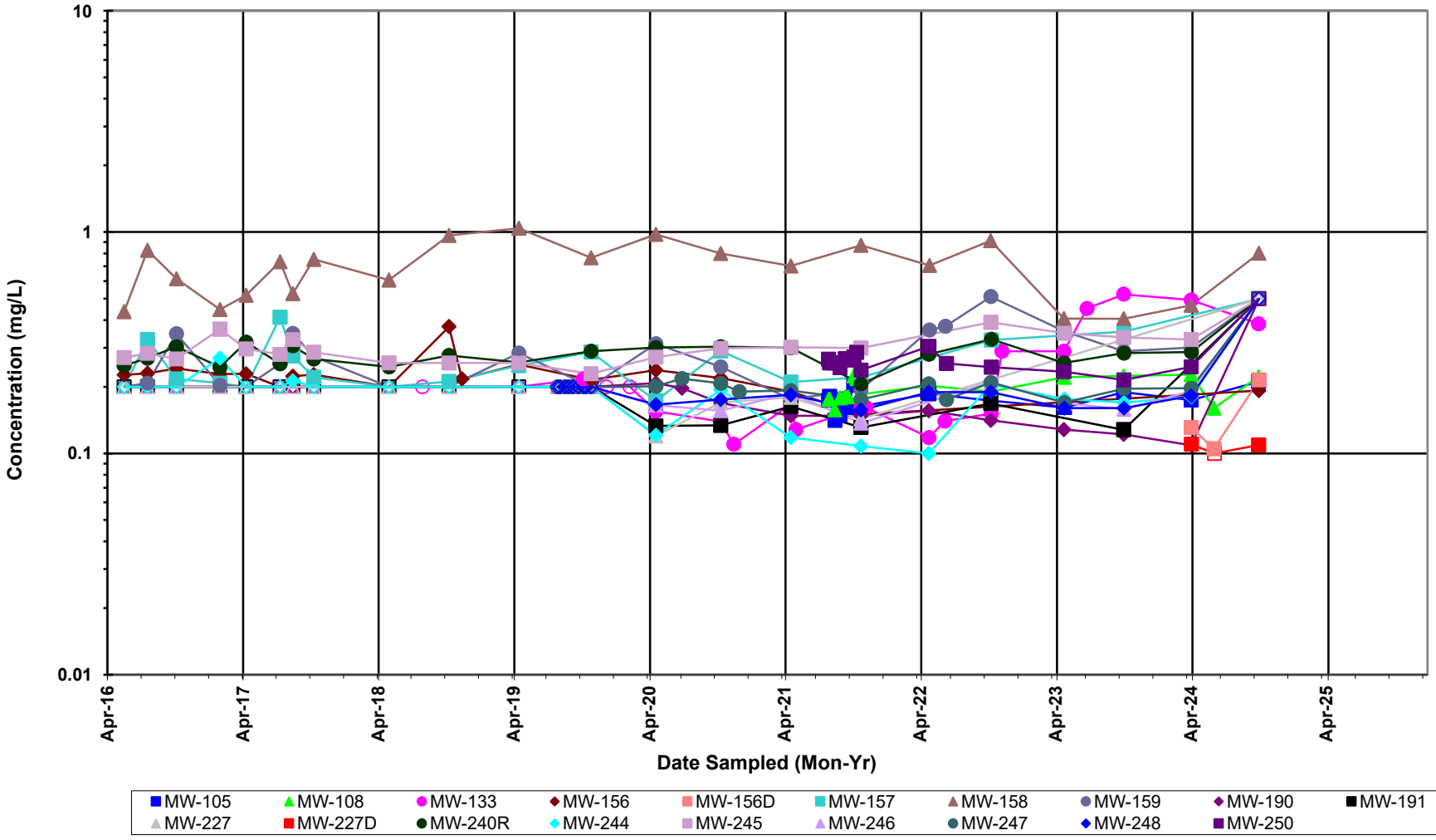
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 1A - BORON - BACKGROUND WELLS



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CCR MONOFILL

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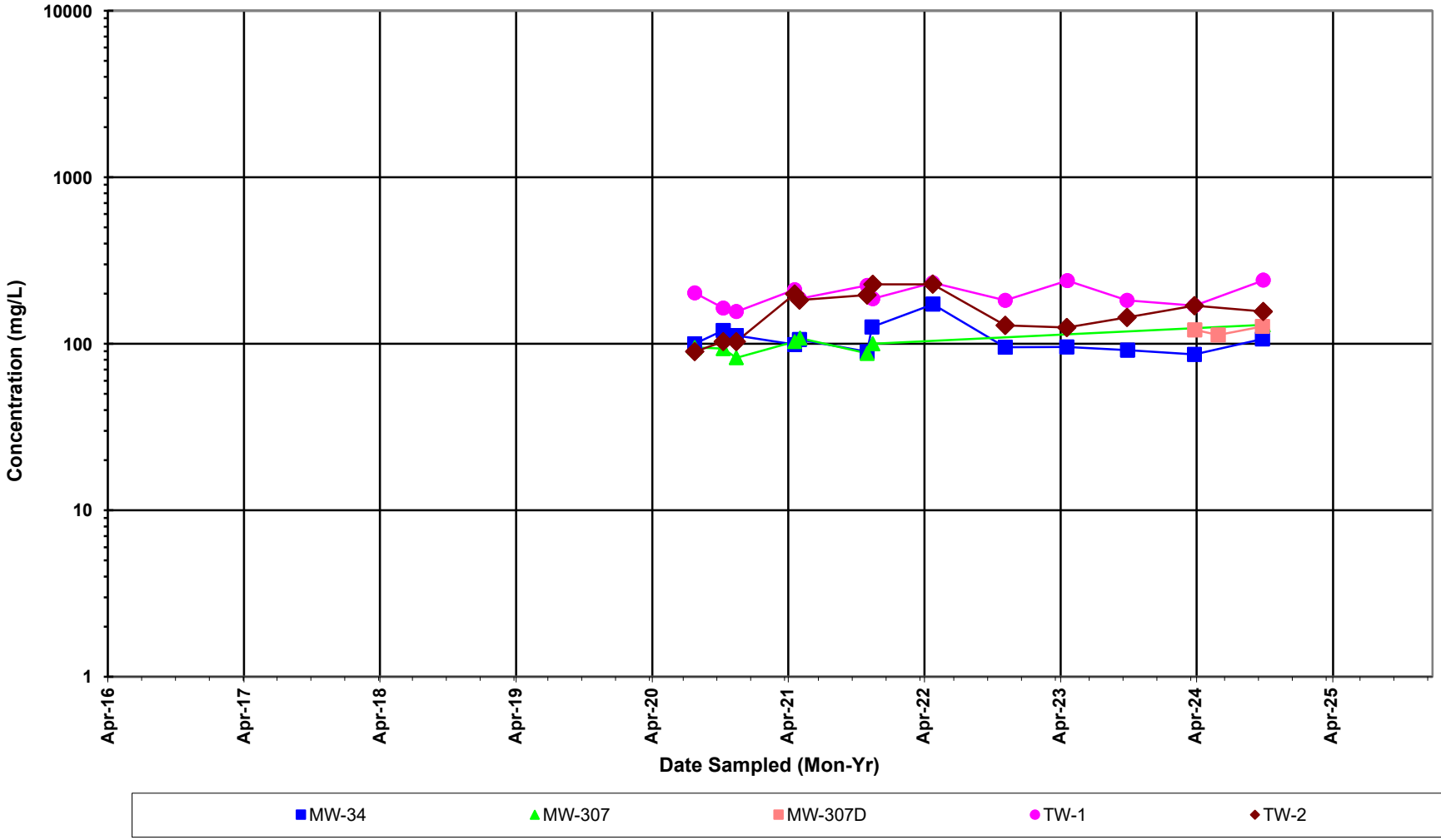
12592594

1/9/2025

FIGURE 1B - BORON - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

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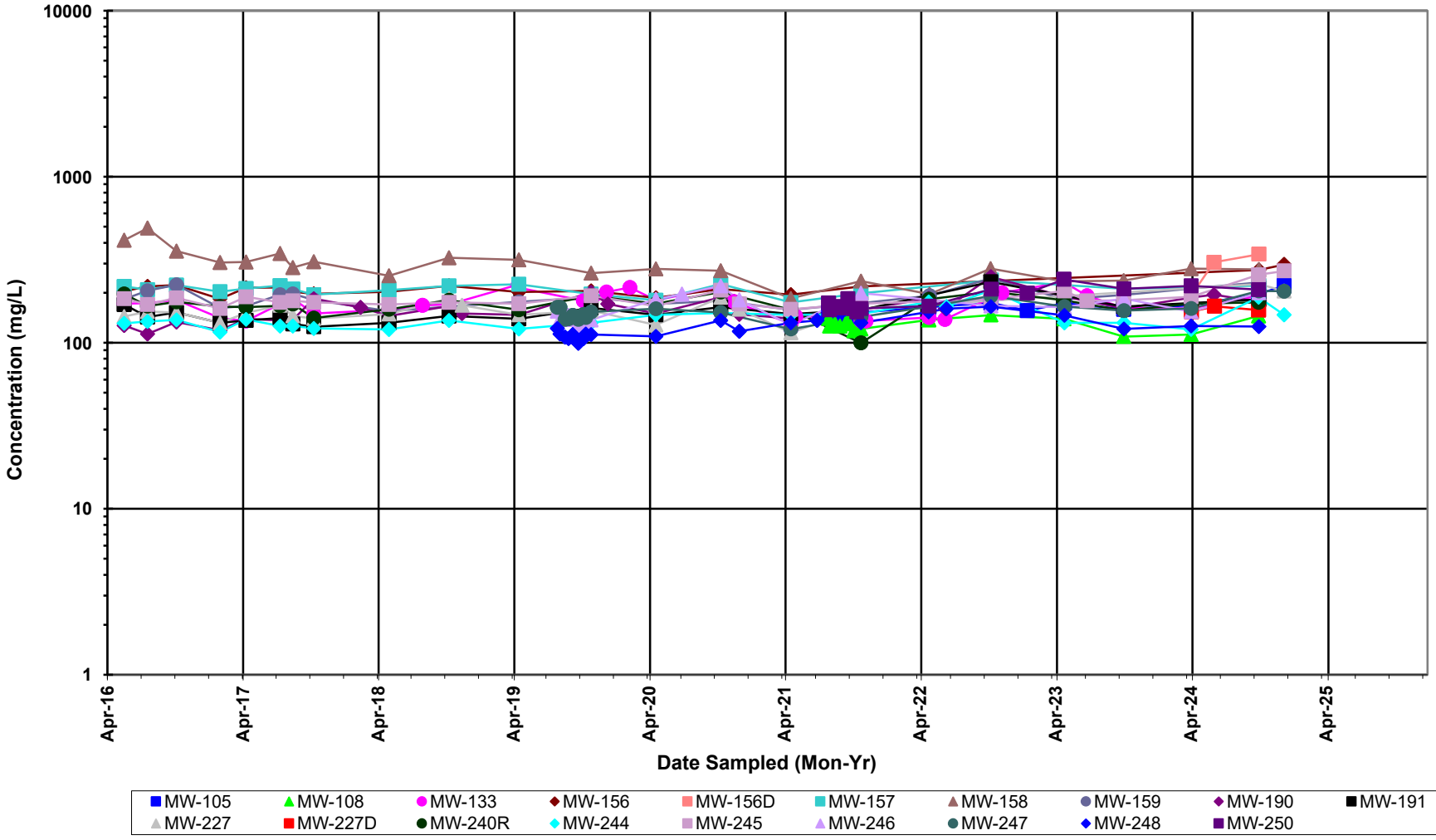
12592594

1/9/2025

FIGURE 2A - CALCIUM - BACKGROUND WELLS



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CCR MONOFILL

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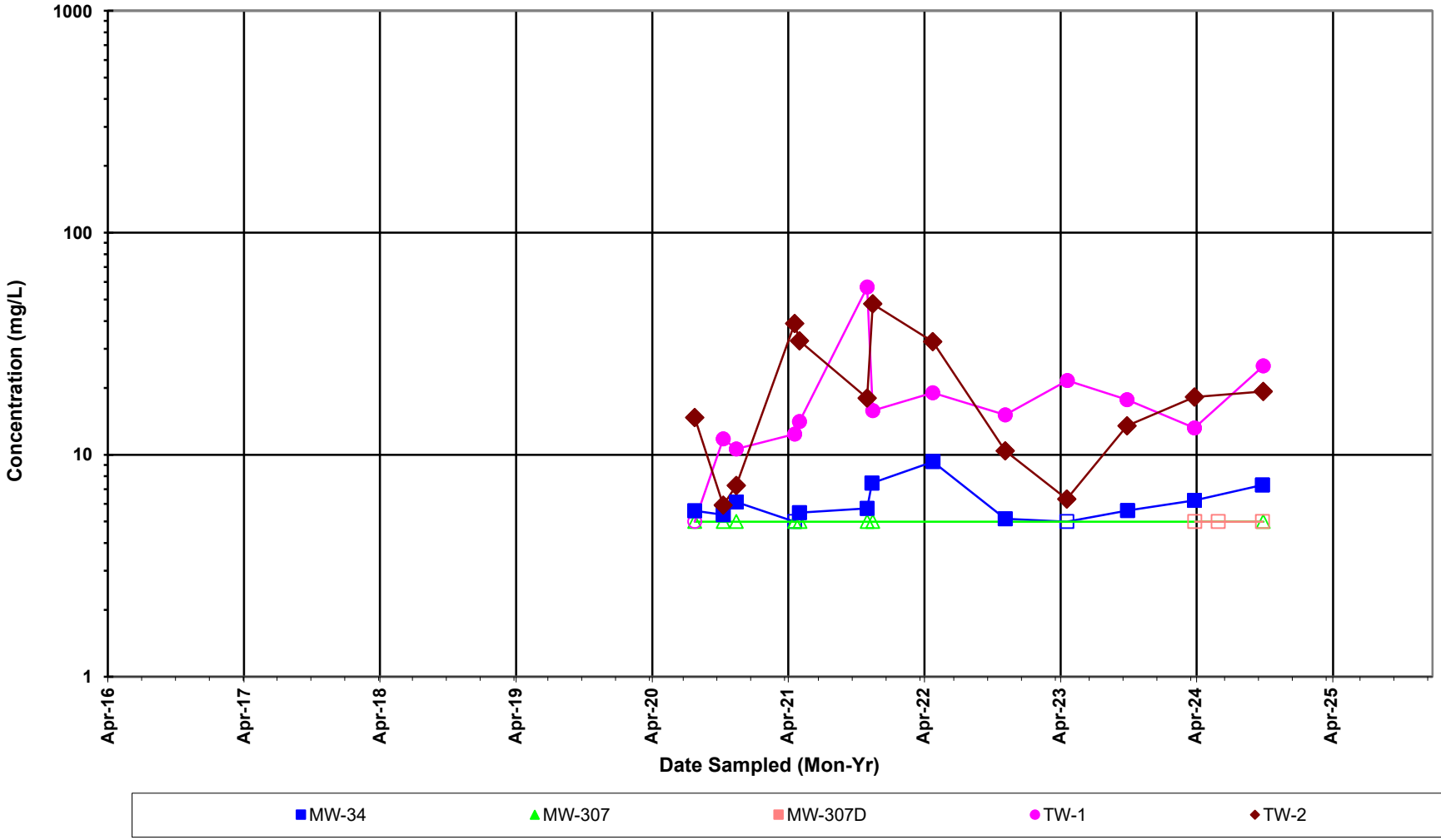
FIGURE 2B - CALCIUM - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

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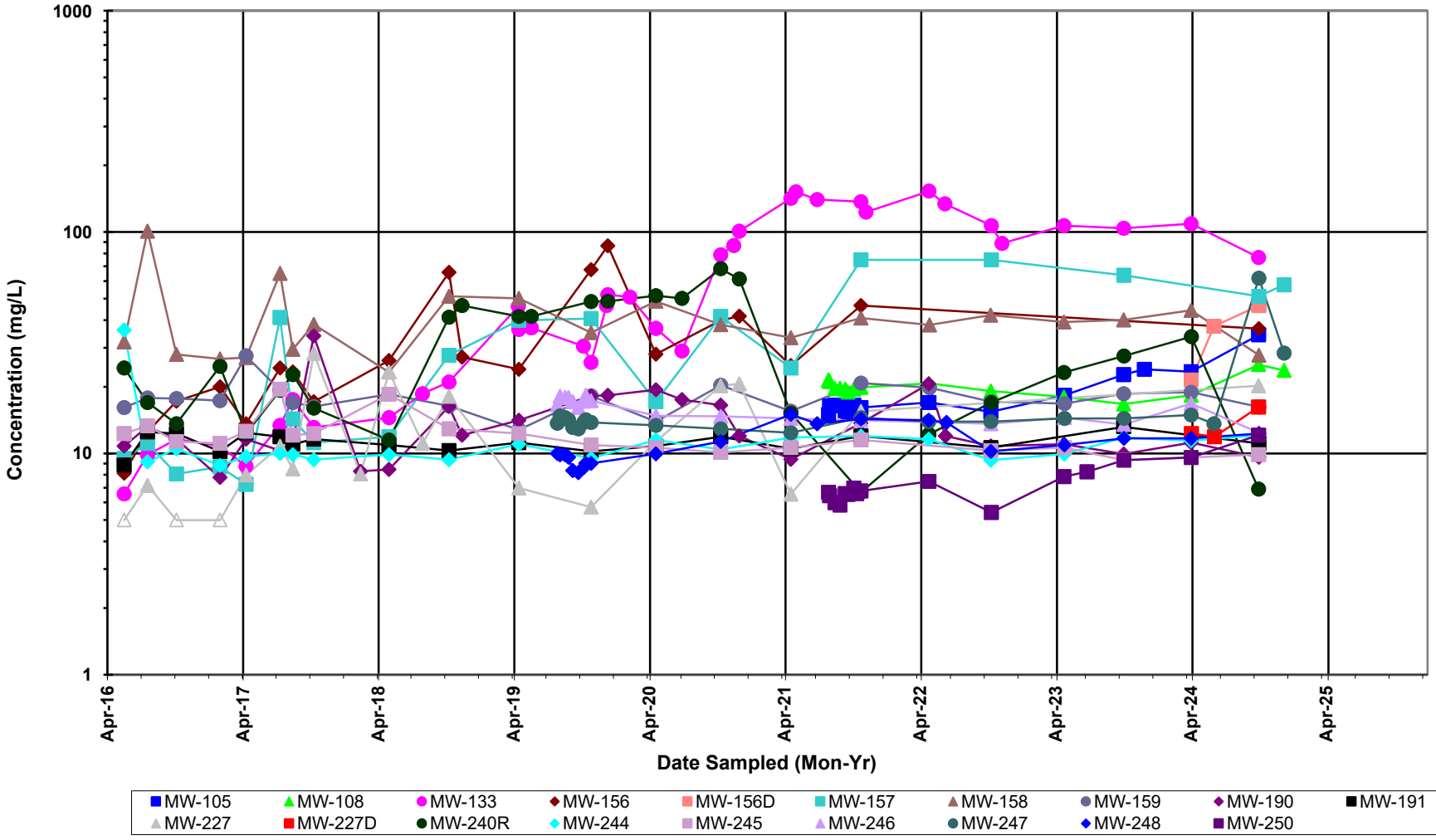
FIGURE 3A - CHLORIDE - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

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COUNCIL BLUFFS, IOWA

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FIGURE 3B - CHLORIDE - MONOFILL WELLS

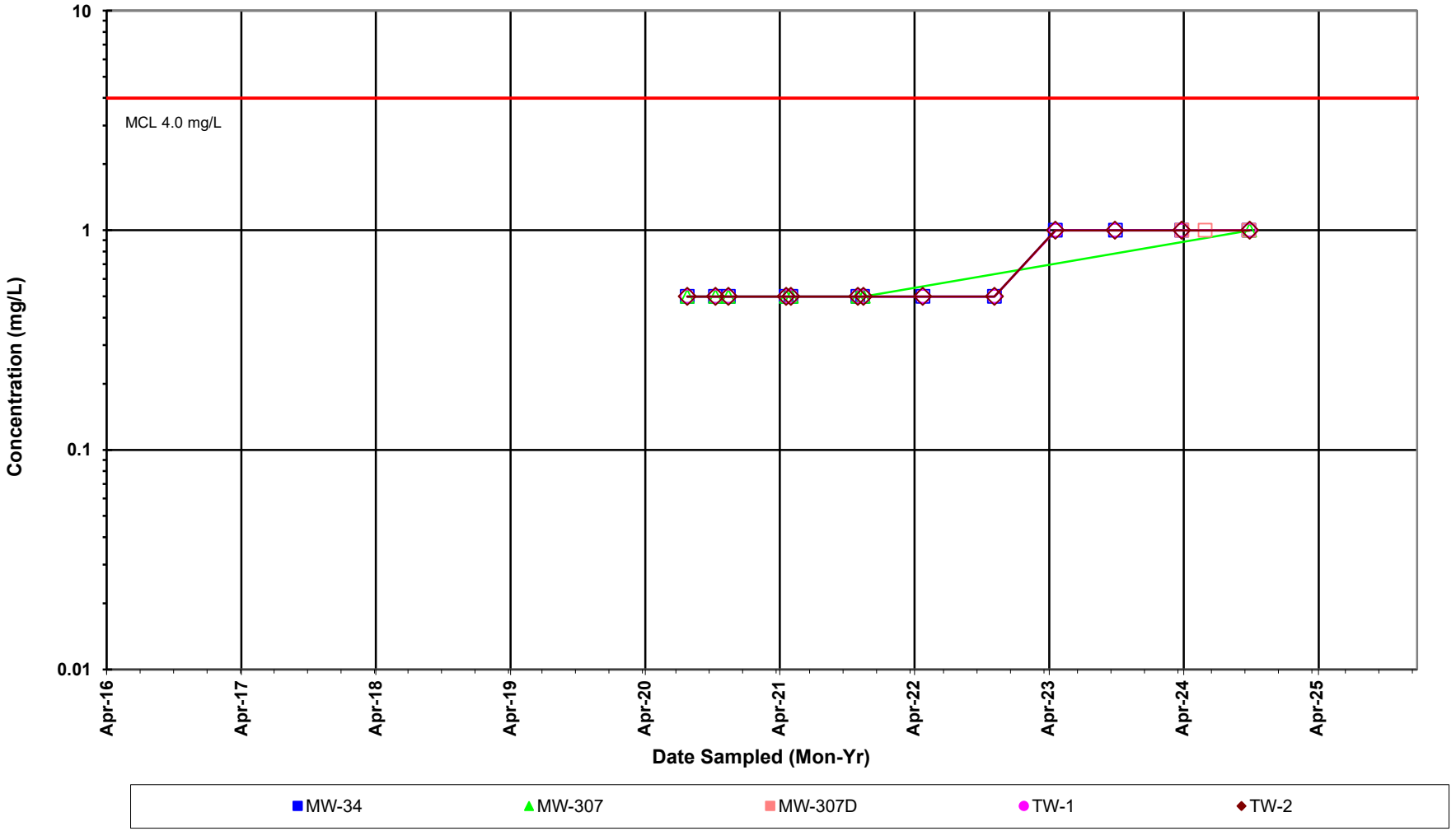

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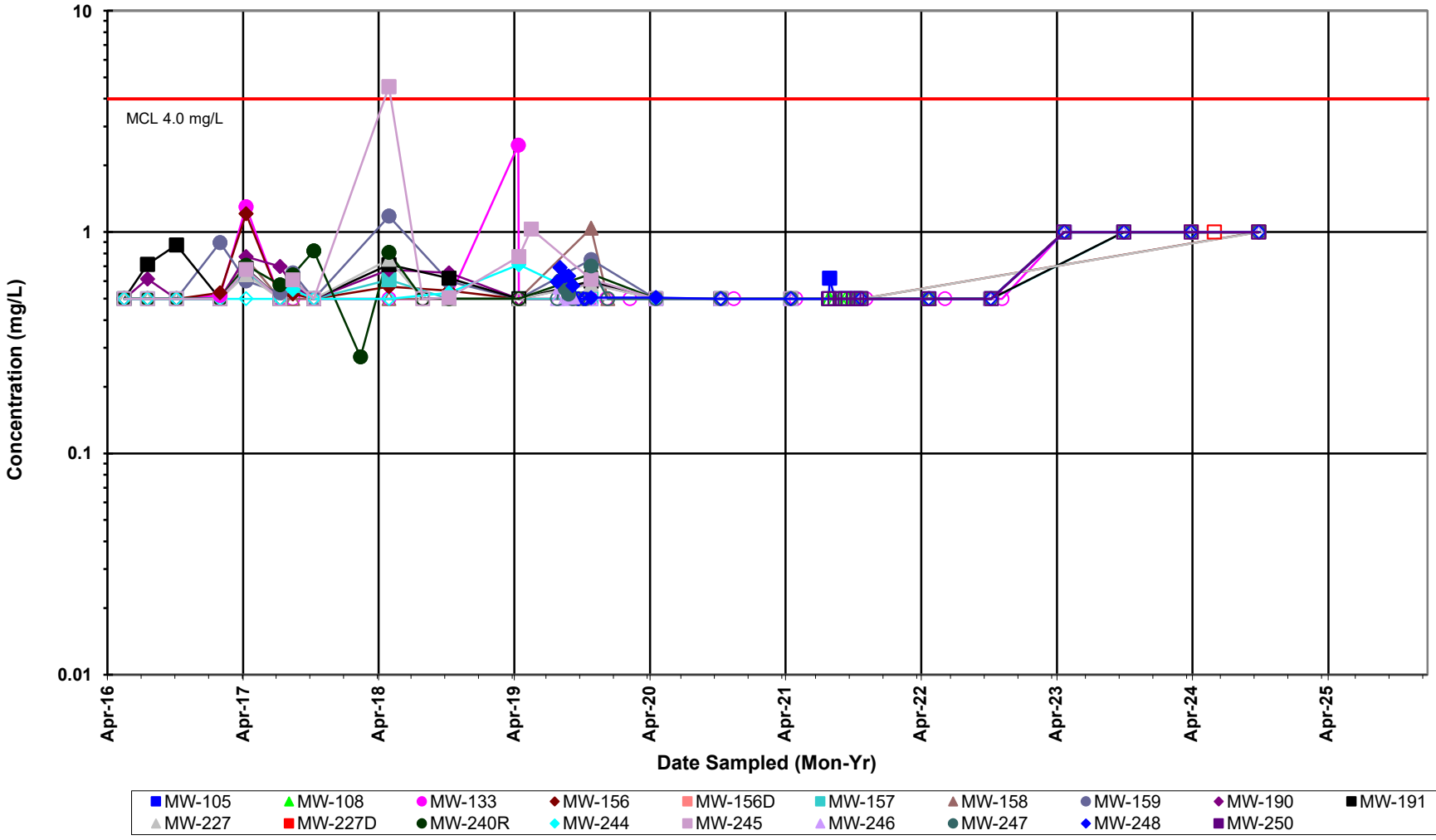
FIGURE 4A - FLUORIDE - BACKGROUND WELLS



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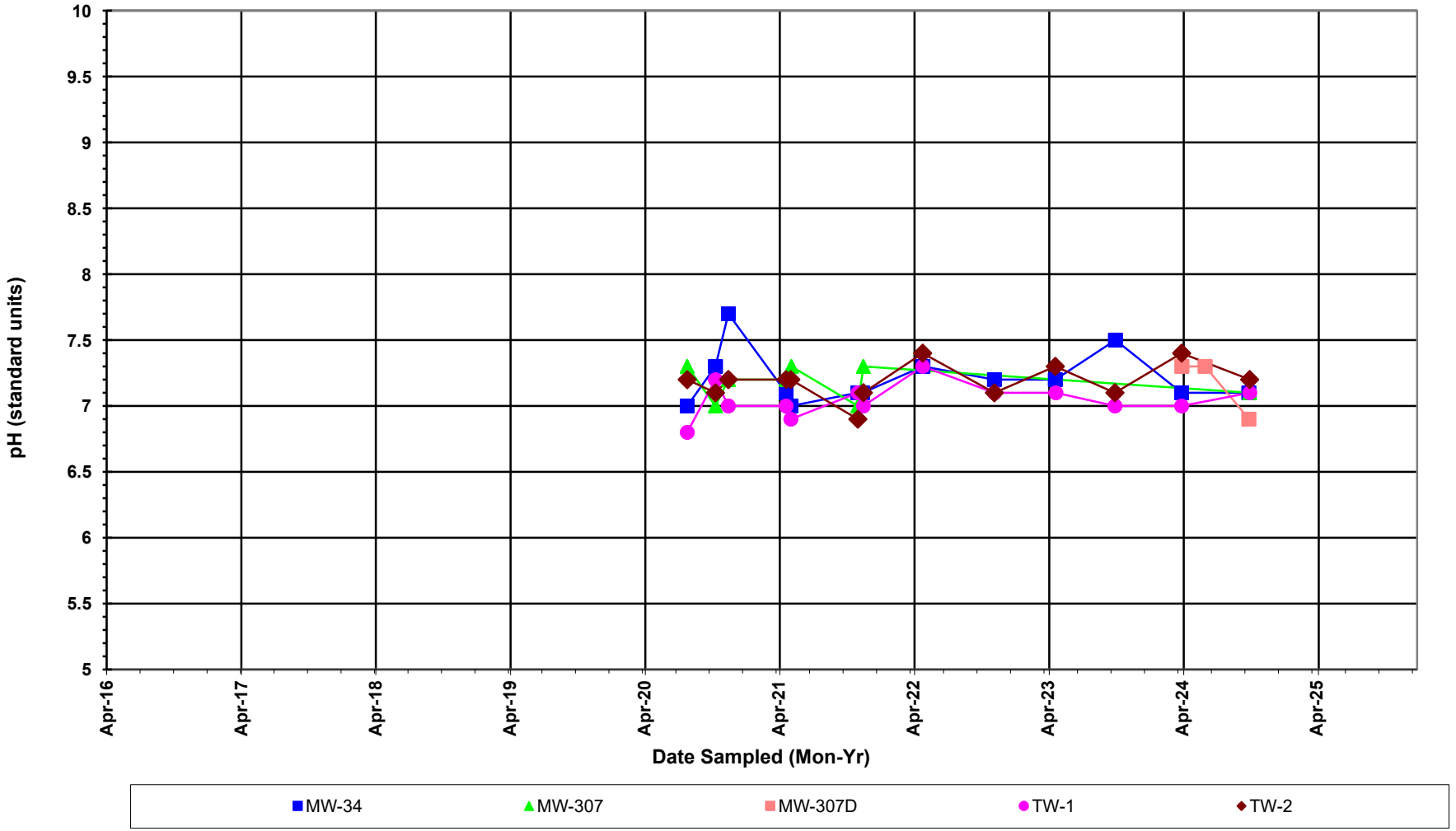
12592594

1/9/2025

FIGURE 4B - FLUORIDE - MONOFILL WELLS



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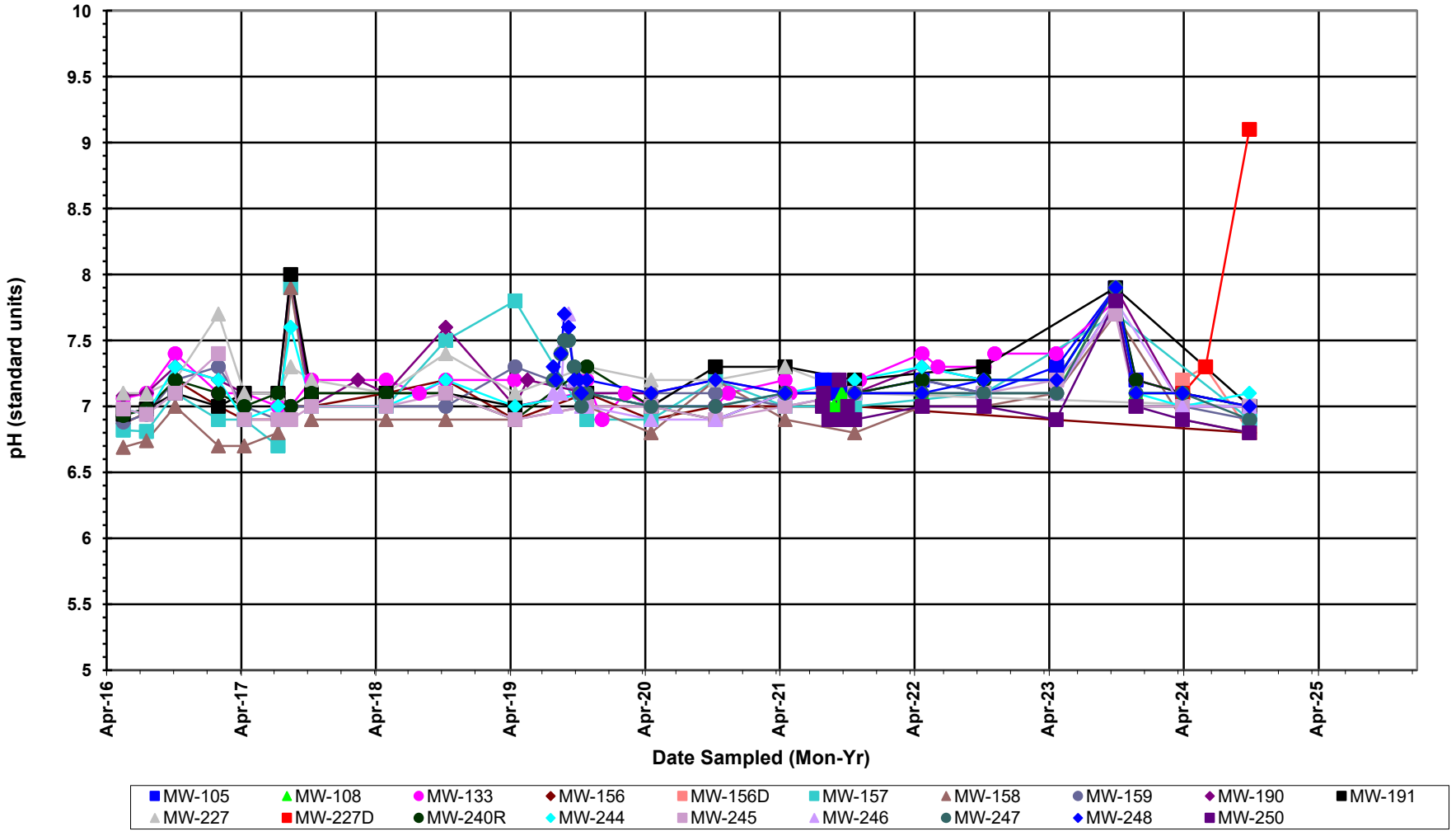
1/9/2025

FIGURE 5A - PH, LAB - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

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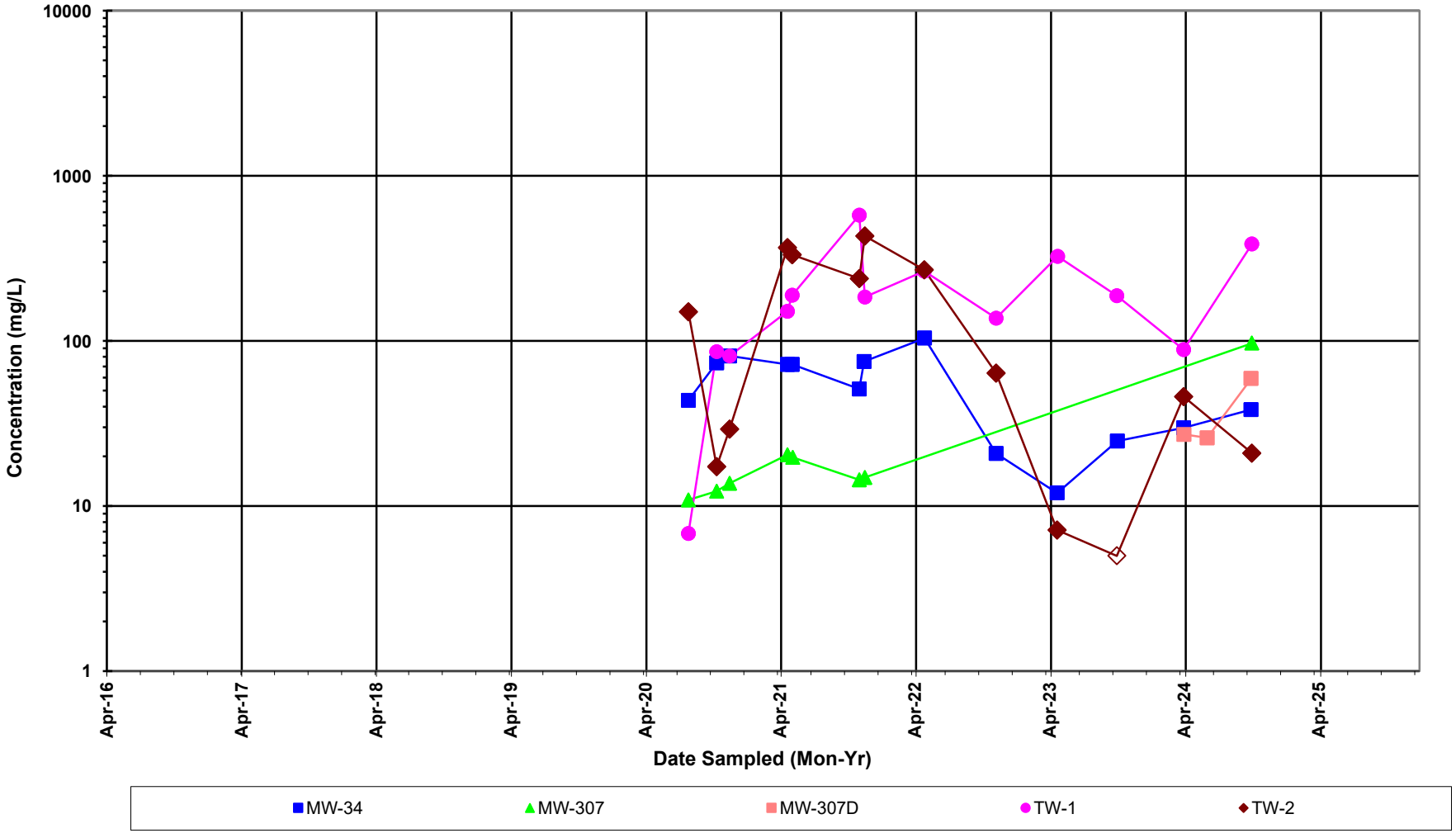
1/9/2025

FIGURE 5B - PH, LAB - MONOFILL WELLS



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WALTER SCOTT JR. ENERGY CENTER

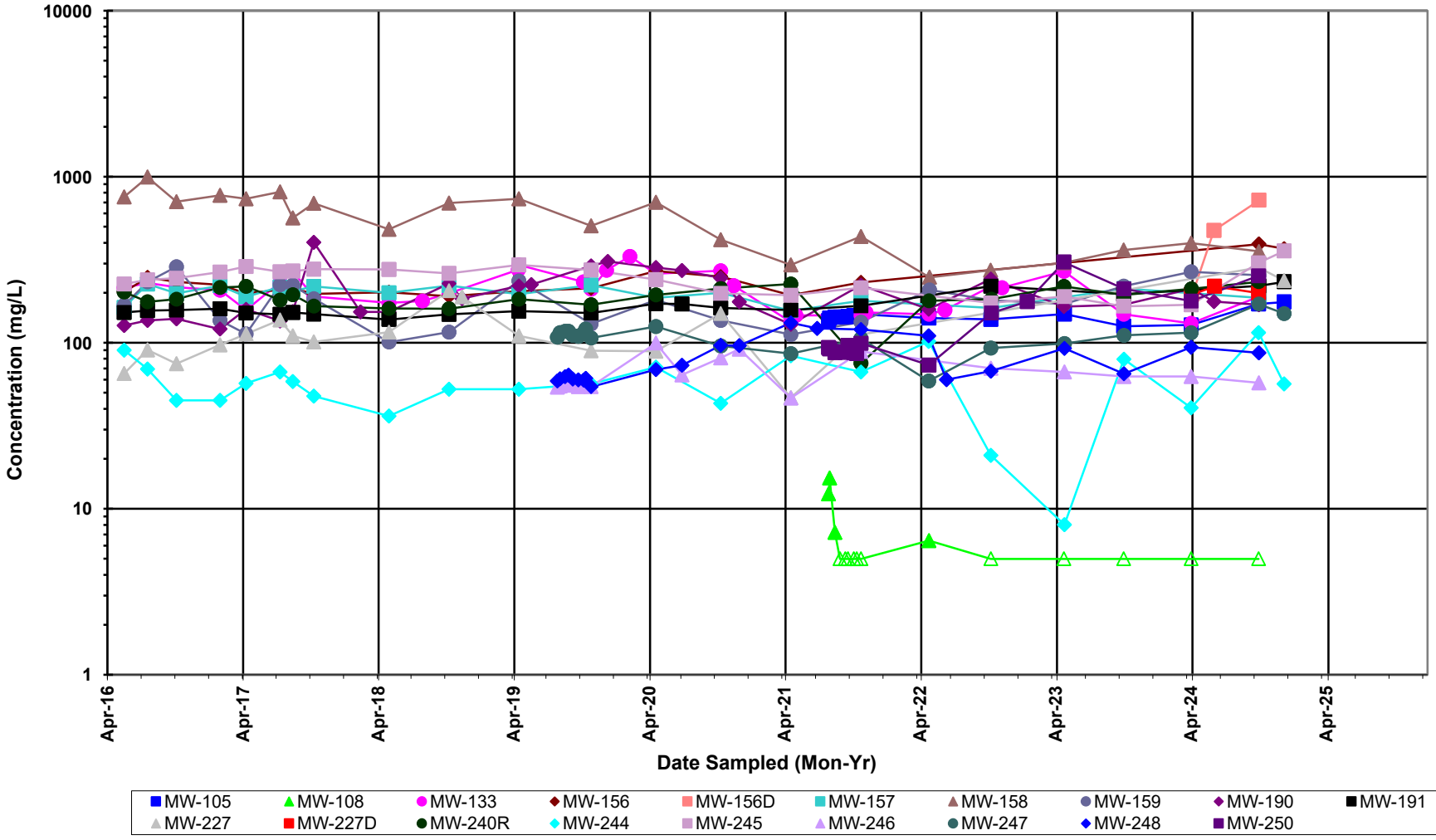
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 6A - SULFATE - BACKGROUND WELLS



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MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

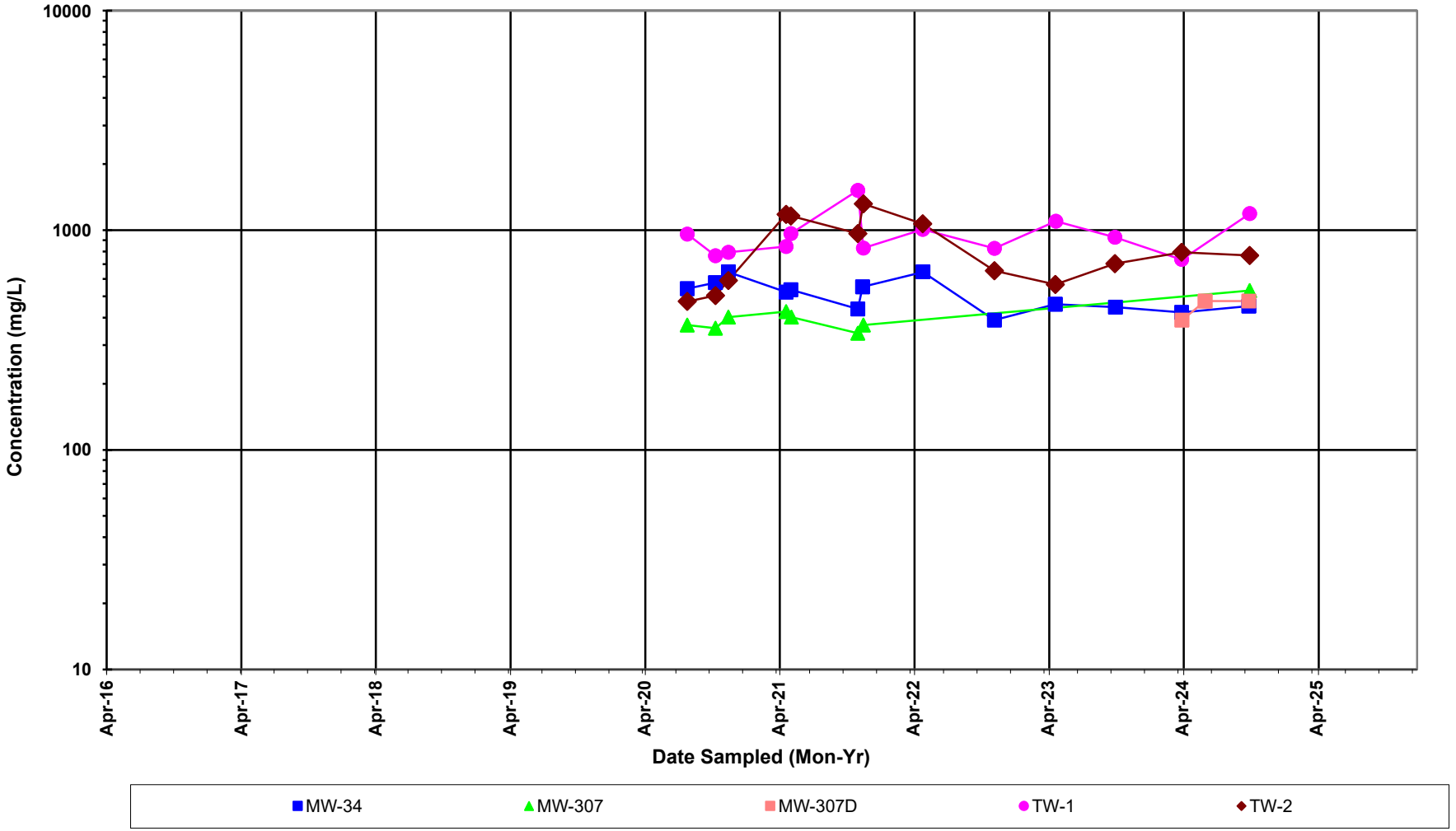
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 6B - SULFATE - MONOFILL WELLS



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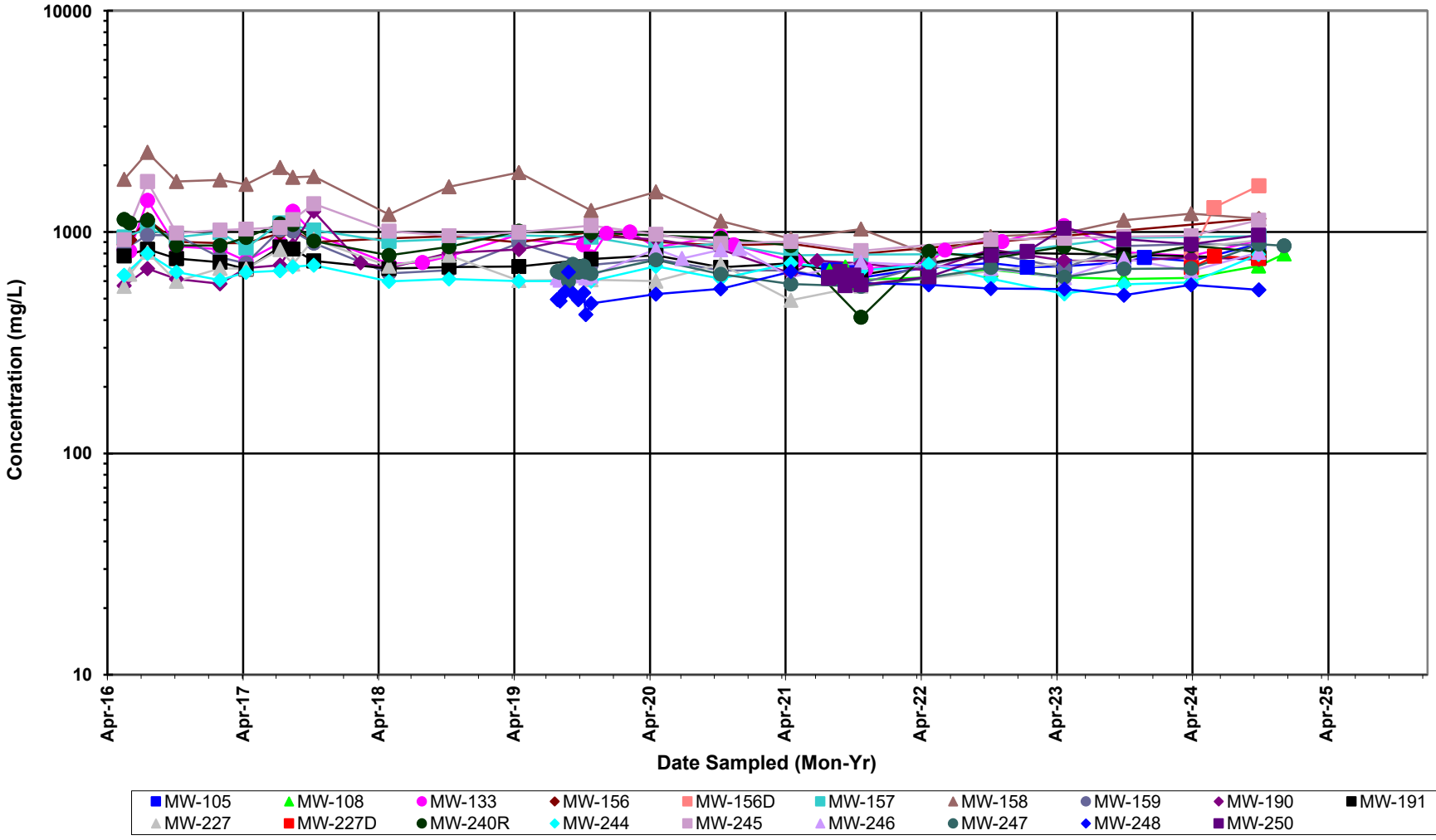
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 7A - TOTAL DISSOLVED SOLIDS (TDS) - BACKGROUND WELLS



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1/9/2025

FIGURE 7B - TOTAL DISSOLVED SOLIDS (TDS) - MONOFILL WELLS

Appendix E

Alternate Source Demonstration

Alternate Source Demonstration for the WSEC CCR Monofill

Permit 78-SDP-06P
Walter Scott Jr. Energy Center
Council Bluffs, Iowa

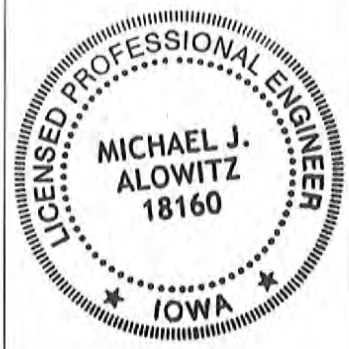
MidAmerican Energy Company

January 20, 2025

The Power of Commitment

Certification

Alternate Source Demonstration
for the WSEC CCR Monofill
Walter Scott Jr. Energy Center
Council Bluffs, Iowa
MidAmerican Energy Company



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Michael J. Alowitz, P.E. — Date: 1/20/25

License Number: 18160

My license renewal date is: December 31, 2026

Pages or sheets covered by this seal: Entire Document

Contents

Table index

Figure index

Appendices

1. Introduction

This Alternate Source Demonstration (ASD) Report was prepared by GHD on behalf of MidAmerican Energy Company (MidAmerican) in compliance with the Federal Coal Combustion Residual (CCR) rule (40 CFR Part 257) for the Walter Scott Jr. Energy Center (WSEC) Coal Combustion Residual (CCR) Monofill. The WSEC Monofill is located in the southwest quarter of Section 31, Township 74 North, and Range 43 West; the northwest quarter of Section 6, Township 73 North, and Range 43 West; and the northeast quarter of Section 1, Township 73 North, and Range 44 West in Pottawattamie and Mills counties, Iowa.

The Monofill is permitted under Iowa Department of Natural Resources (IDNR) Operating Permit No. 78-SDP-26-06P, originally issued May 2, 2007, and subsequent amendments. A renewed operating permit was issued January 12, 2018, and incorporated previous amendments. The site was developed as a Monofill in 2007 (Cell 1) and began receiving CCR in September 2007. The Monofill was constructed with a composite liner system including a 2-foot compacted clay liner and 60-mil high density polyethylene (HDPE) plastic liner. Additional cells were added after 2007 and include Cells 2, 3S, and 3N (2008), Cell 4 (2010), Cell 5 (2011), Cell 6 (2012), Cell 7 (2016), Cell 8 (2020), and Cell 9 (2022).

As described in 40 CFR §257.94(e)(2), statistically significant differences from background levels for a constituent may be evaluated to demonstrate that a source other than the CCR unit has caused the statistically significant difference from background or resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The purpose of this Report is to describe the ASD for statistically significant increases (SSIs) identified at the WSEC CCR Monofill.

2. Description of Statistically Significant Increases

In October and December 2024, semiannual and verification groundwater sampling events under the detection monitoring program were completed at the WSEC Monofill. Several SSIs were identified in the 2024 monitoring results, some of which were evaluated previously and identified to be unrelated to a release from the Monofill in ASD reports prepared by Terracon and GHD. This Report reviews the basis for the earlier ASDs and reconfirms the validity of the findings for calcium at MW-105, chloride at MW-157, and sulfate at MW-191 and MW-227. This Report also addresses new ASDs identified in 2024 for calcium at MW-156, MW-227, MW-245, and MW-247, chloride at MW-108 and MW-247, sulfate at MW-105, MW-156, MW-245, and MW-247, and TDS at MW-108 and MW-247.

The original baseline samples for MW-156, MW-157, MW-191, MW-227, and MW-245 were collected between March 2016 and August 2017. Since October 2017, the wells have been sampled semiannually under the detection monitoring program through the October 2024 sampling event. The original baseline samples for MW-247 were collected between July and October 2019; the original baseline period for MW-247 was completed during an abbreviated period of 77 days to accommodate expansion of the Monofill to include Cell 8. MW-247 has been sampled under the detection monitoring program since October 2019. For MW-105 and MW-108, the original baseline samples were collected between July 2021 and October 2021; the original baseline period for MW-105 and MW-108 was completed during an abbreviated period of 76 days to accommodate expansion of the Monofill to include Cell 9. Since October 2021, MW-105 and MW-108 have been sampled semiannually under the detection monitoring program through the October 2024 sampling event.

Data from MW-105, MW-108, MW-156, MW-157, MW-191, MW-227, MW-245, and MW-247 are compared to the concentrations from background wells TW-1, TW-2, MW-34, and MW-307. The baseline samples were completed at new background monitoring wells TW-1, TW-2, and MW-34 between July 2020 and April 2022. Seven sampling events were completed at new background monitoring well MW-307 between 2020 and 2021; the eighth baseline

sample at MW-307 was collected in October 2024 because the well had insufficient water for sampling due to drought conditions during 2022 through the April 2024 monitoring event. The Monofill extent and nearby monitoring well locations are shown on Figure 1. Figure 2 shows the Monofill extent and monitoring network, including the background monitoring wells located northeast of the Monofill.

The method to establish upgradient/background concentrations at the WSEC CCR Monofill is Upper Prediction Limits (UPLs). UPLs for the upgradient/background monitoring wells were provided in the 2022 Annual Groundwater Monitoring and Corrective Action Report (GHD, 2023); where trends were observed in the baseline data, the minimum and maximum values are provided in lieu of UPLs. The UPLs for the background/upgradient monitoring wells are provided in Table 1.

2.1 MW-105 Calcium and Sulfate

During the compressed baseline data collection period (July through October 2021), no trend for calcium was identified at MW-105. The calculated intra-well UPL for calcium at MW-105 is 172 milligrams per liter (mg/L). During the October 2024 detection and December 2024 verification sampling events, the calcium results were 196/209 and 221 mg/L, respectively. The October 2024 duplicate (but not the primary sample) and the December 2024 verification sample exceed the established intra-well UPL of 172 mg/L for calcium but are within range of the calcium UPLs for the upgradient wells (89.7 to 265 mg/L).

During the compressed baseline data collection period (July through October 2021), an increasing trend for sulfate was identified at MW-105. The intra-well UPL trend range for sulfate at MW-105 is 136 to 148 mg/L. During the October 2024 detection and December 2024 verification sampling events, the sulfate results were 171/173 and 176 mg/L, respectively. These results are above the established UPL of 136-148 mg/L but are within range of the sulfate UPLs calculated for the upgradient wells (6.82 to 1142 mg/L).

The concentrations of calcium and sulfate at MW-105 are both within the range of the upgradient wells, and the upgradient wells have not been affected by any release from the CCR. This makes it unlikely that elevated concentrations at MW-105 are from a release from site. Instead, elevated levels of calcium and sulfate at MW-105 are attributed to natural variability in groundwater quality.

2.2 MW-108 Chloride and TDS

During the compressed baseline data collection period (July through October 2021), no trend for chloride at MW-108 was identified. The intra-well UPL for chloride at MW-108 is 22.5. During the October 2024 and December 2024 sampling events, the chloride results were 25.2 and 23.7 mg/L, respectively. These results exceed the MW-108 chloride UPL of 22.5 mg/L but are within the range of chloride UPLs calculated for the upgradient wells (9.7 to 64.1 mg/L) and are below the range detected in the treated wastewater (Table 2) released from the from the adjacent Council Bluffs Water Pollution Control Plant (CBWPCP).

During the compressed baseline data collection period (July through October 2021), TDS concentrations at MW-108 showed a decreasing trend, ranging from 590 to 694 mg/L. During the October 2024 and December 2024 sampling events, the chloride results were 702 and 796 mg/L, respectively. The two most recent results are above the UPL range for TDS but are within the range of TDS UPLs calculated for the upgradient wells (464 to 1766 mg/L).

The elevated chloride and TDS concentrations in groundwater at monitoring well MW-108 are within the range of the upgradient wells, and the upgradient wells have not been affected by any release from the CCR. Elevated levels of chloride and TDS at MW-108 are attributed to natural variability seen in groundwater quality.

2.3 MW-156 Calcium and Sulfate

During the baseline data collection period (March 2016 through August 2017) at MW-156, no trend was observed for calcium. The intra-well UPL for calcium at MW-156 is 238 mg/L. During the October 2024 and December 2024 events the calcium concentrations were 274 and 296 mg/L, respectively. These results are above the calculated UPL and

above the range of calcium UPLs calculated for the upgradient wells (89.7 to 265 mg/L). During the baseline data collection period, groundwater flow was primarily from the southeast toward the northwest. Groundwater flow during the past two monitoring events when the SSI was verified was toward the northeast and southeast. Due to the variability of groundwater flow direction, monitoring wells are not monitoring the same groundwater that was monitored during the baseline period. The average calcium concentration in leachate samples is 140 mg/L; this is less than the calcium SSI concentrations at MW-156. The monofill leachate data are provided in Appendix A. Based on these concentrations, monofill leachate is not the source of the calcium SSIs at MW-156. Elevated levels of calcium at MW-156 are attributed to natural variability in groundwater quality and variations in groundwater flow.

During the baseline data collection period (March 2016 through August 2017), a decreasing trend was identified for sulfate at MW-156. The intra-well baseline concentration range used in lieu of an UPL (due to the concentration trend) for sulfate is 191 to 247 mg/L. During the two most recent monitoring events, the sulfate concentrations at MW-156 were 393 and 368, respectively. These results exceed the MW-156 baseline range but are within range of the sulfate UPLs for the upgradient wells (6.82 to 1142 mg/L).

2.4 MW-157 Chloride

During the baseline data collection period (March 2016 through August 2017), an increasing trend was identified for chloride at MW-157. The intra-well baseline concentration range for chloride is between 7.25 and 41.1 mg/L. During the two most recent monitoring events (October 2024 and December 2024) the chloride concentrations were 51.3 and 57.8 mg/L, respectively. These results exceed the MW-157 baseline range but are within range of chloride concentrations and UPLs in the upgradient wells (<5.00-64.1).

The SSI for chloride at MW-157 is not a result of a release from the Monofill, but due to natural variability.

2.5 MW-191 Sulfate

During the baseline data collection period (March 2016 through August 2017), no trend was identified for sulfate at MW-191. The calculated intra-well UPL for sulfate is 168 mg/L. During the October 2024 and December 2024 monitoring events, the sulfate concentrations at MW-191 were 220 and 233, respectively. These results exceed the MW-191 UPL of 168 mg/L but are within range of the sulfate UPLs for the upgradient wells (6.82 to 1,142 mg/L).

The elevated sulfate concentrations in groundwater at monitoring well MW-191 are within the range of the upgradient wells, and the upgradient wells have not been affected by any release from the CCR. Elevated levels of sulfate at MW-191 are attributed to natural variability in groundwater quality.

2.6 MW-227 Calcium and Sulfate

During the baseline data collection period (March 2016 through August 2017), the concentrations at MW-227 showed no trend for calcium, with an intra-well UPL established at 189 mg/L. During the October 2024 and December 2024 events the calcium concentrations at MW-227 were 226 and 205 mg/L, respectively. These results are above the calculated UPL but are within the range of calcium UPLs for the upgradient wells (89.7 to 265 mg/L). During the baseline data collection period, groundwater flow was primarily from the southeast toward the northwest.

During the baseline data collection period (March 2016 through August 2017), an increasing trend was identified for sulfate at MW-227. The intra-well UPL range for sulfate was 65.3 to 206 mg/L. During the two most recent monitoring events, the sulfate concentrations were 284 and 237 mg/L, respectively. These results exceed the MW-227 baseline range but are within range of the sulfate UPLs for the upgradient wells (6.82 to 1142 mg/L).

The elevated calcium and sulfate concentrations in groundwater at monitoring well MW-227 are within the range of the upgradient wells, and the upgradient wells have not been affected by any release from the CCR. Groundwater flow during the past two monitoring events when the SSI was verified was toward the northeast and southeast. Due to variability of groundwater flow direction, monitoring wells are not monitoring the same groundwater that was monitored

during the baseline period. The calcium and sulfate SSIs at MW-227 are due to natural variability in groundwater quality due to variations in groundwater flow directions.

2.7 MW-245 Calcium and Sulfate

During the baseline data collection period (March 2016 through August 2017), no trend was observed for calcium concentrations at MW-245. An intra-well UPL established at 198 mg/L for MW-245 calcium. During the October 2024 and December 2024 events calcium concentrations were 257 and 271 mg/L, respectively. These results are above the calculated UPL and above the range of calcium UPLs for the upgradient wells (89.7 to 265 mg/L). During the baseline data collection period, groundwater flow was primarily from the southeast toward the northwest. Groundwater flow during the past two monitoring events when the SSI was verified was toward the northeast and southeast. Due to variability of groundwater flow direction, monitoring wells are not monitoring the same groundwater that was monitored during the baseline. The average calcium concentration from the leachate system is 140 mg/L; this is less than the calcium concentrations detected at MW-245. The monofill leachate data are provided in Appendix A. Based on these concentrations, monofill leachate is not the source of the calcium SSIs at MW-245. Elevated levels of calcium at MW-190 are attributed to natural variability in groundwater quality and variations in groundwater flow directions.

During the baseline data collection period an increasing trend was identified for sulfate at MW-245. The baseline concentration range for sulfate at MW-245 is 226 to 294 mg/L. During the two most recent monitoring events, the sulfate concentrations were 303 and 357 mg/L, respectively. These results exceed the MW-245 baseline range but are within range of the sulfate UPLs for the upgradient wells (6.82 to 1142 mg/L).

The calcium and sulfate SSIs at MW-245 are due to natural variability in groundwater quality due to variations in groundwater flow directions.

2.8 MW-247 Calcium, Chloride, Sulfate, and TDS

During the baseline data collection period (March 2016 through August 2017), no trend was observed in calcium concentrations at MW-247, with an intra-well UPL established at 181 mg/L. During the October 2024 and December 2024 events the calcium concentrations were 205 and 204/202 mg/L, respectively. These results are above the calculated UPL but within the range of calcium UPLs for the upgradient wells (89.7 to 265 mg/L).

During the baseline data collection period a decreasing trend was identified for chloride at MW-247. The intra-well baseline range for chloride is 12.4 to 14.8 mg/L. During the October 2024 and December 2024 monitoring events, the chloride concentrations were 61.9 and 28.4/28.2 mg/L, respectively. These results exceed the MW-247 baseline range but are within range of the chloride UPLs in the upgradient wells (<5.00-64.1 mg/L) and are below the range detected in the treated wastewater released from the from the adjacent CBWPCP (Table 2).

During the baseline data collection period no trend was identified for sulfate at MW-247. The calculated intra-well UPL for sulfate is 140 mg/L. During the October 2024 and December 2024 monitoring events, the sulfate concentrations were 171 and 150/140 mg/L, respectively. The October 2024 and December 2024 primary sample results exceed the MW-245 UPL (the December 2024 duplicate result did not exceed the UPL) of 140 mg/L but are within range of the sulfate UPLs for the upgradient wells (6.82 to 1142 mg/L).

During the baseline data collection period no trend was identified for TDS at MW-247. The calculated intra-well UPL for sulfate is 789 mg/L. During the two most recent monitoring events, the TDS concentrations were 882 and 866/846 mg/L, respectively. These results exceed the MW-247 UPL but are within range of the TDS UPLs for the upgradient wells (464 to 1766 mg/L).

The elevated calcium, chloride, sulfate and TDS concentrations in groundwater at monitoring well MW-247 are within the UPL range of the upgradient wells, and the upgradient wells have not been affected by any release from the CCR. Groundwater flow during the past two monitoring events when the SSI was verified was toward the northeast and southeast. Due to the variability of the groundwater flow direction, monitoring wells are not monitoring the same groundwater that was monitored during the baseline. The SSIs at MW-247 are due to natural variability in groundwater quality due to variations in groundwater flow directions.

3. Description of WSEC Monofill Alternate Source Demonstration

ASDs of natural variability in groundwater and groundwater flow direction changes have been identified for the observed SSIs at the Monofill. ASDs due to natural variability and the CBWPCP wastewater release were previously identified for past SSIs and these factors continue to affect groundwater at the Monofill.

3.1 Natural Variability

Temporal and spatial variability in background water quality is present in the background monitoring wells (MW-34, MW-307, TW-1, and TW-2). Time-series graphs for the upgradient/background monitoring wells and the Monofill monitoring wells are provided in Appendix B. Box plots for the upgradient/background monitoring wells are provided in Appendix C. The variability in mean concentrations and concentration ranges indicate that significant spatial variability exists for calcium, chloride, sulfate, and TDS in background groundwater. The variability in these upgradient/background monitoring wells is not attributable to a release from a CCR unit. Groundwater flow direction at the Monofill has exhibited significant variability since sampling was initiated in 2016 (Terracon, 2021; Terracon, 2022; GHD, 2023). Groundwater flow maps for the Monofill monitoring events conducted between 2016 and June 2024 are provided in Appendix D.

During the baseline period for the upgradient/background monitoring wells, increasing trends were identified for chloride and sulfate at TW-1 and for calcium at TW-2 (GHD, 2023). For calcium, TW-1 and MW-34 collectively have five different instances of consecutive samples with a difference greater than 35 mg/L, and TW-2 has consecutive samples with a difference of 96 mg/L. For chloride, TW-1 shows multiple occurrences of consecutive samples having a difference of more than 30 mg/L, reaching as high as 56.9 mg/L and as low as undetectable. For sulfate, TW-1 and TW-2 have six separate consecutive samples with variations exceeding 100 mg/L, with three of those surpassing a 300 mg/L change. For TDS, between TW-1 and TW-2, there are three different cases of consecutive samples with a difference greater than 500 mg/L. These results show significant temporal variability at individual background monitoring well locations.

These data indicate both temporal and spatial variability in calcium, chloride, sulfate, and TDS concentrations in groundwater from upgradient locations not influenced by the WSEC Monofill.

3.2 Groundwater Flow Direction

Groundwater flow direction at the Monofill has exhibited significant variability since sampling was initiated in 2016 (Terracon, 2021; Terracon, 2022; GHD, 2023). From March 2016 through December 2024, groundwater flow direction was observed as follows:

From March 2016 through August 2017, the groundwater flow direction was generally northwest. In October 2017, May 2018, October 2018, April 2019, and October 2019, groundwater flow direction was either reversed or variable when compared to the previous groundwater flow (March 2016 to August 2017). April and October 2020 had groundwater flow directions similar to the period from March 2016 to April 2017 (northwest). During subsequent sampling events up to October 2022, the groundwater flow was reversed again, trending southeast across the site. 2022 flow direction was variable, but mostly reversed (southeast). January 2023 had groundwater flow toward the river (northwest), but April 2023 was reversed again (southeast). Groundwater flow remained toward the southeast until September 2024, when flow was primarily trending northeast; December 2024 saw flow toward the Missouri River to the northwest. Groundwater flow maps for the Monofill monitoring events conducted between 2016 and December 2024 are provided in Appendix C.

The stage of the Missouri River impacts groundwater flow direction across the site. The United States Army Corps of Engineers (USACE) recorded 2018 and 2019 as higher than average runoff seasons (USACE, 2022). Due to this

increase in volume and the interconnectedness of the river and groundwater, the elevation of the Missouri River was higher than the groundwater elevation at the site which caused reversal in groundwater flow. Following October 2019, groundwater elevations started to decrease significantly (Figure 3). The USACE reported reduced discharges from the Missouri River reservoir system beginning in November 2019 (USACE, 2019) and continued to report lower runoff forecasts due to drought conditions (USACE, 2021). The northwest trend of groundwater flow in April and October 2020 can be attributed to this lower river stage reported by USACE. This is also reflected in the decrease in groundwater elevations (Figure 3). As of December 2024, the U.S. Drought Monitor shows 98.57 percent of land area in Pottawattamie County in a D1 Moderate Drought.

The presence of higher concentrations of sulfate measured in the background samples collected from upgradient and background monitoring wells indicates sulfate is naturally present in the aquifer or is being supplied by an alternate source. Though the sulfate is elevated at monitoring well MW-191 relative to its own background dataset, it does not indicate a release from the site since upgradient/background monitoring wells not impacted by CCR have higher measured concentrations of sulfate.

During the baseline monitoring events, groundwater flow direction was generally to the northwest or west to northwest, however, during subsequent monitoring events, groundwater flow direction was to the east to southeast or has been variable and has not returned to the direction that was observed during the background monitoring events. Due to the variability of the groundwater flow direction, the monitoring wells are not monitoring the same groundwater that was monitored during the baseline evaluations.

3.3 Wastewater Release

A potential source for the identified SSIs is the treated wastewater released from the CBWPCP into drainageways immediately adjacent to MW-105, MW-108, MW-133, and other wells along the north and east Monofill perimeter. Two wastewater discharge events have occurred over the period of Federal CCR rule groundwater monitoring. The first wastewater discharge occurred during the period of March 15 to March 24, 2019, and was estimated to be 118 million gallons (Terracon, 2020). A second release occurred in June 2024. The releases filled the ditches near MW-105, MW-108, MW-133, MW-247, and MW-248,. Because discharge gates to the Missouri River were closed at the time, the wastewater was left to infiltrate into the ground until it was gone. Photographs from the 2019 and 2024 wastewater releases are provided in Appendix E.

Samples of ponded wastewater were collected in June 2019 (Terracon, 2020) and June 2024, with chloride results ranging from 41.5 mg/L to 191 mg/L (Table 2). The wastewater likely contributed to the rise in chloride concentration at these locations. This discharge was also linked to SSIs in 2019.

3.4 Conclusion

As outlined in this ASD, SSIs for calcium and sulfate at MW-105, chloride and TDS at MW-108, calcium and sulfate at MW-156, chloride and MW-157, sulfate at MW-191, calcium and sulfate at MW-227, calcium and sulfate at MW-245, and calcium, chloride, sulfate, and TDS at MW-247 are not a result of a release from the Monofill, but rather are due to natural variability in groundwater amplified by changes in groundwater flow direction.

Temporal and spatial variability in groundwater quality were observed for the Appendix III parameters in the upgradient/background wells (MW-34, MW-307, TW-1, and TW-2). There is variability in groundwater flow direction during each of the sampling events due to the varying stage of the Missouri River and previous drought conditions in the area.

The identified SSIs are attributed to natural variability in groundwater quality, variations in groundwater flow direction, and the release of treated wastewater from the CBWPCP.

4. Summary

Verified SSIs for calcium and sulfate at MW-105, chloride and TDS at MW-108, calcium and sulfate at MW-156, chloride and MW-157, sulfate at MW-191, calcium and sulfate at MW-227, calcium and sulfate at MW-245, and calcium, chloride, sulfate, and TDS at MW-247 relative to the intra-well baseline data were confirmed in the 2024 groundwater monitoring results. However, these SSIs are due to natural variability of groundwater quality, variability in groundwater flow direction, and release of treated wastewater.

5. References

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United States Army Corps of Engineers (USACE), 2022. Technical Report – Hydrologic Statistics. Missouri River Basin Water Management Division, Omaha, Nebraska. May 2022.

Tables

Table 1

Baseline UPLs for Upgradient/Background Monitoring Wells
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Constituent	Units	TW-1	TW-2	MW-34	MW-307
Boron	mg/L	0.553	0.544	0.196	0.194
Calcium	mg/L	265	89.7 - 228 **(Increasing)**	182	120
Chloride	mg/L	<5.00 - 56.9 **(Increasing)**	64.1	9.7	<5.00
Fluoride	mg/L	<0.500	<0.500	<0.500	<0.500
pH, lab	Standard Units	6.63 - 7.45	6.80 - 7.52	6.60 - 7.80	6.81 - 7.56
Sulfate	mg/L	6.82 - 578 **(Increasing)**	1142	118	25.2
TDS	mg/L	1643	1766	731	464

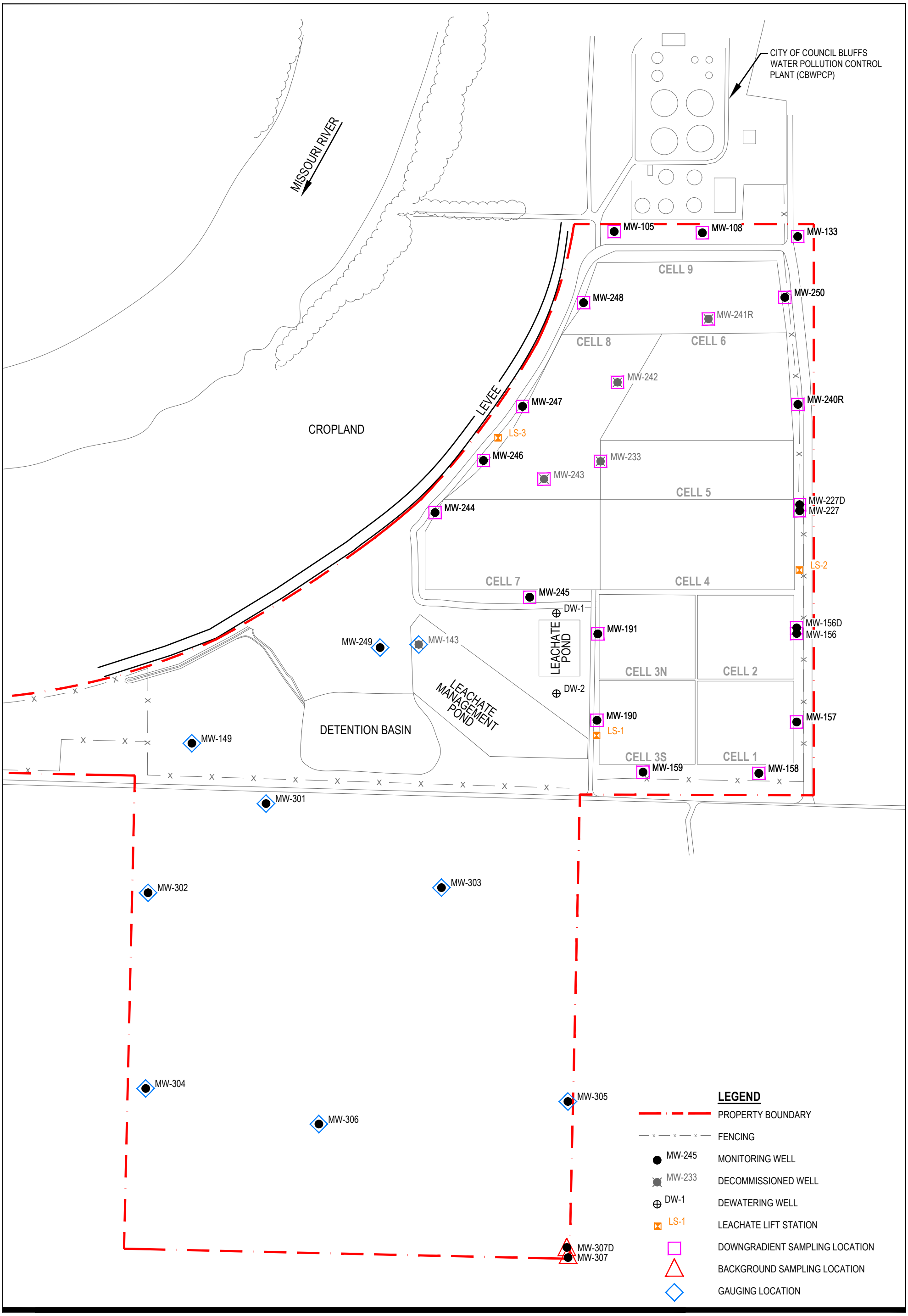
Notes:
TDS - Total dissolved solids.
UPL - Upper prediction limit.
<0.500 - Not detected at the associated reporting limit.
Consituents with increasing baseline trends denoted with red font.

Council Bluffs Water Pollution Control Plant Treated Wastewater Sample Summary
Walter Scott Jr. Energy Center - CCR Monofill
Council Bluffs, Iowa

Analyte	Units	SW-133-254N June 19, 2019	SW-105-5S June 19, 2019	SW-0624 June 27, 2024
Appendix III Parameters				
Boron	mg/L	0.242	0.205	0.210
Calcium	mg/L	150	139	74.9
Chloride	mg/L	123	41.5	191
Fluoride	mg/L	0.668	<0.500	<1.00
pH	Standard Units	7.5	8.6	7.7
Sulfate	mg/L	125	9.08	148
Total Dissolved Solids (TDS)	mg/L	704	412	728

Notes:
CBWPCP = Council Bluffs Water Pollution Control Plant.
Terracon, 2020. Alternative Source Demonstration - December 2019,
Walter Scott Jr. Energy Center Monofill, Council Bluffs, Iowa. January 20, 2020.

Figures



MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

Project No. **12592594**
Date **July 2024**

SITE MAP AND MONITORING NETWORK

FIGURE 1

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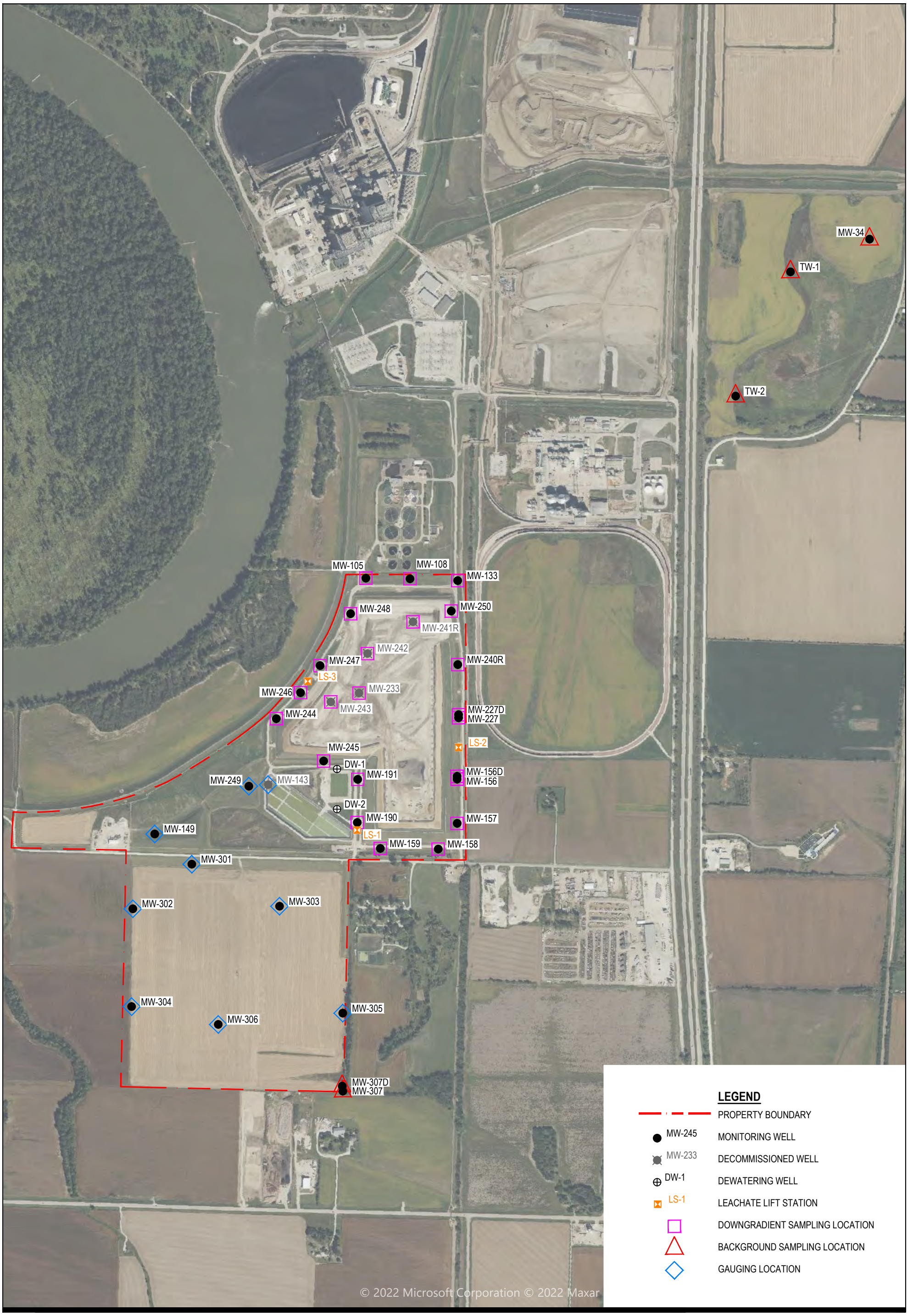

0 500 1000 ft

1" = 1000 ft

Coordinate System:
IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

AERIAL PHOTO AND BACKGROUND MONITORING WELL LOCATIONS

Project No. **12592594**
Date **July 2024**

FIGURE 2

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT020\12592594-GHD-00-00-RPT-EN-D102_DE-020.dwg
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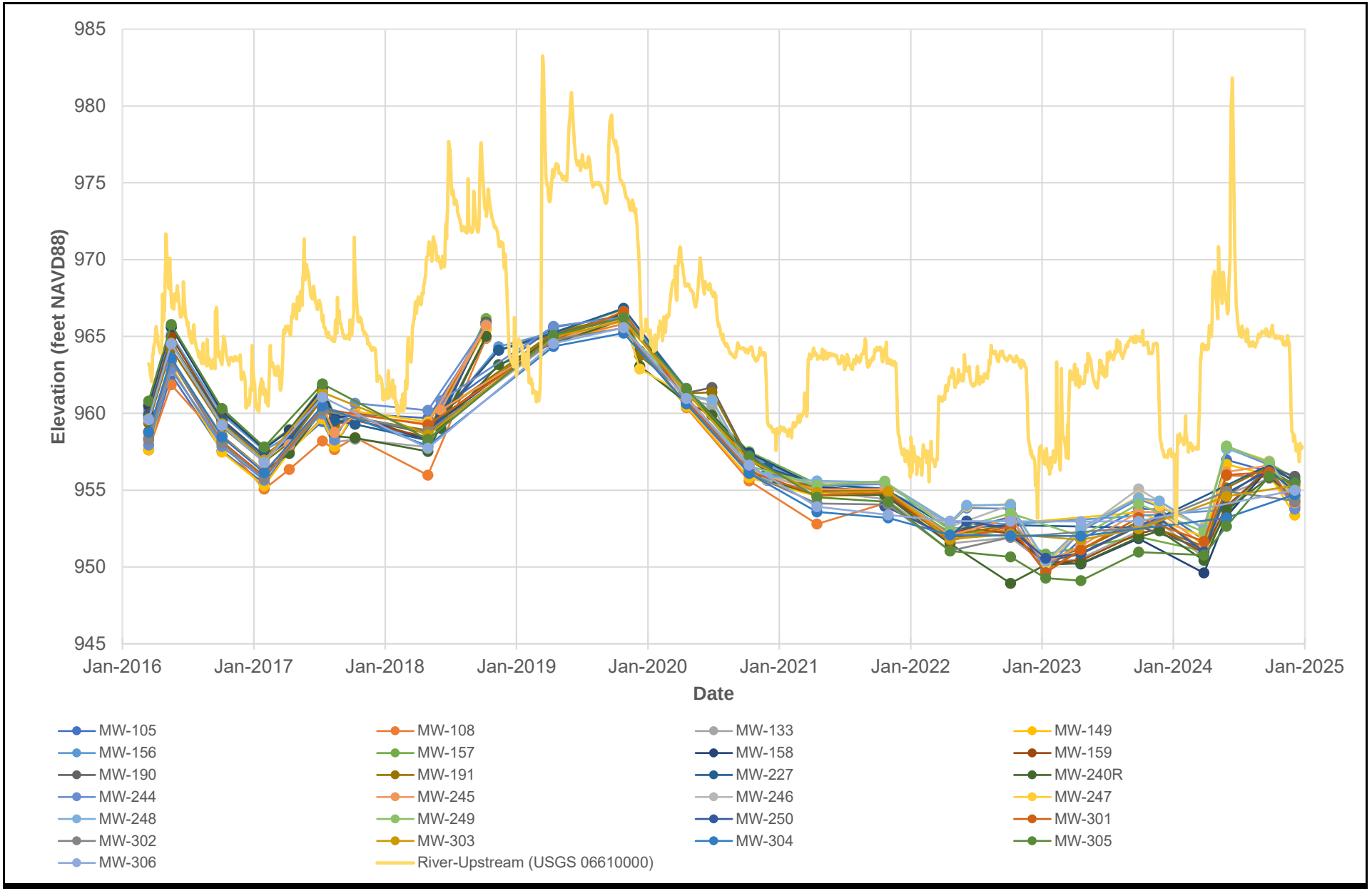

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COUNCIL BLUFFS, IOWA

GROUNDWATER AND MISSOURI RIVER HYDROGRAPH

Project No. **12592594**
Date **Jan. 2025**

FIGURE 3

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Appendices

Appendix A

Monofill Leachate Data

Table 1

Leachate Analytical Results
MidAmerican Energy Company
Walter Scott Jr. Energy Center CCR Monofill
Council Bluffs, Iowa

Sample Location:		**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**
Sample ID:		**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**
Sample Date:		**3/18/2016**	**5/18/2016**	**7/20/2016**	**10/6/2016**	**1/31/2017**	**4/12/2017**	**7/12/2017**	**8/16/2017**
Parameters	**Units**								
Appendix III									
Boron	mg/L	1.4	0.88	0.811	1.08	1.82	1.54	1.94	1.74
Calcium	mg/L	135	205	281	229	80.7	150	116	93.3
Chloride	mg/L	281	247	148	206	415	282	266	324
Fluoride	mg/L	0.966	<0.500	<0.500	0.512	<0.500	0.667	<0.500	0.614
pH, lab	s.u.	10.2	11.5	10.9	10.7	11.3	10.7	9.8	9.9
Sulfate	mg/L	4670	3010	2760	5900	5380	3950	4720	4900
Total dissolved solids (TDS)	mg/L	8600	6950	5340	7480	10000	8200	8500	9480
Appendix IV									
Antimony	mg/L	0.00111	<0.001	<0.001	0.00129	0.00124	<0.001	0.00121	0.00125
Arsenic	mg/L	0.0261	0.0170	0.0133	0.0170	0.0210	0.0153	0.0174	0.0155
Barium	mg/L	0.0621	0.0681	0.0945	0.0841	0.0525	0.0526	0.0507	0.0504
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.000856	<0.0005	<0.0005	0.000622	0.00103	0.000782	0.000761	<0.0005
Chromium	mg/L	0.0352	0.0583	0.0225	0.133	0.0189	0.0210	0.0306	0.0184
Cobalt	mg/L	0.00129	0.000613	<0.0005	0.000619	0.000976	0.000765	0.000777	0.000780
Lead	mg/L	<0.00250	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.0005
Lithium	mg/L	<0.250	<0.200	0.110	<0.200	<0.300	<0.150	<0.250	<0.250
Mercury	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	4.32	2.30	2.00	3.48	4.74	3.86	4.17	3.79
Radium-226 & 228	pCi/L	0.446	0.671	0.653	0.790	0.501	0.502	1.07	0.558
Selenium	mg/L	0.280	0.185	0.150	0.234	0.375	0.305	0.254	0.260
Thallium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Footnotes:
J - Estimated concentration.
R - Rejected.

Table 1

Leachate Analytical Results
MidAmerican Energy Company
Walter Scott Jr. Energy Center CCR Monofill
Council Bluffs, Iowa

Sample Location:		**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**
Sample ID:		**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**	**Leachate (Lift Station) #1**
Sample Date:		**10/10/2017**	**5/3/2018**	**10/10/2018**	**4/18/2019**	**10/30/2019**	**4/21/2020**	**10/14/2020**	**4/21/2021**
Parameters	**Units**								
Appendix III									
Boron	mg/L	1.57	1.99	3.73	1.17	1.75	1.65	1.63	1.53
Calcium	mg/L	148	126	199	190	508	186	159	170
Chloride	mg/L	269	318	281	291	272	312	278	233
Fluoride	mg/L	0.534	0.913	<0.500	<0.500	<0.500	<0.500	<1.00	0.687
pH, lab	s.u.	10	9	11.1	9.2	11.7	11.8	11.1	11.3
Sulfate	mg/L	4730	4840	3540	3910	3320	3890	5040	3930
Total dissolved solids (TDS)	mg/L	8520	9180	7280	6840	7240	7820	8100	6760
Appendix IV									
Antimony	mg/L	--	--	--	--	--	--	--	--
Arsenic	mg/L	--	--	--	--	--	--	--	--
Barium	mg/L	--	--	--	--	--	--	--	--
Beryllium	mg/L	--	--	--	--	--	--	--	--
Cadmium	mg/L	--	--	--	--	--	--	--	--
Chromium	mg/L	--	--	--	--	--	--	--	--
Cobalt	mg/L	--	--	--	--	--	--	--	--
Lead	mg/L	--	--	--	--	--	--	--	--
Lithium	mg/L	--	--	--	--	--	--	--	--
Mercury	mg/L	--	--	--	--	--	--	--	--
Molybdenum	mg/L	--	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	--
Selenium	mg/L	--	--	--	--	--	--	--	--
Thallium	mg/L	--	--	--	--	--	--	--	--

Footnotes:
J - Estimated concentration.
R - Rejected.

Table 1

Leachate Analytical Results
MidAmerican Energy Company
Walter Scott Jr. Energy Center CCR Monofill
Council Bluffs, Iowa

Sample Location:		**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 1**	**Lift Station 2**	**Lift Station 2**	**Lift Station 2**	**Lift Station 2**
Sample ID:		**Leachate (Lift Station) #1**	**Leachate-1**	**LS1-1022**	**LS1-0423**	**LS1-1023**	**LS1-0424**	**LS1-1024**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**
Sample Date:		**10/28/2021**	**4/29/2022**	**10/10/2022**	**4/25/2023**	**10/4/2023**	**4/2/2024**	**10/2/2024**	**3/18/2016**	**5/18/2016**	**7/20/2016**	**10/6/2016**
Parameters	**Units**											
Appendix III												
Boron	mg/L	2.01	1.81	1.69	2.36	1.81	2.12	1.84	1.81	1.68	1.7	1.51
Calcium	mg/L	138	127	69.1	104	87.4	50.4	89.2	123	144	119	109
Chloride	mg/L	263	271	288	289	293	311	319	438	710	592	633
Fluoride	mg/L	4.14	4.98	6.35	<1.00	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	11.4	10.9 J	11.7 J	11.0 J	11.8 J	11.2 J	12.0 J	10.9	11.8	11.7	11.9
Sulfate	mg/L	3700	4970	3850	5500	3980	75.9 R	3250	6000	6930	6750	7670
Total dissolved solids (TDS)	mg/L	5360	7390	7310	8020	7010	7170	6320	11500	13000	12600	12500
Appendix IV												
Antimony	mg/L	--	--	--	0.00200 J+	<0.00200	<0.00200	<0.00200	<0.001	<0.001	<0.001	<0.001
Arsenic	mg/L	--	--	--	0.0474	0.0371	0.0533	0.0229	0.0368	0.0160	0.0196	0.0156
Barium	mg/L	--	--	--	0.0325	0.0357	0.0262	0.0324	0.0569	0.0942	0.0807	0.0753
Beryllium	mg/L	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	--	--	--	0.00282	0.00200	0.00116	0.00157	0.00124	0.000715	0.000602	0.000806
Chromium	mg/L	--	--	--	0.00546	<0.00500	<0.00500	<0.00500	0.0402	0.0839	0.0452	0.0330
Cobalt	mg/L	--	--	--	0.00151	0.000945	0.00131	<0.000500	0.00193	0.000541	0.000614	0.000564
Lead	mg/L	--	--	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.00250	<0.0005	<0.0005	<0.0005
Lithium	mg/L	--	--	--	0.0824	0.102	0.0788	0.112	<0.300	<0.300	<0.350	<0.400
Mercury	mg/L	--	--	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.0002	<0.0002	0.000267	<0.0002
Molybdenum	mg/L	--	--	--	6.27	4.96	6.34	4.23	5.81	4.32	4.27	4.58
Radium-226 & 228	pCi/L	--	--	--	<0.346	<0.387	<1.13	0.712	0.495	0.399	0.114	1.71
Selenium	mg/L	--	--	--	0.420	0.371	0.315	0.350	0.408	0.370	0.384	0.370
Thallium	mg/L	--	--	--	<0.00100	<0.00100	<0.00100	0.00483	<0.001	<0.001	<0.001	<0.001

Footnotes:
J - Estimated concentration.
R - Rejected.

Table 1

Leachate Analytical Results
MidAmerican Energy Company
Walter Scott Jr. Energy Center CCR Monofill
Council Bluffs, Iowa

Sample Location:		**Lift Station 2**	**Lift Station 2**	**Lift Station 2**	**Lift Station 2**	**Lift Station 2**	**Lift Station 2**	**Lift Station 2**	**Lift Station 2**
Sample ID:		**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**	**Leachate (Lift Station) #2**
Sample Date:		**1/31/2017**	**4/12/2017**	**7/12/2017**	**8/16/2017**	**10/10/2017**	**5/3/2018**	**10/10/2018**	**4/18/2019**
Parameters	**Units**								
Appendix III									
Boron	mg/L	1.65	2.57	2.03	2.28	1.67	1.81	1.42	2.06
Calcium	mg/L	74.2	106	68.8	36.4	180	155	152	93.3
Chloride	mg/L	635	608	629	607	514	644	357	471
Fluoride	mg/L	13.5	<0.500	<0.500	<0.500	<0.500	0.698	<0.500	<0.500
pH, lab	s.u.	11.5	10.3	11.4	11.4	11.1	9.3	9.6	10.1
Sulfate	mg/L	7440	6520	6350	6610	6650	4950	4930	5210
Total dissolved solids (TDS)	mg/L	13500	13100	13000	13000	12200	8460	9200	9960
Appendix IV									
Antimony	mg/L	0.00113	<0.001	<0.001	<0.01	--	--	--	--
Arsenic	mg/L	0.0322	0.0152	0.0186	0.0160	--	--	--	--
Barium	mg/L	0.0482	0.0697	0.0529	0.0410	--	--	--	--
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	--	--	--	--
Cadmium	mg/L	0.00124	0.000892	0.000920	<0.005	--	--	--	--
Chromium	mg/L	0.0210	0.0613	0.0241	0.0190	--	--	--	--
Cobalt	mg/L	0.00157	0.00111	0.000675	0.000668	--	--	--	--
Lead	mg/L	<0.001	<0.0005	<0.0005	<0.0005	--	--	--	--
Lithium	mg/L	<0.400	<0.350	<0.350	<0.350	--	--	--	--
Mercury	mg/L	<0.0002	<0.0002	0.000252	<0.0002	--	--	--	--
Molybdenum	mg/L	5.43	3.80	5.10	4.79	--	--	--	--
Radium-226 & 228	pCi/L	1.17	0.433	0.190	0.258	--	--	--	--
Selenium	mg/L	0.425	0.374	0.417	0.427	--	--	--	--
Thallium	mg/L	<0.001	<0.001	<0.001	<0.001	--	--	--	--

Footnotes:
J - Estimated concentration.
R - Rejected.

Table 1

Leachate Analytical Results
MidAmerican Energy Company
Walter Scott Jr. Energy Center CCR Monofill
Council Bluffs, Iowa

Sample Location:		Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2	Lift Station 2
Sample ID:		Leachate (Lift Station) #2	Leachate (Lift Station) #2	Leachate (Lift Station) #2	Leachate (Lift Station) #2	Leachate (Lift Station) #2	Leachate-2	LS2-1022	LS2-0423	LS2-1023	LS2-0424	LS2-1024
Sample Date:		10/30/2019	4/21/2020	10/14/2020	4/21/2021	10/28/2021	4/29/2022	10/10/2022	4/25/2023	10/4/2023	4/2/2024	10/2/2024
Parameters	**Units**											
Appendix III												
Boron	mg/L	2.38	2.97	2.66	2.86	2.82	2.12	2.15	3.38	1.91	3.03	2.13
Calcium	mg/L	210	93.7	28.6	55	53.9	36.7	26.2	269	46.6	36.2	126
Chloride	mg/L	183	487	586	428	453	618	549	648	564	586	403
Fluoride	mg/L	<0.500	<0.500	<1.00	<0.500	11.9	12.8	14.7	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	9.2	10.6	11	11.3	11.3	11.1 J	10.7 J	10.6 J	10.1 J	9.8 J	11.4 J
Sulfate	mg/L	2490	5880	7810	5660	5350	6530	5680	6200	5900	5570	4560
Total dissolved solids (TDS)	mg/L	8640	11400	12500	9400	9640	10500	11200	9750	10700	10200	7540
Appendix IV												
Antimony	mg/L	--	--	--	--	--	--	--	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	--	--	--	--	--	--	--	0.00733	0.0188	0.0251	0.00832
Barium	mg/L	--	--	--	--	--	--	--	0.0526	0.0229	0.0275	0.0421
Beryllium	mg/L	--	--	--	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	--	--	--	--	--	--	--	0.00179	0.00254	0.00157	0.00141
Chromium	mg/L	--	--	--	--	--	--	--	0.980	<0.00500	0.0272	0.00500
Cobalt	mg/L	--	--	--	--	--	--	--	0.00122	0.000824	0.00224	<0.000500
Lead	mg/L	--	--	--	--	--	--	--	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	--	--	--	--	--	--	--	0.0147	0.0396	0.0744	0.0619
Mercury	mg/L	--	--	--	--	--	--	--	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	--	--	--	--	--	--	--	4.19	5.22	8.46	3.86
Radium-226 & 228	pCi/L	--	--	--	--	--	--	--	<0.305	<0.369	<1.11	0.629
Selenium	mg/L	--	--	--	--	--	--	--	0.249	0.367	0.423	0.253
Thallium	mg/L	--	--	--	--	--	--	--	<0.00100	<0.00400	<0.00100	<0.00400

Footnotes:
J - Estimated concentration.
R - Rejected.

Table 1

Leachate Analytical Results
MidAmerican Energy Company
Walter Scott Jr. Energy Center CCR Monofill
Council Bluffs, Iowa

Sample Location:		**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**
Sample ID:		**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**
Sample Date:		**8/16/2017**	**10/10/2017**	**5/3/2018**	**10/10/2018**	**4/18/2019**	**10/30/2019**	**4/21/2020**	**10/14/2020**
Parameters	**Units**								
Appendix III									
Boron	mg/L	4.85	4.27	4.24	1.57	2.01	1.49	4.11	4.36
Calcium	mg/L	224	218	168	137	108	103	158	316
Chloride	mg/L	156	354	158	273	232	264	501	306
Fluoride	mg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	8.8	11.4	8.7	10.3	11.5	11.8	10.6	11
Sulfate	mg/L	2120	4930	1940	3430	3440	4480	4190	3590
Total dissolved solids (TDS)	mg/L	5040	10200	3840	6520	6320	5580	9020	5710
Appendix IV									
Antimony	mg/L	<0.001	--	--	--	--	--	--	--
Arsenic	mg/L	0.00293	--	--	--	--	--	--	--
Barium	mg/L	0.0556	--	--	--	--	--	--	--
Beryllium	mg/L	<0.001	--	--	--	--	--	--	--
Cadmium	mg/L	<0.0005	--	--	--	--	--	--	--
Chromium	mg/L	0.0505	--	--	--	--	--	--	--
Cobalt	mg/L	0.000607	--	--	--	--	--	--	--
Lead	mg/L	<0.0005	--	--	--	--	--	--	--
Lithium	mg/L	<0.250	--	--	--	--	--	--	--
Mercury	mg/L	<0.0002	--	--	--	--	--	--	--
Molybdenum	mg/L	1.08	--	--	--	--	--	--	--
Radium-226 & 228	pCi/L	0.303	--	--	--	--	--	--	--
Selenium	mg/L	0.0623	--	--	--	--	--	--	--
Thallium	mg/L	<0.001	--	--	--	--	--	--	--

Footnotes:
J - Estimated concentration.
R - Rejected.

Table 1

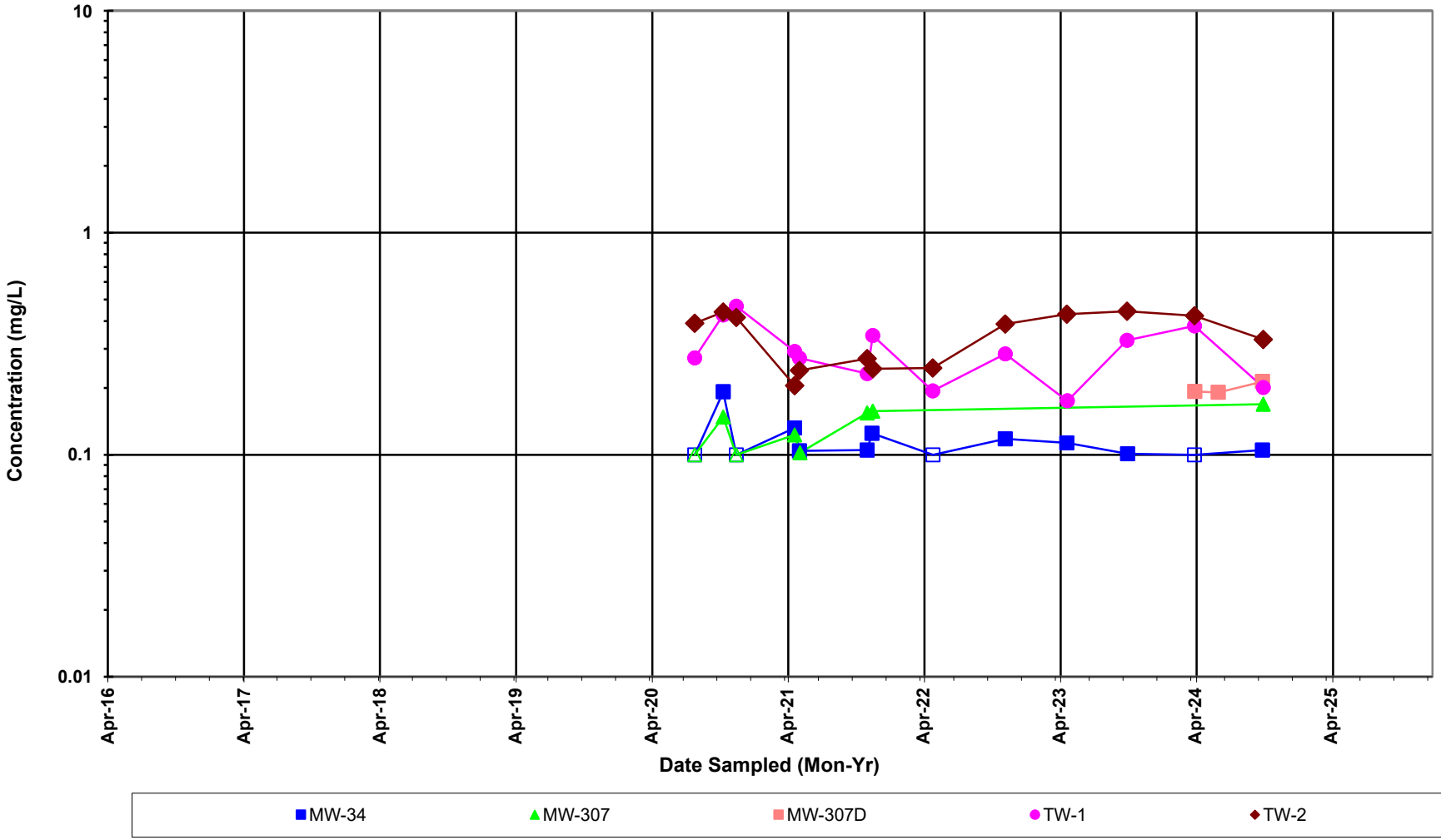
Leachate Analytical Results
MidAmerican Energy Company
Walter Scott Jr. Energy Center CCR Monofill
Council Bluffs, Iowa

Sample Location:		**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**	**Lift Station 3**
Sample ID:		**Leachate (Lift Station) #3**	**Leachate (Lift Station) #3**	**Leachate-3**	**LS3-1022**	**LS3-0423**	**LS3-1023**	**LS3-0424**	**LS3-1024**
Sample Date:		**4/21/2021**	**10/28/2021**	**4/29/2022**	**10/10/2022**	**4/25/2023**	**10/4/2023**	**4/2/2024**	**10/2/2024**
Parameters	**Units**								
Appendix III									
Boron	mg/L	5.53	3.47	3.56	2.40	2.09	1.94	2.00	1.44
Calcium	mg/L	544	191	144	77.4	135	42.5	22.5	106
Chloride	mg/L	408	317	321	315	240	317	154	248
Fluoride	mg/L	0.515	3.2	3.69	4.82	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	11.6	11.3	11.3 J	11.9 J	11.9 J	11.9 J	11.9 J	12.1 J
Sulfate	mg/L	3920	2690	2500	2910	3300	3070	1720	3030
Total dissolved solids (TDS)	mg/L	7260	4260	5400	6680	5520	6330	3550	5630
Appendix IV									
Antimony	mg/L	--	--	--	--	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	--	--	--	--	0.0108	0.0170	0.0107	0.0206
Barium	mg/L	--	--	--	--	0.0564	0.0248	0.0249	0.0471
Beryllium	mg/L	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	--	--	--	--	0.000790	0.000417	0.000211	0.000791
Chromium	mg/L	--	--	--	--	0.0103	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	--	--	--	--	0.000683	0.000570	0.000550	<0.000500
Lead	mg/L	--	--	--	--	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	--	--	--	--	<0.0100	<0.0100	<0.0100	0.0123
Mercury	mg/L	--	--	--	--	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	--	--	--	--	1.80	2.33	1.26	2.10
Radium-226 & 228	pCi/L	--	--	--	--	<-0.0661	<0.585	<0.595	0.590
Selenium	mg/L	--	--	--	--	0.145	0.231	0.103	0.232
Thallium	mg/L	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100

Footnotes:
J - Estimated concentration.
R - Rejected.

Appendix B

Time-Series Graphs



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

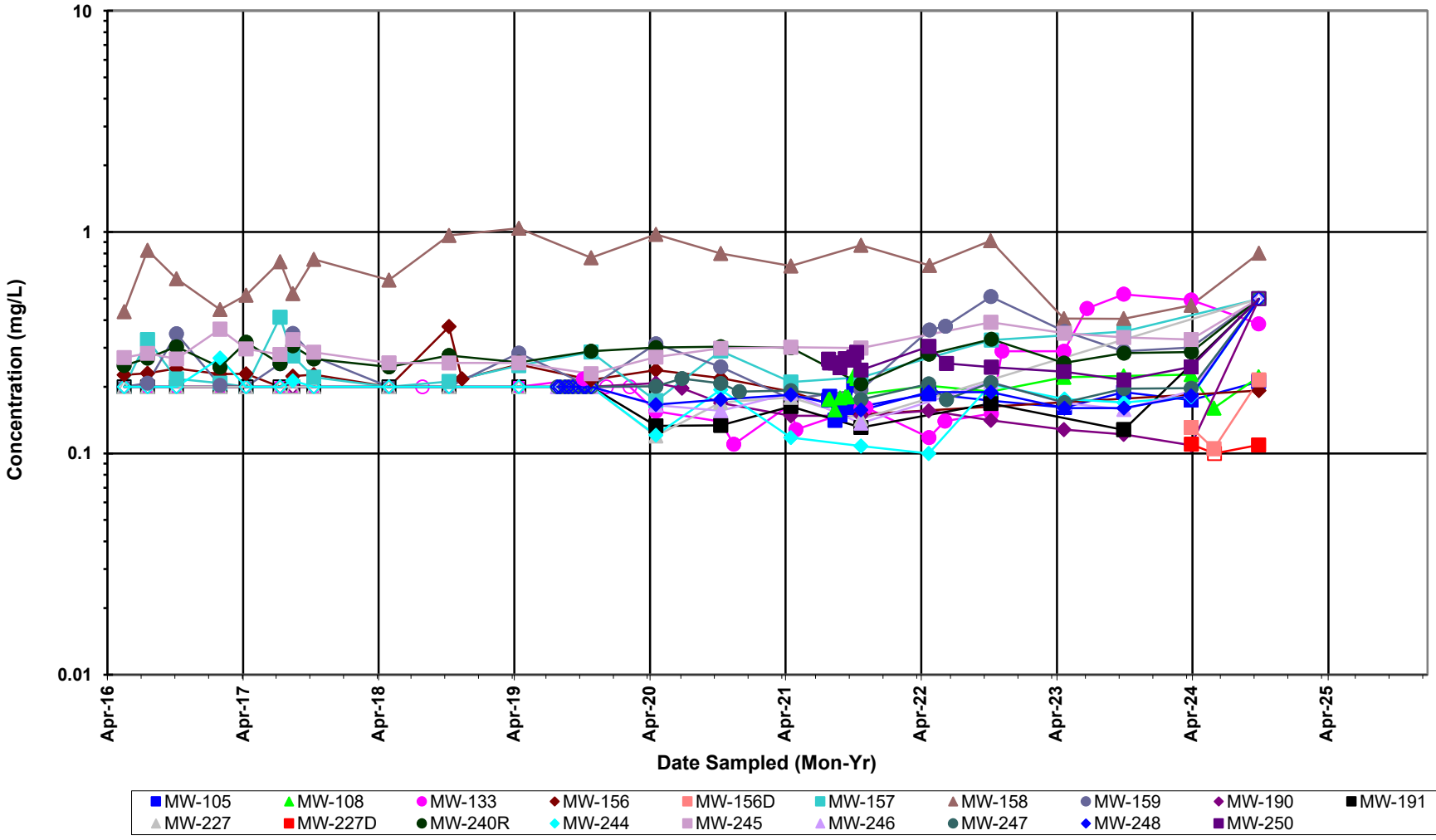
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 1A - BORON - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

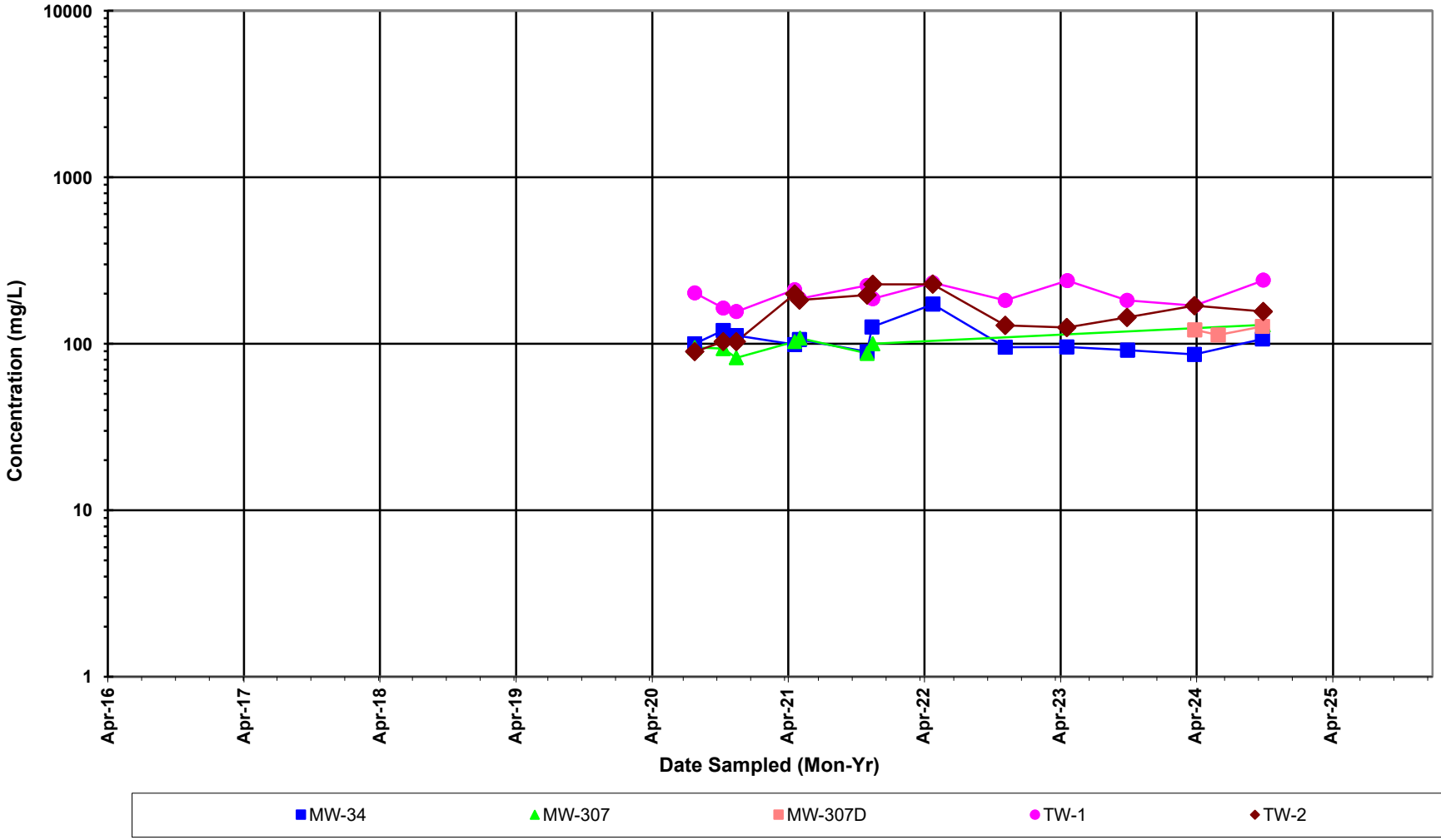
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 1B - BORON - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

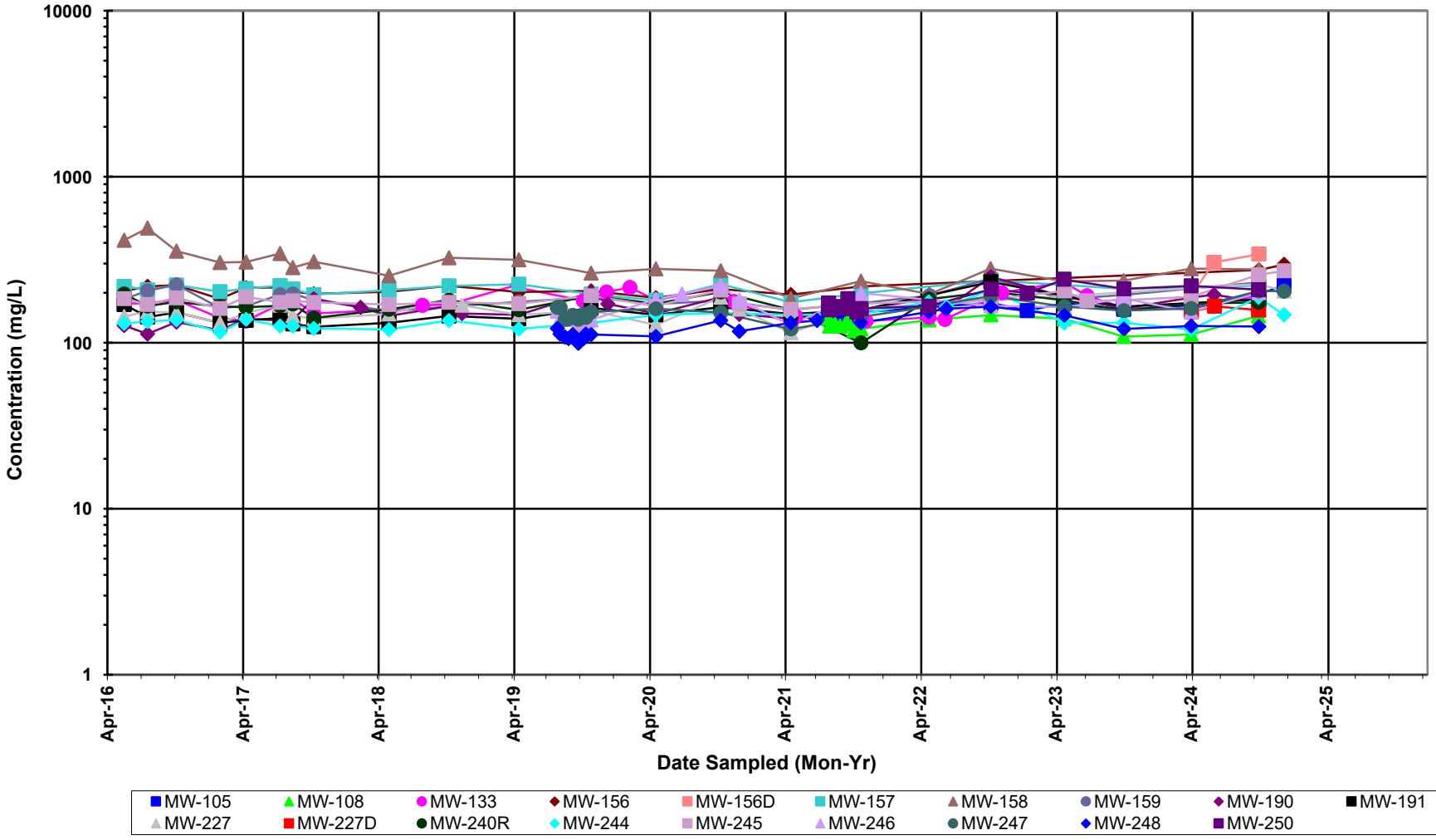
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 2A - CALCIUM - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

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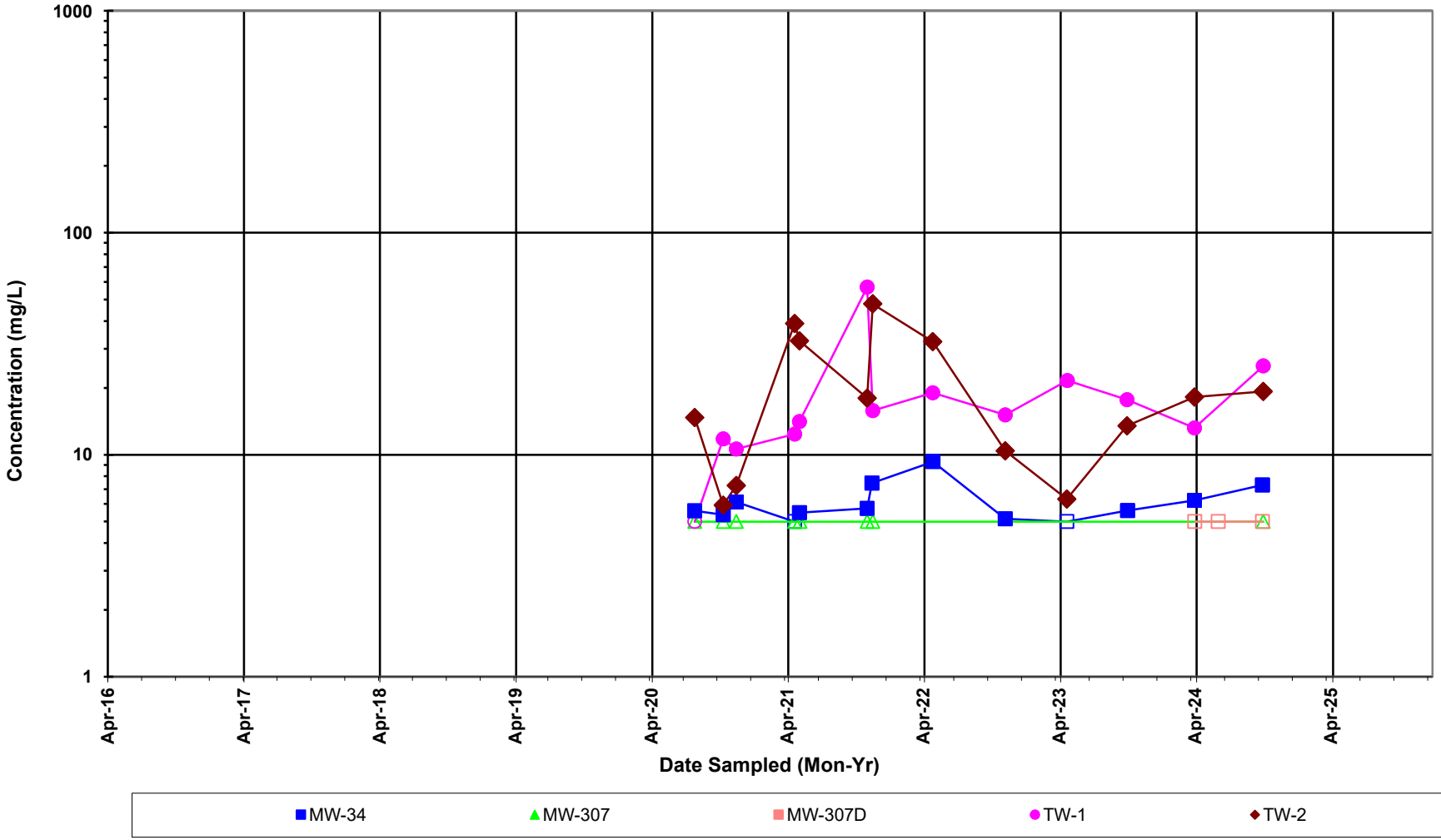
FIGURE 2B - CALCIUM - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

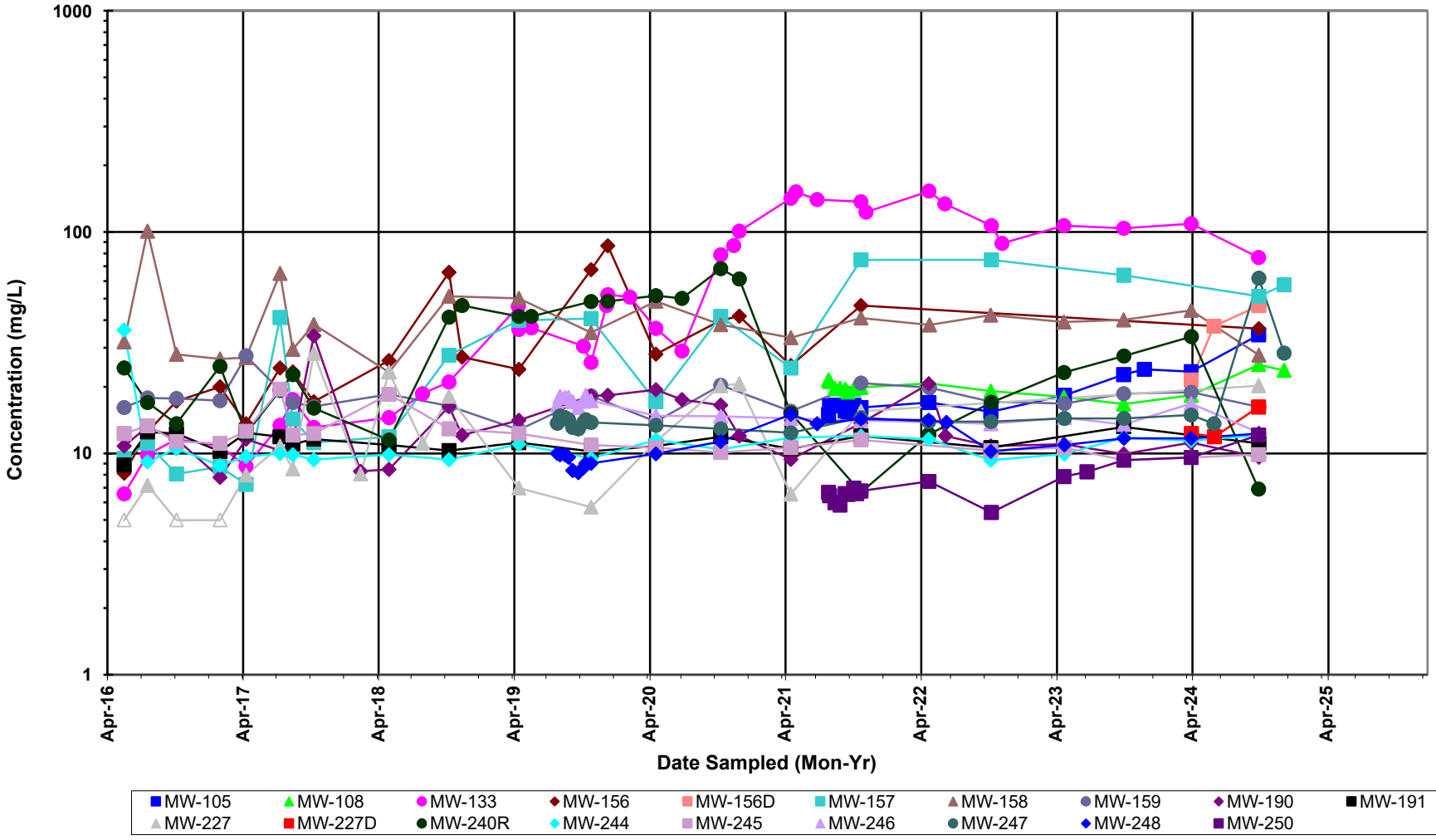
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 3A - CHLORIDE - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

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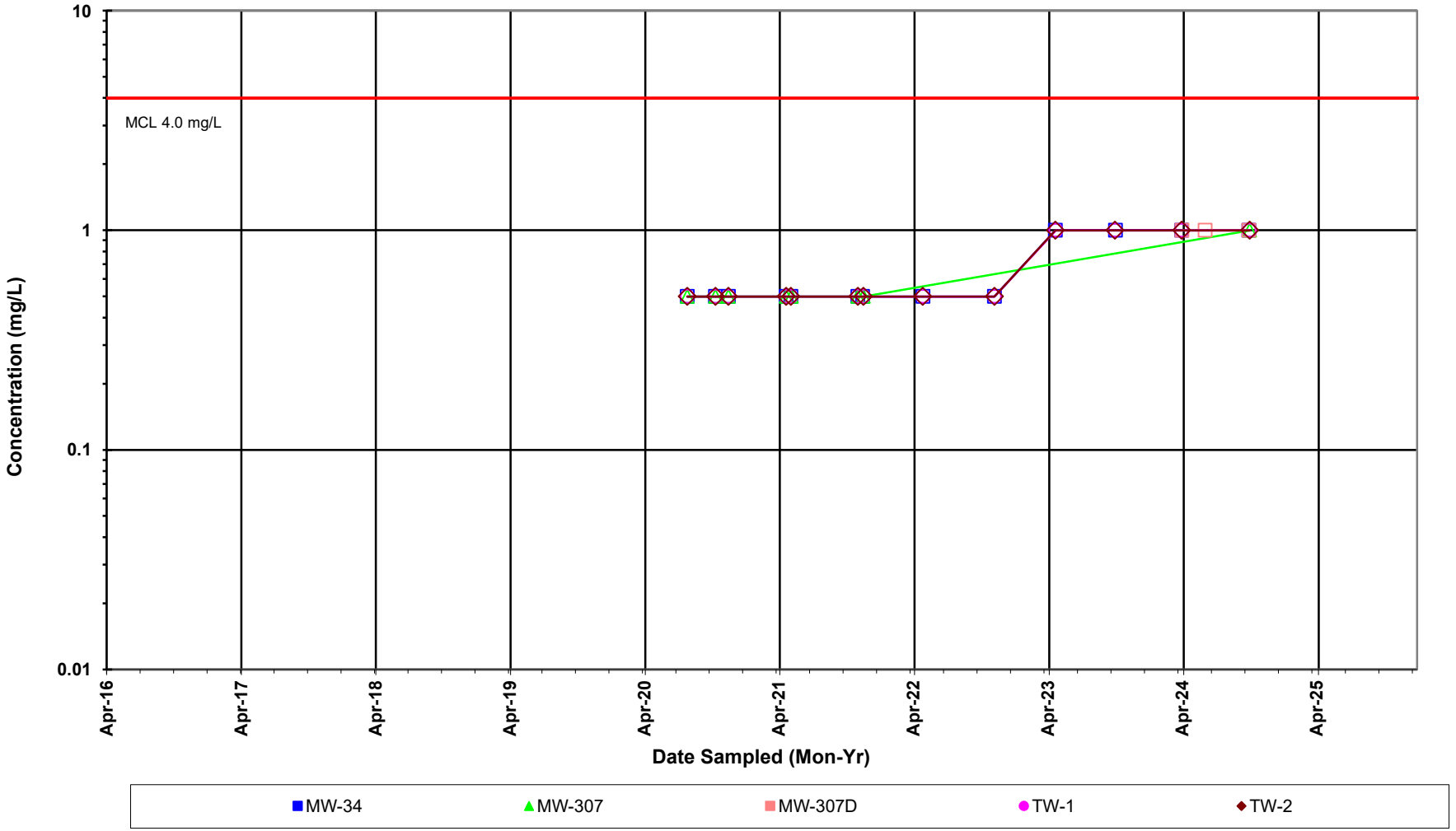
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 3B - CHLORIDE - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

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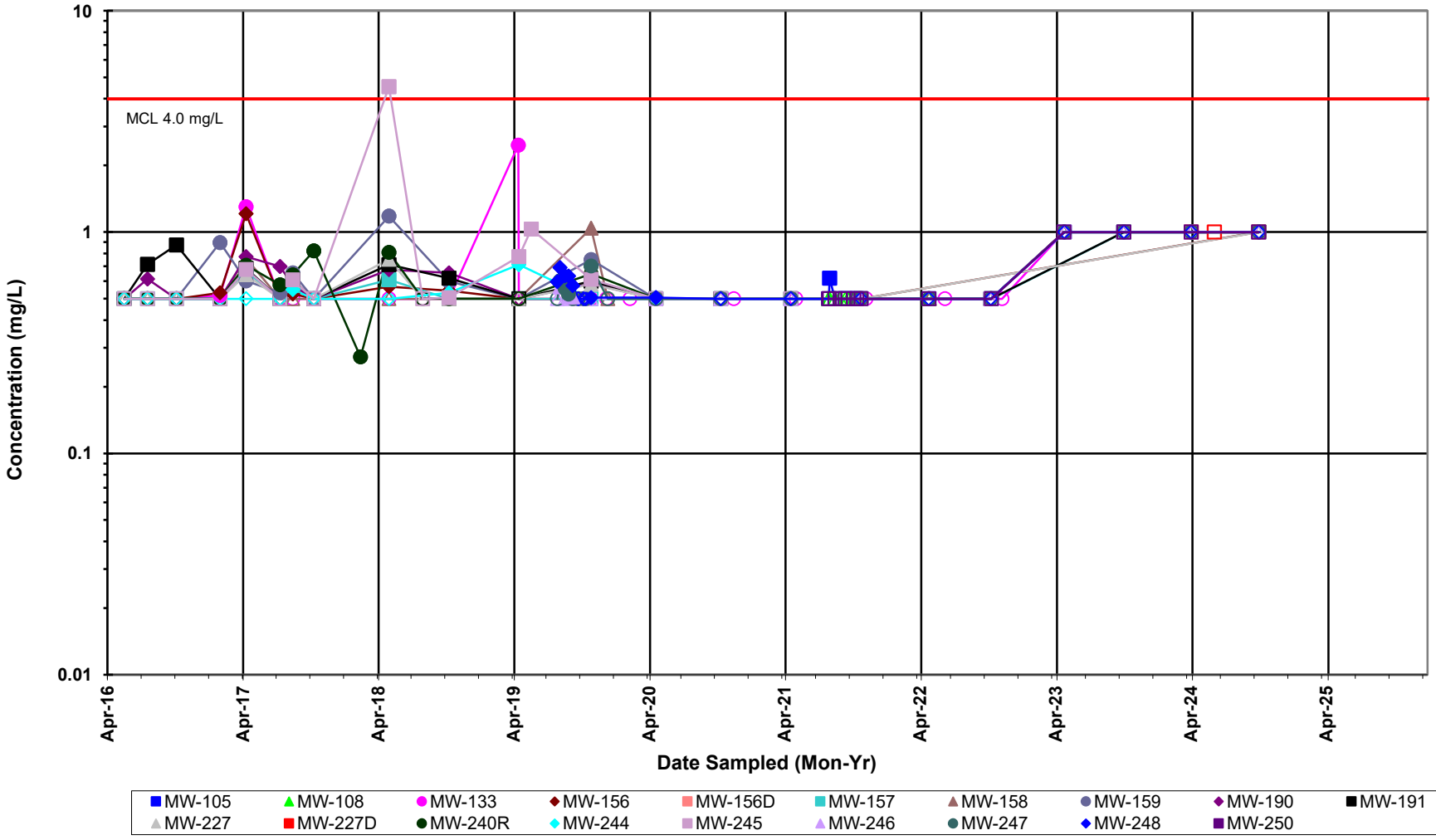
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 4A - FLUORIDE - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

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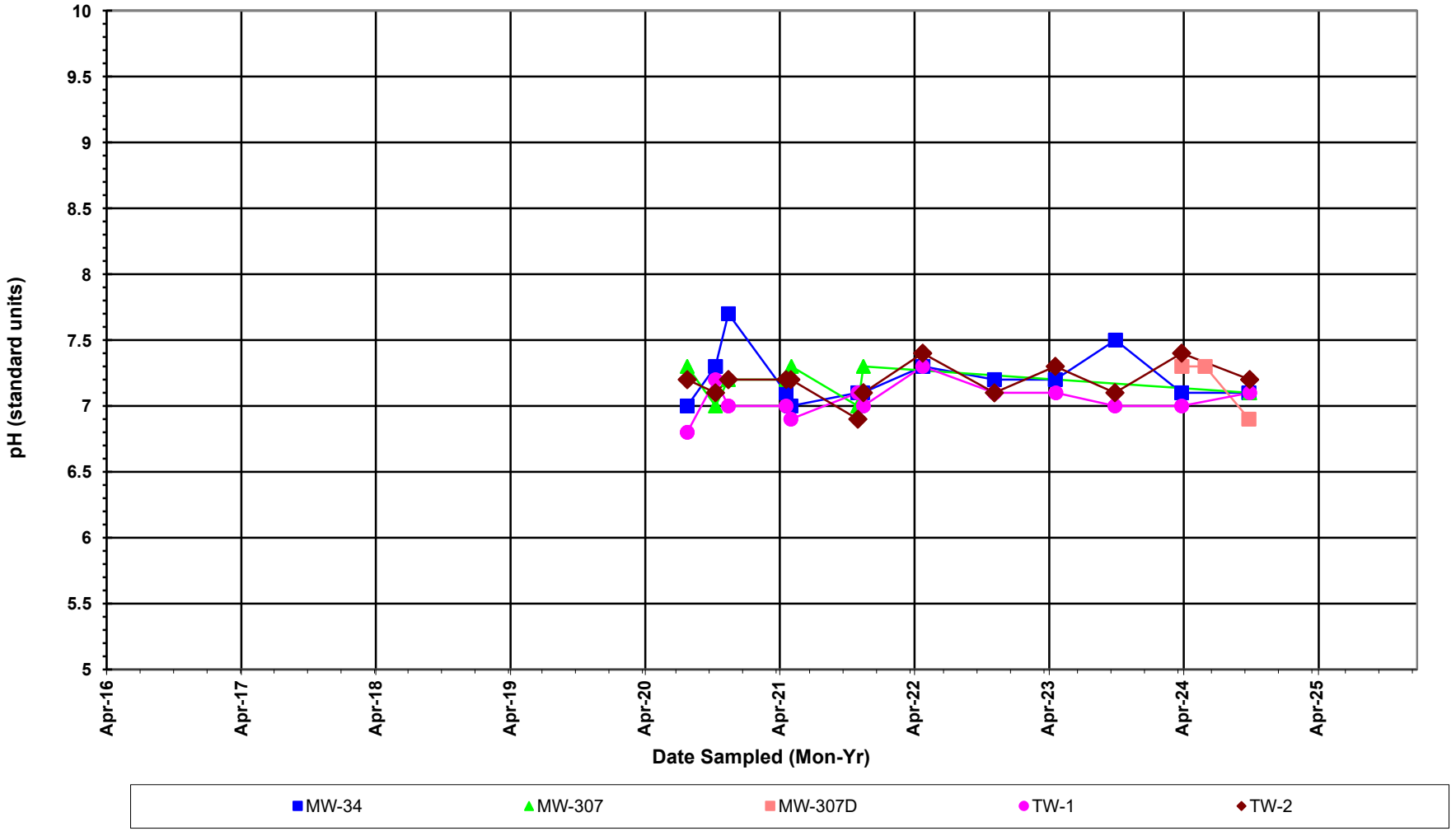
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 4B - FLUORIDE - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

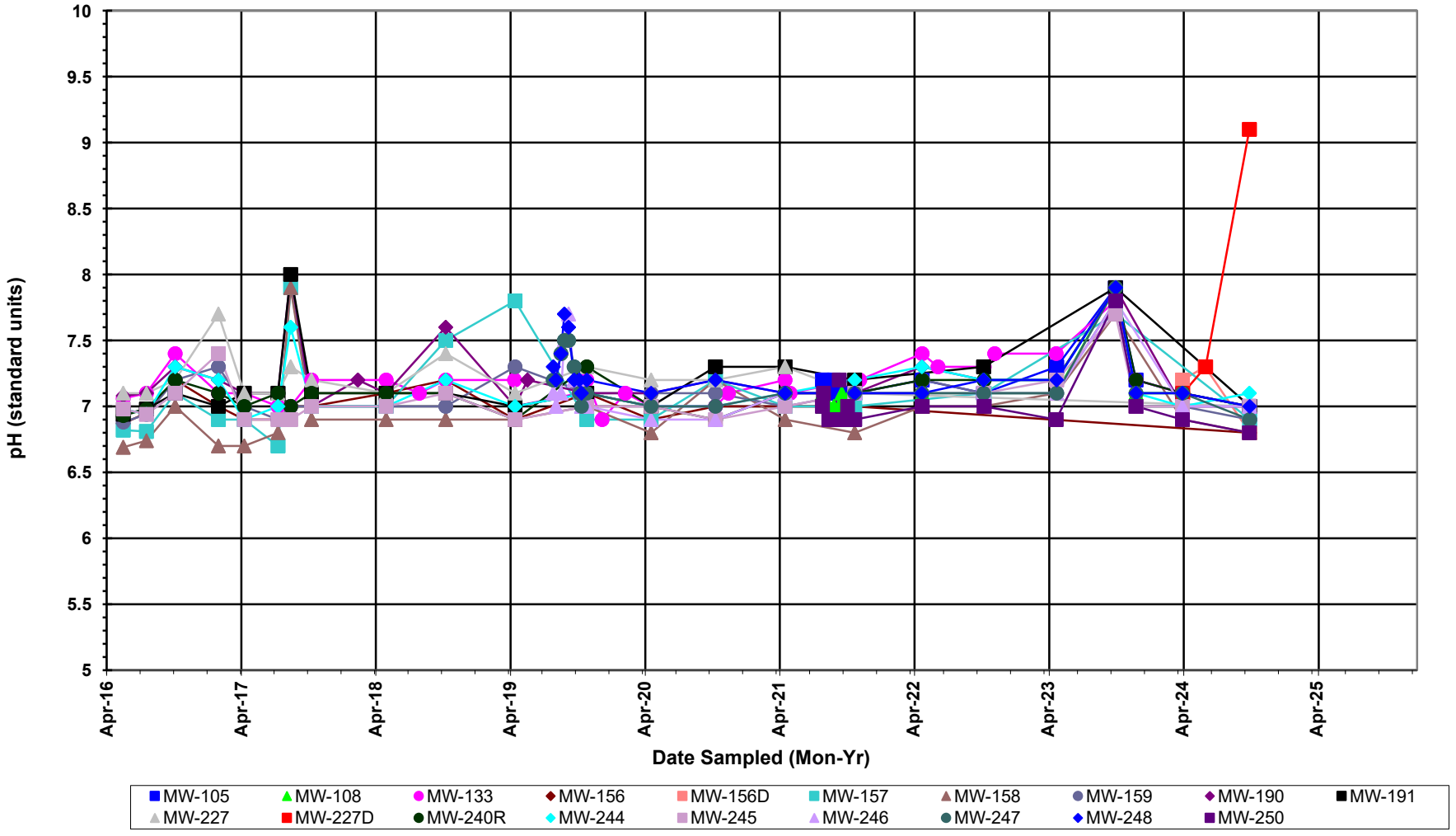
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 5A - PH, LAB - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

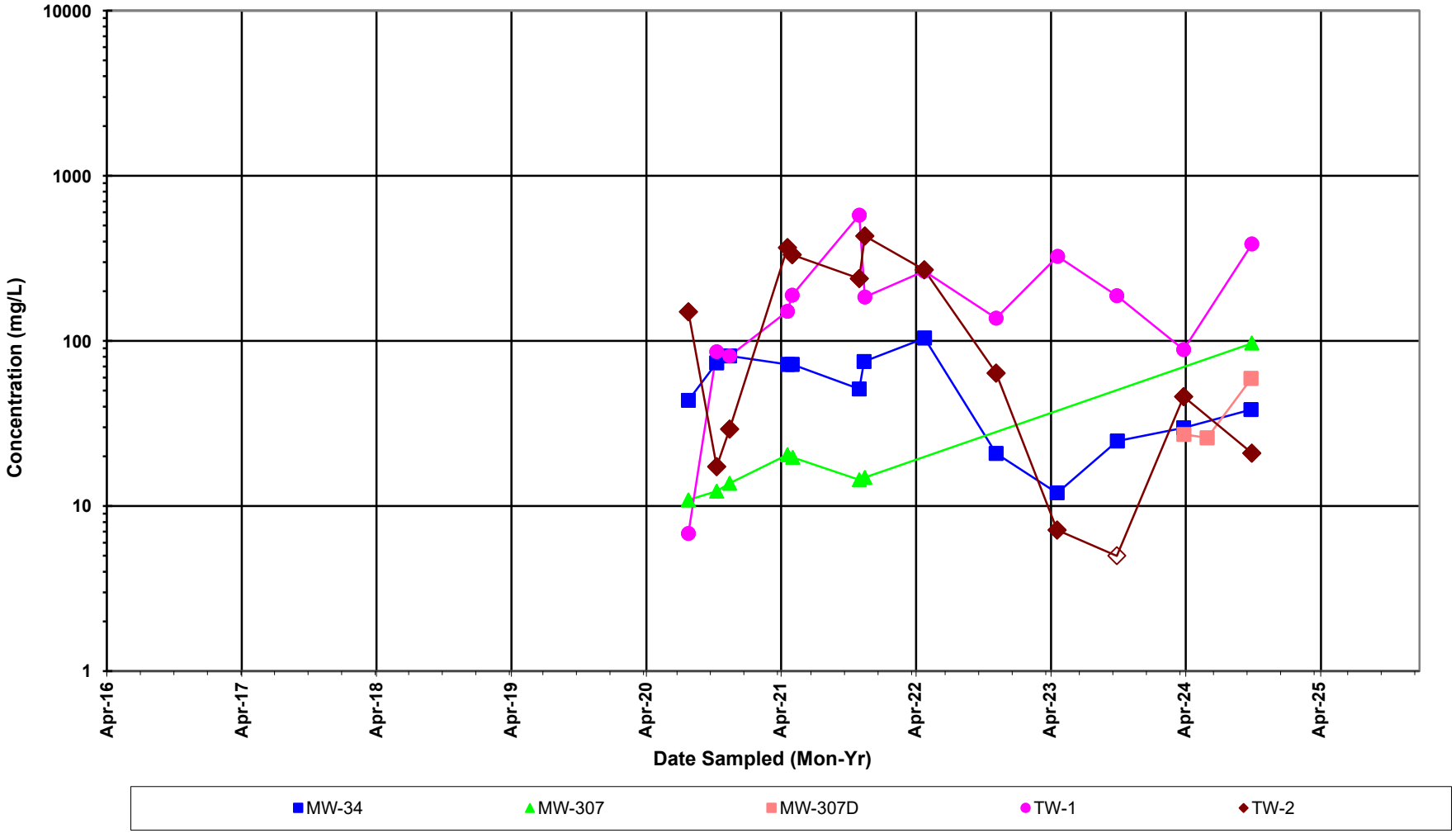
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 5B - PH, LAB - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

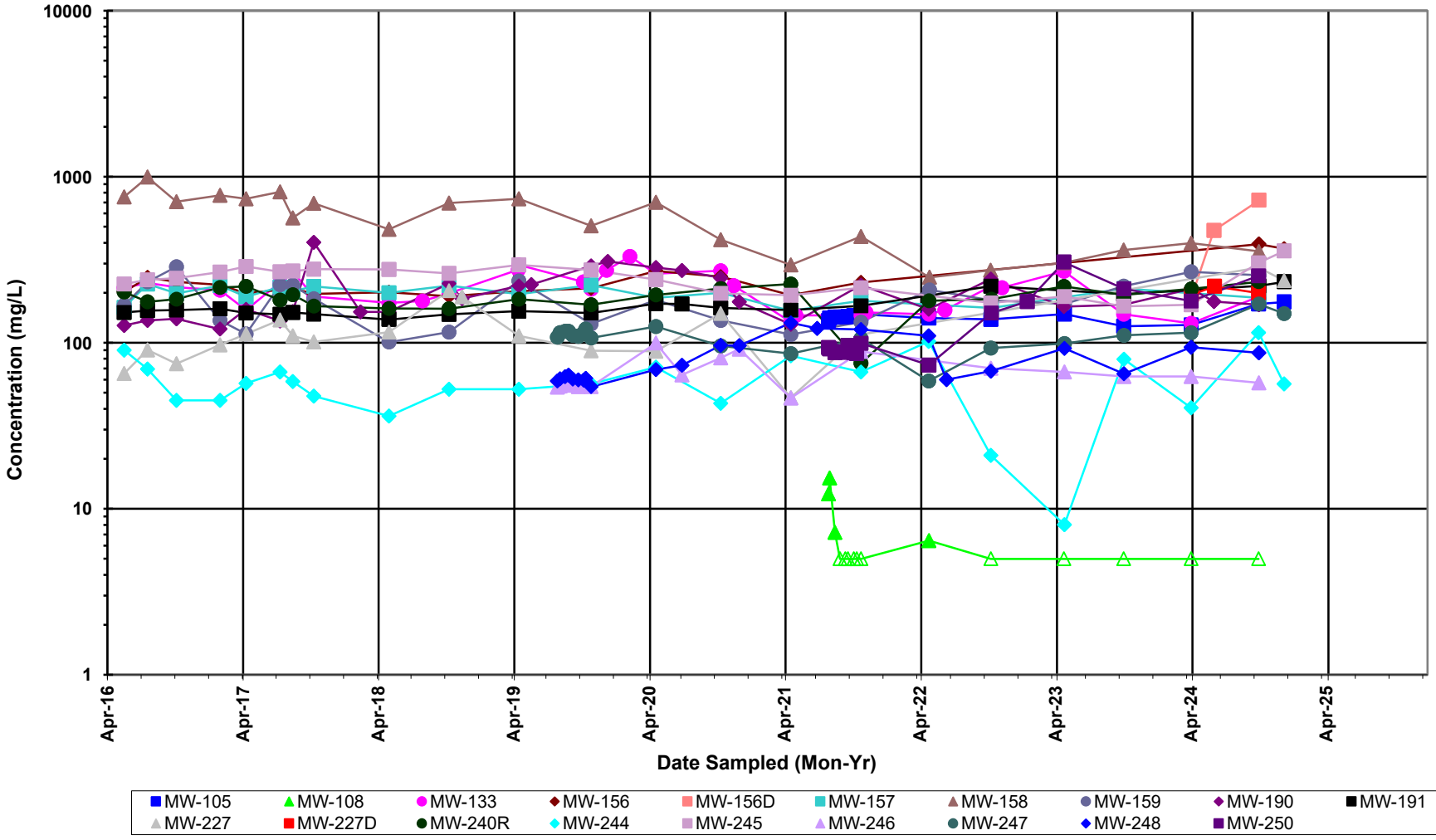
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 6A - SULFATE - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

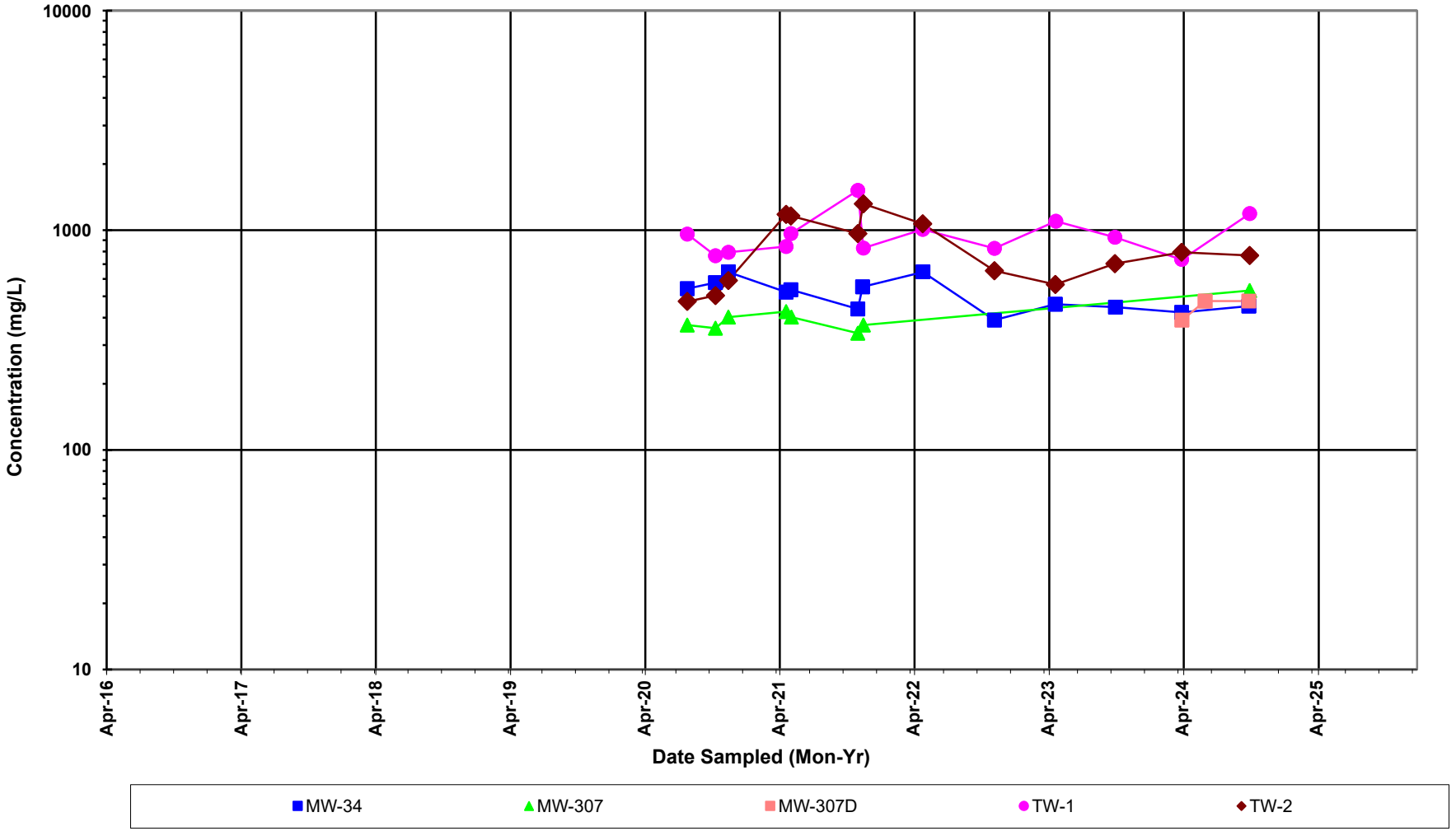
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 6B - SULFATE - MONOFILL WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

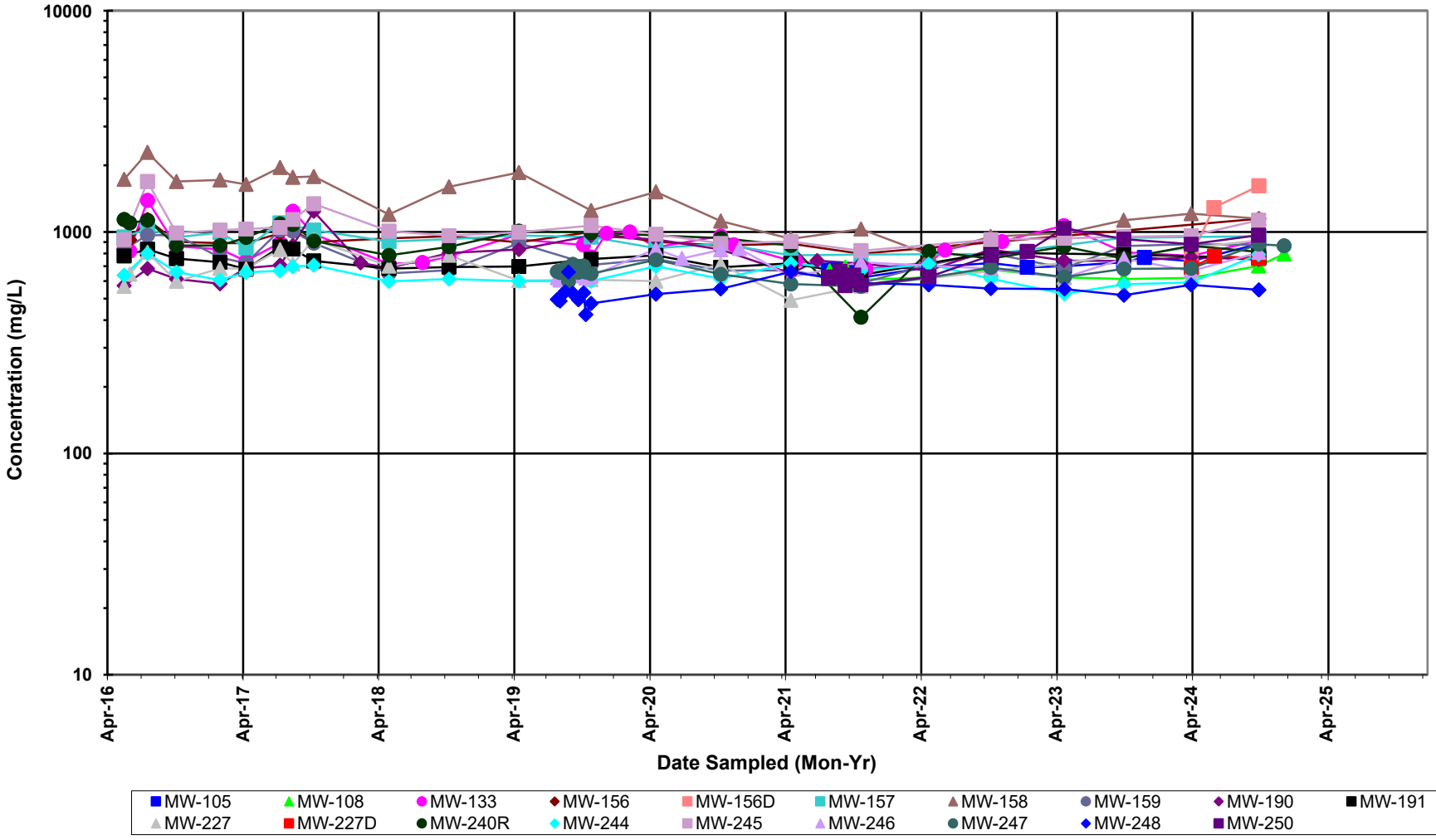
CCR MONOFILL

COUNCIL BLUFFS, IOWA

12592594

1/9/2025

FIGURE 7A - TOTAL DISSOLVED SOLIDS (TDS) - BACKGROUND WELLS



*Open symbols denote a non-detect at reporting detection limit value.

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS, IOWA

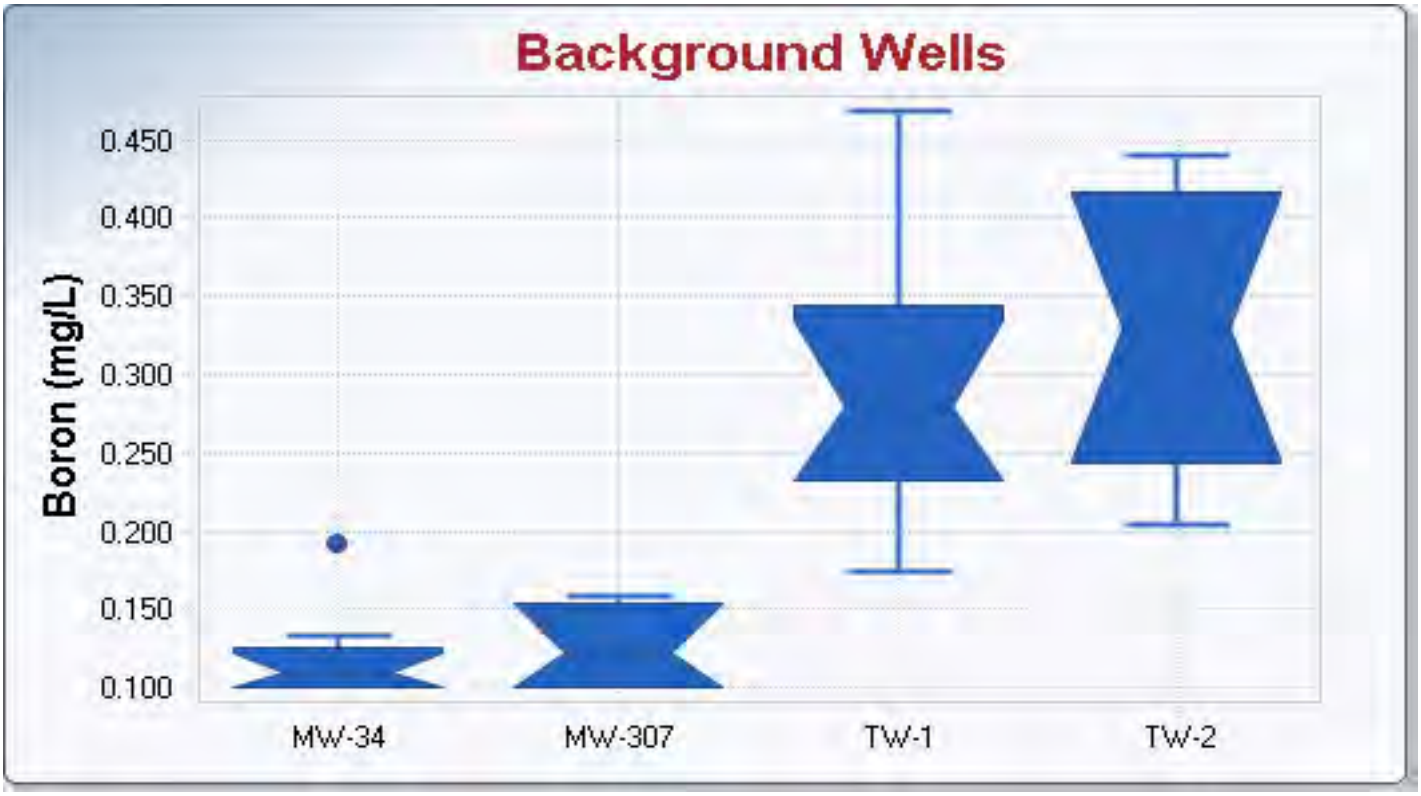
12592594

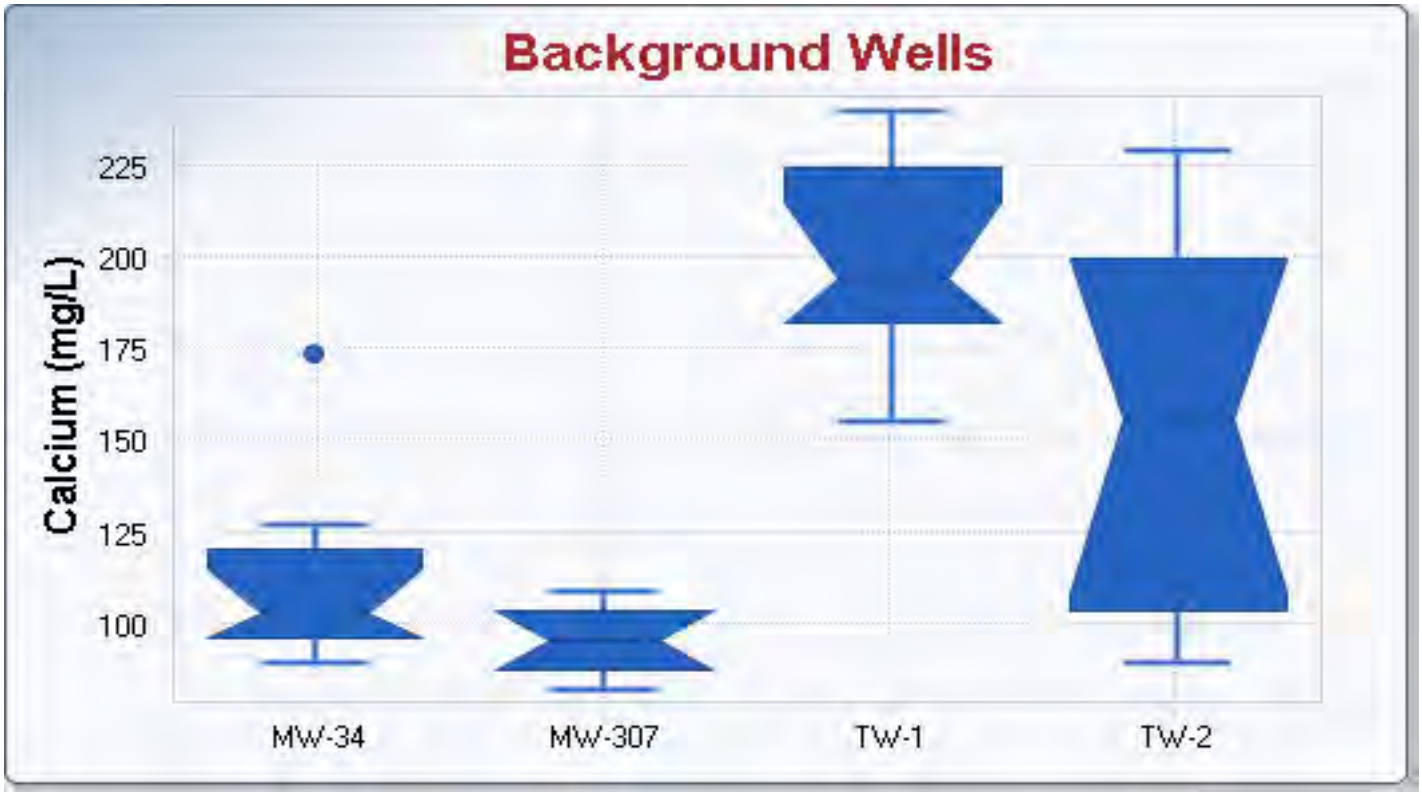
1/9/2025

FIGURE 7B - TOTAL DISSOLVED SOLIDS (TDS) - MONOFILL WELLS

Appendix C

Box Plots for Background Monitoring Wells



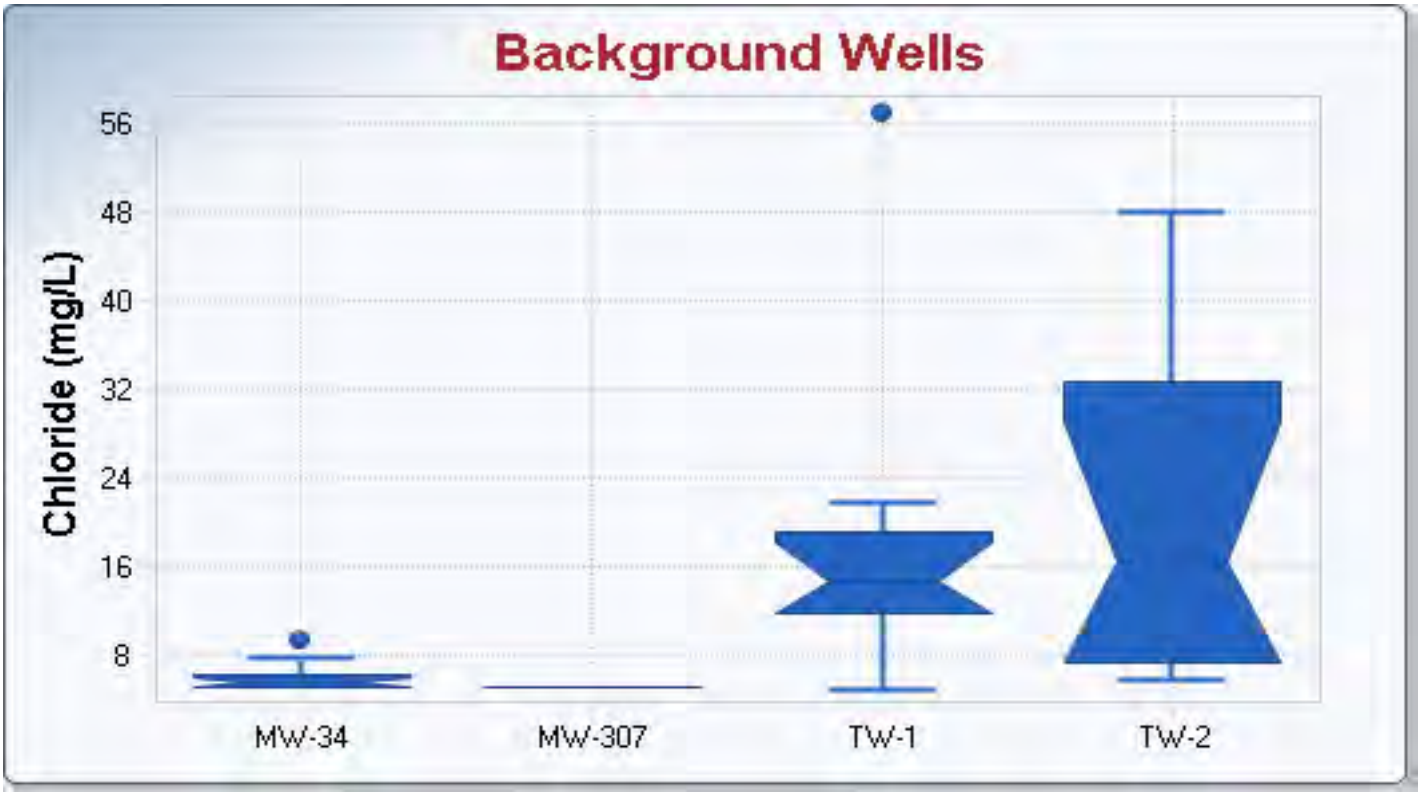


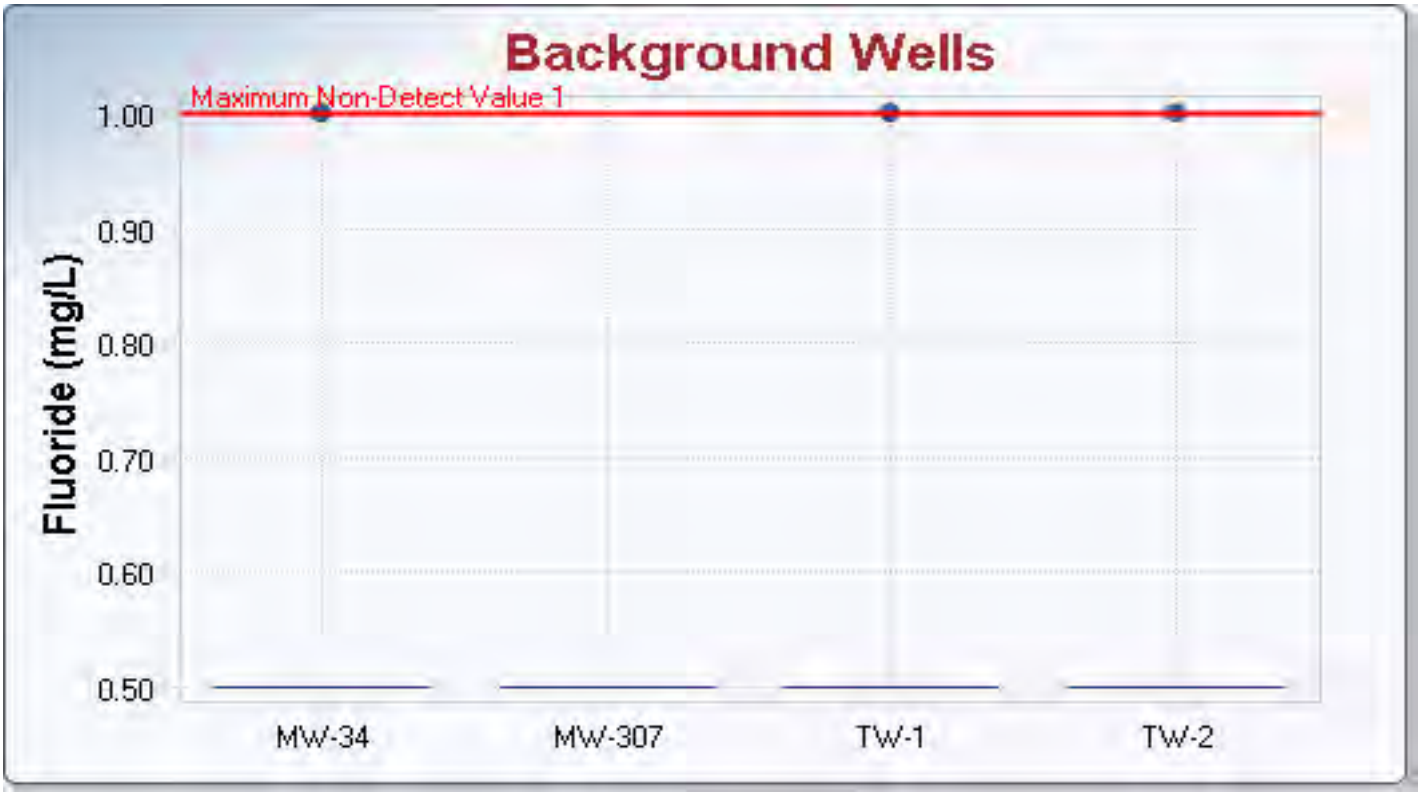
MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

BORON AND CALCIUM
BACKGROUND WELL BOX PLOTS

Project No. **12592594**
Date **Aug. 2023**

FIGURE 1



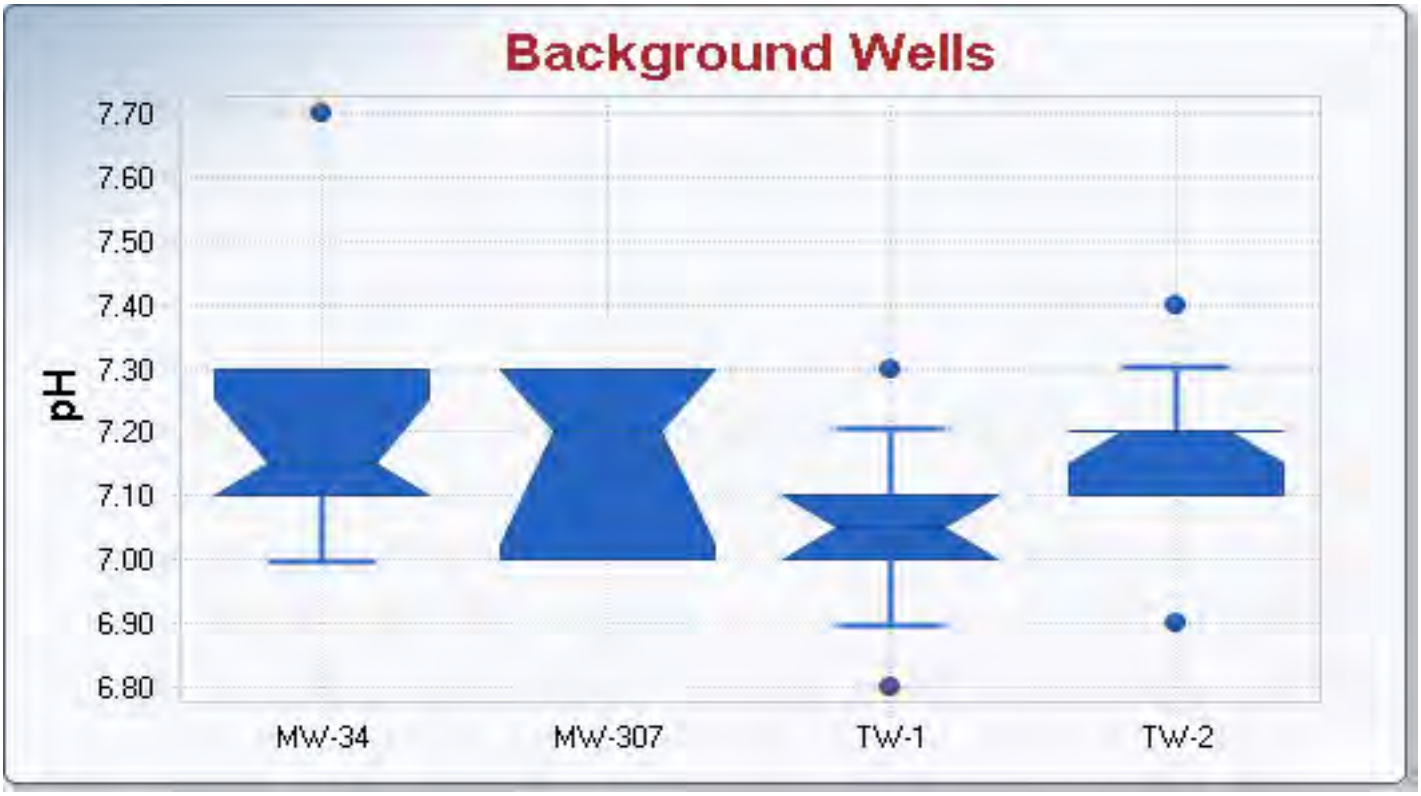


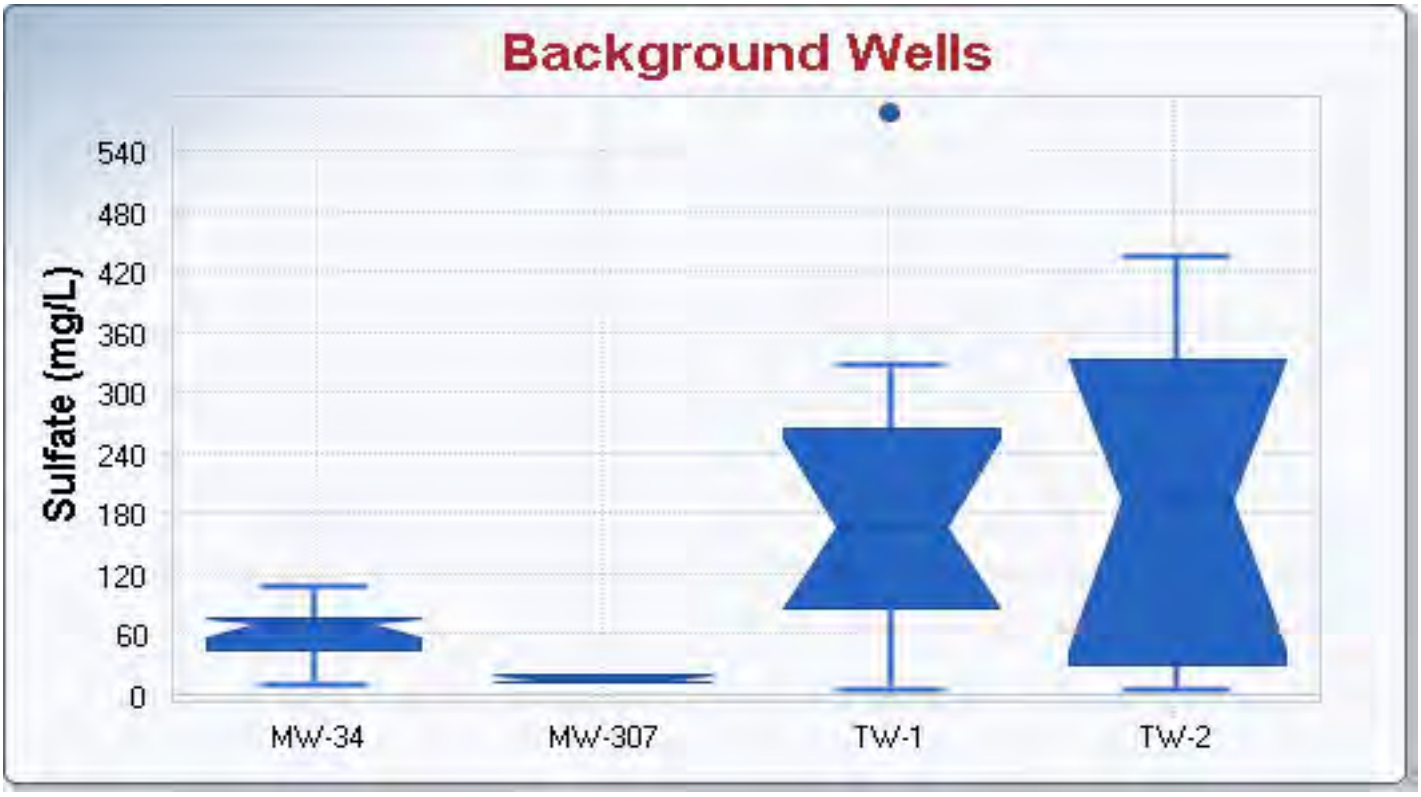
MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

CHLORIDE AND FLUORIDE
BACKGROUND WELL BOX PLOTS

Project No. **12592594**
Date **Aug. 2023**

FIGURE 2





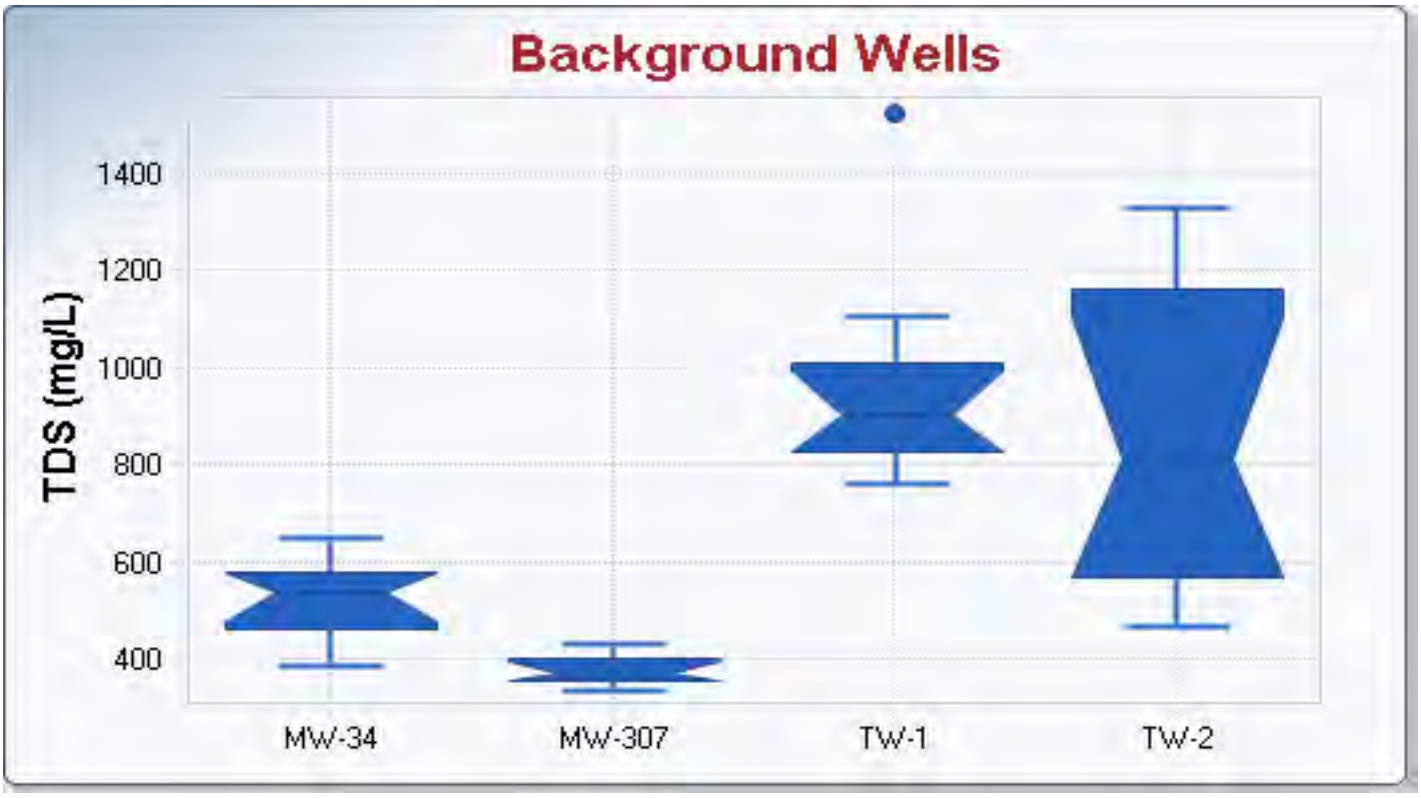
MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

Project No. **12592594**
Date **Aug. 2023**

PH AND SULFATE
BACKGROUND WELL BOX PLOTS

FIGURE 3

G:\563\12592594\Workshare\Working Drafts\2023-08 Monofill ASD\ProUCL\New Outputs\12592594 Box Plots.xlsx\12592594 Box Plots.xlsx
Print Date: 8/23/2023 11:35 AM



MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

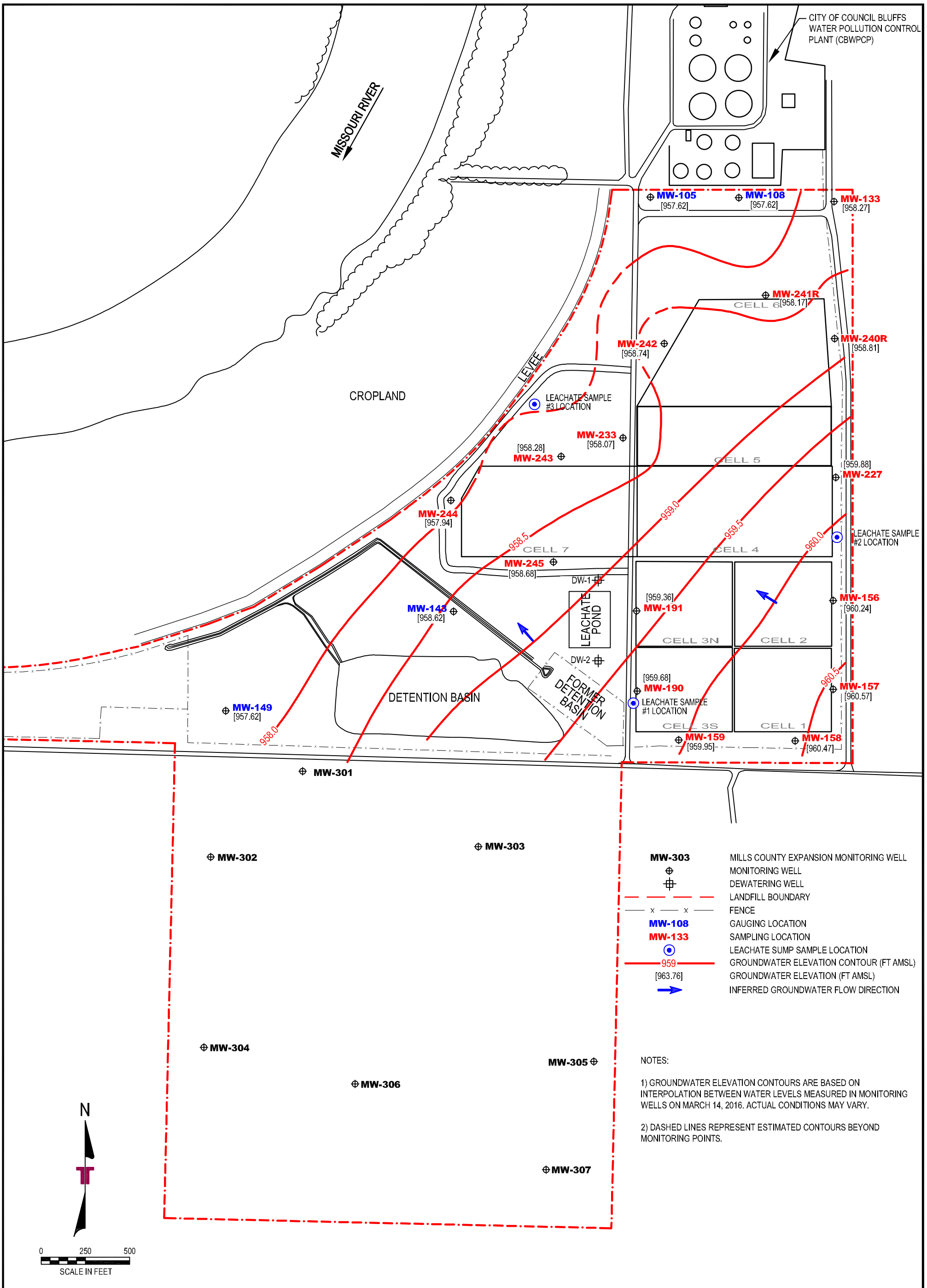
TOTAL DISSOLVED SOLIDS
BACKGROUND WELL BOX PLOTS

Project No. **12592594**
Date **Aug. 2023**

FIGURE 4

Appendix D

Groundwater Flow Maps



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON MARCH 14, 2016. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-3/14/16

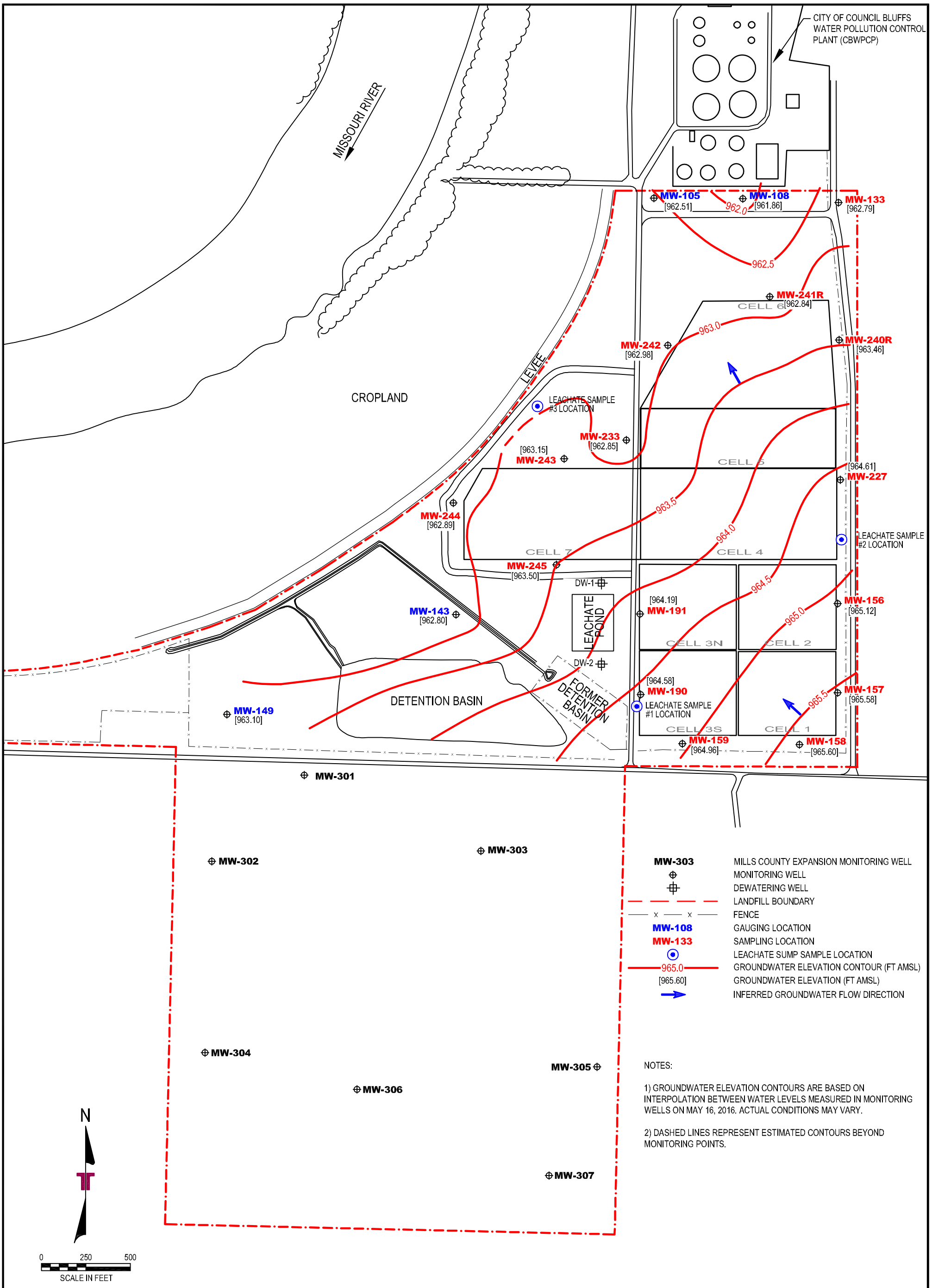
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	3



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON MAY 16, 2016. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-5/16/16

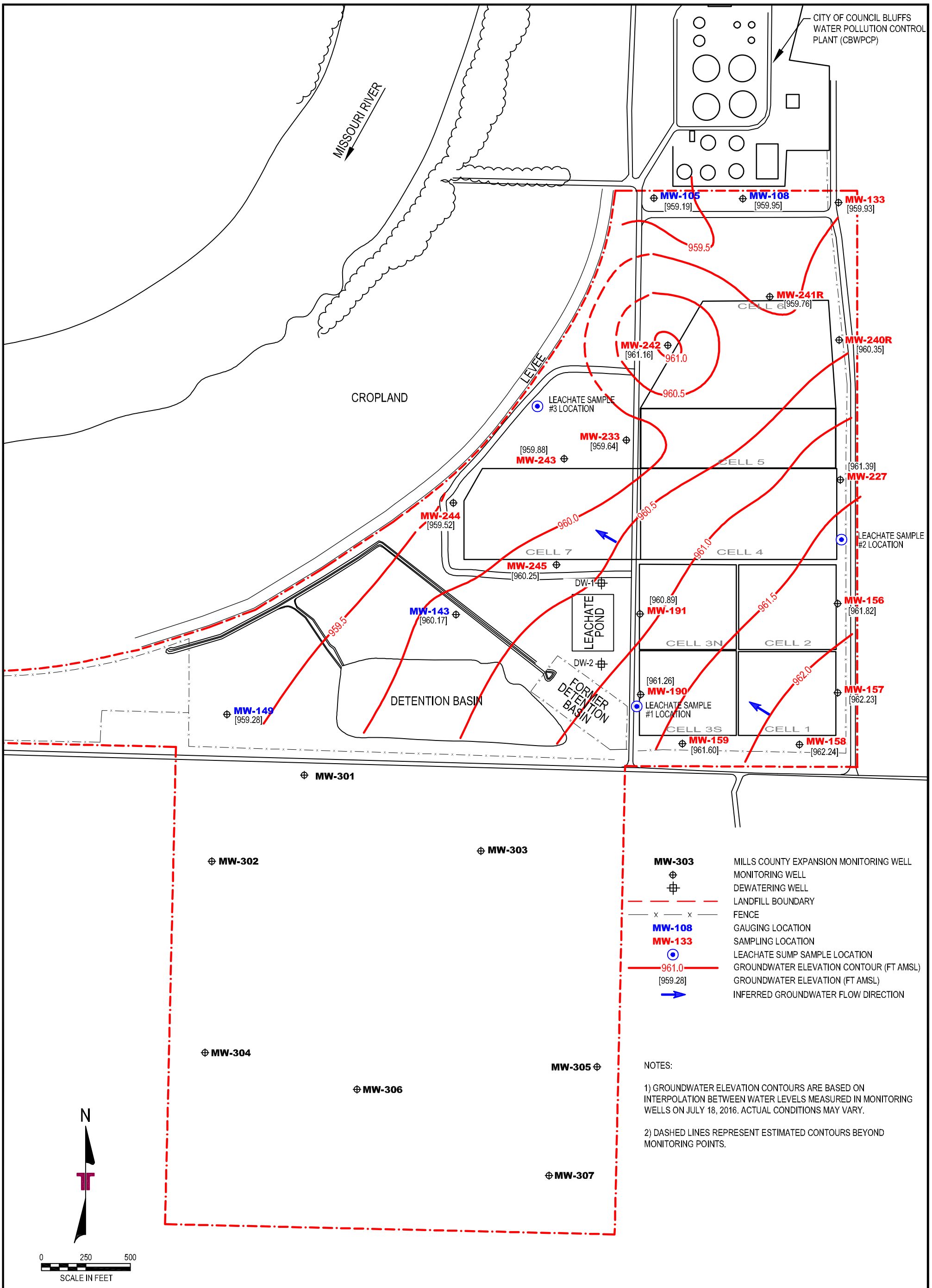
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	4



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON JULY 18, 2016. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
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PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-7/18/16

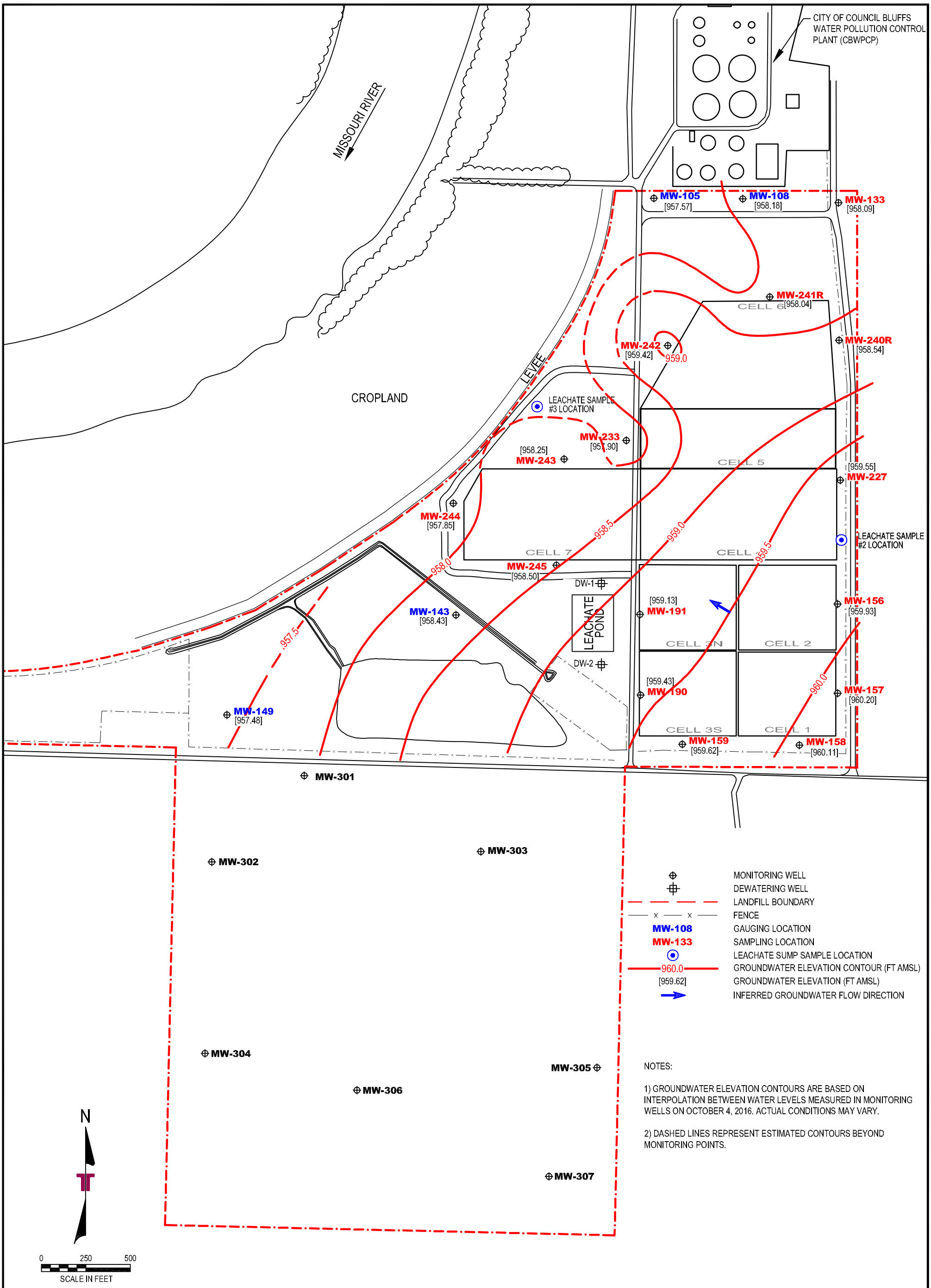
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	5



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON OCTOBER 4, 2016. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-10/4/16

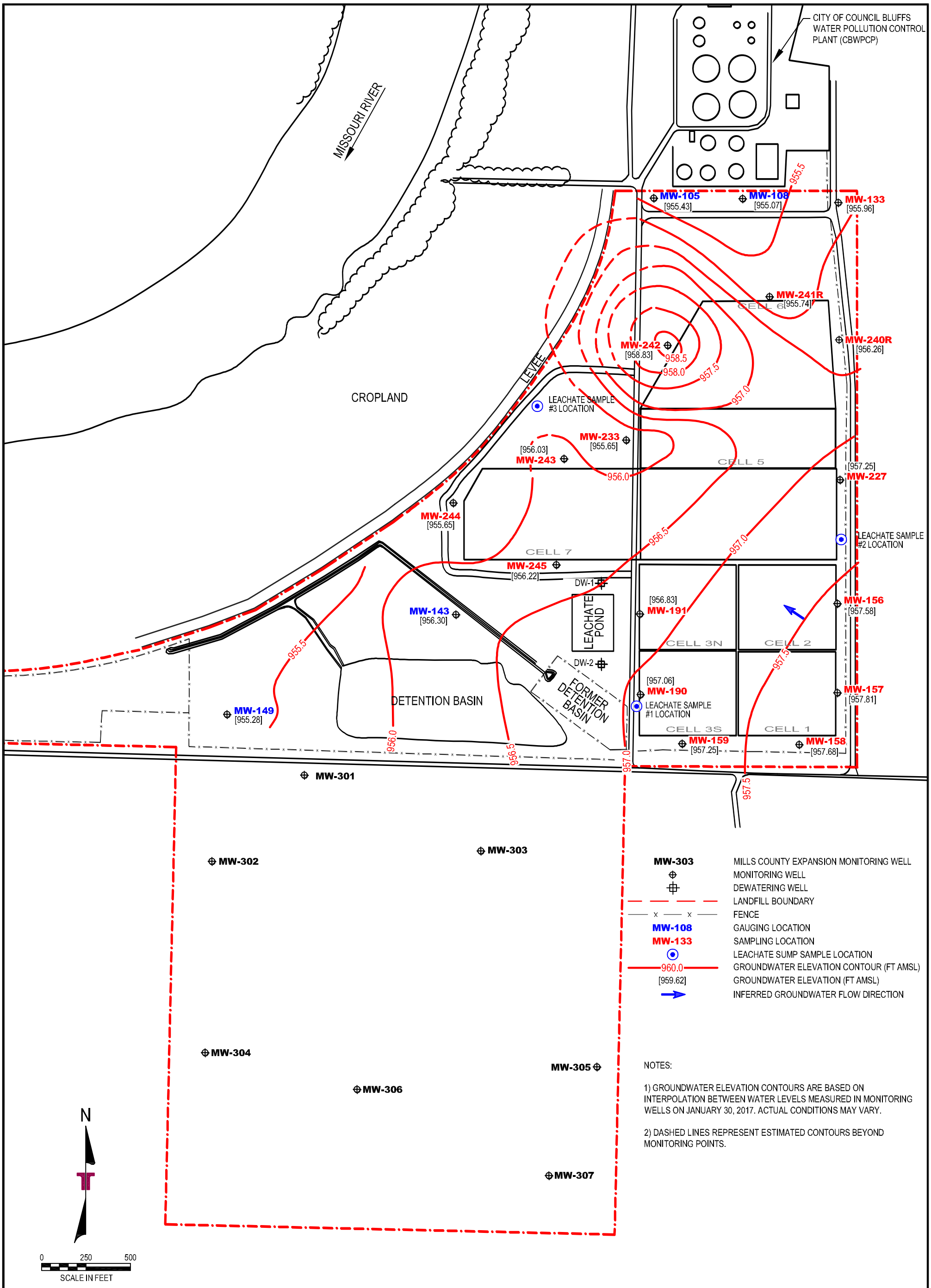
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	6



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON JANUARY 30, 2017. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
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PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-1/30/17

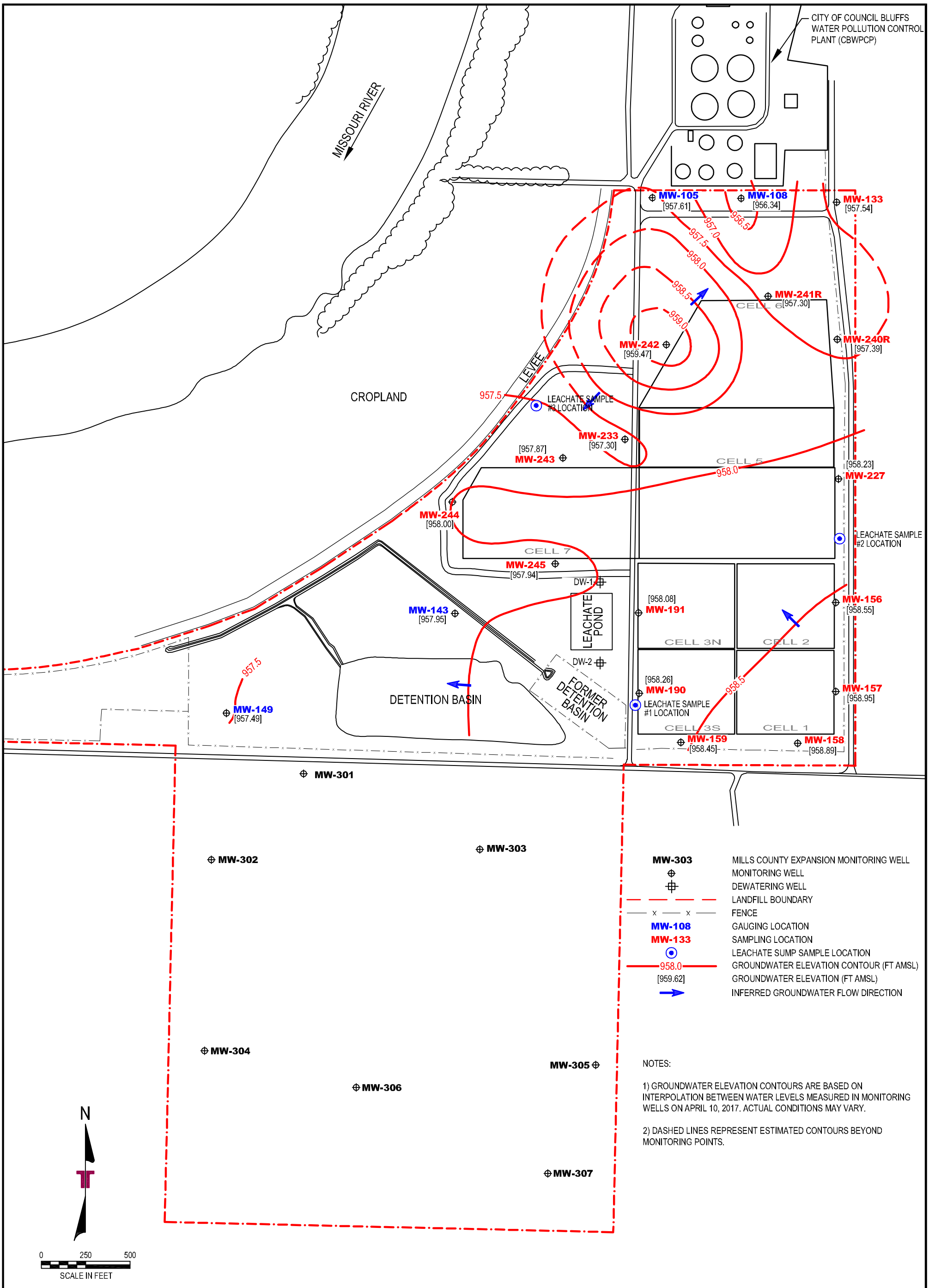
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	7



MW-303 MILLS COUNTY EXPANSION MONITORING WELL
MONITORING WELL
DEWATERING WELL
LANDFILL BOUNDARY
FENCE
MW-108 GAUGING LOCATION
MW-133 SAMPLING LOCATION
LEACHATE SUMP SAMPLE LOCATION
958.0 GROUNDWATER ELEVATION CONTOUR (FT AMSL)
[959.62] GROUNDWATER ELEVATION (FT AMSL)
INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON APRIL 10, 2017. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-4/10/17

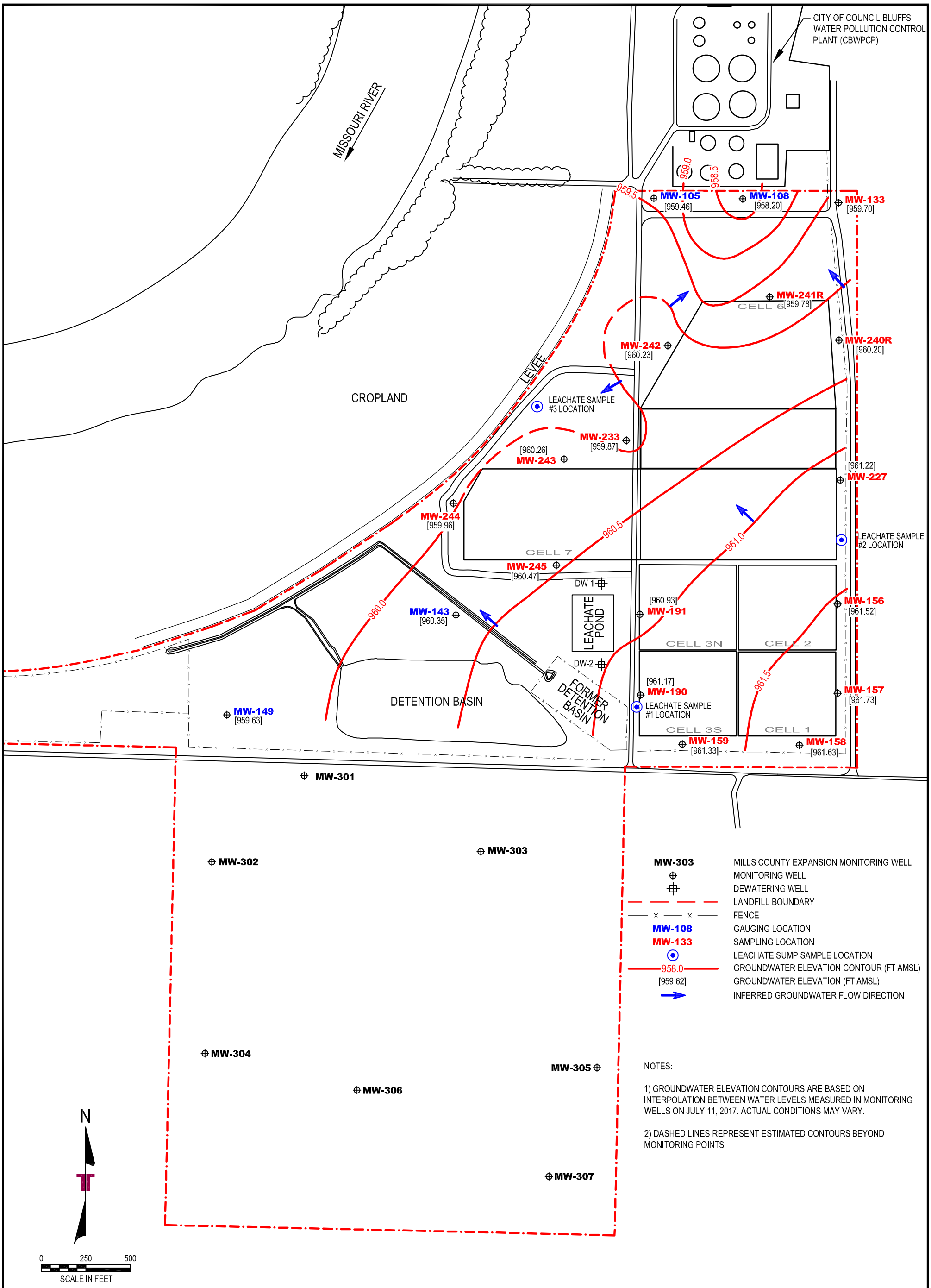
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	8



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON JULY 11, 2017. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-7/11/17

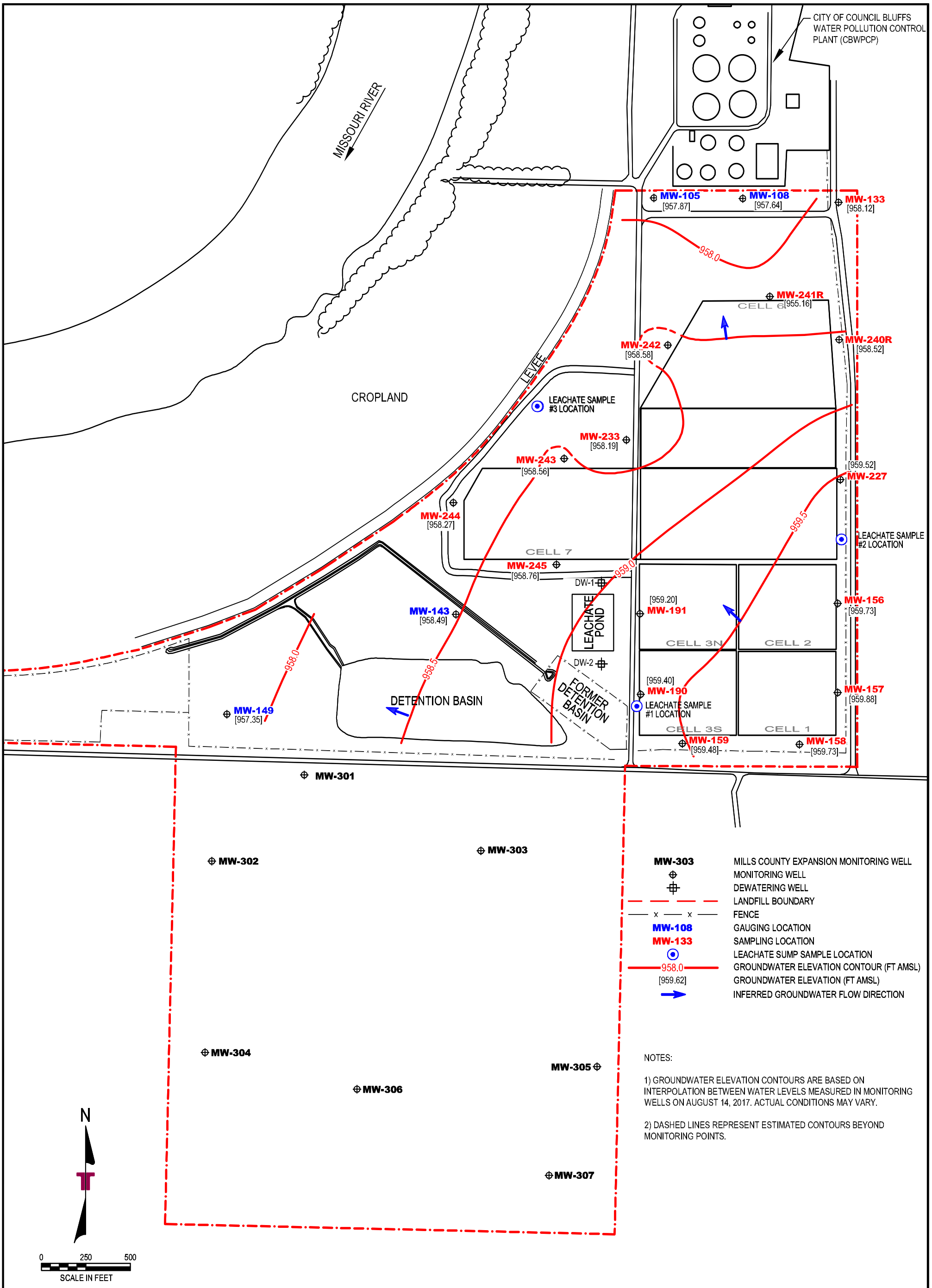
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	9



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON AUGUST 14, 2017. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-8/14/17

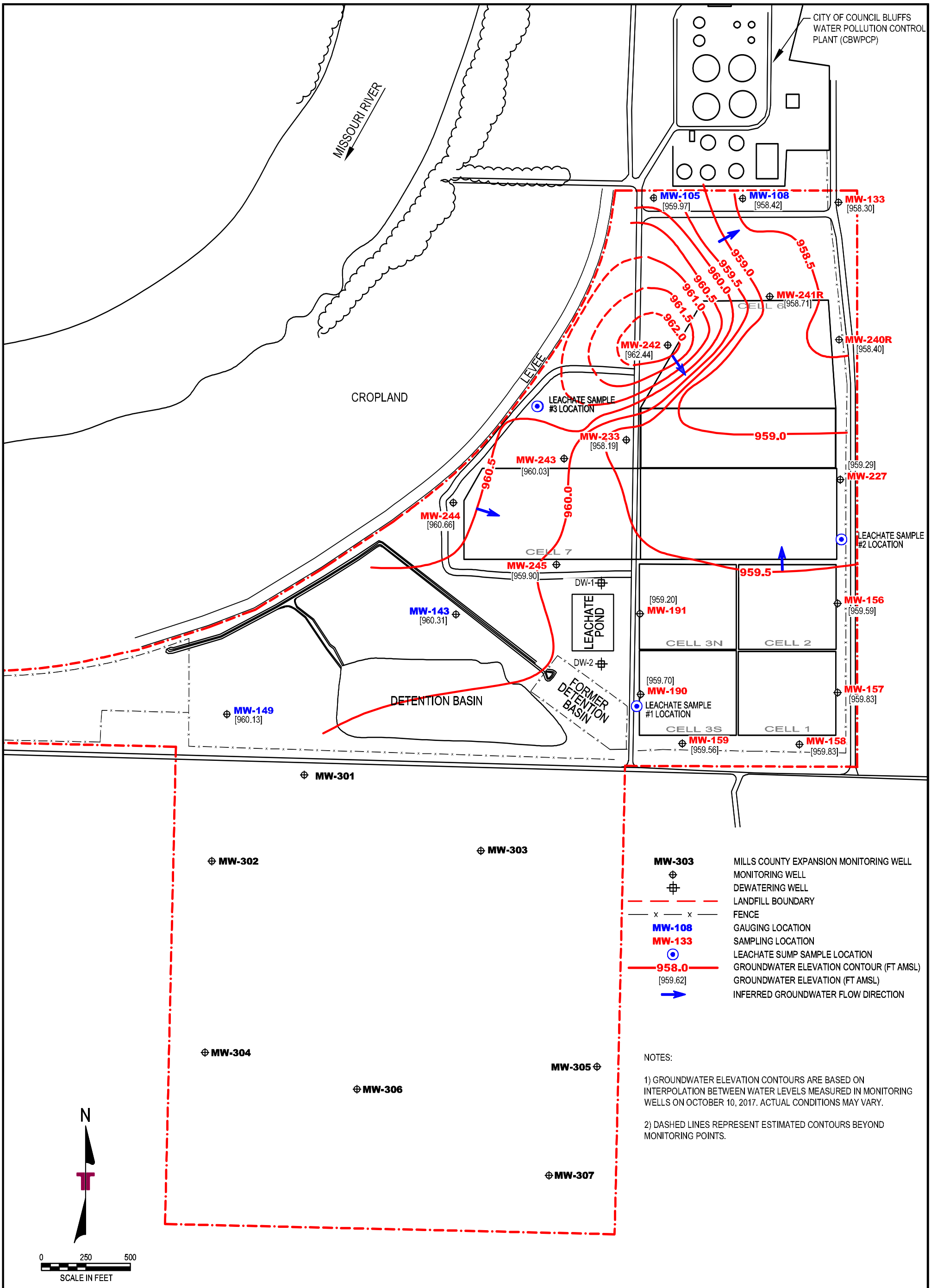
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	10



MW-303 — MILLS COUNTY EXPANSION MONITORING WELL
MONITORING WELL
DEWATERING WELL
LANDFILL BOUNDARY
FENCE
MW-108 — GAUGING LOCATION
MW-133 — SAMPLING LOCATION
LEACHATE SUMP SAMPLE LOCATION
958.0 — GROUNDWATER ELEVATION CONTOUR (FT AMSL)
[959.62] — GROUNDWATER ELEVATION (FT AMSL)
INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON OCTOBER 10, 2017. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-10/10/17

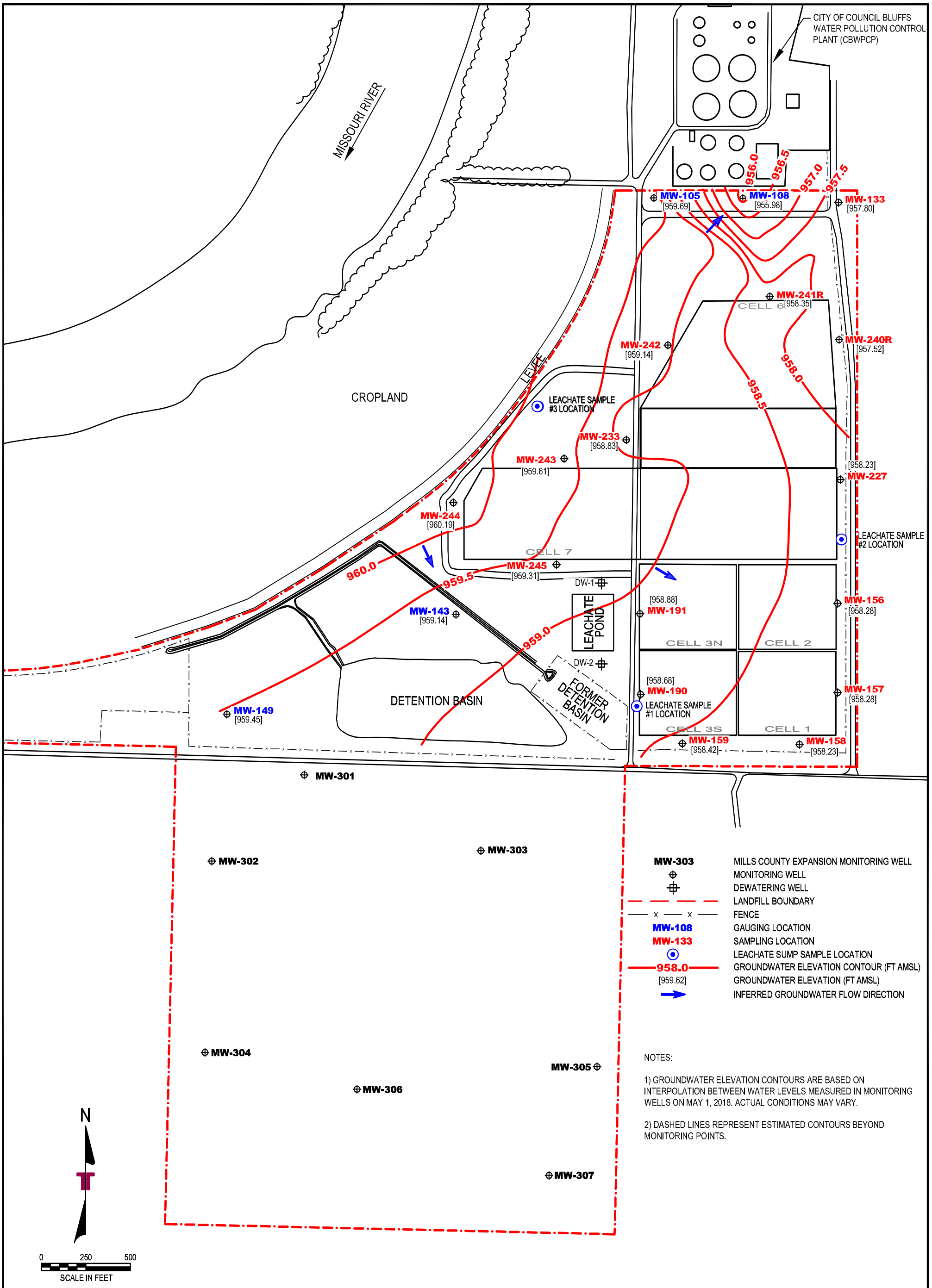
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/2/17
JOB NO.	05157640
ACAD NO.	05157640C15
FIGURE NO.:	11



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON MAY 1, 2018. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-5/1/18

MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	5/11/18
JOB NO.	05157640
ACAD NO.	05157640C18
FIGURE NO.:	3

CITY OF COUNCIL BLUFFS WATER POLLUTION CONTROL PLANT (CBWPCP)

MISSOURI RIVER

MW-105 [965.48]

MW-108 [964.87]

MW-133 [964.96]

MW-241R [965.05]

CELL 6

965.00

MW-242 [965.04]

MW-240R [965.02]

965.25

LEVEE

CROPLAND

LEACHATE SAMPLE #3 LOCATION

965.50

MW-233 [965.12]

965.75

MW-243 [965.65]

MW-244 [965.76]

MW-227 [965.76]

LEACHATE SAMPLE #2 LOCATION

CELL 7

MW-245 [965.70]

DW-1

[965.80] MW-191

MW-156 [965.95]

966.00

CELL 3N

CELL 2

LEACHATE POND

MW-143 [965.74]

DW-2

FORMER DETENTION BASIN

[965.92] MW-190

MW-157 [966.16]

LEACHATE SAMPLE #1 LOCATION

DETENTION BASIN

CELL 3S

CELL 1

MW-159 [965.93]

MW-158 [965.93]

MW-149 [965.43]

MW-301

MW-302

MW-303

MW-304

MW-305

MW-306

MW-307

MW-303	MILLS COUNTY EXPANSION MONITORING WELL
⊕	MONITORING WELL
⊞	DEWATERING WELL
— — — —	LANDFILL BOUNDARY
— x — x —	FENCE
MW-108	GAUGING LOCATION
MW-133	SAMPLING LOCATION
⊙	LEACHATE SUMP SAMPLE LOCATION
958.0	GROUNDWATER ELEVATION CONTOUR (FT AMSL)
[959.62]	GROUNDWATER ELEVATION (FT AMSL)
→	INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON OCTOBER 10, 2018. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

N

0 250 500

SCALE IN FEET

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-10/10/18

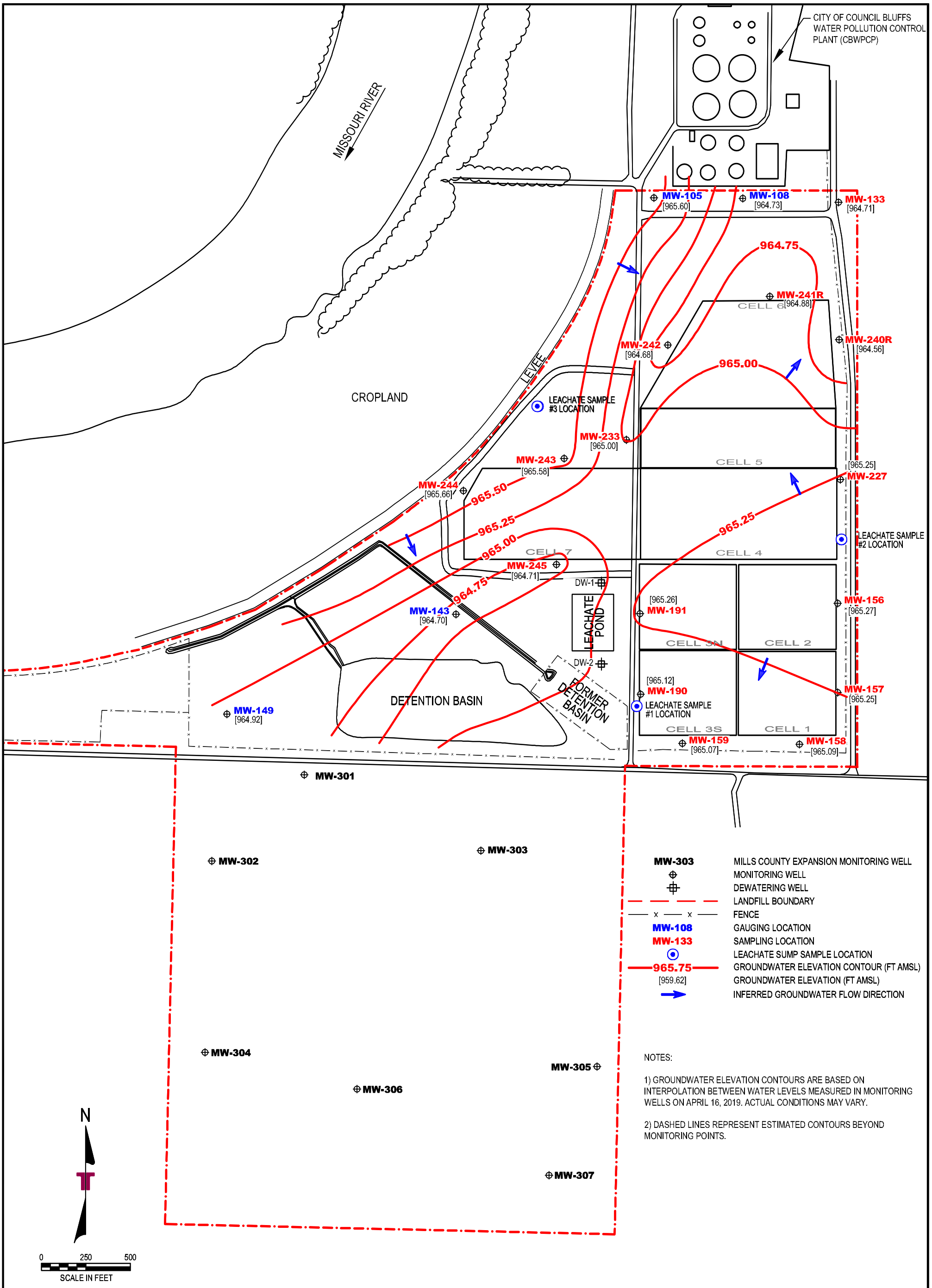
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	10/19/18
JOB NO.	05157640
ACAD NO.	05157640C21
FIGURE NO.:	4



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON APRIL 16, 2019. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-4/16/19

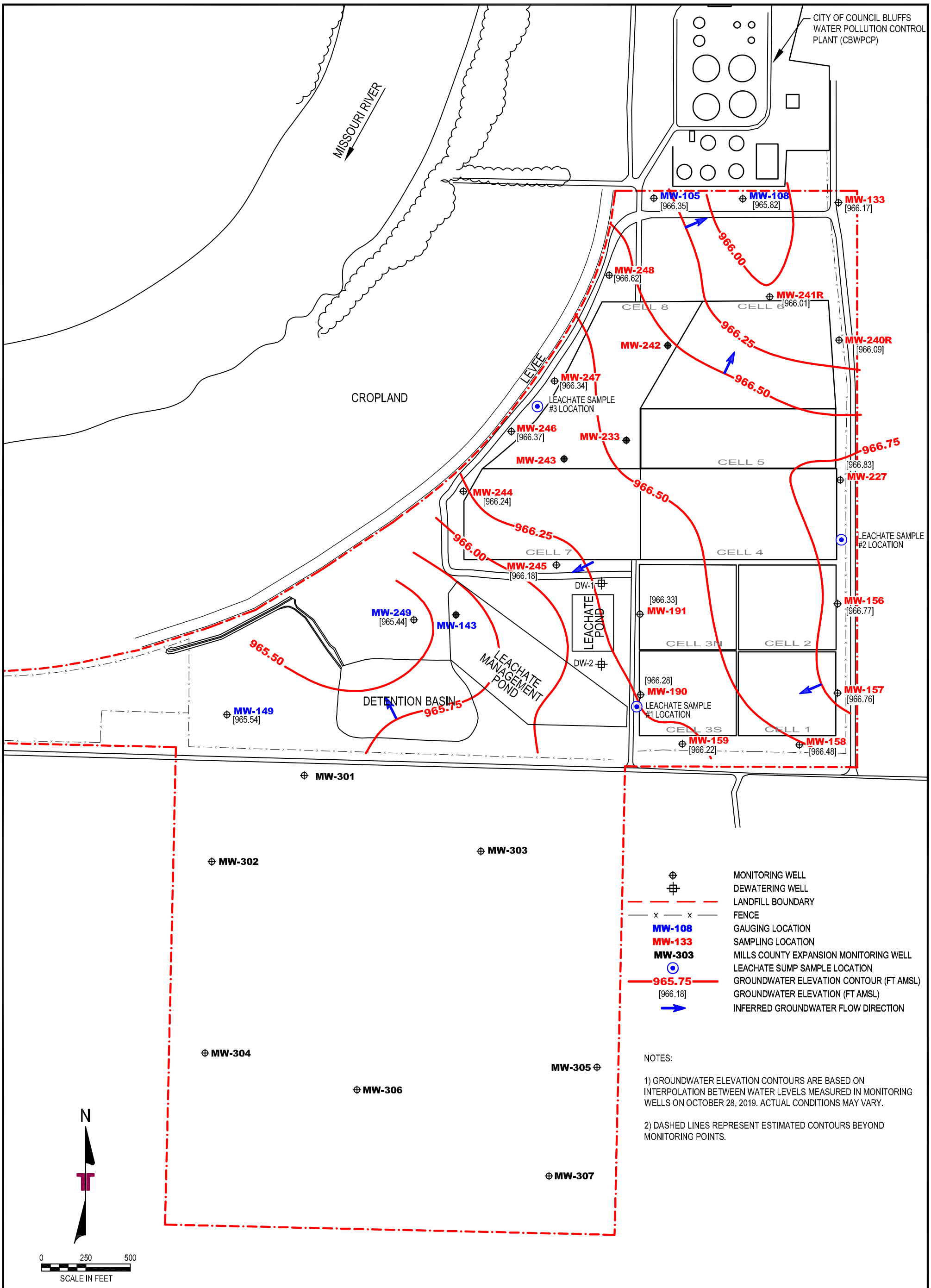
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	5/2/19
JOB NO.	05157640
ACAD NO.	05157640C25
FIGURE NO.:	3



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON OCTOBER 28, 2019. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP - 10/28/19

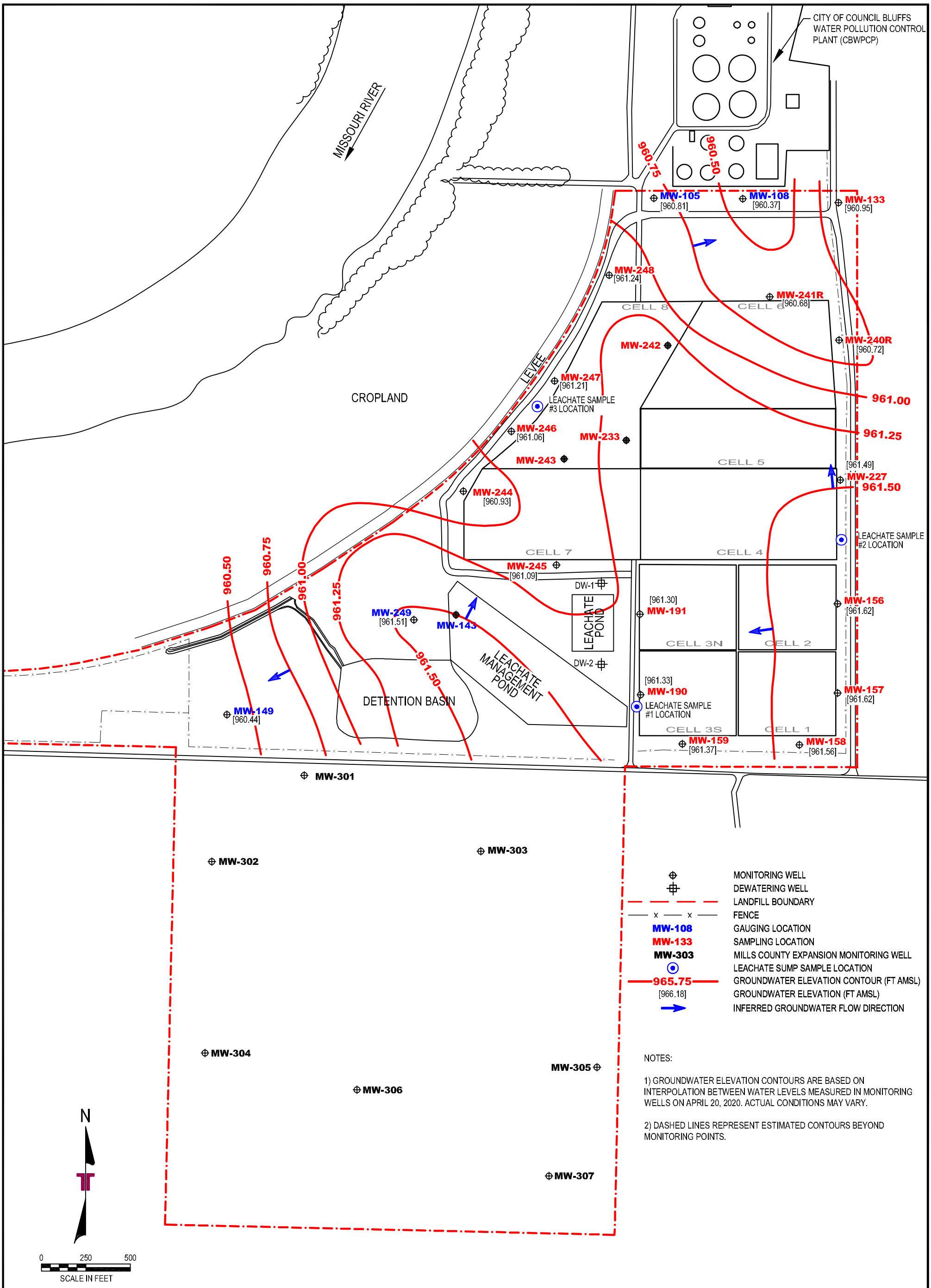
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/18/19
JOB NO.	05157640
ACAD NO.	05157640C29
FIGURE NO.:	4



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON APRIL 20, 2020. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-4/20/20

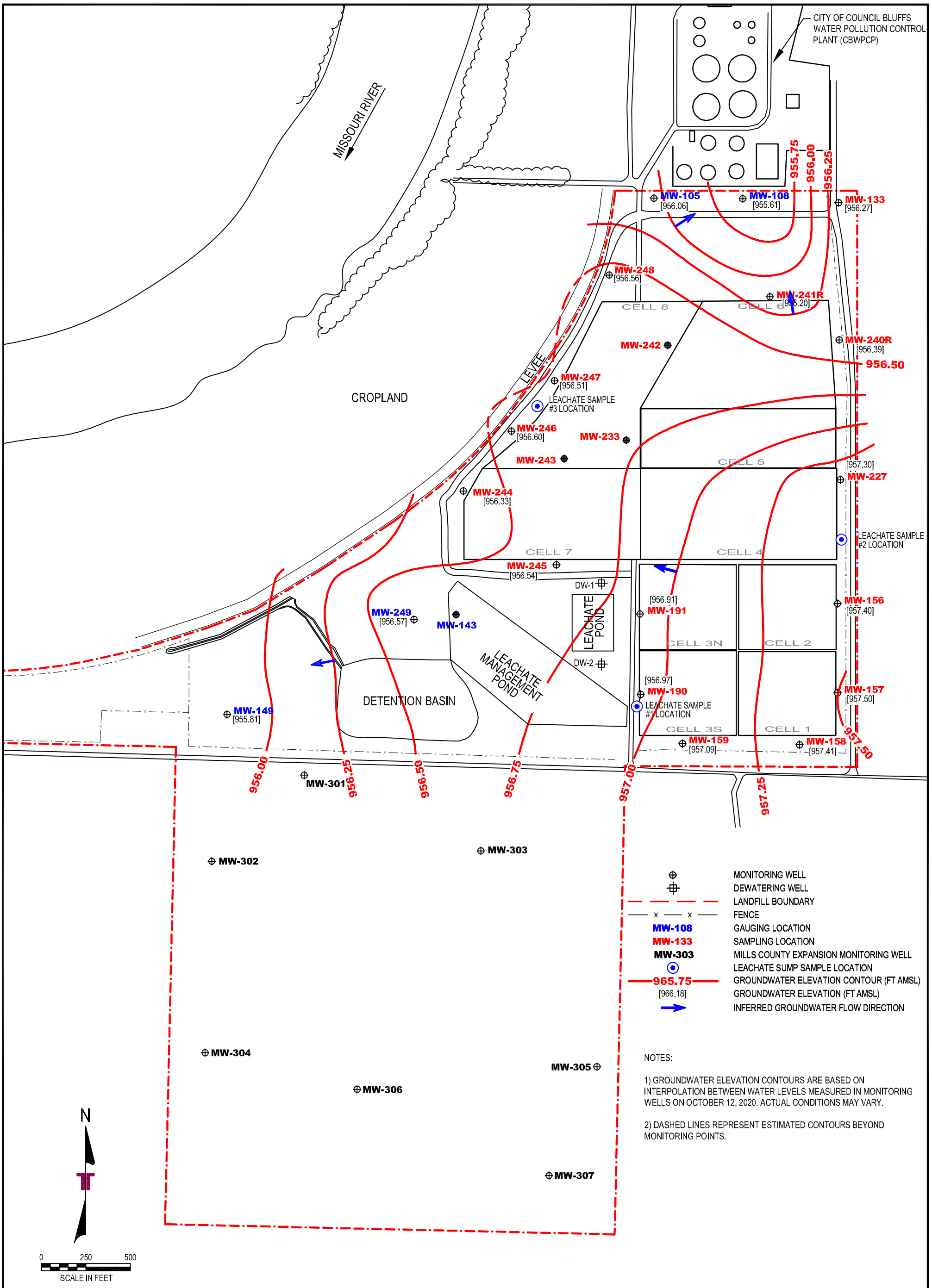
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	5/20/20
JOB NO.	05157640
ACAD NO.	05157640C30
FIGURE NO.:	3



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON OCTOBER 12, 2020. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP-10/12/20

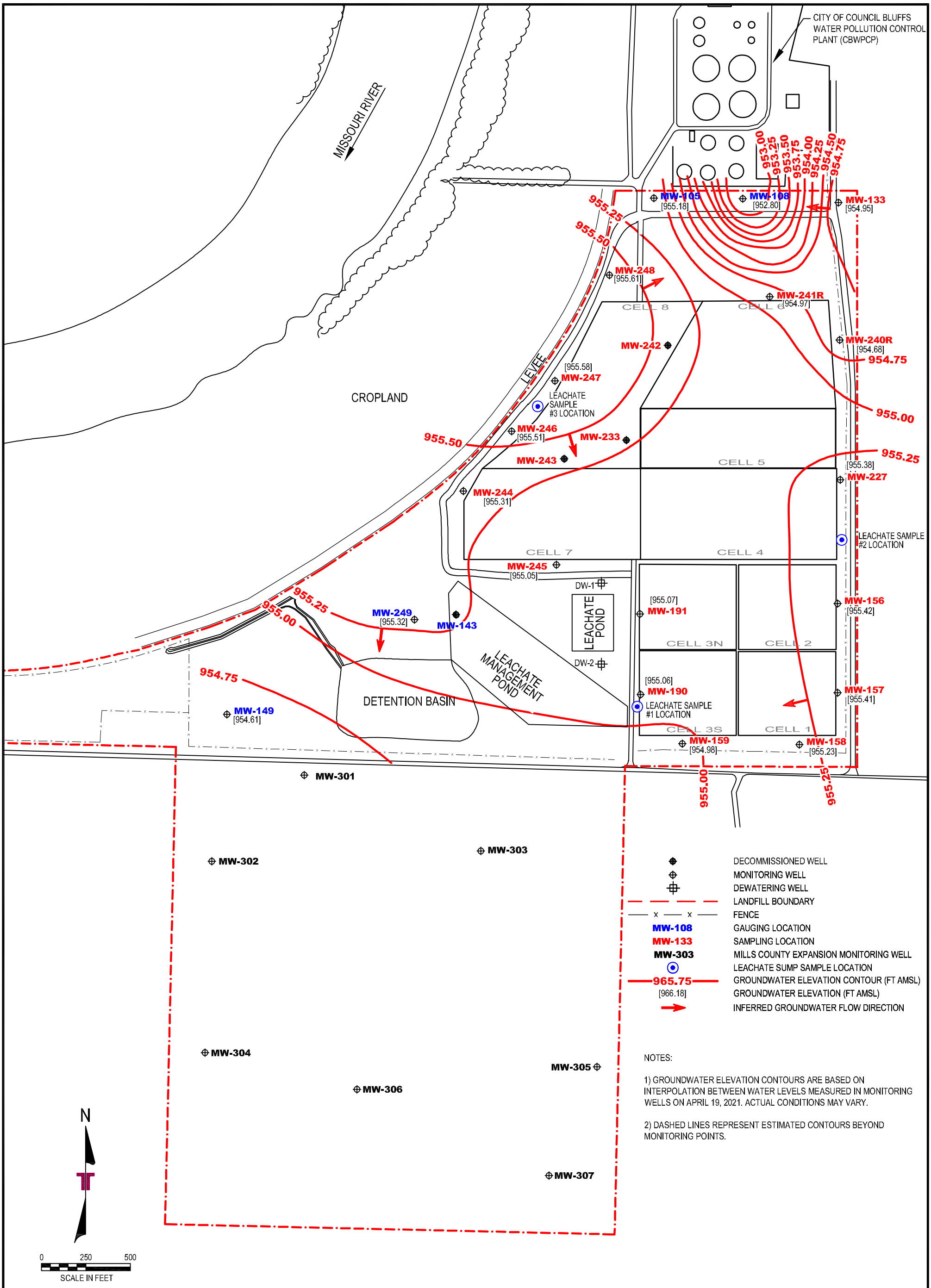
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	11/11/20
JOB NO.	05157640
ACAD NO.	05157640C30
FIGURE NO.:	4



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON APRIL 19, 2021. ACTUAL CONDITIONS MAY VARY.

2) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP- 4/19/21

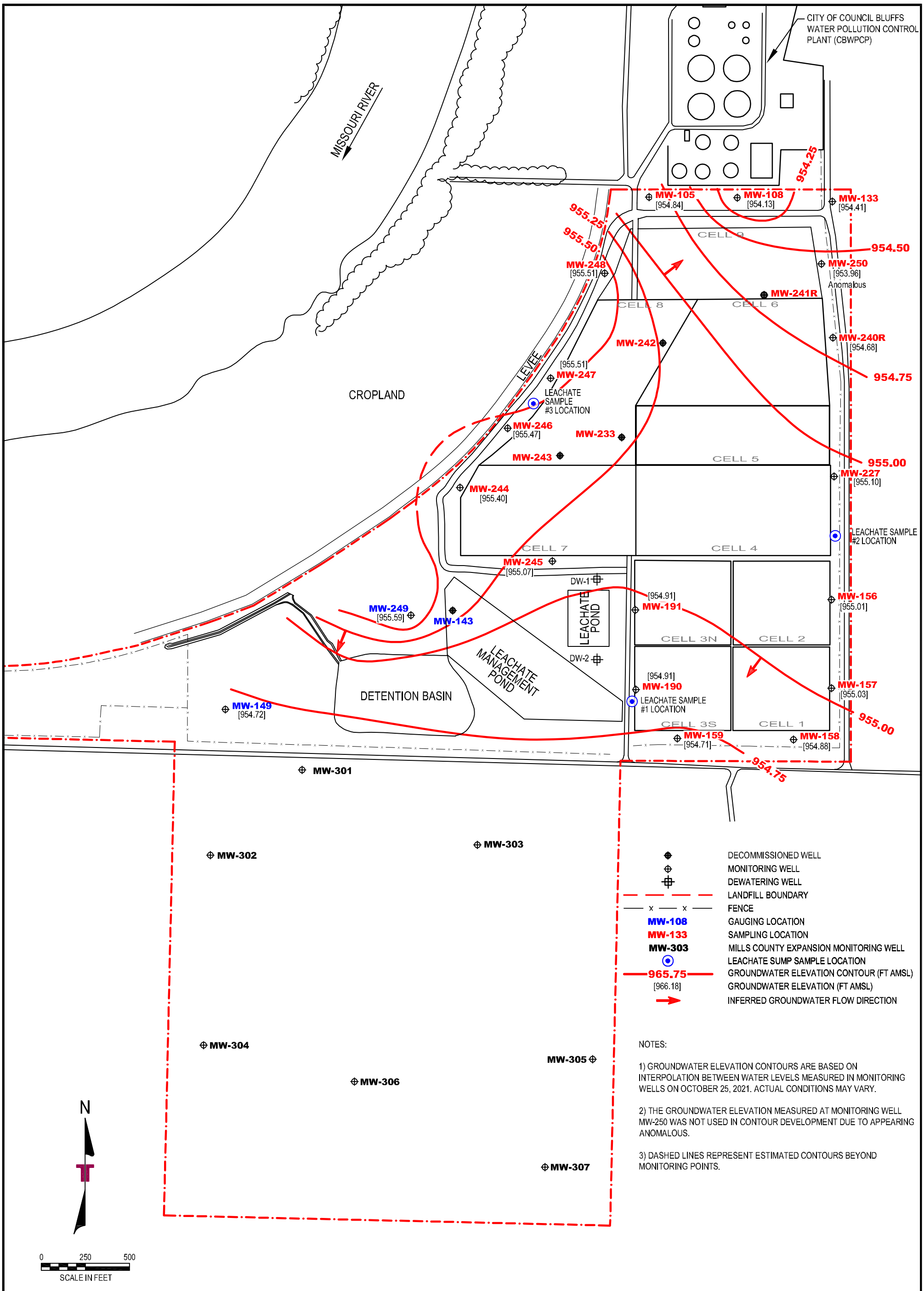
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	10/18/21
JOB NO.	05157640
ACAD NO.	05157640C32
FIGURE NO.:	3



NOTES:

1) GROUNDWATER ELEVATION CONTOURS ARE BASED ON INTERPOLATION BETWEEN WATER LEVELS MEASURED IN MONITORING WELLS ON OCTOBER 25, 2021. ACTUAL CONDITIONS MAY VARY.

2) THE GROUNDWATER ELEVATION MEASURED AT MONITORING WELL MW-250 WAS NOT USED IN CONTOUR DEVELOPMENT DUE TO APPEARING ANOMALOUS.

3) DASHED LINES REPRESENT ESTIMATED CONTOURS BEYOND MONITORING POINTS.

REV.	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists
15080 A CIRCLE OMAHA, NE 68144
PH. (402) 330-2202 FAX. (402) 330-7606

GROUNDWATER CONTOUR MAP - 10/25/21

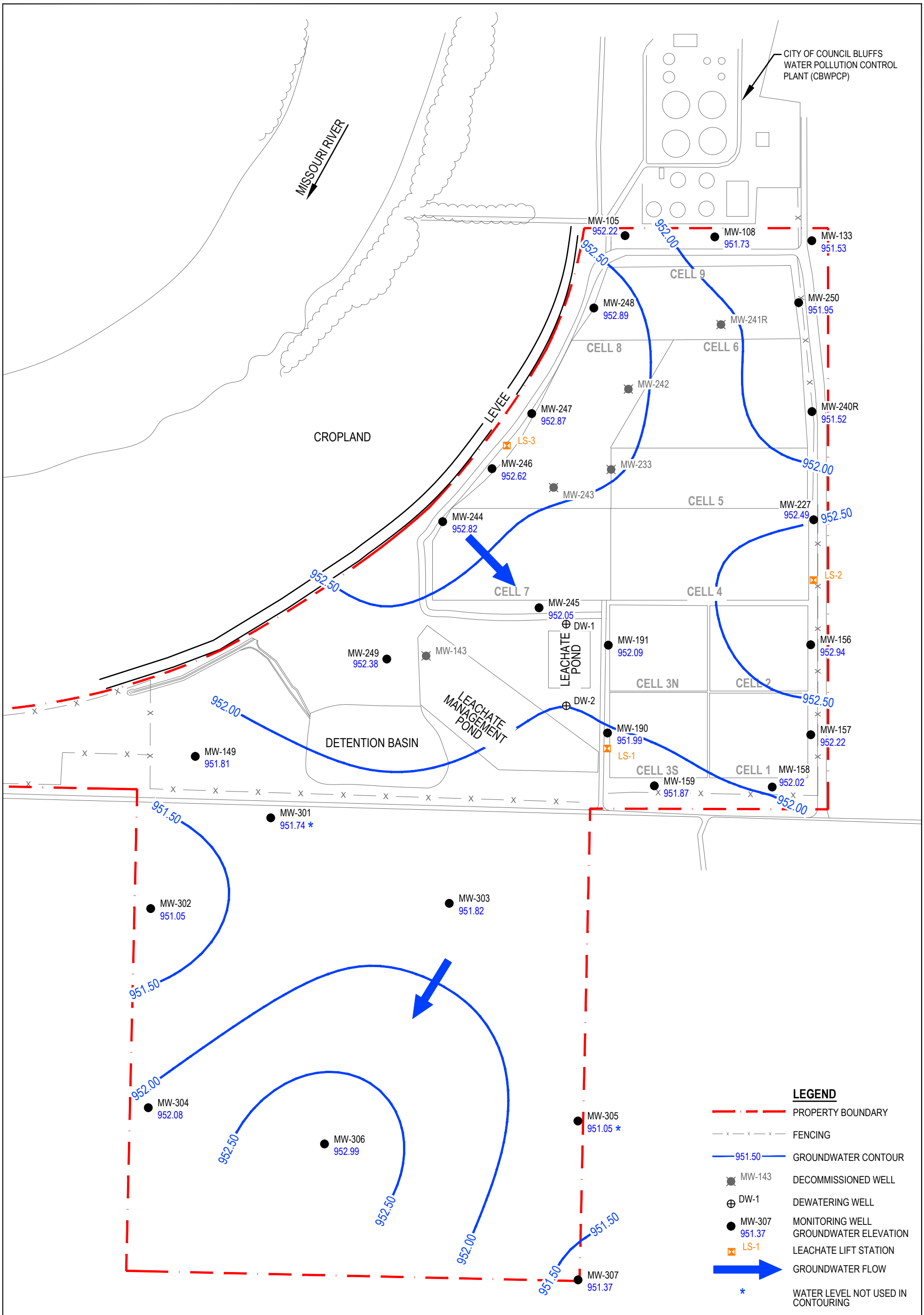
MIDAMERICAN ENERGY COMPANY

WALTER SCOTT JR. ENERGY CENTER

CCR MONOFILL

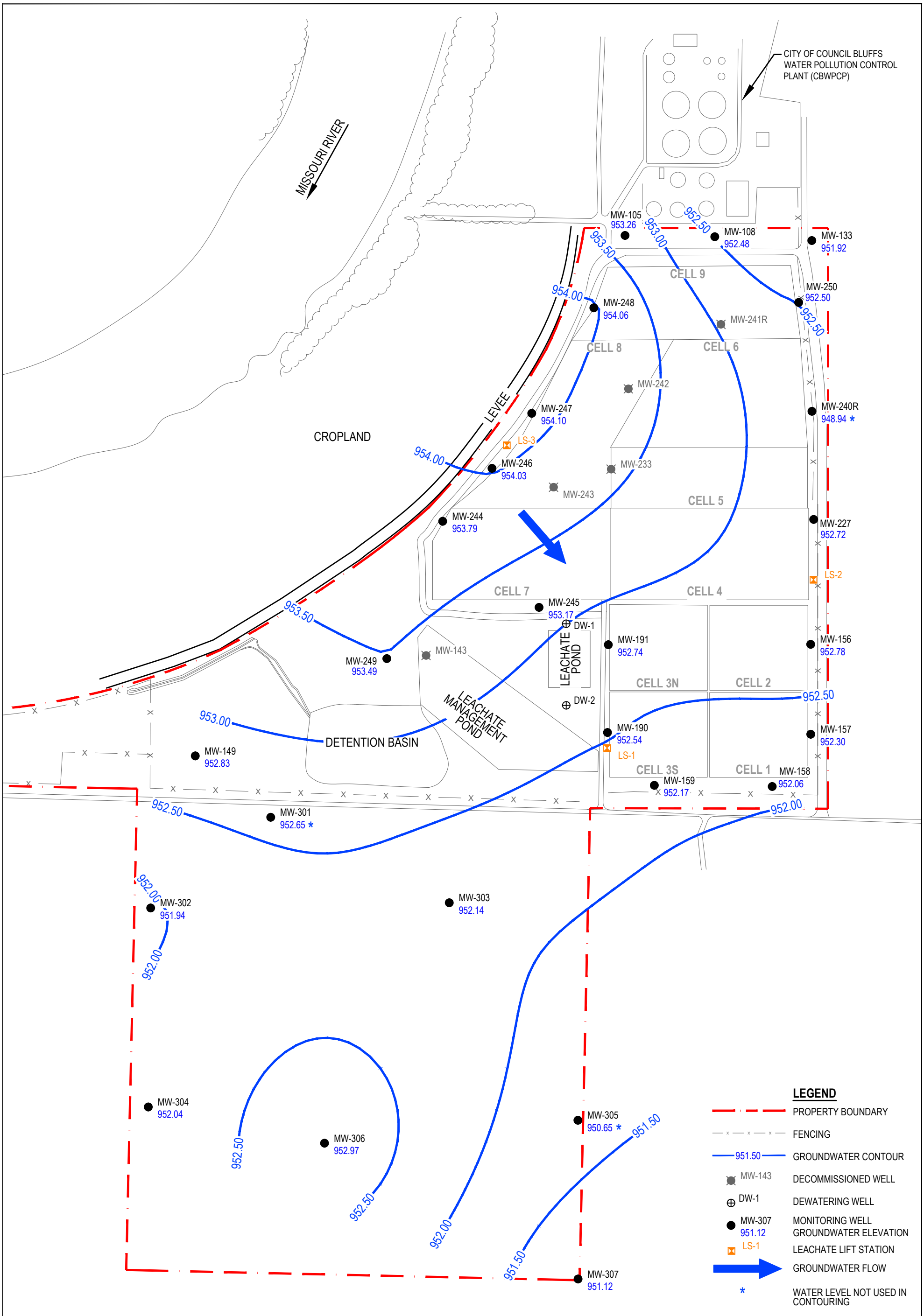
COUNCIL BLUFFS IOWA

DESIGNED BY:	RDW
DRAWN BY:	PAI
APPVD. BY:	MBR
SCALE:	AS SHOWN
DATE:	10/18/21
JOB NO.	05157640
ACAD NO.	05157640C32
FIGURE NO.:	4



Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT001\12592594-GHD-00-00-RPT-EN-D103_GB-001.dwg
Plot Date: 30 November 2022 1:18 PM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER CONTOUR MAP
OCTOBER 10, 2022

Project No. **12592594**
Date **November 2022**

FIGURE 3.2

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT001\12592594-GHD-00-00-RPT-EN-D104_GB-001.dwg
Plot Date: 30 November 2022 1:17 PM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022

MISSOURI RIVER

CITY OF COUNCIL BLUFFS
WATER POLLUTION CONTROL
PLANT (CBWPCP)

CROPLAND

LEVEE

MW-105
949.75

MW-108
949.78

MW-133
950.18

950.00

950.50

CELL 9

MW-248
950.37

MW-250
950.57

MW-241R

CELL 8

CELL 6

MW-242

MW-247
950.21

MW-240R
950.15

LS-3

MW-246
950.21

MW-233

MW-243

CELL 5

MW-244
949.79

MW-227
DRY

LS-2

CELL 7

CELL 4

MW-245
950.26

DW-1

LEACHATE POND

MW-249
DRY

MW-143

MW-191
950.49

MW-156
DRY

CELL 3N

CELL 2

DW-2

LEACHATE MANAGEMENT POND

DETENTION BASIN

MW-190
950.36

MW-157
950.84

LS-1

CELL 3S

CELL 1

MW-159
950.27

MW-158
950.38

MW-149
DRY

MW-301
949.63 *

MW-302
DRY

MW-303
DRY

MW-304
DRY

MW-306
DRY

MW-305
949.28 *

MW-307
DRY

LEGEND

- PROPERTY BOUNDARY
- FENCING
- 950.50 GROUNDWATER CONTOUR
- MW-143 DECOMMISSIONED WELL
- DW-1 DEWATERING WELL
- MW-305 949.28 MONITORING WELL GROUNDWATER ELEVATION
- LS-1 LEACHATE LIFT STATION
- GROUNDWATER FLOW
- * WATER LEVEL NOT USED IN CONTOURING

0 250 500 ft
1" = 500 ft

Coordinate System:
IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

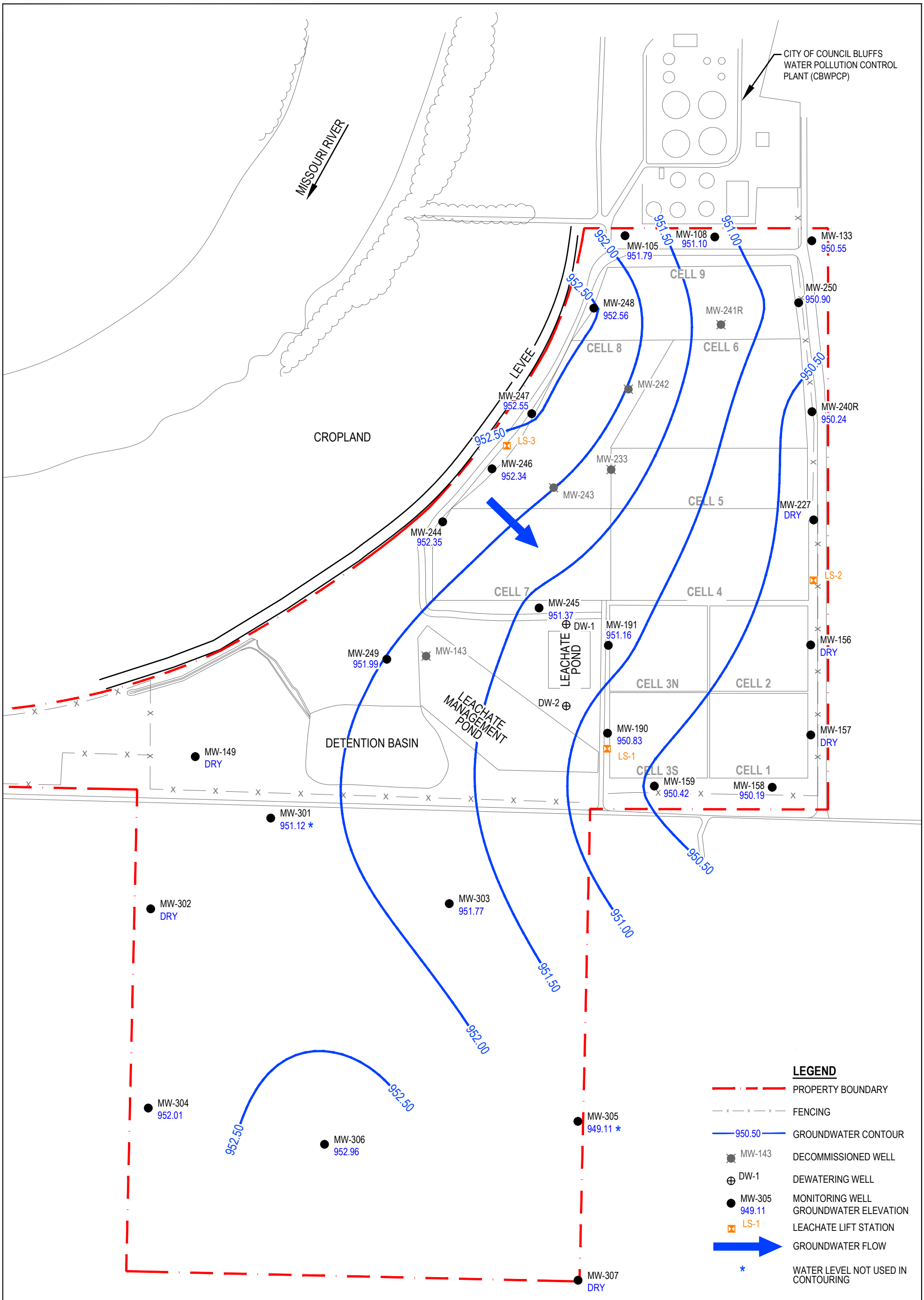
GROUNDWATER FLOW MAP
JANUARY 16, 2023

Project No. **12592594**
Date **August 2023**

FIGURE 3.1

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT009\12592594-GHD-00-00-RPT-EN-D101_GB-009.dwg
Plot Date: 11 August 2023 3:57 PM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



0 250 500 ft

1" = 500 ft

Coordinate System: IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER FLOW MAP
APRIL 24, 2023

Project No. **12592594**
Date **August 2023**

FIGURE 3.2

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT009\12592594-GHD-00-00-RPT-EN-D102_GB-009.dwg
Plot Date: 11 August 2023 3:58 PM

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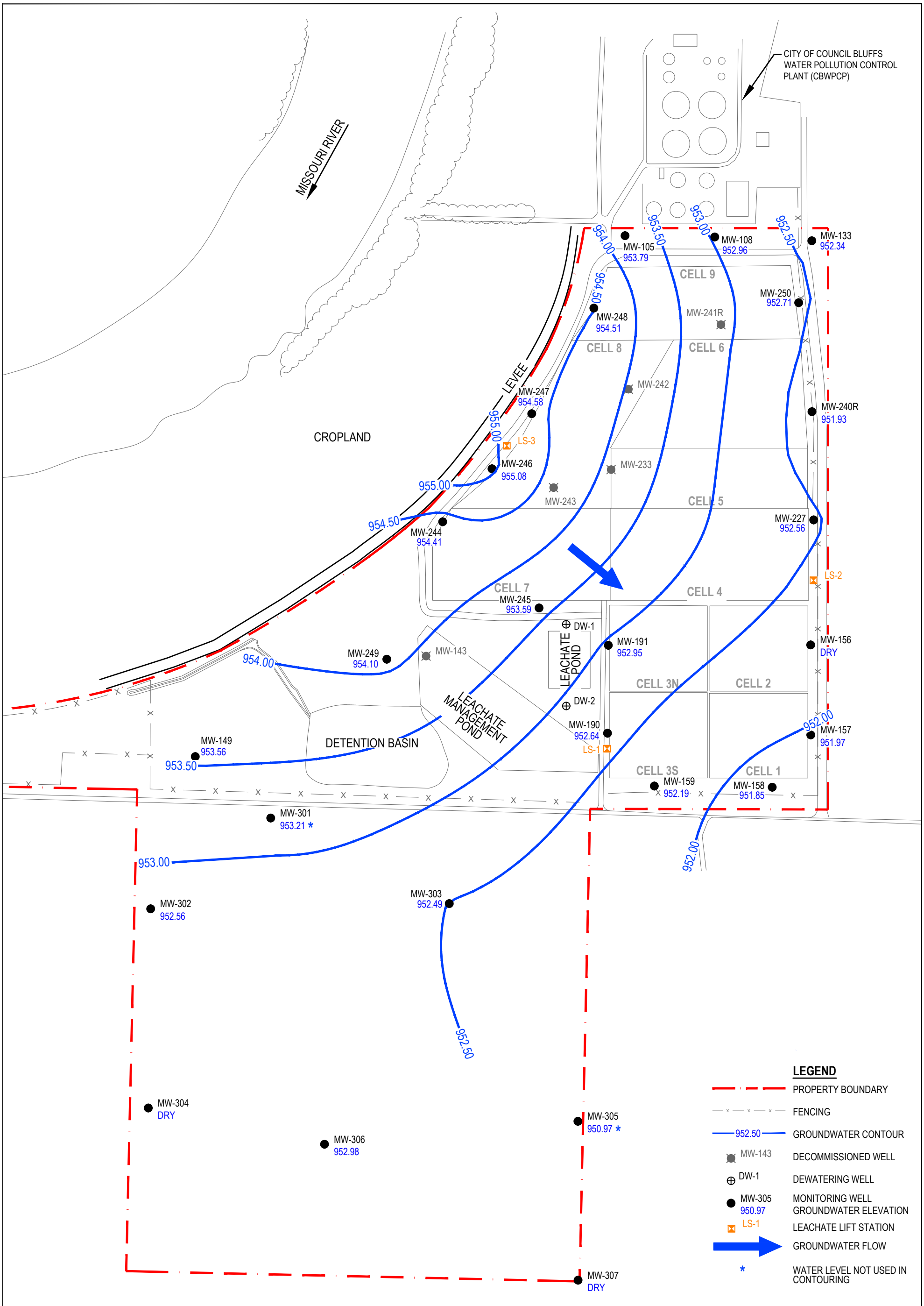


0 250 500 ft
1" = 500 ft

Coordinate System:
IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

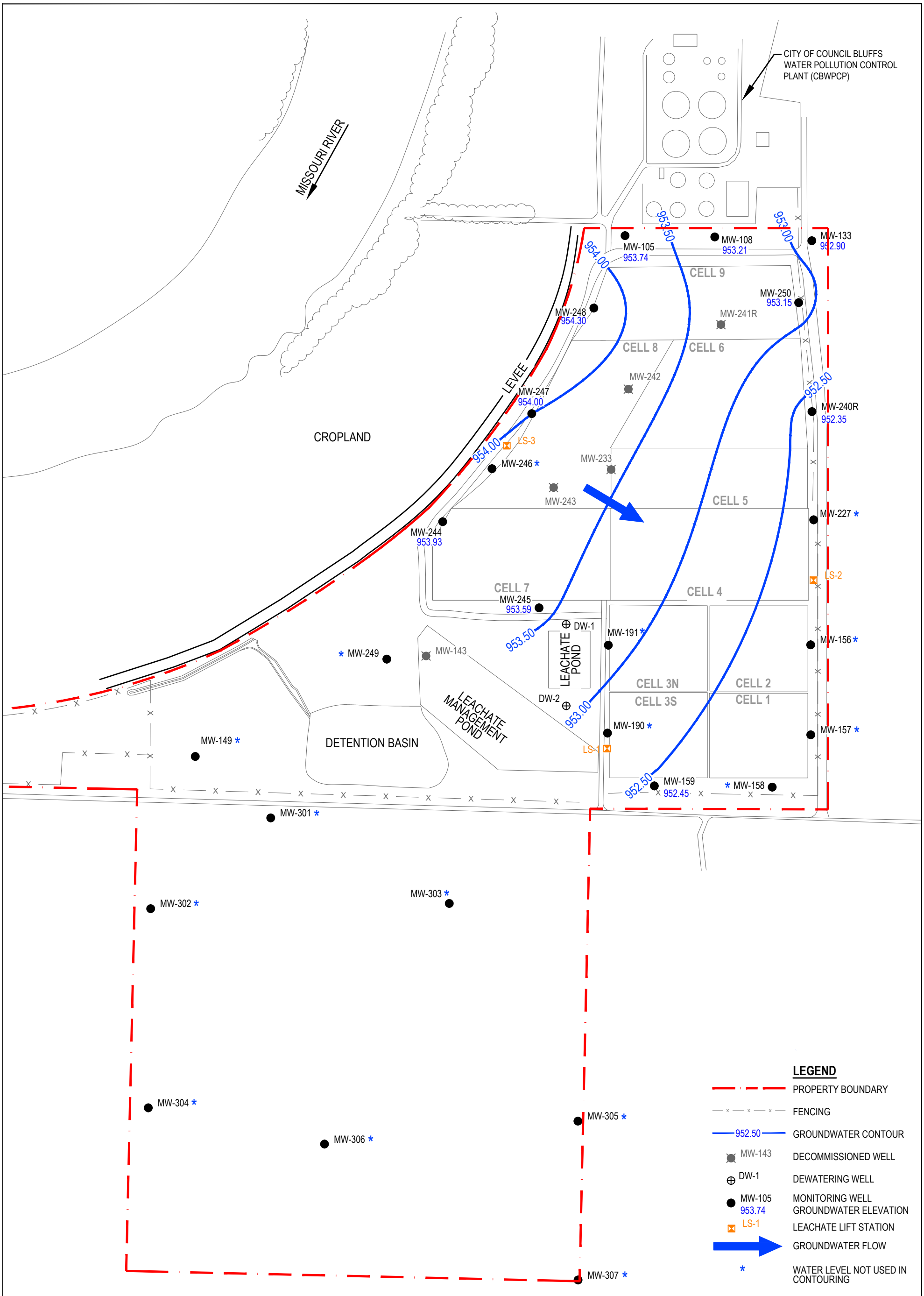
GROUNDWATER FLOW MAP
OCTOBER 2, 2023

Project No. **12592594**
Date **December 2023**

FIGURE 3.3

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT010\12592594-GHD-00-00-RPT-EN-D103.3_GB-010.dwg
Plot Date: 15 December 2023 2:09 PM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



0 250 500 ft

1" = 500 ft

Coordinate System: IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

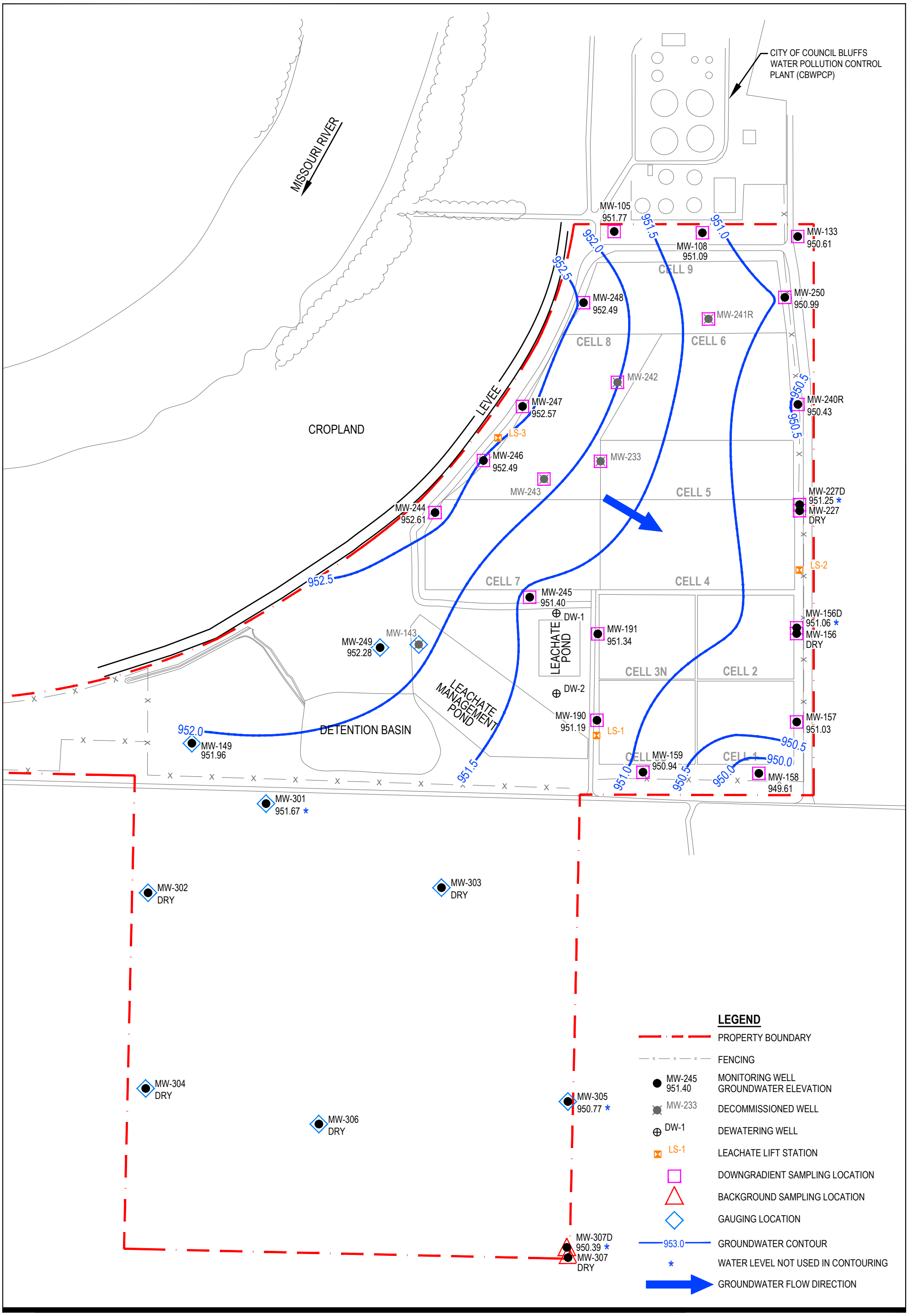
GROUNDWATER FLOW MAP
NOVEMBER 29, 2023

Project No. **12592594**
Date **January 2024**

FIGURE 3.4

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT010\12592594-GHD-00-00-RPT-EN-D103.4_GB-010.dwg
Plot Date: 19 January 2024 1:21 PM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

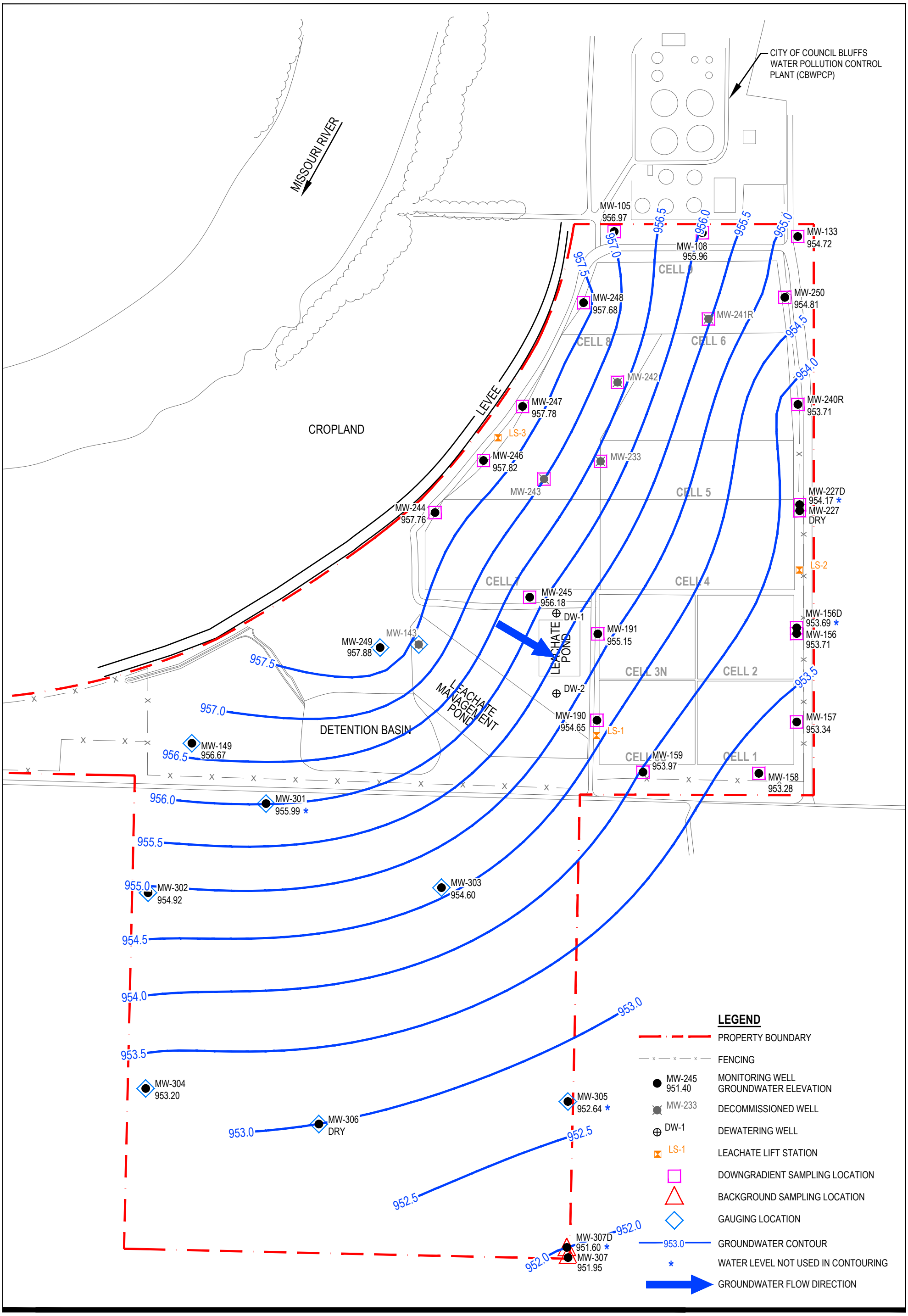
GROUNDWATER FLOW MAP
APRIL 1, 2024

Project No. **12592594**
Date **May 2024**

FIGURE 3.1

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\PRES001\12592594-GHD-00-00-PRE-EN-D103.1_GB-001.dwg
Plot Date: 21 May 2024 10:43 AM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



0 250 500 ft

1" = 500 ft

Coordinate System: IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER FLOW MAP JUNE 3, 2024

Project No. **12592594**
Date **January 2025**

FIGURE 3.2

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\PRE002\12592594-GHD-00-00-PRE-EN-D101_WA-002.dwg
Plot Date: 08 January 2025 11:51 AM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022

CITY OF COUNCIL BLUFFS
WATER POLLUTION CONTROL
PLANT (CBWPCP)

MISSOURI RIVER

CROPLAND

LEVEE

MW-105
956.20

MW-108
955.84

MW-133
955.76

956.0

956.5

CELL 9

MW-248
956.84

MW-250
956.29

MW-241R

CELL 8

CELL 6

MW-242

MW-247
956.90

MW-240R
955.83

LS-3

MW-246
956.88

MW-243

MW-233

CELL 5

MW-227D *
956.77

MW-227
956.64

MW-244
956.65

LS-2

CELL 7

CELL 4

MW-245
956.61

DW-1

MW-156D *
956.65

MW-156
956.68

MW-249
956.77

MW-143

LEACHATE POND

MW-191
956.56

CELL 3N

CELL 2

DW-2

LEACHATE MANAGEMENT POND

DETENTION BASIN

MW-190
956.50

LS-1

MW-157
956.74

MW-149
956.01

CELL 3S

CELL 1

MW-159
956.36

MW-158
956.45

MW-301 *
956.17

MW-302

MW-303

MW-304

MW-305 *
955.90

MW-306

MW-307D *
955.44

MW-307
955.80

LEGEND

- PROPERTY BOUNDARY
- FENCING
- MW-245 956.61 — MONITORING WELL ID GROUNDWATER ELEVATION
- MW-233 — DECOMMISSIONED WELL
- DW-1 — DEWATERING WELL
- LS-1 — LEACHATE LIFT STATION
- 955.85 — GROUNDWATER CONTOUR
- * — WATER LEVEL NOT USED IN CONTOURING
- GROUNDWATER FLOW DIRECTION
- DOWNGRADIENT SAMPLING LOCATION
- BACKGROUND SAMPLING LOCATION
- GAUGING LOCATION

0 250 500 ft
1" = 500 ft

Coordinate System:
IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

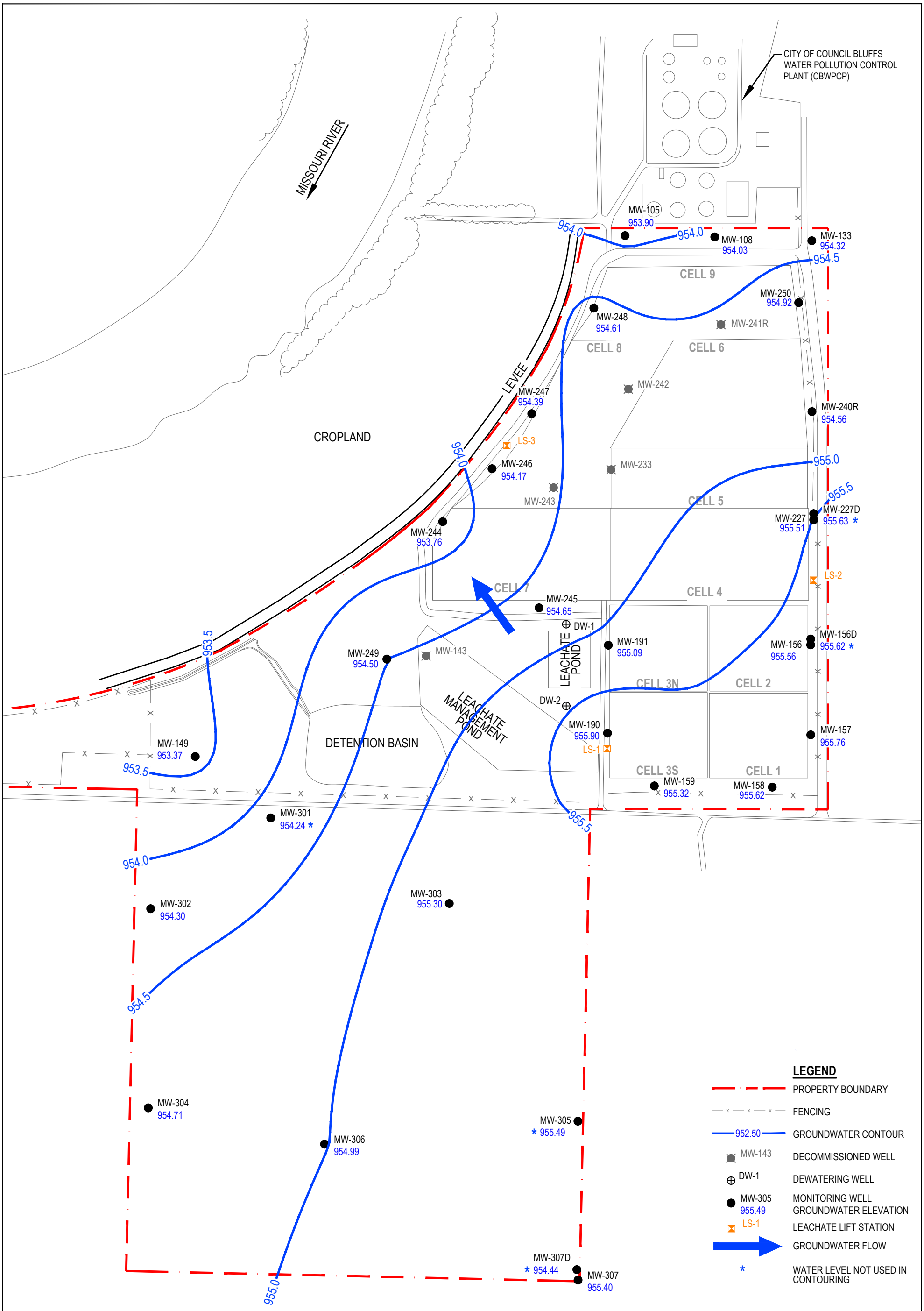
GROUNDWATER FLOW MAP
SEPTEMBER 30, 2024

Project No. **12592594**
Date **January 2025**

FIGURE 3.3

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT022\12592594-GHD-00-00-RPT-EN-D101_DE-022.dwg
Plot Date: 08 January 2025 11:38 AM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022



0 250 500 ft

1" = 500 ft

Coordinate System: IA83-SF

N

GHD

MIDAMERICAN ENERGY COMPANY
WALTER SCOTT JR. ENERGY CENTER
CCR MONOFILL
COUNCIL BLUFFS, IOWA

GROUNDWATER FLOW MAP
DECEMBER 10, 2024

Project No. **12592594**
Date **January 2025**

FIGURE 3.4

Filename: N:\US\Des Moines\Projects\563\12592594\Digital_Design\ACAD\Figures\RPT022\12592594-GHD-00-00-RPT-EN-D103.4_GB-022.dwg
Plot Date: 08 January 2025 11:34 AM

Data Source: 05157640C32 Terracon Consulting Engineers and Scientists, Rec'd 10/2022

Appendix E

Photographic Log

Photo 1 May 2019 treated wastewater release from Council Bluffs Water Pollution Control Plant (CBWPCP). View to north on west side of Monofill.

Photo 2 May 2019 treated wastewater release from CBWPCP. View to north on west side of Monofill.

Photo 3 May 2019 treated wastewater release from CBWPCP. View to north. Monitoring well MW-105 near center of photo.

Photo 4 May 2019 treated wastewater release from CBWPCP. View to northeast.

Photo 5 May 2019 treated wastewater release from CBWPCP. View to northwest. Monitoring well MW-242 near center of photo.

Photo 6 June 2024 treated wastewater release from CBWPCP. View to northwest.

Photo 7 June 2024 treated wastewater release from CBWPCP. View to north. Monitoring well MW-108.

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