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4th QUARTER 2023 GROUNDWATER AND LEACHATE MONITORING REPORT

KEKAHA LANDFILL PHASE I AND PHASE II KEKAHA, KAUAʻI, HAWAIʻI

Prepared for

County of Kauaʻi
Department of Public Works
Solid Waste Management Division
Kekaha Landfill, Phase I and Phase II
6900-D Kaumualiʻi Highway
Kekaha, Hawaiʻi 96752

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29 January 2024

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ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
µS/cm	microSiemens per centimeter
AECOM	AECOM Technical Services, Inc.
ASD	alternative source demonstration
ASTM	American Society of Testing Materials
CFR	Code of Federal Regulations
COD	chemical oxygen demand
County	County of Kaua‘i Department of Public Works
CUSUM	Shewhart-Cumulative Sum
DOH	Department of Health, State of Hawaii
DUP	duplicate
EAL	Environmental Action Level
FB	field blank
ft	foot or feet
Geosyntec	Geosyntec Consultants, Inc.
GMP	Groundwater and Leachate Monitoring Plan
HAR	Hawai‘i Administrative Rules
J	Result is less than the reporting limit, but greater than or equal to the method detection limit, so the concentration is approximate
KLF	Kekaha Municipal Solid Waste Landfill
MB	method blank
MCL	maximum contaminant level
MDL	method detection limit
mg/L	milligrams per liter
msl	mean sea level
MSW	municipal solid waste
N	nitrogen
ND	non-detect
NTU	nephelometric turbidity unit
ORP	oxidation reduction potential
PVC	polyvinylchloride
RL	reporting limit
RPD	relative percent difference
SHWB	Solid and Hazardous Waste Branch
SSIs	statistically significant increases
SU	standard unit

TA	Eurofins TestAmerica-Denver
TB	trip blank
TDS	total dissolved solids
TOC	total organic carbon
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

1. INTRODUCTION AND BACKGROUND

This report presents the results of the Fourth Quarter 2023 (1 October 2023 to 31 December 2023) groundwater and leachate monitoring event completed by Geosyntec Consultants, Inc. (Geosyntec) for the Kekaha Municipal Solid Waste Landfill (KLF, Figure 1 and Figure 2). The Fourth Quarter 2023 groundwater and leachate monitoring event was conducted in accordance with the Solid Waste Management Permit No. LF-0042-16 issued by the Hawai‘i Department of Health (DOH) (DOH, 2019). The purpose of the groundwater and leachate monitoring is to evaluate whether past and/or present municipal solid waste disposal operations have impacted groundwater quality within the coastal plain aquifer beneath the KLF.

1.1 Monitoring Plan Update

The KLF Solid Waste Management Permit No. LF-0042.16 section II.G.9 requires an update of the Groundwater and Leachate Monitoring Plan (GMP) Kekaha Sanitary Landfill (AECOM, 2017) within six months of the solid waste permit issuance. An updated GMP (Geosyntec, 2020) was submitted to the DOH on 12 March 2020. Subsequent correspondence on updates to the GMP, which also discuss updates to the Quarterly Monitoring Reports, includes the following documents:

- Comments from the DOH in a letter dated 6 August 2021 (DOH, 2021);
- Summary of Background Reevaluation for Intra-Well Statistics, Geosyntec, 21 July 2022 (Geosyntec, 2022);
- Responses by the County of Kaua‘i Department of Public Works (County) to the DOH comments on the updated Draft GMP, 12 August 2022 (County, 2022);
- A meeting of the DOH, the County, and Geosyntec on 31 August 2022 to discuss the DOH comments on the updated Draft GMP and the updates to the groundwater monitoring network;
- DOH Letter to the County dated 3 October 2022 presenting their review of (DOH, 2022):
  - The County’s 12 August 2022 response to DOH comments on the Draft GMP;
  - Geosyntec’s Summary of Background Reevaluation for Intra-Well Statistics; and
  - The 2nd Quarter 2022 Monitoring Report.
- Discussion by the County and Geosyntec on 14 October 2022 to prepare a response to the additional comments and requests by the DOH; and
- County letter to the DOH dated 6 February 2023 presenting a status update and response to additional comments on the GMP, which includes documentation of agreement that beginning in 2023, the monitoring reports will address the Phase I and II landfills together rather than including separate sections in the report for each (County, 2023).

In accordance with previous and the recently submitted Monitoring Plan(s) (Geosyntec, 2020), statistical evaluation of the groundwater monitoring data is conducted using DUMPStat statistical modeling software,[1] which facilitates application of the methodology presented in "Statistical Methods for Groundwater Monitoring" (Gibbons, 1994) and is consistent with United States Environmental Protection Agency (USEPA) and American Society of Testing Materials (ASTM) international guidance on groundwater monitoring at Subtitle D and Subtitle C facilities (DOH, 2002).

As discussed with the DOH, the County plans to submit an updated GMP by the end of 2025 that incorporates background updates based on data collected from two new monitoring wells mauka (inland) of the highway for which access arrangements are in progress. The County currently has verbal agreement with the mauka property owner and is finalizing a Right of Entry access agreement.

1.2 Elevation Datum

Elevation references in this report are in feet above mean sea level (ft above msl) and are based on elevation data provided by Waste Management from 11 May 2018 and 29 June 2019 survey elevations. This survey information uses the United States Geological Survey brass monument G1000 plus 1.21 ft, as is described in KLF Solid Waste Management Permit No. LF-0042.16.

1.3 Phase I Landfill

The KLF Phase I (Figure 2) is a closed municipal solid waste (MSW) unlined landfill that began accepting solid waste in 1953 and ceased operations on 8 October 1993. The facility is owned and operated by the County. Groundwater monitoring is currently conducted quarterly in accordance with assessment monitoring specified in the *Closure/Post Closure Plan* (HLA, 1994) and *Groundwater and Leachate Monitoring Plan Kekaha Sanitary Landfill* (AECOM, 2017). Subsequent to the first quarter 2020 monitoring event, a revised GMP was submitted (Geosyntec, 2020) that will be applicable to future monitoring events once approved by the DOH.

Phase I landfill closure construction commenced on 20 May 1994 and was completed on 13 February 1995. Closure construction activities were documented in the *Postconstruction Report, Kekaha Sanitary Landfill, Phase I Closure, Kekaha, Kaua'i, Hawai'i* (HLA, 1996). The final cover was designed and constructed in accordance with 40 Code of Federal Regulations (CFR) Part 258, Solid Waste Disposal Facility Criteria under the Resource Conservation and Recovery Act, Subtitle D (USEPA, 1991), and DOH Hawai'i Administrative Rules (HAR) Title 11, Subchapter 58 (DOH, 1994).

Phase I groundwater monitoring wells MWI-1, MWI-2, and MWI-3 were decommissioned in May 2019. Replacement monitoring wells MWI-1A, MWI-2A, and MWI-3A were installed in May

[1] https://www.dsi-software.com/dumpstat.html

2019. MWI-2A is near the southeast corner of the Phase I Area and close to the former location of MWI-3 (Figure 2).

1.4 Phase II Landfill

The KLF Phase II (Figure 2) is an active MSW-lined landfill that began accepting solid waste on 9 October 1993. The facility is owned and operated by the County. Groundwater monitoring is currently conducted quarterly in accordance with Geosyntec's GMP and Solid Waste Operating Permit Number LF-0042-16 (issued 13 September 2019) (Geosyntec, 2020).

Phase II monitoring wells MWII-4 and MWII-6 and Phase I groundwater monitoring wells MWI-1, MWI-2, and MWI-3 were decommissioned in May 2019. Monitoring wells MWII-2, MWII-5, MWII-7, and MWI-1A, MWI-2A, and MWI-3A now comprise the Phase II groundwater monitoring network (Figure 2).

Several statistically significant increases (SSIs) of monitored parameters, including ammonia as nitrogen (N), arsenic, calcium, potassium, and total organic carbon (TOC) have been identified in the KLF monitoring well network in MWII-2, MWII-5, and MWII-7. Alternative source demonstration (ASD) reports were prepared (Sanifill, 1998; WMH, 2006; WMH, 2007; WMH, 2008; GeoChem, 2012) that address possible sources of the SSIs other than the KLF. The ASD reports indicated that the exceedances were likely due to sources other than the Phase II landfill, including fertilizer application on agricultural land upgradient of the KLF, biodegradation of organic material placed as fill material prior to construction of Phase II, the unlined KLF Phase I site, and impacts from the adjacent aquaculture facility. Naturally occurring arsenic in the volcanic soils was also cited as a possible alternative source.

The DOH, Solid and Hazardous Waste Branch (SHWB), in a letter dated 22 May 2014, responded to the previously mentioned ASDs with the following acceptance of ASD findings:

- The ammonia as N SSIs are not related to Phase II landfill releases, but due to fertilizer compounds associated with upgradient agricultural activities and biodegradation of organic fill materials.
- The TOC SSIs are likely from the Phase I landfill. SHWB noted that the Phase I wells identified TOC at significantly greater concentrations and earlier than the detection of TOC in well MWII-6.
- Based on the GeoChem 2012 ASD, SHWB agreed that the calcium and potassium SSIs observed at MWII-7 are not related to Phase II landfill releases but are associated with impacts from the adjacent aquaculture facility.

In a letter to the DOH dated 13 April 2023, the County determined that an ASD for exceedance of background limits of site-specific indicator parameters ammonia as N, and TOC at MWI-1A and MWI-2A was not supported by available data or the prior period of assessment monitoring in the

Phase I operating history. Therefore, the KLF will continue with assessment monitoring for these wells.

1.5 Site Setting

The KLF is located near the southwest coast of the island of Kaua‘i, approximately 1.5 miles northwest of Kekaha and approximately 2,000 ft from the Pacific Ocean shoreline (Figure 1). The Phase I Landfill covers approximately 33 acres and has an elevation between approximately 10 to 40 ft above msl. The unlined Phase I landfill opened in 1953 and accepted MSW until the 1993 closure.

The Phase II Landfill, which is lined, is hydraulically upgradient of the closed and unlined Phase I Landfill. The Phase II property covers approximately 63 acres, with the permitted waste footprint consisting of the original Phase II (32.1 acres), the Cell 1 lateral expansion (6.4 acres), and the Cell 2 lateral expansion (5.9 acres). The base elevation of the KLF Phase II varies from approximately 7 ft above msl to 12 ft above msl.

No natural streams or lakes exist within or near the facility. The site location is shown in Figure 1, and the site layout is shown in **Figure 2**.

okapua
Bay
South Sidewinder Road
HI 50
AES Kekaha
Solar Hybrid
PMRF
Barking
Sands
Site Location
Waiawa Reservoir
HI 50
HI 50
Kekaha
Airstrip
(historical)
Mac Arthur
Park
Akialoa Road
HI 50
N
0
0.5
Miles

Kaua'i
1596 m
985 m
Kalaheo
Hawai'i
N
0
15
Miles

Site Location Map

Kekaha Municipal Solid Waste Landfill
Kaua'i, Hawai'i

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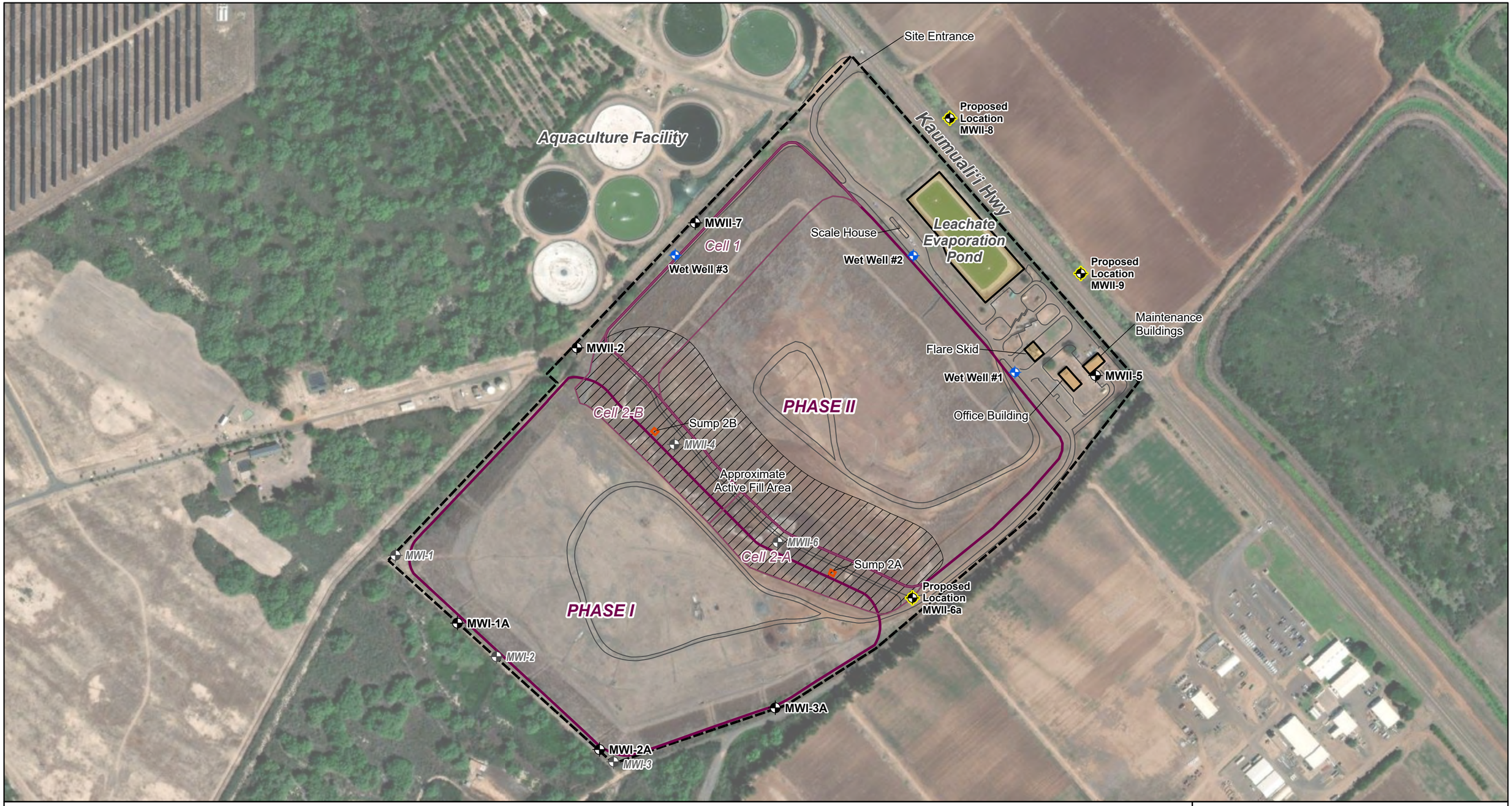
WG3074	July 2022	Figure 1

P:\GIS\WM\KekahaLF\Project\2022Q1_GWMR\2022Q1.aprx\Fig01_SiteLocationMap 6/13/2022 4:43 PM (KWalton)



Legend

- Wet Well (Leachate Sump)
- Groundwater Monitoring Well
- Proposed Groundwater Monitoring Well
- Decommissioned Groundwater Monitoring Well
- Approximate Active Landfill Area
- Sump Location
- Phase Boundary
- Cell Boundary
- Roads
- Property Boundary

N

0 350 Feet

Site Layout

Kekaha Municipal Solid Waste Landfill
Kaua'i, Hawai'i

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Figure 2

\\oakland-01\data\GIS\WM\KekahaLF\Project\2023Q4_GWMR\2023Q4.aprx\Fig02_SiteLayout 1/9/2024 10:48 AM (kwalton)

2. LANDFILL QUARTERLY GROUNDWATER MONITORING

Previous monitoring reports have presented the Phase I and Phase II monitoring results separately. Monitoring wells MWI-1A, MWI-2A, and MWI-3A now serve a dual purpose as downgradient point of compliance monitoring locations for the Phase II Landfill and the Phase I Landfill; therefore, the DOH and the County have agreed that beginning in 2023, the monitoring reports will address the Phase I and II Landfills together rather than discussing the results in separate sections in the report.[2]

2.1 Field Monitoring Activities

Groundwater samples were collected from the monitoring wells (MWI-1A, MWI-2A, MWI-3A, MWII-2, and MWII-7) by Geosyntec on 14 November 2023 and from monitoring well (MWII-5) on 13 November 2023 for the Fourth Quarter 2023 monitoring event. A duplicate (DUP) sample was also collected from monitoring well MWII-5 on 13 November 2023. Additionally, field blank (FB) and trip blank (TB) samples were collected by Geosyntec personnel. All samples were preserved and transported with the appropriate chain-of-custody documentation to Eurofins Test America-Denver (TA) for analyses and were received by TA on 17 November 2023. The field information forms are contained in Appendix A.

On 13 and 14 November 2023, Geosyntec personnel measured water levels at the monitoring wells prior to purging and sample collection. During the monitoring event, the conditions for each of the six monitoring wells were inspected. The lid of the protective casing for MWII-2 was bent; the lid will be replaced or repaired. The other monitoring wells inspected were observed to be functional and in good condition.

The groundwater elevations, estimated contours, and inferred groundwater flow directions for the Fourth Quarter 2023 monitoring event are presented below in Figure 3. The Fourth Quarter depth-to-groundwater measurements and the calculated water table elevations for the monitoring wells are presented in Table 1, following Figure 3.

[2] These changes are discussed in greater detail in a letter from the County to DOH dated 31 January 2023 discussing a status update and response to additional DOH comments on the GMP.

Legend

MWI-1A 4.81 — Groundwater Monitoring Well

Wet Well (Leachate Sump)

4.60 — Groundwater Elevation Contour (ft msl)

Inferred Groundwater Flow Direction

Sump Location

Phase Boundary

Cell Boundary

Property Boundary

Roads

Notes:
ft msl = feet above mean sea level
- Monitoring wells were gauged on November 14, 2023, with the exception of MWII-5 which was gauged on November 13, 2023.
- TOC elevation data provided by Waste Management from May 11, 2018 and July 29, 2019 well survey elevations and use the USGS brass monument G1000 plus 1.21 feet.

N

0 350 Feet

Groundwater Contour Map
November 2023

Kekaha Municipal Solid Waste Landfill
Kauaʻi, Hawaiʻi

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Figure 3

\\oakland-01\data\GIS\WM\KekahaLF\Project\2023Q4_GWMR\2023Q4.aprx\Fig03_GroundwaterElevation 12/11/2023 10:56 AM (kwalton)

Table 1: Groundwater Level Data (13-14 November 2023)

Monitoring Well ID	Top of Casing Elevation (ft-msl)	Screened Interval (ft-below top of casing)	Depth to Water (ft-below top of casing)	Groundwater Elevation (ft-msl)
MWI-1A	14.53	4.5-19.5	9.72	4.81
MWI-2A	13.33	4.5-19.5	8.57	4.76
MWI-3A	14.03	4.5-19.5	9.04	4.99
MWII-2	15.83	4.0-14.0	10.95	4.88
MWII-5*	13.7	3.0-13.0	8.91	4.79
MWII-7	15.8	3.5-23.5	11.28	4.51

Notes:
All wells are 2-inch diameter polyvinylchloride (PVC)
ft msl = feet mean sea level
Top of casing elevation data provided by Waste Management from 11 May 2018 and 29 July 2019 well survey elevations.
* Depth to water recorded on 13 November 2023. All other wells surveyed on 14 November 2023.

2.2 Laboratory Analyses of Monitoring Well Groundwater Samples

TA analyzed the groundwater samples for the following parameters:

- Appendix I of 40 CFR 258 parameters - volatile organic compounds (VOCs);
- Appendix I 40 CFR 258 total and dissolved metals - antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, tin, vanadium, and zinc;
- Supplemental parameters - total alkalinity, bicarbonate alkalinity, carbonate alkalinity, bromide, chloride, and sulfate; and
- Additional indicator parameters - ammonia as N, nitrate-nitrite as N, total dissolved solids (TDS), TOC, and chemical oxygen demand (COD).

The groundwater chemistry results for monitoring wells located in the Phase I Landfill footprint and Phase II Landfill footprint are summarized below in Table 2. Historical data and time-series graphs for analytes detected in wells located in the Phase 1 Landfill footprint are provided in Appendix B, and the laboratory reports are contained in Appendix C. The laboratory reports in Appendix C include additional results that are not included in Table 2 because they either do not pertain to the scope of work for groundwater monitoring or had a non-detection result. The facility is currently in assessment monitoring for total and dissolved arsenic, so an *annual analysis* of parameters included in Appendix II 40 CFR 258 (Subtitle D) was conducted as part of the First Quarter 2023 monitoring event to comply with Hawaii HAR 11-58.1-16(e).

2.3 Groundwater Monitoring Results

2.3.1 Groundwater Flow Direction

As shown in Table 1 and Figure 3, groundwater elevations measured by Geosyntec during the Fourth Quarter 2023 monitoring event ranged from 4.51 ft above msl in MWII-7 to 4.99 ft above msl in MWI-3A. The groundwater gradient and inferred flow direction based on the groundwater elevations is typically southwest towards the Pacific Ocean; however, during this event, relatively high groundwater elevations at MWI-1A, MWI-2A, MWI-3A, and MWII-2 indicate a generally northward groundwater gradient and inferred groundwater flow direction, away from the Pacific Ocean. Similar patterns have been observed historically (2012, 2013). As discussed in those previous reports, the anomalous flow direction may be influenced by groundwater pumping at the nearby aquiculture facility.

2.3.2 Groundwater Sample Analyses

Results of analyses of Fourth Quarter 2023 groundwater samples for VOCs, total/dissolved metals, major chemical parameters, and site-specific indicator parameters are provided in Table 2 and are summarized below.

Volatile Organic Compounds - No VOCs were detected at any monitoring wells above the reporting limits (RLs); however, 1,4-dichlorobenzne was detected above the method detection limit (MDL) at estimated concentrations at MWI-1A (0.63 J micrograms per liter [µg/L]) and MWI-2A (0.45 J µg/L).

Dissolved Metals – The dissolved metals results for wells located in the Phase I Landfill footprint and the Phase II Landfill footprint are provided in Table 2. These results are summarized below.

- Arsenic, calcium, magnesium, potassium, silicon, and sodium were detected at concentrations greater than the RLs in all monitoring wells.
- Iron was detected at concentrations greater than the RLs in MWI-1A, MWI-2A, and MWII-7.
- Manganese was detected at a concentration greater than the RL in MWI-3A and MWII-7.
- Zinc was detected at a concentration greater than the RL in MWII-5 only.
- Barium was detected at estimated concentrations greater than the MDLs in all monitoring wells.
- Zinc was detected at estimated concentrations greater than the MDLs in all monitoring wells, with the exception of MWII-5.
- Manganese was detected at estimated concentrations greater than the MDLs in MWI-1A, MWI-2A, MWII-2, MWII-5, and the DUP sample.
- Vanadium was detected at estimated concentrations greater than the MDLs in MWI-3A, MWII-2, MWII-5, the DUP sample, and MWII-7.

- Iron was detected at estimated concentrations greater than the MDLs in MWII-2, MWII-5, and the DUP sample.
- Nickel was detected at estimated concentrations greater than the MDL in MWI-1A, MWI-2A, and MWI-3A.
- Copper was detected at estimated concentrations greater than the MDLs in all monitoring wells, with the exception of MWI-2A and MWII-7.
- Selenium was detected at estimated concentrations greater than the MDLs in MWII-5 and the DUP sample.
- Beryllium was detected at estimated concentrations greater than the MDL in MWI-2A only.

Total Recoverable Metals – The total recoverable metals results, which include metals associated with suspended particles, for wells located in the Phase I landfill footprint and Phase II landfill footprint are provided in Table 2. These results are summarized below.

- Arsenic, calcium, magnesium, potassium, silicon, and sodium were detected above the RLs in all monitoring wells.
- Iron was detected above the RLs for MWI-1A, MWI-2A, and MWII-7;.
- Manganese was detected above the RL for MWI-3A and MWII-7.
- Barium was detected at estimated concentrations greater than the MDLs in all monitoring wells.
- Manganese was detected at estimated concentrations greater than the MDLs in MWI-1A, MWI-2A, MWII-2, MWII-5, and the DUP sample.
- Vanadium was detected at estimated concentrations greater than the MDLS in MWI-3A, MWII-2, MWII-5, the DUP sample, and MWII-7.
- Zinc was detected at estimated concentrations greater than the MDLs in MWI-1A, MWI-3A, MWII-2, MWII-5, the DUP sample, and MWII-7.
- Cobalt was detected at estimated concentrations greater than the MDLs in MWI-2A and MWII-7.
- Nickel was detected at estimated concentrations greater than the MDLs in MWI-2A and MWI-3A.
- Selenium was detected at an estimated concentration greater than the MDL in MWII-5 and the DUP sample only.
- Chromium was detected at an estimated concentration greater than the MDL in MWII-7 only.

Both the dissolved metals and total metals results are similar to previous monitoring events.

Major Chemical Parameters - The groundwater samples were analyzed for ammonia as N, nitrate/nitrate as N, bromide, chloride, sulfate, total alkalinity, carbonate alkalinity, bicarbonate alkalinity, TDS, and TOC to provide data for geochemical evaluation. Bicarbonate and total alkalinity, bromide, chloride, sulfate, TDS, and TOC were detected in samples from all monitoring wells at concentrations greater than the RLs. Ammonia as N was detected in samples from all monitoring wells at concentrations greater than the RLs except for MWII-5 and the DUP sample; and was detected at an estimated concentration above the MDL in MWII-5. Nitrate/nitrite as N was detected at concentrations greater than the RLs in MWII-2, MWII-5, the DUP sample, and MWII-7.

Site-Specific Indicator Parameters – The groundwater samples were analyzed for the following site-specific indicator parameters: ammonia as N, TOC, total and dissolved metals (arsenic, iron, and manganese); and COD. In addition to the results described above, COD was detected at concentrations above the RLs for MWI-1A and MWI-2A; and detected at an estimated concentration above the MDLs in MWI-3A and MWII-7. The results of these analyses for wells in the Phase 1 Landfill footprint and the Phase II Landfill footprint were evaluated for evidence of potential landfill impacts to groundwater using the statistical methods described below.

2.3.3 Phase I Landfill Monitoring Wells

The data were evaluated following the same criteria used for the preparation of the First Quarter 2018 Phase I Report (AECOM, 2018) and subsequent monitoring reports. As previously presented by AECOM, nonparametric prediction limits were determined using statistical analysis of the groundwater monitoring data. An analytical data set based on the Phase II monitoring wells was used to determine the Phase I background prediction limits that included data from March 1996 to January 2014 from monitoring wells MWII-2, MWII-4, MWII-5, MWII-6, and MWII-7. Wells MWII-4 and MWII-6 were decommissioned in May 2019. Monitoring wells MWI-1A, MWI-2A, and MWI-3A now have the minimum requisite eight samples required to conduct intra-well statistical analysis. However, the DOH indicated that the use of intra-well statistical analysis for these wells may not be appropriate because current conditions do not appear to reflect unimpacted background groundwater conditions based on historical groundwater analytical data collected from both the former downgradient wells (MWI-1, MWI-2, and MWI-3) and the current Phase I groundwater wells. Therefore, the inter-well statistical method is still used for wells located in the Phase I landfill footprint.

The current background limits for the Phase I wells are based on the composite data from the Phase II wells because Phase II is upgradient of Phase I. These background prediction limits[3] are shown in Table 2. Some chemical constituents were detected in these Phase I wells above the background limits.

[3] Note that not all analytes that appear in Table 2 have established background limits because there are not enough historical detection data to establish these levels.

As mentioned above, Geosyntec submitted a memorandum to the DOH on 21 July 2022 with recommendations for updating the Phase I background limits for MWI-1A, MWI-2A, and MWI-3A. The DOH responded to the proposed background limits in a letter dated 3 October 2022, requesting that additional data be included to estimate background limits.

The County and Geosyntec met with the DOH on 31 August 2022 and discussed potential locations and plans to install the proposed monitoring well, MWII-6A, as well as two additional monitoring wells on the northeast side of the Kaumuali‘i Highway to obtain background data. The DOH concurred with the proposed location of the proposed new monitoring wells, which are shown on Figure 2. The County plans to install the three new monitoring wells once property access agreements have been secured for the two wells located on the northeast side of Kaumuali‘i Highway. MWII-6A will provide cross-gradient groundwater data, and the two wells mauka of the landfill will provide upgradient groundwater data. The two new monitoring wells should establish background limits for the detection monitoring network.

2.3.4 Phase II Landfill Monitoring Wells

The analytical results for groundwater samples collected from monitoring wells located in the Phase II Landfill footprint were evaluated for evidence of potential landfill impacts to groundwater using the intra-well statistical methods described in the KLF Phase II GMP. Appendix D presents the Shewhart-Cumulative Sum (CUSUM) control charts for the Fourth Quarter 2023 sampling event. At least eight historical independent samples are required to reliably calculate parameters (e.g., mean, standard deviation) used to determine a background control limit. These samples are referred to as the background dataset for a given well. Additionally, for constituents that are detected in less than 25% of samples, variance is not adequately defined and a CUSUM value cannot be calculated (Gibbons, 1994). Analytes for which these values could not be calculated due to limited historical information or low detection rates are noted below.

The detected concentrations and CUSUM values were generally below the statistical background control limits, except as noted below:

MWII-2:

- Due to low detection rates, a CUSUM value was not computed for COD, dissolved iron, dissolved manganese, or total manganese.
- Due to the limited background dataset, a background control limit was not computed for COD or total manganese.

MWII-5:

- Due to low detection rates, a CUSUM value was not computed for COD, dissolved manganese, or total manganese.
- Due to the limited background dataset, a background control limit was not computed for COD or total manganese.

MWII-7:

- Due to low detection rates, a CUSUM value was not computed for dissolved iron or total iron.
- Due to the limited background dataset, a background control limit was not computed for dissolved iron or total iron.
- Exceedances:
  - The ammonia as N concentration and CUSUM value exceeded the statistical background control limit.
  - The COD concentration exceeded the statistical background control limit. The CUSUM value remained below the statistical background control limit.
  - Neither a background control limit nor a CUSUM value were computed for dissolved iron. However, the detection of dissolved iron at a concentration of 1.2 milligrams per liter (mg/L) appears inconsistent with available background data, which is non-detect.
  - Neither a background control limit nor a CUSUM value were computed for total iron because background data were primarily non-detect, but the detection of total iron at a concentration of 1.7 mg/L appears inconsistent with available background data, which is mostly non-detect.
  - The dissolved manganese detected concentration and CUSUM value exceeded statistical background control limit.
  - The total manganese detected concentration and CUSUM value exceeded the statistical background control limit.

The exceedances at MWII-7 are attributed to continued sporadic impact on groundwater quality resulting from infiltration of brackish, nutrient-laden water with high biological oxygen demand and likely reducing conditions from the aquaculture facility operations located northwest (and sporadically hydraulically upgradient) of the landfill, not a release from the Phase II Landfill.

2.3.5 Evaluation of Groundwater Data Quality

Field Blank and Trip Blanks – Total and dissolved calcium, silicon, magnesium, and sodium, dissolved barium, and TOC were detected in the FB sample at estimated concentrations greater than the MDLs, but less than the RLs. Qualifiers were added to the associated analytical sample results where appropriate.

No VOCs were detected in a TB submitted with the groundwater samples.

Method Blanks – The MB is a sample of “clean” water that is placed the sample container in the laboratory. Detections in the MB can indicate that the “clean” water used for the blank contains chemicals above the MDL. This can also be due to cross-contamination, such as from volatized chemicals entering the sample or from chemical residuals present on equipment in the laboratory.

Dissolved sodium was detected at estimated concentrations in MB 280-635955/1-A. Total cadmium, iron, manganese, and zinc were detected at estimated concentrations in MB 280-635949/1-A. Total alkalinity and bicarbonate alkalinity were detected at estimated concentrations in MB 280-635325/110 and 280-635325/136 and 280-635325/58. Associated sample results were qualified if the compound was detected.

MWII-5 Duplicate Data – A sample set specific-field duplicate was analyzed for VOCs, total/dissolved metals, major chemical parameters, and site-specific indicator parameters using sample MWII-5. The acceptance criteria for relative percent difference (RPD < 30%) was met for the field duplicate pair, with the following exceptions. The estimated total selenium result was higher in the primary MWII-5 sample relative to the DUP sample. The dissolved zinc result in the primary MWII-5 sample is higher relative to the estimated result in the DUP sample. The ammonia as N result was non-detect in the primary MWII-5 sample compared to the estimated value in the DUP sample. The COD in the primary MWII-5 sample was signficantly lower compared to the estimated value detected in the DUP sample.

Other Notable Data Quality Results – The MWII-7 sample required 10x dilution prior to analysis for total metals. The MWII-7 sample required 5x dilution prior to analysis for COD. Several samples required dilutions to complete the anion analysis; this included MWII-2 [10x], MWII-7[5x and 50x], MW1-1A[20x], and MWI-2A[10x] required. Samples MWII-5 and the DUP sample required 10x dilutions prior to the nitrate/nitrite as N analysis. Reporting limits have been adjusted to compensate for the required dilutions.

Additionally, sample MWII-5 and the DUP sample were analyzed for COD outside of target hold times because COD was not detected in either sample; no qualifiers were necessary. The COD results have been non-detect in the second and third quarter sampling events so the analysis outside of hold times may not have impacted the analytical results.

Table 2: Summary of Groundwater Analytical Results (13-14 November 2023)

Analyte	Unit	MWI-1A	MWI-2A	MWI-3A	MWII-2	MWII-5	MWII-5 (DUP)	MWII-7	Background[3]	HAR MCLs[5]	HI EALs[6]
Volatile Organic Compounds (VOCs)											
1,4-Dichlorobenzene	µg/L	0.63 J	0.45 J	< 0.39	< 0.39	< 0.39	< 0.39	< 0.39	--	--	110
All VOCs Analyzed	µg/L	ND	ND	ND	ND	ND	ND	ND	--	--	--
Metals											
Arsenic (dissolved)	µg/L	**10**	**98**	**11**	**6.1**	**13**	**13**	**7.6**	130	10	69
Arsenic (total)	µg/L	**9.8**	**96**	**11**	**6.7**	**13**	**13**	**8.5**	--	--	--
Barium (dissolved)	µg/L	3.8 J	4.4 J	28 J	4.5 J	3.3 J	3.7 J	21 J	18	2,000	2,000
Barium (total)	µg/L	4 J	4.3 J	28 J	4.6 J	3.5 J	3.5 J	24 J	--	--	--
Beryllium (dissolved)	µg/L	< 0.062	0.065 J	< 0.062	< 0.062	< 0.062	< 0.062	< 0.062	1	--	35
Beryllium (total)	µg/L	< 0.062	< 0.062	< 0.062	< 0.062	< 0.062	< 0.062	< 0.062	--	--	--
Cadmium (dissolved)	µg/L	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	5	5	3
Cadmium (total)	µg/L	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	--	--	--
Calcium (dissolved)	µg/L	**36,000**	**38,000**	**68,000**	**48,000**	**43,000**	**42,000**	**170,000**	500,000	--	--
Calcium (total)	µg/L	**36,000**	**37,000**	**67,000**	**52,000**	**42,000**	**43,000**	**170,000**	--	--	--
Chromium (dissolved)	µg/L	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	10	100	16
Chromium (total)	µg/L	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	< 0.66	0.085 J	--	--	--
Cobalt (dissolved)	µg/L	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	10		120
Cobalt (total)	µg/L	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	< 0.56	0.68 J	--	--	--
Copper (dissolved)	µg/L	< 4.2	4.7 J	< 4.2	< 4.2	< 4.2	< 4.2	4.3 J	15	130	2.9
Copper (total)	µg/L	14 J	< 4.2	< 4.2	< 4.2	< 4.2	< 4.2	4.9 J	--	--	--
Iron (dissolved)	µg/L	**270**	**490**	< 9.1	14 J	18 J	23 J	**1,200**	950	--	--
Iron (total)	µg/L	**300 B**	**480 B**	< 9.1	29 J B	18 J B	19 J B	**1,700 B**	--	--	--
Magnesium (dissolved)	µg/L	**110,000**	**140,000**	**88,000**	**95,000**	**94,000**	**93,000**	**320,000**	870,000	--	--
Magnesium (total)	µg/L	**110,000**	**140,000**	**86,000**	**100,000**	**94,000**	**91,000**	**310,000**	--	--	--
Nickel (dissolved)	µg/L	2.9 J	10 J	6.5 J	< 2.6	< 2.6	< 2.6	< 2.6	40	--	5
Nickel (total)	µg/L	< 2.6	9.6 J	5 J	< 2.6	< 2.6	< 2.6	< 2.6	--	--	--
Potassium (dissolved)	µg/L	**57,000**	**84,000**	**57,000**	**23,000**	**10,000**	**10,000**	**71,000**	220,000	--	--
Potassium (total)	µg/L	**58,000**	**83,000**	**56,000**	**25,000**	**10,000**	**9,800**	**68,000**	--	--	--
Selenium (dissolved)	µg/L	< 6.3	< 6.3	< 6.3	< 6.3	10 J	11 J	< 6.3	15	50	20
Selenium (total)	µg/L	< 6.3	< 6.3	< 6.3	< 6.3	14 J	7.8 J	< 6.3	--	--	--

Analyte	Unit	MWI-1A	MWI-2A	MWI-3A	MWII-2	MWII-5	MWII-5 (DUP)	MWII-7	Background[3]	HAR MCLs[5]	HI EALs[6]
Silicon (dissolved)	µg/L	**11,000**	**11,000**	**9,700**	**9,300**	**12,000**	**13,000**	**11,000**	15,000	--	--
Silicon (total)	µg/L	**12,000**	**11,000**	**9,400**	**10,000**	**13,000**	**12,000**	**11,000**	--	--	--
Sodium (dissolved)	µg/L	**400,000 B**	**320,000 B**	**150,000 B**	**190,000 B**	**110,000 B**	**110,000 B**	**1,700,000 B**	7,700,000	--	--
Sodium (total)	µg/L	**410,000**	**320,000 B**	**140,000**	**210,000**	**110,000**	**110,000**	**1,700,000**	--	--	--
Vanadium (dissolved)	µg/L	< 0.5	< 0.5	3.2 J	4.1 J	5.4 J	5.4 J	1.8 J	10	--	90
Vanadium (total)	µg/L	< 0.5	< 0.5	3.5 J	4.3 J	5.3 J	5.4 J	2.9 J	--	--	--
Zinc (dissolved)	µg/L	4.2 J B	3.2 J	1.7 J	1.7 J	2.8	2 J	3.4 J	20	--	22
Zinc (total)	µg/L	4.1 J B	< 1.5	2.3 J B	< 1.5	1.8 J B	2.1 J B	5 J B	--	--	--
All Other Metals Analyzed	µg/L	ND	ND	ND	ND	ND	ND	ND	--	--	--
Major Chemical Parameters											
Ammonia as Nitrogen (N)	mg/L	**28**	**18**	**0.14**	**0.24**	< 0.029	0.047 J	**0.15**	7.7	--	--
Nitrate Nitrite as N	mg/L	< 0.044	< 0.044	< 0.044	**0.38**	**22**	**22**	**0.88**	--	10	--
Bicarbonate Alkalinity	mg/L	**590 B**	**700 B**	**460 B**	**480 B**	**380 H B**	**380 H B**	**430 B**	553	--	--
Carbonate Alkalinity	mg/L	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	--	--	--
Total Alkalinity	mg/L	**590 B**	**700 B**	**460 B**	**480 B**	**380 H B**	**380 H B**	**430 B**	549	--	--
Bromide	mg/L	**2.6**	**3.1**	**0.41**	**1.4**	**1.4**	**1.4**	**9.9 F1**	--	--	--
Chloride	mg/L	**540**	**370**	**14**	**230**	**170**	**170**	**2,700**	14,000	--	--
Sulfate	mg/L	**160**	**200**	**8.8**	**98**	**48**	**49**	**430**	1,800	--	--
Total Dissolved Solids	mg/L	**1,600**	**1,600**	**940**	**1,100**	**740**	**740**	**4,900**	23,000	--	--
Total Organic Carbon (average)	mg/L	**7.6**	**11**	**5**	**1**	0.37 J	0.64 J	**3.4**	6.4	--	--
Chemical Oxygen Demand (COD)	mg/L	**24**	**37**	13 J	< 8.7	< 8.7	< 8.7	87 J	280	--	--
Field Parameters											
Electrical Conductivity	µS/cm	3.50	2.88	1.64	2.04	1.41	1.41	10.00	--	--	--
Dissolved Oxygen	mg/L	0	0	0	0	0	0	0.85	--	--	--
eH/ORP	mV	-114	-112	62	54	147	147	-99	--	--	--
pH	SU	7.32	7.22	7.14	7.27	6.87	6.87	7.21	--	--	--
Temperature	°C	28.94	28.37	25.72	25.82	28.5	28.5	25.45	--	--	--
Temperature	°F	84.09	83.07	78.30	78.48	83.30	83.30	77.81	--	--	--
Turbidity	NTU	0.52	0.42	0.31	0.39	0.1	0.1	5	--	--	--

Notes:

1. "MWI-X" represents groundwater monitoring well
2. Wells MWI-1, MWI-2, and MWI-3 were decommissioned and replaced with MWI-1A, MWI-2A, and MWI-3A in May 2019
3. Background limits from AECOM.
4. Bold text indicates the detected concentration exceeds the statistically established reporting limit (RL).
5. HAR Chapter 11-20 maximum contaminant levels (MCLs) established for drinking water. In absence of state MCLs, the National Primary Drinking Water Regulations is used instead.
6. Hawai'i Environmental Action Levels (EALs) obtained from Table D-1c (2017).
7. Blue highlighted cells indicate that the value has exceeded background limits.
8. Red text indicates an exceedance of either the MCLs or EALs.

Abbreviations:

°C = degrees Celsius
°F = degrees Fahrenheit
eH/ORP = redox potential/oxidation reduction potential
J = Result is less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL), and the concentration is an approximate value
mg/L = milligrams per liter
mV = millivolts
ND = not detected above the MDL
NTU = nephelometric turbidity unit
SU = standard unit
µg/L = micrograms per liter
µS/cm = microSiemens per centimeter
MCL = Maximum Contaminant Level
EAL = Environmental Action Level
B = compound was also detected in the blank and corresponding sample

2.4 Monitoring Results Summary and Conclusions

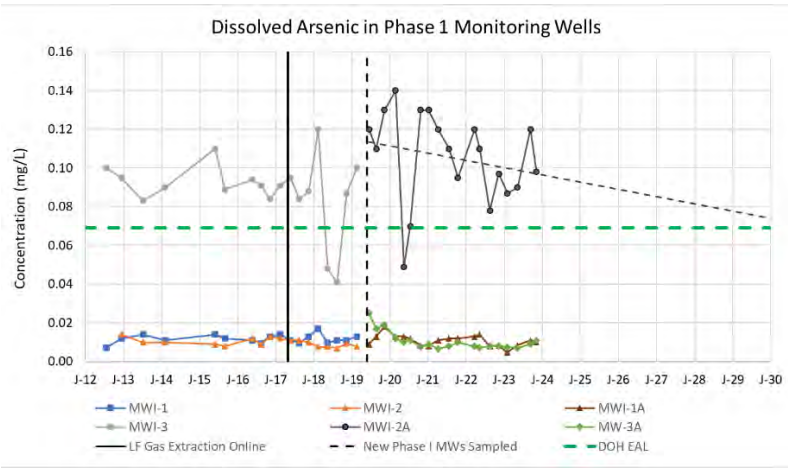
Findings and conclusions from the groundwater monitoring are summarized below:

- No VOCs were detected at concentrations greater than their respective RLs.
- Ammonia as N, bicarbonate and total alkalinity, and TOC exceeded the respective background limits in monitoring well MWI-1A and MWI-2A.[4]
- Total and dissolved barium exceeded background limits in monitoring well MWI-3A.
- The analytical data were screened against Hawai'i state maximum contaminant levels (MCLs) for drinking water and environmental action levels (EALs) for groundwater. Dissolved and total arsenic in MWI-2A, MWI-3A, MWII-5, and the DUP sample, and dissolved arsenic in MWI-1A exceeded the corresponding MCL. Additionally, the dissolved and total arsenic in MWI-2A also exceeded the corresponding EAL.
- Statistical analysis of the data shows continued exceedances in total and dissolved iron at MWII-7. As presented in the GeoChem ASD (Geochem 2012), iron SSIs at MWII-7 are attributed to impacts from the adjacent aquaculture facility, not the Phase II Landfill.
- Total and dissolved manganese exceeded statistical background limits at MWII-7.
- COD exceeded statistical background limits at MWII-7.
- Ammonia as N exceeded statistical background limits at MWII-7.
- These findings are consistent with results from previous monitoring events.

Elevated concentrations of arsenic in groundwater at the KLF have been previously addressed in the WMH 2007 ASD report, the most recent GMP (Geosyntec, 2020), and multiple meetings with the DOH. The 2007 ASD indicated that elevated arsenic in monitoring well MWII-6 and in other monitoring wells is likely due to naturally occurring arsenic in the aquifer matrix, not a release from the landfill. A subsequent ASD (WMH, 2009) documented the presence of arsenic in soil near the landfill and showed that concentrations detected in groundwater are consistent with partitioning of arsenic between soil and groundwater. Elevated background concentrations of arsenic in soil and groundwater near the KLF are likely associated with naturally occurring arsenic in volcanic soils, as well as arsenic-based herbicides and pesticides used at sugarcane plantations, as has been documented for many locations in Hawai'i, including the vicinity of Kekaha on Kaua'i (DOH, 2011; Geosyntec, 2020).

[4] In their letter dated 3 October 2022, the DOH requested assessment monitoring or an ASD to address the ammonia as N and TOC detected in MWI-2A. The County's response to the DOH comments, which is in preparation, includes a proposed approach to re-evaluate the background data using data that will be acquired from the two new upgradient monitoring wells that are planned for installation before the end of 3rd Quarter 2023.

In addition, as has been discussed with and submitted to the DOH (e.g., WMH, 2018), oxygen-depleted reducing conditions associated with the presence of the KLF and generation of methane likely increases the solubility of arsenic in groundwater beneath the landfill. As a consequence of landfill gas extraction, which began at the Phase I landfill in 2017, conditions are expected to become less reducing with time beneath the Phase I Landfill, and solubility of arsenic in groundwater beneath the landfill may gradually decrease. Although this is expected to be a slow process that would likely take many years, a decreasing trend of arsenic concentrations in MWI-2A the last few years is encouraging and indicates that the landfill gas extraction system may be helping to reduce solubility of arsenic in groundwater (see graph and map inserted below).



Graph of Concentrations of Dissolved Arsenic in Groundwater Samples for Phase I Monitoring Wells and Aerial Photo Showing Locations of the MWs

As illustrated above, monitoring well MWI-2A is near the southeast corner of the Phase I Area, close to former monitoring well MWI-3 (Figure 2). Concentrations of arsenic at MWI-2A are similar to historical values of arsenic detected at MWI-3, and the data show a decreasing trend. This location is downgradient of the previously decommissioned MWII-6, and the elevated concentration of arsenic is likely a result of natural occurring minerals containing arsenic in the soil and/or residual agricultural chemicals in the soil and not a release from the landfill (DOH, 2011; Geosyntec, 2020). However, the physical presence of the landfill and the generation of methane gas result in reducing geochemical conditions (low oxygen) within the landfill and in groundwater beneath the landfill, which increases the solubility of metals, including arsenic.

The landfill gas extraction system that began operating in May 2017 is removing methane, which should also help to limit the reducing conditions within and beneath the landfill. This may lessen the solubility of metals in groundwater beneath the landfill and result in lower concentrations of metals with time. Elevated concentrations of metals in groundwater are likely limited to the vicinity of the landfill where reducing conditions exist, and lower concentrations of metals are expected in groundwater away from the landfill where conditions are more aerobic. Changes in

the redox conditions and the associated solubility of metals are likely to take several years (e.g., Abiriga et al., 2021). More time and monitoring are needed before definitive trends can be determined. Time series plots for dissolved arsenic, calcium, iron, magnesium, potassium, and sodium in the Phase I wells were prepared and are included in Appendix B.

Two new monitoring wells will be installed mauka of the highway that should provide background data. Additionally, the County agrees to collect groundwater samples from a transect makai (on the ocean side) of the Phase I Landfill to investigate the extent of elevated arsenic downgradient of the landfill.

The Sanifill 1998 ASD report, which was approved by the DOH, concluded that TOC and ammonia in groundwater may be attributable to the biodegradation of large quantities of organic matter (e.g., sugarcane vegetation) placed as fill material near and upgradient of monitoring well MWII-6 at a depth of at least 14 ft below ground surface. The ASD also indicated that the application of fertilizers and pesticides at nearby agricultural areas may have contributed to elevated TOC and ammonia concentrations in groundwater. Impacts to groundwater of organic matter from the adjacent upgradient aquaculture facility likely contributes to elevated concentrations of TOC and ammonia in downgradient Phase 1 monitoring wells MWI-1A and MWI-2A.

Additionally, the elevated concentrations of ammonia as N, bicarbonate alkalinity, total alkalinity, and TOC may partly be the result of decaying vegetation on the makai side of the Phase I Landfill (e.g., Sanifill, 1998). The organic detritus and roots that were in the area near decommissioned Phase I monitoring wells MWI-2 and MWI-3 may persist in the vicinity of these old monitoring wells and still may be influencing the water quality in the new monitoring wells that were installed in that same area (MWI-1A replaced MWI-2, and MWI-2A replaced MWI-3). New monitoring wells MWI-1A and MWI-2A have similar water quality of the original Phase I wells (MWI-2 and MWI-3). Replacement monitoring well MWI-3A was installed approximately 650 ft east of MWI-3 and is downgradient or cross-gradient from the Phase I Landfill and may be representative of upgradient groundwater with differences in geochemical characteristics from the other two Phase I monitoring wells.

Time-series plots for ammonia as N, sulfate, chloride, TOC, and TDS are included in Appendix B and illustrate concentrations trends in the Phase I monitoring wells. TOC was decreasing in all Phase I monitoring wells before stabilizing at approximately 9.5 mg/L in MWI-1, approximately 6 mg/L in MWI-2, and approximately 7 mg/L in MWI-3. Initially, after the new Phase I monitoring wells were installed, in MWI-1A and MWI-2A, TOC appeared to be increasing over time. Recently, a general decreasing trend for TOC in MWI-1A has begun to occur since the fourth quarter 2021 monitoring event. The TOC results from the last several quarters have fluctuated but appear to be stabilizing overall. TOCs results in MWI-2A appear to be stabilizing around 10 mg/L since approximately the fourth quarter 2020. TOC in MWI-3A has been gradually decreasing but rose slightly in first quarter 2023 which has continued through 2023. The variable trends are likely

due to differing subsurface conditions such as differing amounts of decaying vegetation in proximity, preferential groundwater flow pathways, and variable hydraulic gradients. Additionally, MWI-3A is located so that upgradient groundwater flow is from the north and eastern adjoining properties rather than from beneath the Phase 1 and Phase II Landfills, which is the case for MWI-1A and MWI-2A.

The time series plot for ammonia as N shows that concentrations were generally trending down prior to the installation of the new Phase I monitoring wells. In the new Phase I wells, ammonia as N has stabilized below 1 mg/L in MWI-3A since May 2020 and appears to be stabilizing in MWI-2A around 18 mg/L but has been fluctuating in MWI-1A since the first quarter 2022.

In third quarter 2023, a significant rise of chloride and sulfate, and a modest but meaningful increase in TDS was observed in MWI-3A. Meanwhile, chloride, sulfate, and TDS concentrations changes in MWI-1A and MWI-2A are limited relative to MWI-3A. It is unclear what may have influenced the dramatic increase in the concentrations of these compounds in MWI-3A, as field sampling and laboratory analysis procedures did not indicate any obvious explanation for the occurrence. It is possible that agricultural activity on the south adjoining property may have influenced the sample results in this monitoring well. It is possible that the shift in groundwater flow direction have introduced brackish water to these wells. The fourth quarter 2023 chloride and sulfate results in MWI-3A have decreased dramatically compared to third quarter 2023 and represent a multi-year low.

As is discussed elsewhere herein and in previous reports, the adjacent aquaculture facility is a source of ammonia, organic carbon, chloride, and other constituents associated with infiltration of nutrient-rich water with elevated salinity. The aquaculture facility likely also depletes oxygen in groundwater and thus contributes to reduced conditions. Elevated concentrations of ammonia have been detected historically at MWII-7 (Appendix D), which is adjacent to the aquaculture facility.

2.5 Phase I Quarterly Site Inspection

On 11 August 2023, the Third Quarter 2023 site inspection was conducted for the closed Phase I KLF by Geosyntec. The landfill cover was inspected for signs of erosion and for differential settlement or depressions. The storm water controls were inspected for any signs of failure or maintenance needs and for the proper drainage of all storm water. A summary of the site inspection follows:

- **Infiltration Ditch:** The infiltration ditch was in good condition with no apparent silt accumulation. There were no signs of obstructions, and the infiltration ditch appeared to able to convey storm water.
- **Storm Water Drainpipe Inlets:** All drainage inlets were unobstructed, and silt socks around the inlets appeared to be intact.

- **Storm Water Drainpipe Outlets and Energy Dissipaters:** The pipe outlets and all energy dissipators were in place and in good condition during the inspection.
- **Signs of Landfill Settlements, Depressions, etc.:** No visible signs of settlement or depressions were observed during the inspection.
- **Signs of Landfill Gas Migration (Dead or Brown Vegetation):** No visible signs of gas migration were observed during the inspection.
- **Signs of Erosion or Instability (Deck and Side Slope):** Some signs of erosion were present on the south and west slope. The service schedule for the bulldozer present at the KLF has been updated and will incorporate tracking of these slopes.
- **Landfill Security Measures (Gates, Fencing, etc.)**: The tree that had fallen on the fencing located along the northwest side of the Phase 1 landfill, adjacent to the aquaculture facility, has been removed but the fencing damage remains. Additional fencing damage was also observed along the southwest corner of the former Phase I landfill (by former MWI-1) in two sections which abuts the adjoining military station. The fence repairs will be made.

3. LEACHATE MONITORING

No leachate samples were collected during the Fourth Quarter 2023 monitoring event. The Permit requires, at minimum, annual sampling of Wet Wells 1, 2, and 3 and leachate Sumps 2A and 2B. Samples were collected from Wet Wells 1, 2, and 3 and from leachate Sumps 2A and 2B during the First Quarter 2023 monitoring event.

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APPENDIX A
Field Information Forms

Geosyntec consultants

Groundwater Purging and Sampling Log

6900D Kaumuali'i Hwy
Kekaha, Hawaii 96752
PH 808.337.1416

Project No: WG3074	Task No: 01/1.3	Project Name: Kekaha Landfill	Date: 11/14/23
Site Location: Kekaha	Depth to Water (DTW)(ft): 9.72	Measurements Referenced to: TOC	
Well ID: MW 1-1A	Total Well Depth (ft): —	OVM (ppm) = N/A	
Screen Interval (ft): —	Well Diameter (inch): 2"	Casing Volume: —	
Pump Placement (ft): —	DTW After Purge (ft):	3 Casing Volumes: —	
Sampler(s): George Hichborn			

Purging Equipment:
- ( ) Disposable Bailer
- ( ) Electric Submersible Pump
- (X) Bladder Pump

Sampling Equipment:
- ( ) Disposable Bailer
- (X) Dedicated Tubing
- ( ) Other:_____

Type of Water Quality Meter Used: Horiba U-52
- (X) Low-Flow/Micro Purging PRT-15CE
- ( ) Purge at least 3 well volumes

Volume of Schedule 40 PVC Pipe	
Well Diameter (inches).	gal/linear ft.
1.00	0.041
2.00	0.163
3.00	0.367
4.00	0.653
5.00	1.023
6.00	1.469

Time (24 hrs)	Water Level (ft TOC)	Turbidity (NTUs)	DO (mg/l)	pH (units)	Spec.Cond. (uS/cm)	ORP (mv)	Temp. (°C or °F)	Rate (ml/min)	Total Volume
---	---	(± 10%)	(± 0.3)	(± 0.1)	(± 3%)	(± 10mV)	---	---	---
0901	9.75	1.79	0.73	7.40	3.50	-105	28.31	450	1350
0904	9.77	1.11	0.73	7.35	3.44	-104	28.44	450	2700
0907	9.77	0.87	0.68	7.30	3.40	-105	28.49	450	4050
0910	9.77	0.91	Ø	7.33	3.36	-109	28.52	450	5400
0913	9.77	0.45	Ø	7.33	3.33	-111	28.68	450	6,750
0916	9.77	0.41	Ø	7.33	3.30	-113	28.83	450	8,100
0919	9.78	0.54	Ø	7.32	3.27	-114	28.94	450	9,450
0922	9.78	0.53	Ø	7.32	3.27	-114	28.94	450	10,800
* 0923	9.78	0.52	Ø	7.32	3.26	-114	28.94	450	12,150
			10/12/23						

Notes: Sample 0923

Total Gallons Purged: 12,150

Presence of Sheen in groundwater sample (yes/no): no

Sample ID and Analysis: MW 1-1A

Duplicate Sample: N/A

Equipment Blank: N/A

Field Blank:

Geosyntec consultants

Groundwater Purging and Sampling Log

6900D Kaumuali'i Hwy
Kekaha, Hawaii 96752
PH 808.337.1416

Project No: W63074	Task No: a/1.3	Project Name: Kekaha Landfill	Date: 11/14/23
Site Location: Kekaha	Depth to Water (DTW)(ft): 8.57	Measurements Referenced to: TOC	
Well ID: MW 1-2A	Total Well Depth (ft): —	OVM (ppm) = N/A	
Screen Interval (ft): —	Well Diameter (inch): 2	Casing Volume: —	
Pump Placement (ft): —	DTW After Purge (ft): —	3 Casing Volumes: —	
Sampler(s): George Hichara			

Purging Equipment:
- ( ) Disposable Bailer
- ( ) Electric Submersible Pump
- (X) Bladder Pump

Sampling Equipment:
- ( ) Disposable Bailer
- (X) Dedicated Tubing
- ( ) Other:_____

Type of Water Quality Meter Used: Horiba U-52 PRT-ISCE
- (X) Low-Flow/Micro Purging
- ( ) Purge at least 3 well volumes

Volume of Schedule 40 PVC Pipe	
Well Diameter (inches).	gal/linear ft.
1.00	0.041
2.00	0.163
3.00	0.367
4.00	0.653
5.00	1.023
6.00	1.469

Time (24 hrs)	Water Level (ft TOC)	Turbidity (NTUs)	DO (mg/l)	pH (units)	Spec.Cond. (uS/cm)	ORP (mv)	Temp. (°C or °F)	Rate (ml/min)	Total Volume
---	---	(± 10%)	(± 0.3)	(± 0.1)	(± 3%)	(± 10mV)	---	---	---
1005	8.60	1.0	0.25	7.23	2.89	-109	28.24	500	1500
1008	8.60	0.63	0.25	7.23	2.89	-110	28.26	500	3000
1011	8.60	0.52	0.23	7.23	2.89	-110	28.31	500	4500
1014	8.60	0.45	0.18	7.23	2.92	-110	28.34	500	6000
1017	8.59	0.44	0	7.22	2.89	-113	28.36	500	7500
1020	8.59	0.43	0	7.22	2.88	-112	28.37	500	9000
* 1023	8.59	0.42	0	7.22	2.88	-112	28.37	500	10,500
				11-12-23 GAH					

Notes: Sample 1023

Total Gallons Purged: 10,500

Presence of Sheen in groundwater sample (yes/no): no

Sample ID and Analysis: NO

Duplicate Sample: NO

Equipment Blank: NO

Field Blank:

Geosyntec consultants

Groundwater Purging and Sampling Log

6900D Kaumuali'i Hwy
Kekaha, Hawaii 96752
PH 808.337.1416

Project No: WG3074	Task No: B1.1.3	Project Name: Kekaha Landfill	Date: 11 / 14 / 23
Site Location: Kekaha	Depth to Water (DTW)(ft): 9.04	Measurements Referenced to: TOC	
Well ID: MW 1-3A	Total Well Depth (ft): -	OVM (ppm) = N/A	
Screen Interval (ft): —	Well Diameter (inch): 2	Casing Volume: -	
Pump Placement (ft): —	DTW After Purge (ft): -	3 Casing Volumes: -	
Sampler(s): George Hichborn			

Purging Equipment:
- ( ) Disposable Bailer
- ( ) Electric Submersible Pump
- (X) Bladder Pump

Sampling Equipment:
- ( ) Disposable Bailer
- (X) Dedicated Tubing
- ( ) Other:_____

Type of Water Quality Meter Used:_____
- ( ) Low-Flow/Micro Purging Horiba U-52
- ( ) Purge at least 3 well volumes PRT ISCE

Volume of Schedule 40 PVC Pipe	
Well Diameter (inches).	gal/linear ft.
1.00	0.041
2.00	0.163
3.00	0.367
4.00	0.653
5.00	1.023
6.00	1.469

Time (24 hrs)	Water Level (ft TOC)	Turbidity (NTUs)	DO (mg/l)	pH (units)	Spec.Cond. (uS/cm)	ORP (mv)	Temp. (°C or °F)	Rate (ml/min)	Total Volume
---	---	(± 10%)	(± 0.3)	(± 0.1)	(± 3%)	(± 10mV)	---	---	---
1113	9.08	0.50	0.54	7.15	1.64	56	25.70	450	1,350
1116	9.08	0.43	0.51	7.14	1.63	61	25.70	450	2,700
1119	9.08	0.45	0.50	7.14	1.64	63	25.70	450	4,050
1122	9.09	0.32	0	7.14	1.64	63	25.72	450	5,500
1125	9.09	0.31	0	7.14	1.64	63	25.72	450	6,850
* 1128	9.09	0.31	0	7.14	1.64	62	25.72	450	8,200
				11/14/23 GAH					

Notes: Sample 1128

Total Gallons Purged: 8200

Presence of Sheen in groundwater sample (yes/no): no

Sample ID and Analysis: MW1-3A

Duplicate Sample: N/A

Equipment Blank: N/A

Field Blank: N/A

Geosyntec consultants

Groundwater Purging and Sampling Log

6900D Kaumuali'i Hwy
Kekaha, Hawaii 96752
PH 808.337.1416

Project No: WG3074	Task No: 01113	Project Name: Kekaha Landfill	Date: 11/14/23
Site Location: Kekaha	Depth to Water (DTW)(ft): 10.95	Measurements Referenced to: TOC	
Well ID: MW 11-2	Total Well Depth (ft): –	OVM (ppm) = N/A	
Screen Interval (ft): –	Well Diameter (inch): 2	Casing Volume: –	
Pump Placement (ft): –	DTW After Purge (ft): –	3 Casing Volumes: –	
Sampler(s): George Hickbarn			

Purging Equipment:
- ( ) Disposable Bailer
- ( ) Electric Submersible Pump
- (X) Bladder Pump

Sampling Equipment:
- ( ) Disposable Bailer
- (X) Dedicated Tubing
- ( ) Other:_____

Type of Water Quality Meter Used: Horiba U-52
- (X) Low-Flow/Micro Purging
- ( ) Purge at least 3 well volumes

Volume of Schedule 40 PVC Pipe	
Well Diameter (inches).	gal/linear ft.
1.00	0.041
2.00	0.163
3.00	0.367
4.00	0.653
5.00	1.023
6.00	1.469

Time (24 hrs)	Water Level (ft TOC)	Turbidity (NTUs)	DO (mg/l)	pH (units)	Spec.Cond. (uS/cm)	ORP (mv)	Temp. (°C or °F)	Rate (ml/min)	Total Volume
---	---	(± 10%)	(± 0.3)	(± 0.1)	(± 3%)	(± 10mV)	---	---	---
0653	11.07	1.20	.70	7.32	2.04	57	25.09	500	1500
0656	11.05	.68	.67	7.30	2.04	56	25.40	500	3000
0659	11.06	.54	.55	7.28	2.04	55	25.80	500	4500
0702	11.03	.42	.43	7.28	2.04	55	25.83	500	6000
0705	11.03	.40	0	7.27	2.04	54	25.82	500	7500
* 0708	11.03	.39	0	7.27	2.04	54	25.82	500	9000
				11-14-23 GAH					

Notes: Sampled 7:08

Total Gallons Purged: 9000

Presence of Sheen in groundwater sample (yes/no): NO

Sample ID and Analysis: MW 11-2

Duplicate Sample: N/A

Equipment Blank:

Field Blank:

Geosyntec consultants

Groundwater Purging and Sampling Log

6900D Kaumuali'l Hwy
Kekaha, Hawaii 96752
PH 808.337.1416

Project No: LG3074	Task No: 1.1.3	Project Name: Kekaha Landfill	Date: 11 / 13 / 23
Site Location: Kekaha	Depth to Water (DTW)(ft): 8.91	Measurements Referenced to: TOC	
Well ID: mw11-5 / mw11-5 Dup	Total Well Depth (ft): —	OVM (ppm) = N/A	
Screen Interval (ft): —	Well Diameter (inch): —	Casing Volume: —	
Pump Placement (ft): —	DTW After Purge (ft): —	3 Casing Volumes: —	
Sampler(s): George Hichberg			

Purging Equipment:
- ( ) Disposable Bailer
- ( ) Electric Submersible Pump
- (X) Bladder Pump

Sampling Equipment:
- ( ) Disposable Bailer
- (X) Dedicated Tubing
- ( ) Other:_____

Type of Water Quality Meter Used: Horiba U-52
- (X) Low-Flow/Micro Purging
- ( ) Purge at least 3 well volumes

Volume of Schedule 40 PVC Pipe	
Well Diameter (inches).	gal/linear ft.
1.00	0.041
2.00	0.163
3.00	0.367
4.00	0.653
5.00	1.023
6.00	1.469

Time (24 hrs)	Water Level (ft TOC)	Turbidity (NTUs)	DO (mg/l)	pH (units)	Spec.Cond. (uS/cm)	ORP (mv)	Temp. (^{0}C or ^{0}F)	Rate (ml/min)	Total Volume
---	---	(± 10%)	(± 0.3)	(± 0.1)	(± 3%)	(± 10mV)	---	---	---
1330	8.86	0.67	1.65	6.62	1.42	166	28.42	400	1200
1333	8.85	0.41	1.41	6.78	1.41	156	28.44	400	2400
1336	8.94	0.35	1.10	7.00	1.40	148	28.54	400	3600
1339	8.94	0.23	0.81	6.88	1.40	148	28.55	400	4800
1342	8.95	0.15	0.47	6.87	1.40	147	28.50	400	6000
1345	8.95	0.13	0	6.87	1.40	147	28.50	400	7200
* 1348	8.95	0.10	0	6.87	1.41	147	28.50	400	8400
				11-13-23 GAH					

Notes: Sampled 1348

Total Gallons Purged: 8400

Presence of Sheen in groundwater sample (yes/no): NO

Sample ID and Analysis: mw 11-5

Duplicate Sample: mw 11-5 Dup

Equipment Blank: N/A

Field Blank:

Geosyntec consultants

Groundwater Purging and Sampling Log

6900D Kaumuali'i Hwy
Kekaha, Hawaii 96752
PH 808.337.1416

Project No: WG3074	Task No: 01/1.3	Project Name: Kekaha Landfill	Date: 11/14/23
Site Location: Kekaha	Depth to Water (DTW)(ft): 11.28	Measurements Referenced to: TOC	
Well ID: MW 11-7	Total Well Depth (ft): —	OVM (ppm) = N/A	
Screen Interval (ft): —	Well Diameter (inch): —	Casing Volume: —	
Pump Placement (ft): —	DTW After Purge (ft): —	3 Casing Volumes: —	
Sampler(s): George Hickbart			

Purging Equipment:
- ( ) Disposable Bailer
- ( ) Electric Submersible Pump
- (X) Bladder Pump

Sampling Equipment:
- ( ) Disposable Bailer
- (X) Dedicated Tubing
- ( ) Other:_____

Type of Water Quality Meter Used: Horiba U-52
- (X) Low-Flow/Micro Purging
- ( ) Purge at least 3 well volumes

Volume of Schedule 40 PVC Pipe	
Well Diameter (inches).	gal/linear ft.
1.00	0.041
2.00	0.163
3.00	0.367
4.00	0.653
5.00	1.023
6.00	1.469

Time (24 hrs)	Water Level (ft TOC)	Turbidity (NTUs)	DO (mg/l)	pH (units)	Spec.Cond. (uS/cm)	ORP (mv)	Temp. (°C or °F)	Rate (ml/min)	Total Volume
---	---	(± 10%)	(± 0.3)	(± 0.1)	(± 3%)	(± 10mV)	---	---	---
0755	11.26	40.2	2.32	7.21	9.95	-67	25.39	500	1500
0758	11.25	34.8	2.01	7.20	9.94	-83	25.43	500	3000
0801	11.25	19.7	1.70	7.20	9.95	-87	25.40	500	4500
0804	11.25	13.0	1.45	7.21	9.94	-94	25.45	500	6000
0807	11.24	12.7	1.02	7.21	9.94	-99	25.47	500	7500
0810	11.24	6.4	.90	7.22	9.98	-103	25.50	500	9000
0813	11.24	5.3	.88	7.21	9.99	-101	25.47	500	10500
0816	11.24	5.1	.86	7.21	10.0	-100	25.45	500	12000
0819	11.24	5.2	.86	7.21	10.0	-100	25.45	500	13500
* 0821	11.25	5.0	.85	7.21	10.0	-99	25.45	500	15000

Notes: Sampled 0821

Total Gallons Purged: 15,000

Presence of Sheen in groundwater sample (yes/no): No

Sample ID and Analysis: MW 11-7

Duplicate Sample: N/A

Equipment Blank: N/A

Field Blank:

Certificate of Calibration

Instrument Type: ***Horiba U-52*** Serial Number: F4YC

Calibration Solution : ***Lot# 21470033 EXP. 09/2024***

Calibration Solution	***Result***
Temp 17.6 C	Temp 17.6 C
pH 4.00	pH 4.00
Cond. 0.00 mS/cm/4.49 mS/cm	Cond. 0.00 mS/cm/4.49 mS/cm
Turbidity 0 NTU/800 NTU	Turbidity 0 NTU/800 NTU
DO 0.00 mg/ l /10.50 mg/l @17.6 C	DO 0.00 mg/ l /10.50 mg/l @17.6C

Calibrated by: _____ Calibration Date: 11/9/23

HAWAII ENVIRONMENTAL RENTAL
(808)436-5575

WELL CONDITION INSPECTION FORM

Site: Kekaha Landfill　Personnel: George Hiaborn

Date: ______　Page 1 of 1

Well ID	Protective Casing	Well Casing	Label	Lock	Sample Equipment Type	General Turbidity	Well Yield	Comments/Observations *
mw 1-1A	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No	3rd quarter	☒ Clear ☐ Turbid	☒ OK ☐ Inadequate	
mw 1-2A	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No		☒ Clear ☐ Turbid	☒ OK ☐ Inadequate	
mw 1-3A	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No		☒ Clear ☐ Turbid	☒ OK ☐ Inadequate	
mw 11-2	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No		☒ Clear ☐ Turbid	☒ OK ☐ Inadequate	Lid bent
mw 11-5	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No		☒ Clear ☐ Turbid	☒ OK ☐ Inadequate	
mw 11-7	☒ OK ☐ Damaged	☒ OK ☐ Damaged	☒ OK ☐ Inadequate	☒ Yes ☐ No		☒ Clear ☐ Turbid	☒ OK ☐ Inadequate	
	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No		☐ Clear ☐ Turbid	☐ OK ☐ Inadequate	
	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No		☐ Clear ☐ Turbid	☐ OK ☐ Inadequate	
	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No		☐ Clear ☐ Turbid	☐ OK ☐ Inadequate	
	☐ OK ☐ Damaged	☐ OK ☐ Damaged	☐ OK ☐ Inadequate	☐ Yes ☐ No		☐ Clear ☐ Turbid	☐ OK ☐ Inadequate	

* Note ponding water, weep holes, or any other information pertaining to well condition. Provide additional details on listed items.

Return this form to Site Manager and Groundwater Program Manager

Well Condition Summary Form

Facility: Kekoba Landfill Well/Piezometer Name: MW 1-1A

Evaluator: George Hickson Evaluation Date: 11-14-23

	Y	N	N/A
Is the well's location appropriately shown on a facility map?	X		
Is the well adequately flagged if hard to find?	X		
Is the well elevation information inscribed at or on the well correct?			X
Is the well: ☐ flush with surface? ■ above ground?			
Is the well free of physical damage?	X		
Is the well labeled on the inside?	X		
Is the well labeled on the outside?	X		
Does the well have protective posts, if necessary?	X		
Do above ground wells have weep holes at the base of the protective casing?	X		
Does the area around the well appear clean?	X		
Is the casing secure (attempt to move along two perpendicular axes)?	X		
Is the surface seal void of differential erosion around and under the base?	X		
Is the surface seal free of cracks that might affect the integrity of the seal?	X		
Is the surface seal sloped to prevent ponding around the well?	X		
Is the well free from standing or ponded water?	X		
Is the well locked to prevent unauthorized access?	X		
Is the protective casing cap void of large-gaps which would breach security?	X		
Is the locking cap free of rust?	X		
Is there a survey mark on the riser/wellhead assembly cap?	X		
Is the riser cap vented?	X		
Is the annular space free of animal/insect nests?	X		
Is the annular space appropriately filled with filtering material?	X		
If a pump, can it be lifted a few inches? (do not test prior to sampling)	X		
Is the well free of kinks or bends?	X		

COMMENTS: Bollard needs painting

Well Condition Summary Form

Facility: Kekoha Landfill Well/Piezometer Name: mw 1-2A

Evaluator: George Hichborn Evaluation Date: 11-14-23

	Y	N	N/A
Is the well's location appropriately shown on a facility map?	X		
Is the well adequately flagged if hard to find?	X		
Is the well elevation information inscribed at or on the well correct?			X
Is the well:			
☐ flush with surface?			
☒ above ground?			
Is the well free of physical damage?	X		
Is the well labeled on the inside?	X		
Is the well labeled on the outside?	X		
Does the well have protective posts, if necessary?	X		
Do above ground wells have weep holes at the base of the protective casing?	X		
Does the area around the well appear clean?	X		
Is the casing secure (attempt to move along two perpendicular axes)?	X		
Is the surface seal void of differential erosion around and under the base?	X		
Is the surface seal free of cracks that might affect the integrity of the seal?	X		
Is the surface seal sloped to prevent ponding around the well?	X		
Is the well free from standing or ponded water?	X		
Is the well locked to prevent unauthorized access?	X		
Is the protective casing cap void of large gaps which would breach security?	X		
Is the locking cap free of rust?	X		
Is there a survey mark on the riser/wellhead assembly cap?	X		
Is the riser cap vented?	X		
Is the annular space free of animal/insect nests?	X		
Is the annular space appropriately filled with filtering material?	X		
If a pump, can it be lifted a few inches? (do not test prior to sampling)	X		
Is the well free of kinks or bends?	X		

COMMENTS: Bollard need painting

Well Condition Summary Form

Facility: Kekaha Landfill Well/Piezometer Name: MW 1-3A

Evaluator: George Hickman Evaluation Date: 11-14-23

	Y	N	N/A
Is the well's location appropriately shown on a facility map?	X		
Is the well adequately flagged if hard to find?	X		
Is the well elevation information inscribed at or on the well correct?			X
Is the well:			
☐ flush with surface?			
☒ above ground?			
Is the well free of physical damage?	X		
Is the well labeled on the inside?	X		
Is the well labeled on the outside?	X		
Does the well have protective posts, if necessary?	X		
Do above ground wells have weep holes at the base of the protective casing?	X		
Does the area around the well appear clean?	X		
Is the casing secure (attempt to move along two perpendicular axes)?	X		
Is the surface seal void of differential erosion around and under the base?	X		
Is the surface seal free of cracks that might affect the integrity of the seal?	X		
Is the surface seal sloped to prevent ponding around the well?	X		
Is the well free from standing or ponded water?	X		
Is the well locked to prevent unauthorized access?	X		
Is the protective casing cap void of large gaps which would breach security?	X		
Is the locking cap free of rust?	X		
Is there a survey mark on the riser/wellhead assembly cap?	X		
Is the riser cap vented?	X		
Is the annular space free of animal/insect nests?	X		
Is the annular space appropriately filled with filtering material?	X		
If a pump, can it be lifted a few inches? (do not test prior to sampling)	X		
Is the well free of kinks or bends?	X		

COMMENTS: Bollards need painting

Well Condition Summary Form

Facility: Kekaha Landfill Well/Piezometer Name: mw 11-2

Evaluator George Hichman Evaluation Date: 11-14-23

	Y	N	N/A
Is the well's location appropriately shown on a facility map?	X		
Is the well adequately flagged if hard to find?	X		
Is the well elevation information inscribed at or on the well correct?			X
Is the well: ☐ flush with surface? ● above ground?	X		
Is the well free of physical damage?		X	
Is the well labeled on the inside?	X		
Is the well labeled on the outside?	X		
Does the well have protective posts, if necessary?	X		
Do above ground wells have weep holes at the base of the protective casing?	X		
Does the area around the well appear clean?	X		
Is the casing secure (attempt to move along two perpendicular axes)?	X		
Is the surface seal void of differential erosion around and under the base?	X		
Is the surface seal free of cracks that might affect the integrity of the seal?	X		
Is the surface seal sloped to prevent ponding around the well?	X		
Is the well free from standing or ponded water?	X		
Is the well locked to prevent unauthorized access?	X		
Is the protective casing cap void of large gaps which would breach security?		X	
Is the locking cap free of rust?		X	
Is there a survey mark on the riser/wellhead assembly cap?	X		
Is the riser cap vented?	X		
Is the annular space free of animal/insect nests?	X		
Is the annular space appropriately filled with filtering material?	X		
If a pump, can it be lifted a few inches? (do not test prior to sampling)	X		
Is the well free of kinks or bends?	X		

COMMENTS: Lid at hinge bent and in process of being repaired / painted. Bollard need painting

Well Condition Summary Form

Facility: Kekaha Landfill Well/Piezometer Name: mw11-5

Evaluator: George Hichborn Evaluation Date: 11-13-23

	Y	N	N/A
Is the well's location appropriately shown on a facility map?	X		
Is the well adequately flagged if hard to find?	X		
Is the well elevation information inscribed at or on the well correct?			X
Is the well: ■ flush with surface? ☐ above ground?	X		
Is the well free of physical damage?	X		
Is the well labeled on the inside?	X		
Is the well labeled on the outside?	X		
Does the well have protective posts, if necessary?			X
Do above ground wells have weep holes at the base of the protective casing?			X
Does the area around the well appear clean?	X		
Is the casing secure (attempt to move along two perpendicular axes)?	X		
Is the surface seal void of differential erosion around and under the base?	X		
Is the surface seal free of cracks that might affect the integrity of the seal?	X		
Is the surface seal sloped to prevent ponding around the well?	X		
Is the well free from standing or ponded water?	X		
Is the well locked to prevent unauthorized access?		X	
Is the protective casing cap void of large gaps which would breach security?			X
Is the locking cap free of rust?	X		
Is there a survey mark on the riser/wellhead assembly cap?	X		
Is the riser cap vented?	X		
Is the annular space free of animal/insect nests?	X		
Is the annular space appropriately filled with filtering material?	X		
If a pump, can it be lifted a few inches? (do not test prior to sampling)	X		
Is the well free of kinks or bends?	X		

COMMENTS: NONE

Well Condition Summary Form

Facility: Kekaha Landfill Well/Piezometer Name: MW 11-7

Evaluator: George Hichhorn Evaluation Date: 11-14-23

	Y	N	N/A
Is the well's location appropriately shown on a facility map?	X		
Is the well adequately flagged if hard to find?	X		
Is the well elevation information inscribed at or on the well correct?			X
Is the well: ☐ flush with surface? ☒ above ground?			
Is the well free of physical damage?	X		
Is the well labeled on the inside?	X		
Is the well labeled on the outside?	X		
Does the well have protective posts, if necessary?	X		
Do above ground wells have weep holes at the base of the protective casing?	X		
Does the area around the well appear clean?	X		
Is the casing secure (attempt to move along two perpendicular axes)?	X		
Is the surface seal void of differential erosion around and under the base?	X		
Is the surface seal free of cracks that might affect the integrity of the seal?	X		
Is the surface seal sloped to prevent ponding around the well?	X		
Is the well free from standing or ponded water?	X		
Is the well locked to prevent unauthorized access?	X		
Is the protective casing cap void of large gaps which would breach security?	X		
Is the locking cap free of rust?	X		
Is there a survey mark on the riser/wellhead assembly cap?	X		
Is the riser cap vented?	X		
Is the annular space free of animal/insect nests?	X		
Is the annular space appropriately filled with filtering material?	X		
If a pump, can it be lifted a few inches? (do not test prior to sampling)	X		
Is the well free of kinks or bends?		X	

COMMENTS: Bollard need painting

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Phone (303) 431-7171

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: George A Hickborn	Lab PM: Turner, Shelby R	Carrier Tracking No(s): FED-EX	COC No: 01
Client Contact: Mr. Justin Lottig	Phone: 480-318-9459	E-Mail: Shelby.Turner@et.eurofinsus.com	State of Origin: HI	Page: 1 of 1
Company: Geosyntec Consultants, Inc.	PWSID:			Job #: WG3074
Address: 920 SW Sixth Avenue Suite 600	Due Date Requested:			
City: Portland	TAT Requested (days):			
State, Zip: OR, 97204	Compliance Project: Δ Yes Δ No			
Phone: 971-271-5917(Tel)	PO #: 100035480-1			
Email: JLottig@Geosyntec.com	WO #: Project Number: WG3074			
Project Name: Kekaha Landfill - Geosyntec	Project #: 28002962			
Site: Hawaii - Quarterly GW (APP I)	SSOW#:			

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, Y - Trizma, Z - other (specify)
Other:

280-184790 Chain of Custody

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)	8260D - VOCs (APP I)	2320B - Alkalinity, 2540C_Calcd - TDS, 300.0_28D - Cl/SO4/Br	6010D, 6020B, 7470A - Total Metals (APP I)	6010D, 6020B, 7470A - Dissolved Metals (APP I) (Field Filtered)	SM5310B - TOC (Field Filtered)	350.1 - Ammonia, 353.2_Pres - Nitrate Nitrite as N, 410.4 - COD	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	D	D	S	S		
MW 11-5	11-13-23	1348	G	W			X	X	X	X	X	X		
MW 11-5	11-13-23	1348	G	W			X	X	X	X	X	X		
MW 11-2	11-14-23	0708	G	W			X	X	X	X	X	X		
MW 11-7	11-14-23	0821	G	W			X	X	X	X	X	X		
MW 1-1A	11-14-23	0923	G	W			X	X	X	X	X	X		
MW 1-2A	11-14-23	1023	G	W			X	X	X	X	X	X		
MW 1-3A	11-14-23	1128	G	W			X	X	X	X	X	X		
Field Blank	11-14-23	1245	G	W	X		X	X	X	X	X	X		
Trip Blank	11-13-23	1340												

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
George A Hickborn	11-15-23 10:00	GEOSYNTEC	[illegible]	11/17/23 940	EETPEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.3, 1.4, 0.1 OF +.3 IR NoMo

Ver: 01/16/2019

PHASE 1 QUARTERLY SITE INSPECTION
KEKAHA SANITARY LANDFILL GCCS
KEKAHA, KAUA'I, HAWAI'I

Technician: George Hichborn Weather condition: Overcast

Inspection Date and Time: 30-Nov-23

COVER INSPECTION	YES	NO	COMMENTS
Issues with Infiltration Ditch		No	Good condition
Issues with Storm water pipe inlets		No	Good condition
Issues with storm water pipe outlets and energy dissipaters		No	
Signs of Landfill Settlement		No	
Signs of Landfll Gas Migration (Dead or Brown Vegetation		No	
Erosion on cap system - deck and side slopes		No	The county continues to monitor monthly the cap and side slopes.
Issues with Landfill security measures (Gate, Fencing, etc.)	Yes		Three areas in need of repair.

ACTION TAKEN

Repair Item	Location		Date	Comments
	Latitude	Longitude		
Fence repair	N21'59.325	159'45.857	11/24/23	NE section of property Shrimp Farm
Fence repair	N21'59.017	159'45.152	11/24/23	N section of property Naval station
Fence repair	N21'59.006	159'45.162	11/24/23	NW section of property Naval Station

Comments:

Note

**For Location of Observation and Repairs Made: Show on Map and provide GPS coordinates

CERTIFICATION OF CALIBRATION

PJLA Calibration
No. 66916

Date Of Calibration: 13-Apr-2023

Certificate Number: G504508_9/46012

Issued by: QED Environmental Systems Inc.

Customer: **GEOSYNTEC - SAN DIEGO, CA**
16644 W BERNARDO DR SUITE 301 SAN DIEGO, CA 92127
US

Description: Landtec Gas Analyzer

Model: GEM5000

Serial Number: G504508

Accredited Results:

Methane (CH4)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	5.0	0.42
15.0	15.0	0.66
50.0	50.9	1.03

Carbon Dioxide (CO2)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	4.8	0.43
15.1	14.6	0.71
50.0	50.2	1.19

Oxygen (O2)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
20.9	20.9	0.25

Gas cylinders are traceable and details can be provided if requested.

CH4, CO2 readings recorded at: 32.2 °C/89.9 °F

O2 readings recorded at: 21.9 °C/71.5 °F

Barometric Pressure: 0977"Hg/28.84 "Hg

Method of Test : The analyzer is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure ISP17.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with NIST requirements.

www.qedenv.com (800) 624-2026 info@qedenv.com

QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

CERTIFICATION OF CALIBRATION

PJLA Calibration
No. 66916

Date Of Calibration: 13-Apr-2023

Certificate Number: G504508_9/46012

Issued by: QED Environmental Systems Inc.

Non Accredited results:

Pressure Transducers (inches of water column)					
Transducer	**Certified (Low)**	**Reading (Low)**	**Certified (High)**	**Reading (High)**	**Accuracy**
Static	0"	0"	40"	40.22"	2.0"
Differential	0"	0"	4"	3.98"	0.7"

Barometer (mbar)	
Reference	**Instrument Reading**
0977 mbar / 28.84 "Hg	0977 mbar / 28.85 "Hg

As received gas check readings:

Methane (CH4)	
Certified Gas (%)	**Instrument Reading (%)**
5.0	5.3
15.0	15.7
50.0	48.8

Carbon Dioxide (CO2)	
Certified Gas (%)	**Instrument Reading (%)**
5.0	5.5
15.1	16.0
50.0	51.2

Oxygen (O2)	
Certified Gas (%)	**Instrument Reading (%)**
20.9	20.2

As received Gas readings recorded at: 32.2 °C/89.9 °F
As received Barometric Pressure recorded at: 21.9 °C/71.5 °F

Date of Issue : 14 Apr 2023

Approved By Signatory

Chris Fleenor
Laboratory Inspection

The calibration results published in this certificate were obtained using equipment capable of producing results that are traceable through NIST to the International System of Units (SI). Certification only applies to results shown. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance: 116 IGC Instance: 116

www.qedenv.com (800) 624-2026 info@qedenv.com

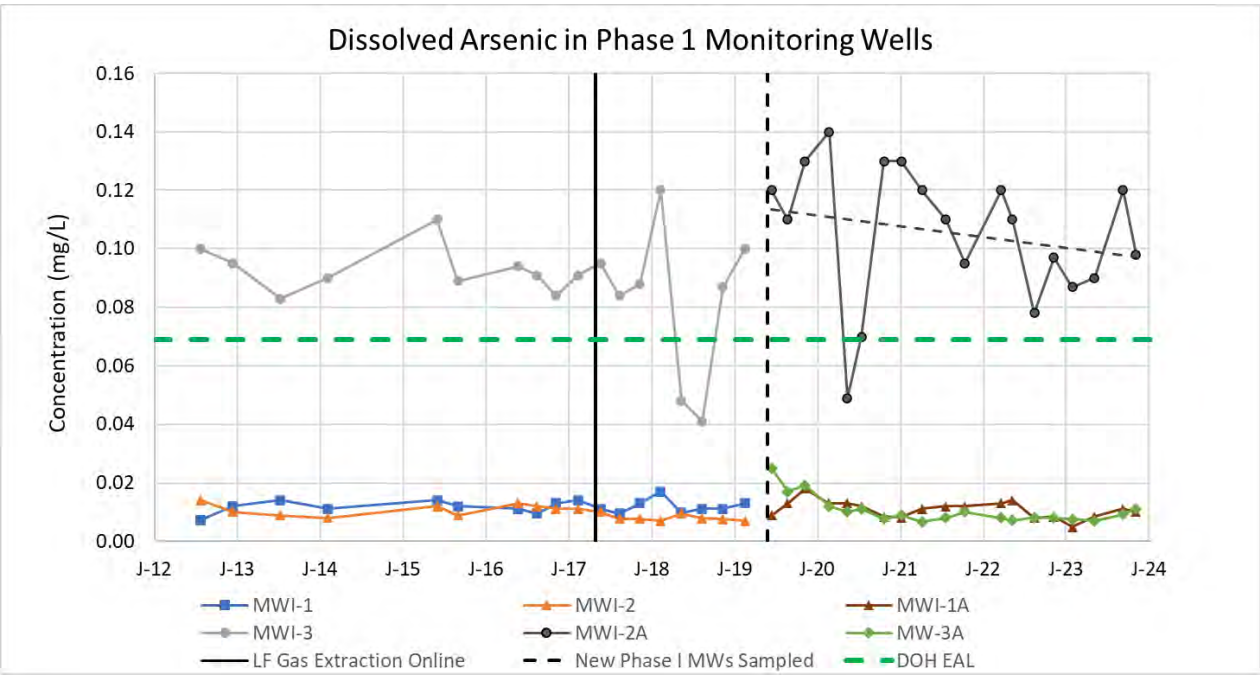
QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

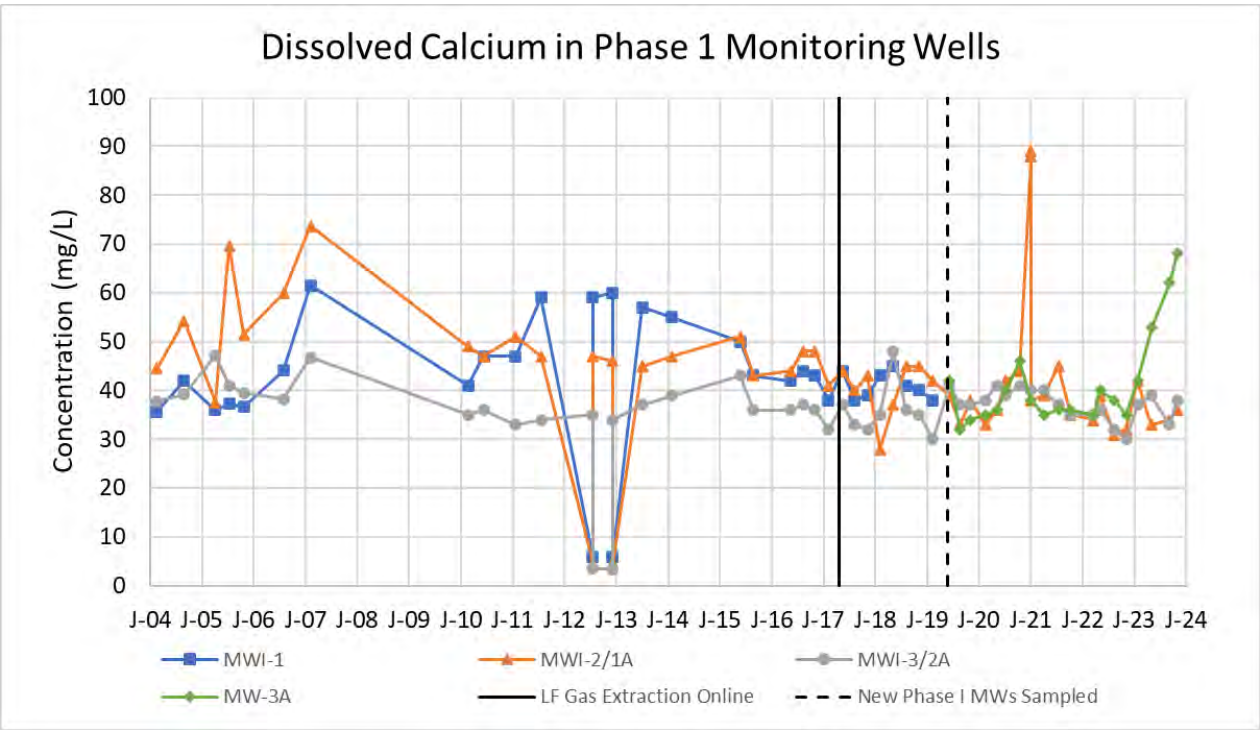
APPENDIX B

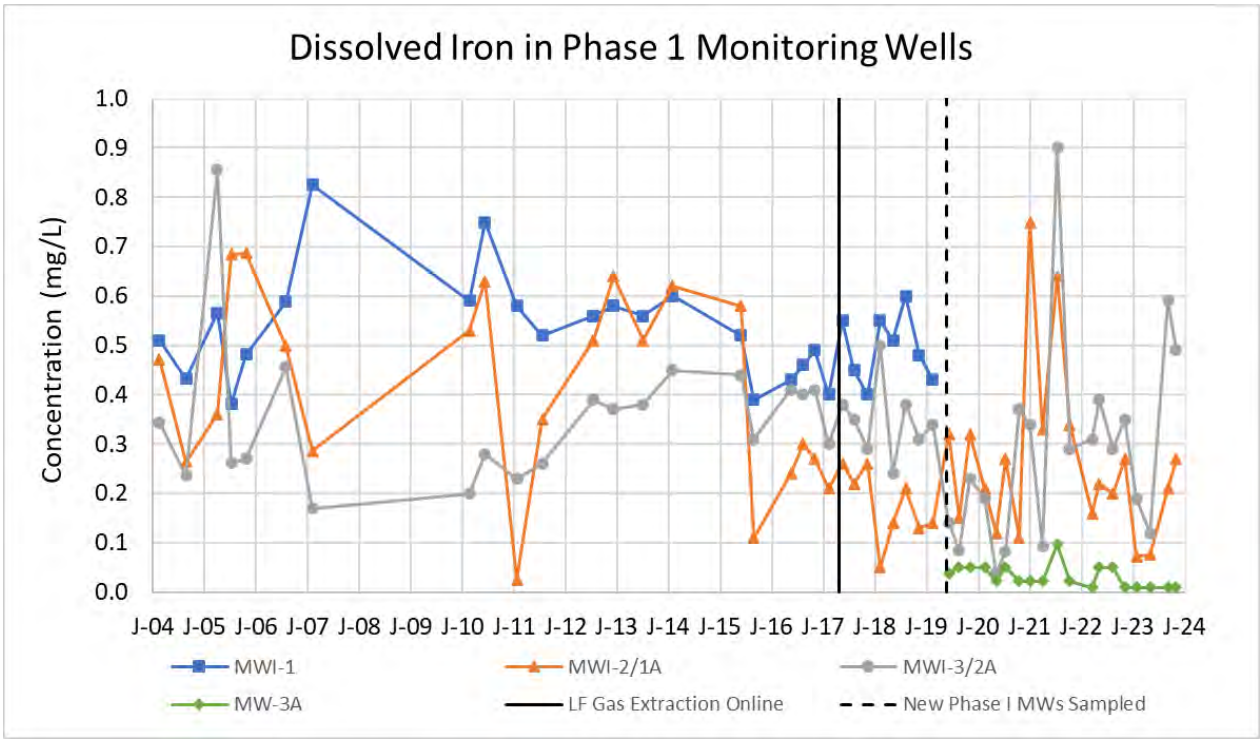
Historical Analytical Data for Phase 1 Groundwater Monitoring Wells

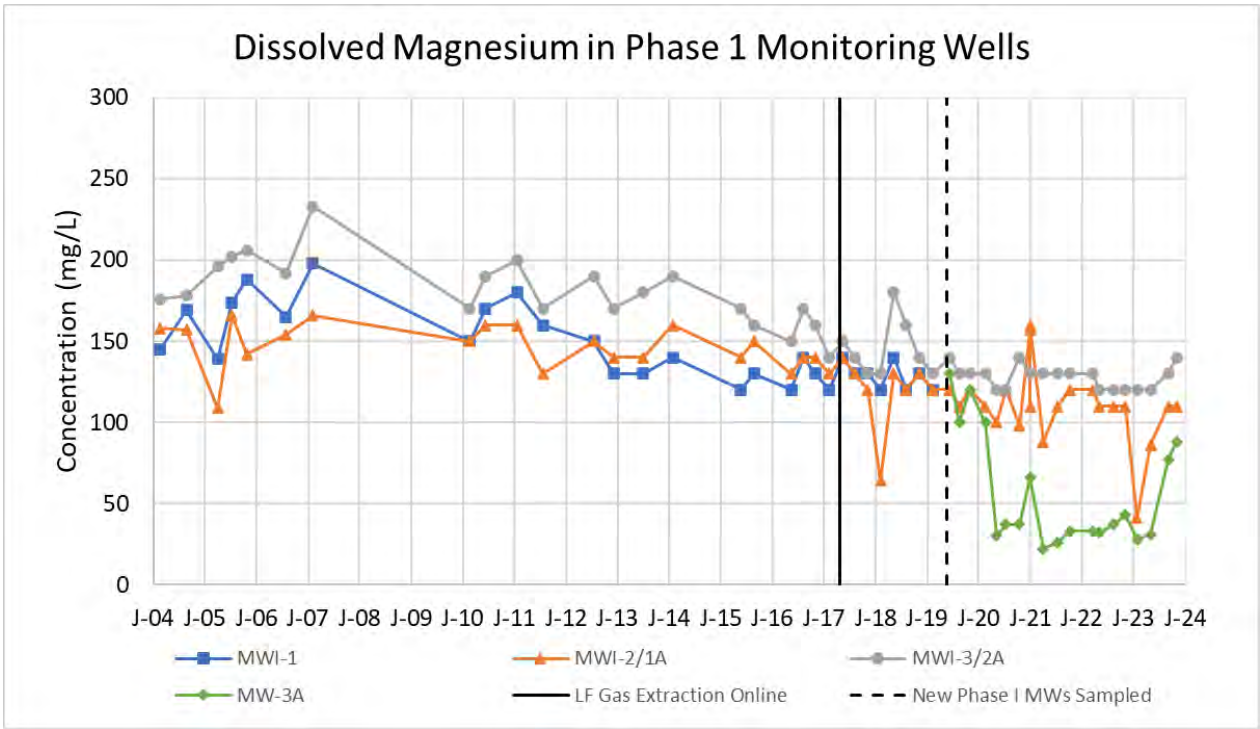
Historical Analytical Data for Phase 1 Groundwater Monitoring Wells

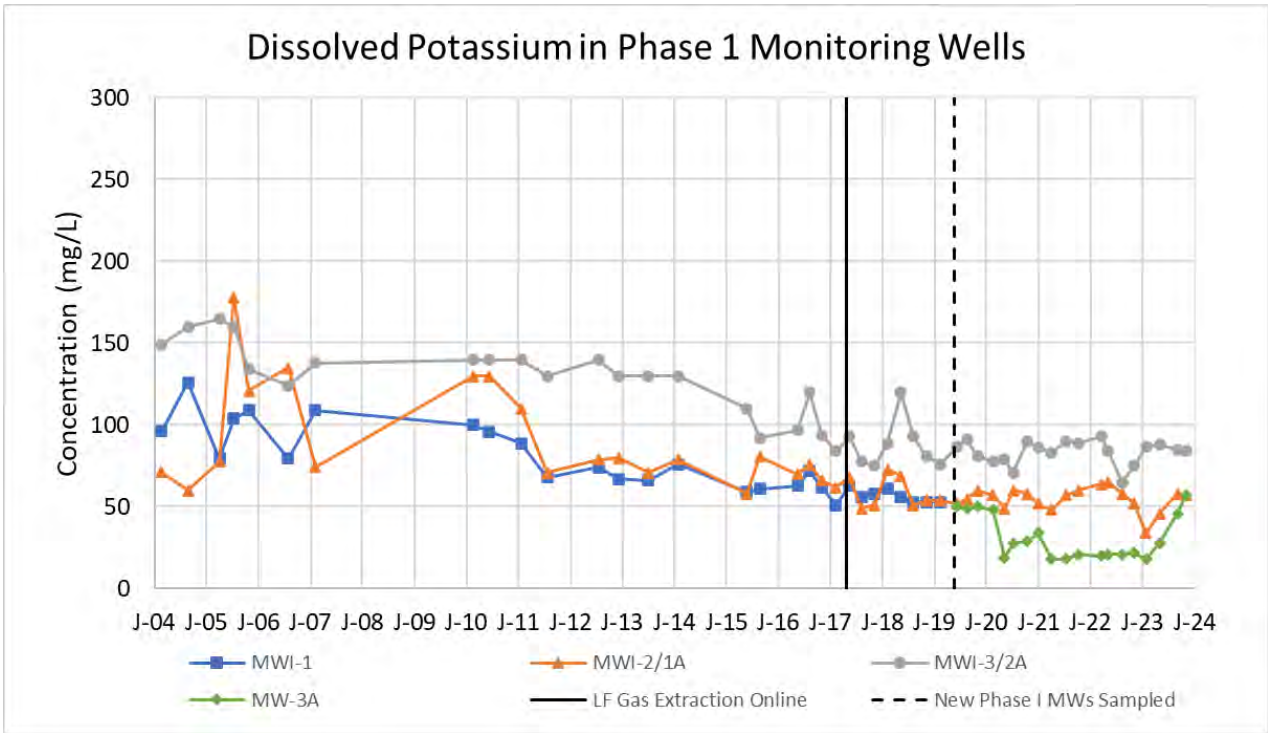
Time Series Graphs of Selected Analytes

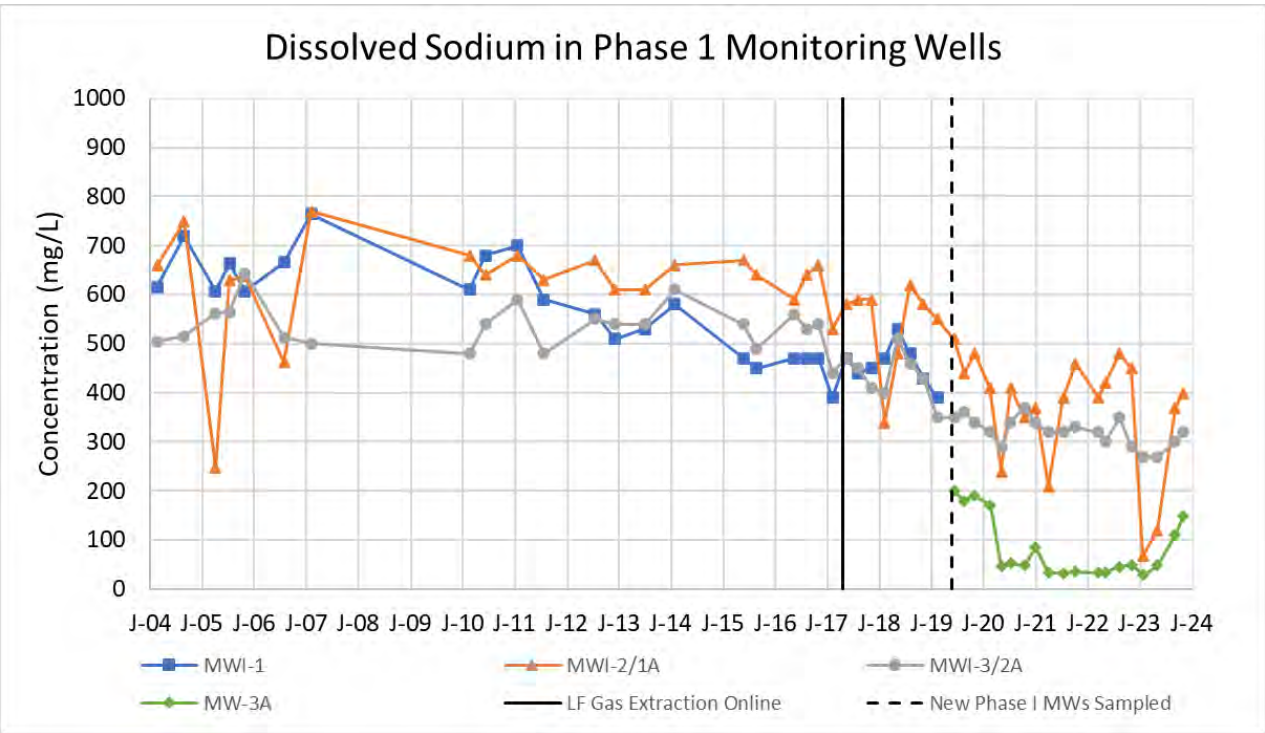


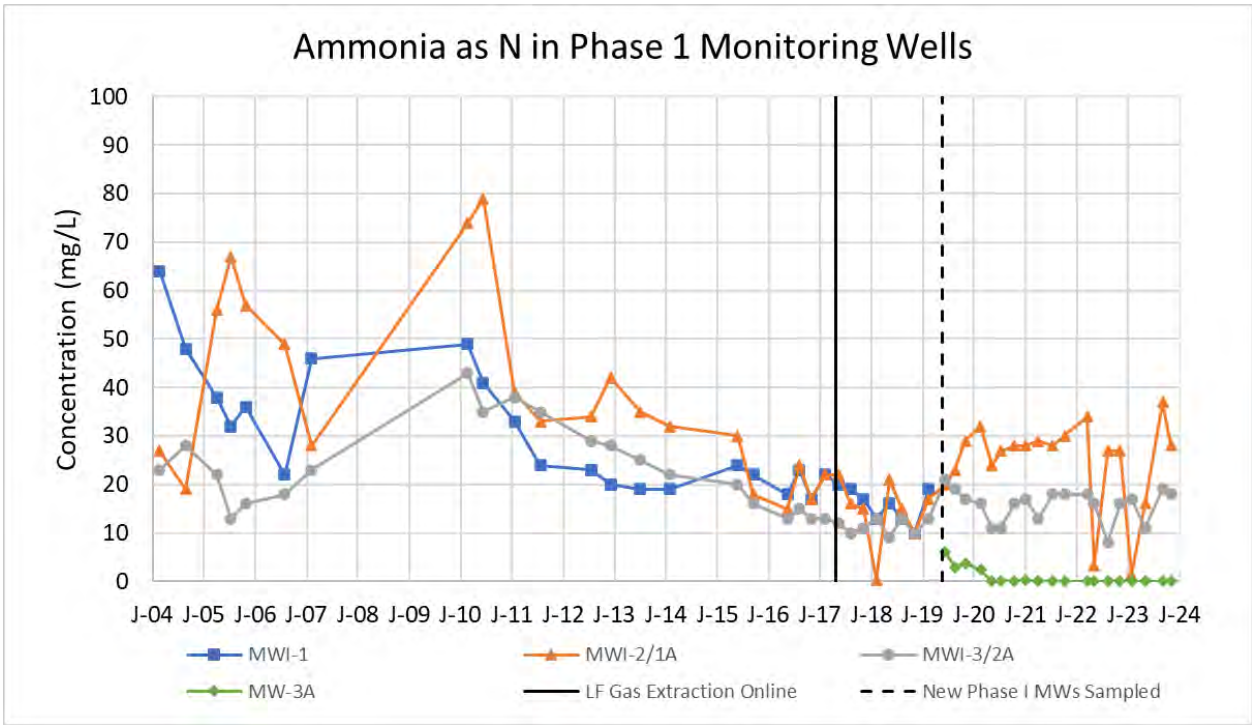


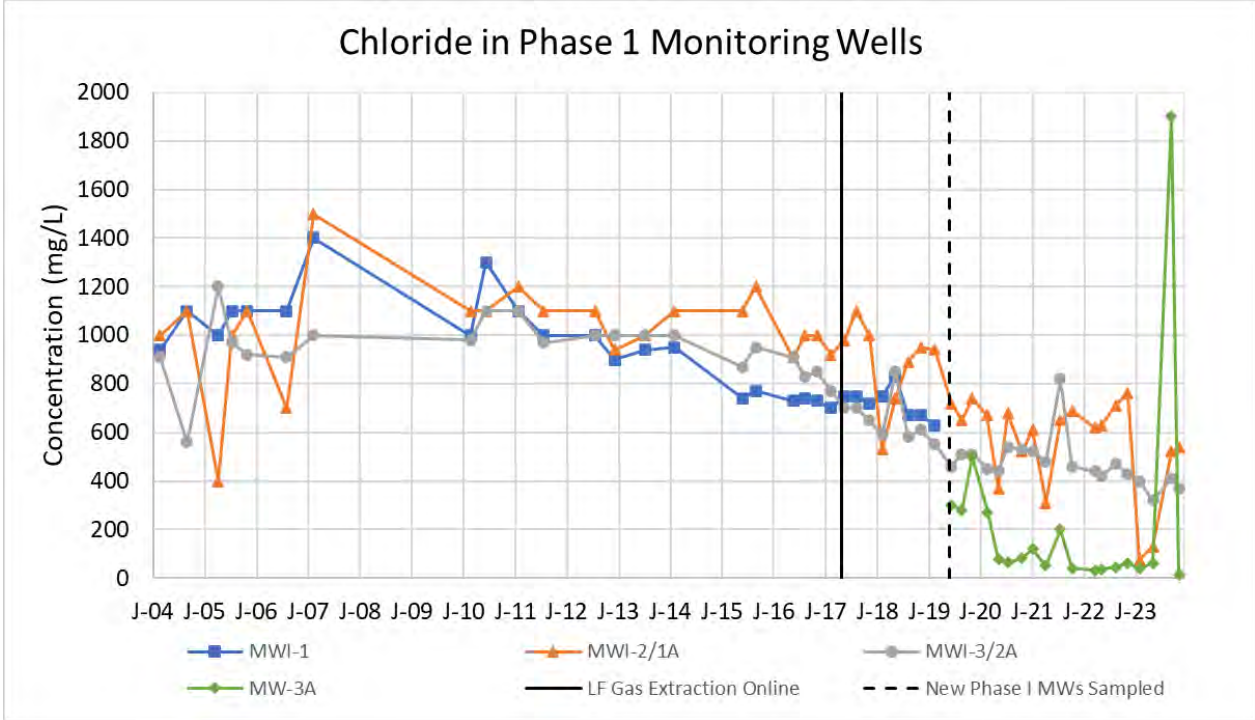

Dissolved Iron in Phase 1 Monitoring Wells
Concentration (mg/L)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled

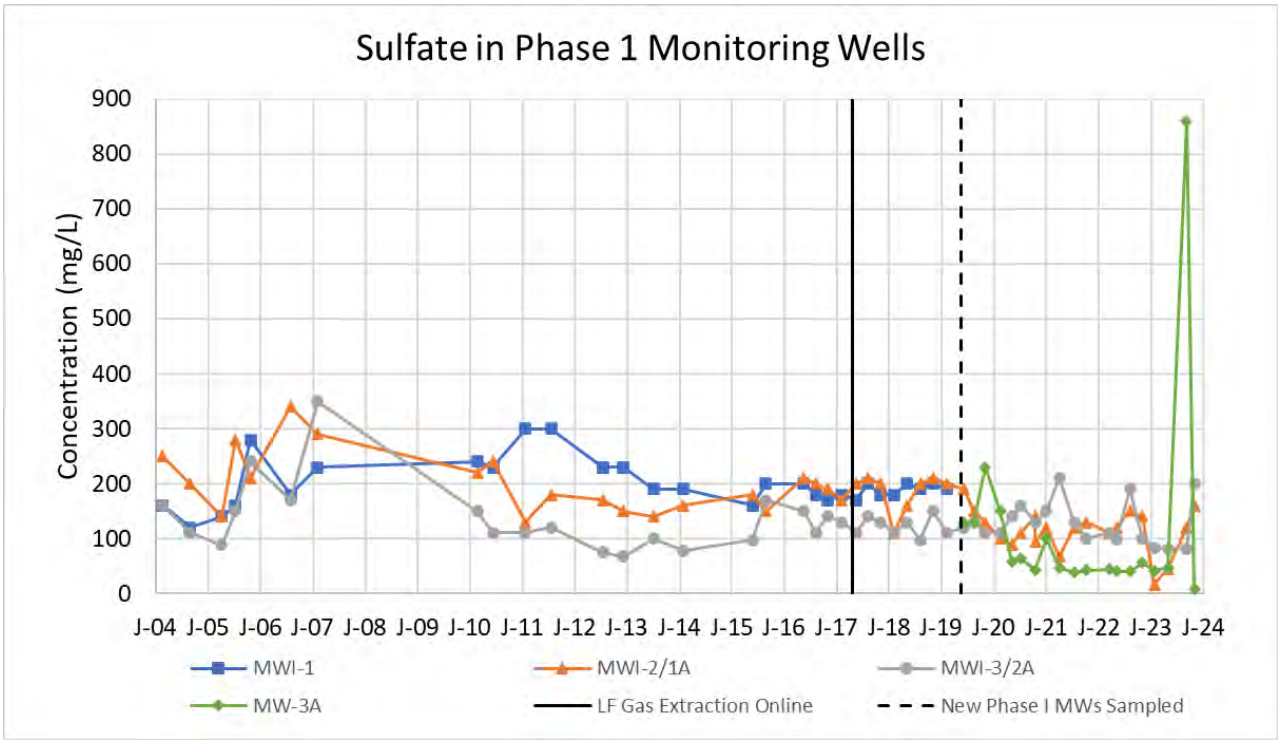

Dissolved Magnesium in Phase 1 Monitoring Wells
Concentration (mg/L)
300
250
200
150
100
50
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled

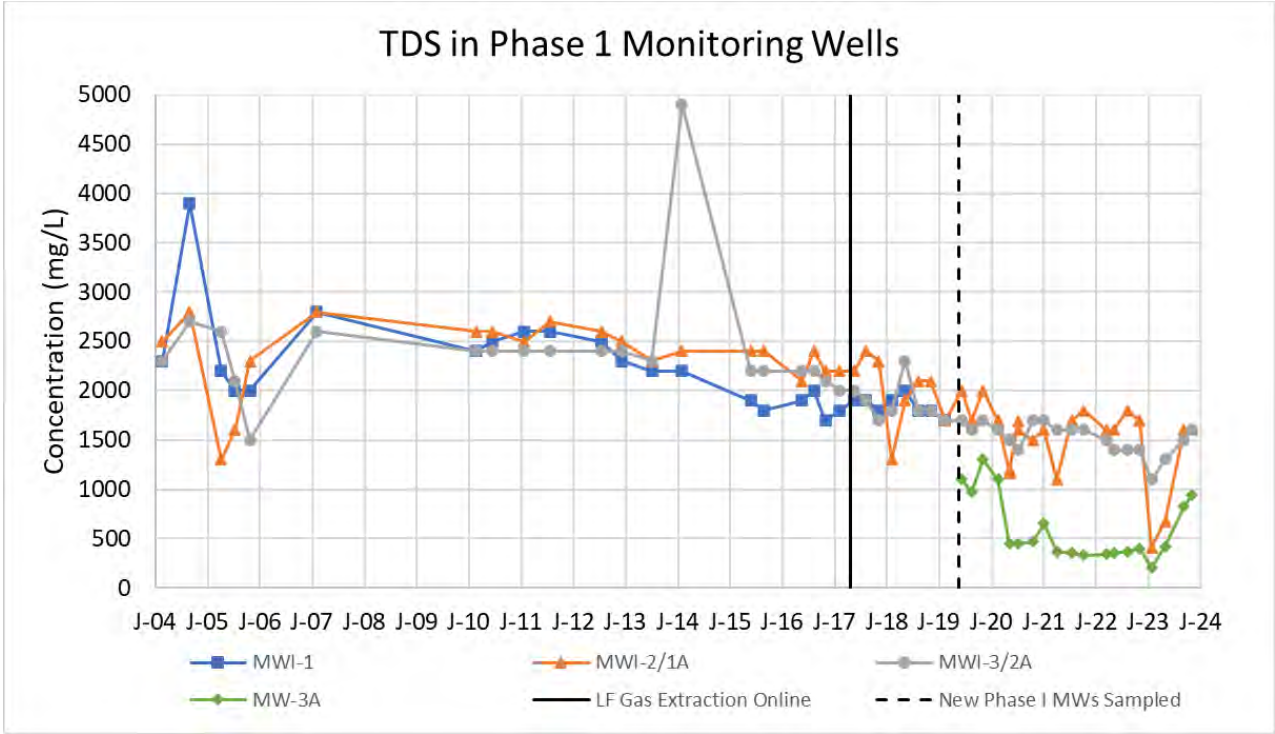

Dissolved Potassium in Phase 1 Monitoring Wells
Concentration (mg/L)
300
250
200
150
100
50
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled

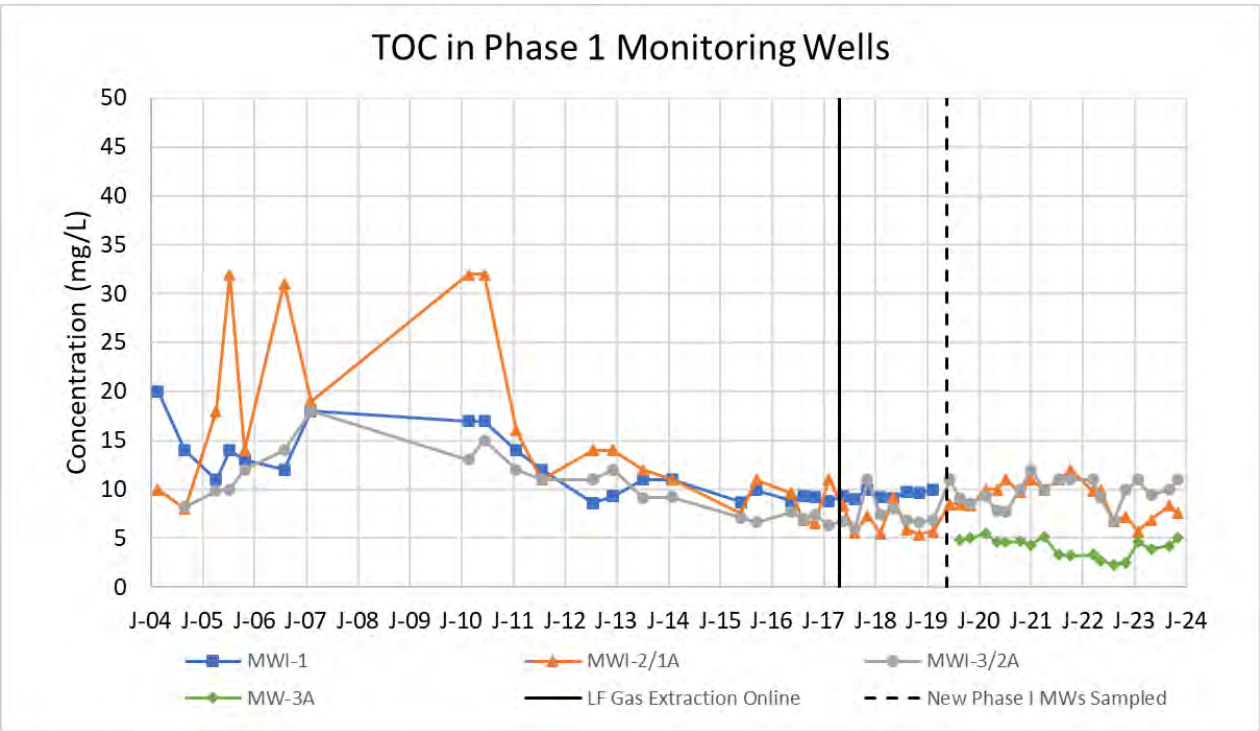

Dissolved Sodium in Phase 1 Monitoring Wells
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled


Ammonia as N in Phase 1 Monitoring Wells
Concentration (mg/L)
100
90
80
70
60
50
40
30
20
10
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled


Chloride in Phase 1 Monitoring Wells
Concentration (mg/L)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled


Sulfate in Phase 1 Monitoring Wells
Concentration (mg/L)
900
800
700
600
500
400
300
200
100
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled


TDS in Phase 1 Monitoring Wells
Concentration (mg/L)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled


TOC in Phase 1 Monitoring Wells
Concentration (mg/L)
50
45
40
35
30
25
20
15
10
5
0
J-04 J-05 J-06 J-07 J-08 J-09 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24
MWI-1
MWI-2/1A
MWI-3/2A
MW-3A
LF Gas Extraction Online
New Phase I MWs Sampled

APPENDIX C

Eurofins TestAmerica-Denver Laboratory Reports (on CD)

APPENDIX D
Statistical Evaluation of Phase II Data

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Ammonia (as n)	mg/L	MWII-2	35	46	81	0.2593	0.2252	0.2700	0.2400	0.2593	0.2593	1.1600	normal		
Ammonia (as n)	mg/L	MWII-5	29	47	76	0.4383	0.3005	0.1000	0.1000	0.4383	0.4383	1.6404	normal		
Ammonia (as n)	mg/L	MWII-7	8	51	59	0.1063	0.0119	0.1700	0.1500	0.1819	0.1619	0.1597	normal		
Arsenic, dissolved	mg/L	MWII-2	18	46	64	0.0087	0.0030	0.0056	0.0061	0.0087	0.0087	0.0209	normal		
Arsenic, dissolved	mg/L	MWII-5	18	47	65	0.0295	0.0072	0.0130	0.0130	0.0295	0.0295	0.0584	normal		
Arsenic, dissolved	mg/L	MWII-7	8	51	59	0.0113	0.0015	0.0080	0.0076	0.0113	0.0113	0.0181	normal		
Arsenic, total	mg/L	MWII-2	30	42	72	0.0146	0.0063	0.0068	0.0067	0.0146	0.0146	0.0398	normal		
Arsenic, total	mg/L	MWII-5	23	42	66	0.0285	0.0112	0.0120	0.0130	0.0285	0.0285	0.0733	normal		
Arsenic, total	mg/L	MWII-7	5	46	51	0.0102	0.0008	0.0059	0.0085	0.0102	0.0102	0.0140	normal		
Chemical oxygen demand	mg/L	MWII-2	2	46	48										*
Chemical oxygen demand	mg/L	MWII-5	2	46	48										*
Chemical oxygen demand	mg/L	MWII-7	6	51	57	18.6667	4.3205	27.0000	100.0000	22.6795	18.6667	38.1089	normal		
Iron, dissolved	mg/L	MWII-2	18	46	64			0.2300	0.0500			0.2900	nonpar	.99	**
Iron, dissolved	mg/L	MWII-5	18	46	64	0.0597	0.0218	0.0500	0.0500	0.0597	0.0597	0.1469	normal		
Iron, dissolved	mg/L	MWII-7	8	51	59								nonpar *		**
Iron, total	mg/L	MWII-2	30	42	72	0.1094	0.1114	0.0500	0.0500	0.1094	0.1094	0.5551	normal		
Iron, total	mg/L	MWII-5	23	42	66	0.0636	0.0298	0.0500	0.0500	0.0636	0.0636	0.1830	normal		
Iron, total	mg/L	MWII-7	5	46	51								nonpar *		**
Manganese, dissolved	mg/L	MWII-2	13	46	59			0.0100	0.0100			0.0140	nonpar	.99	**
Manganese, dissolved	mg/L	MWII-5	13	47	60			0.0100	0.0100			0.0110	nonpar	.99	**
Manganese, dissolved	mg/L	MWII-7	8	51	59	0.0107	0.0016	0.2400	0.3500	0.2384	0.3484	0.0180	normal		
Manganese, total	mg/L	MWII-2	11	42	53								nonpar *		**
Manganese, total	mg/L	MWII-5	11	42	53								nonpar *		**
Manganese, total	mg/L	MWII-7	5	46	51	0.0112	0.0027	0.2500	0.4500	0.2474	0.4474	0.0233	normal		
Total organic carbon (toc)	mg/L	MWII-2	35	46	81	1.9314	0.6475	1.8000	1.0000	1.9314	1.9314	4.5215	normal		
Total organic carbon (toc)	mg/L	MWII-5	29	47	76	1.7862	0.4823	2.0000	1.0000	1.7862	1.7862	3.7156	normal		
Total organic carbon (toc)	mg/L	MWII-7	8	51	59	2.7500	0.5657	2.9000	3.4000	2.7500	2.8343	5.2956	normal		

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Ammonia (as n)	mg/L	MWII-2	03/12/1996	yes	0.0500	ND			0.1000	***
Ammonia (as n)	mg/L	MWII-2	05/14/1996	yes	0.0500	ND			0.1000	***
Ammonia (as n)	mg/L	MWII-2	08/06/1996	yes	0.0500	ND			0.1000	***
Ammonia (as n)	mg/L	MWII-2	01/14/1997	yes	0.0500	ND			0.1000	***
Ammonia (as n)	mg/L	MWII-2	07/08/1997	yes	0.1100					
Ammonia (as n)	mg/L	MWII-2	01/13/1998	yes	0.0500	ND			0.1000	***
Ammonia (as n)	mg/L	MWII-2	08/10/1998	yes	0.1200					
Ammonia (as n)	mg/L	MWII-2	01/11/1999	yes	0.1600					
Ammonia (as n)	mg/L	MWII-2	07/12/1999	yes	0.2200					
Ammonia (as n)	mg/L	MWII-2	01/10/2000	yes	0.1800					
Ammonia (as n)	mg/L	MWII-2	07/10/2000	yes	0.0500	ND			0.1000	***
Ammonia (as n)	mg/L	MWII-2	01/29/2001	yes	0.4600					
Ammonia (as n)	mg/L	MWII-2	08/06/2001	yes	0.6200					
Ammonia (as n)	mg/L	MWII-2	01/29/2002	yes	0.0970					
Ammonia (as n)	mg/L	MWII-2	08/05/2002	yes	0.4800					
Ammonia (as n)	mg/L	MWII-2	01/28/2003	yes	0.9200					
Ammonia (as n)	mg/L	MWII-2	08/04/2003	yes	0.5800					
Ammonia (as n)	mg/L	MWII-2	01/27/2004	yes	0.3500					
Ammonia (as n)	mg/L	MWII-2	08/09/2004	yes	0.6500					
Ammonia (as n)	mg/L	MWII-2	01/24/2005	yes	0.5200					
Ammonia (as n)	mg/L	MWII-2	07/18/2005	yes	0.7200					
Ammonia (as n)	mg/L	MWII-2	01/23/2006	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	07/25/2006	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	02/05/2007	yes	0.3400					
Ammonia (as n)	mg/L	MWII-2	10/16/2007	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	03/11/2008	yes	0.2600					
Ammonia (as n)	mg/L	MWII-2	06/10/2008	yes	0.3700					
Ammonia (as n)	mg/L	MWII-2	07/29/2008	yes	0.3400					
Ammonia (as n)	mg/L	MWII-2	11/10/2008	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	03/10/2009	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	05/18/2009	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	07/20/2009	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	11/02/2009	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	02/22/2010	yes	0.0780					
Ammonia (as n)	mg/L	MWII-2	08/23/2010	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-2	03/08/2011		0.1200			0.2593		
Ammonia (as n)	mg/L	MWII-2	08/02/2011		0.1400			0.2593		
Ammonia (as n)	mg/L	MWII-2	03/14/2012		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/27/2012		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/24/2013		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/26/2013		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/24/2014		0.1000	ND		0.2593		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Ammonia (as n)	mg/L	MWII-2	05/27/2014		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/26/2014		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	11/11/2014		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/23/2015		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	05/31/2015		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/31/2015		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	11/09/2015		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	03/23/2016		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	05/23/2016		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/15/2016		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	10/26/2016		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/14/2017		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	05/23/2017		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/15/2017		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	11/14/2017		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/13/2018		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	05/15/2018		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/14/2018		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	11/13/2018		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/19/2019		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	06/19/2019		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/27/2019		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	11/13/2019		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/27/2020		0.0230			0.2593		
Ammonia (as n)	mg/L	MWII-2	05/17/2020		0.0220	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	07/19/2020		0.0220	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	10/26/2020		0.0220	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	01/12/2021		0.0260			0.2593		
Ammonia (as n)	mg/L	MWII-2	04/13/2021		0.0220	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	07/26/2021		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	10/19/2021		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	03/27/2022		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	05/09/2022		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	08/23/2022		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	11/16/2022		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	02/06/2023		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	05/14/2023		0.1000	ND		0.2593		
Ammonia (as n)	mg/L	MWII-2	09/18/2023		0.2700			0.2593		
Ammonia (as n)	mg/L	MWII-2	11/14/2023		0.2400			0.2593		
Ammonia (as n)	mg/L	MWII-5	03/12/1996	yes	0.0500	ND				
Ammonia (as n)	mg/L	MWII-5	05/14/1996	yes	0.0730					
Ammonia (as n)	mg/L	MWII-5	08/06/1996	yes	0.0500	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Ammonia (as n)	mg/L	MWII-5	01/14/1997	yes	0.0500	ND				
Ammonia (as n)	mg/L	MWII-5	01/13/1998	yes	0.0500	ND				
Ammonia (as n)	mg/L	MWII-5	01/11/1999	yes	0.1300					
Ammonia (as n)	mg/L	MWII-5	01/10/2000	yes	0.2500					
Ammonia (as n)	mg/L	MWII-5	07/10/2000	yes	0.1700					
Ammonia (as n)	mg/L	MWII-5	01/29/2001	yes	0.0100	ND			0.0500	***
Ammonia (as n)	mg/L	MWII-5	01/29/2002	yes	0.0170					
Ammonia (as n)	mg/L	MWII-5	01/28/2003	yes	0.9400					
Ammonia (as n)	mg/L	MWII-5	01/27/2004	yes	0.5000					
Ammonia (as n)	mg/L	MWII-5	08/09/2004	yes	0.8500					
Ammonia (as n)	mg/L	MWII-5	01/24/2005	yes	0.4600					
Ammonia (as n)	mg/L	MWII-5	07/18/2005	yes	0.8000					
Ammonia (as n)	mg/L	MWII-5	01/23/2006	yes	0.6800					
Ammonia (as n)	mg/L	MWII-5	07/26/2006	yes	0.7000					
Ammonia (as n)	mg/L	MWII-5	02/05/2007	yes	0.5200					
Ammonia (as n)	mg/L	MWII-5	10/16/2007	yes	0.6900					
Ammonia (as n)	mg/L	MWII-5	03/11/2008	yes	0.7300					
Ammonia (as n)	mg/L	MWII-5	06/10/2008	yes	0.5700					
Ammonia (as n)	mg/L	MWII-5	07/29/2008	yes	0.6300					
Ammonia (as n)	mg/L	MWII-5	11/10/2008	yes	0.8000					
Ammonia (as n)	mg/L	MWII-5	03/09/2009	yes	0.6800					
Ammonia (as n)	mg/L	MWII-5	05/18/2009	yes	0.6400					
Ammonia (as n)	mg/L	MWII-5	07/20/2009	yes	0.6800					
Ammonia (as n)	mg/L	MWII-5	11/02/2009	yes	0.4500					
Ammonia (as n)	mg/L	MWII-5	02/22/2010	yes	0.3200					
Ammonia (as n)	mg/L	MWII-5	08/23/2010	yes	0.1800					
Ammonia (as n)	mg/L	MWII-5	03/08/2011		0.3800			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/02/2011		0.7300			0.5046		
Ammonia (as n)	mg/L	MWII-5	03/14/2012		0.5700			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/27/2012		0.3700			0.4383		
Ammonia (as n)	mg/L	MWII-5	02/24/2013		0.6600			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/26/2013		0.6100			0.4383		
Ammonia (as n)	mg/L	MWII-5	02/24/2014		0.3300			0.4383		
Ammonia (as n)	mg/L	MWII-5	05/27/2014		0.1600			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/26/2014		0.1500			0.4383		
Ammonia (as n)	mg/L	MWII-5	11/11/2014		0.1400			0.4383		
Ammonia (as n)	mg/L	MWII-5	02/23/2015		0.3900			0.4383		
Ammonia (as n)	mg/L	MWII-5	05/31/2015		0.5100			0.4383		
Ammonia (as n)	mg/L	MWII-5	06/01/2015		0.6100			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/31/2015		0.5500			0.4383		
Ammonia (as n)	mg/L	MWII-5	11/09/2015		0.4900			0.4383		
Ammonia (as n)	mg/L	MWII-5	03/17/2016		0.6200			0.4383		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Ammonia (as n)	mg/L	MWII-5	05/23/2016		0.6700			0.4446		
Ammonia (as n)	mg/L	MWII-5	08/15/2016		0.6200			0.4383		
Ammonia (as n)	mg/L	MWII-5	10/26/2016		0.5600			0.4383		
Ammonia (as n)	mg/L	MWII-5	02/14/2017		0.3800			0.4383		
Ammonia (as n)	mg/L	MWII-5	05/23/2017		0.4500			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/15/2017		0.3200			0.4383		
Ammonia (as n)	mg/L	MWII-5	11/14/2017		0.3200			0.4383		
Ammonia (as n)	mg/L	MWII-5	02/13/2018		0.2700			0.4383		
Ammonia (as n)	mg/L	MWII-5	05/15/2018		0.2600			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/14/2018		0.2600			0.4383		
Ammonia (as n)	mg/L	MWII-5	11/13/2018		0.1700			0.4383		
Ammonia (as n)	mg/L	MWII-5	02/19/2019		0.1300			0.4383		
Ammonia (as n)	mg/L	MWII-5	06/19/2019		0.2100			0.4383		
Ammonia (as n)	mg/L	MWII-5	08/27/2019		0.1300			0.4383		
Ammonia (as n)	mg/L	MWII-5	11/12/2019		0.1100			0.4383		
Ammonia (as n)	mg/L	MWII-5	02/26/2020		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	05/17/2020		0.1200			0.4383		
Ammonia (as n)	mg/L	MWII-5	07/19/2020		0.0690			0.4383		
Ammonia (as n)	mg/L	MWII-5	10/26/2020		0.0300			0.4383		
Ammonia (as n)	mg/L	MWII-5	01/12/2021		0.0300			0.4383		
Ammonia (as n)	mg/L	MWII-5	04/13/2021		0.1000			0.4383		
Ammonia (as n)	mg/L	MWII-5	07/26/2021		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	10/18/2021		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	03/27/2022		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	05/09/2022		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	08/23/2022		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	11/16/2022		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	02/07/2023		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	05/14/2023		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	09/18/2023		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-5	11/13/2023		0.1000	ND		0.4383		
Ammonia (as n)	mg/L	MWII-7	03/10/2009	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-7	05/18/2009	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-7	07/20/2009	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-7	11/02/2009	yes	0.1200					
Ammonia (as n)	mg/L	MWII-7	02/22/2010	yes	0.1300					
Ammonia (as n)	mg/L	MWII-7	06/01/2010	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-7	08/23/2010	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-7	11/16/2010	yes	0.1000	ND				
Ammonia (as n)	mg/L	MWII-7	03/08/2011		0.1000	ND		0.1063		
Ammonia (as n)	mg/L	MWII-7	05/10/2011		0.1000	ND		0.1063		
Ammonia (as n)	mg/L	MWII-7	08/02/2011		0.3400			0.3281		**

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Ammonia (as n)	mg/L	MWII-7	11/16/2011		3.7000			3.6881		**
Ammonia (as n)	mg/L	MWII-7	03/14/2012		7.2000			7.1881		**
Ammonia (as n)	mg/L	MWII-7	06/05/2012		0.3400			0.3281		**
Ammonia (as n)	mg/L	MWII-7	08/27/2012		0.1300			0.1181		
Ammonia (as n)	mg/L	MWII-7	11/13/2012		1.6000			1.6000		**
Ammonia (as n)	mg/L	MWII-7	02/24/2013		0.4700			0.4700		**
Ammonia (as n)	mg/L	MWII-7	06/04/2013		0.1000	ND		0.1063		
Ammonia (as n)	mg/L	MWII-7	08/26/2013		0.1800			0.1681		**
Ammonia (as n)	mg/L	MWII-7	02/24/2014		0.1000	ND		0.1063		
Ammonia (as n)	mg/L	MWII-7	05/27/2014		0.1000	ND		0.1063		
Ammonia (as n)	mg/L	MWII-7	08/26/2014		0.1000	ND		0.1063		
Ammonia (as n)	mg/L	MWII-7	11/11/2014		0.3200			0.3081		**
Ammonia (as n)	mg/L	MWII-7	02/23/2015		0.2800			0.2681		**
Ammonia (as n)	mg/L	MWII-7	05/31/2015		0.8300			0.8181		**
Ammonia (as n)	mg/L	MWII-7	08/31/2015		1.8000			1.7881		**
Ammonia (as n)	mg/L	MWII-7	11/09/2015		1.5000			1.4881		**
Ammonia (as n)	mg/L	MWII-7	03/23/2016		0.8700			0.8581		**
Ammonia (as n)	mg/L	MWII-7	05/23/2016		1.1000			1.0881		**
Ammonia (as n)	mg/L	MWII-7	08/15/2016		1.3000			1.2881		**
Ammonia (as n)	mg/L	MWII-7	10/26/2016		0.9800			0.9681		**
Ammonia (as n)	mg/L	MWII-7	02/14/2017		1.0000			0.9881		**
Ammonia (as n)	mg/L	MWII-7	05/23/2017		2.1000			2.0881		**
Ammonia (as n)	mg/L	MWII-7	08/15/2017		1.4000			1.3881		**
Ammonia (as n)	mg/L	MWII-7	11/14/2017		1.7000			1.6881		**
Ammonia (as n)	mg/L	MWII-7	02/13/2018		1.5000			1.4881		**
Ammonia (as n)	mg/L	MWII-7	05/15/2018		1.0000			0.9881		**
Ammonia (as n)	mg/L	MWII-7	08/14/2018		0.9100			0.8981		**
Ammonia (as n)	mg/L	MWII-7	11/13/2018		0.8300			0.8181		**
Ammonia (as n)	mg/L	MWII-7	02/19/2019		0.6300			0.6181		**
Ammonia (as n)	mg/L	MWII-7	06/19/2019		0.4700			0.4581		**
Ammonia (as n)	mg/L	MWII-7	08/27/2019		0.3400			0.3281		**
Ammonia (as n)	mg/L	MWII-7	11/13/2019		0.2800			0.2681		**
Ammonia (as n)	mg/L	MWII-7	02/27/2020		0.2400			0.2281		**
Ammonia (as n)	mg/L	MWII-7	05/17/2020		0.1800			0.1681		**
Ammonia (as n)	mg/L	MWII-7	07/19/2020		0.0870			0.1063		
Ammonia (as n)	mg/L	MWII-7	10/26/2020		0.3200			0.3081		**
Ammonia (as n)	mg/L	MWII-7	01/12/2021		0.2300			0.2181		**
Ammonia (as n)	mg/L	MWII-7	04/13/2021		0.1200			0.1081		
Ammonia (as n)	mg/L	MWII-7	07/26/2021		0.1400			0.1300		
Ammonia (as n)	mg/L	MWII-7	10/18/2021		0.8100			0.8219		**
Ammonia (as n)	mg/L	MWII-7	03/27/2022		0.1700			0.1819		**
Ammonia (as n)	mg/L	MWII-7	05/09/2022		0.3900			0.4019		**

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Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Ammonia (as n)	mg/L	MWII-7	08/23/2022		0.1900			0.2019		**
Ammonia (as n)	mg/L	MWII-7	11/16/2022		0.2100			0.2219		**
Ammonia (as n)	mg/L	MWII-7	02/06/2023		0.2200			0.2319		**
Ammonia (as n)	mg/L	MWII-7	05/14/2023		0.1700			0.1819		**
Ammonia (as n)	mg/L	MWII-7	09/18/2023		0.1700			0.1819		**
Ammonia (as n)	mg/L	MWII-7	11/14/2023		0.1500			0.1619		**
Arsenic, dissolved	mg/L	MWII-2	01/10/2000	yes	0.0200	ND				
Arsenic, dissolved	mg/L	MWII-2	08/09/2004	yes	0.0099					
Arsenic, dissolved	mg/L	MWII-2	01/24/2005	yes	0.0096					
Arsenic, dissolved	mg/L	MWII-2	07/18/2005	yes	0.0084					
Arsenic, dissolved	mg/L	MWII-2	01/23/2006	yes	0.0063					
Arsenic, dissolved	mg/L	MWII-2	07/25/2006	yes	0.0100					
Arsenic, dissolved	mg/L	MWII-2	02/05/2007	yes	0.0067					
Arsenic, dissolved	mg/L	MWII-2	10/16/2007	yes	0.0083					
Arsenic, dissolved	mg/L	MWII-2	03/11/2008	yes	0.0094					
Arsenic, dissolved	mg/L	MWII-2	06/10/2008	yes	0.0088					
Arsenic, dissolved	mg/L	MWII-2	07/29/2008	yes	0.0074					
Arsenic, dissolved	mg/L	MWII-2	11/10/2008	yes	0.0075					
Arsenic, dissolved	mg/L	MWII-2	03/10/2009	yes	0.0068					
Arsenic, dissolved	mg/L	MWII-2	05/18/2009	yes	0.0088					
Arsenic, dissolved	mg/L	MWII-2	07/20/2009	yes	0.0074					
Arsenic, dissolved	mg/L	MWII-2	11/02/2009	yes	0.0069					
Arsenic, dissolved	mg/L	MWII-2	02/22/2010	yes	0.0072					
Arsenic, dissolved	mg/L	MWII-2	08/23/2010	yes	0.0078					
Arsenic, dissolved	mg/L	MWII-2	03/08/2011		0.0072			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/02/2011		0.0065			0.0087		
Arsenic, dissolved	mg/L	MWII-2	03/14/2012		0.0051			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/27/2012		0.0063			0.0087		
Arsenic, dissolved	mg/L	MWII-2	02/24/2013		0.0069			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/26/2013		0.0069			0.0087		
Arsenic, dissolved	mg/L	MWII-2	02/24/2014		0.0066			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/27/2014		0.0069			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/26/2014		0.0068			0.0087		
Arsenic, dissolved	mg/L	MWII-2	11/11/2014		0.0074			0.0087		
Arsenic, dissolved	mg/L	MWII-2	02/23/2015		0.0077			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/31/2015		0.0073			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/31/2015		0.0080			0.0087		
Arsenic, dissolved	mg/L	MWII-2	11/09/2015		0.0072			0.0087		
Arsenic, dissolved	mg/L	MWII-2	03/23/2016		0.0070			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/23/2016		0.0071			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/15/2016		0.0068			0.0087		
Arsenic, dissolved	mg/L	MWII-2	10/26/2016		0.0067			0.0087		

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ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, dissolved	mg/L	MWII-2	02/14/2017		0.0063			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/23/2017		0.0064			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/15/2017		0.0062			0.0087		
Arsenic, dissolved	mg/L	MWII-2	11/14/2017		0.0061			0.0087		
Arsenic, dissolved	mg/L	MWII-2	02/13/2018		0.0062			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/15/2018		0.0056			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/14/2018		0.0071			0.0087		
Arsenic, dissolved	mg/L	MWII-2	11/13/2018		0.0064			0.0087		
Arsenic, dissolved	mg/L	MWII-2	02/19/2019		0.0065			0.0087		
Arsenic, dissolved	mg/L	MWII-2	06/19/2019		0.0060			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/27/2019		0.0059			0.0087		
Arsenic, dissolved	mg/L	MWII-2	11/13/2019		0.0062			0.0087		
Arsenic, dissolved	mg/L	MWII-2	02/27/2020		0.0066			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/17/2020		0.0065			0.0087		
Arsenic, dissolved	mg/L	MWII-2	07/19/2020		0.0064			0.0087		
Arsenic, dissolved	mg/L	MWII-2	10/26/2020		0.0068			0.0087		
Arsenic, dissolved	mg/L	MWII-2	01/12/2021		0.0059			0.0087		
Arsenic, dissolved	mg/L	MWII-2	04/13/2021		0.0060			0.0087		
Arsenic, dissolved	mg/L	MWII-2	07/26/2021		0.0062			0.0087		
Arsenic, dissolved	mg/L	MWII-2	10/19/2021		0.0051			0.0087		
Arsenic, dissolved	mg/L	MWII-2	03/27/2022		0.0065			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/09/2022		0.0061			0.0087		
Arsenic, dissolved	mg/L	MWII-2	08/23/2022		0.0072			0.0087		
Arsenic, dissolved	mg/L	MWII-2	11/16/2022		0.0063			0.0087		
Arsenic, dissolved	mg/L	MWII-2	02/06/2023		0.0067			0.0087		
Arsenic, dissolved	mg/L	MWII-2	05/14/2023		0.0065			0.0087		
Arsenic, dissolved	mg/L	MWII-2	09/18/2023		0.0056			0.0087		
Arsenic, dissolved	mg/L	MWII-2	11/14/2023		0.0061			0.0087		
Arsenic, dissolved	mg/L	MWII-5	01/10/2000	yes	0.0200	ND				
Arsenic, dissolved	mg/L	MWII-5	08/09/2004	yes	0.0400					
Arsenic, dissolved	mg/L	MWII-5	01/24/2005	yes	0.0320					
Arsenic, dissolved	mg/L	MWII-5	07/18/2005	yes	0.0380					
Arsenic, dissolved	mg/L	MWII-5	01/23/2006	yes	0.0420					
Arsenic, dissolved	mg/L	MWII-5	07/26/2006	yes	0.0240					
Arsenic, dissolved	mg/L	MWII-5	02/05/2007	yes	0.0300					
Arsenic, dissolved	mg/L	MWII-5	10/16/2007	yes	0.0450					
Arsenic, dissolved	mg/L	MWII-5	03/11/2008	yes	0.0250					
Arsenic, dissolved	mg/L	MWII-5	06/10/2008	yes	0.0260					
Arsenic, dissolved	mg/L	MWII-5	07/29/2008	yes	0.0280					
Arsenic, dissolved	mg/L	MWII-5	11/10/2008	yes	0.0300					
Arsenic, dissolved	mg/L	MWII-5	03/09/2009	yes	0.0210					
Arsenic, dissolved	mg/L	MWII-5	05/18/2009	yes	0.0240					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, dissolved	mg/L	MWII-5	07/20/2009	yes	0.0260					
Arsenic, dissolved	mg/L	MWII-5	11/02/2009	yes	0.0270					
Arsenic, dissolved	mg/L	MWII-5	02/22/2010	yes	0.0250					
Arsenic, dissolved	mg/L	MWII-5	08/23/2010	yes	0.0280					
Arsenic, dissolved	mg/L	MWII-5	03/08/2011		0.0230			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/02/2011		0.0210			0.0295		
Arsenic, dissolved	mg/L	MWII-5	03/14/2012		0.0180			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/27/2012		0.0230			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/24/2013		0.0190			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/26/2013		0.0240			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/24/2014		0.0190			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/27/2014		0.0240			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/26/2014		0.0210			0.0295		
Arsenic, dissolved	mg/L	MWII-5	11/11/2014		0.0190			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/23/2015		0.0150			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/31/2015		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	06/01/2015		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/31/2015		0.0200			0.0295		
Arsenic, dissolved	mg/L	MWII-5	11/09/2015		0.0190			0.0295		
Arsenic, dissolved	mg/L	MWII-5	03/17/2016		0.0079			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/23/2016		0.0160			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/15/2016		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	10/26/2016		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/14/2017		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/23/2017		0.0160			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/15/2017		0.0150			0.0295		
Arsenic, dissolved	mg/L	MWII-5	11/14/2017		0.0160			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/13/2018		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/15/2018		0.0140			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/14/2018		0.0150			0.0295		
Arsenic, dissolved	mg/L	MWII-5	11/13/2018		0.0140			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/19/2019		0.0150			0.0295		
Arsenic, dissolved	mg/L	MWII-5	06/19/2019		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/27/2019		0.0170			0.0295		
Arsenic, dissolved	mg/L	MWII-5	11/12/2019		0.0160			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/26/2020		0.0130			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/17/2020		0.0120			0.0295		
Arsenic, dissolved	mg/L	MWII-5	07/19/2020		0.0110			0.0295		
Arsenic, dissolved	mg/L	MWII-5	10/26/2020		0.0130			0.0295		
Arsenic, dissolved	mg/L	MWII-5	01/12/2021		0.0110			0.0295		
Arsenic, dissolved	mg/L	MWII-5	04/13/2021		0.0110			0.0295		
Arsenic, dissolved	mg/L	MWII-5	07/26/2021		0.0110			0.0295		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, dissolved	mg/L	MWII-5	10/18/2021		0.0120			0.0295		
Arsenic, dissolved	mg/L	MWII-5	03/27/2022		0.0120			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/09/2022		0.0120			0.0295		
Arsenic, dissolved	mg/L	MWII-5	08/23/2022		0.0140			0.0295		
Arsenic, dissolved	mg/L	MWII-5	11/16/2022		0.0120			0.0295		
Arsenic, dissolved	mg/L	MWII-5	02/07/2023		0.0130			0.0295		
Arsenic, dissolved	mg/L	MWII-5	05/14/2023		0.0130			0.0295		
Arsenic, dissolved	mg/L	MWII-5	09/18/2023		0.0130			0.0295		
Arsenic, dissolved	mg/L	MWII-5	11/13/2023		0.0130			0.0295		
Arsenic, dissolved	mg/L	MWII-7	03/10/2009	yes	0.0110					
Arsenic, dissolved	mg/L	MWII-7	05/18/2009	yes	0.0110					
Arsenic, dissolved	mg/L	MWII-7	07/20/2009	yes	0.0096					
Arsenic, dissolved	mg/L	MWII-7	11/02/2009	yes	0.0099					
Arsenic, dissolved	mg/L	MWII-7	02/22/2010	yes	0.0097					
Arsenic, dissolved	mg/L	MWII-7	06/01/2010	yes	0.0130					
Arsenic, dissolved	mg/L	MWII-7	08/23/2010	yes	0.0130					
Arsenic, dissolved	mg/L	MWII-7	11/16/2010	yes	0.0130					
Arsenic, dissolved	mg/L	MWII-7	03/08/2011		0.0094			0.0113		
Arsenic, dissolved	mg/L	MWII-7	05/10/2011		0.0075			0.0113		
Arsenic, dissolved	mg/L	MWII-7	08/02/2011		0.0110			0.0113		
Arsenic, dissolved	mg/L	MWII-7	11/16/2011		0.0190			0.0175		**
Arsenic, dissolved	mg/L	MWII-7	03/14/2012		0.0170			0.0217		**
Arsenic, dissolved	mg/L	MWII-7	06/05/2012		0.0120			0.0167		
Arsenic, dissolved	mg/L	MWII-7	08/27/2012		0.0120			0.0159		
Arsenic, dissolved	mg/L	MWII-7	11/13/2012		0.0160			0.0191		**
Arsenic, dissolved	mg/L	MWII-7	02/24/2013		0.0230			0.0261		**
Arsenic, dissolved	mg/L	MWII-7	06/04/2013		0.0120			0.0151		
Arsenic, dissolved	mg/L	MWII-7	08/26/2013		0.0120			0.0143		
Arsenic, dissolved	mg/L	MWII-7	02/24/2014		0.0081			0.0113		
Arsenic, dissolved	mg/L	MWII-7	05/27/2014		0.0070			0.0113		
Arsenic, dissolved	mg/L	MWII-7	08/26/2014		0.0110			0.0113		
Arsenic, dissolved	mg/L	MWII-7	11/11/2014		0.0110			0.0113		
Arsenic, dissolved	mg/L	MWII-7	02/23/2015		0.0140			0.0125		
Arsenic, dissolved	mg/L	MWII-7	05/31/2015		0.0130			0.0127		
Arsenic, dissolved	mg/L	MWII-7	08/31/2015		0.0150			0.0149		
Arsenic, dissolved	mg/L	MWII-7	11/09/2015		0.0310			0.0331		**
Arsenic, dissolved	mg/L	MWII-7	03/23/2016		0.0270			0.0291		**
Arsenic, dissolved	mg/L	MWII-7	05/23/2016		0.0200			0.0221		**
Arsenic, dissolved	mg/L	MWII-7	08/15/2016		0.0280			0.0301		**
Arsenic, dissolved	mg/L	MWII-7	10/26/2016		0.0300			0.0321		**
Arsenic, dissolved	mg/L	MWII-7	02/14/2017		0.0110			0.0131		
Arsenic, dissolved	mg/L	MWII-7	05/23/2017		0.0220			0.0223		**

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, dissolved	mg/L	MWII-7	08/15/2017		0.0230			0.0233		**
Arsenic, dissolved	mg/L	MWII-7	11/14/2017		0.0170			0.0173		
Arsenic, dissolved	mg/L	MWII-7	02/13/2018		0.0220			0.0265		**
Arsenic, dissolved	mg/L	MWII-7	05/15/2018		0.0200			0.0245		**
Arsenic, dissolved	mg/L	MWII-7	08/14/2018		0.0200			0.0245		**
Arsenic, dissolved	mg/L	MWII-7	11/13/2018		0.0190			0.0235		**
Arsenic, dissolved	mg/L	MWII-7	02/19/2019		0.0190			0.0235		**
Arsenic, dissolved	mg/L	MWII-7	06/19/2019		0.0200			0.0245		**
Arsenic, dissolved	mg/L	MWII-7	08/27/2019		0.0180			0.0225		**
Arsenic, dissolved	mg/L	MWII-7	11/13/2019		0.0170			0.0215		**
Arsenic, dissolved	mg/L	MWII-7	02/27/2020		0.0160			0.0205		**
Arsenic, dissolved	mg/L	MWII-7	05/17/2020		0.0150			0.0195		**
Arsenic, dissolved	mg/L	MWII-7	07/19/2020		0.0150			0.0195		**
Arsenic, dissolved	mg/L	MWII-7	10/26/2020		0.0150			0.0195		**
Arsenic, dissolved	mg/L	MWII-7	01/12/2021		0.0130			0.0175		
Arsenic, dissolved	mg/L	MWII-7	04/13/2021		0.0130			0.0177		
Arsenic, dissolved	mg/L	MWII-7	07/26/2021		0.0110			0.0159		
Arsenic, dissolved	mg/L	MWII-7	10/18/2021		0.0120			0.0151		
Arsenic, dissolved	mg/L	MWII-7	03/27/2022		0.0120			0.0143		
Arsenic, dissolved	mg/L	MWII-7	05/09/2022		0.0099			0.0114		
Arsenic, dissolved	mg/L	MWII-7	08/23/2022		0.0120			0.0113		
Arsenic, dissolved	mg/L	MWII-7	11/16/2022		0.0110			0.0113		
Arsenic, dissolved	mg/L	MWII-7	02/06/2023		0.0110			0.0113		
Arsenic, dissolved	mg/L	MWII-7	05/14/2023		0.0079			0.0113		
Arsenic, dissolved	mg/L	MWII-7	09/18/2023		0.0080			0.0113		
Arsenic, dissolved	mg/L	MWII-7	11/14/2023		0.0076			0.0113		
Arsenic, total	mg/L	MWII-2	03/12/1996	yes	0.0060					
Arsenic, total	mg/L	MWII-2	05/14/1996	yes	0.0500	ND			0.0200	***
Arsenic, total	mg/L	MWII-2	08/06/1996	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/14/1997	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	07/08/1997	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/13/1998	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	08/10/1998	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/11/1999	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	07/12/1999	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/10/2000	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	07/10/2000	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/29/2001	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	08/06/2001	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/29/2002	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	08/05/2002	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/28/2003	yes	0.0200	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	mg/L	MWII-2	08/04/2003	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/27/2004	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-2	01/23/2006	yes	0.0069					
Arsenic, total	mg/L	MWII-2	07/25/2006	yes	0.0083					
Arsenic, total	mg/L	MWII-2	02/05/2007	yes	0.0079					
Arsenic, total	mg/L	MWII-2	10/16/2007	yes	0.0078					
Arsenic, total	mg/L	MWII-2	06/10/2008	yes	0.0086					
Arsenic, total	mg/L	MWII-2	07/29/2008	yes	0.0075					
Arsenic, total	mg/L	MWII-2	11/10/2008	yes	0.0080					
Arsenic, total	mg/L	MWII-2	03/10/2009	yes	0.0068					
Arsenic, total	mg/L	MWII-2	05/18/2009	yes	0.0069					
Arsenic, total	mg/L	MWII-2	07/20/2009	yes	0.0094					
Arsenic, total	mg/L	MWII-2	11/02/2009	yes	0.0067					
Arsenic, total	mg/L	MWII-2	02/22/2010	yes	0.0075					
Arsenic, total	mg/L	MWII-2	02/24/2013		0.0072			0.0146		
Arsenic, total	mg/L	MWII-2	08/26/2013		0.0064			0.0146		
Arsenic, total	mg/L	MWII-2	02/24/2014		0.0070			0.0146		
Arsenic, total	mg/L	MWII-2	05/27/2014		0.0072			0.0146		
Arsenic, total	mg/L	MWII-2	08/26/2014		0.0066			0.0146		
Arsenic, total	mg/L	MWII-2	11/11/2014		0.0069			0.0146		
Arsenic, total	mg/L	MWII-2	02/23/2015		0.0070			0.0146		
Arsenic, total	mg/L	MWII-2	05/31/2015		0.0071			0.0146		
Arsenic, total	mg/L	MWII-2	08/31/2015		0.0070			0.0146		
Arsenic, total	mg/L	MWII-2	11/09/2015		0.0065			0.0146		
Arsenic, total	mg/L	MWII-2	03/23/2016		0.0068			0.0146		
Arsenic, total	mg/L	MWII-2	05/23/2016		0.0065			0.0146		
Arsenic, total	mg/L	MWII-2	08/15/2016		0.0077			0.0146		
Arsenic, total	mg/L	MWII-2	10/26/2016		0.0073			0.0146		
Arsenic, total	mg/L	MWII-2	02/14/2017		0.0066			0.0146		
Arsenic, total	mg/L	MWII-2	05/23/2017		0.0066			0.0146		
Arsenic, total	mg/L	MWII-2	08/15/2017		0.0060			0.0146		
Arsenic, total	mg/L	MWII-2	11/14/2017		0.0063			0.0146		
Arsenic, total	mg/L	MWII-2	02/13/2018		0.0064			0.0146		
Arsenic, total	mg/L	MWII-2	05/15/2018		0.0060			0.0146		
Arsenic, total	mg/L	MWII-2	08/14/2018		0.0069			0.0146		
Arsenic, total	mg/L	MWII-2	11/13/2018		0.0065			0.0146		
Arsenic, total	mg/L	MWII-2	02/19/2019		0.0067			0.0146		
Arsenic, total	mg/L	MWII-2	06/19/2019		0.0062			0.0146		
Arsenic, total	mg/L	MWII-2	08/27/2019		0.0068			0.0146		
Arsenic, total	mg/L	MWII-2	11/13/2019		0.0064			0.0146		
Arsenic, total	mg/L	MWII-2	02/27/2020		0.0065			0.0146		
Arsenic, total	mg/L	MWII-2	05/17/2020		0.0075			0.0146		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	mg/L	MWII-2	07/19/2020		0.0066			0.0146		
Arsenic, total	mg/L	MWII-2	10/26/2020		0.0068			0.0146		
Arsenic, total	mg/L	MWII-2	01/12/2021		0.0056			0.0146		
Arsenic, total	mg/L	MWII-2	04/13/2021		0.0062			0.0146		
Arsenic, total	mg/L	MWII-2	07/26/2021		0.0063			0.0146		
Arsenic, total	mg/L	MWII-2	10/19/2021		0.0066			0.0146		
Arsenic, total	mg/L	MWII-2	03/27/2022		0.0062			0.0146		
Arsenic, total	mg/L	MWII-2	05/09/2022		0.0062			0.0146		
Arsenic, total	mg/L	MWII-2	08/23/2022		0.0070			0.0146		
Arsenic, total	mg/L	MWII-2	11/16/2022		0.0069			0.0146		
Arsenic, total	mg/L	MWII-2	02/06/2023		0.0066			0.0146		
Arsenic, total	mg/L	MWII-2	05/14/2023		0.0064			0.0146		
Arsenic, total	mg/L	MWII-2	09/18/2023		0.0068			0.0146		
Arsenic, total	mg/L	MWII-2	11/14/2023		0.0067			0.0146		
Arsenic, total	mg/L	MWII-5	03/12/1996	yes	0.0040		yes			*
Arsenic, total	mg/L	MWII-5	05/14/1996	yes	0.0500	ND			0.0200	***
Arsenic, total	mg/L	MWII-5	08/06/1996	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-5	01/14/1997	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-5	01/13/1998	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-5	01/11/1999	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-5	01/10/2000	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-5	07/10/2000	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-5	01/29/2001	yes	0.0630					
Arsenic, total	mg/L	MWII-5	01/29/2002	yes	0.0230					
Arsenic, total	mg/L	MWII-5	01/28/2003	yes	0.0490					
Arsenic, total	mg/L	MWII-5	01/27/2004	yes	0.0200	ND				
Arsenic, total	mg/L	MWII-5	01/23/2006	yes	0.0420					
Arsenic, total	mg/L	MWII-5	07/26/2006	yes	0.0230					
Arsenic, total	mg/L	MWII-5	02/05/2007	yes	0.0330					
Arsenic, total	mg/L	MWII-5	10/16/2007	yes	0.0420					
Arsenic, total	mg/L	MWII-5	06/10/2008	yes	0.0270					
Arsenic, total	mg/L	MWII-5	07/29/2008	yes	0.0290					
Arsenic, total	mg/L	MWII-5	11/10/2008	yes	0.0330					
Arsenic, total	mg/L	MWII-5	03/09/2009	yes	0.0210					
Arsenic, total	mg/L	MWII-5	05/18/2009	yes	0.0220					
Arsenic, total	mg/L	MWII-5	07/20/2009	yes	0.0300					
Arsenic, total	mg/L	MWII-5	11/02/2009	yes	0.0290					
Arsenic, total	mg/L	MWII-5	02/22/2010	yes	0.0290					
Arsenic, total	mg/L	MWII-5	02/24/2013		0.0180			0.0285		
Arsenic, total	mg/L	MWII-5	08/26/2013		0.0230			0.0285		
Arsenic, total	mg/L	MWII-5	02/24/2014		0.0190			0.0285		
Arsenic, total	mg/L	MWII-5	05/27/2014		0.0240			0.0285		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	mg/L	MWII-5	08/26/2014		0.0210			0.0285		
Arsenic, total	mg/L	MWII-5	11/11/2014		0.0190			0.0285		
Arsenic, total	mg/L	MWII-5	02/23/2015		0.0150			0.0285		
Arsenic, total	mg/L	MWII-5	05/31/2015		0.0180			0.0285		
Arsenic, total	mg/L	MWII-5	08/31/2015		0.0170			0.0285		
Arsenic, total	mg/L	MWII-5	11/09/2015		0.0190			0.0285		
Arsenic, total	mg/L	MWII-5	03/17/2016		0.0160			0.0285		
Arsenic, total	mg/L	MWII-5	05/23/2016		0.0150			0.0285		
Arsenic, total	mg/L	MWII-5	08/15/2016		0.0170			0.0285		
Arsenic, total	mg/L	MWII-5	10/26/2016		0.0180			0.0285		
Arsenic, total	mg/L	MWII-5	02/14/2017		0.0170			0.0285		
Arsenic, total	mg/L	MWII-5	05/23/2017		0.0160			0.0285		
Arsenic, total	mg/L	MWII-5	08/15/2017		0.0150			0.0285		
Arsenic, total	mg/L	MWII-5	11/14/2017		0.0160			0.0285		
Arsenic, total	mg/L	MWII-5	02/13/2018		0.0160			0.0285		
Arsenic, total	mg/L	MWII-5	05/15/2018		0.0150			0.0285		
Arsenic, total	mg/L	MWII-5	08/14/2018		0.0160			0.0285		
Arsenic, total	mg/L	MWII-5	11/13/2018		0.0140			0.0285		
Arsenic, total	mg/L	MWII-5	02/19/2019		0.0140			0.0285		
Arsenic, total	mg/L	MWII-5	06/19/2019		0.0160			0.0285		
Arsenic, total	mg/L	MWII-5	08/27/2019		0.0180			0.0285		
Arsenic, total	mg/L	MWII-5	11/12/2019		0.0170			0.0285		
Arsenic, total	mg/L	MWII-5	02/26/2020		0.0140			0.0285		
Arsenic, total	mg/L	MWII-5	05/17/2020		0.0130			0.0285		
Arsenic, total	mg/L	MWII-5	07/19/2020		0.0110			0.0285		
Arsenic, total	mg/L	MWII-5	10/26/2020		0.0110			0.0285		
Arsenic, total	mg/L	MWII-5	01/12/2021		0.0120			0.0285		
Arsenic, total	mg/L	MWII-5	04/13/2021		0.0110			0.0285		
Arsenic, total	mg/L	MWII-5	07/26/2021		0.0110			0.0285		
Arsenic, total	mg/L	MWII-5	10/18/2021		0.0130			0.0285		
Arsenic, total	mg/L	MWII-5	03/27/2022		0.0120			0.0285		
Arsenic, total	mg/L	MWII-5	05/09/2022		0.0120			0.0285		
Arsenic, total	mg/L	MWII-5	08/23/2022		0.0140			0.0285		
Arsenic, total	mg/L	MWII-5	11/16/2022		0.0120			0.0285		
Arsenic, total	mg/L	MWII-5	02/07/2023		0.0130			0.0285		
Arsenic, total	mg/L	MWII-5	05/14/2023		0.0120			0.0285		
Arsenic, total	mg/L	MWII-5	09/18/2023		0.0120			0.0285		
Arsenic, total	mg/L	MWII-5	11/13/2023		0.0130			0.0285		
Arsenic, total	mg/L	MWII-7	03/10/2009	yes	0.0110					
Arsenic, total	mg/L	MWII-7	05/18/2009	yes	0.0090					
Arsenic, total	mg/L	MWII-7	07/20/2009	yes	0.0110					
Arsenic, total	mg/L	MWII-7	11/02/2009	yes	0.0100					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	mg/L	MWII-7	02/22/2010	yes	0.0100					
Arsenic, total	mg/L	MWII-7	06/05/2012		0.0120			0.0112		
Arsenic, total	mg/L	MWII-7	08/27/2012		0.0120			0.0121		
Arsenic, total	mg/L	MWII-7	11/13/2012		0.0160			0.0171		**
Arsenic, total	mg/L	MWII-7	02/24/2013		0.0230			0.0241		**
Arsenic, total	mg/L	MWII-7	06/04/2013		0.0110			0.0121		
Arsenic, total	mg/L	MWII-7	08/26/2013		0.0120			0.0131		
Arsenic, total	mg/L	MWII-7	02/24/2014		0.0080			0.0102		
Arsenic, total	mg/L	MWII-7	05/27/2014		0.0081			0.0102		
Arsenic, total	mg/L	MWII-7	08/26/2014		0.0120			0.0112		
Arsenic, total	mg/L	MWII-7	11/11/2014		0.0110			0.0111		
Arsenic, total	mg/L	MWII-7	02/23/2015		0.0130			0.0131		
Arsenic, total	mg/L	MWII-7	05/31/2015		0.0130			0.0151		**
Arsenic, total	mg/L	MWII-7	08/31/2015		0.0140			0.0161		**
Arsenic, total	mg/L	MWII-7	11/09/2015		0.0340			0.0361		**
Arsenic, total	mg/L	MWII-7	03/23/2016		0.0400			0.0421		**
Arsenic, total	mg/L	MWII-7	05/23/2016		0.0250			0.0271		**
Arsenic, total	mg/L	MWII-7	08/15/2016		0.0300			0.0321		**
Arsenic, total	mg/L	MWII-7	10/26/2016		0.0340			0.0361		**
Arsenic, total	mg/L	MWII-7	02/14/2017		0.0150			0.0171		**
Arsenic, total	mg/L	MWII-7	05/23/2017		0.0210			0.0231		**
Arsenic, total	mg/L	MWII-7	08/15/2017		0.0230			0.0251		**
Arsenic, total	mg/L	MWII-7	11/14/2017		0.0180			0.0201		**
Arsenic, total	mg/L	MWII-7	02/13/2018		0.0230			0.0251		**
Arsenic, total	mg/L	MWII-7	05/15/2018		0.0200			0.0221		**
Arsenic, total	mg/L	MWII-7	08/14/2018		0.0210			0.0231		**
Arsenic, total	mg/L	MWII-7	11/13/2018		0.0200			0.0221		**
Arsenic, total	mg/L	MWII-7	02/19/2019		0.0200			0.0221		**
Arsenic, total	mg/L	MWII-7	06/19/2019		0.0200			0.0221		**
Arsenic, total	mg/L	MWII-7	08/27/2019		0.0190			0.0211		**
Arsenic, total	mg/L	MWII-7	11/13/2019		0.0190			0.0211		**
Arsenic, total	mg/L	MWII-7	02/27/2020		0.0170			0.0191		**
Arsenic, total	mg/L	MWII-7	05/17/2020		0.0160			0.0181		**
Arsenic, total	mg/L	MWII-7	07/19/2020		0.0130			0.0151		**
Arsenic, total	mg/L	MWII-7	10/26/2020		0.0160			0.0181		**
Arsenic, total	mg/L	MWII-7	01/12/2021		0.0140			0.0161		**
Arsenic, total	mg/L	MWII-7	04/13/2021		0.0120			0.0141		**
Arsenic, total	mg/L	MWII-7	07/26/2021		0.0120			0.0141		**
Arsenic, total	mg/L	MWII-7	10/18/2021		0.0120			0.0141		**
Arsenic, total	mg/L	MWII-7	03/27/2022		0.0120			0.0141		**
Arsenic, total	mg/L	MWII-7	05/09/2022		0.0110			0.0131		
Arsenic, total	mg/L	MWII-7	08/23/2022		0.0130			0.0150		**

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Arsenic, total	mg/L	MWII-7	11/16/2022		0.0120			0.0140		**
Arsenic, total	mg/L	MWII-7	02/06/2023		0.0110			0.0130		
Arsenic, total	mg/L	MWII-7	05/14/2023		0.0094			0.0114		
Arsenic, total	mg/L	MWII-7	09/18/2023		0.0059			0.0102		
Arsenic, total	mg/L	MWII-7	11/14/2023		0.0085			0.0102		
Chemical oxygen demand	mg/L	MWII-2	02/22/2010	yes	11.0000					
Chemical oxygen demand	mg/L	MWII-2	08/23/2010	yes	25.0000					
Chemical oxygen demand	mg/L	MWII-2	03/08/2011		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/02/2011		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	03/14/2012		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/27/2012		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/24/2013		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/26/2013		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/24/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	05/27/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/26/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	11/11/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/23/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	05/31/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/31/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	11/09/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	03/23/2016		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	05/23/2016		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/15/2016		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	10/26/2016		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/14/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	05/23/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/15/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	11/14/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/13/2018		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	05/15/2018		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/14/2018		20.0000					
Chemical oxygen demand	mg/L	MWII-2	11/13/2018		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/19/2019		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	06/19/2019		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	08/27/2019		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	11/13/2019		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/27/2020		15.0000					
Chemical oxygen demand	mg/L	MWII-2	05/17/2020		8.7000	ND				
Chemical oxygen demand	mg/L	MWII-2	07/19/2020		16.0000					
Chemical oxygen demand	mg/L	MWII-2	10/26/2020		8.7000	ND				
Chemical oxygen demand	mg/L	MWII-2	01/12/2021		8.7000	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chemical oxygen demand	mg/L	MWII-2	04/13/2021		8.7000	ND				
Chemical oxygen demand	mg/L	MWII-2	07/26/2021		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	10/19/2021		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	03/27/2022		20.0000					
Chemical oxygen demand	mg/L	MWII-2	05/09/2022		21.0000					
Chemical oxygen demand	mg/L	MWII-2	08/23/2022		23.0000					
Chemical oxygen demand	mg/L	MWII-2	11/16/2022		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	02/06/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	05/14/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	09/18/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-2	11/14/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/22/2010	yes	20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/23/2010	yes	20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	03/08/2011		22.0000					
Chemical oxygen demand	mg/L	MWII-5	08/02/2011		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	03/14/2012		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/27/2012		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/24/2013		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/26/2013		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/24/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	05/27/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/26/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	11/11/2014		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/23/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	05/31/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/31/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	11/09/2015		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	03/17/2016		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	05/23/2016		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/15/2016		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	10/26/2016		20.0000					
Chemical oxygen demand	mg/L	MWII-5	02/14/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	05/23/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/15/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	11/14/2017		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/13/2018		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	05/15/2018		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/14/2018		21.0000					
Chemical oxygen demand	mg/L	MWII-5	11/13/2018		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/19/2019		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	06/19/2019		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	08/27/2019		20.0000	ND				

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*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chemical oxygen demand	mg/L	MWII-5	11/12/2019		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/26/2020		16.0000					
Chemical oxygen demand	mg/L	MWII-5	05/17/2020		8.7000	ND				
Chemical oxygen demand	mg/L	MWII-5	07/19/2020		16.0000					
Chemical oxygen demand	mg/L	MWII-5	10/26/2020		9.7000					
Chemical oxygen demand	mg/L	MWII-5	01/12/2021		10.0000					
Chemical oxygen demand	mg/L	MWII-5	04/13/2021		8.7000	ND				
Chemical oxygen demand	mg/L	MWII-5	07/26/2021		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	10/18/2021		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	03/27/2022		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	05/09/2022		22.0000					
Chemical oxygen demand	mg/L	MWII-5	08/23/2022		27.0000					
Chemical oxygen demand	mg/L	MWII-5	11/16/2022		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	02/07/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	05/14/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	09/18/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-5	11/13/2023		20.0000	ND				
Chemical oxygen demand	mg/L	MWII-7	03/10/2009	yes	20.0000	ND				
Chemical oxygen demand	mg/L	MWII-7	11/02/2009	yes	20.0000	ND				
Chemical oxygen demand	mg/L	MWII-7	02/22/2010	yes	10.0000					
Chemical oxygen demand	mg/L	MWII-7	06/01/2010	yes	20.0000	ND				
Chemical oxygen demand	mg/L	MWII-7	08/23/2010	yes	20.0000	ND				
Chemical oxygen demand	mg/L	MWII-7	11/16/2010	yes	22.0000					
Chemical oxygen demand	mg/L	MWII-7	03/08/2011		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	05/10/2011		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	08/02/2011		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	11/16/2011		150.0000			145.6795		**
Chemical oxygen demand	mg/L	MWII-7	03/14/2012		200.0000			195.6795		**
Chemical oxygen demand	mg/L	MWII-7	06/05/2012		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	08/27/2012		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	11/13/2012		130.0000			125.6795		**
Chemical oxygen demand	mg/L	MWII-7	02/24/2013		280.0000			275.6795		**
Chemical oxygen demand	mg/L	MWII-7	06/04/2013		22.0000			18.6667		
Chemical oxygen demand	mg/L	MWII-7	08/26/2013		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	02/24/2014		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	05/27/2014		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	08/26/2014		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	11/11/2014		24.0000			19.6795		
Chemical oxygen demand	mg/L	MWII-7	02/23/2015		79.0000			75.6923		**
Chemical oxygen demand	mg/L	MWII-7	05/31/2015		170.0000			166.6923		**
Chemical oxygen demand	mg/L	MWII-7	08/31/2015		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	11/09/2015		38.0000			33.6795		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Chemical oxygen demand	mg/L	MWII-7	03/23/2016		36.0000			46.6923		**
Chemical oxygen demand	mg/L	MWII-7	05/23/2016		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	08/15/2016		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	10/26/2016		81.0000			76.6795		**
Chemical oxygen demand	mg/L	MWII-7	02/14/2017		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	05/23/2017		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	08/15/2017		20.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	11/14/2017		31.0000			26.6795		
Chemical oxygen demand	mg/L	MWII-7	02/13/2018		34.0000			37.6923		
Chemical oxygen demand	mg/L	MWII-7	05/15/2018		44.0000			58.7052		**
Chemical oxygen demand	mg/L	MWII-7	08/14/2018		44.0000			58.7052		**
Chemical oxygen demand	mg/L	MWII-7	11/13/2018		30.0000			44.7052		**
Chemical oxygen demand	mg/L	MWII-7	02/19/2019		54.0000			68.7052		**
Chemical oxygen demand	mg/L	MWII-7	06/19/2019		120.0000			134.7052		**
Chemical oxygen demand	mg/L	MWII-7	08/27/2019		120.0000			134.7052		**
Chemical oxygen demand	mg/L	MWII-7	11/13/2019		110.0000			124.7052		**
Chemical oxygen demand	mg/L	MWII-7	02/27/2020		31.0000			45.7052		**
Chemical oxygen demand	mg/L	MWII-7	05/17/2020		310.0000			324.7052		**
Chemical oxygen demand	mg/L	MWII-7	07/19/2020		160.0000			174.7052		**
Chemical oxygen demand	mg/L	MWII-7	10/26/2020		170.0000			184.7052		**
Chemical oxygen demand	mg/L	MWII-7	01/12/2021		94.0000			108.7052		**
Chemical oxygen demand	mg/L	MWII-7	04/13/2021		120.0000			134.7052		**
Chemical oxygen demand	mg/L	MWII-7	07/26/2021		100.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	10/18/2021		89.0000			84.6795		**
Chemical oxygen demand	mg/L	MWII-7	03/27/2022		100.0000	ND		18.6667		
Chemical oxygen demand	mg/L	MWII-7	05/09/2022		130.0000			125.6795		**
Chemical oxygen demand	mg/L	MWII-7	08/23/2022		180.0000			175.6795		**
Chemical oxygen demand	mg/L	MWII-7	11/16/2022		81.0000			76.6795		**
Chemical oxygen demand	mg/L	MWII-7	02/06/2023		73.0000			68.6795		**
Chemical oxygen demand	mg/L	MWII-7	05/14/2023		62.0000			57.6795		**
Chemical oxygen demand	mg/L	MWII-7	09/18/2023		27.0000			22.6795		
Chemical oxygen demand	mg/L	MWII-7	11/14/2023		100.0000	ND		18.6667		
Iron, dissolved	mg/L	MWII-2	01/10/2000	yes	0.0600	ND			0.0500	***
Iron, dissolved	mg/L	MWII-2	08/09/2004	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	01/24/2005	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	07/18/2005	yes	0.0350					
Iron, dissolved	mg/L	MWII-2	01/23/2006	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	07/25/2006	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/05/2007	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	10/16/2007	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	03/11/2008	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	06/10/2008	yes	0.0500	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, dissolved	mg/L	MWII-2	07/29/2008	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/10/2008	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	03/10/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/18/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	07/20/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/02/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/22/2010	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/23/2010	yes	0.2900					
Iron, dissolved	mg/L	MWII-2	03/08/2011		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/02/2011		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	03/14/2012		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/27/2012		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/24/2013		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/26/2013		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/24/2014		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/27/2014		0.0710					
Iron, dissolved	mg/L	MWII-2	08/26/2014		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/11/2014		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/23/2015		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/31/2015		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/31/2015		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/09/2015		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	03/23/2016		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/23/2016		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/15/2016		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	10/26/2016		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/14/2017		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/23/2017		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/15/2017		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/14/2017		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/13/2018		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/15/2018		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/14/2018		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/13/2018		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/19/2019		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	06/19/2019		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/27/2019		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/13/2019		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/27/2020		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/17/2020		0.0220	ND				
Iron, dissolved	mg/L	MWII-2	07/19/2020		0.0220	ND				
Iron, dissolved	mg/L	MWII-2	10/26/2020		0.0220	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, dissolved	mg/L	MWII-2	01/12/2021		0.0230					
Iron, dissolved	mg/L	MWII-2	04/13/2021		0.0220	ND				
Iron, dissolved	mg/L	MWII-2	07/26/2021		0.0510					
Iron, dissolved	mg/L	MWII-2	10/19/2021		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	03/27/2022		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/09/2022		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	08/23/2022		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	11/16/2022		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	02/06/2023		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	05/14/2023		0.0500	ND				
Iron, dissolved	mg/L	MWII-2	09/18/2023		0.2300					
Iron, dissolved	mg/L	MWII-2	11/14/2023		0.0500	ND				
Iron, dissolved	mg/L	MWII-5	01/10/2000	yes	0.0600	ND			0.0500	***
Iron, dissolved	mg/L	MWII-5	08/09/2004	yes	0.1400					
Iron, dissolved	mg/L	MWII-5	01/24/2005	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	07/18/2005	yes	0.0740					
Iron, dissolved	mg/L	MWII-5	01/23/2006	yes	0.0590					
Iron, dissolved	mg/L	MWII-5	07/26/2006	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	02/05/2007	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	10/16/2007	yes	0.0650					
Iron, dissolved	mg/L	MWII-5	03/11/2008	yes	0.0760					
Iron, dissolved	mg/L	MWII-5	06/10/2008	yes	0.0600					
Iron, dissolved	mg/L	MWII-5	07/29/2008	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	11/10/2008	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	03/09/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	05/18/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	07/20/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	11/02/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	02/22/2010	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	08/23/2010	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-5	03/08/2011		0.0510			0.0597		
Iron, dissolved	mg/L	MWII-5	08/02/2011		0.0610			0.0597		
Iron, dissolved	mg/L	MWII-5	03/14/2012		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/27/2012		0.0520			0.0597		
Iron, dissolved	mg/L	MWII-5	02/24/2013		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/26/2013		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	02/24/2014		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	05/27/2014		0.0560			0.0597		
Iron, dissolved	mg/L	MWII-5	08/26/2014		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	11/11/2014		0.0660			0.0597		
Iron, dissolved	mg/L	MWII-5	02/23/2015		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	05/31/2015		0.0500	ND		0.0597		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, dissolved	mg/L	MWII-5	06/01/2015		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/31/2015		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	11/09/2015		0.0500			0.0597		
Iron, dissolved	mg/L	MWII-5	03/17/2016		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	05/23/2016		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/15/2016		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	10/26/2016		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	02/14/2017		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	05/23/2017		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/15/2017		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	11/14/2017		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	02/13/2018		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	05/15/2018		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/14/2018		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	11/13/2018		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	02/19/2019		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	06/19/2019		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/27/2019		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	11/12/2019		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	02/26/2020		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	05/17/2020		0.0220	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	07/19/2020		0.0330			0.0597		
Iron, dissolved	mg/L	MWII-5	10/26/2020		0.0220	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	01/12/2021		0.0220	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	04/13/2021		0.0220			0.0597		
Iron, dissolved	mg/L	MWII-5	07/26/2021		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	10/18/2021		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	03/27/2022		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	05/09/2022		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	08/23/2022		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	11/16/2022		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	02/07/2023		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	09/18/2023		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-5	11/13/2023		0.0500	ND		0.0597		
Iron, dissolved	mg/L	MWII-7	03/10/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-7	05/18/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-7	07/20/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-7	11/02/2009	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-7	02/22/2010	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-7	06/01/2010	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-7	08/23/2010	yes	0.0500	ND				
Iron, dissolved	mg/L	MWII-7	11/16/2010	yes	0.0500	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, dissolved	mg/L	MWII-7	03/08/2011		0.0500	ND				
Iron, dissolved	mg/L	MWII-7	05/10/2011		0.0500	ND				
Iron, dissolved	mg/L	MWII-7	08/02/2011		0.0500	ND				
Iron, dissolved	mg/L	MWII-7	11/16/2011		0.0660					
Iron, dissolved	mg/L	MWII-7	03/14/2012		0.3500					
Iron, dissolved	mg/L	MWII-7	06/05/2012		0.1000	ND				
Iron, dissolved	mg/L	MWII-7	08/27/2012		0.1000	ND				
Iron, dissolved	mg/L	MWII-7	11/13/2012		0.9500					
Iron, dissolved	mg/L	MWII-7	02/24/2013		0.4800					
Iron, dissolved	mg/L	MWII-7	06/04/2013		0.0500	ND				
Iron, dissolved	mg/L	MWII-7	08/26/2013		0.0500	ND				
Iron, dissolved	mg/L	MWII-7	02/24/2014		0.0500	ND				
Iron, dissolved	mg/L	MWII-7	05/27/2014		0.1100					
Iron, dissolved	mg/L	MWII-7	08/26/2014		0.0500	ND				
Iron, dissolved	mg/L	MWII-7	11/11/2014		0.1100					
Iron, dissolved	mg/L	MWII-7	02/23/2015		0.5800					
Iron, dissolved	mg/L	MWII-7	05/31/2015		0.5000					
Iron, dissolved	mg/L	MWII-7	08/31/2015		0.6700					
Iron, dissolved	mg/L	MWII-7	11/09/2015		3.1000					
Iron, dissolved	mg/L	MWII-7	03/23/2016		3.2000					
Iron, dissolved	mg/L	MWII-7	05/23/2016		2.0000					
Iron, dissolved	mg/L	MWII-7	08/15/2016		3.5000					
Iron, dissolved	mg/L	MWII-7	10/26/2016		3.3000					
Iron, dissolved	mg/L	MWII-7	02/14/2017		0.5400					
Iron, dissolved	mg/L	MWII-7	05/23/2017		3.7000					
Iron, dissolved	mg/L	MWII-7	08/15/2017		3.7000					
Iron, dissolved	mg/L	MWII-7	11/14/2017		5.1000					
Iron, dissolved	mg/L	MWII-7	02/13/2018		3.3000					
Iron, dissolved	mg/L	MWII-7	05/15/2018		3.7000					
Iron, dissolved	mg/L	MWII-7	08/14/2018		3.6000					
Iron, dissolved	mg/L	MWII-7	11/13/2018		4.3000					
Iron, dissolved	mg/L	MWII-7	02/19/2019		3.7000					
Iron, dissolved	mg/L	MWII-7	06/19/2019		4.5000					
Iron, dissolved	mg/L	MWII-7	08/27/2019		4.4000					
Iron, dissolved	mg/L	MWII-7	11/13/2019		3.7000					
Iron, dissolved	mg/L	MWII-7	02/27/2020		3.7000					
Iron, dissolved	mg/L	MWII-7	05/17/2020		2.9000					
Iron, dissolved	mg/L	MWII-7	07/19/2020		2.7000					
Iron, dissolved	mg/L	MWII-7	10/26/2020		2.3000					
Iron, dissolved	mg/L	MWII-7	01/12/2021		1.6000					
Iron, dissolved	mg/L	MWII-7	04/13/2021		1.8000					
Iron, dissolved	mg/L	MWII-7	07/26/2021		2.1000					

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**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, dissolved	mg/L	MWII-7	10/18/2021		2.1000					
Iron, dissolved	mg/L	MWII-7	03/27/2022		1.9000					
Iron, dissolved	mg/L	MWII-7	05/09/2022		2.0000					
Iron, dissolved	mg/L	MWII-7	08/23/2022		2.0000					
Iron, dissolved	mg/L	MWII-7	11/16/2022		1.7000					
Iron, dissolved	mg/L	MWII-7	02/06/2023		2.0000					
Iron, dissolved	mg/L	MWII-7	05/14/2023		1.4000					
Iron, dissolved	mg/L	MWII-7	09/18/2023		1.2000					
Iron, dissolved	mg/L	MWII-7	11/14/2023		1.2000					
Iron, total	mg/L	MWII-2	03/12/1996	yes	0.0320					
Iron, total	mg/L	MWII-2	05/14/1996	yes	0.1645					
Iron, total	mg/L	MWII-2	08/06/1996	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/14/1997	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	07/08/1997	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/13/1998	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	08/10/1998	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/11/1999	yes	0.3400					
Iron, total	mg/L	MWII-2	07/12/1999	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/10/2000	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	07/10/2000	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/29/2001	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	08/06/2001	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/29/2002	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	08/05/2002	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/28/2003	yes	0.4800					
Iron, total	mg/L	MWII-2	08/04/2003	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/27/2004	yes	0.0600	ND				
Iron, total	mg/L	MWII-2	01/23/2006	yes	0.2500					
Iron, total	mg/L	MWII-2	07/25/2006	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	02/05/2007	yes	0.3000					
Iron, total	mg/L	MWII-2	10/16/2007	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	06/10/2008	yes	0.0640					
Iron, total	mg/L	MWII-2	07/29/2008	yes	0.3300					
Iron, total	mg/L	MWII-2	11/10/2008	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	03/10/2009	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	05/18/2009	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	07/20/2009	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	11/02/2009	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	02/22/2010	yes	0.0500	ND			0.0600	***
Iron, total	mg/L	MWII-2	02/24/2013		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	08/26/2013		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	02/24/2014		0.0500	ND		0.1094		

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**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, total	mg/L	MWII-2	05/27/2014		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	08/26/2014		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	11/11/2014		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	02/23/2015		0.0600			0.1094		
Iron, total	mg/L	MWII-2	05/31/2015		0.1200			0.1094		
Iron, total	mg/L	MWII-2	08/31/2015		0.0840			0.1094		
Iron, total	mg/L	MWII-2	11/09/2015		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	03/23/2016		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	05/23/2016		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	08/15/2016		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	10/26/2016		0.0650			0.1094		
Iron, total	mg/L	MWII-2	02/14/2017		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	05/23/2017		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	08/15/2017		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	11/14/2017		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	02/13/2018		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	05/15/2018		0.0570			0.1094		
Iron, total	mg/L	MWII-2	08/14/2018		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	11/13/2018		0.0670			0.1094		
Iron, total	mg/L	MWII-2	02/19/2019		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	06/19/2019		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	08/27/2019		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	11/13/2019		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	02/27/2020		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	05/17/2020		0.0220	ND		0.1094		
Iron, total	mg/L	MWII-2	07/19/2020		0.0220	ND		0.1094		
Iron, total	mg/L	MWII-2	10/26/2020		0.0220	ND		0.1094		
Iron, total	mg/L	MWII-2	01/12/2021		0.0220	ND		0.1094		
Iron, total	mg/L	MWII-2	04/13/2021		0.0220	ND		0.1094		
Iron, total	mg/L	MWII-2	07/26/2021		0.2500			0.1664		
Iron, total	mg/L	MWII-2	10/19/2021		0.1200			0.1094		
Iron, total	mg/L	MWII-2	03/27/2022		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	05/09/2022		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	08/23/2022		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	11/16/2022		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	02/06/2023		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	05/14/2023		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	09/18/2023		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-2	11/14/2023		0.0500	ND		0.1094		
Iron, total	mg/L	MWII-5	03/12/1996	yes	0.0240					
Iron, total	mg/L	MWII-5	05/14/1996	yes	0.1730					
Iron, total	mg/L	MWII-5	08/06/1996	yes	0.0600	ND			0.0500	***

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, total	mg/L	MWII-5	01/14/1997	yes	0.0600	ND			0.0500	***
Iron, total	mg/L	MWII-5	01/13/1998	yes	0.0600	ND			0.0500	***
Iron, total	mg/L	MWII-5	01/11/1999	yes	0.3200		yes			*
Iron, total	mg/L	MWII-5	01/10/2000	yes	0.0600	ND			0.0500	***
Iron, total	mg/L	MWII-5	07/10/2000	yes	0.0600	ND			0.0500	***
Iron, total	mg/L	MWII-5	01/29/2001	yes	0.0600	ND			0.0500	***
Iron, total	mg/L	MWII-5	01/29/2002	yes	0.0600	ND			0.0500	***
Iron, total	mg/L	MWII-5	01/28/2003	yes	0.1000					
Iron, total	mg/L	MWII-5	01/27/2004	yes	0.0990					
Iron, total	mg/L	MWII-5	01/23/2006	yes	0.0810					
Iron, total	mg/L	MWII-5	07/26/2006	yes	0.0650					
Iron, total	mg/L	MWII-5	02/05/2007	yes	0.0500	ND				
Iron, total	mg/L	MWII-5	10/16/2007	yes	0.0790					
Iron, total	mg/L	MWII-5	06/10/2008	yes	0.0600					
Iron, total	mg/L	MWII-5	07/29/2008	yes	0.0820					
Iron, total	mg/L	MWII-5	11/10/2008	yes	0.0500	ND				
Iron, total	mg/L	MWII-5	03/09/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-5	05/18/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-5	07/20/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-5	11/02/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-5	02/22/2010	yes	0.0500	ND				
Iron, total	mg/L	MWII-5	02/24/2013		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	08/26/2013		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	02/24/2014		0.1900			0.1676		**
Iron, total	mg/L	MWII-5	05/27/2014		0.0500	ND		0.0816		
Iron, total	mg/L	MWII-5	08/26/2014		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	11/11/2014		0.0780			0.0636		
Iron, total	mg/L	MWII-5	02/23/2015		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	05/31/2015		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	08/31/2015		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	11/09/2015		0.0620			0.0636		
Iron, total	mg/L	MWII-5	03/17/2016		0.0730			0.0636		
Iron, total	mg/L	MWII-5	05/23/2016		0.1900			0.1676		**
Iron, total	mg/L	MWII-5	08/15/2016		0.0500	ND		0.0816		
Iron, total	mg/L	MWII-5	10/26/2016		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	02/14/2017		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	05/23/2017		0.0870			0.0646		
Iron, total	mg/L	MWII-5	08/15/2017		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	11/14/2017		0.0780			0.0636		
Iron, total	mg/L	MWII-5	02/13/2018		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	05/15/2018		0.0580			0.0636		
Iron, total	mg/L	MWII-5	08/14/2018		0.0500	ND		0.0636		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, total	mg/L	MWII-5	11/13/2018		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	02/19/2019		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	06/19/2019		0.1200			0.0976		
Iron, total	mg/L	MWII-5	08/27/2019		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	11/12/2019		0.0880			0.0656		
Iron, total	mg/L	MWII-5	02/26/2020		0.0710			0.0636		
Iron, total	mg/L	MWII-5	05/17/2020		0.0390			0.0636		
Iron, total	mg/L	MWII-5	07/19/2020		0.0290			0.0636		
Iron, total	mg/L	MWII-5	10/26/2020		0.0220	ND		0.0636		
Iron, total	mg/L	MWII-5	01/12/2021		0.0220	ND		0.0636		
Iron, total	mg/L	MWII-5	04/13/2021		0.0220	ND		0.0636		
Iron, total	mg/L	MWII-5	07/26/2021		0.0520			0.0636		
Iron, total	mg/L	MWII-5	10/18/2021		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	03/27/2022		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	05/09/2022		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	08/23/2022		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	11/16/2022		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	02/07/2023		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	05/14/2023		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	09/18/2023		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-5	11/13/2023		0.0500	ND		0.0636		
Iron, total	mg/L	MWII-7	03/10/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-7	05/18/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-7	07/20/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-7	11/02/2009	yes	0.0500	ND				
Iron, total	mg/L	MWII-7	02/22/2010	yes	0.0300					
Iron, total	mg/L	MWII-7	06/05/2012		0.1000	ND				
Iron, total	mg/L	MWII-7	08/27/2012		0.1000	ND				
Iron, total	mg/L	MWII-7	11/13/2012		0.8600					
Iron, total	mg/L	MWII-7	02/24/2013		0.3600					
Iron, total	mg/L	MWII-7	06/04/2013		0.0500	ND				
Iron, total	mg/L	MWII-7	08/26/2013		0.0560					
Iron, total	mg/L	MWII-7	02/24/2014		0.1700					
Iron, total	mg/L	MWII-7	05/27/2014		1.6000					
Iron, total	mg/L	MWII-7	08/26/2014		0.0500	ND				
Iron, total	mg/L	MWII-7	11/11/2014		0.1600					
Iron, total	mg/L	MWII-7	02/23/2015		1.2000					
Iron, total	mg/L	MWII-7	05/31/2015		0.7000					
Iron, total	mg/L	MWII-7	08/31/2015		1.7000					
Iron, total	mg/L	MWII-7	11/09/2015		4.5000					
Iron, total	mg/L	MWII-7	03/23/2016		14.0000					
Iron, total	mg/L	MWII-7	05/23/2016		5.0000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Iron, total	mg/L	MWII-7	08/15/2016		4.0000					
Iron, total	mg/L	MWII-7	10/26/2016		4.0000					
Iron, total	mg/L	MWII-7	02/14/2017		16.0000					
Iron, total	mg/L	MWII-7	05/23/2017		4.0000					
Iron, total	mg/L	MWII-7	08/15/2017		4.3000					
Iron, total	mg/L	MWII-7	11/14/2017		8.8000					
Iron, total	mg/L	MWII-7	02/13/2018		3.6000					
Iron, total	mg/L	MWII-7	05/15/2018		5.0000					
Iron, total	mg/L	MWII-7	08/14/2018		4.3000					
Iron, total	mg/L	MWII-7	11/13/2018		4.6000					
Iron, total	mg/L	MWII-7	02/19/2019		4.0000					
Iron, total	mg/L	MWII-7	06/19/2019		9.6000					
Iron, total	mg/L	MWII-7	08/27/2019		6.9000					
Iron, total	mg/L	MWII-7	11/13/2019		5.4000					
Iron, total	mg/L	MWII-7	02/27/2020		5.7000					
Iron, total	mg/L	MWII-7	05/17/2020		3.4000					
Iron, total	mg/L	MWII-7	07/19/2020		3.1000					
Iron, total	mg/L	MWII-7	10/26/2020		3.1000					
Iron, total	mg/L	MWII-7	01/12/2021		2.2000					
Iron, total	mg/L	MWII-7	04/13/2021		2.5000					
Iron, total	mg/L	MWII-7	07/26/2021		2.8000					
Iron, total	mg/L	MWII-7	10/18/2021		2.5000					
Iron, total	mg/L	MWII-7	03/27/2022		2.1000					
Iron, total	mg/L	MWII-7	05/09/2022		2.1000					
Iron, total	mg/L	MWII-7	08/23/2022		2.2000					
Iron, total	mg/L	MWII-7	11/16/2022		2.5000					
Iron, total	mg/L	MWII-7	02/06/2023		2.0000					
Iron, total	mg/L	MWII-7	05/14/2023		1.9000					
Iron, total	mg/L	MWII-7	09/18/2023		1.3000					
Iron, total	mg/L	MWII-7	11/14/2023		1.7000					
Manganese, dissolved	mg/L	MWII-2	07/25/2006	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/05/2007	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	10/16/2007	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	03/11/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	06/10/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	07/29/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/10/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	03/10/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	05/18/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	07/20/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/02/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/22/2010	yes	0.0040					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, dissolved	mg/L	MWII-2	08/23/2010	yes	0.0140					
Manganese, dissolved	mg/L	MWII-2	03/08/2011		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/02/2011		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	03/14/2012		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/27/2012		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/24/2013		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/26/2013		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/24/2014		0.0100					
Manganese, dissolved	mg/L	MWII-2	05/27/2014		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/26/2014		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/11/2014		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/23/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	05/31/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/31/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/09/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	03/23/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	05/23/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/15/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	10/26/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/14/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	05/23/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/15/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/14/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/13/2018		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	05/15/2018		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/14/2018		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/13/2018		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/19/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	06/19/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/27/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/13/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/27/2020		0.0026					
Manganese, dissolved	mg/L	MWII-2	05/17/2020		0.0019	ND				
Manganese, dissolved	mg/L	MWII-2	07/19/2020		0.0030					
Manganese, dissolved	mg/L	MWII-2	10/26/2020		0.0020					
Manganese, dissolved	mg/L	MWII-2	01/12/2021		0.0019	ND				
Manganese, dissolved	mg/L	MWII-2	04/13/2021		0.0019	ND				
Manganese, dissolved	mg/L	MWII-2	07/26/2021		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	10/19/2021		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	03/27/2022		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	05/09/2022		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	08/23/2022		0.0100	ND				

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*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, dissolved	mg/L	MWII-2	11/16/2022		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	02/06/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	05/14/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	09/18/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-2	11/14/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	07/26/2006	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/05/2007	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	10/16/2007	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	03/11/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	06/10/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	07/29/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/10/2008	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	03/09/2009	yes	0.0110					
Manganese, dissolved	mg/L	MWII-5	05/18/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	07/20/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/02/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/22/2010	yes	0.0080					
Manganese, dissolved	mg/L	MWII-5	08/23/2010	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	03/08/2011		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/02/2011		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	03/14/2012		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/27/2012		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/24/2013		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/26/2013		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/24/2014		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	05/27/2014		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/26/2014		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/11/2014		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/23/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	05/31/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	06/01/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/31/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/09/2015		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	03/17/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	05/23/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/15/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	10/26/2016		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/14/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	05/23/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/15/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/14/2017		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/13/2018		0.0100	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, dissolved	mg/L	MWII-5	05/15/2018		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/14/2018		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/13/2018		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/19/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	06/19/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/27/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/12/2019		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/26/2020		0.0040					
Manganese, dissolved	mg/L	MWII-5	05/17/2020		0.0066					
Manganese, dissolved	mg/L	MWII-5	07/19/2020		0.0071					
Manganese, dissolved	mg/L	MWII-5	10/26/2020		0.0049					
Manganese, dissolved	mg/L	MWII-5	01/12/2021		0.0051					
Manganese, dissolved	mg/L	MWII-5	04/13/2021		0.0041					
Manganese, dissolved	mg/L	MWII-5	07/26/2021		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	10/18/2021		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	03/27/2022		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	05/09/2022		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	08/23/2022		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/16/2022		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	02/07/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	05/14/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	09/18/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-5	11/13/2023		0.0100	ND				
Manganese, dissolved	mg/L	MWII-7	03/10/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-7	05/18/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-7	07/20/2009	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-7	11/02/2009	yes	0.0140					
Manganese, dissolved	mg/L	MWII-7	02/22/2010	yes	0.0088					
Manganese, dissolved	mg/L	MWII-7	06/01/2010	yes	0.0120					
Manganese, dissolved	mg/L	MWII-7	08/23/2010	yes	0.0110					
Manganese, dissolved	mg/L	MWII-7	11/16/2010	yes	0.0100	ND				
Manganese, dissolved	mg/L	MWII-7	03/08/2011		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	05/10/2011		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	08/02/2011		0.0110			0.0107		
Manganese, dissolved	mg/L	MWII-7	11/16/2011		0.0270			0.0254		**
Manganese, dissolved	mg/L	MWII-7	03/14/2012		0.0200			0.0184		**
Manganese, dissolved	mg/L	MWII-7	06/05/2012		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	08/27/2012		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	11/13/2012		0.0240			0.0224		**
Manganese, dissolved	mg/L	MWII-7	02/24/2013		0.0330			0.0314		**
Manganese, dissolved	mg/L	MWII-7	06/04/2013		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	08/26/2013		0.0100	ND		0.0107		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, dissolved	mg/L	MWII-7	02/24/2014		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	05/27/2014		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	08/26/2014		0.0100	ND		0.0107		
Manganese, dissolved	mg/L	MWII-7	11/11/2014		0.0120			0.0107		
Manganese, dissolved	mg/L	MWII-7	02/23/2015		0.0220			0.0204		**
Manganese, dissolved	mg/L	MWII-7	05/31/2015		0.0250			0.0234		**
Manganese, dissolved	mg/L	MWII-7	08/31/2015		1.4000			1.3984		**
Manganese, dissolved	mg/L	MWII-7	11/09/2015		1.0000			0.9984		**
Manganese, dissolved	mg/L	MWII-7	03/23/2016		1.1000			1.0984		**
Manganese, dissolved	mg/L	MWII-7	05/23/2016		1.4000			1.3984		**
Manganese, dissolved	mg/L	MWII-7	08/15/2016		1.2000			1.1984		**
Manganese, dissolved	mg/L	MWII-7	10/26/2016		0.9500			0.9484		**
Manganese, dissolved	mg/L	MWII-7	02/14/2017		0.5300			0.5284		**
Manganese, dissolved	mg/L	MWII-7	05/23/2017		1.7000			1.6984		**
Manganese, dissolved	mg/L	MWII-7	08/15/2017		1.3000			1.2984		**
Manganese, dissolved	mg/L	MWII-7	11/14/2017		1.3000			1.2984		**
Manganese, dissolved	mg/L	MWII-7	02/13/2018		1.5000			1.4984		**
Manganese, dissolved	mg/L	MWII-7	05/15/2018		1.4000			1.3984		**
Manganese, dissolved	mg/L	MWII-7	08/14/2018		1.3000			1.2984		**
Manganese, dissolved	mg/L	MWII-7	11/13/2018		1.5000			1.4984		**
Manganese, dissolved	mg/L	MWII-7	02/19/2019		1.0000			0.9984		**
Manganese, dissolved	mg/L	MWII-7	06/19/2019		1.1000			1.0984		**
Manganese, dissolved	mg/L	MWII-7	08/27/2019		0.9900			0.9884		**
Manganese, dissolved	mg/L	MWII-7	11/13/2019		0.7600			0.7584		**
Manganese, dissolved	mg/L	MWII-7	02/27/2020		0.7600			0.7584		**
Manganese, dissolved	mg/L	MWII-7	05/17/2020		0.5800			0.5784		**
Manganese, dissolved	mg/L	MWII-7	07/19/2020		0.4100			0.4084		**
Manganese, dissolved	mg/L	MWII-7	10/26/2020		0.5300			0.5284		**
Manganese, dissolved	mg/L	MWII-7	01/12/2021		0.3200			0.3184		**
Manganese, dissolved	mg/L	MWII-7	04/13/2021		0.3600			0.3584		**
Manganese, dissolved	mg/L	MWII-7	07/26/2021		0.3900			0.3884		**
Manganese, dissolved	mg/L	MWII-7	10/18/2021		0.3800			0.3784		**
Manganese, dissolved	mg/L	MWII-7	03/27/2022		0.2500			0.2484		**
Manganese, dissolved	mg/L	MWII-7	05/09/2022		0.2700			0.2684		**
Manganese, dissolved	mg/L	MWII-7	08/23/2022		0.2600			0.2584		**
Manganese, dissolved	mg/L	MWII-7	11/16/2022		0.2300			0.2284		**
Manganese, dissolved	mg/L	MWII-7	02/06/2023		0.3000			0.2984		**
Manganese, dissolved	mg/L	MWII-7	05/14/2023		0.2700			0.2684		**
Manganese, dissolved	mg/L	MWII-7	09/18/2023		0.2400			0.2384		**
Manganese, dissolved	mg/L	MWII-7	11/14/2023		0.3500			0.3484		**
Manganese, total	mg/L	MWII-2	07/25/2006	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	02/05/2007	yes	0.0100	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, total	mg/L	MWII-2	10/16/2007	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	06/10/2008	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	07/29/2008	yes	0.0130					
Manganese, total	mg/L	MWII-2	11/10/2008	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	03/10/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	05/18/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	07/20/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	11/02/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-2	02/22/2010	yes	0.0041					
Manganese, total	mg/L	MWII-2	02/24/2013		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/26/2013		0.0100	ND				
Manganese, total	mg/L	MWII-2	02/24/2014		0.0120					
Manganese, total	mg/L	MWII-2	05/27/2014		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/26/2014		0.0100	ND				
Manganese, total	mg/L	MWII-2	11/11/2014		0.0100	ND				
Manganese, total	mg/L	MWII-2	02/23/2015		0.0100	ND				
Manganese, total	mg/L	MWII-2	05/31/2015		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/31/2015		0.0100	ND				
Manganese, total	mg/L	MWII-2	11/09/2015		0.0100	ND				
Manganese, total	mg/L	MWII-2	03/23/2016		0.0100	ND				
Manganese, total	mg/L	MWII-2	05/23/2016		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/15/2016		0.0100	ND				
Manganese, total	mg/L	MWII-2	10/26/2016		0.0100	ND				
Manganese, total	mg/L	MWII-2	02/14/2017		0.0100	ND				
Manganese, total	mg/L	MWII-2	05/23/2017		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/15/2017		0.0100	ND				
Manganese, total	mg/L	MWII-2	11/14/2017		0.0100	ND				
Manganese, total	mg/L	MWII-2	02/13/2018		0.0100	ND				
Manganese, total	mg/L	MWII-2	05/15/2018		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/14/2018		0.0100	ND				
Manganese, total	mg/L	MWII-2	11/13/2018		0.0100	ND				
Manganese, total	mg/L	MWII-2	02/19/2019		0.0100	ND				
Manganese, total	mg/L	MWII-2	06/19/2019		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/27/2019		0.0100	ND				
Manganese, total	mg/L	MWII-2	11/13/2019		0.0100	ND				
Manganese, total	mg/L	MWII-2	02/27/2020		0.0047					
Manganese, total	mg/L	MWII-2	05/17/2020		0.0025					
Manganese, total	mg/L	MWII-2	07/19/2020		0.0031					
Manganese, total	mg/L	MWII-2	10/26/2020		0.0026					
Manganese, total	mg/L	MWII-2	01/12/2021		0.0025					
Manganese, total	mg/L	MWII-2	04/13/2021		0.0019	ND				
Manganese, total	mg/L	MWII-2	07/26/2021		0.0100	ND				

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, total	mg/L	MWII-2	10/19/2021		0.0100	ND				
Manganese, total	mg/L	MWII-2	03/27/2022		0.0100	ND				
Manganese, total	mg/L	MWII-2	05/09/2022		0.0100	ND				
Manganese, total	mg/L	MWII-2	08/23/2022		0.0100	ND				
Manganese, total	mg/L	MWII-2	11/16/2022		0.0100	ND				
Manganese, total	mg/L	MWII-2	02/06/2023		0.0100	ND				
Manganese, total	mg/L	MWII-2	05/14/2023		0.0100	ND				
Manganese, total	mg/L	MWII-2	09/18/2023		0.0100	ND				
Manganese, total	mg/L	MWII-2	11/14/2023		0.0100	ND				
Manganese, total	mg/L	MWII-5	07/26/2006	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	02/05/2007	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	10/16/2007	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	06/10/2008	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	07/29/2008	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	11/10/2008	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	03/09/2009	yes	0.0110					
Manganese, total	mg/L	MWII-5	05/18/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	07/20/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	11/02/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-5	02/22/2010	yes	0.0071					
Manganese, total	mg/L	MWII-5	02/24/2013		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/26/2013		0.0100	ND				
Manganese, total	mg/L	MWII-5	02/24/2014		0.0100	ND				
Manganese, total	mg/L	MWII-5	05/27/2014		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/26/2014		0.0100					
Manganese, total	mg/L	MWII-5	11/11/2014		0.0100	ND				
Manganese, total	mg/L	MWII-5	02/23/2015		0.0100	ND				
Manganese, total	mg/L	MWII-5	05/31/2015		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/31/2015		0.0100	ND				
Manganese, total	mg/L	MWII-5	11/09/2015		0.0100	ND				
Manganese, total	mg/L	MWII-5	03/17/2016		0.0100	ND				
Manganese, total	mg/L	MWII-5	05/23/2016		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/15/2016		0.0100	ND				
Manganese, total	mg/L	MWII-5	10/26/2016		0.0100	ND				
Manganese, total	mg/L	MWII-5	02/14/2017		0.0100	ND				
Manganese, total	mg/L	MWII-5	05/23/2017		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/15/2017		0.0100	ND				
Manganese, total	mg/L	MWII-5	11/14/2017		0.0100					
Manganese, total	mg/L	MWII-5	02/13/2018		0.0100	ND				
Manganese, total	mg/L	MWII-5	05/15/2018		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/14/2018		0.0100	ND				
Manganese, total	mg/L	MWII-5	11/13/2018		0.0100	ND				

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*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, total	mg/L	MWII-5	02/19/2019		0.0100	ND				
Manganese, total	mg/L	MWII-5	06/19/2019		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/27/2019		0.0100	ND				
Manganese, total	mg/L	MWII-5	11/12/2019		0.0100	ND				
Manganese, total	mg/L	MWII-5	02/26/2020		0.0083					
Manganese, total	mg/L	MWII-5	05/17/2020		0.0079					
Manganese, total	mg/L	MWII-5	07/19/2020		0.0071					
Manganese, total	mg/L	MWII-5	10/26/2020		0.0052					
Manganese, total	mg/L	MWII-5	01/12/2021		0.0060					
Manganese, total	mg/L	MWII-5	04/13/2021		0.0043					
Manganese, total	mg/L	MWII-5	07/26/2021		0.0100	ND				
Manganese, total	mg/L	MWII-5	10/18/2021		0.0100	ND				
Manganese, total	mg/L	MWII-5	03/27/2022		0.0100	ND				
Manganese, total	mg/L	MWII-5	05/09/2022		0.0100	ND				
Manganese, total	mg/L	MWII-5	08/23/2022		0.0100	ND				
Manganese, total	mg/L	MWII-5	11/16/2022		0.0100	ND				
Manganese, total	mg/L	MWII-5	02/07/2023		0.0100	ND				
Manganese, total	mg/L	MWII-5	05/14/2023		0.0100	ND				
Manganese, total	mg/L	MWII-5	09/18/2023		0.0100	ND				
Manganese, total	mg/L	MWII-5	11/13/2023		0.0100	ND				
Manganese, total	mg/L	MWII-7	03/10/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-7	05/18/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-7	07/20/2009	yes	0.0100	ND				
Manganese, total	mg/L	MWII-7	11/02/2009	yes	0.0160					
Manganese, total	mg/L	MWII-7	02/22/2010	yes	0.0099					
Manganese, total	mg/L	MWII-7	06/05/2012		0.0100	ND		0.0112		
Manganese, total	mg/L	MWII-7	08/27/2012		0.0100	ND		0.0112		
Manganese, total	mg/L	MWII-7	11/13/2012		0.0210			0.0183		
Manganese, total	mg/L	MWII-7	02/24/2013		0.0330			0.0374		**
Manganese, total	mg/L	MWII-7	06/04/2013		0.0100	ND		0.0112		
Manganese, total	mg/L	MWII-7	08/26/2013		0.0100	ND		0.0112		
Manganese, total	mg/L	MWII-7	02/24/2014		0.0100	ND		0.0112		
Manganese, total	mg/L	MWII-7	05/27/2014		0.0300			0.0273		**
Manganese, total	mg/L	MWII-7	08/26/2014		0.0100	ND		0.0112		
Manganese, total	mg/L	MWII-7	11/11/2014		0.0140			0.0113		
Manganese, total	mg/L	MWII-7	02/23/2015		0.0430			0.0404		**
Manganese, total	mg/L	MWII-7	05/31/2015		0.0260			0.0234		**
Manganese, total	mg/L	MWII-7	08/31/2015		1.5000			1.4974		**
Manganese, total	mg/L	MWII-7	11/09/2015		1.1000			1.0974		**
Manganese, total	mg/L	MWII-7	03/23/2016		1.3000			1.2974		**
Manganese, total	mg/L	MWII-7	05/23/2016		1.2000			1.1974		**
Manganese, total	mg/L	MWII-7	08/15/2016		1.2000			1.1974		**

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ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Manganese, total	mg/L	MWII-7	10/26/2016		0.9700			0.9674		**
Manganese, total	mg/L	MWII-7	02/14/2017		0.6900			0.6874		**
Manganese, total	mg/L	MWII-7	05/23/2017		1.6000			1.5974		**
Manganese, total	mg/L	MWII-7	08/15/2017		1.4000			1.3974		**
Manganese, total	mg/L	MWII-7	11/14/2017		1.4000			1.3974		**
Manganese, total	mg/L	MWII-7	02/13/2018		1.4000			1.3974		**
Manganese, total	mg/L	MWII-7	05/15/2018		1.5000			1.4974		**
Manganese, total	mg/L	MWII-7	08/14/2018		1.3000			1.2974		**
Manganese, total	mg/L	MWII-7	11/13/2018		1.4000			1.3974		**
Manganese, total	mg/L	MWII-7	02/19/2019		1.0000			0.9974		**
Manganese, total	mg/L	MWII-7	06/19/2019		1.1000			1.0974		**
Manganese, total	mg/L	MWII-7	08/27/2019		1.1000			1.0974		**
Manganese, total	mg/L	MWII-7	11/13/2019		0.8500			0.8474		**
Manganese, total	mg/L	MWII-7	02/27/2020		0.7800			0.7774		**
Manganese, total	mg/L	MWII-7	05/17/2020		0.5800			0.5774		**
Manganese, total	mg/L	MWII-7	07/19/2020		0.4700			0.4674		**
Manganese, total	mg/L	MWII-7	10/26/2020		0.6000			0.5974		**
Manganese, total	mg/L	MWII-7	01/12/2021		0.3500			0.3474		**
Manganese, total	mg/L	MWII-7	04/13/2021		0.4400			0.4374		**
Manganese, total	mg/L	MWII-7	07/26/2021		0.4800			0.4774		**
Manganese, total	mg/L	MWII-7	10/18/2021		0.3900			0.3874		**
Manganese, total	mg/L	MWII-7	03/27/2022		0.2800			0.2774		**
Manganese, total	mg/L	MWII-7	05/09/2022		0.2900			0.2874		**
Manganese, total	mg/L	MWII-7	08/23/2022		0.2700			0.2674		**
Manganese, total	mg/L	MWII-7	11/16/2022		0.3100			0.3074		**
Manganese, total	mg/L	MWII-7	02/06/2023		0.2700			0.2674		**
Manganese, total	mg/L	MWII-7	05/14/2023		0.3800			0.3774		**
Manganese, total	mg/L	MWII-7	09/18/2023		0.2500			0.2474		**
Manganese, total	mg/L	MWII-7	11/14/2023		0.4500			0.4474		**
Total organic carbon (toc)	mg/L	MWII-2	03/12/1996	yes	1.5000					
Total organic carbon (toc)	mg/L	MWII-2	05/14/1996	yes	1.5000					
Total organic carbon (toc)	mg/L	MWII-2	08/06/1996	yes	2.3000					
Total organic carbon (toc)	mg/L	MWII-2	01/14/1997	yes	3.3000					
Total organic carbon (toc)	mg/L	MWII-2	07/08/1997	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-2	01/13/1998	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-2	08/10/1998	yes	1.6000					
Total organic carbon (toc)	mg/L	MWII-2	01/11/1999	yes	2.3000					
Total organic carbon (toc)	mg/L	MWII-2	07/12/1999	yes	3.0000					
Total organic carbon (toc)	mg/L	MWII-2	01/10/2000	yes	1.6000					
Total organic carbon (toc)	mg/L	MWII-2	07/10/2000	yes	2.0000					
Total organic carbon (toc)	mg/L	MWII-2	01/29/2001	yes	3.7000					
Total organic carbon (toc)	mg/L	MWII-2	08/06/2001	yes	2.9000					

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ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Total organic carbon (toc)	mg/L	MWII-2	01/29/2002	yes	2.6000					
Total organic carbon (toc)	mg/L	MWII-2	08/05/2002	yes	2.5000					
Total organic carbon (toc)	mg/L	MWII-2	01/28/2003	yes	2.3000					
Total organic carbon (toc)	mg/L	MWII-2	08/04/2003	yes	1.1000					
Total organic carbon (toc)	mg/L	MWII-2	01/27/2004	yes	1.5000					
Total organic carbon (toc)	mg/L	MWII-2	08/09/2004	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-2	01/24/2005	yes	2.1000					
Total organic carbon (toc)	mg/L	MWII-2	07/18/2005	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-2	01/23/2006	yes	2.7000					
Total organic carbon (toc)	mg/L	MWII-2	07/25/2006	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-2	02/05/2007	yes	1.2000					
Total organic carbon (toc)	mg/L	MWII-2	10/16/2007	yes	1.2000					
Total organic carbon (toc)	mg/L	MWII-2	03/11/2008	yes	1.0000	ND				
Total organic carbon (toc)	mg/L	MWII-2	06/10/2008	yes	1.0000	ND				
Total organic carbon (toc)	mg/L	MWII-2	07/29/2008	yes	1.3000					
Total organic carbon (toc)	mg/L	MWII-2	11/10/2008	yes	1.4000					
Total organic carbon (toc)	mg/L	MWII-2	03/10/2009	yes	2.1000					
Total organic carbon (toc)	mg/L	MWII-2	05/18/2009	yes	1.8000					
Total organic carbon (toc)	mg/L	MWII-2	07/20/2009	yes	1.6000					
Total organic carbon (toc)	mg/L	MWII-2	11/02/2009	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-2	02/22/2010	yes	1.8000					
Total organic carbon (toc)	mg/L	MWII-2	08/23/2010	yes	1.5000					
Total organic carbon (toc)	mg/L	MWII-2	03/08/2011		1.6000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/02/2011		1.6000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	03/14/2012		1.1000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/27/2012		1.0000	ND		1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/24/2013		1.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/26/2013		1.6000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/24/2014		1.6000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	05/27/2014		2.0000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/26/2014		1.5000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	11/11/2014		1.3000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/23/2015		1.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	05/31/2015		1.5000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/31/2015		1.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	11/09/2015		2.3000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	03/23/2016		1.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	05/23/2016		1.4000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/15/2016		1.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	10/26/2016		1.3000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/14/2017		1.3000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	05/23/2017		1.5000			1.9314		

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ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Total organic carbon (toc)	mg/L	MWII-2	08/15/2017		1.5000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	11/14/2017		1.4000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/13/2018		3.6000			3.1144		
Total organic carbon (toc)	mg/L	MWII-2	05/15/2018		1.1000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/14/2018		1.3000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	11/13/2018		1.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/19/2019		1.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	06/19/2019		1.4000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	08/27/2019		1.6000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	11/13/2019		1.5000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/27/2020		1.1000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	05/17/2020		1.9000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	07/19/2020		1.5000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	10/26/2020		1.8000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	01/12/2021		1.5000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	04/13/2021		2.0000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	07/26/2021		1.4000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	10/19/2021		2.2000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	03/27/2022		1.3000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	05/09/2022		3.9000			3.4144		
Total organic carbon (toc)	mg/L	MWII-2	08/23/2022		1.0000			1.9973		
Total organic carbon (toc)	mg/L	MWII-2	11/16/2022		1.5000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	02/06/2023		1.9000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	05/14/2023		1.7000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	09/18/2023		1.8000			1.9314		
Total organic carbon (toc)	mg/L	MWII-2	11/14/2023		1.0000			1.9314		
Total organic carbon (toc)	mg/L	MWII-5	03/12/1996	yes	1.1000					
Total organic carbon (toc)	mg/L	MWII-5	05/14/1996	yes	1.2000					
Total organic carbon (toc)	mg/L	MWII-5	08/06/1996	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-5	01/14/1997	yes	2.9000					
Total organic carbon (toc)	mg/L	MWII-5	01/13/1998	yes	1.8000					
Total organic carbon (toc)	mg/L	MWII-5	01/11/1999	yes	2.0000					
Total organic carbon (toc)	mg/L	MWII-5	01/10/2000	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-5	07/10/2000	yes	1.2000					
Total organic carbon (toc)	mg/L	MWII-5	01/29/2001	yes	3.0000					
Total organic carbon (toc)	mg/L	MWII-5	01/29/2002	yes	2.5000					
Total organic carbon (toc)	mg/L	MWII-5	01/28/2003	yes	2.2000					
Total organic carbon (toc)	mg/L	MWII-5	01/27/2004	yes	1.6000					
Total organic carbon (toc)	mg/L	MWII-5	08/09/2004	yes	1.8000					
Total organic carbon (toc)	mg/L	MWII-5	01/24/2005	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-5	07/18/2005	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-5	01/23/2006	yes	1.8000					

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Total organic carbon (toc)	mg/L	MWII-5	07/26/2006	yes	2.0000					
Total organic carbon (toc)	mg/L	MWII-5	02/05/2007	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-5	10/16/2007	yes	1.3000					
Total organic carbon (toc)	mg/L	MWII-5	03/11/2008	yes	1.0000	ND				
Total organic carbon (toc)	mg/L	MWII-5	06/10/2008	yes	1.1000					
Total organic carbon (toc)	mg/L	MWII-5	07/29/2008	yes	1.6000					
Total organic carbon (toc)	mg/L	MWII-5	11/10/2008	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-5	03/09/2009	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-5	05/18/2009	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-5	07/20/2009	yes	1.7000					
Total organic carbon (toc)	mg/L	MWII-5	11/02/2009	yes	2.3000					
Total organic carbon (toc)	mg/L	MWII-5	02/22/2010	yes	2.1000					
Total organic carbon (toc)	mg/L	MWII-5	08/23/2010	yes	1.6000					
Total organic carbon (toc)	mg/L	MWII-5	03/08/2011		1.3000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/02/2011		1.5000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	03/14/2012		1.9000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/27/2012		1.4000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	02/24/2013		1.5000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/26/2013		1.6000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	02/24/2014		1.9000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	05/27/2014		2.0000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/26/2014		1.8000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	11/11/2014		1.5000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	02/23/2015		1.6000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	05/31/2015		2.2000			1.8382		
Total organic carbon (toc)	mg/L	MWII-5	06/01/2015		2.0000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/31/2015		1.7000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	11/09/2015		1.8000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	03/17/2016		1.8000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	05/23/2016		2.1000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/15/2016		2.2000			1.8382		
Total organic carbon (toc)	mg/L	MWII-5	10/26/2016		2.1000			1.7903		
Total organic carbon (toc)	mg/L	MWII-5	02/14/2017		1.8000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	05/23/2017		2.0000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/15/2017		1.8000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	11/14/2017		2.0000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	02/13/2018		2.0000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	05/15/2018		1.3000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/14/2018		1.5000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	11/13/2018		1.3000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	02/19/2019		1.4000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	06/19/2019		1.3000			1.7862		

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Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Total organic carbon (toc)	mg/L	MWII-5	08/27/2019		1.7000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	11/12/2019		1.4000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	02/26/2020		1.5000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	05/17/2020		1.9000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	07/19/2020		1.6000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	10/26/2020		1.7000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	01/12/2021		1.5000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	04/13/2021		1.4000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	07/26/2021		1.2000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	10/18/2021		2.0000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	03/27/2022		1.3000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	05/09/2022		1.4000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	08/23/2022		1.4000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	11/16/2022		2.3000			1.9382		
Total organic carbon (toc)	mg/L	MWII-5	02/07/2023		2.0000			1.7903		
Total organic carbon (toc)	mg/L	MWII-5	05/14/2023		1.8000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	09/18/2023		2.0000			1.7862		
Total organic carbon (toc)	mg/L	MWII-5	11/13/2023		1.0000	ND		1.7862		
Total organic carbon (toc)	mg/L	MWII-7	03/10/2009	yes	3.5000					
Total organic carbon (toc)	mg/L	MWII-7	05/18/2009	yes	3.5000					
Total organic carbon (toc)	mg/L	MWII-7	07/20/2009	yes	2.8000					
Total organic carbon (toc)	mg/L	MWII-7	11/02/2009	yes	2.5000					
Total organic carbon (toc)	mg/L	MWII-7	02/22/2010	yes	1.9000					
Total organic carbon (toc)	mg/L	MWII-7	06/01/2010	yes	2.9000					
Total organic carbon (toc)	mg/L	MWII-7	08/23/2010	yes	2.2000					
Total organic carbon (toc)	mg/L	MWII-7	11/16/2010	yes	2.7000					
Total organic carbon (toc)	mg/L	MWII-7	03/08/2011		1.8000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	05/10/2011		2.5000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	08/02/2011		2.3000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/16/2011		3.4000			2.8343		
Total organic carbon (toc)	mg/L	MWII-7	03/14/2012		2.7000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	06/05/2012		1.9000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	08/27/2012		1.8000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/13/2012		3.0000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	02/24/2013		1.9000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	06/04/2013		2.1000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	08/26/2013		1.5000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	02/24/2014		2.2000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	05/27/2014		2.7000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	08/26/2014		1.8000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/11/2014		1.9000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	02/23/2015		1.3000			2.7500		

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Total organic carbon (toc)	mg/L	MWII-7	05/31/2015		2.0000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	08/31/2015		4.9000			4.3343		
Total organic carbon (toc)	mg/L	MWII-7	11/09/2015		3.5000			4.5186		
Total organic carbon (toc)	mg/L	MWII-7	03/23/2016		2.4000			3.6029		
Total organic carbon (toc)	mg/L	MWII-7	05/23/2016		2.6000			2.8873		
Total organic carbon (toc)	mg/L	MWII-7	08/15/2016		2.3000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	10/26/2016		2.4000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	02/14/2017		3.4000			2.8343		
Total organic carbon (toc)	mg/L	MWII-7	05/23/2017		3.6000			3.1186		
Total organic carbon (toc)	mg/L	MWII-7	08/15/2017		2.8000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/14/2017		3.8000			3.2343		
Total organic carbon (toc)	mg/L	MWII-7	02/13/2018		4.2000			4.1186		
Total organic carbon (toc)	mg/L	MWII-7	05/15/2018		2.4000			3.2029		
Total organic carbon (toc)	mg/L	MWII-7	08/14/2018		2.5000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/13/2018		2.6000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	02/19/2019		2.1000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	06/19/2019		2.8000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	08/27/2019		2.4000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/13/2019		2.2000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	02/27/2020		3.0000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	05/17/2020		2.4000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	07/19/2020		2.2000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	10/26/2020		3.3000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	01/12/2021		2.5000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	04/13/2021		2.8000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	07/26/2021		1.8000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	10/18/2021		3.1000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	03/27/2022		1.7000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	05/09/2022		2.2000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	08/23/2022		1.5000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/16/2022		1.9000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	02/06/2023		2.4000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	05/14/2023		3.2000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	09/18/2023		2.9000			2.7500		
Total organic carbon (toc)	mg/L	MWII-7	11/14/2023		3.4000			2.8343		

* - Outlier for that well and constituent.
** - Non-outlier detected sample Result and / or CUSUM value exceeds limit.
*** - ND value replaced with median RL.
**** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

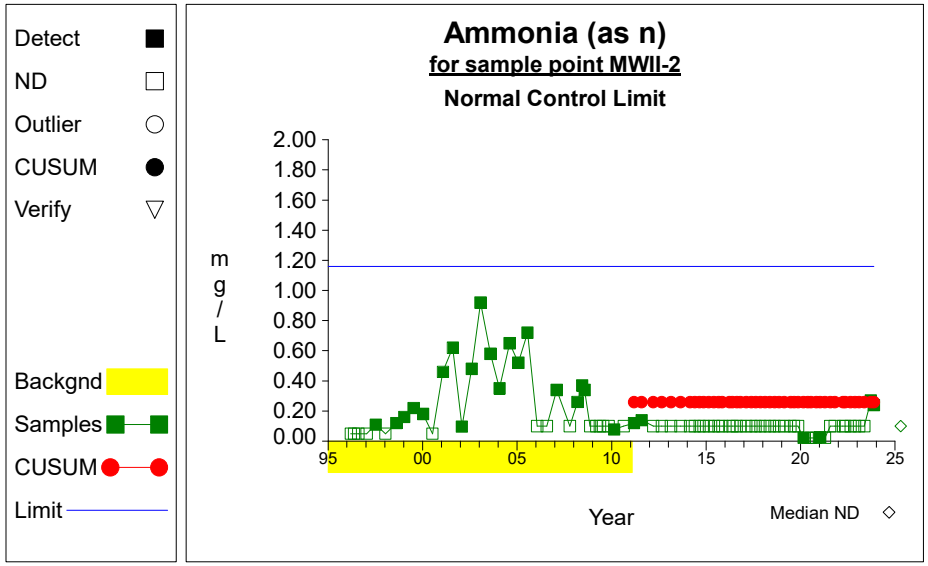
Table 4

Dixon's Test Outliers
1% Significance Level

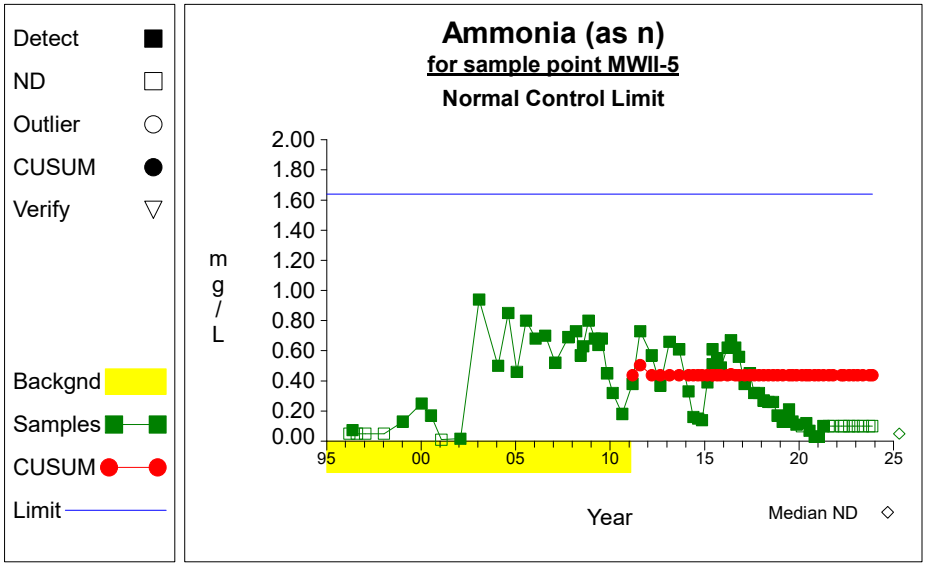
Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Arsenic, total	mg/L	MWII-5	03/12/1996	0.0040		03/12/1996-02/22/2010	24	0.4969
Iron, total	mg/L	MWII-5	01/11/1999	0.3200		03/12/1996-02/22/2010	24	0.4969

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

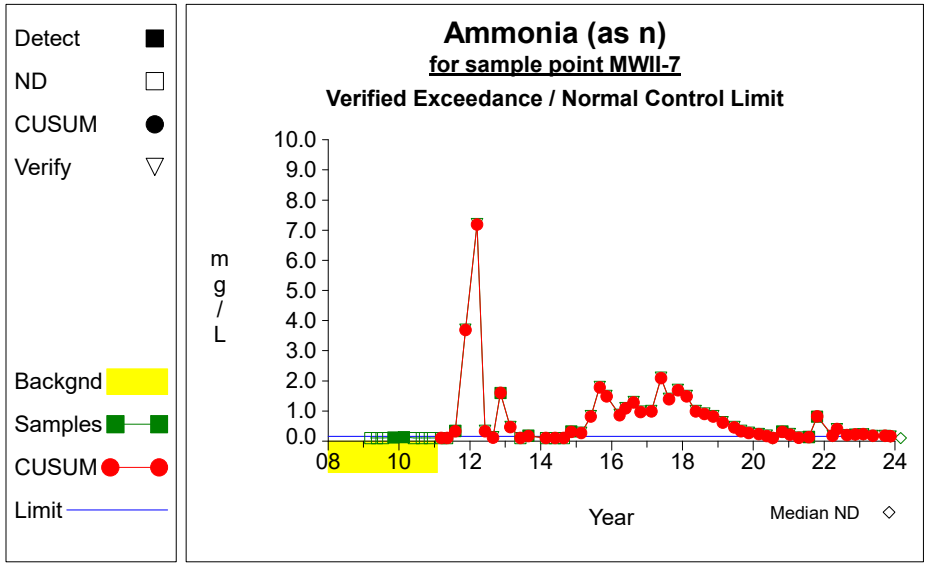
Intra-Well Control Charts / Prediction Limits



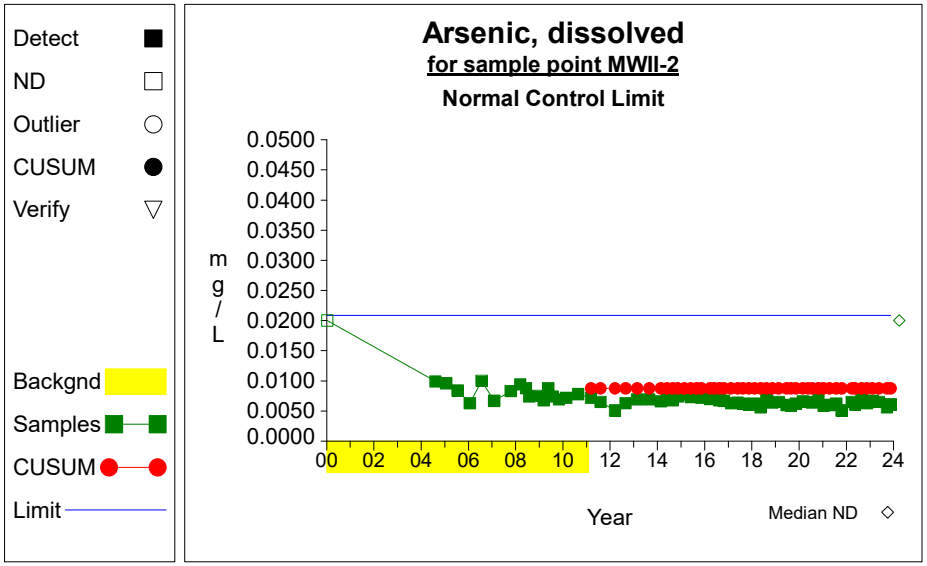
Graph 1



Graph 2

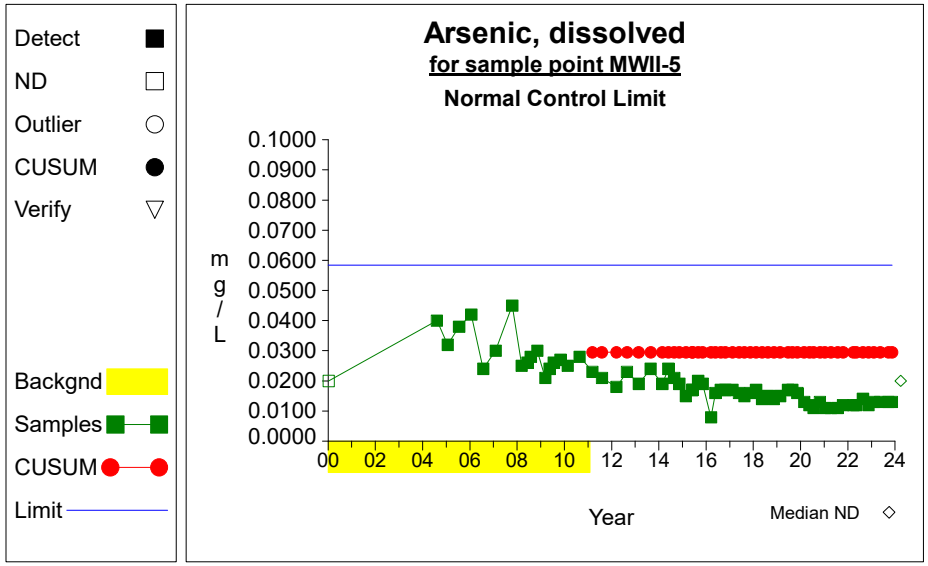


Graph 3

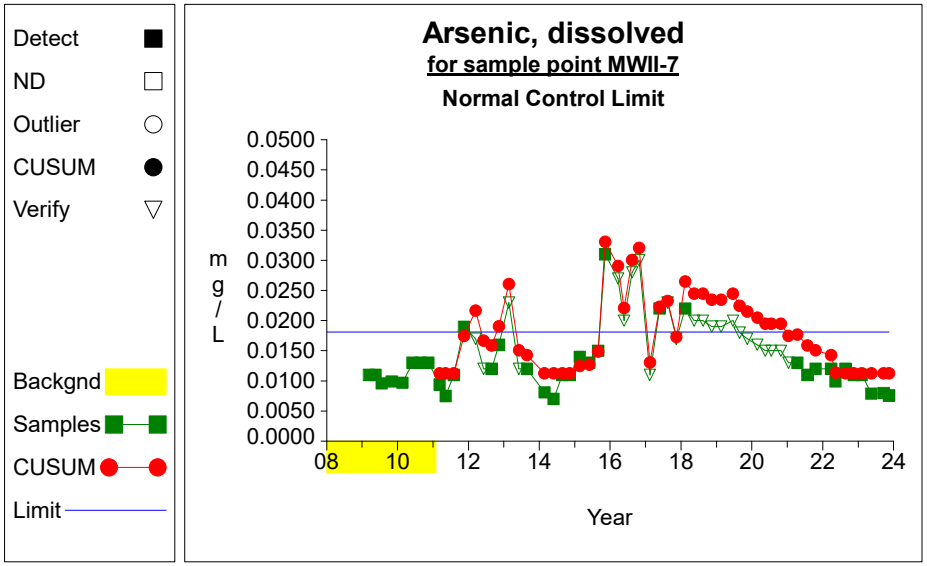


Graph 4

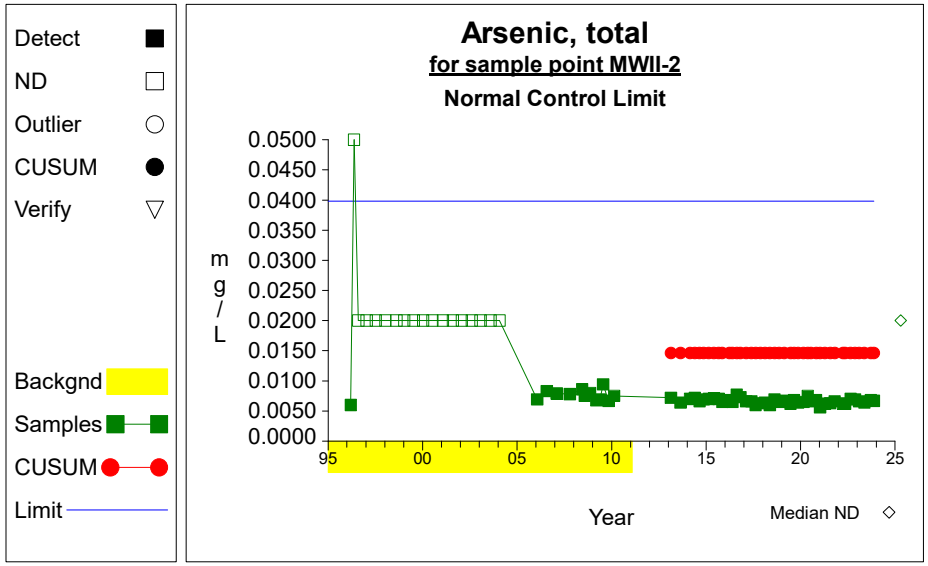
Intra-Well Control Charts / Prediction Limits



Graph 5



Graph 6



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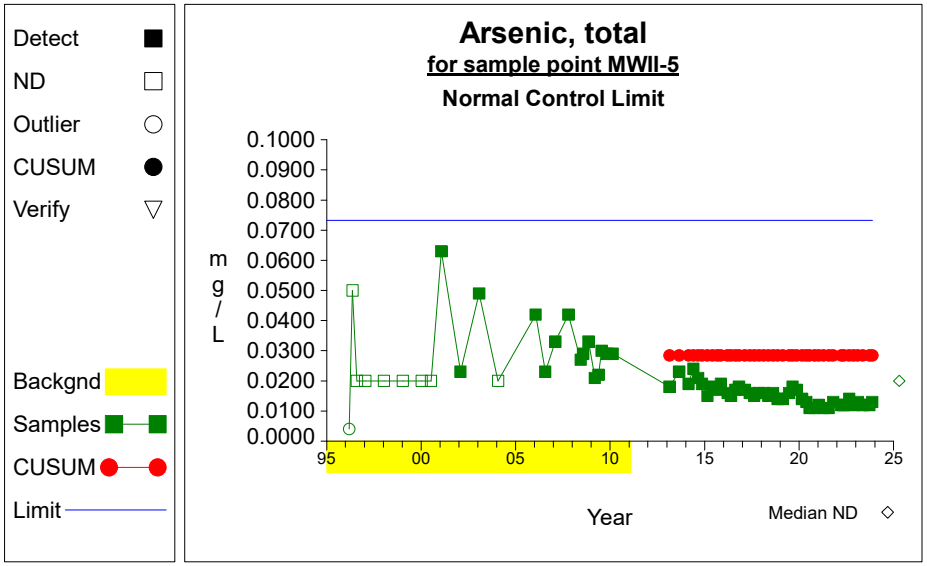
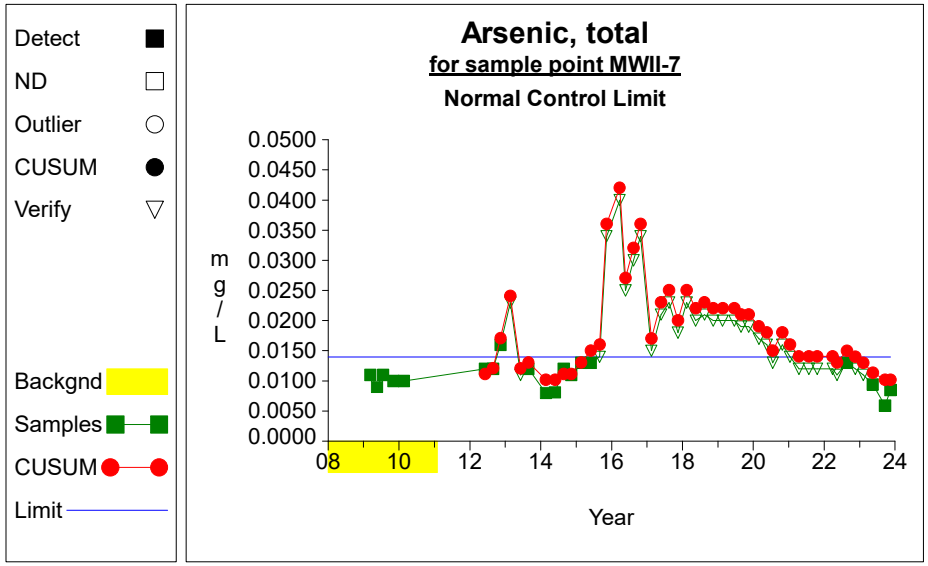
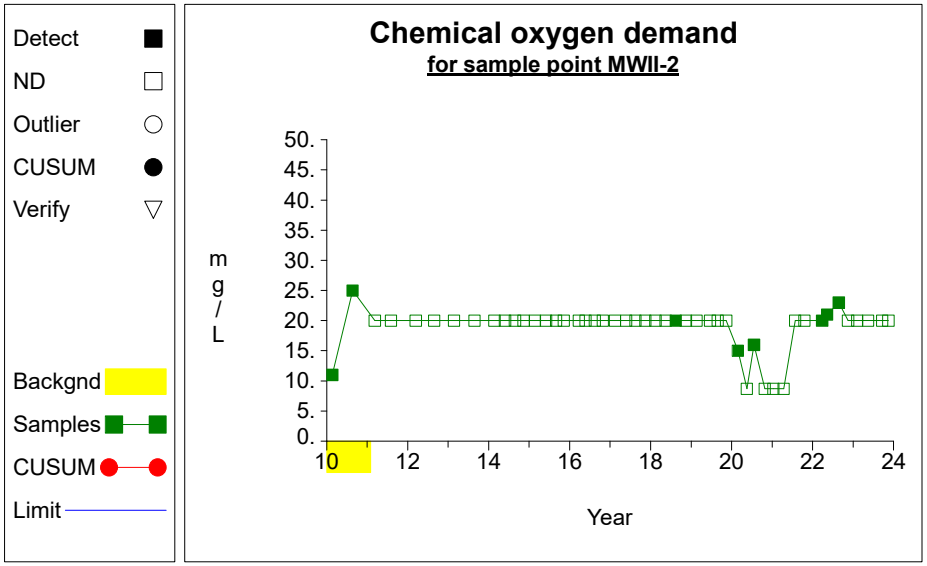


Graph 8

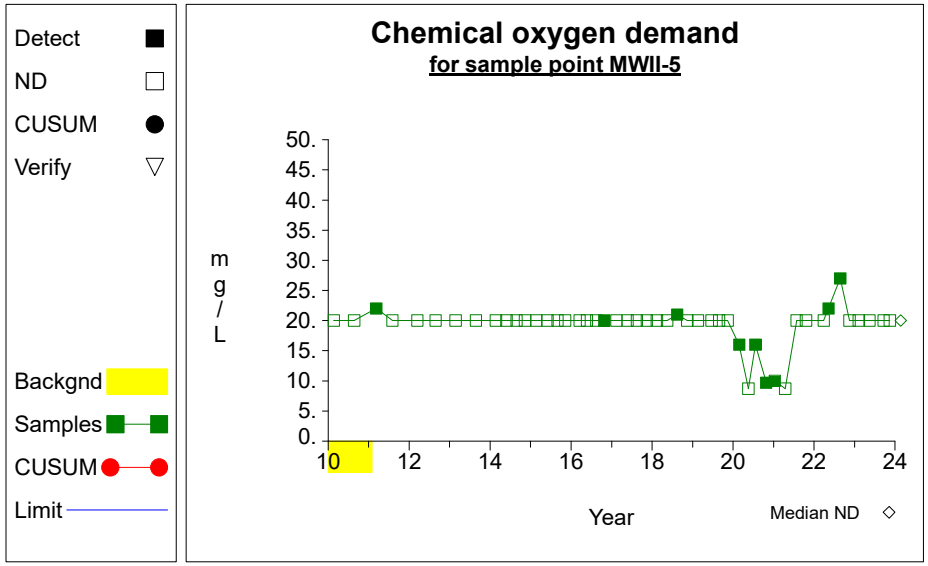
Intra-Well Control Charts / Prediction Limits



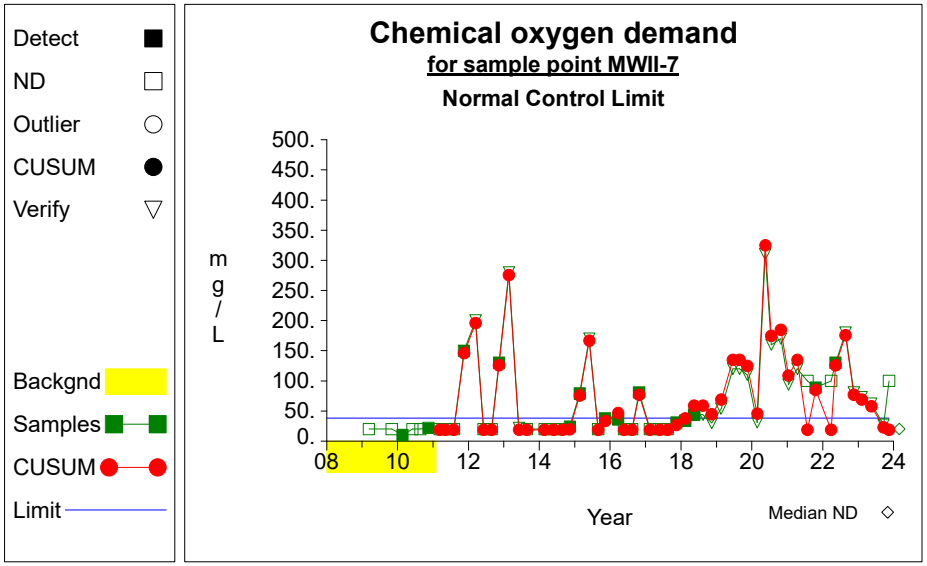
Graph 9



Graph 10

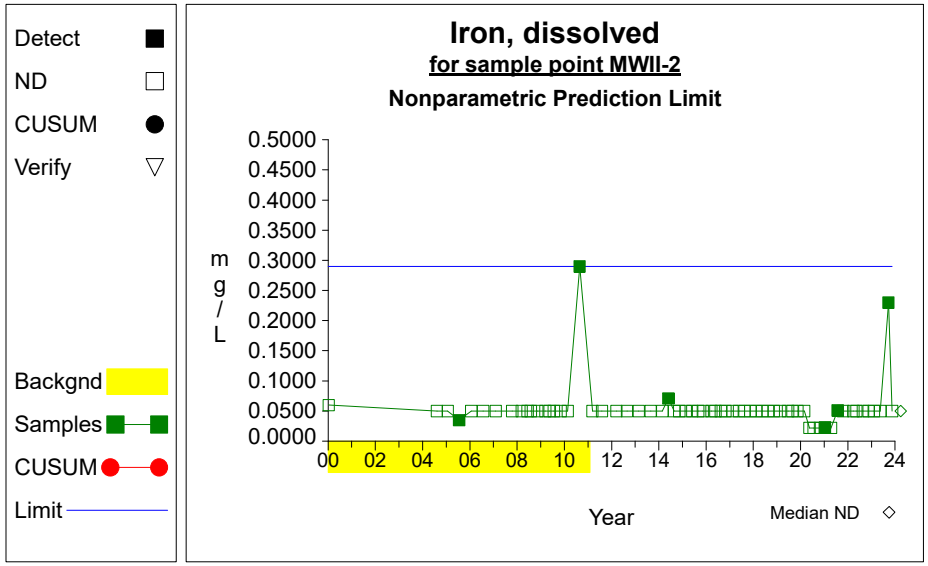


Graph 11

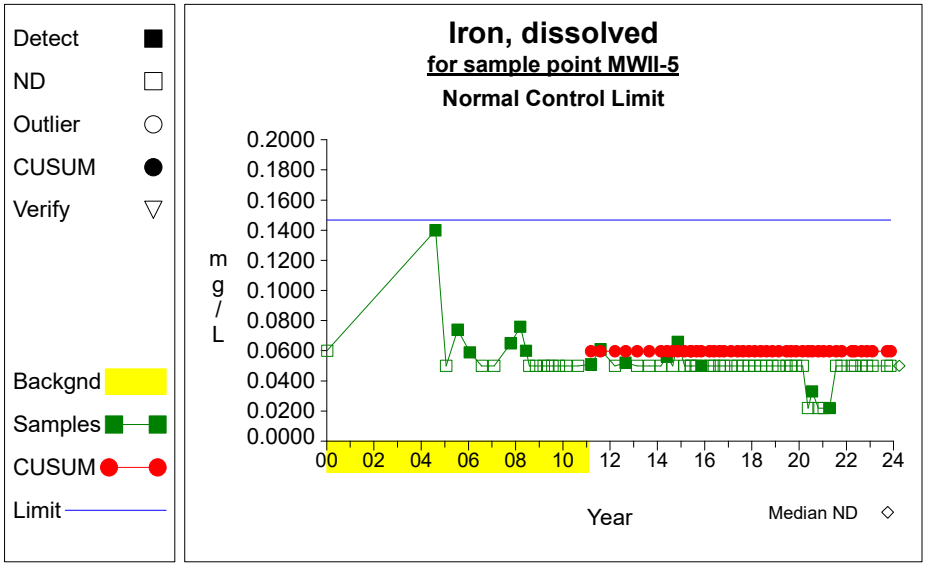


Graph 12

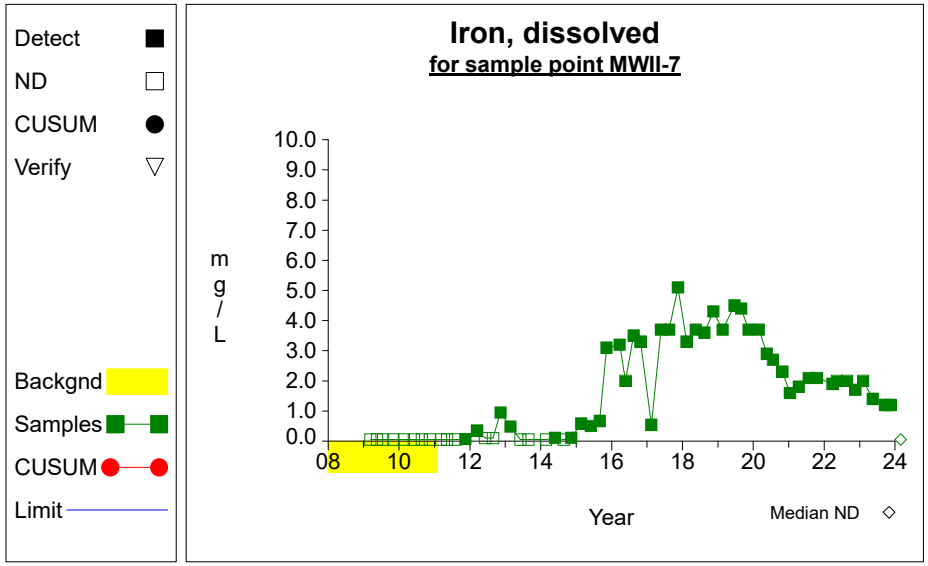
Intra-Well Control Charts / Prediction Limits



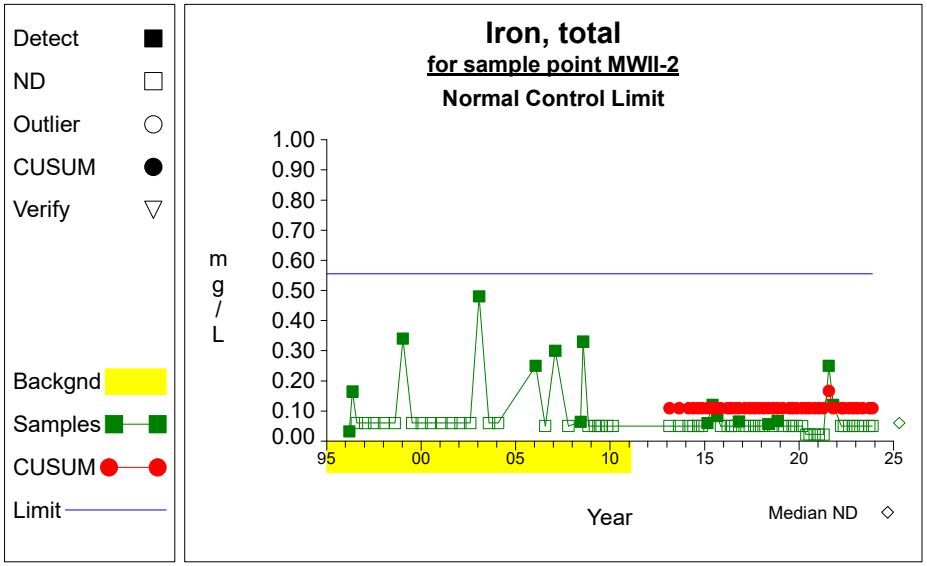
Graph 13



Graph 14

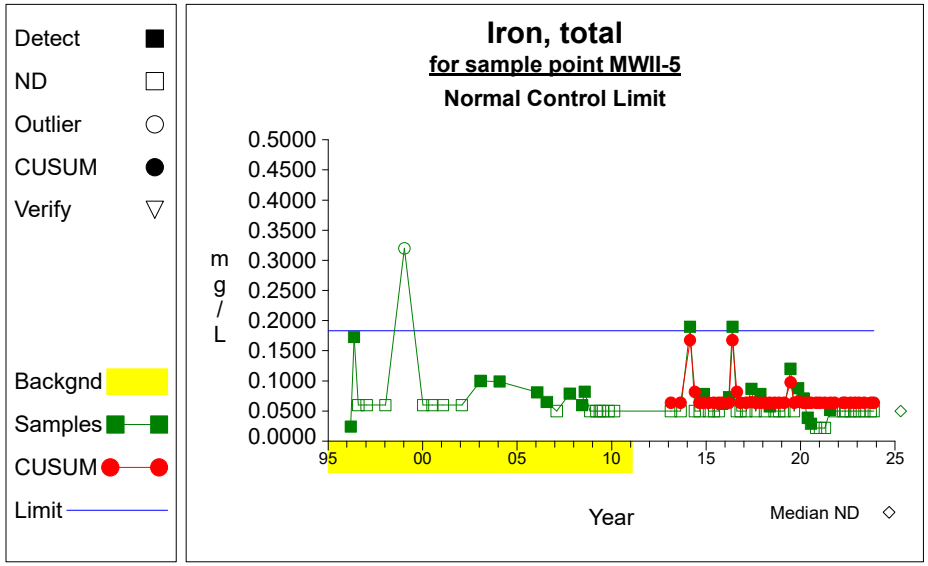


Graph 15

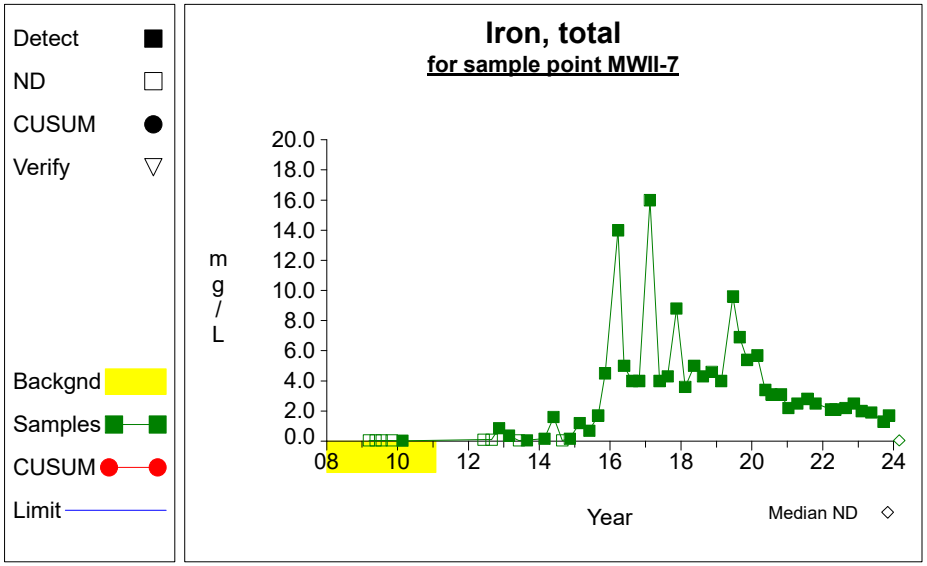


Graph 16

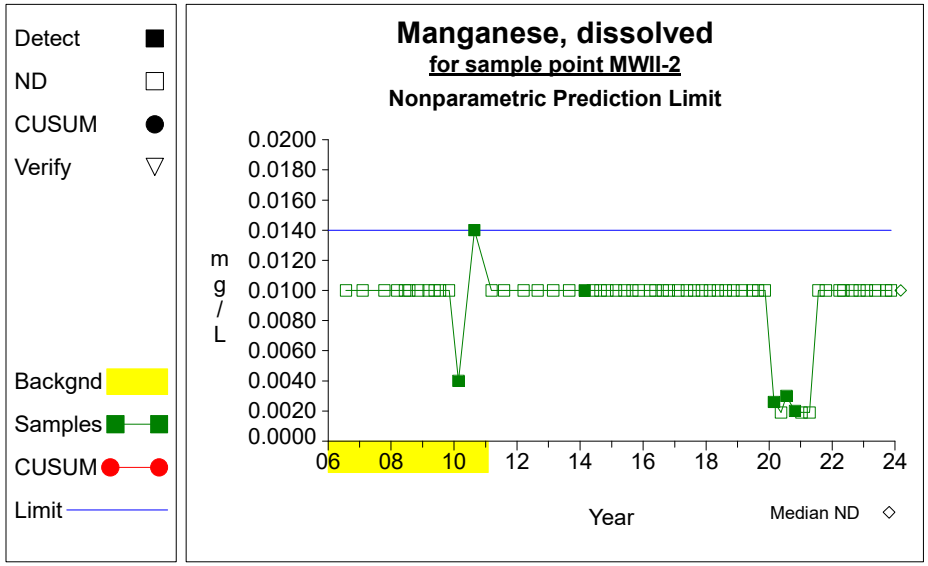
Intra-Well Control Charts / Prediction Limits



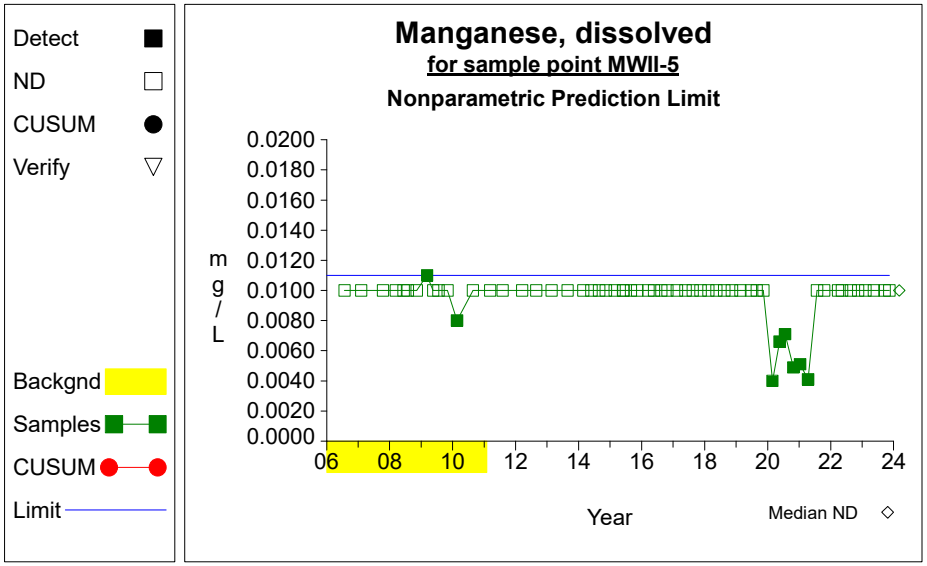
Graph 17



Graph 18

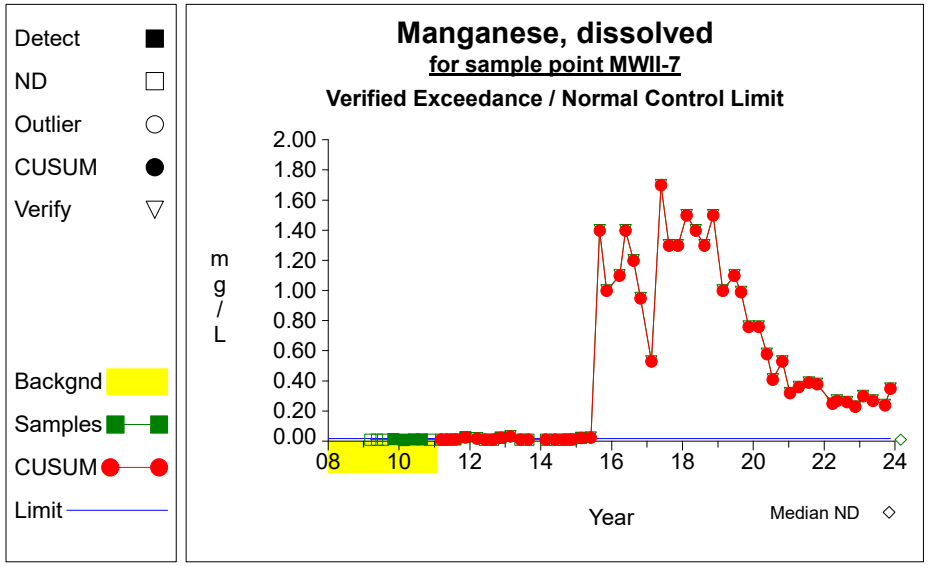


Graph 19

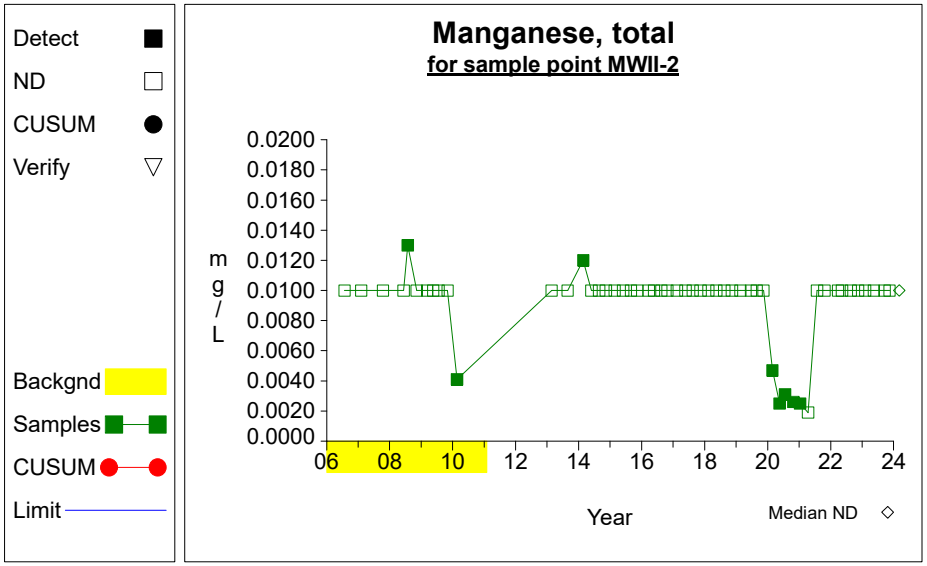


Graph 20

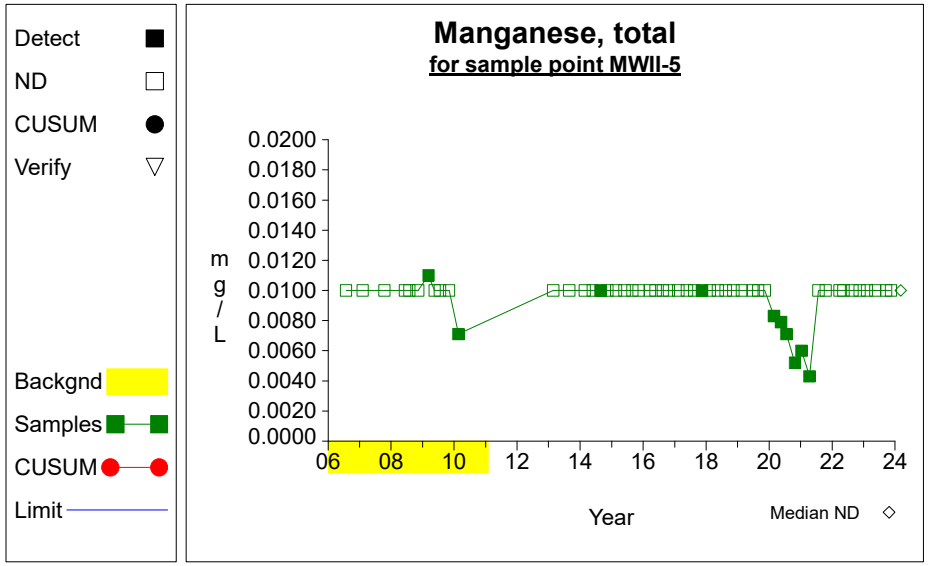
Intra-Well Control Charts / Prediction Limits



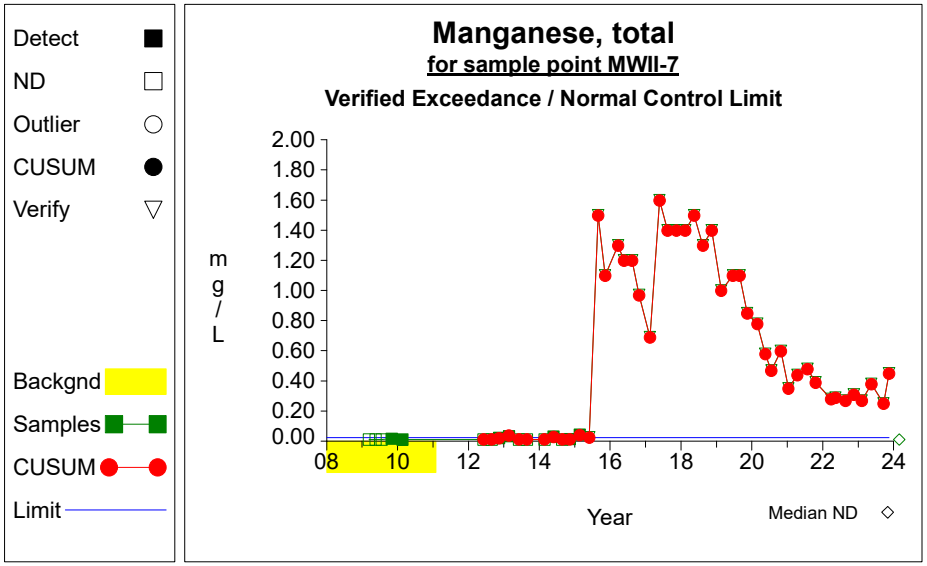
Graph 21



Graph 22

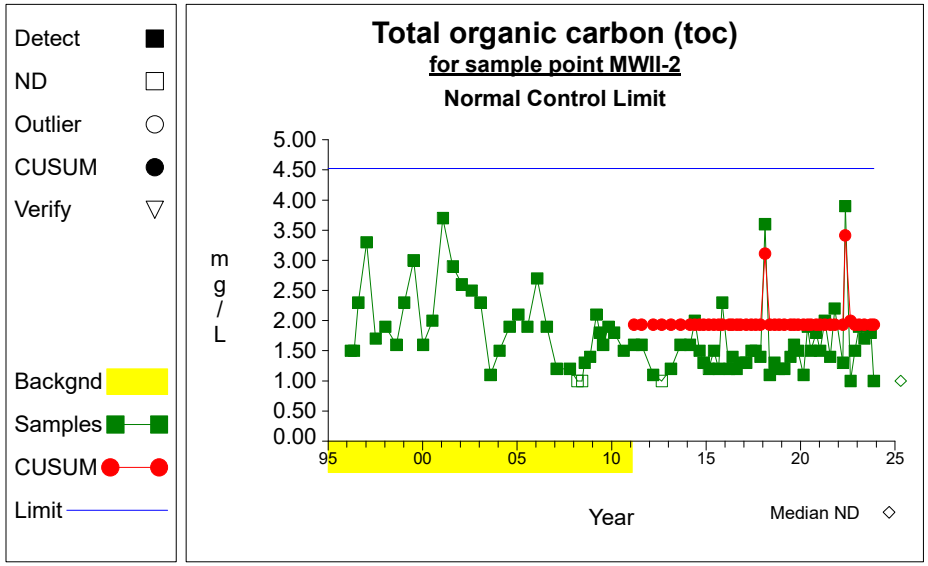


Graph 23

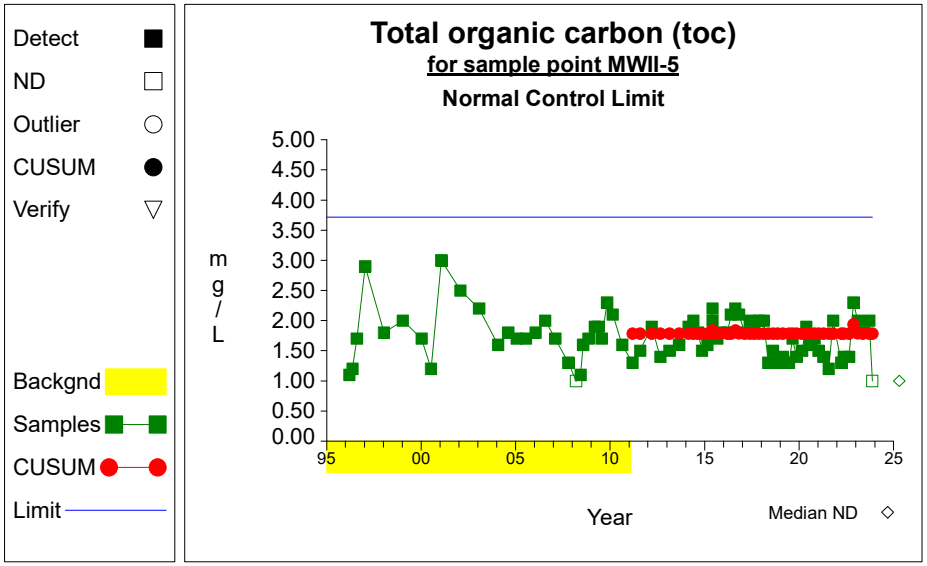


Graph 24

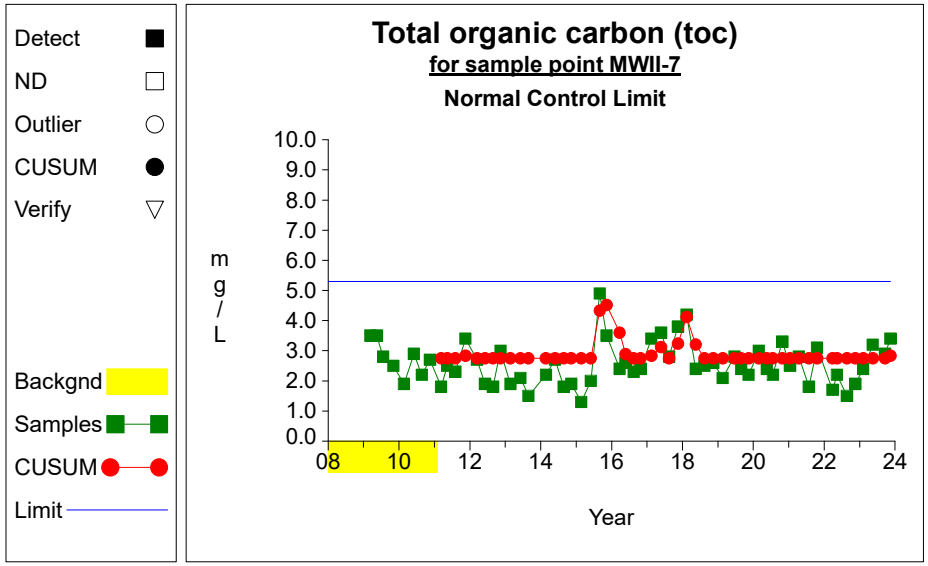
Intra-Well Control Charts / Prediction Limits



Graph 25



Graph 26



Graph 27

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