2025
ANNUAL GROUNDWATER QUALITY REPORT

OF

THE CEDAR RAPIDS WPCF ASH MONOFILL
57-SDP-07-85P
CEDAR RAPIDS, IOWA

by:
HLW Engineering Group
204 West Broad Street
P.O. Box 314
Story City, Iowa 50248
(515) 733-4144

January, 2026

HLW Engineering Group
Engineering *Management*

3422-25A.320

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January 8, 2026

Mr. Brian Rath, P.E.
Environmental Engineer Senior
Iowa Department of Natural Resources
6200 Park Avenue, Suite 200
Des Moines, Iowa 50321

HLW Engineering Group
Engineering Management

RE: CEDAR RAPIDS WATER POLLUTION CONTROL FACILITIES ASH MONOFILL
2025 ANNUAL WATER QUALITY REPORT
SDP PERMIT #57-SDP-07-85P

Dear Mr. Rath:

This letter forwards the results of water quality testing at the Cedar Rapids Water Pollution Control Facility (WPCF) Ash Monofill that was performed in accordance with Special Provision X.4 of the SDP Permit (Appendix A).

1. BACKGROUND INFORMATION

Site Facilities - Two lagoons with bentonite/clay liners were constructed in 1985 to receive ash slurry from the sludge incinerator at the Cedar Rapids WPCF. The industrial monofill (consisting of the two lagoons) operated under IDNR SDP Permit #57-SDP-07-85P. The ash slurry was deposited in the lagoons, allowed to dewater, and the dewatered ash was periodically removed from the lagoons for disposal.

Due to groundwater quality concerns, Special Provision 2a of the October 6, 2008 SDP Permit required that "A waste disposal unit shall be constructed in accordance with the liner requirements pursuant to Subparagraph 115.26(1)"d"(2) by September 23, 2011; and waste disposal shall cease in the North and South Cells." Ash disposal in the original lagoons ceased prior to September 23, 2011. Accumulated ash was removed from the south lagoon in 2011. Accumulated ash was removed from the north lagoon in 2013.

Lined disposal areas have been constructed on site to replace the original lagoons. The design of the lined disposal areas exceeds the requirements of IAC 567-115 "Sanitary Landfills: Industrial Monofills" and IAC 567-113 "Sanitary Landfills for Municipal Solid Waste: Groundwater Protection Systems for the Disposal of Nonhazardous Wastes". The liner in each area consists of a Subtitle D compliant composite liner, a leachate collection layer, and an additional 60 mil HDPE flexible membrane liner over the top of the leachate collection layer/Subtitle D compliant composite liner. The objective of the additional 60 mil HDPE flexible membrane liner is to limit the liquid level that is directly in contact with the Subtitle D composite liner.

Construction of the lined South Disposal Area in the former south lagoon footprint was completed in 2011. Ash deposition in the South Disposal Area was authorized in Special Provision X.2 of the SDP Permit dated February 9, 2012 and began in April, 2012. The South Disposal Area stopped receiving ash on June 3, 2025. Ash removal and closure of the South Disposal Area started on June 16, 2025 with the removal all ash and infrastructure associated with the South Disposal Area completed on July 27, 2025. Documentation on the closure was included in the Construction Quality Assurance Report – North 2 Lagoon Construction, North 1 Lagoon Repairs, and South Disposal Area Removal that was submitted to IDNR on September 25, 2025 (Doc #114440).

This report will be referred to as CQA Report in the North 2 Disposal Area discussion below.

Construction of the lined North 1 Disposal Area (previously referred to as the North Disposal Area) was completed in 2016. The Quality Control and Assurance Report for the North 1 Disposal Area was submitted to IDNR on October 13, 2016 (Doc #87418). Ash deposition in the North 1 Disposal Area was authorized in Permit Amendment #2 dated November 15, 2016 and began in March, 2017.

Construction of the lined North 2 Disposal Area was completed in 2025. The CQA Report for the North 2 Disposal Area was submitted to IDNR on September 25, 2025 (Doc #114440). Ash deposition in the North 2 Disposal Area was authorized in the IDNR email dated October 8, 2025 (Doc #114436) and began in November, 2025.

Variance Applied to the Site - IAC 567-115.27(8) prohibits the disposal of free liquids or waste containing free liquid in a landfill. A variance from IAC 567-115.27(8) to allow the ash slurry to be deposited in the lined disposal area(s) was approved by IDNR on May 12, 2011 (Doc #65122). The variance is included in Appendix A.

IAC 567-115.26(4)"d" and "e" require sampling for dissolved metals and IAC 567-115.26(4)"f" requires annual sampling for total organic halogens and phenols. A variance from IAC 567-115.26(4) to allow sampling for total recoverable metals and from IAC 567-115.26(4)"f" to discontinue sampling for total organic halogens and phenols was approved by IDNR on September 12, 2018 (Doc #93200). The variance is included in Appendix A. Based on an email from IDNR on November 20, 2018 (Appendix A), total metals testing is currently required for arsenic, barium, iron, and magnesium.

The geology of the site has been documented in past Annual Water Quality Reports (AWQR) as well as the 2015 Permit Renewal Documentation (Doc #82547) and is not reiterated in this AWQR.

2. HYDROLOGIC MONITORING SYSTEM PLAN MODIFICATIONS

An updated HMSP was included in the Permit Modification request by HDR dated April 18, 2024 (Doc #109868). The updated HMSP was approved by IDNR in SDP Permit Revision #2 dated May 17, 2024. Special Provision X.4.a of the SDP Permit approved the following changes to the HMSP:

- *Abandonment of MW-1, MW-4, MW-23, and MW-26.* These wells were abandoned on February 2, 2025 with well abandonment documentation submitted to IDNR on March 27, 2025 (Doc #112610).
- *Retaining MW-21 as a background well*
- *Installation of MW-30, MW-31, and MW-32 as downgradient wells.* These wells were installed on July 21, 2025 (MW-31 and MW-32) and July 22, 2025 (MW-30). Well construction documentation should be submitted in the near future.
- *Abandonment of MW-2, MW-3R1, MW-22, and MW-24 after removal of the South Disposal Area and "if constituents are below the groundwater protection standard as outlined in the Permit Modification Request".* MW-24 was mistakenly abandoned on February 2, 2025 and replaced with MW-24R1. Well construction documentation for MW-24R1 was submitted to IDNR on May 23, 2025 (Doc #114487) with additional information submitted on November 7, 2025 (Doc #114698), November 13, 2025 (Doc #114713) and November 20,

2025 (Doc #114807). MW-2 and MW-24R1 tested below the applicable groundwater protection standards during testing on June 30, 2025. MW-2 and MW-24R1 were abandoned on September 19, 2025 with well abandonment documentation submitted to IDNR on September 30, 2025 (Doc #114319) with additional information submitted on October 30, 2025 (Doc #114615). Documentation was submitted to IDNR on September 8, 2025 (Doc #113805) supporting the abandonment of MW-3R1 and MW-22, IDNR approved the abandonment of these points in the email dated September 21, 2025 (Doc #113941). MW-3R1 and MW-22 were abandoned on September 19, 2025 with well abandonment documentation submitted to IDNR on September 30, 2025 (Doc #114319) with additional information submitted on October 30, 2025 (Doc #114615).

MW-29 was also installed as a background well. MW-29 was installed on July 22, 2025. Well construction documentation should be submitted in the near future.

On July 18, 2023, a reevaluation of the HMSP was submitted to IDNR (Doc #107315). This reevaluation recommended that the background wells for the site should include MW-1, MW-4, and MW-21. On September 7, 2023, IDNR was notified of the intent to construct significant modifications to the WPCF starting in 2024. A request to postpone changes to the HMSP was filed by the Cedar Rapids WPCF (Doc #107650). The request asked that the HMSP be modified after construction of the WPCF upgrades was completed. The request was approved September 7, 2023 (Doc #107650).

In concurrence with the July 18, 2023 letter, we are also requesting that the data from MW-1 and MW-4, both of which have been abandoned, be retained and utilized in the background data set.

Based on the discussion above, the HMSP should now consist of the following:

- background, MW-21 and MW-29, MW-1 (historic data) and MW-4 (historic data)
- downgradient, MW-30, MW-31, and MW-32

Table 1 and 2 summarize the HMSP and the implementation schedule for 2026. The monitoring network is illustrated on Figures 1 and 2.

Implied Significance of Water Quality Findings (2025) – Water quality is reported herein based on two (2) completed quarterly sampling events in the recently constructed monitoring wells (MW-29, MW-30, MW-31, and MW-32). The first-year quarterly sampling will be completed in the summer of 2026. The first semi-annual routine sampling event is planned for the Fall of 2026. It is acknowledged that insufficient water quality data currently exists to fully evaluate site conditions. It is requested that no binding conclusions be made regarding water quality at this time.

Conclusions related to water quality should be suspended until such time as the HMSP is approved and the use of interwell statistics and/or intrawell statistics can be employed in the future. A discussion is offered at this time based on the available data.

3. WATER QUALITY

2025 water sampling events were conducted in accordance with Special Provision X.4 of the SDP Permit (Appendix A). Quarterly sampling of the new monitoring wells was also performed in 2025. 2025 sampling events were as follows:

April 15, 2025	MW-2, MW-3R1, MW-21, MW-22, MW-24R1
June 30 – July 1, 2025	MW-2, MW-3R1, MW-21, MW-22, MW-24R1
Aug. 19 – Aug. 20, 2025	MW-29, MW-30, MW-31, MW-32
Oct. 13 – Oct. 14, 2025	MW-21, MW-29, MW-30, MW-31, MW-32
Nov. 20 – Nov. 21, 2025	MW-21, MW-29, MW-30, MW-31, MW-32

Statistical Evaluations are prepared by Otter Creek Environmental Services annually. Results of the Ground Water Statistics for Ash Monofill Facility, Semi-Annual Monitoring Events in 2025 dated December, 2025 is included in Appendix B.

The laboratory Analytical Reports for the sampling events are included in Appendix C. Field Sampling forms for the sampling events are included in Appendix D.

A comprehensive summary of Analytical Data for the episodes between April 26, 2018 and November 21, 2025 is included in Table 9.

4. BACKGROUND DATA VALIDATION

Background data for the facility is based on sampling results from April 26, 2018 to November 21, 2025 for MW-21, from August 19, 2025 to November 21, 2025 for MW-29, and from April 26, 2018 to October 24, 2024 for MW-1 and MW-4.

Upgradient Data, Table 1, Attachment F to the statistical analysis (Appendix B) includes a summary of the background data. The site prediction limits established are based on the background collected since April 26, 2018.

5. STATISTICALLY SIGNIFICANT INCREASES (SSI)

Interwell Statistical Evaluations

The detected concentrations of each compound are compared to the prediction limit for each respective compound calculated based on the background data set including MW-1 (historic data), MW-4 (historic data), MW-21, and MW-29 (Table 5). A compound detected at a concentration that is more than the calculated prediction limit is recorded as a Statistically Significant Increase (SSI).

Table 6 is a summary of potential SSI recorded based on the background established to date and based on two (2) episodes of data from downgradient monitoring wells MW-30, MW-31, and MW-32. This data is considered tentative and is anticipated to change as both the background and the downgradient data pools become more populated. The potential SSI are based on Interwell Statistical methods (background to downgradient well comparisons).

Intrawell Statistical Evaluations

The reported concentrations of each compound from a specific well are utilized to establish the background for each parameter within each well. A number of data points from a specific well is required before sufficient background within the well can be established. For compounds that are frequently detected, a minimum of eight (8) results are required to establish a tentative background. For compounds that are rarely (or never) detected, a minimum of of thirteen (13) results are required to establish a tentative background.

Once background for each compound in a monitoring well is established, subsequent monitoring results from that well can then be compared to the intrawell background value (the Control Limit). As such, SSI can be identified in the instances when the reported result exceeds the established intrawell background.

At this time there is insufficient data available to establish intrawell background (control limits) or to evaluate SSI by intrawell methods.

We recommend that the Intrawell Statistical Evaluations be performed in the future as additional data is available. Intrawell evaluations are deemed to be an appropriate evaluation method for this site since monitoring at MW-30, MW-31, and MW-32 started in the same timeframe that the disposal area construction was completed. It follows that the water quality endemic to the area exists prior to utilization of the North 2 Disposal Area and will be incorporated into the background for the individual wells.

It is anticipated that the intrawell evaluations can commence in 2028 at the earliest and will be comprehensive by 2031.

6. STATISTICALLY SIGNIFICANT LEVELS (SSL)

SSL evaluations are completed by comparing the Confidence Interval band (the range from the 95% Lower Confidence Limit (LCL) to the 95% Upper Confidence Limit (UCL)) to the GWPS. There is insufficient data available to calculate the Confidence Intervals in downgradient wells at this time.

Typically, compounds with detections that exceed the interwell site prediction limits (see Table 6 and Table 7 for interwell data) and/or the intrawell control limits (not available) are utilized to calculate the Confidence Interval in accordance with the 2009 Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities by US EPA. The 95% LCL values are compared to applicable GWPS. Any 95% LCL value that exceeds an applicable GWPS is recorded as an SSL. All wells with a recorded SSL require the plume of impact to be defined in the horizontal and vertical directions and require completion of an Assessment of Corrective Measures (ACM).

The Confidence Intervals (95% LCL to 95% UCL) are calculated during statistical evaluations based on the most recent four (4) data points. Sampling of the downgradient monitoring wells commenced in 2025 so only two or three data points exist for the constituents at each well. As a result, Confidence Intervals cannot be calculated at this time.

It is concluded that determination of potential SSL through the confidence intervals evaluation should be completed in the future when the data pool is sufficient to allow comprehensive statistical analyses. It is anticipated that SSL evaluation will commence in the 2026 Annual Water Quality Report when the downgradient wells will have four (4), or more, data points available to allow the Confidence Intervals to be calculated.

7. WELL MAINTENANCE AND REEVALUATION PLAN

Monitoring well hydraulic conductivity data was assessed in 1992, 2000, 2005, 2014, 2019, and 2024. The previous Monitoring Well Performance Reevaluation was completed in 2019 and was included in the 2019 AWQR (Doc #96348). A Monitoring Well Performance Reevaluation was completed in 2024 included in the 2024 AWQR (Doc #111490). Note that as per IAC 567-115.21 a Monitoring Well Performance Reevaluation should be completed every 5 years. Given the 2025 well installation of MW-29, MW-30, MW-31, and MW-32, a Monitoring Well Performance Reevaluation will be due in 2030.

Water elevation measurements were collected at each well during all sampling events in 2025 (quarterly frequency). The water elevations from each monitoring well are included in Table 4 and Table 4A. Review of the water elevation data for 2025 does not indicate excessive variability. Based on the available water elevation data, the assessment of well conditions during sampling, and the hydrologic conditions at the site, semi-annual water level measurements are interpreted to be sufficient to gauge notable changes in the site hydrology. The November, 2025 Water Table Contour Map (Figure 1) is included herein and illustrates groundwater flow paths across the site.

It is recognized that discrepancies exist on Table 4 when comparing the "Total Depth" of MW-30, MW-31, and MW-32 provided by the well driller to the "Measured Well Depth" recorded by City staff during the October 13, 2025 sampling event. These measurements will be explored further in 2026 by surveying the top of metal casing at each MW, surveying the top of PVC casing at each MW, surveying the ground at each MW, and physically measuring the depth of each MW. The data obtained by the surveys will be discussed in the 2026 AWQR.

8. LCS PERFORMANCE

The leachate control system (LCS) in each disposal area consists of a drainage layer of a geonet composite (slopes) or clean sand (base) and leachate collection pipes that underlie the top flexible membrane liner of the double liner system. The LCS drains back to the WPCF for treatment and disposal.

South Disposal Area

The South Disposal Area stopped receiving ash on June 3, 2025. Ash removal and closure of the South Disposal Area started on June 16, 2025 with removal of all ash and infrastructure associated with the South Disposal Area completed on July 27, 2025. Groundwater levels and leachate levels in the South Disposal Area were recorded January – June of 2025 and are included on Table 12. All measurements were less than 12". Since the South Disposal Area has been removed no further discussion on groundwater or leachate levels is included in this report.

Due to historical data documenting over a 5' separation between the base of waste elevation in the North 1 Disposal Area and the North 2 Disposal Area and the groundwater elevations recorded in the site monitoring wells, a groundwater diversion system was not required for the North Disposal Areas.

North 1 Disposal Area

One leachate head monitoring point was installed in the drainage media in the North 1 Disposal Area to monitor the liquid level on the Subtitle D compliant liner.

All measurements during 2025 in the North 1 Disposal Area were less than 12". The measurements are included on Table 12.

North 2 Disposal Area

One leachate head monitoring point was installed in the drainage media in the North 2 Disposal Area to monitor the liquid level on the Subtitle D composite liner. Measurements in the North 2 Disposal Area commenced in November, 2025 in conjunction with the start of ash disposal in the North 2 Disposal Area. Measurements in November and December 2025 were less than 12". The measurements are included on Table 12.

The leachate collection pipes in the North 1 Disposal Area were cleaned during July, 2024. The lines should be cleaned again in 2027, at the latest, to maintain the 3 year cleaning interval required by IAC 567-115.26(11)a.8. The North 2 Disposal Area initially started to receive slurry in November, 2025 so the lines in the North 2 Disposal Area should initially be cleaned in 2028, at the latest.

Based on available data, it appears that the existing Leachate Collection System is effective at maintaining less than 12" of leachate on the Subtitle D composite liners in both the North 1 and North 2 Disposal Areas.

9. RECOMMENDATIONS

a. Continue to perform monthly leachate head measurements and report levels in the Annual Water Quality Report.

b. After completion of the quarterly sampling of the new monitoring wells, continue to perform semi-annual sampling episodes from site monitoring wells in accordance with Special Provision X.4 of the SDP Permit.

c. Continue to perform semi-annual water level measurements in site monitoring wells in accordance with Special Provision X.4.h of the SDP Permit.

d. Obtain IDNR approval of the proposed HMSP moving forward including the proposed background data pool and the proposed downgradient monitoring points.

e. Complete the calculation of the Confidence Interval and perform SSL evaluations in the 2026 AWQR.

f. Evaluate the site water quality data by intrawell statistical methods (in addition to the interwell statistical methods) beginning in 2028 when the minimum number of data points will be available for some of the intrawell comparisons. Continue the intrawell evaluations beyond 2031 when the background data for each well will be fully established.

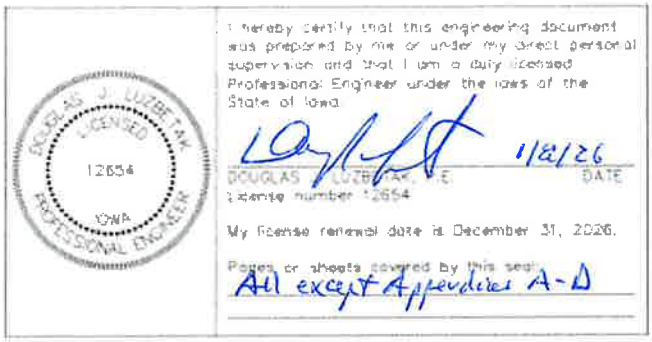
g. Conduct the surveys discussed in Section 7 above to try to determine the source of the discrepancies contained on Table 4 with discussion in the 2026 AWQR.

h. Continue to perform semi-annual Engineer's inspections as per the General Conditions of the SDP Permit.

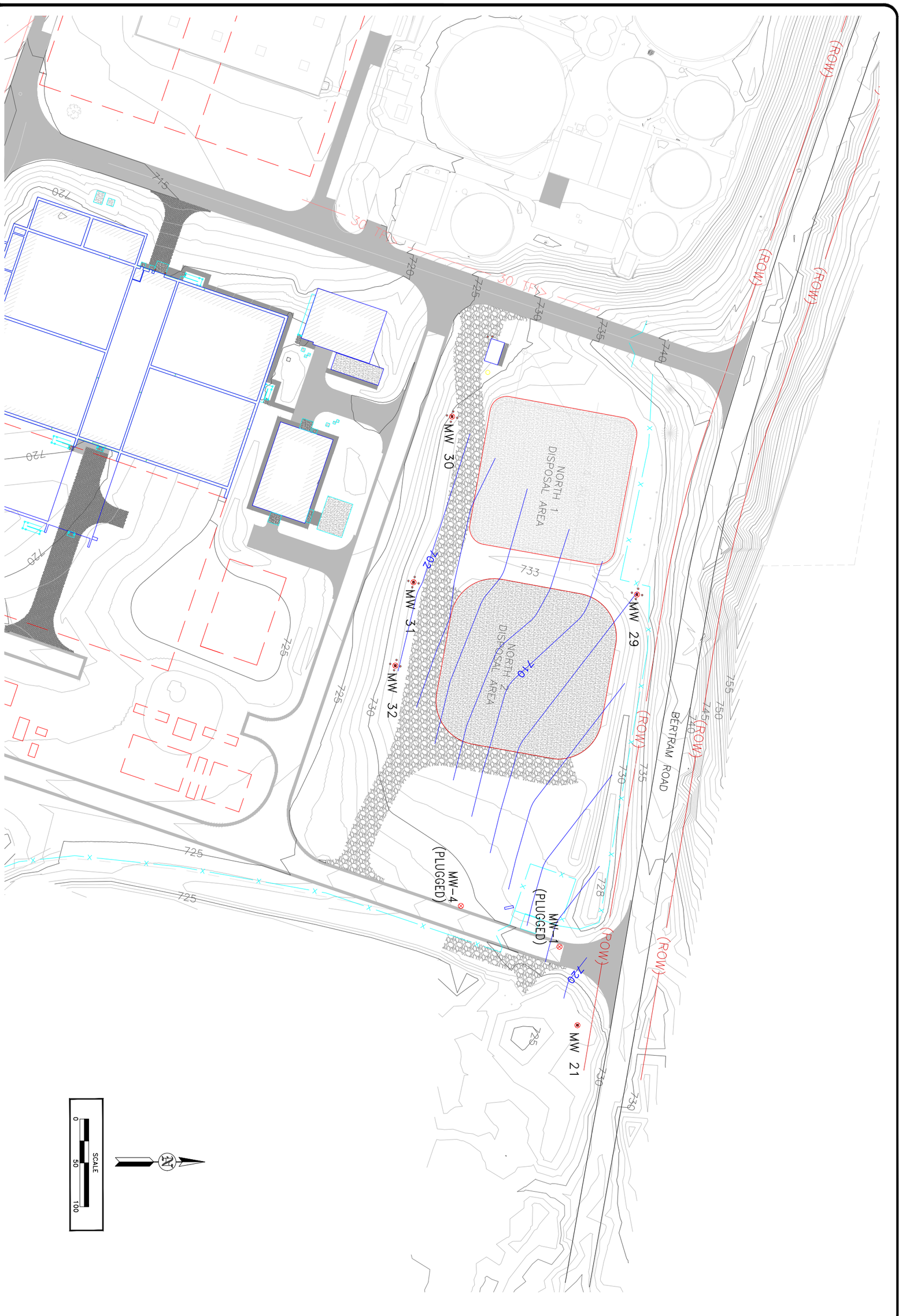
i. Continue to clean leachate collection lines on a three (3) year interval, at a minimum, in accordance with IAC 567-115.26(11)a.8. The next cleaning should be conducted in 2027 at the latest.

j. Perform the next Monitoring Well Maintenance Performance Reevaluation in 2030.

Please feel free to contact our office at (515) 733-4144 with any questions you may have.



cc: *Jason Decker, Utilities Environmental Manager, Cedar Rapids WPCF (electronic copy)*
Margaret Nelson, Environmental Compliance Program Manager, Cedar Rapids WPCF (electronic copy)



HLW Engineering Group
204 West Broad Street, P.O. Box 314
Story City, Iowa 50248
Phone: (515) 733-4144
FAX: (515) 733-4146

GROUNDWATER CONTOUR MAP

2025 ANNUAL WATER QUALITY REPORT

NORTH DISPOSAL AREAS

CEDAR RAPIDS WATER POLLUTION CONTROL
CEDAR RAPIDS, IOWA

FIGURE: 1

REVISION	NO.	DATE
DRAWN JGH	PROJECT NO. 3422-24A	DATE 12/19/25

Table 1 – Monitoring Program Summary

Table 1
Monitoring Program Summary
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

Monitoring Well	Formation	Current Monitoring Program	Change for next sampling event	Historic - Constituents that exceed a prediction limit	Current Year - Constituents that exceed a prediction limit	Historic - Constituents w/95% LCL over GWPS	2025 - Constituents w/95% LCL over GWPS	Total # of Samples in each monitoring program		
								Detection	Assessment	Corrective Action
MW-21	Glacial Till	Background	NC	NA	NA	NA	NA	17	0	0
MW-29	Glacial Till	Background	NC	NA	NA	NA	NA	2	0	0
MW-30	Glacial Till	Detection	NC	*NA*	ammonia, arsenic, iron, pH	pending sufficent data	pending sufficent data	2	0	0
MW-31	Glacial Till	Detection	NC	*NA*	COD, iron	pending sufficent data	pending sufficent data	2	0	0
MW-32	Glacial Till	Detection	NC	*NA*	barium, iron	pending sufficent data	pending sufficent data	2	0	0

Table 2 – Monitoring Program Implementation Schedule

Table 2
Monitoring Program Implementation Schedule
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

Monitoring Well	Recent Sampling Dates and Constituents	Current Year Sampling Dates and Constituents			Supplemental Sampling	
		Spring, 2026 3rd Quarterly	Summer, 2026 4th Quarterly	Fall, 2026 1st Semi-Annual	Previously Collected	Next Event
MW-21 (b)	4/26/18, 10/15/18, 4/24/19, 10/22/19, 4/21/20, 10/13/20, 4/14/21, 10/20/21, 4/14/22, 10/13/22, 4/19/23, 10/24/23, 4/11/24, 10/23/24, 4/15/25, 7/1/25, 10/14/25	List 1	**N/A**	List 1	N/A	N/A
MW-29 (b)	8/20/25, 10/14/25	List 1	List 1	List 1	N/A	N/A
MW-30	8/19/25, 10/13/25,	List 1	List 1	List 1	N/A	N/A
MW-31	8/19/25, 10/13/25,	List 1	List 1	List 1	N/A	N/A
MW-32	8/19/25, 10/13/25,	List 1	List 1	List 1	N/A	N/A

(b) background well

List 1 - IAC 567-115.26(4)"e" minus dissolved Fe plus total As Ba, Fe, Mg

Table 3 – Monitoring Well Maintenance and Performance Reevaluation Schedule

Table 3
Monitoring Well Maintenance and Performance Revaluation Schedule
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

Compliance with:	Monitoring Calendar Years														
	1992	---	---	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
567 IAC 115.21(2)"a" - high and low water levels (biennial)	X			X	X	X	X	X	X	X	X	X	X	X	X
567 IAC 115.21(2)"b" - changes in the hydrologic setting and flow paths (biennial)	X			X	X	X	X	X	X	X	X	X	X	X	X
567 IAC 115.21(2)"c" - well depths (annual)	X			X	X	X	X	X	X	X	X	X	X	X	X
567 IAC 115.21(2)"d" - in-situ permeability testing (1 per 5 years)	X			X					X						

Compliance with:	Monitoring Calendar Years														
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
567 IAC 115.21(2)"a" - high and low water levels (biennial)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	P
567 IAC 115.21(2)"b" - changes in the hydrologic setting and flow paths (biennial)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	P
567 IAC 115.21(2)"c" - well depths (annual)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	P
567 IAC 115.21(2)"d" - in-situ permeability testing (1 per 5 years)			X					X					X		

X = completed
P = Planned
N/A = Not Applicable

Table 4 – Monitoring Well Maintenance and Performance Summary

Table 4
Monitoring Well Maintenance and Performance Summary
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Hydraulic Cond. (cm/sec)/date	Most Recent Recharge Rate	
					4/14/2025	10/13/2025			**2024**	Change
MW-21(b)	729.93	717.9	27.03	Groundwater Level (ft)	6.23	8.45	-0.46	1.10E-05 1992	6.73E-06	Not Appreciable
				Groundwater Elevation (Ft MSL)	723.7	721.48				
				Measured Well Depth (ft)	27.49	27.42				
				Submerged (+) or Exposed screen (-)	5.8	3.58				
MW-29(b)	736.4	712	34.4	Groundwater Level (ft)	NA	24.32	0.55	NA	NA	NA
				Groundwater Elevation (Ft MSL)	NA	712.08				
				Measured Well Depth (ft)	NA	33.85				
				Submerged (+) or Exposed screen (-)	NA	0.08				
MW-30	733.3	711	32.3	Groundwater Level (ft)	NA	32.38	-3.8	NA	NA	NA
				Groundwater Elevation (Ft MSL)	NA	700.92				
				Measured Well Depth (ft)	NA	36.1				
				Submerged (+) or Exposed screen (-)	NA	-10.08				
MW-31	734.5	712	32.5	Groundwater Level (ft)	NA	32.92	-1.82	NA	NA	NA
				Groundwater Elevation (Ft MSL)	NA	701.58				
				Measured Well Depth (ft)	NA	34.32				
				Submerged (+) or Exposed screen (-)	NA	-10.42				
MW-32	734.3	712	32.3	Groundwater Level (ft)	NA	32.46	-3.02	NA	NA	NA
				Groundwater Elevation (Ft MSL)	NA	701.84				
				Measured Well Depth (ft)	NA	35.32				
				Submerged (+) or Exposed screen (-)	NA	-10.16				

Table 4A – Routine Water Levels

Table 4A
Supplemental Water Elevation Data
Annual Water Quality Report
Cedar Rapids WPCF Ash Lagoons
Permit No. 57-SDP-07-85P

	MW-1	MW-2	MW-3R1	MW-4	MW-21	MW-22	MW-23	MW-24	MW-26	MW-29	MW-30	MW-31	MW-32
TOC Elev. (ft)	730.72	720.04	719.42	726.78	729.93	718.4	725.41	720.27	725.81	736.4	733.3	734.5	734.3
Screened Int.	693.9-698.9	694.4-704.4	692.7-702.7	698.9-703.9	702.9-717.9	691.8-706.8	691.9-701.9	690.7-705.7	700.4-710.4	702-712	701-711	702-712	702-712
	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)	Elev (ft)
11/6/95	710.55	700.77		704.83	724.68	701.45	704.40	702.40	704.83				
3/12/96	709.47	700.35	---	702.33	724.15	700.40	702.26	701.25	703.08	---	---	---	---
6/20/96	712.02	701.77	---	704.80	724.22	702.03	704.52	702.93	705.66	---	---	---	---
10/9/96	709.48	700.10	---	702.53	723.84	700.08	702.27	---	703.71	---	---	---	---
4/9/97	710.27	702.15	---	705.13	724.49	702.20	703.43	702.55	703.08	---	---	---	---
10/9/97	708.08	698.98	---	702.67	723.68	699.23	702.53	700.67	703.46	---	---	---	---
4/15/98	710.76	700.96	---	705.18	725.11	701.04	705.16	702.82	705.27	---	---	---	---
10/16/98	711.62	702.94	---	704.45	725.60	702.86	704.52	703.58	705.71	---	---	---	---
4/7/99	711.95	701.69	---	708.33	725.71	702.86	708.38	703.88	704.63	---	---	---	---
10/1/99	710.92	701.81	---	707.83	724.71	703.01	707.64	703.86	703.40	---	---	---	---
4/26/00	709.86	701.39	---	706.79	724.94	701.96	706.45	703.01	703.51	---	---	---	---
10/13/00	711.07	703.08	---	708.80	724.79	703.80	708.49	704.75	705.26	---	---	---	---
4/20/01	715.83	706.93	---	712.51	725.05	707.15	712.23	709.06	709.85	---	---	---	---
10/4/01	711.84	703.94	---	708.94	723.68	704.20	708.57	705.40	707.10	---	---	---	---
4/18/02	711.21	702.90	---	706.87	724.22	703.11	707.53	705.04	706.69	---	---	---	---
10/9/02	712.16	704.58	---	708.25	724.42	704.41	707.93	705.59	707.51	---	---	---	---
4/4/03	709.20	701.33	---	705.66	724.43	701.40	705.37	702.97	705.13	---	---	---	---
10/10/03	709.35	702.86	---	708.24	725.62	703.10	707.75	704.32	705.71	---	---	---	---
4/15/04	712.94	---	---	711.41	723.74	---	711.83	---	707.29	---	---	---	---
10/18/04	710.47	699.69	---	705.86	723.18	700.26	705.59	702.76	705.97	---	---	---	---
4/18/05	711.10	702.46	---	707.87	724.39	702.15	708.06	705.94	707.48	---	---	---	---
10/20/05	708.02	699.79	---	703.67	722.09	699.87	703.56	701.82	704.33	---	---	---	---
4/13/06	709.42	701.34	---	704.51	724.11	701.05	704.96	703.27	704.09	---	---	---	---
10/5/06	707.67	700.20	---	703.37	722.19	700.23	703.34	701.89	703.76	---	---	---	---
4/19/07	710.31	705.23	---	705.62	724.45	704.85	706.73	705.94	704.22	---	---	---	---
10/4/07	709.25	701.71	---	704.07	723.64	701.42	704.12	703.11	704.57	---	---	---	---
4/23/08	716.87	706.35	---	714.64	725.66	705.90	713.75	709.35	712.61	---	---	---	---
10/9/08	711.70	698.57	---	704.14	723.23	698.18	703.49	701.00	705.87	---	---	---	---
4/29/09	715.60	708.12	---	714.28	725.61	707.75	713.76	709.53	711.40	---	---	---	---
10/9/09	715.02	705.23	---	711.12	725.53	705.54	711.18	707.06	709.26	---	---	---	---
4/9/10	716.73	706.54	---	711.52	725.56	706.32	710.94	707.85	709.25	---	---	---	---
10/12/10	714.02	701.38	---	708.20	724.27	701.34	707.50	703.73	707.35	---	---	---	---
4/20/11	714.25	705.17	---	708.86	725.87	704.90	708.46	705.57	708.23	---	---	---	---
10/13/11	711.51	699.23	---	704.68	723.47	699.25	704.12	701.44	705.42	---	---	---	---
4/25/12	710.84	699.13	697.93	703.02	723.69	698.63	702.76	701.07	704.42	---	---	---	---
10/3/12	707.97	697.57	696.48	701.56	719.05	697.02	701.23	699.33	702.89	---	---	---	---
1/10/13	707.64	696.99	695.74	700.74	723.52	696.16	700.48	698.53	702.05	---	---	---	---
4/11/13	708.88	697.97	697.27	702.12	725.80	696.82	703.45	701.93	702.39	---	---	---	---
7/18/13	711.53	699.09	697.87	704.47	722.67	698.53	704.03	701.51	705.66	---	---	---	---
10/10/13	707.52	697.95	696.83	702.42	722.52	697.22	702.13	699.91	703.93	---	---	---	---
1/10/14	---	697.52	696.70	701.76	713.41	697.02	701.49	699.25	703.01	---	---	---	---
4/9/14	708.30	697.99	696.95	701.79	723.91	697.10	701.86	699.93	702.72	---	---	---	---
7/17/14	712.67	699.81	698.74	704.57	724.16	699.32	704.23	701.99	706.26	---	---	---	---
10/16/14	710.35	698.45	697.82	702.99	725.68	698.25	702.51	700.31	704.78	---	---	---	---
1/16/15	709.04	697.90	697.32	701.95	723.93	697.60	701.53	699.49	703.66	---	---	---	---
4/15/15	708.72	697.69	697.06	701.69	723.98	697.35	701.33	699.30	703.30	---	---	---	---
7/15/15	710.82	698.33	697.69	702.72	722.93	698.09	702.25	700.09	704.59	---	---	---	---
10/12/15	709.52	698.15	697.46	702.13	723.14	697.77	701.77	699.75	703.81	---	---	---	---
1/14/16	---	698.56	697.98	702.99	724.41	698.40	702.53	700.38	705.04	---	---	---	---
4/7/16	711.57	698.57	697.99	702.96	725.54	698.36	702.51	700.31	704.98	---	---	---	---
7/6/16	711.72	699.01	698.44	703.32	725.08	698.78	702.82	700.70	705.27	---	---	---	---
10/11/16	713.28	700.11	699.26	704.42	723.73	699.61	703.89	701.88	706.52	---	---	---	---
1/17/17	711.70	699.24	698.69	703.73	723.64	699.03	703.24	700.98	705.48	---	---	---	---
4/20/17	712.94	699.75	699.06	704.03	725.44	699.26	703.55	701.46	706.93	---	---	---	---
7/20/17	712.08	699.41	698.92	703.93	723.53	699.25	703.42	701.16	705.71	---	---	---	---
10/18/17	710.18	698.67	---	702.47	722.93	698.46	702.09	699.18	704.06	---	---	---	---
1/18/18	709.60	698.23	---	701.62	723.59	---	701.31	698.57	703.03	---	---	---	---
4/26/18	710.21	698.44	---	702.06	723.69	698.17	701.72	698.88	703.51	---	---	---	---
7/11/18	710.22	699.02	697.81	702.53	722.61	698.90	702.16	699.40	703.83	---	---	---	---
10/16/18	711.27	700.15	698.55	703.68	725.09	699.60	703.34	700.64	705.42	---	---	---	---
1/25/19	---	699.75	698.52	703.90	723.94	698.57	703.47	700.44	705.56	---	---	---	---
4/23/19	713.12	700.63	699.03	705.43	724.93	700.22	704.83	701.45	707.26	---	---	---	---
7/15/19	713.67	701.14	699.58	705.82	722.56	700.86	705.26	701.87	707.12	---	---	---	---
10/22/19	712.71	700.49	698.96	704.74	724.63	700.09	704.19	701.06	706.42	---	---	---	---
1/8/20	711.76	700.07	698.64	704.11	724.14	699.69	703.58	700.54	705.79	---	---	---	---
4/21/20	712.37	700.73	699.13	704.35	723.96	700.10	703.85	700.94	706.01	---	---	---	---
7/23/20	712.17	699.81	699.37	704.07	722.73	699.47	703.56	700.39	705.66	---	---	---	---
10/12/20	710.31	699.99	698.09	703.10	722.81	699.11	702.71	699.82	704.56	---	---	---	---
4/14/21	711.61	700.12	698.49	704.07	724.74	700.08	703.56	700.53	706.09	---	---	---	---
10/19/21	708.87	698.70	697.60	701.87	722.09	698.49	701.57	698.84	703.18	---	---	---	---
4/14/22	709.63	699.59	698.11	702.92	724.15	698.97	702.61	699.75	703.97	---	---	---	---
10/13/22	708.32	699.39	698.29	702.16	721.82	699.06	701.91	699.33	703.25	---	---	---	---
4/19/23	710.52	700.55	699.19	704.20	723.55	699.97	703.81	700.82	705.42	---	---	---	---
10/18/23	706.79	699.24	698.32	701.53	720.11	698.99	701.36	699.00	702.62	---	---	---	---
4/10/24	707.79	699.54	698.56	702.07	724.35	699.12	701.87	699.33	702.86	---	---	---	---
10/23/24	707.39	699.58	698.58	701.97	721.28	699.28	701.80	699.37	702.87	---	---	---	---
4/14/25	NA	700.22	699.48	NA	723.70	699.95	NA	700.99	NA	---	---	---	---
6/30/25	NA	700.23	699.40	NA	721.05	699.98	NA	701.01	NA	---	---	---	---
8/19/25	NA	NA	NA	NA	NA	NA	NA	NA	NA	722.41	701.69	702.33	702.61
10/13/25	NA	NA	NA	NA	721.48	NA	NA	NA	NA	712.08	700.92	701.58	701.84
11/20/25	NA	NA	NA	NA	722.44	NA	NA	NA	NA	712.07	699.66	700.69	701.15
Average	710.91	700.56	698.19	704.82	723.73	700.39	704.53	701.92	705.22	715.52	700.76	701.53	701.87
Max.	716.87	708.12	699.58	714.64	725.87	707.75	713.76	709.53	712.61	722.41	701.69	702.33	702.61
Min.	706.79	696.99	695.74	700.74	713.41	696.16	700.48	698.53	702.05	712.07	699.66	700.69	701.15
	MW-1	MW-2	MW-3R1	MW-4	MW-21	MW-22	MW-23	MW-24	MW-26	MW-29	MW-30	MW-31	MW-32

MW-3R was abandoned during March, 2018 and replaced with MW-3R1
MW-24 was abandoned 2/05/25 and replaced with MW-24R1 (installed 4/11/25)
MW-1, MW-4, MW-23, and MW-26 abandoned 2/05/25
MW-2, MW-3R1, MW-22, and MW-24R1 abandoned on 9/19/25
NW-29. MW-30. MW-31. and MW-32 installed 7/21/25 and 7/22/25

Table 5 – Background Summary

Table 5
Background and GWPS Summary
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

Interwell Background Well - (MW-1, MW-4, MW-21, and MW-29)

Inorganics - Appendix I										
Constituent	**Units**	**Model Type**	**Samples - N**	**Detections**	**Mean**	**SD**	**Prediction Limit**	**Confidence**	**GWPS**	**Source**
Ammonia	mg/L	normal	47	34	0.7772	0.9912	3.1915		30	SS
Arsenic (As)	µg/L	normal	45	36	7.5931	9.7895	31.4866		**31.4866**	**Site**
Barium (Ba)	µg/L	normal	47	47	299.1064	96.5483	534.2616		2000	SS
COD	mg/L	normal	49	29	8.7347	15.3094	45.9511		NA	NA
Chloride	mg/L	normal	47	47	112.0686	91.8331	335.7395		NA	NA
Cobalt (Co)	µg/L	nonparametric	32	13			126.0000	0.99	**126.0**	**Site**
Iron (Fe)	µg/L	normal	44	38	3151.8409	3089.2553	10700.3317		NA	NA
Magnesium (Mg)	mg/L	normal	47	47	38.6766	13.8591	72.4322		NA	NA
pH	SU	nonparametric	49	49			6.25-7.5	0.99	5-9	SS
Specific conductance	µS	nonparametric	49	49			1958.0000	0.99	NA	NA

SS = Statewide Standard for Protected Groundwater (IAC-567, Chapter 137)
Site = Site Specific GWPS based on elevated Prediction Limit from background wells.

Table 6 – Summary of Well/Detected Constituent Pairs that Exceed the Prediction Limit
(Interwell Statistical Evaluation)

Table 6
Summary of Well/Detected Constituent Pairs that Exceed the Prediction Limit (Interwell Statistics)
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

Well	Compound	Date	Result	Prediction	GWPS	Monitoring Program
MW-30	Ammonia (mg/L)	10/13/25	3.70	3.1915	30.0	Detection Monitoring
MW-30	Arsenic (ug/L)	08/19/25	38.80	31.4866	31.5	Detection Monitoring
MW-30	Arsenic (ug/L)	10/13/25	39.60	31.4866	31.5	Detection Monitoring
MW-30	Iron (ug/L)	08/19/25	64600	10700	---	Detection Monitoring
MW-30	Iron (ug/L)	10/13/25	47700	10700	---	Detection Monitoring
MW-30	pH (SU)	08/19/25	5.96	6.25-7.50	5-9	Detection Monitoring
MW-31	COD (mg/L)	08/19/25	58.0	45.9511	---	Detection Monitoring
MW-31	COD (mg/L)	11/21/25	47.00	45.9511	---	Detection Monitoring
MW-31	Iron (ug/L)	08/19/25	63100	10700	---	Detection Monitoring
MW-31	Iron (ug/L)	10/13/25	41100	10700	---	Detection Monitoring
MW-32	Barium (ug/L)	08/19/25	582.00	534.2616	2000	Detection Monitoring
MW-32	Iron (ug/L)	08/19/25	28200	10700	---	Detection Monitoring

Table 7 – Summary of On-Going and Newly Identified Prediction Limit Exceedances

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-30	Ammonia (mg/L)	8/19/2025	2.00	3.1915	---	30.000	10/13/2025	NA	pending
MW-30	Ammonia (mg/L)	10/13/2025	3.70	3.1915	---	30.000	10/13/2025	NA	pending

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-30	Arsenic (ug/L)	8/19/2025	38.80	31.4866	---	**31.4866**	8/19/2025	NA	pending
MW-30	Arsenic (ug/L)	10/13/2025	39.60	31.4866	---	**31.4866**	8/19/2025	NA	pending

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-30	Iron (ug/L)	8/19/2025	64600	10700	---	---	8/19/2025	NA	pending
MW-30	Iron (ug/L)	10/13/2025	47700	10700	---	---	8/19/2025	NA	pending

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-30	pH (SU)	8/19/2025	5.96	6.2-7.5	---	5-9	8/19/2025	NA	pending
MW-30	pH (SU)	10/13/2025	6.83	6.2-7.5	---	5-9	8/19/2025	NA	pending
MW-30	pH (SU)	11/21/2025	6.91	6.2-7.5	---	5-9	8/19/2025	NA	pending

Bold Result *= A value that exceeds the GWPS.*
Bold GWPS *= A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewaide Standards for Protected Groundwater.*

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-31	COD (mg/L)	8/19/2025	58	45.9511	---	---	8/19/2025	NA	pending
MW-31	COD (mg/L)	10/13/2025	16	45.9511	---	---	8/19/2025	NA	pending
MW-31	COD (mg/L)	11/21/2025	47	45.9511	---	---	8/19/2025	NA	pending

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-31	Iron (ug/L)	8/19/2025	63100	10700	---	---	8/19/2025	NA	pending
MW-31	Iron (ug/L)	10/13/2025	41100	10700	---	---	8/19/2025	NA	pending

Bold Result *= A value that exceeds the GWPS.*
Bold GWPS *= A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewaide Standards for Protected Groundwater.*

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-32	Barium (ug/L)	8/19/2025	582	534.3	---	2000	8/19/2025	NA	pending
MW-32	Barium (ug/L)	10/13/2025	210	534.3	---	2000	8/19/2025	NA	pending

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

KEY:	SSI	SSL LCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result	Prediction Limit	95% LCL	GWPS Limit	SSI Initial Exceedance	Resamples Due	5th Background Sample
MW-32	Iron (ug/L)	8/19/2025	28200	10700	---	---	8/19/2025	NA	pending
MW-32	Iron (ug/L)	10/13/2025	9360	10700	---	---	8/19/2025	NA	pending

Bold Result *= A value that exceeds the GWPS.*
Bold GWPS *= A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewaide Standards for Protected Groundwater.*

Table 8 – Summary of On-Going and Newly Identified Statistically Significant Levels (Not Used)

Table 9 –Analytical Data Summary

Table 9
Analytical Data Summary
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

ATTACHED

Historic Data

MW-1, MW-4, MW-21

Table 1

Analytical Data Summary for MW-1

Constituents	Units	4/26/2018	10/15/2018	4/23/2019	10/22/2019	4/21/2020	10/13/2020	4/14/2021	10/19/2021	4/14/2022	10/13/2022	4/19/2023	10/20/2023
Ammonia	mg/L	1.00	.53	1.10	.91	.58	.71	.63	.65	.74	.63	.61	.63
Arsenic, dissolved	ug/L	2.61											
Arsenic, total	ug/L	2.40	1.37	4.02	3.96	3.65	3.75	5.61	<.23	3.47	3.71	3.32	2.27
Barium, dissolved	ug/L	219											
Barium, total	ug/L	237	218	135	169	177	180	235	155	201	216	205	204
Chemical oxygen demand	mg/L	13.0	<7.0	18.0	7.0	17.0	22.0	32.0	<7.0	<5.7	<5.7	<5.7	<5.7
Chloride	mg/L	3.51	1.29	27.80	11.80	17.80	11.20	6.90	6.28	6.34	5.89	5.83	5.61
Cobalt, total	ug/L						.95	1.97	<1.25	<1.25	<.75	<.75	<.65
Iron, dissolved	ug/L	1690											
Iron, total	ug/L	2840.0	1900.0	6880.0	5820.0	45.8	5900.0	9720.0	4090.0	4100.0	4910.0	1270.0	779.0
Magnesium, dissolved	mg/L	25.9											
Magnesium, total	mg/L	29.0	32.0	20.7	25.8	23.5	24.2	29.3	20.9	28.7	29.2	28.3	31.9
pH	SU	6.50	7.22	7.03	7.21	7.23	7.03	7.40	7.40	7.50	7.17	7.33	7.20
Phenols, total	mg/L		<.1								<.1		
Specific conductance	uS	684.0	700.0	554.0	662.0	641.0	617.0	685.0	702.0	704.0	733.0	711.0	707.0
Temperature	C									10.7	13.0	12.6	16.0
Total organic halogens	mg/L		<.01								<.01		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 1

Analytical Data Summary for MW-1

Constituents	4/10/2024	10/23/2024
Ammonia	.55	.53
Arsenic, dissolved		
Arsenic, total	3.65	<3.70
Barium, dissolved		
Barium, total	222	219
Chemical oxygen demand	<5.7	<5.7
Chloride	5.53	4.62
Cobalt, total	<.65	<1.70
Iron, dissolved		
Iron, total	5270.0	5400.0
Magnesium, dissolved		
Magnesium, total	29.4	29.0
pH	6.97	6.37
Phenols, total		
Specific conductance	721.0	956.5
Temperature	13.6	25.0
Total organic halogens		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 3

Analytical Data Summary for MW-21

Constituents	Units	4/26/2018	10/15/2018	4/24/2019	10/22/2019	4/21/2020	10/13/2020	4/14/2021	10/20/2021	4/14/2022	10/13/2022	4/19/2023	10/24/2023
Ammonia	mg/L	<.500	<.500	<.500	<.200	.100	<.280	<.134	.400	<.134	<.114	<.104	<.104
Arsenic, dissolved	ug/L	1.27											
Arsenic, total	ug/L	.98	1.83	.56	1.17	<2.00	1.52	1.58	<1.15	1.17	1.54	1.54	<1.45
Barium, dissolved	ug/L	368											
Barium, total	ug/L	406	372	413	438	401	338	347	229	325	307	269	301
Chemical oxygen demand	mg/L	10.0	8.0	10.0	7.0	9.0	11.0	8.0	6.0	9.0	<5.7	8.0	6.0
Chloride	mg/L	224.000	194.950	224.000	217.000	227.000	245.000	238.000	195.945	178.040	162.000	167.000	174.000
Cobalt, total	ug/L						.48	<1.25	<1.25	<1.25	<.75	<.75	<.65
Iron, dissolved	ug/L	24.2											
Iron, total	ug/L	194.0	323.0	193.0	460.0	<2.0	134.0	<681.5	<681.5	<681.5	147.0	162.0	126.0
Magnesium, dissolved	mg/L	52.7											
Magnesium, total	mg/L	60.1	55.3	58.7	58.0	59.6	56.8	55.4	36.9	51.5	43.9	47.0	52.7
pH	SU	6.79	6.36	6.78	6.83	6.86	6.74	6.80	6.70	6.70	6.82	6.92	6.90
Phenols, total	mg/L		<.1								<.1		
Specific conductance	uS	1554.0	1391.0	1590.0	1532.0	1661.0	1542.0	1649.0	1480.0	1484.0	1520.0	1443.0	1350.0
Temperature	C									8.8	13.0	12.0	14.5
Total organic halogens	mg/L		.039								.035		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 3

Analytical Data Summary for MW-21

Constituents	4/11/2024	10/23/2024
Ammonia	<.104	.200
Arsenic, dissolved		
Arsenic, total	<1.45	<3.70
Barium, dissolved		
Barium, total	343	350
Chemical oxygen demand	<5.7	<5.7
Chloride	204.000	215.000
Cobalt, total	<.65	<1.70
Iron, dissolved		
Iron, total	58.0	1070.0
Magnesium, dissolved		
Magnesium, total	53.1	54.8
pH	6.67	6.83
Phenols, total		
Specific conductance	1420.0	874.5
Temperature	11.4	13.3
Total organic halogens		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-4

Constituents	Units	4/26/2018	10/15/2018	4/23/2019	10/22/2019	4/21/2020	10/12/2020	4/14/2021	10/19/2021	4/14/2022	10/13/2022	4/19/2023	10/18/2023
Ammonia	mg/L	2.90	1.30	.90	1.20	.84	1.40	1.00	2.00	1.60	1.50	.62	1.60
Arsenic, dissolved	ug/L	28.3											
Arsenic, total	ug/L	25.7	26.5	13.4	26.3	14.7	15.1	14.2	18.8	31.5	22.3	11.7	17.4
Barium, dissolved	ug/L	305											
Barium, total	ug/L	372	270	282	350	301	279	343	378	500	404	235	458
Chemical oxygen demand	mg/L	17.0	<7.0	8.0	<7.0	10.0	7.0	<7.0	<7.0	14.0	<5.7	6.0	<5.7
Chloride	mg/L	103.00	79.99	86.50	48.70	55.10	60.90	75.10	84.40	90.34	85.80	64.20	76.50
Cobalt, total	ug/L						4.15	2.42	<6.25	7.14	15.10	8.29	7.85
Iron, dissolved	ug/L	4600											
Iron, total	ug/L	6740.0	6260.0	3690.0	7270.0	36.2	4910.0	4320.0	5800.0	8470.0	11600.0	3230.0	3930.0
Magnesium, dissolved	mg/L	32.7											
Magnesium, total	mg/L	35.8	27.7	30.3	22.7	23.6	23.0	28.9	25.1	32.1	32.5	25.2	36.9
pH	SU	6.25	6.72	6.63	6.45	6.75	6.64	6.70	6.90	6.90	6.83	6.69	6.80
Phenols, total	mg/L		<.1								<.1		
Specific conductance	uS	986.0	874.0	895.0	618.0	709.0	643.0	1090.0	917.0	915.0	934.0	782.0	869.0
Temperature	C									11.0	13.5	13.4	13.5
Total organic halogens	mg/L		<.010								.017		

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for MW-4

Constituents	4/10/2024	10/23/2024
Ammonia	1.20	1.00
Arsenic, dissolved		
Arsenic, total	35.6	13.7
Barium, dissolved		
Barium, total	543	317
Chemical oxygen demand	18.0	<5.7
Chloride	82.60	75.70
Cobalt, total	126.00	5.29
Iron, dissolved		
Iron, total	83400.0	5090.0
Magnesium, dissolved		
Magnesium, total	34.1	29.1
pH	6.43	6.75
Phenols, total		
Specific conductance	848.0	447.9
Temperature	13.4	16.4
Total organic halogens		

* - The displayed value is the arithmetic mean of multiple database matches.

Current Year Data

MW-21, MW-29, MW-30, MW-31, MW-32

Table 1

Analytical Data Summary for 4/15/2025

Constituents	Units	MW-2	MW-21	MW-22	MW24R1	MW-3R1
Ammonia	mg/L	<.313	<.055	4.000	<.055	<.055
Arsenic, total	ug/L	<5.60	<5.60	6.32	<5.60	42.40
Barium, total	ug/L	166	399	368	302	243
Chemical oxygen demand	mg/L	<5.7	7.0	<5.7	7.0	<5.7
Chloride	mg/L	70.49243	233.46831	95.78461	79.69585	105.47600
Cobalt, total	ug/L	<3.40	<3.40	7.89	15.90	12.70
Iron, total	ug/L	<154.3	<154.3	3340.0	4810.0	40700.0
Magnesium, total	mg/L	24.3	64.3	3838.0	33.5	31.7
pH	SU	6.50	7.14	7.20	6.87	6.89
Specific conductance	uS	954.1	1835.0	1442.0	934.1	984.3
Temperature	C	11.6	8.9	12.5	11.8	12.5

* - The displayed value is the arithmetic mean of multiple database matches.

Table 3

Analytical Data Summary for 7/1/2025

Constituents	Units	MW-21	MW-3R1
Ammonia	mg/L	<.047	.300
Arsenic, total	ug/L	<1.45	25.10
Barium, total	ug/L	312	179
Chemical oxygen demand	mg/L	<5.7	6.0
Chloride	mg/L	223.48219	85.40098
Cobalt, total	ug/L	<.65	10.30
Iron, total	ug/L	<42.95	30500.00
Magnesium, total	mg/L	57.2	22.5
pH	SU	6.96	6.72
Specific conductance	uS	1754.0	859.3
Temperature	C	14.7	15.5

* - The displayed value is the arithmetic mean of multiple database matches.

Table 4

Analytical Data Summary for 8/19/2025

Constituents	Units	MW-30	MW-31	MW-32
Ammonia	mg/L	2.0	1.6	.2
Arsenic, total	ug/L	38.8	29.5	14.2
Barium, total	ug/L	442	238	582
Chemical oxygen demand	mg/L	47	58	13
Chloride	mg/L	63.01387	40.37284	37.21953
Cobalt, total	ug/L	19.0	49.3	42.8
Iron, total	ug/L	64600	63100	28200
Magnesium, total	mg/L	43.4	39.3	23.5
pH	SU	5.96	6.66	6.48
Specific conductance	uS	1035.0	1024.0	559.9
Temperature	C	18.0	16.2	18.8

* - The displayed value is the arithmetic mean of multiple database matches.

Table 5

Analytical Data Summary for 8/20/2025

Constituents	Units	MW-29
Ammonia	mg/L	5.9
Arsenic, total	ug/L	<5.6
Barium, total	ug/L	212
Chemical oxygen demand	mg/L	100
Chloride	mg/L	256.1106
Cobalt, total	ug/L	6.34
Iron, total	ug/L	4290
Magnesium, total	mg/L	51.7
pH	SU	7.47
Specific conductance	uS	1917
Temperature	C	18.7

* - The displayed value is the arithmetic mean of multiple database matches.

Table 6

Analytical Data Summary for 10/13/2025

Constituents	Units	MW-30	MW-31	MW-32
Ammonia	mg/L	3.700	.640	<.047
Arsenic, total	ug/L	39.6	27.2	5.4
Barium, total	ug/L	284	204	210
Chemical oxygen demand	mg/L	10.0	16.0	<5.7
Chloride	mg/L	57.19633	44.90321	48.16122
Cobalt, total	ug/L	6.42	27.90	16.50
Iron, total	ug/L	47700	41100	9360
Magnesium, total	mg/L	30.1	25.1	19.3
pH	SU	6.83	6.68	6.27
Specific conductance	uS	1106.0	834.7	574.3
Temperature	C	17.5	17.3	15.4

* - The displayed value is the arithmetic mean of multiple database matches.

Table 7

Analytical Data Summary for 10/14/2025

Constituents	Units	MW-21	MW-29
Ammonia	mg/L	.20	.87
Arsenic, total	ug/L	<1.45	1.72
Barium, total	ug/L	340	151
Chemical oxygen demand	mg/L	<5.7	9.0
Chloride	mg/L	221	278
Cobalt, total	ug/L	<.65	2.26
Iron, total	ug/L	55	1280
Magnesium, total	mg/L	54.3	57.6
pH	SU	6.86	6.92
Specific conductance	uS	1728	1927
Temperature	C	13.9	18.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 8

Analytical Data Summary for 11/20/2025

Constituents	Units	MW-32
Chemical oxygen demand	mg/L	<5.7
pH	SU	6.41
Specific conductance	uS	707.2
Temperature	C	11.3

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for 11/21/2025

Constituents	Units	MW-21	MW-29	MW-30	MW-31
Chemical oxygen demand	mg/L	10	21	9	47
pH	SU	6.89	6.93	6.91	6.62
Specific conductance	uS	1858	1958	1426	1016
Temperature	C	10.2	13.4	12.4	9.3

* - The displayed value is the arithmetic mean of multiple database matches.

Table 10 – Historic SSI and SSL
(Not Used)

Table 11 – Corrective Action Trend Analysis
(Not Used)

Table 12 – Leachate/Groundwater Elevations

Table 12
Leachate Head Measurements
Annual Water Quality Report
Cedar Rapids WPCF Ash Monofill
Permit No. 57-SDP-07-85P

Date	South Disposal Area		North 1 Disposal Area	North 2 Disposal Area
	Groundwater Head Monitoring Point	Leachate Head Monitoring Point	Leachate Head Monitoring Point	Leachate Head Monitoring Point
1/2/2025	0.9'	0.4'	0.9'	NA
2/10/2025	0.9'	0.6'	0.5'	NA
3/3/2025	0.7'	0.3'	0.9'	NA
4/1/2025	0.6'	0.3'	0.9'	NA
5/1/2025	0.4'	0.7'	0.9'	NA
6/2/2025	0.6'	0.4'	0.8'	NA
7/1/2025	NA	NA	0.9'	NA
8/1/2025	NA	NA	0.8'	NA
9/8/2025	NA	NA	0.9'	NA
10/1/2025	NA	NA	0.9'	NA
11/3/2025	NA	NA	0.9'	0.0'
12/1/2025	NA	NA	0.0'	0.0'

Ash removal and closure of the South Disposal Area started on June 16, 2025 with the removal of the South Disposal Area completed on July 27, 2025.

North 2 Disposal Area started receiving ash in November, 2025

APPENDIX A

SDP Permit and Variances

IOWA DEPARTMENT OF NATURAL RESOURCES

GOVERNOR, KIM REYNOLDS
LT. GOVERNOR, CHRIS COURNOYER
DIRECTOR, KAYLA LYON

January 23, 2025

LAUREN O'NEIL
CEDAR RAPIDS WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM ROAD SE
CEDAR RAPIDS IA 52403

RE: Cedar Rapids Water Pollution Control Facilities Ash Monofill
Permit No. 57-SDP-07-85P
Permit Revision #1

Dear Mr. O'Neil:

Enclosed is the revised permit for the Cedar Rapids Water Pollution Control Facilities Ash Monofill. The permit and the approved plans must be kept at the sanitary disposal project in accordance with Iowa Administrative Code 567 Paragraph 115.26(2)"c" (567 IAC 115.26(2)"c"). Please review the permit in its entirety with your operators, as they must become familiar with it.

The revision was issued to update General Provision IX to require online submittal of tonnage reports.

Note that the permit may contain conditions that require a response or action by you, which if not properly complied with, may prompt enforcement action by the Iowa Department of Natrual Resources.

If you have any questions, you may contact me at (515) 537-4051 or brian.rath@dnr.iowa.gov.

Sincerely,

Brian L. Rath, P.E.
Environmental Engineer Senior
Land Quality Bureau

copy: DNR Field Office #1 – Manchester
Doug Luzbetak, P.E., HLW Engineering Group
Jason Decker, City of Cedar Rapids

IOWA DEPARTMENT OF NATURAL RESOURCES
SANITARY DISPOSAL PROJECT PERMIT
FOR INDUSTRIAL MONOFILLS

I. **Permit Number:** 57-SDP-07-85P

II. **Permitted Agency:** City of Cedar Rapids
Cedar Rapids Water Pollution Control Facilities Ash Monofill

III. **Project Location:** NE ¼, NE ¼, Sec.32, T83N, R6W
Linn County, Iowa

IV. **Responsible Official**

Name: Lauren O'Neil
Address: Cedar Rapids Water Pollution Control Facilities
7525 Bertram Road SE
Cedar Rapids, IA 52403-7111
Phone: 319-286-5033
Email: l.oneil@cedar-rapids.org

V. **Licensed Design Engineer**

Name: Douglas J. Luzbetak, P.E.
Address: HLW Engineering Group
204 West Broad Street
P.O. Box 314
Story City, Iowa 50248
Phone: 515-733-4144
Email: dluzbetak@hlwengineering.com

Iowa License Number: 12654

VI. **Date Permit Issued:** **January 9, 2025**

VII. **Permit Expiration Date:** January 9, 2028

Revision Date: January 23, 2025 (Revision #1)

VIII. **Issued by:** _____
Environmental Services Division
for the Director

IX. General Provisions

The above named permitted agency is hereby authorized to operate a sanitary disposal project at the described location in conformance with Iowa Code section 455B, the rules pursuant thereto existing at the time of issuance, and any subsequent new rules which may be duly adopted, and any provisions contained in Section X of this permit.

The issuance of this permit in no way relieves the applicant of the responsibility for complying with all other local, state, and federal statutes, ordinances, and rules or other requirements applicable to the establishment and operation of this sanitary disposal project.

No legal or financial responsibility arising from the construction or operation of the approved project shall attach to the State of Iowa or the Department of Natural Resources (DNR) due to the issuance of this permit.

If title to this project is transferred, the new owner must apply to the DNR for a transfer of this permit within thirty days of the date of title transfer pursuant to rule 115.9(455B). This permit is void sixty days after the date of title transfer unless the DNR has transferred the permit.

The permit holder shall file a Quarterly Solid Waste Fee Schedule and Retained Fee Report utilizing the DNR's Form 542-3276 and remit tonnage fee payment, as applicable, for all wastes disposed at the sanitary disposal project in accordance with Iowa Code section 455B.310. The Reports will be due January 1, April 1, July 1 and October 1 for the quarters ending September 30, December 31, March 31 and June 30, respectively. The permit holder shall submit the completed report electronically via the Iowa DNR Solid Waste Permitting Database (https://programs.iowadnr.gov/solidwaste/). This reporting procedure supersedes any previous conflicting permit provisions.

The permit holder shall weigh all solid waste collection vehicles and solid waste transport vehicles on a scale certified by the Iowa Department of Agriculture and Land Stewardship. If conditions are such that make it impractical to provide an on-site scale, then off-site scale facilities or an alternative method of calculating the tonnage disposed, may be used if justified and approved by the DNR. The permit holder shall comply with the waste weighing, record keeping and tonnage fee reporting requirements defined in rule 101.14(455B,455D). The scale weighing facilities shall comply with the certification and licensing requirements of the Iowa Department of Agriculture and Land Stewardship at all times. The permit holder shall maintain a current copy of the weighing scale facility licensing certificate issued by the Iowa Department of Agriculture and Land Stewardship at all times.

The permit holder shall ensure that the sanitary disposal project does not (1) cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402 of the Clean Water Act, and (2) cause the discharge of a nonpoint source of pollution into waters of the United States, including wetlands, that violates any requirement of an areawide or statewide

water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act.

The permit holder shall submit an updated Sanitary Landfill Financial Assurance Report Form no later than April 1st, annually, pursuant to rule 115.31(455B). Use of this form provides permit holders a uniform means of submitting all required documentation to ensure that closure and postclosure cost estimates and applicable financial assurance instruments are updated as required.

This facility shall be staked as necessary and inspected on a semiannual basis by a professional engineer licensed in the State of Iowa. The engineer shall prepare a brief report describing the site's conformance and nonconformance with the permit and the approved plans and specifications during the inspections. These reports shall be submitted by April 30 and October 31 each year to the Department's Main and local Field offices. The Department shall be notified if any inspection reveals any nonconformance with the permit and approved plans and specifications.

Failure to comply with Iowa Code Chapter 455B, or any rule of order promulgated pursuant thereto, or any or all provisions of this permit may result in 1) a civil penalty of up to $5000 for each day of violation, pursuant to Iowa Code section 455B.307, or 2) the suspension or revocation of this permit, pursuant to Iowa Code section 455B.305.

X. Special Provisions

1. The permit holder is authorized to accept sewage sludge incinerator ash from the Cedar Rapids Water Pollution Control Facilities for disposal. Wastes disposed at this site shall not exhibit toxic or hazardous properties. No hazardous wastes as defined by Iowa Code section 455B.411 may be disposed at this landfill.
2. The permit holder shall develop and operate the site in accordance with the 2024 Industrial Monofill Permit Renewal, dated June 14, 2024, and the revised Executive Summary, dated January 3, 2025, all as submitted by HLW Engineering Group, and the following:
    a. Waste disposal is limited to the North Cell and South Cell ash monofill disposal units. Any further expansion beyond these cells shall require prior Department approval.

       The permit holder shall continually review the design of the cell with all staff on-site for excavation of the lagoons. The permit holder shall limit the use of the excavators to a few well-trained operators.

    b. The Response to SDP Permit Amendment #1 (5/12/11) regarding operational procedures, dated May 26, 2011, as submitted by HLW Engineering Group, and approved on February 9, 2012, is incorporated as part of the permit documents.

    c. The permit holder shall collect a representative sample and submit TCLP metals analytical results for the waste at the time of each permit renewal, or following any process modifications that may result in changes of waste characteristics. No waste ash that exhibits hazardous characteristics shall be disposed of at this site.

d. Surface water shall be diverted around the fill area and proper surface drainage shall be provided at all times.

e. The Emergency Response and Remedial Action Plan (ERRAP), included in Appendix F of the 2024 Industrial Monofill Permit Renewal, dated June 14, 2024, and the revisions, dated January 3, 2025, all as submitted by HLW Engineering Group, in compliance with rule 115.30(455B) is incorporated as part of the permit documents. An updated ERRAP shall be submitted at the time of each permit renewal application. An updated ERRAP shall be included with any request for permit modification to incorporate a facility expansion or significant changes in facility operation that require modification of the currently approved ERRAP.

f. In accordance with the variance approval of May 12, 2011, the permit holder is authorized to accept liquids associated with ash slurry disposal at the referenced site. No other liquids are authorized for disposal without prior Department approval.

g. The Quality Control and Assurance Report for the Ash Lagoon Liner (South Lagoon), dated December 16, 2011 as submitted by HLW Engineering Group; and approved on February 9, 2012, is incorporated as part of the permit documents.

h. The Quality Control and Assurance Report for the North Ash Lagoon Liner, dated October 13, 2016, as prepared and submitted by HLW Engineering Group and approved on November 15, 2016, is incorporated as part of the permit documents.

i. The Quality Control and Assurance Report for the FML Repair-South Cell, dated August 15, 2017, as submitted by HLW Engineering Group, and approved on September 6, 2017, is incorporated as part of the permit documents.

j. The Permit Modification request, dated April 18, 2024, as submitted by HDR, and approved on April 29, 2024, is incorporated into the permit documents; and the Request for Authorization for Construction of North 2 Lagoon and Closure of South Disposal Area, as submitted by HDR on May 7, 2024, is approved and incorporated into the permit documents.

3. The Department authorizes the following alternative arrangement for reduction in fees owed for sewage sludge incinerator ash that is reclaimed from the landfill for beneficial use purposes.

a. The difference between the amount (in tons) of sewage sludge incinerator ash reclaimed for beneficial use(s) from the landfill and the amount of new waste disposed of during a quarter shall be used to calculate what/if any fees are owed at the end of each quarter. If the amount reclaimed is equal to or greater than the amount disposed, no fees are owed for that quarter.

b. Beneficial use projects shall comply with the state's solid waste by-product beneficial use determination rules (Iowa Administrative Code 567 Chapter 108) and be tracked and reported with each Quarterly Solid Waste Fee Schedule and Retained Fees Report including:

1. Location of beneficial use(s)

2. Description of beneficial use(s)

3. Quantities used for each beneficial use project

The Department shall have the sole authority to deny approval of a reported beneficial use if the proposed use is determined to have the primary purpose as a means of disposal, and any beneficial use would be incidental in nature.

4. Hydrologic monitoring at the site shall be conducted in accordance with the Hydrologic Monitoring System Plan (HMSP) contained in the Permit Modification Request, dated April 18, 2024, as submitted by HDR, and approved on April 29, 2024, and the following:

   a. The HMSP shall include upgradient groundwater monitoring points MW-1 and MW-21; crossgradient monitoring point MW-26, and downgradient groundwater monitoring points MW-2, MW-3RI, MW-4, , MW-22, MW-23, and MW-24. As construction commences (removal of the South Disposal Area and construction of the new North 2 Lagoon along with Water Pollution Control Facility Improvements in the vicinity), the following HMSP changes will occur.

      - MW-1 and MW-26 will be abandoned.
      - MW-21 will be retained as an upgradient/background well.
      - MW-4 and MW-23 will be abandoned and replaced.
      - MW-30, MW-31, and MW-32 will be installed as downgradient wells of the North Disposal Area Lagoons.
      - MW-2, MW-3R1, MW-22, and MW-24 may be abandoned after removal of the South Disposal Area and if constituents are below the groundwater protection standard as outlined in the Permit Modification Request.

   b. Monitoring points not used for water quality analysis may be retained as water level measuring points.

   c. Department construction documentation form 542-1277 and boring logs for all monitoring wells and piezometers shall be submitted within 30 days of installation. Department construction documentation form 542-1323 shall be submitted within 30 days of establishing surface water monitoring points.

      Monitoring points MW-20 and MW-25 have been plugged and abandoned or removed.

      The Abandoned Water Well Plugging Record for MW-3, dated July 28, 2011 and attached to the August 25, 2011 transmittal submitted by HLW Engineering Group, and approved on February 9, 2012, is incorporated as part of the permit documents.

      The Construction Documentation form for replacement well MW-3R, dated December 19, 2011 and attached to the January 9, 2012 transmittal submitted by HLW Engineering Group, and approved on February 9, 2012, is incorporated as part of the permit document.

      The Construction Documentation Form and Boring Log for replacement well MW-3RI, dated March 29, 2018 (Doc 92858), and approved on September 13, 2018, is incorporated as part of the permit documents.

The Abandoned Water Well Plugging Record for monitoring well MW-3R, as attached to the September 4, 2018 electronic mail submitted by HLW Engineering Group and approved on September 13, 2018, is incorporated as part of the permit documents.

d. Quarterly sampling shall be conducted in the first year for any newly installed monitoring points. Existing monitoring points had the quarterly sampling completed in October of 1996.

   Continued semiannual sampling shall take place in April and October of each year and be analyzed for the parameters listed in paragraph 115.26(4)“e”. Routine annual testing for any additional necessary parameters listed in paragraph 115.26(4)“f” shall be conducted during October of each year.

   Supplemental semiannual sampling and analysis of all monitoring points for arsenic, barium, and magnesium shall be conducted in addition to the routine test parameters. The additional testing may be discontinued upon all of the following: 1) The test results and a request for elimination of the additional sampling are submitted to the Department; and 2) The Department approves discontinuation of the additional sampling.

e. The Method Detection Limit (MDL) for the test parameters shall not exceed action levels as defined in 567 IAC Chapter 133. If the action levels cannot be feasibly achieved using procedures described in subrule 115.26(5), then the MDL shall not exceed the lowest feasible level.

f. In accordance with the variance, dated September 12, 2018, the permit holder is authorized to conduct sampling and analysis of total recoverable metals in lieu of sampling for dissolved metals as required by 567 IAC 115.26(4)”d”, and phenols and TOX, as required by 567 IAC 115.26(4)”f”.

g. Surface monitoring points must be clearly marked in the field and a method for measuring the flow rate at each sampling point shall be devised.

h. In accordance with the request contained in the 2020 AWQR, dated December 7, 2020, the permit holder is authorized to reduce the frequency of groundwater level measurements from quarterly to semiannually. The measurements shall be taken in, April and October of each year, with the results submitted in the corresponding semiannual monitoring reports. (Amendment #1)

i. An Annual Water Quality Report (AWQR) summarizing the effects the facility is having on groundwater and surface water quality shall be submitted to the Department by November 30 of each year. The AWQR report shall include the results of the routine groundwater measurements conducted at the monitoring points and by using the DNR AWQR Format.

5. The permit holder is exempt from monitoring and reporting methane gas levels in site structures and at the property boundary, as required by subrule 115.26(15). This exemption is in accordance with the variance approval letter of May 5, 1995. Variance approval was based on the inert nature of the incinerator ash waste deposited at this site.

However, in the event that methane gas is found to be present at the site, the Department's Main and Field Offices shall be notified, and gas monitoring shall be immediately implemented in accordance with subrule 115.26(15).

6. In accordance with the variance approval of April 27, 2005, the permit holder is not required to have a certified solid waste operator on duty during waste unloading, as required by rule 115.29(455B), since this site is required to have certified wastewater operators on staff. The variance approval shall hold until such time that the Department develops a certification program that relates more directly to this operation; and as long as certified wastewater operators are retained on site.
7. The permit holder shall close the landfill site in accordance with the Closure/Postclosure Plan (CPCP) as contained in Appendix H of the 2021 Industrial Monofill Permit Renewal, dated June 7, 2021, and the modifications in Appendix E of the 2024 Industrial Monofill Permit Renewal, dated June 14, 2024, all as submitted by HLW Engineering Group, and the following:
    a. The review comments, dated May 15, 1985 from the County Soil & Water Conservation District relative to compliance with wind and soil loss limit regulations, in accordance with paragraph 115.26(1)"j" for all development areas, are incorporated as part of the permit documents.
    b. Upon closure of both the North and South Lagoons, all ash material will be removed and disposed of in accordance with regulations at the time of closure, dikes and all infrastructure will be removed and the site(s) regraded, seeded, and repurposed for other uses by CRWPCF.

XI. Revision History

Date	Comment
1/9/2025	Permit Renewed.
1/23/2025	General Provision IX updated to require online submittal of tonnage reports.

Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
ROGER L. LANDE, DIRECTOR

May 12, 2011

STEVE HERSHNER
CEDAR RAPIDS WATER POLLUTION CONTROL FACILITY
7525 BERTRAM ROAD SE
CEDAR RAPIDS IA 52403

Re: Cedar Rapids Water Pollution Control Facilities-Sludge Ash Storage Landfill
Permit #57-SDP-07-85P
IAC Rule Variance Request Approval

Dear Mr. Hershner:

This letter is to inform you that the rule variance request from 567 IAC 115.27(8) (455B, 455D) relative to the requirement that no free liquids or waste containing free liquid shall be disposed in a sanitary landfill, is hereby approved.

The permit holder has requested a waiver from subrule 567 IAC 115.27(8) which does not allow the disposal of free liquids or waste containing free liquids in a sanitary landfill. Approval of the variance is based on the fact that the City of Cedar Rapids is proposing to construct a liner in the south lagoon exceeding current standards for industrial waste landfills. The liner will consist of a Subtitle D compliant composite liner with an additional 60 mil HDPE liner over the top of the composite liner. The additional 60 mil HDPE liner will function to limit the liquid level on the Subtitle D compliant liner to less than 1 foot as required in 115.26(11)"a"(1). Leachate head measuring devices are being provided to measure the liquid level on the Subtitle D compliant composite liner.

If you have any questions, please contact Nina M. Koger at (515) 281-8986.

Sincerely,

Brian Tormey

Brian Tormey
Chief
Land Quality Bureau

IOWA DEPARTMENT OF NATURAL RESOURCES

GOVERNOR KIM REYNOLDS
LT. GOVERNOR ADAM GREGG
ACTING DIRECTOR BRUCE TRAUTMAN

September 12, 2018

Con 12-1-1
Doc # 93200

John Ernst
CEDAR RAPIDS WATER POLLUTION CONTROL FACILITY
7525 BERTRAM ROAD SE
CEDAR RAPIDS IA 52403

Re: Cedar Rapids Water Pollution Control Facilities-Sludge Ash Storage Landfill
Permit #57-SDP-07-85P
IAC Rule Variance Request Approval

Dear Mr. Ernst:

This letter is to inform you that the variance request to discontinue the collection of filtered samples for analysis of dissolved metals, as required by 567 IAC 115.26(4)"d", and phenols and TOX, as required by 567 IAC 115.26(4)"f"; and instead to conduct sampling and analysis of total recoverable metals, is approved.

This variance approval was granted based on the review of your *Petition for Variance*, dated September 12, 2018.

This variance is applicable as long as the justification for the request remains the same. The permit for the referenced facility will be revised to reflect the same under separate cover.

If you have any questions, you may contact me at (515) 725-8309.

Sincerely,

Nina M. Booker

Nina M. Booker
Environmental Engineer Senior
Land Quality Bureau

cc: Field Office 1

Douglas J. Luzbetak, P.E.
HLW Engineering Group
204 West Broad Street
P.O. Box 314
Story City, IA 50248

Gmail

Doug Luzbetak <dluzbetak@hlwengineering.com>

Cedar Rapids WPCF

4 messages

Doug Luzbetak <dluzbetak@hlwengineering.com> Tue, Nov 20, 2018 at 3:42 PM
To: "Nina Booker [DNR]" <nina.booker@dnr.iowa.gov>

Nina,

On September 12, 2018, IDNR issued a variance for this facility that allowed sampling of total metals instead of dissolved metals. I just received the results from the Fall, 2018 sampling event. The sampling was completed for total arsenic, barium, iron, and magnesium. These are the same metals (as dissolved) that were sampled for previously. Will this list be sufficient, or does the department want additional total metals added to this list during future sampling.

Thank you for your help,

Doug

Doug Luzbetak, P.E.
HLW Engineering Group
204 West Broad Street
PO Box 314
Story City, IA 50248
(515)7334144
FAX (515)7334146
Cell (515)2900247
dluzbetak@hlwengineering.com

Booker, Nina <nina.booker@dnr.iowa.gov> Tue, Nov 20, 2018 at 3:49 PM
To: Doug Luzbetak <dluzbetak@hlwengineering.com>

Doug,
Unless there becomes a reason to add additional metals, the list can stay the same for now.

Nina

NOTE NAME CHANGE

Nina Booker | Environmental Engineer Senior
Iowa Department of Natural Resources
P 515-725-8309 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

[Quoted text hidden]

Doug Luzbetak <dluzbetak@hlwengineering.com> Tue, Nov 20, 2018 at 3:54 PM
To: "Nina Booker [DNR]" <nina.booker@dnr.iowa.gov>

Nina,

OK, we will have them use the same list next year. Thank you for the quick response.

Doug

Doug Luzbetak, P.E.

HLW Engineering Group
204 West Broad Street
PO Box 314
Story City, IA 50248
(515)7334144
FAX (515)7334146
Cell (515)2900247
dluzbetak@hlwengineering.com

[Quoted text hidden]

Booker, Nina <nina.booker@dnr.iowa.gov> Tue, Nov 20, 2018 at 3:56 PM
To: Doug Luzbetak <dluzbetak@hlwengineering.com>

You're welcome!

NOTE NAME CHANGE

Nina Booker | Environmental Engineer Senior
Iowa Department of Natural Resources
P 515-725-8309 | F 515-725-8202 | 502 E. 9th St., Des Moines, IA 50319
www.iowadnr.gov

[Quoted text hidden]

APPENDIX B

Statistical Report

Results of the Ground Water Statistics

for Ash Monofill Facility

Semi-Annual Monitoring Events in 2025

Prepared for:
Ash Monofill – Cedar Rapids Water Pollution Control Facility
7525 Bertram Road SE
Cedar Rapids, IA

Prepared by:
Jeffrey A. Holmgren
Otter Creek Environmental Services, L.L.C.
Elgin, IL
(847) 464-1355

December 2025

INTRODUCTION

This report contains the results of the statistical analyses used to evaluate the ground water data obtained during the semi-annual monitoring events in 2025 at the Ash Monofill Facility. The ground water at the Ash Monofill Facility is monitored by a network of wells including MW-21 (upgradient), MW-29 (upgradient), MW-30, MW-31, and MW-32. Monitoring wells MW-1, MW-2, MW-3R1, MW-4, MW-22, and MW-24 have been abandoned.

Monitoring well MW-21 was sampled on April 15, 2025 and July 1, 2025 and analyzed for the parameters required by permit. Monitoring wells MW-29, MW-30, MW-31, and MW-32 were sampled initially on August 19-20, 2025 and analyzed for the parameters required by permit. Monitoring wells MW-21, MW-29, MW-30, MW-31, and MW-32 were again sampled on October 13-14, 2025 and analyzed for the parameters required by permit and then on November 20-21, 2025 for only field parameters and COD.

The statistical plan is designed to detect a release from the facility at the earliest indication so that it is protective of human health and the environment. The interwell and intrawell methodologies are described and then applied to the Ash Monofill Facility data. The statistical plan conforms with IAC 567, Chapter 113.10, USEPA Guidance document ("*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance"*, March 2009), and the American Society for Testing and Materials (ASTM) standard D6312-98, *Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs.*

Ground Water Monitoring Program

The groundwater monitoring network for the Ash Monofill Facility includes MW-21, MW-29, MW-30, MW-31, and MW-32. Each of the groundwater monitoring wells is to be sampled at least semiannually and analyzed for arsenic, barium, iron, magnesium, ammonia, COD, chloride, pH, and specific conductivity. The ground water data obtained during the semi-annual monitoring events in 2025 are summarized in Attachment A.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

IAC 567, Chapter 113.10(4) provides several options for statistically evaluating the ground water data at those wells that monitor the open cells or contiguous MSWLF units. The preferred methods for comparing ground water data are using either prediction limits or using control charts. The site prediction limit method was first applied to the Ash Monofill Facility data using the DUMPStat® statistical program. An intrawell method was also then utilized to determine the most appropriate statistical method for this data set. DUMPStat® is a program for the statistical analysis of groundwater monitoring data using methods described in "Statistical Methods for Groundwater Monitoring" by Dr. Robert D. Gibbons. The DUMPStat program is completely consistent with all USEPA regulations and guidance and the ASTM D6312-98 guidance.

Interwell Statistics: Upgradient versus Downgradient Comparisons

Interwell statistics are appropriate when the upgradient and downgradient wells monitor the same ground water formation and there is similar variability in the upgradient and downgradient zones. Site prediction limits are determined by pooling the historical ground water data from hydraulically upgradient wells. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances. The type of prediction limit utilized (e.g., parametric or nonparametric) is based on the detection frequency and the data distribution of each parameter in the background data. The distribution of the background data is tested for normality using the Shapiro-Wilk test (Gibbons, 1994 and USEPA 1992). If the constituent is normally distributed, a normal prediction limit is used. If normality is rejected by the Shapiro-Wilk test, the background data is transformed by taking the natural logarithm. The Shapiro-Wilk test is then reapplied on the transformed data. If it is not rejected, lognormal prediction limits are used. If after transforming the data, normality is still rejected, nonparametric prediction limits are used for that analyte. The nonparametric prediction limit is the largest determination in the background measurements. For constituents where the background detection frequency is greater than 0% but less than 50%, nonparametric prediction limits will be used. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

Results of the Interwell Statistics: August 2025 Monitoring Event

The background data used in this statistical analysis includes the ground water data collected from ground water well MW-21, MW-29, MW-1, and MW-4 during the period from 2018 through August 2025. A summary of the background data is listed in Attachment B, Table 1 "Upgradient Data". This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 "Most Current Downgradient Monitoring Data", summarizes the August 2025 data from downgradient wells MW-30, MW-31, and MW-32 compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks. For the most current data, the site prediction limit exceedances detected are summarized in the table below.

Prediction Limit Exceedances during the August 2025 Monitoring Event

Well	Parameter	Result	Prediction Limit	Prediction Limit Type	Verified/ Awaiting verification
MW-30	Arsenic, µg/L	38.8	32.1330	Normal	Awaiting verification
	Iron, µg/L	64600	10889.4265	Normal	Awaiting verification
	pH, SU	5.96	6.05 - 7.69	Normal	Awaiting verification
MW-31	COD, mg/L	58.0	47.2825	Normal	Awaiting verification
	Iron, µg/L	63100	10889.4265	Normal	Awaiting verification
MW-32	Barium, µg/L	582	535.6328	Normal	Awaiting verification
	Iron, µg/L	28200	10889.4265	Normal	Awaiting verification

The detection frequencies of the parameters in the up and down gradient monitoring wells are summarized in Table 3. All parameters other than cobalt were detected at a frequency greater than or equal to 50% in the upgradient well so these parameters were tested for normality. Cobalt was detected less than 50% in the upgradient wells so a nonparametric prediction limit was used in this case.

Table 4 summarizes the results of the Shapiro-Wilk test. Table 5 is a summary of the statistics and prediction limits determined for the metals. Table 8 is a historical summary of the data at those wells that have indicated an exceedance. Time series graphs of each of the parameters at each well with the corresponding prediction limits are attached.

A statistical power curve indicates the expected false assessments for the site as a whole. The false positive rate for interwell analyses is the percentage of failures when the upgradient versus downgradient true mean difference equals zero. False negative rate indicates the chance of missing contamination at a single well for a single constituent. The statistical power is a function of the number of wells included, the number of constituents compared, the detection frequencies, and the data distributions involved. For interwell analysis, the site-wide false positive rate is 1% and the test becomes sensitive to 5 standard deviation unit increases over background.

Intrawell statistics

Intrawell statistics are appropriate for facilities where the upgradient wells do not accurately characterize the natural ground water conditions downgradient from the facility. This may be due to different hydrogeological conditions where the wells are screened, having too few upgradient wells to account for the spatial variability, or the site exhibiting no definable hydraulic gradient. Intrawell statistics compare new measurements to the historical data at each ground water monitoring well independently. It is recommended that at least eight background samples be obtained prior to performing the statistics.

The most useful technique for intrawell comparisons is the combined Shewhart-CUSUM control chart. This control chart procedure is useful because it will detect releases both in terms of the constituent concentration and cumulative increases. This method is also extremely sensitive to sudden and gradual releases. A requirement for constructing these control charts is that the parameter is detected at a frequency greater than or equal to 25%, otherwise the data variance is not properly defined.

The combined Shewhart-CUSUM control chart assumes that the data are independent and normally distributed with a fixed mean and a constant variance. Independent data is much more critical than the normality assumption. To achieve independence, it is recommended that data are collected no more frequently than quarterly to account for seasonal variation. The combined Shewhart-CUSUM control chart is extremely robust to deviations from normality. Because the control charts do not use a specific multiplier based on a normal distribution, it is more conservative to assume normality.

It is recommended that at least eight rounds of data be available to provide a reliable estimate of the mean and standard deviation of the parameter concentration, although the control charts will be generated with as few as four data points. Having only four data points may produce greater uncertainty in the mean and standard deviation of the background data, leading to higher control limits, thus having a potentially high false negative rate.

Many groundwater monitoring parameters are not detected at a frequency great enough to generate the combined Shewhart-CUSUM control charts. For constituents that are detected less than 25% of the time at a particular well, the data should be plotted as a time series until a sufficient number of data points are available to provide a 99% confidence nonparametric prediction limit. Thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. Eight independent measurements (for pass 1 of 2 resamples) are necessary to achieve a 99% confidence nonparametric prediction limit. The nonparametric prediction limit is the largest determination out of the data set collected for that well and parameter. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

In developing the statistical background, the historical data must be thoroughly screened for anomalous data due to sampling error, analytical error, or simply by chance alone. An erroneous data point, if not removed prior to the mean and variance computations, would yield a larger control limit thus increasing the false negative rate. The DUMPStat® program screens for outliers using the Dixon test. Anomalous data will still be plotted on the graphs (with a unique symbol) but will not be included in the calculations.

The verification resample plan is an integral function of the statistical plan to reduce the probability that anomalous data obtained after the background has been established, is indicative of a landfill release.

The background data for each well and constituent is tested for existing trends using Sen's nonparametric estimate of trend. If contamination exists prior to completing the background, the control limits could be potentially high and this control chart method would not be able to detect an increasing trend unless the increase is severe.

Results of the Intrawell Statistics: July 2025 Monitoring Event

The data from upgradient well MW-21 was evaluated using the combined Shewhart-CUSUM control chart method. Insufficient data is available for wells MW-29, MW-30, MW-31, and MW-32. As ground water monitoring at a municipal solid waste facility proceeds, it is recommended to update background data sets periodically with valid detection monitoring results that are representative of background groundwater quality not affected by leakage from a monitored unit. Failure to update background will exclude factors such as natural temporal variation, changes in field or laboratory methodologies, and changes in the water table due to meteorological conditions or other influences. The background for MW-21 includes data obtained from 2018 through 2024.

A summary of the intrawell statistics is included in Attachment C, Table 1 “Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts.” The control charts or time series graphs follow the summary table. For the parameters evaluated, there are no statistical limit exceedances identified. No increasing trends were detected in the background data.

A control chart factor was selected to provide a balance of the site-wide false positive and false negative rates. A statistical power curve indicates the expected false assessments for the site as a whole. For intrawell analysis, the site-wide false positive rate is 1% and the test becomes sensitive to 4 standard deviation units over background.

Results of the Interwell Statistics: October 2025 Monitoring Event

Monitoring wells MW-21, MW-29, MW-30, MW-31, and MW-32 were sampled on October 13-14, 2025 and analyzed for the parameters required by permit. The background data used in this statistical analysis includes the ground water data collected from ground water well MW-21, MW-29, MW-1, and MW-4 during the period from 2018 through October 2025. A summary of the background data is listed in Attachment D, Table 1 "Upgradient Data". This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 "Most Current Downgradient Monitoring Data", summarizes the October 2025 data from downgradient wells MW-30, MW-31, and MW-32 compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks. For the most current data, the site prediction limit exceedances detected are summarized in the table below.

Prediction Limit Exceedances during the October 2025 Monitoring Event

Well	Parameter	Result	Prediction Limit	Prediction Limit Type	Verified/ Awaiting verification
MW-30	Ammonia, mg/L	3.7	3.1915	Normal	Awaiting verification
	Arsenic, µg/L	39.6	31.4866	Normal	Verified
	Iron, µg/L	47700	10700.3317	Normal	Verified
MW-31	Iron, µg/L	41100	10700.3317	Normal	Verified

Results of the Intrawell Statistics: October 2025 Monitoring Event

The data from upgradient well MW-21 was evaluated using the combined Shewhart-CUSUM control chart method. The background for MW-21 includes data obtained from 2018 through 2024.

A summary of the intrawell statistics is included in Attachment E, Table 1 "Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts." The control charts or time series graphs follow the summary table. For the parameters evaluated, there are no statistical limit exceedances identified. No increasing trends were detected in the background data.

Results of the Interwell Statistics: November 2025 Monitoring Event

Since COD was analyzed past the hold time in October 2025, wells MW-21, MW-29, MW-30, MW-31, and MW-32 were sampled on November 20-21, 2025 and analyzed for the field parameters and COD. A summary of the background data is listed in Attachment F, Table 1 "Upgradient Data". This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 "Most Current Downgradient Monitoring Data", summarizes the November 2025 data from downgradient wells MW-30, MW-31, and MW-32 compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks. For the most current data, the site prediction limit exceedances detected are summarized in the table below.

Prediction Limit Exceedances during the November 2025 Monitoring Event

Well	Parameter	Result	Prediction Limit	Prediction Limit Type	Verified/ Awaiting verification
MW-31	COD, mg/L	47.0	45.9511	Normal	Awaiting verification

Results of the Intrawell Statistics: November 2025 Monitoring Event

The data from upgradient well MW-21 was evaluated using the combined Shewhart-CUSUM control chart method. The background for MW-21 includes data obtained from 2018 through 2024.

A summary of the intrawell statistics is included in Attachment G, Table 1 "Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts." The control charts or time series graphs follow the summary table. For the parameters evaluated, there are no statistical limit exceedances identified. No increasing trends were detected in the background data.

Attachment A

Ground Water Data obtained in 2025

Table 1

Analytical Data Summary for 4/15/2025

Constituents	Units	MW-2	MW-21	MW-22	MW24R1	MW-3R1
Ammonia	mg/L	<.313	<.055	4.000	<.055	<.055
Arsenic, total	ug/L	<5.60	<5.60	6.32	<5.60	42.40
Barium, total	ug/L	166	399	368	302	243
Chemical oxygen demand	mg/L	<5.7	7.0	<5.7	7.0	<5.7
Chloride	mg/L	70.49243	233.46831	95.78461	79.69585	105.47600
Cobalt, total	ug/L	<3.40	<3.40	7.89	15.90	12.70
Iron, total	ug/L	<154.3	<154.3	3340.0	4810.0	40700.0
Magnesium, total	mg/L	24.3	64.3	3838.0	33.5	31.7
pH	SU	6.50	7.14	7.20	6.87	6.89
Specific conductance	uS	954.1	1835.0	1442.0	934.1	984.3
Temperature	C	11.6	8.9	12.5	11.8	12.5

* - The displayed value is the arithmetic mean of multiple database matches.

Table 2

Analytical Data Summary for 6/30/2025

Constituents	Units	MW-2	MW-22	MW-24
Ammonia	mg/L	<.047	2.900	.540
Arsenic, total	ug/L	<2.8	12.8	<2.8
Barium, total	ug/L	120	446	103
Chemical oxygen demand	mg/L	<5.7	6.0	<5.7
Chloride	mg/L	80.60484	87.04522	87.73923
Cobalt, total	ug/L	<1.70	11.80	1.84
Iron, total	ug/L	<77.15	10600.00	362.00
Magnesium, total	mg/L	24.9	38.6	27.7
pH	SU	6.56	7.03	7.16
Specific conductance	uS	797.3	1033.0	827.4
Temperature	C	18.6	21.2	14.8

* - The displayed value is the arithmetic mean of multiple database matches.

Table 3

Analytical Data Summary for 7/1/2025

Constituents	Units	MW-21	MW-3R1
Ammonia	mg/L	<.047	.300
Arsenic, total	ug/L	<1.45	25.10
Barium, total	ug/L	312	179
Chemical oxygen demand	mg/L	<5.7	6.0
Chloride	mg/L	223.48219	85.40098
Cobalt, total	ug/L	<.65	10.30
Iron, total	ug/L	<42.95	30500.00
Magnesium, total	mg/L	57.2	22.5
pH	SU	6.96	6.72
Specific conductance	uS	1754.0	859.3
Temperature	C	14.7	15.5

* - The displayed value is the arithmetic mean of multiple database matches.

Table 4

Analytical Data Summary for 8/19/2025

Constituents	Units	MW-30	MW-31	MW-32
Ammonia	mg/L	2.0	1.6	.2
Arsenic, total	ug/L	38.8	29.5	14.2
Barium, total	ug/L	442	238	582
Chemical oxygen demand	mg/L	47	58	13
Chloride	mg/L	63.01387	40.37284	37.21953
Cobalt, total	ug/L	19.0	49.3	42.8
Iron, total	ug/L	64600	63100	28200
Magnesium, total	mg/L	43.4	39.3	23.5
pH	SU	5.96	6.66	6.48
Specific conductance	uS	1035.0	1024.0	559.9
Temperature	C	18.0	16.2	18.8

* - The displayed value is the arithmetic mean of multiple database matches.

Table 5

Analytical Data Summary for 8/20/2025

Constituents	Units	MW-29
Ammonia	mg/L	5.9
Arsenic, total	ug/L	<5.6
Barium, total	ug/L	212
Chemical oxygen demand	mg/L	100
Chloride	mg/L	256.1106
Cobalt, total	ug/L	6.34
Iron, total	ug/L	4290
Magnesium, total	mg/L	51.7
pH	SU	7.47
Specific conductance	uS	1917
Temperature	C	18.7

* - The displayed value is the arithmetic mean of multiple database matches.

Table 6

Analytical Data Summary for 10/13/2025

Constituents	Units	MW-30	MW-31	MW-32
Ammonia	mg/L	3.700	.640	<.047
Arsenic, total	ug/L	39.6	27.2	5.4
Barium, total	ug/L	284	204	210
Chemical oxygen demand	mg/L	10.0	16.0	<5.7
Chloride	mg/L	57.19633	44.90321	48.16122
Cobalt, total	ug/L	6.42	27.90	16.50
Iron, total	ug/L	47700	41100	9360
Magnesium, total	mg/L	30.1	25.1	19.3
pH	SU	6.83	6.68	6.27
Specific conductance	uS	1106.0	834.7	574.3
Temperature	C	17.5	17.3	15.4

* - The displayed value is the arithmetic mean of multiple database matches.

Table 7

Analytical Data Summary for 10/14/2025

Constituents	Units	MW-21	MW-29
Ammonia	mg/L	.20	.87
Arsenic, total	ug/L	<1.45	1.72
Barium, total	ug/L	340	151
Chemical oxygen demand	mg/L	<5.7	9.0
Chloride	mg/L	221	278
Cobalt, total	ug/L	<.65	2.26
Iron, total	ug/L	55	1280
Magnesium, total	mg/L	54.3	57.6
pH	SU	6.86	6.92
Specific conductance	uS	1728	1927
Temperature	C	13.9	18.0

* - The displayed value is the arithmetic mean of multiple database matches.

Table 8

Analytical Data Summary for 11/20/2025

Constituents	Units	MW-32
Chemical oxygen demand	mg/L	<5.7
pH	SU	6.41
Specific conductance	uS	707.2
Temperature	C	11.3

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

Analytical Data Summary for 11/21/2025

Constituents	Units	MW-21	MW-29	MW-30	MW-31
Chemical oxygen demand	mg/L	10	21	9	47
pH	SU	6.89	6.93	6.91	6.62
Specific conductance	uS	1858	1958	1426	1016
Temperature	C	10.2	13.4	12.4	9.3

* - The displayed value is the arithmetic mean of multiple database matches.

Attachment B

Summary Tables and Graphs for the Interwell Comparisons
August 2025 Monitoring Event

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Ammonia	mg/L	MW-1	04/26/2018		1.0000		
Ammonia	mg/L	MW-1	10/15/2018		0.5300		
Ammonia	mg/L	MW-1	04/23/2019		1.1000		
Ammonia	mg/L	MW-1	10/22/2019		0.9100		
Ammonia	mg/L	MW-1	04/21/2020		0.5800		
Ammonia	mg/L	MW-1	10/13/2020		0.7100		
Ammonia	mg/L	MW-1	04/14/2021		0.6300		
Ammonia	mg/L	MW-1	10/19/2021		0.6500		
Ammonia	mg/L	MW-1	04/14/2022		0.7400		
Ammonia	mg/L	MW-1	10/13/2022		0.6300		
Ammonia	mg/L	MW-1	04/19/2023		0.6100		
Ammonia	mg/L	MW-1	10/20/2023		0.6300		
Ammonia	mg/L	MW-1	04/10/2024		0.5500		
Ammonia	mg/L	MW-1	10/23/2024		0.5300		
Arsenic, total	ug/L	MW-1	04/26/2018		2.4000		
Arsenic, total	ug/L	MW-1	10/15/2018		1.3700		
Arsenic, total	ug/L	MW-1	04/23/2019		4.0200		
Arsenic, total	ug/L	MW-1	10/22/2019		3.9600		
Arsenic, total	ug/L	MW-1	04/21/2020		3.6500		
Arsenic, total	ug/L	MW-1	10/13/2020		3.7500		
Arsenic, total	ug/L	MW-1	04/14/2021		5.6100		
Arsenic, total	ug/L	MW-1	10/19/2021	ND	0.2300		*
Arsenic, total	ug/L	MW-1	04/14/2022		3.4700		
Arsenic, total	ug/L	MW-1	10/13/2022		3.7100		
Arsenic, total	ug/L	MW-1	04/19/2023		3.3200		
Arsenic, total	ug/L	MW-1	10/20/2023		2.2700		
Arsenic, total	ug/L	MW-1	04/10/2024		3.6500		
Arsenic, total	ug/L	MW-1	10/23/2024	ND	3.7000	1.4500	**
Barium, total	ug/L	MW-1	04/26/2018		237.0000		
Barium, total	ug/L	MW-1	10/15/2018		218.0000		
Barium, total	ug/L	MW-1	04/23/2019		135.0000		
Barium, total	ug/L	MW-1	10/22/2019		169.0000		
Barium, total	ug/L	MW-1	04/21/2020		177.0000		
Barium, total	ug/L	MW-1	10/13/2020		180.0000		
Barium, total	ug/L	MW-1	04/14/2021		235.0000		
Barium, total	ug/L	MW-1	10/19/2021		155.0000		
Barium, total	ug/L	MW-1	04/14/2022		201.0000		
Barium, total	ug/L	MW-1	10/13/2022		216.0000		
Barium, total	ug/L	MW-1	04/19/2023		205.0000		
Barium, total	ug/L	MW-1	10/20/2023		204.0000		
Barium, total	ug/L	MW-1	04/10/2024		222.0000		
Barium, total	ug/L	MW-1	10/23/2024		219.0000		
Chemical oxygen demand	mg/L	MW-1	04/26/2018		13.0000		
Chemical oxygen demand	mg/L	MW-1	10/15/2018	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-1	04/23/2019		18.0000		
Chemical oxygen demand	mg/L	MW-1	10/22/2019		7.0000		
Chemical oxygen demand	mg/L	MW-1	04/21/2020		17.0000		
Chemical oxygen demand	mg/L	MW-1	10/13/2020		22.0000		
Chemical oxygen demand	mg/L	MW-1	04/14/2021		32.0000		
Chemical oxygen demand	mg/L	MW-1	10/19/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-1	04/14/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	04/19/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/20/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	04/10/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/23/2024	ND	5.7000		
Chloride	mg/L	MW-1	04/26/2018		3.5100		
Chloride	mg/L	MW-1	10/15/2018		1.2900		
Chloride	mg/L	MW-1	04/23/2019		27.8000		
Chloride	mg/L	MW-1	10/22/2019		11.8000		
Chloride	mg/L	MW-1	04/21/2020		17.8000		
Chloride	mg/L	MW-1	10/13/2020		11.2000		
Chloride	mg/L	MW-1	04/14/2021		6.9000		
Chloride	mg/L	MW-1	10/19/2021		6.2800		
Chloride	mg/L	MW-1	04/14/2022		6.3400		
Chloride	mg/L	MW-1	10/13/2022		5.8900		
Chloride	mg/L	MW-1	04/19/2023		5.8300		
Chloride	mg/L	MW-1	10/20/2023		5.6100		
Chloride	mg/L	MW-1	04/10/2024		5.5300		
Chloride	mg/L	MW-1	10/23/2024		4.6200		
Cobalt, total	ug/L	MW-1	10/13/2020		0.9500		
Cobalt, total	ug/L	MW-1	04/14/2021		1.9700		
Cobalt, total	ug/L	MW-1	10/19/2021	ND	1.2500	0.7500	**
Cobalt, total	ug/L	MW-1	04/14/2022	ND	1.2500	0.7500	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt, total	ug/L	MW-1	10/13/2022	ND	0.7500		
Cobalt, total	ug/L	MW-1	04/19/2023	ND	0.7500		
Cobalt, total	ug/L	MW-1	10/20/2023	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-1	04/10/2024	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-1	10/23/2024	ND	1.7000	0.7500	**
Iron, total	ug/L	MW-1	04/26/2018		2840.0000		
Iron, total	ug/L	MW-1	10/15/2018		1900.0000		
Iron, total	ug/L	MW-1	04/23/2019		6880.0000		
Iron, total	ug/L	MW-1	10/22/2019		5820.0000		
Iron, total	ug/L	MW-1	04/21/2020		45.8000		*
Iron, total	ug/L	MW-1	10/13/2020		5900.0000		
Iron, total	ug/L	MW-1	04/14/2021		9720.0000		
Iron, total	ug/L	MW-1	10/19/2021		4090.0000		
Iron, total	ug/L	MW-1	04/14/2022		4100.0000		
Iron, total	ug/L	MW-1	10/13/2022		4910.0000		
Iron, total	ug/L	MW-1	04/19/2023		1270.0000		
Iron, total	ug/L	MW-1	10/20/2023		779.0000		
Iron, total	ug/L	MW-1	04/10/2024		5270.0000		
Iron, total	ug/L	MW-1	10/23/2024		5400.0000		
Magnesium, total	mg/L	MW-1	04/26/2018		29.0000		
Magnesium, total	mg/L	MW-1	10/15/2018		32.0000		
Magnesium, total	mg/L	MW-1	04/23/2019		20.7000		
Magnesium, total	mg/L	MW-1	10/22/2019		25.8000		
Magnesium, total	mg/L	MW-1	04/21/2020		23.5000		
Magnesium, total	mg/L	MW-1	10/13/2020		24.2000		
Magnesium, total	mg/L	MW-1	04/14/2021		29.3000		
Magnesium, total	mg/L	MW-1	10/19/2021		20.9000		
Magnesium, total	mg/L	MW-1	04/14/2022		28.7000		
Magnesium, total	mg/L	MW-1	10/13/2022		29.2000		
Magnesium, total	mg/L	MW-1	04/19/2023		28.3000		
Magnesium, total	mg/L	MW-1	10/20/2023		31.9000		
Magnesium, total	mg/L	MW-1	04/10/2024		29.4000		
Magnesium, total	mg/L	MW-1	10/23/2024		29.0000		
pH	SU	MW-1	04/26/2018		6.5000		
pH	SU	MW-1	10/15/2018		7.2200		
pH	SU	MW-1	04/23/2019		7.0300		
pH	SU	MW-1	10/22/2019		7.2100		
pH	SU	MW-1	04/21/2020		7.2300		
pH	SU	MW-1	10/13/2020		7.0300		
pH	SU	MW-1	04/14/2021		7.4000		
pH	SU	MW-1	10/19/2021		7.4000		
pH	SU	MW-1	04/14/2022		7.5000		
pH	SU	MW-1	10/13/2022		7.1700		
pH	SU	MW-1	04/19/2023		7.3300		
pH	SU	MW-1	10/20/2023		7.2000		
pH	SU	MW-1	04/10/2024		6.9700		
pH	SU	MW-1	10/23/2024		6.3700		
Specific conductance	uS	MW-1	04/26/2018		684.0000		
Specific conductance	uS	MW-1	10/15/2018		700.0000		
Specific conductance	uS	MW-1	04/23/2019		554.0000		
Specific conductance	uS	MW-1	10/22/2019		662.0000		
Specific conductance	uS	MW-1	04/21/2020		641.0000		
Specific conductance	uS	MW-1	10/13/2020		617.0000		
Specific conductance	uS	MW-1	04/14/2021		685.0000		
Specific conductance	uS	MW-1	10/19/2021		702.0000		
Specific conductance	uS	MW-1	04/14/2022		704.0000		
Specific conductance	uS	MW-1	10/13/2022		733.0000		
Specific conductance	uS	MW-1	04/19/2023		711.0000		
Specific conductance	uS	MW-1	10/20/2023		707.0000		
Specific conductance	uS	MW-1	04/10/2024		721.0000		
Specific conductance	uS	MW-1	10/23/2024		956.5000		
Ammonia	mg/L	MW-21	04/26/2018	ND	0.5000	0.1340	**
Ammonia	mg/L	MW-21	10/15/2018	ND	0.5000	0.1340	**
Ammonia	mg/L	MW-21	04/24/2019	ND	0.5000	0.1340	**
Ammonia	mg/L	MW-21	10/22/2019	ND	0.2000	0.1340	**
Ammonia	mg/L	MW-21	04/21/2020		0.1000		
Ammonia	mg/L	MW-21	10/13/2020	ND	0.2800	0.1340	**
Ammonia	mg/L	MW-21	04/14/2021	ND	0.1340		
Ammonia	mg/L	MW-21	10/20/2021		0.4000		
Ammonia	mg/L	MW-21	04/14/2022	ND	0.1340		
Ammonia	mg/L	MW-21	10/13/2022	ND	0.1140	0.1340	**
Ammonia	mg/L	MW-21	04/19/2023	ND	0.1040	0.1340	**
Ammonia	mg/L	MW-21	10/24/2023	ND	0.1040	0.1340	**
Ammonia	mg/L	MW-21	04/11/2024	ND	0.1040	0.1340	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Ammonia	mg/L	MW-21	10/23/2024		0.2000		
Ammonia	mg/L	MW-21	04/15/2025	ND	0.0550	0.1340	**
Ammonia	mg/L	MW-21	07/01/2025	ND	0.0470	0.1340	**
Arsenic, total	ug/L	MW-21	04/26/2018		0.9800		
Arsenic, total	ug/L	MW-21	10/15/2018		1.8300		
Arsenic, total	ug/L	MW-21	04/24/2019		0.5600		
Arsenic, total	ug/L	MW-21	10/22/2019		1.1700		
Arsenic, total	ug/L	MW-21	04/21/2020	ND	2.0000	1.4500	**
Arsenic, total	ug/L	MW-21	10/13/2020		1.5200		
Arsenic, total	ug/L	MW-21	04/14/2021		1.5800		
Arsenic, total	ug/L	MW-21	10/20/2021	ND	1.1500	1.4500	**
Arsenic, total	ug/L	MW-21	04/14/2022		1.1700		
Arsenic, total	ug/L	MW-21	10/13/2022		1.5400		
Arsenic, total	ug/L	MW-21	04/19/2023		1.5400		
Arsenic, total	ug/L	MW-21	10/24/2023	ND	1.4500		
Arsenic, total	ug/L	MW-21	04/11/2024	ND	1.4500		
Arsenic, total	ug/L	MW-21	10/23/2024	ND	3.7000	1.4500	**
Arsenic, total	ug/L	MW-21	04/15/2025	ND	5.6000		*
Arsenic, total	ug/L	MW-21	07/01/2025	ND	1.4500		
Barium, total	ug/L	MW-21	04/26/2018		406.0000		
Barium, total	ug/L	MW-21	10/15/2018		372.0000		
Barium, total	ug/L	MW-21	04/24/2019		413.0000		
Barium, total	ug/L	MW-21	10/22/2019		438.0000		
Barium, total	ug/L	MW-21	04/21/2020		401.0000		
Barium, total	ug/L	MW-21	10/13/2020		338.0000		
Barium, total	ug/L	MW-21	04/14/2021		347.0000		
Barium, total	ug/L	MW-21	10/20/2021		229.0000		
Barium, total	ug/L	MW-21	04/14/2022		325.0000		
Barium, total	ug/L	MW-21	10/13/2022		307.0000		
Barium, total	ug/L	MW-21	04/19/2023		269.0000		
Barium, total	ug/L	MW-21	10/24/2023		301.0000		
Barium, total	ug/L	MW-21	04/11/2024		343.0000		
Barium, total	ug/L	MW-21	10/23/2024		350.0000		
Barium, total	ug/L	MW-21	04/15/2025		399.0000		
Barium, total	ug/L	MW-21	07/01/2025		312.0000		
Chemical oxygen demand	mg/L	MW-21	04/26/2018		10.0000		
Chemical oxygen demand	mg/L	MW-21	10/15/2018		8.0000		
Chemical oxygen demand	mg/L	MW-21	04/24/2019		10.0000		
Chemical oxygen demand	mg/L	MW-21	10/22/2019		7.0000		
Chemical oxygen demand	mg/L	MW-21	04/21/2020		9.0000		
Chemical oxygen demand	mg/L	MW-21	10/13/2020		11.0000		
Chemical oxygen demand	mg/L	MW-21	04/14/2021		8.0000		
Chemical oxygen demand	mg/L	MW-21	10/20/2021		6.0000		
Chemical oxygen demand	mg/L	MW-21	04/14/2022		9.0000		
Chemical oxygen demand	mg/L	MW-21	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	04/19/2023		8.0000		
Chemical oxygen demand	mg/L	MW-21	10/24/2023		6.0000		
Chemical oxygen demand	mg/L	MW-21	04/11/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	10/23/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	04/15/2025		7.0000		
Chemical oxygen demand	mg/L	MW-21	07/01/2025	ND	5.7000		
Chloride	mg/L	MW-21	04/26/2018		224.0000		
Chloride	mg/L	MW-21	10/15/2018		194.9500		
Chloride	mg/L	MW-21	04/24/2019		224.0000		
Chloride	mg/L	MW-21	10/22/2019		217.0000		
Chloride	mg/L	MW-21	04/21/2020		227.0000		
Chloride	mg/L	MW-21	10/13/2020		245.0000		
Chloride	mg/L	MW-21	04/14/2021		238.0000		
Chloride	mg/L	MW-21	10/20/2021		195.9450		
Chloride	mg/L	MW-21	04/14/2022		178.0400		
Chloride	mg/L	MW-21	10/13/2022		162.0000		
Chloride	mg/L	MW-21	04/19/2023		167.0000		
Chloride	mg/L	MW-21	10/24/2023		174.0000		
Chloride	mg/L	MW-21	04/11/2024		204.0000		
Chloride	mg/L	MW-21	10/23/2024		215.0000		
Chloride	mg/L	MW-21	04/15/2025		233.4683		
Chloride	mg/L	MW-21	07/01/2025		223.4822		
Cobalt, total	ug/L	MW-21	10/13/2020		0.4800		
Cobalt, total	ug/L	MW-21	04/14/2021	ND	1.2500	0.7500	**
Cobalt, total	ug/L	MW-21	10/20/2021	ND	1.2500	0.7500	**
Cobalt, total	ug/L	MW-21	04/14/2022	ND	1.2500	0.7500	**
Cobalt, total	ug/L	MW-21	10/13/2022	ND	0.7500		
Cobalt, total	ug/L	MW-21	04/19/2023	ND	0.7500		
Cobalt, total	ug/L	MW-21	10/24/2023	ND	0.6500	0.7500	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt, total	ug/L	MW-21	04/11/2024	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-21	10/23/2024	ND	1.7000	0.7500	**
Cobalt, total	ug/L	MW-21	04/15/2025	ND	3.4000	0.7500	**
Cobalt, total	ug/L	MW-21	07/01/2025	ND	0.6500	0.7500	**
Iron, total	ug/L	MW-21	04/26/2018		194.0000		
Iron, total	ug/L	MW-21	10/15/2018		323.0000		
Iron, total	ug/L	MW-21	04/24/2019		193.0000		
Iron, total	ug/L	MW-21	10/22/2019		460.0000		
Iron, total	ug/L	MW-21	04/21/2020	ND	2.0000	154.3000	**
Iron, total	ug/L	MW-21	10/13/2020		134.0000		
Iron, total	ug/L	MW-21	04/14/2021	ND	681.5000	154.3000	**
Iron, total	ug/L	MW-21	10/20/2021	ND	681.5000	154.3000	**
Iron, total	ug/L	MW-21	04/14/2022	ND	681.5000	154.3000	**
Iron, total	ug/L	MW-21	10/13/2022		147.0000		
Iron, total	ug/L	MW-21	04/19/2023		162.0000		
Iron, total	ug/L	MW-21	10/24/2023		126.0000		
Iron, total	ug/L	MW-21	04/11/2024		58.0000		
Iron, total	ug/L	MW-21	10/23/2024		1070.0000		
Iron, total	ug/L	MW-21	04/15/2025	ND	154.3000		
Iron, total	ug/L	MW-21	07/01/2025	ND	42.9500	154.3000	**
Magnesium, total	mg/L	MW-21	04/26/2018		60.1000		
Magnesium, total	mg/L	MW-21	10/15/2018		55.3000		
Magnesium, total	mg/L	MW-21	04/24/2019		58.7000		
Magnesium, total	mg/L	MW-21	10/22/2019		58.0000		
Magnesium, total	mg/L	MW-21	04/21/2020		59.6000		
Magnesium, total	mg/L	MW-21	10/13/2020		56.8000		
Magnesium, total	mg/L	MW-21	04/14/2021		55.4000		
Magnesium, total	mg/L	MW-21	10/20/2021		36.9000		
Magnesium, total	mg/L	MW-21	04/14/2022		51.5000		
Magnesium, total	mg/L	MW-21	10/13/2022		43.9000		
Magnesium, total	mg/L	MW-21	04/19/2023		47.0000		
Magnesium, total	mg/L	MW-21	10/24/2023		52.7000		
Magnesium, total	mg/L	MW-21	04/11/2024		53.1000		
Magnesium, total	mg/L	MW-21	10/23/2024		54.8000		
Magnesium, total	mg/L	MW-21	04/15/2025		64.3000		
Magnesium, total	mg/L	MW-21	07/01/2025		57.2000		
pH	SU	MW-21	04/26/2018		6.7900		
pH	SU	MW-21	10/15/2018		6.3600		
pH	SU	MW-21	04/24/2019		6.7800		
pH	SU	MW-21	10/22/2019		6.8300		
pH	SU	MW-21	04/21/2020		6.8600		
pH	SU	MW-21	10/13/2020		6.7400		
pH	SU	MW-21	04/14/2021		6.8000		
pH	SU	MW-21	10/20/2021		6.7000		
pH	SU	MW-21	04/14/2022		6.7000		
pH	SU	MW-21	10/13/2022		6.8200		
pH	SU	MW-21	04/19/2023		6.9200		
pH	SU	MW-21	10/24/2023		6.9000		
pH	SU	MW-21	04/11/2024		6.6700		
pH	SU	MW-21	10/23/2024		6.8300		
pH	SU	MW-21	04/15/2025		7.1400		
pH	SU	MW-21	07/01/2025		6.9600		
Specific conductance	uS	MW-21	04/26/2018		1554.0000		
Specific conductance	uS	MW-21	10/15/2018		1391.0000		
Specific conductance	uS	MW-21	04/24/2019		1590.0000		
Specific conductance	uS	MW-21	10/22/2019		1532.0000		
Specific conductance	uS	MW-21	04/21/2020		1661.0000		
Specific conductance	uS	MW-21	10/13/2020		1542.0000		
Specific conductance	uS	MW-21	04/14/2021		1649.0000		
Specific conductance	uS	MW-21	10/20/2021		1480.0000		
Specific conductance	uS	MW-21	04/14/2022		1484.0000		
Specific conductance	uS	MW-21	10/13/2022		1520.0000		
Specific conductance	uS	MW-21	04/19/2023		1443.0000		
Specific conductance	uS	MW-21	10/24/2023		1350.0000		
Specific conductance	uS	MW-21	04/11/2024		1420.0000		
Specific conductance	uS	MW-21	10/23/2024		874.5000		
Specific conductance	uS	MW-21	04/15/2025		1835.0000		
Specific conductance	uS	MW-21	07/01/2025		1754.0000		
Ammonia	mg/L	MW-29	08/20/2025		5.9000		
Arsenic, total	ug/L	MW-29	08/20/2025	ND	5.6000	1.4500	**
Barium, total	ug/L	MW-29	08/20/2025		212.0000		
Chemical oxygen demand	mg/L	MW-29	08/20/2025		100.0000		
Chloride	mg/L	MW-29	08/20/2025		256.1106		
Cobalt, total	ug/L	MW-29	08/20/2025		6.3400		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Iron, total	ug/L	MW-29	08/20/2025		4290.0000		
Magnesium, total	mg/L	MW-29	08/20/2025		51.7000		
pH	SU	MW-29	08/20/2025		7.4700		
Specific conductance	uS	MW-29	08/20/2025		1917.0000		
Ammonia	mg/L	MW-4	04/26/2018		2.9000		
Ammonia	mg/L	MW-4	10/15/2018		1.3000		
Ammonia	mg/L	MW-4	04/23/2019		0.9000		
Ammonia	mg/L	MW-4	10/22/2019		1.2000		
Ammonia	mg/L	MW-4	04/21/2020		0.8400		
Ammonia	mg/L	MW-4	10/12/2020		1.4000		
Ammonia	mg/L	MW-4	04/14/2021		1.0000		
Ammonia	mg/L	MW-4	10/19/2021		2.0000		
Ammonia	mg/L	MW-4	04/14/2022		1.6000		
Ammonia	mg/L	MW-4	10/13/2022		1.5000		
Ammonia	mg/L	MW-4	04/19/2023		0.6200		
Ammonia	mg/L	MW-4	10/18/2023		1.6000		
Ammonia	mg/L	MW-4	04/10/2024		1.2000		
Ammonia	mg/L	MW-4	10/23/2024		1.0000		
Arsenic, total	ug/L	MW-4	04/26/2018		25.7000		
Arsenic, total	ug/L	MW-4	10/15/2018		26.5000		
Arsenic, total	ug/L	MW-4	04/23/2019		13.4000		
Arsenic, total	ug/L	MW-4	10/22/2019		26.3000		
Arsenic, total	ug/L	MW-4	04/21/2020		14.7000		
Arsenic, total	ug/L	MW-4	10/12/2020		15.1000		
Arsenic, total	ug/L	MW-4	04/14/2021		14.2000		
Arsenic, total	ug/L	MW-4	10/19/2021		18.8000		
Arsenic, total	ug/L	MW-4	04/14/2022		31.5000		
Arsenic, total	ug/L	MW-4	10/13/2022		22.3000		
Arsenic, total	ug/L	MW-4	04/19/2023		11.7000		
Arsenic, total	ug/L	MW-4	10/18/2023		17.4000		
Arsenic, total	ug/L	MW-4	04/10/2024		35.6000		
Arsenic, total	ug/L	MW-4	10/23/2024		13.7000		
Barium, total	ug/L	MW-4	04/26/2018		372.0000		
Barium, total	ug/L	MW-4	10/15/2018		270.0000		
Barium, total	ug/L	MW-4	04/23/2019		282.0000		
Barium, total	ug/L	MW-4	10/22/2019		350.0000		
Barium, total	ug/L	MW-4	04/21/2020		301.0000		
Barium, total	ug/L	MW-4	10/12/2020		279.0000		
Barium, total	ug/L	MW-4	04/14/2021		343.0000		
Barium, total	ug/L	MW-4	10/19/2021		378.0000		
Barium, total	ug/L	MW-4	04/14/2022		500.0000		
Barium, total	ug/L	MW-4	10/13/2022		404.0000		
Barium, total	ug/L	MW-4	04/19/2023		235.0000		
Barium, total	ug/L	MW-4	10/18/2023		458.0000		
Barium, total	ug/L	MW-4	04/10/2024		543.0000		
Barium, total	ug/L	MW-4	10/23/2024		317.0000		
Chemical oxygen demand	mg/L	MW-4	04/26/2018		17.0000		
Chemical oxygen demand	mg/L	MW-4	10/15/2018	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/23/2019		8.0000		
Chemical oxygen demand	mg/L	MW-4	10/22/2019	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/21/2020		10.0000		
Chemical oxygen demand	mg/L	MW-4	10/12/2020		7.0000		
Chemical oxygen demand	mg/L	MW-4	04/14/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	10/19/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/14/2022		14.0000		
Chemical oxygen demand	mg/L	MW-4	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-4	04/19/2023		6.0000		
Chemical oxygen demand	mg/L	MW-4	10/18/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-4	04/10/2024		18.0000		
Chemical oxygen demand	mg/L	MW-4	10/23/2024	ND	5.7000		
Chloride	mg/L	MW-4	04/26/2018		103.0000		
Chloride	mg/L	MW-4	10/15/2018		79.9900		
Chloride	mg/L	MW-4	04/23/2019		86.5000		
Chloride	mg/L	MW-4	10/22/2019		48.7000		
Chloride	mg/L	MW-4	04/21/2020		55.1000		
Chloride	mg/L	MW-4	10/12/2020		60.9000		
Chloride	mg/L	MW-4	04/14/2021		75.1000		
Chloride	mg/L	MW-4	10/19/2021		84.4000		
Chloride	mg/L	MW-4	04/14/2022		90.3400		
Chloride	mg/L	MW-4	10/13/2022		85.8000		
Chloride	mg/L	MW-4	04/19/2023		64.2000		
Chloride	mg/L	MW-4	10/18/2023		76.5000		
Chloride	mg/L	MW-4	04/10/2024		82.6000		
Chloride	mg/L	MW-4	10/23/2024		75.7000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt, total	ug/L	MW-4	10/12/2020		4.1500		
Cobalt, total	ug/L	MW-4	04/14/2021		2.4200		
Cobalt, total	ug/L	MW-4	10/19/2021	ND	6.2500	0.7500	**
Cobalt, total	ug/L	MW-4	04/14/2022		7.1400		
Cobalt, total	ug/L	MW-4	10/13/2022		15.1000		
Cobalt, total	ug/L	MW-4	04/19/2023		8.2900		
Cobalt, total	ug/L	MW-4	10/18/2023		7.8500		
Cobalt, total	ug/L	MW-4	04/10/2024		126.0000		
Cobalt, total	ug/L	MW-4	10/23/2024		5.2900		
Iron, total	ug/L	MW-4	04/26/2018		6740.0000		
Iron, total	ug/L	MW-4	10/15/2018		6260.0000		
Iron, total	ug/L	MW-4	04/23/2019		3690.0000		
Iron, total	ug/L	MW-4	10/22/2019		7270.0000		
Iron, total	ug/L	MW-4	04/21/2020		36.2000		*
Iron, total	ug/L	MW-4	10/12/2020		4910.0000		
Iron, total	ug/L	MW-4	04/14/2021		4320.0000		
Iron, total	ug/L	MW-4	10/19/2021		5800.0000		
Iron, total	ug/L	MW-4	04/14/2022		8470.0000		
Iron, total	ug/L	MW-4	10/13/2022		11600.0000		
Iron, total	ug/L	MW-4	04/19/2023		3230.0000		
Iron, total	ug/L	MW-4	10/18/2023		3930.0000		
Iron, total	ug/L	MW-4	04/10/2024		83400.0000		*
Iron, total	ug/L	MW-4	10/23/2024		5090.0000		
Magnesium, total	mg/L	MW-4	04/26/2018		35.8000		
Magnesium, total	mg/L	MW-4	10/15/2018		27.7000		
Magnesium, total	mg/L	MW-4	04/23/2019		30.3000		
Magnesium, total	mg/L	MW-4	10/22/2019		22.7000		
Magnesium, total	mg/L	MW-4	04/21/2020		23.6000		
Magnesium, total	mg/L	MW-4	10/12/2020		23.0000		
Magnesium, total	mg/L	MW-4	04/14/2021		28.9000		
Magnesium, total	mg/L	MW-4	10/19/2021		25.1000		
Magnesium, total	mg/L	MW-4	04/14/2022		32.1000		
Magnesium, total	mg/L	MW-4	10/13/2022		32.5000		
Magnesium, total	mg/L	MW-4	04/19/2023		25.2000		
Magnesium, total	mg/L	MW-4	10/18/2023		36.9000		
Magnesium, total	mg/L	MW-4	04/10/2024		34.1000		
Magnesium, total	mg/L	MW-4	10/23/2024		29.1000		
pH	SU	MW-4	04/26/2018		6.2500		
pH	SU	MW-4	10/15/2018		6.7200		
pH	SU	MW-4	04/23/2019		6.6300		
pH	SU	MW-4	10/22/2019		6.4500		
pH	SU	MW-4	04/21/2020		6.7500		
pH	SU	MW-4	10/12/2020		6.6400		
pH	SU	MW-4	04/14/2021		6.7000		
pH	SU	MW-4	10/19/2021		6.9000		
pH	SU	MW-4	04/14/2022		6.9000		
pH	SU	MW-4	10/13/2022		6.8300		
pH	SU	MW-4	04/19/2023		6.6900		
pH	SU	MW-4	10/18/2023		6.8000		
pH	SU	MW-4	04/10/2024		6.4300		
pH	SU	MW-4	10/23/2024		6.7500		
Specific conductance	uS	MW-4	04/26/2018		986.0000		
Specific conductance	uS	MW-4	10/15/2018		874.0000		
Specific conductance	uS	MW-4	04/23/2019		895.0000		
Specific conductance	uS	MW-4	10/22/2019		618.0000		
Specific conductance	uS	MW-4	04/21/2020		709.0000		
Specific conductance	uS	MW-4	10/12/2020		643.0000		
Specific conductance	uS	MW-4	04/14/2021		1090.0000		
Specific conductance	uS	MW-4	10/19/2021		917.0000		
Specific conductance	uS	MW-4	04/14/2022		915.0000		
Specific conductance	uS	MW-4	10/13/2022		934.0000		
Specific conductance	uS	MW-4	04/19/2023		782.0000		
Specific conductance	uS	MW-4	10/18/2023		869.0000		
Specific conductance	uS	MW-4	04/10/2024		848.0000		
Specific conductance	uS	MW-4	10/23/2024		447.9000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date	Result		Pred. Limit
Ammonia	mg/L	MW-30	08/19/2025	2.0000		3.2528
Arsenic, total	ug/L	MW-30	08/19/2025	38.8000	*	32.1330
Barium, total	ug/L	MW-30	08/19/2025	442.0000		535.6328
Chemical oxygen demand	mg/L	MW-30	08/19/2025	47.0000		47.2825
Chloride	mg/L	MW-30	08/19/2025	63.0139		322.6647
Cobalt, total	ug/L	MW-30	08/19/2025	19.0000		126.0000
Iron, total	ug/L	MW-30	08/19/2025	64600.0000	*	10889.4265
Magnesium, total	mg/L	MW-30	08/19/2025	43.4000		71.2422
pH	SU	MW-30	08/19/2025	5.9600	*	6.05 - 7.69
Specific conductance	uS	MW-30	08/19/2025	1035.0000		1917.0000
Ammonia	mg/L	MW-31	08/19/2025	1.6000		3.2528
Arsenic, total	ug/L	MW-31	08/19/2025	29.5000		32.1330
Barium, total	ug/L	MW-31	08/19/2025	238.0000		535.6328
Chemical oxygen demand	mg/L	MW-31	08/19/2025	58.0000	*	47.2825
Chloride	mg/L	MW-31	08/19/2025	40.3728		322.6647
Cobalt, total	ug/L	MW-31	08/19/2025	49.3000		126.0000
Iron, total	ug/L	MW-31	08/19/2025	63100.0000	*	10889.4265
Magnesium, total	mg/L	MW-31	08/19/2025	39.3000		71.2422
pH	SU	MW-31	08/19/2025	6.6600		6.05 - 7.69
Specific conductance	uS	MW-31	08/19/2025	1024.0000		1917.0000
Ammonia	mg/L	MW-32	08/19/2025	0.2000		3.2528
Arsenic, total	ug/L	MW-32	08/19/2025	14.2000		32.1330
Barium, total	ug/L	MW-32	08/19/2025	582.0000	*	535.6328
Chemical oxygen demand	mg/L	MW-32	08/19/2025	13.0000		47.2825
Chloride	mg/L	MW-32	08/19/2025	37.2195		322.6647
Cobalt, total	ug/L	MW-32	08/19/2025	42.8000		126.0000
Iron, total	ug/L	MW-32	08/19/2025	28200.0000	*	10889.4265
Magnesium, total	mg/L	MW-32	08/19/2025	23.5000		71.2422
pH	SU	MW-32	08/19/2025	6.4800		6.05 - 7.69
Specific conductance	uS	MW-32	08/19/2025	559.9000		1917.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Detect	Upgradient N	Proportion	Detect	Downgradient N	Proportion
Ammonia	32	45	0.711	3	3	1.000
Arsenic, total	35	43	0.814	3	3	1.000
Barium, total	45	45	1.000	3	3	1.000
Chemical oxygen demand	26	45	0.578	3	3	1.000
Chloride	45	45	1.000	3	3	1.000
Cobalt, total	12	30	0.400	3	3	1.000
Iron, total	36	42	0.857	3	3	1.000
Magnesium, total	45	45	1.000	3	3	1.000
pH	45	45	1.000	3	3	1.000
Specific conductance	45	45	1.000	3	3	1.000

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Ammonia	32	45	0.711	1.972	1.649					2.326	normal	normal
Arsenic, total	35	43	0.814	1.255	2.124					2.326	normal	normal
Barium, total	45	45	1.000	0.266	0.107					2.326	normal	normal
Chemical oxygen demand	26	45	0.578	0.599	0.578					2.326	normal	normal
Chloride	45	45	1.000	1.766	1.126					2.326	normal	normal
Cobalt, total	12	30	0.400	5.138	1.418					2.326	lognor	nonpar
Iron, total	36	42	0.857	2.030	0.335					2.326	normal	normal
Magnesium, total	45	45	1.000	1.550	2.270					2.326	normal	normal
pH	45	45	1.000	2.322	2.608					2.326	normal	normal
Specific conductance	45	45	1.000	2.868	3.953					2.326	non-norm	nonpar

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type	Conf
Ammonia	mg/L	32	45	0.7880	1.0099	0.0100	2.4407	3.2528	normal	
Arsenic, total	ug/L	35	43	7.9063	9.9033	0.0100	2.4463	32.1330	normal	
Barium, total	ug/L	45	45	301.4889	95.9319	0.0100	2.4407	535.6328	normal	
Chemical oxygen demand	mg/L	26	45	8.6222	15.8396	0.0100	2.4407	47.2825	normal	
Chloride	mg/L	45	45	105.9606	88.7866	0.0100	2.4407	322.6647	normal	
Cobalt, total	ug/L	12	30					126.0000	nonpar	0.99
Iron, total	ug/L	36	42	3270.1429	3110.7345	0.0100	2.4494	10889.4265	normal	
Magnesium, total	mg/L	45	45	37.9089	13.6571	0.0100	2.4407	71.2422	normal	
pH	SU	45	45	6.8727	0.3021	0.0100	2.7219	6.05 - 7.69	normal	
Specific conductance	uS	45	45					1917.0000	nonpar	0.99

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Arsenic, total	ug/L	MW-1	10/19/2021	0.2300	< 0.2300	04/26/2018-10/23/2024	14	0.6403
Iron, total	ug/L	MW-1	04/21/2020	45.8000		04/26/2018-10/23/2024	14	0.6403
Arsenic, total	ug/L	MW-21	04/15/2025	5.6000	< 5.6000	04/26/2018-07/01/2025	16	0.5973
Iron, total	ug/L	MW-4	04/21/2020	36.2000		04/26/2018-10/23/2024	14	0.6403
Iron, total	ug/L	MW-4	04/10/2024	83400.0000		04/26/2018-10/23/2024	14	0.6403

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.

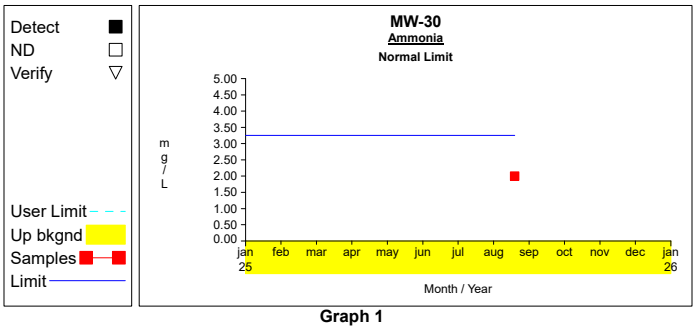
Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

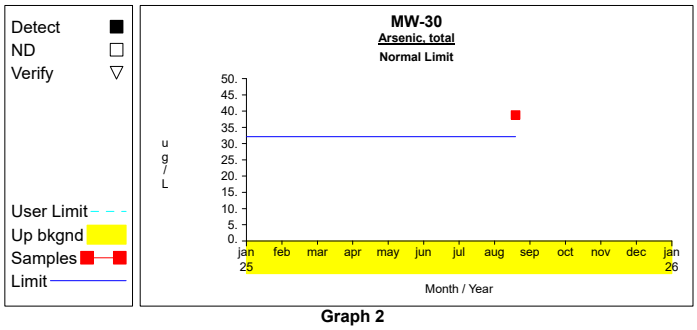
Constituent	Units	Well	Date	Result		Pred. Limit
Arsenic, total	ug/L	MW-30	08/19/2025	38.8000	*	32.1330
Iron, total	ug/L	MW-30	08/19/2025	64600.0000	*	10889.4265
pH	SU	MW-30	08/19/2025	5.9600	*	6.05 - 7.69
Chemical oxygen demand	mg/L	MW-31	08/19/2025	58.0000	*	47.2825
Iron, total	ug/L	MW-31	08/19/2025	63100.0000	*	10889.4265
Barium, total	ug/L	MW-32	08/19/2025	582.0000	*	535.6328
Iron, total	ug/L	MW-32	08/19/2025	28200.0000	*	10889.4265

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

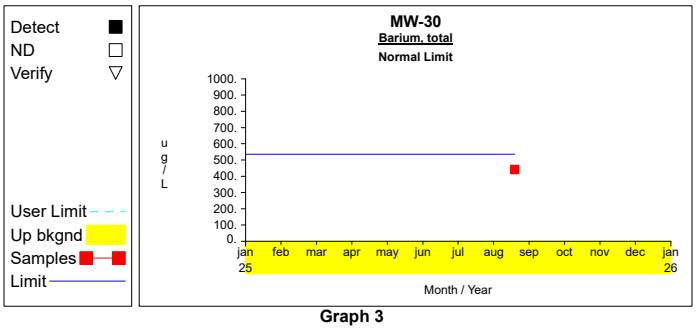
Up vs. Down Prediction Limits



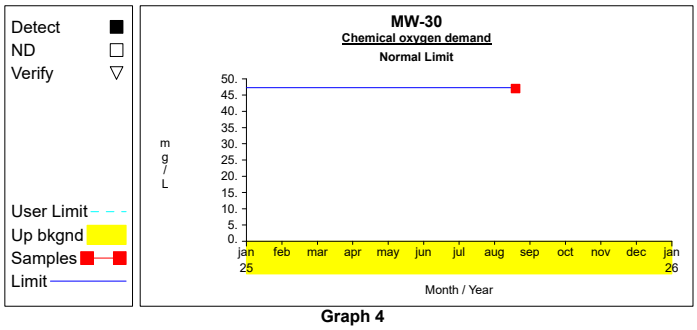
Graph 1



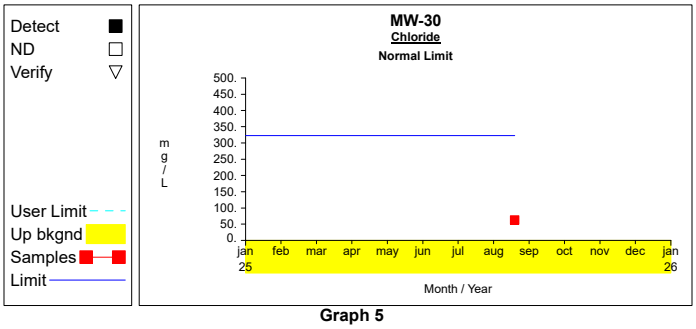
Graph 2



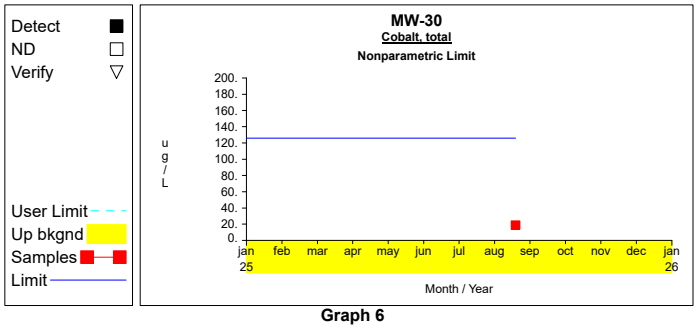
Graph 3



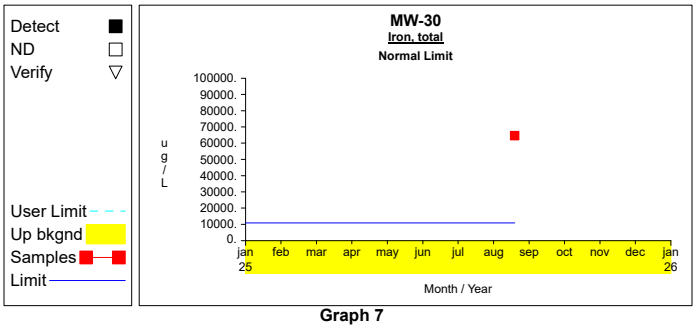
Graph 4



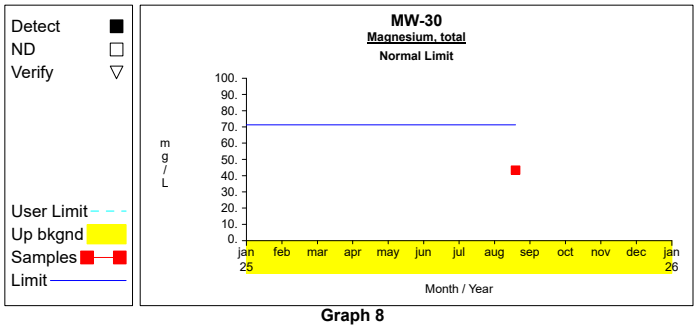
Graph 5



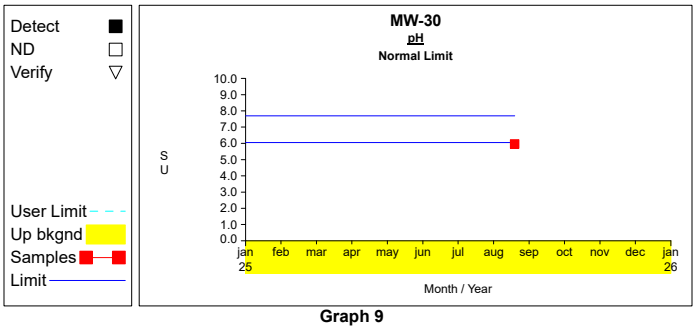
Graph 6



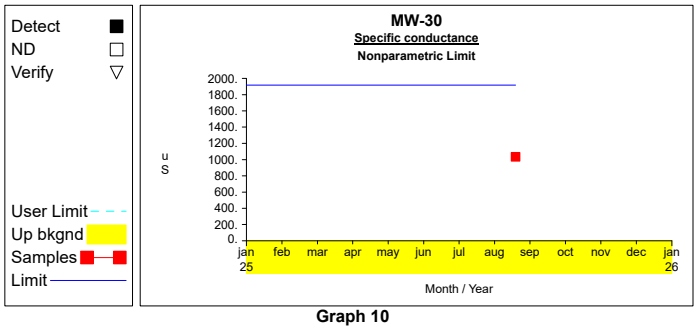
Graph 7



Graph 8



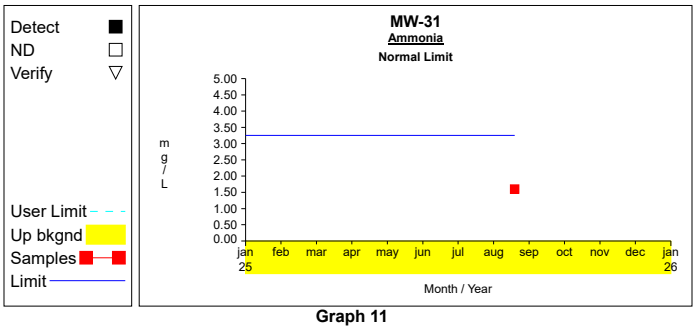
Graph 9



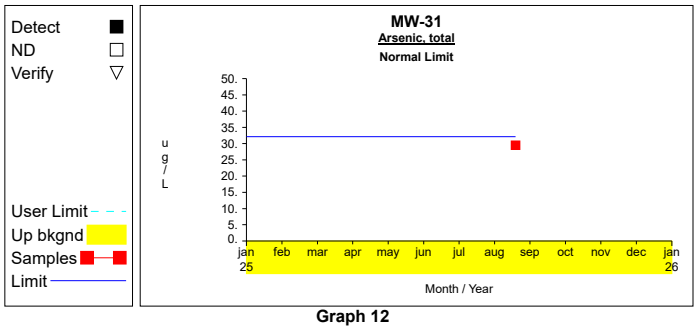
Graph 10

Prepared by: Otter Creek Environmental

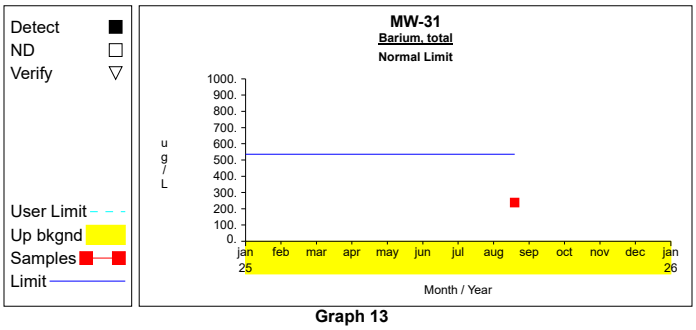
Up vs. Down Prediction Limits



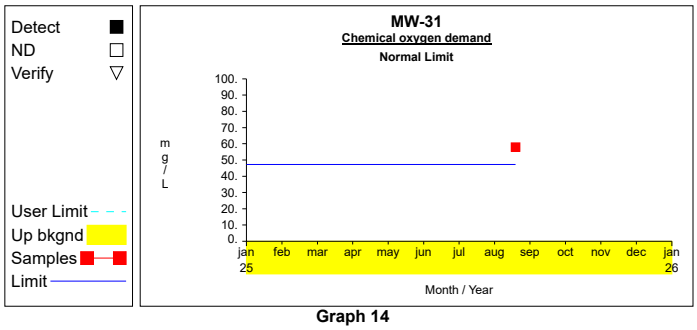
Graph 11



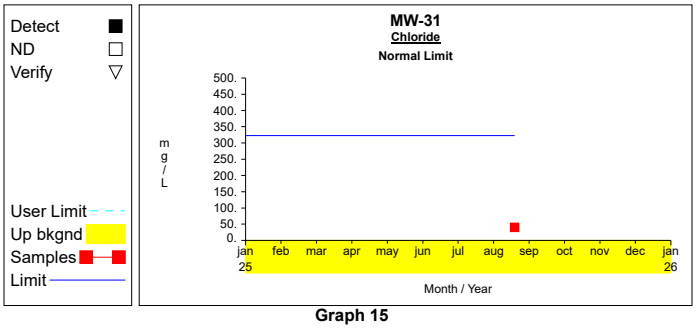
Graph 12



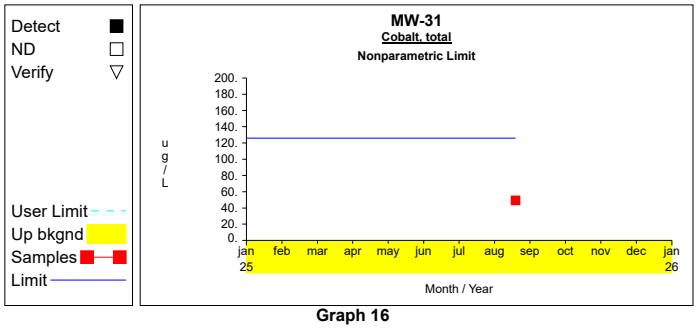
Graph 13



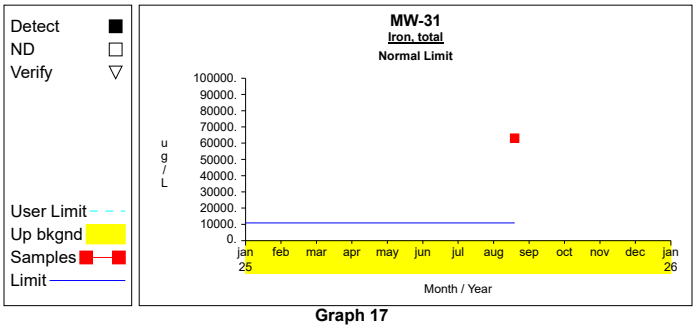
Graph 14



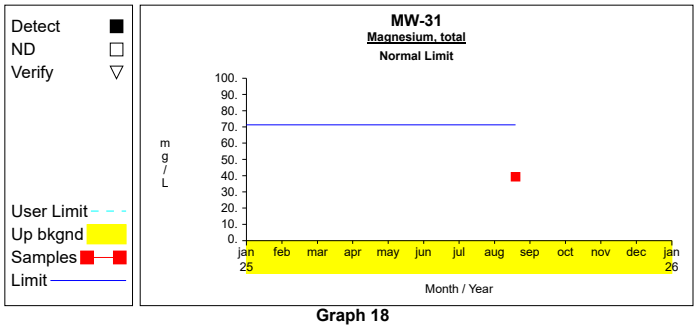
Graph 15



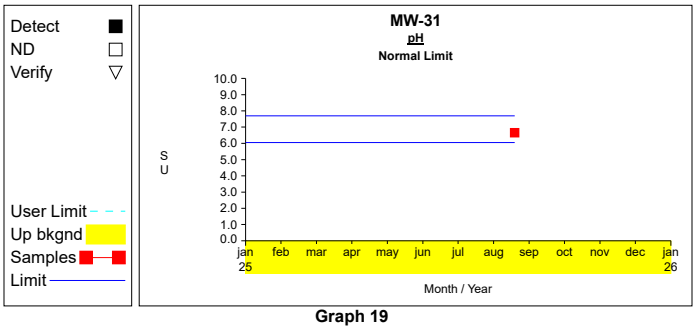
Graph 16



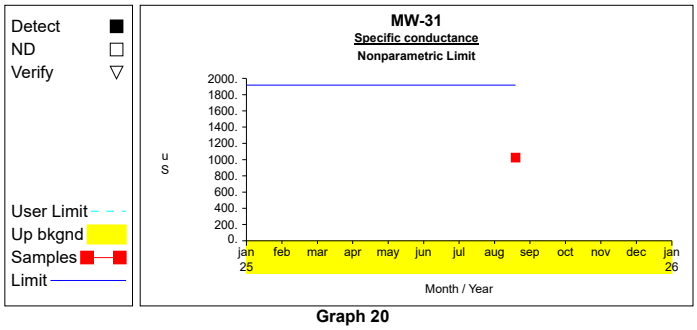
Graph 17



Graph 18



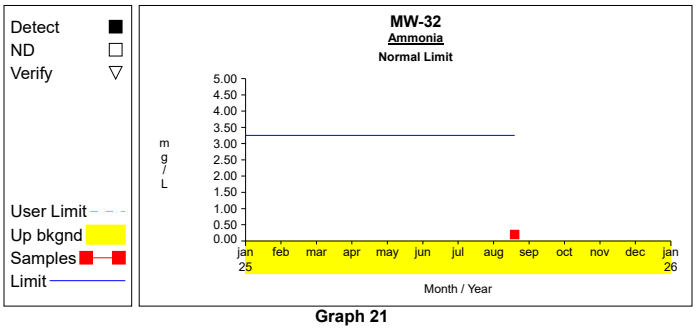
Graph 19



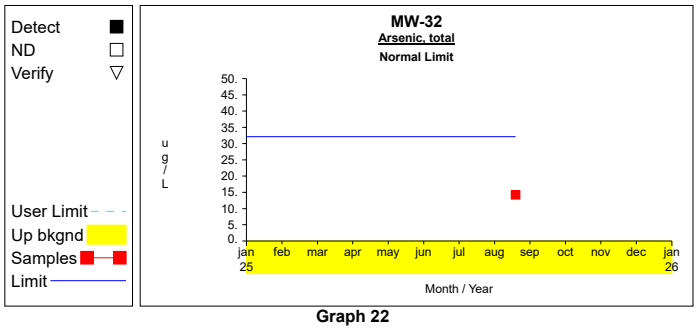
Graph 20

Prepared by: Otter Creek Environmental

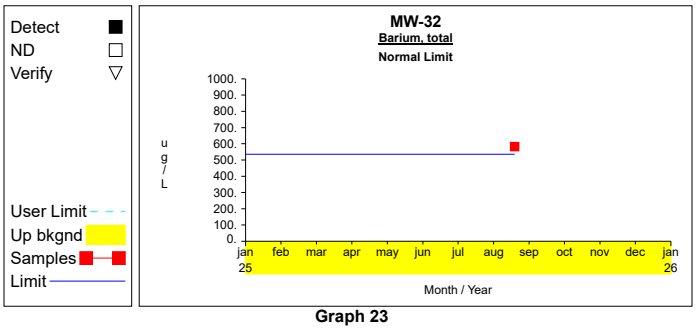
Up vs. Down Prediction Limits



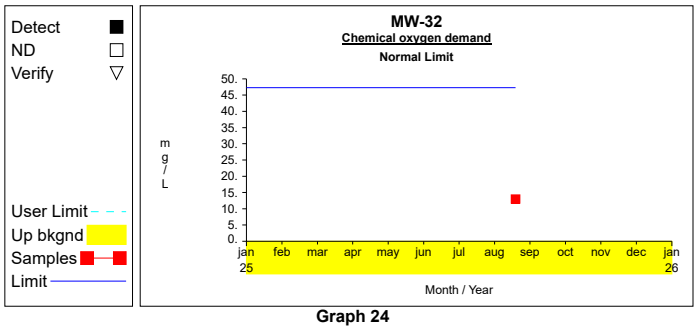
Graph 21



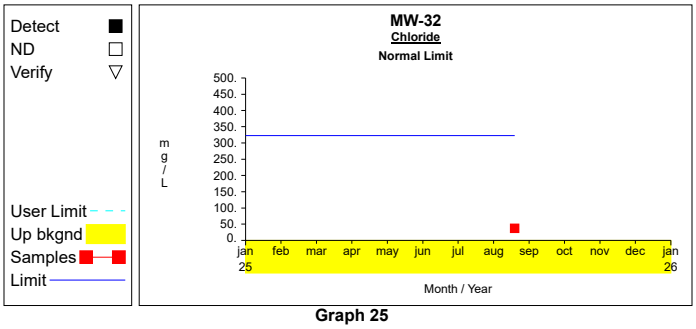
Graph 22



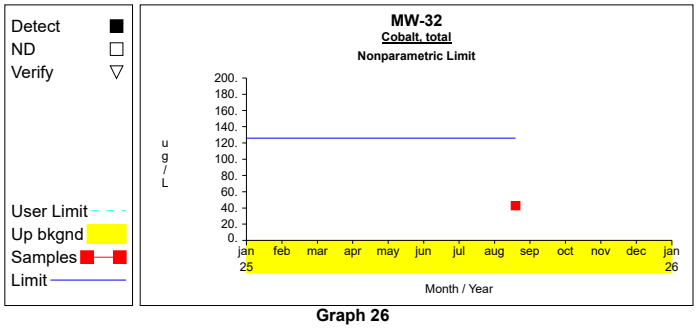
Graph 23



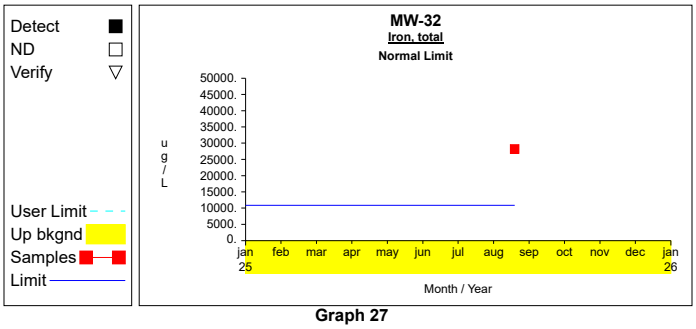
Graph 24



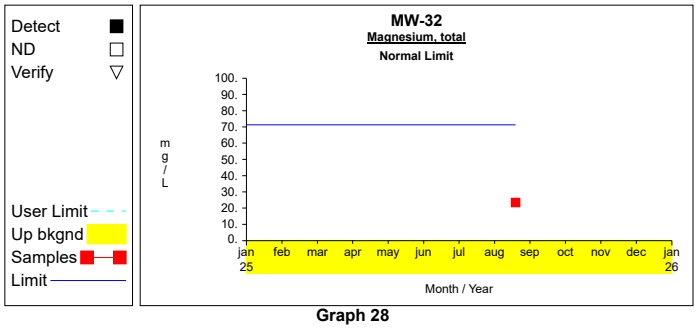
Graph 25



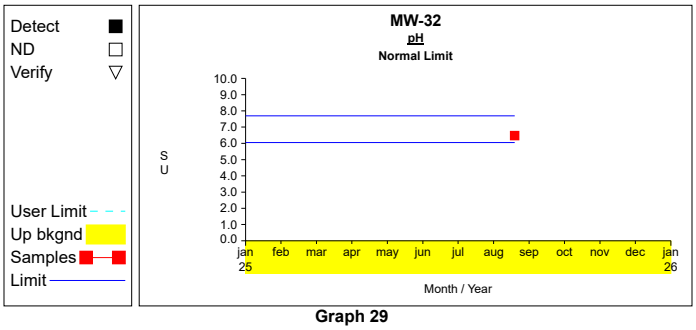
Graph 26



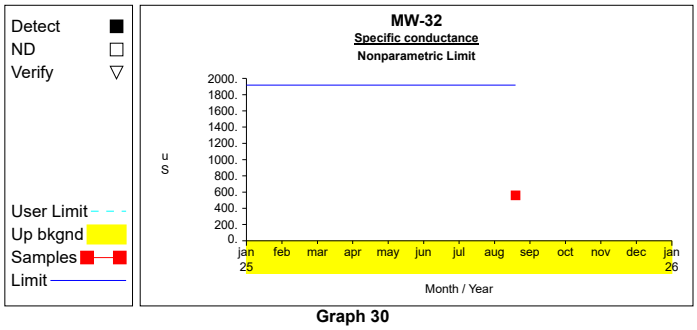
Graph 27



Graph 28



Graph 29

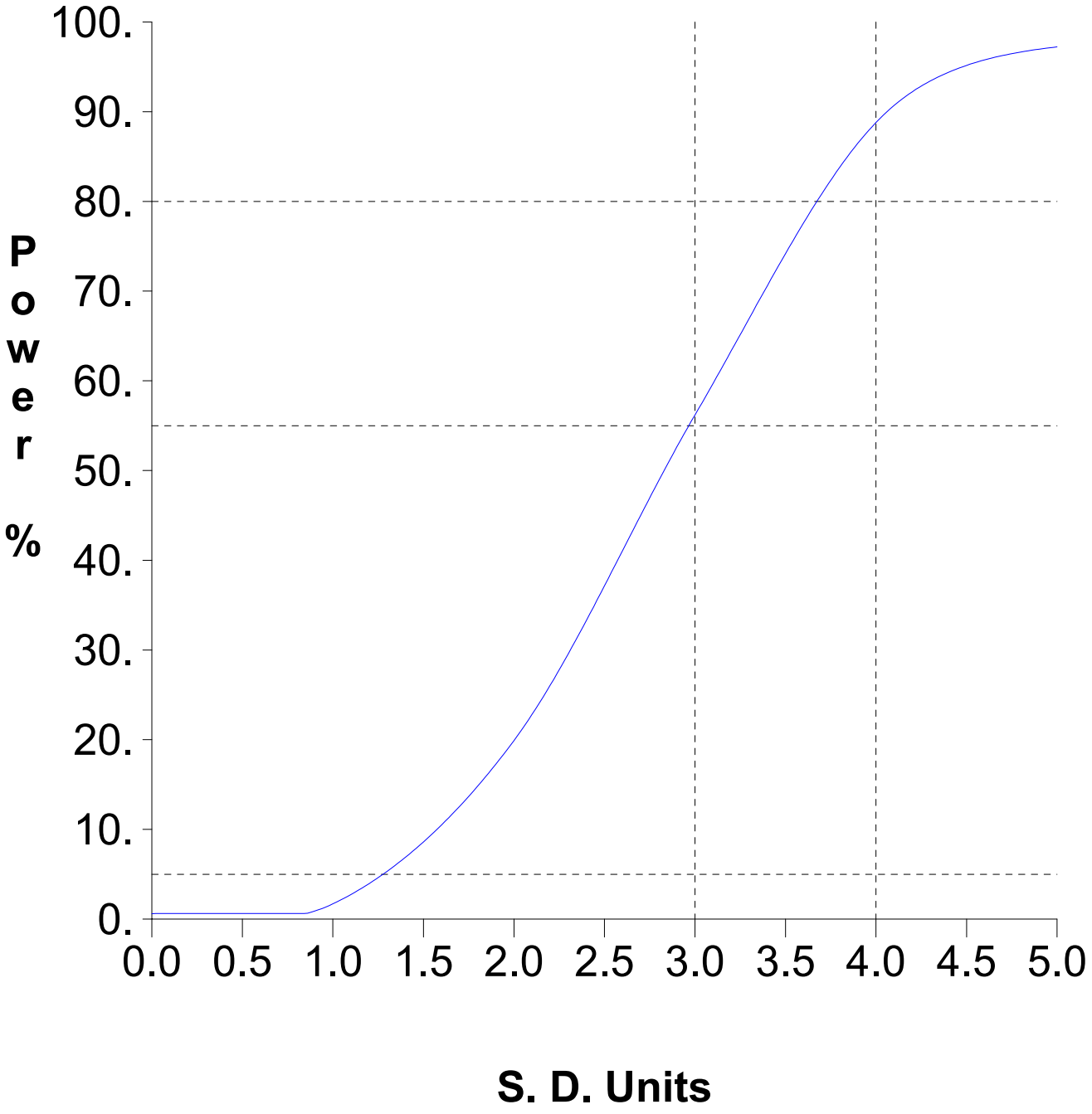


Graph 30

Prepared by: Otter Creek Environmental

False Positive and False Negative Rates for Current

Upgradient vs. Downgradient Monitoring Program



Attachment C

Summary Tables and Graphs for the Intrawell Comparisons
July 2025 Monitoring Event

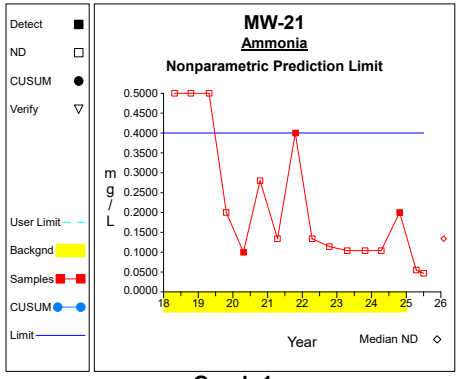
Table 1

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

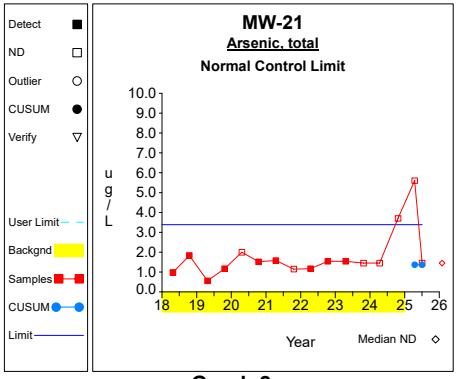
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Ammonia	mg/L	MW-21	14	2	16			0.0550	0.0470			0.4000	nonpar	.99	**
Arsenic, total	ug/L	MW-21	14	2	16	1.3671	0.3108	5.6000	1.4500	1.3671	1.3671	3.3876	normal		
Barium, total	ug/L	MW-21	14	2	16	345.6429	58.1425	399.0000	312.0000	355.3931	345.6429	723.5694	normal		
Chemical oxygen demand	mg/L	MW-21	14	2	16	7.7929	1.8244	7.0000	5.7000	7.7929	7.7929	19.6514	normal		
Chloride	mg/L	MW-21	14	2	16	204.7096	26.7505	233.4683	223.4822	213.4054	212.1151	378.5879	normal		
Cobalt, total	ug/L	MW-21	9	2	11			3.4000	0.6500			0.7500	nonpar	.99	**
Iron, total	ug/L	MW-21	13	2	16	377.8077	310.7098	154.3000	42.9500	377.8077	377.8077	2397.4217	normal		
Magnesium, total	mg/L	MW-21	14	2	16	53.1286	6.5652	64.3000	57.2000	59.3761	58.5236	95.8025	normal		
pH	SU	MW-21	14	2	16	6.7643	0.1378	7.1400	6.9600	7.0366	7.1290	5.87 - 7.66	normal		
Specific conductance	uS	MW-21	14	2	16	1463.6071	192.0977	1835.0000	1754.0000	1690.9267	1837.2462	2712.2425	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 of two verification resamples (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

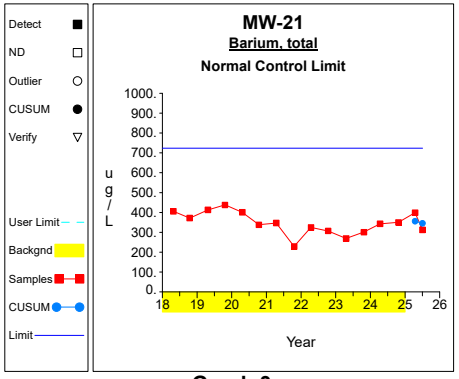
Intra-Well Control Charts / Prediction Limits



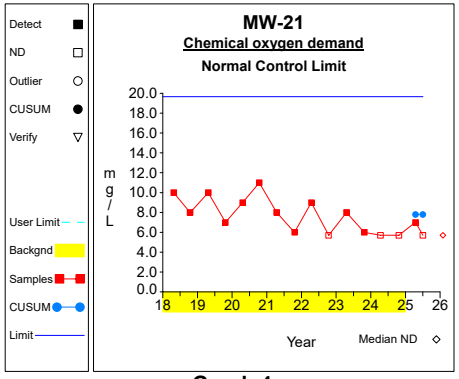
Graph 1



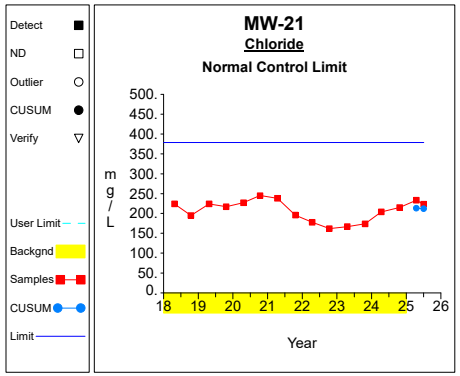
Graph 2



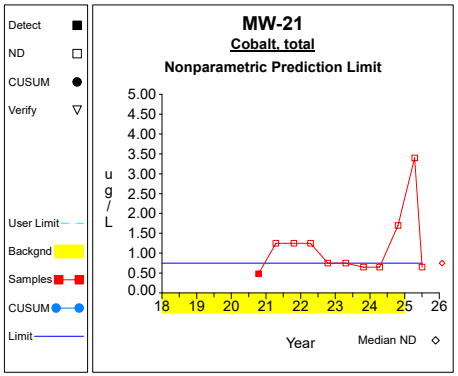
Graph 3



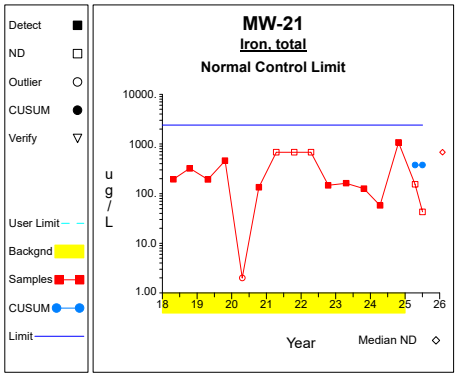
Graph 4



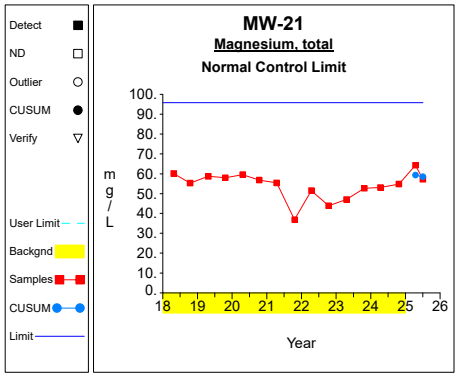
Graph 5



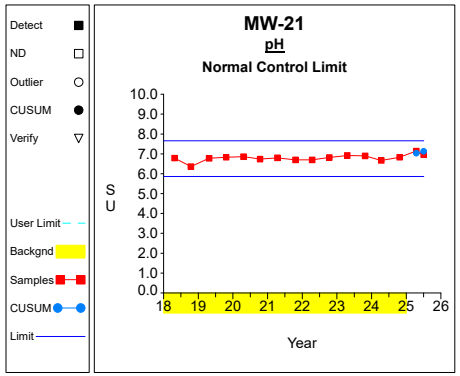
Graph 6



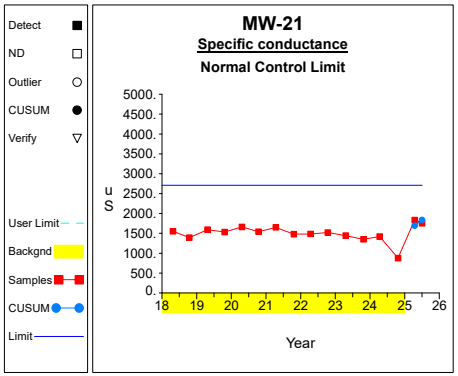
Graph 7



Graph 8



Graph 9



Graph 10

Prepared by: Otter Creek Environmental

False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program

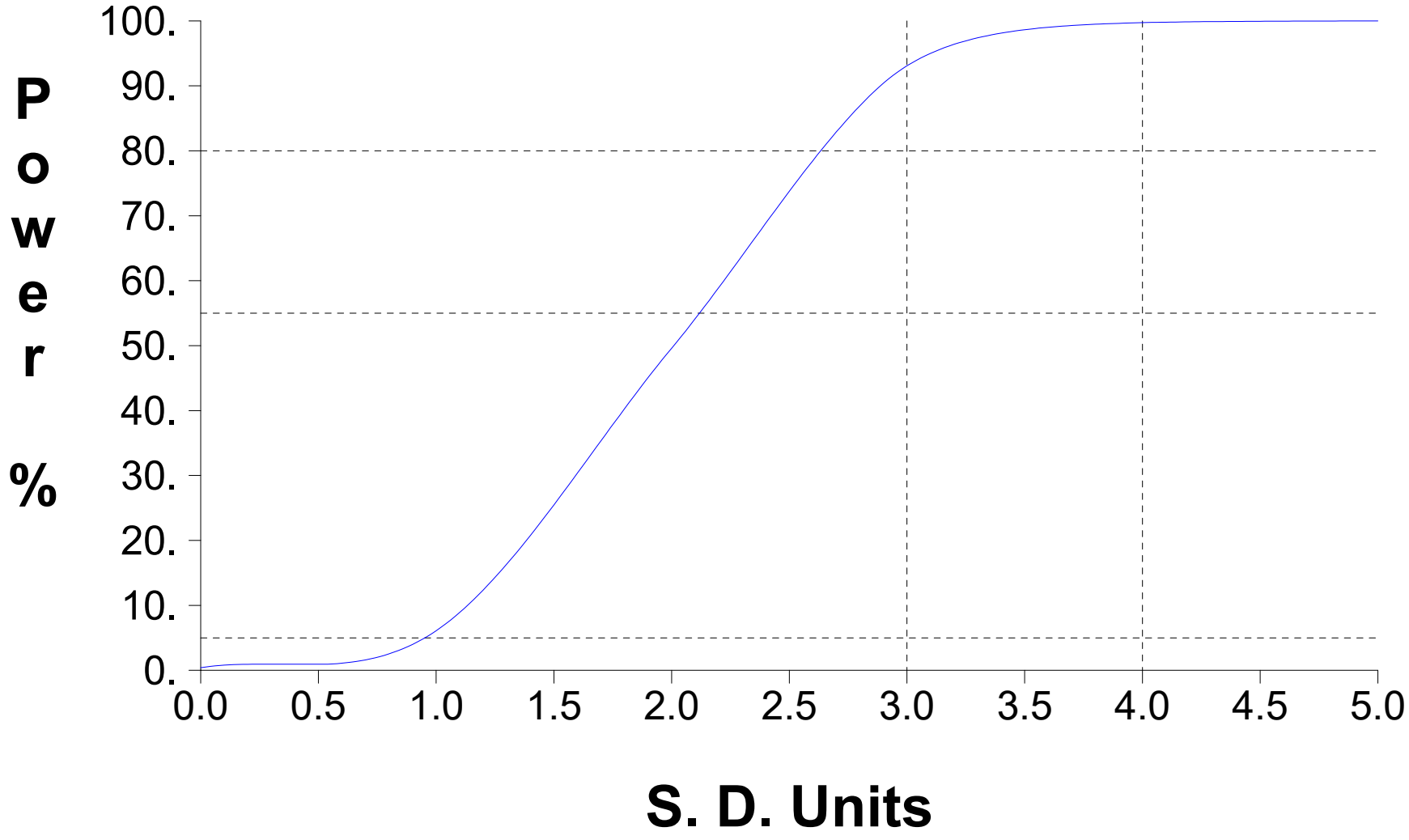


Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted	
Ammonia	mg/L	MW-21	04/26/2018	yes	0.5000	ND			0.1340	***
Ammonia	mg/L	MW-21	10/15/2018	yes	0.5000	ND			0.1340	***
Ammonia	mg/L	MW-21	04/24/2019	yes	0.5000	ND			0.1340	***
Ammonia	mg/L	MW-21	10/22/2019	yes	0.2000	ND			0.1340	***
Ammonia	mg/L	MW-21	04/21/2020	yes	0.1000					
Ammonia	mg/L	MW-21	10/13/2020	yes	0.2800	ND			0.1340	***
Ammonia	mg/L	MW-21	04/14/2021	yes	0.1340	ND				
Ammonia	mg/L	MW-21	10/20/2021	yes	0.4000					
Ammonia	mg/L	MW-21	04/14/2022	yes	0.1340	ND				
Ammonia	mg/L	MW-21	10/13/2022	yes	0.1140	ND			0.1340	***
Ammonia	mg/L	MW-21	04/19/2023	yes	0.1040	ND			0.1340	***
Ammonia	mg/L	MW-21	10/24/2023	yes	0.1040	ND			0.1340	***
Ammonia	mg/L	MW-21	04/11/2024	yes	0.1040	ND			0.1340	***
Ammonia	mg/L	MW-21	10/23/2024	yes	0.2000					
Ammonia	mg/L	MW-21	04/15/2025		0.0550	ND				
Ammonia	mg/L	MW-21	07/01/2025		0.0470	ND				
Arsenic, total	ug/L	MW-21	04/26/2018	yes	0.9800					
Arsenic, total	ug/L	MW-21	10/15/2018	yes	1.8300					
Arsenic, total	ug/L	MW-21	04/24/2019	yes	0.5600					
Arsenic, total	ug/L	MW-21	10/22/2019	yes	1.1700					
Arsenic, total	ug/L	MW-21	04/21/2020	yes	2.0000	ND			1.4500	***
Arsenic, total	ug/L	MW-21	10/13/2020	yes	1.5200					
Arsenic, total	ug/L	MW-21	04/14/2021	yes	1.5800					
Arsenic, total	ug/L	MW-21	10/20/2021	yes	1.1500	ND			1.4500	***
Arsenic, total	ug/L	MW-21	04/14/2022	yes	1.1700					
Arsenic, total	ug/L	MW-21	10/13/2022	yes	1.5400					
Arsenic, total	ug/L	MW-21	04/19/2023	yes	1.5400					
Arsenic, total	ug/L	MW-21	10/24/2023	yes	1.4500	ND				
Arsenic, total	ug/L	MW-21	04/11/2024	yes	1.4500	ND				
Arsenic, total	ug/L	MW-21	10/23/2024	yes	3.7000	ND			1.4500	***
Arsenic, total	ug/L	MW-21	04/15/2025		5.6000	ND		1.3671		
Arsenic, total	ug/L	MW-21	07/01/2025		1.4500	ND		1.3671		
Barium, total	ug/L	MW-21	04/26/2018	yes	406.0000					
Barium, total	ug/L	MW-21	10/15/2018	yes	372.0000					
Barium, total	ug/L	MW-21	04/24/2019	yes	413.0000					
Barium, total	ug/L	MW-21	10/22/2019	yes	438.0000					
Barium, total	ug/L	MW-21	04/21/2020	yes	401.0000					
Barium, total	ug/L	MW-21	10/13/2020	yes	338.0000					
Barium, total	ug/L	MW-21	04/14/2021	yes	347.0000					
Barium, total	ug/L	MW-21	10/20/2021	yes	229.0000					
Barium, total	ug/L	MW-21	04/14/2022	yes	325.0000					
Barium, total	ug/L	MW-21	10/13/2022	yes	307.0000					
Barium, total	ug/L	MW-21	04/19/2023	yes	269.0000					
Barium, total	ug/L	MW-21	10/24/2023	yes	301.0000					
Barium, total	ug/L	MW-21	04/11/2024	yes	343.0000					
Barium, total	ug/L	MW-21	10/23/2024	yes	350.0000					
Barium, total	ug/L	MW-21	04/15/2025		399.0000			355.3931		
Barium, total	ug/L	MW-21	07/01/2025		312.0000			345.6429		
Chemical oxygen demand	mg/L	MW-21	04/26/2018	yes	10.0000					
Chemical oxygen demand	mg/L	MW-21	10/15/2018	yes	8.0000					

* - 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	
Chemical oxygen demand	mg/L	MW-21	04/24/2019	yes	10.0000					
Chemical oxygen demand	mg/L	MW-21	10/22/2019	yes	7.0000					
Chemical oxygen demand	mg/L	MW-21	04/21/2020	yes	9.0000					
Chemical oxygen demand	mg/L	MW-21	10/13/2020	yes	11.0000					
Chemical oxygen demand	mg/L	MW-21	04/14/2021	yes	8.0000					
Chemical oxygen demand	mg/L	MW-21	10/20/2021	yes	6.0000					
Chemical oxygen demand	mg/L	MW-21	04/14/2022	yes	9.0000					
Chemical oxygen demand	mg/L	MW-21	10/13/2022	yes	5.7000	ND				
Chemical oxygen demand	mg/L	MW-21	04/19/2023	yes	8.0000					
Chemical oxygen demand	mg/L	MW-21	10/24/2023	yes	6.0000					
Chemical oxygen demand	mg/L	MW-21	04/11/2024	yes	5.7000	ND				
Chemical oxygen demand	mg/L	MW-21	10/23/2024	yes	5.7000	ND				
Chemical oxygen demand	mg/L	MW-21	04/15/2025		7.0000			7.7929		
Chemical oxygen demand	mg/L	MW-21	07/01/2025		5.7000	ND		7.7929		
Chloride	mg/L	MW-21	04/26/2018	yes	224.0000					
Chloride	mg/L	MW-21	10/15/2018	yes	194.9500					
Chloride	mg/L	MW-21	04/24/2019	yes	224.0000					
Chloride	mg/L	MW-21	10/22/2019	yes	217.0000					
Chloride	mg/L	MW-21	04/21/2020	yes	227.0000					
Chloride	mg/L	MW-21	10/13/2020	yes	245.0000					
Chloride	mg/L	MW-21	04/14/2021	yes	238.0000					
Chloride	mg/L	MW-21	10/20/2021	yes	195.9450					
Chloride	mg/L	MW-21	04/14/2022	yes	178.0400					
Chloride	mg/L	MW-21	10/13/2022	yes	162.0000					
Chloride	mg/L	MW-21	04/19/2023	yes	167.0000					
Chloride	mg/L	MW-21	10/24/2023	yes	174.0000					
Chloride	mg/L	MW-21	04/11/2024	yes	204.0000					
Chloride	mg/L	MW-21	10/23/2024	yes	215.0000					
Chloride	mg/L	MW-21	04/15/2025		233.4683			213.4054		
Chloride	mg/L	MW-21	07/01/2025		223.4822			212.1151		
Cobalt, total	ug/L	MW-21	10/13/2020	yes	0.4800					
Cobalt, total	ug/L	MW-21	04/14/2021	yes	1.2500	ND			0.7500	***
Cobalt, total	ug/L	MW-21	10/20/2021	yes	1.2500	ND			0.7500	***
Cobalt, total	ug/L	MW-21	04/14/2022	yes	1.2500	ND			0.7500	***
Cobalt, total	ug/L	MW-21	10/13/2022	yes	0.7500	ND				
Cobalt, total	ug/L	MW-21	04/19/2023	yes	0.7500	ND				
Cobalt, total	ug/L	MW-21	10/24/2023	yes	0.6500	ND			0.7500	***
Cobalt, total	ug/L	MW-21	04/11/2024	yes	0.6500	ND			0.7500	***
Cobalt, total	ug/L	MW-21	10/23/2024	yes	1.7000	ND			0.7500	***
Cobalt, total	ug/L	MW-21	04/15/2025		3.4000	ND				
Cobalt, total	ug/L	MW-21	07/01/2025		0.6500	ND				
Iron, total	ug/L	MW-21	04/26/2018	yes	194.0000					
Iron, total	ug/L	MW-21	10/15/2018	yes	323.0000					
Iron, total	ug/L	MW-21	04/24/2019	yes	193.0000					
Iron, total	ug/L	MW-21	10/22/2019	yes	460.0000					
Iron, total	ug/L	MW-21	04/21/2020	yes	2.0000	ND	yes			*
Iron, total	ug/L	MW-21	10/13/2020	yes	134.0000					
Iron, total	ug/L	MW-21	04/14/2021	yes	681.5000	ND				
Iron, total	ug/L	MW-21	10/20/2021	yes	681.5000	ND				
Iron, total	ug/L	MW-21	04/14/2022	yes	681.5000	ND				

* - 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	
Iron, total	ug/L	MW-21	10/13/2022	yes	147.0000					
Iron, total	ug/L	MW-21	04/19/2023	yes	162.0000					
Iron, total	ug/L	MW-21	10/24/2023	yes	126.0000					
Iron, total	ug/L	MW-21	04/11/2024	yes	58.0000					
Iron, total	ug/L	MW-21	10/23/2024	yes	1070.0000					
Iron, total	ug/L	MW-21	04/15/2025		154.3000	ND		377.8077		
Iron, total	ug/L	MW-21	07/01/2025		42.9500	ND		377.8077		
Magnesium, total	mg/L	MW-21	04/26/2018	yes	60.1000					
Magnesium, total	mg/L	MW-21	10/15/2018	yes	55.3000					
Magnesium, total	mg/L	MW-21	04/24/2019	yes	58.7000					
Magnesium, total	mg/L	MW-21	10/22/2019	yes	58.0000					
Magnesium, total	mg/L	MW-21	04/21/2020	yes	59.6000					
Magnesium, total	mg/L	MW-21	10/13/2020	yes	56.8000					
Magnesium, total	mg/L	MW-21	04/14/2021	yes	55.4000					
Magnesium, total	mg/L	MW-21	10/20/2021	yes	36.9000					
Magnesium, total	mg/L	MW-21	04/14/2022	yes	51.5000					
Magnesium, total	mg/L	MW-21	10/13/2022	yes	43.9000					
Magnesium, total	mg/L	MW-21	04/19/2023	yes	47.0000					
Magnesium, total	mg/L	MW-21	10/24/2023	yes	52.7000					
Magnesium, total	mg/L	MW-21	04/11/2024	yes	53.1000					
Magnesium, total	mg/L	MW-21	10/23/2024	yes	54.8000					
Magnesium, total	mg/L	MW-21	04/15/2025		64.3000			59.3761		
Magnesium, total	mg/L	MW-21	07/01/2025		57.2000			58.5236		
pH	SU	MW-21	04/26/2018	yes	6.7900					
pH	SU	MW-21	10/15/2018	yes	6.3600					
pH	SU	MW-21	04/24/2019	yes	6.7800					
pH	SU	MW-21	10/22/2019	yes	6.8300					
pH	SU	MW-21	04/21/2020	yes	6.8600					
pH	SU	MW-21	10/13/2020	yes	6.7400					
pH	SU	MW-21	04/14/2021	yes	6.8000					
pH	SU	MW-21	10/20/2021	yes	6.7000					
pH	SU	MW-21	04/14/2022	yes	6.7000					
pH	SU	MW-21	10/13/2022	yes	6.8200					
pH	SU	MW-21	04/19/2023	yes	6.9200					
pH	SU	MW-21	10/24/2023	yes	6.9000					
pH	SU	MW-21	04/11/2024	yes	6.6700					
pH	SU	MW-21	10/23/2024	yes	6.8300					
pH	SU	MW-21	04/15/2025		7.1400			7.0366		
pH	SU	MW-21	07/01/2025		6.9600			7.1290		
Specific conductance	uS	MW-21	04/26/2018	yes	1554.0000					
Specific conductance	uS	MW-21	10/15/2018	yes	1391.0000					
Specific conductance	uS	MW-21	04/24/2019	yes	1590.0000					
Specific conductance	uS	MW-21	10/22/2019	yes	1532.0000					
Specific conductance	uS	MW-21	04/21/2020	yes	1661.0000					
Specific conductance	uS	MW-21	10/13/2020	yes	1542.0000					
Specific conductance	uS	MW-21	04/14/2021	yes	1649.0000					
Specific conductance	uS	MW-21	10/20/2021	yes	1480.0000					
Specific conductance	uS	MW-21	04/14/2022	yes	1484.0000					
Specific conductance	uS	MW-21	10/13/2022	yes	1520.0000					
Specific conductance	uS	MW-21	04/19/2023	yes	1443.0000					

* - 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	
Specific conductance	uS	MW-21	10/24/2023	yes	1350.0000					
Specific conductance	uS	MW-21	04/11/2024	yes	1420.0000					
Specific conductance	uS	MW-21	10/23/2024	yes	874.5000					
Specific conductance	uS	MW-21	04/15/2025		1835.0000			1690.9267		
Specific conductance	uS	MW-21	07/01/2025		1754.0000			1837.2462		

* - 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
Iron, total	ug/L	MW-21	04/21/2020	2.0000	< 2.0000	04/26/2018-10/23/2024	14	0.6403

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.

Attachment D

Summary Tables and Graphs for the Interwell Comparisons
October 2025 Monitoring Event

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Ammonia	mg/L	MW-1	04/26/2018		1.0000		
Ammonia	mg/L	MW-1	10/15/2018		0.5300		
Ammonia	mg/L	MW-1	04/23/2019		1.1000		
Ammonia	mg/L	MW-1	10/22/2019		0.9100		
Ammonia	mg/L	MW-1	04/21/2020		0.5800		
Ammonia	mg/L	MW-1	10/13/2020		0.7100		
Ammonia	mg/L	MW-1	04/14/2021		0.6300		
Ammonia	mg/L	MW-1	10/19/2021		0.6500		
Ammonia	mg/L	MW-1	04/14/2022		0.7400		
Ammonia	mg/L	MW-1	10/13/2022		0.6300		
Ammonia	mg/L	MW-1	04/19/2023		0.6100		
Ammonia	mg/L	MW-1	10/20/2023		0.6300		
Ammonia	mg/L	MW-1	04/10/2024		0.5500		
Ammonia	mg/L	MW-1	10/23/2024		0.5300		
Arsenic, total	ug/L	MW-1	04/26/2018		2.4000		
Arsenic, total	ug/L	MW-1	10/15/2018		1.3700		
Arsenic, total	ug/L	MW-1	04/23/2019		4.0200		
Arsenic, total	ug/L	MW-1	10/22/2019		3.9600		
Arsenic, total	ug/L	MW-1	04/21/2020		3.6500		
Arsenic, total	ug/L	MW-1	10/13/2020		3.7500		
Arsenic, total	ug/L	MW-1	04/14/2021		5.6100		
Arsenic, total	ug/L	MW-1	10/19/2021	ND	0.2300		*
Arsenic, total	ug/L	MW-1	04/14/2022		3.4700		
Arsenic, total	ug/L	MW-1	10/13/2022		3.7100		
Arsenic, total	ug/L	MW-1	04/19/2023		3.3200		
Arsenic, total	ug/L	MW-1	10/20/2023		2.2700		
Arsenic, total	ug/L	MW-1	04/10/2024		3.6500		
Arsenic, total	ug/L	MW-1	10/23/2024	ND	3.7000	1.4500	**
Barium, total	ug/L	MW-1	04/26/2018		237.0000		
Barium, total	ug/L	MW-1	10/15/2018		218.0000		
Barium, total	ug/L	MW-1	04/23/2019		135.0000		
Barium, total	ug/L	MW-1	10/22/2019		169.0000		
Barium, total	ug/L	MW-1	04/21/2020		177.0000		
Barium, total	ug/L	MW-1	10/13/2020		180.0000		
Barium, total	ug/L	MW-1	04/14/2021		235.0000		
Barium, total	ug/L	MW-1	10/19/2021		155.0000		
Barium, total	ug/L	MW-1	04/14/2022		201.0000		
Barium, total	ug/L	MW-1	10/13/2022		216.0000		
Barium, total	ug/L	MW-1	04/19/2023		205.0000		
Barium, total	ug/L	MW-1	10/20/2023		204.0000		
Barium, total	ug/L	MW-1	04/10/2024		222.0000		
Barium, total	ug/L	MW-1	10/23/2024		219.0000		
Chemical oxygen demand	mg/L	MW-1	04/26/2018		13.0000		
Chemical oxygen demand	mg/L	MW-1	10/15/2018	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-1	04/23/2019		18.0000		
Chemical oxygen demand	mg/L	MW-1	10/22/2019		7.0000		
Chemical oxygen demand	mg/L	MW-1	04/21/2020		17.0000		
Chemical oxygen demand	mg/L	MW-1	10/13/2020		22.0000		
Chemical oxygen demand	mg/L	MW-1	04/14/2021		32.0000		
Chemical oxygen demand	mg/L	MW-1	10/19/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-1	04/14/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	04/19/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/20/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	04/10/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/23/2024	ND	5.7000		
Chloride	mg/L	MW-1	04/26/2018		3.5100		
Chloride	mg/L	MW-1	10/15/2018		1.2900		
Chloride	mg/L	MW-1	04/23/2019		27.8000		
Chloride	mg/L	MW-1	10/22/2019		11.8000		
Chloride	mg/L	MW-1	04/21/2020		17.8000		
Chloride	mg/L	MW-1	10/13/2020		11.2000		
Chloride	mg/L	MW-1	04/14/2021		6.9000		
Chloride	mg/L	MW-1	10/19/2021		6.2800		
Chloride	mg/L	MW-1	04/14/2022		6.3400		
Chloride	mg/L	MW-1	10/13/2022		5.8900		
Chloride	mg/L	MW-1	04/19/2023		5.8300		
Chloride	mg/L	MW-1	10/20/2023		5.6100		
Chloride	mg/L	MW-1	04/10/2024		5.5300		
Chloride	mg/L	MW-1	10/23/2024		4.6200		
Cobalt, total	ug/L	MW-1	10/13/2020		0.9500		
Cobalt, total	ug/L	MW-1	04/14/2021		1.9700		
Cobalt, total	ug/L	MW-1	10/19/2021	ND	1.2500	0.7500	**
Cobalt, total	ug/L	MW-1	04/14/2022	ND	1.2500	0.7500	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt, total	ug/L	MW-1	10/13/2022	ND	0.7500		
Cobalt, total	ug/L	MW-1	04/19/2023	ND	0.7500		
Cobalt, total	ug/L	MW-1	10/20/2023	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-1	04/10/2024	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-1	10/23/2024	ND	1.7000	0.7500	**
Iron, total	ug/L	MW-1	04/26/2018		2840.0000		
Iron, total	ug/L	MW-1	10/15/2018		1900.0000		
Iron, total	ug/L	MW-1	04/23/2019		6880.0000		
Iron, total	ug/L	MW-1	10/22/2019		5820.0000		
Iron, total	ug/L	MW-1	04/21/2020		45.8000		*
Iron, total	ug/L	MW-1	10/13/2020		5900.0000		
Iron, total	ug/L	MW-1	04/14/2021		9720.0000		
Iron, total	ug/L	MW-1	10/19/2021		4090.0000		
Iron, total	ug/L	MW-1	04/14/2022		4100.0000		
Iron, total	ug/L	MW-1	10/13/2022		4910.0000		
Iron, total	ug/L	MW-1	04/19/2023		1270.0000		
Iron, total	ug/L	MW-1	10/20/2023		779.0000		
Iron, total	ug/L	MW-1	04/10/2024		5270.0000		
Iron, total	ug/L	MW-1	10/23/2024		5400.0000		
Magnesium, total	mg/L	MW-1	04/26/2018		29.0000		
Magnesium, total	mg/L	MW-1	10/15/2018		32.0000		
Magnesium, total	mg/L	MW-1	04/23/2019		20.7000		
Magnesium, total	mg/L	MW-1	10/22/2019		25.8000		
Magnesium, total	mg/L	MW-1	04/21/2020		23.5000		
Magnesium, total	mg/L	MW-1	10/13/2020		24.2000		
Magnesium, total	mg/L	MW-1	04/14/2021		29.3000		
Magnesium, total	mg/L	MW-1	10/19/2021		20.9000		
Magnesium, total	mg/L	MW-1	04/14/2022		28.7000		
Magnesium, total	mg/L	MW-1	10/13/2022		29.2000		
Magnesium, total	mg/L	MW-1	04/19/2023		28.3000		
Magnesium, total	mg/L	MW-1	10/20/2023		31.9000		
Magnesium, total	mg/L	MW-1	04/10/2024		29.4000		
Magnesium, total	mg/L	MW-1	10/23/2024		29.0000		
pH	SU	MW-1	04/26/2018		6.5000		
pH	SU	MW-1	10/15/2018		7.2200		
pH	SU	MW-1	04/23/2019		7.0300		
pH	SU	MW-1	10/22/2019		7.2100		
pH	SU	MW-1	04/21/2020		7.2300		
pH	SU	MW-1	10/13/2020		7.0300		
pH	SU	MW-1	04/14/2021		7.4000		
pH	SU	MW-1	10/19/2021		7.4000		
pH	SU	MW-1	04/14/2022		7.5000		
pH	SU	MW-1	10/13/2022		7.1700		
pH	SU	MW-1	04/19/2023		7.3300		
pH	SU	MW-1	10/20/2023		7.2000		
pH	SU	MW-1	04/10/2024		6.9700		
pH	SU	MW-1	10/23/2024		6.3700		
Specific conductance	uS	MW-1	04/26/2018		684.0000		
Specific conductance	uS	MW-1	10/15/2018		700.0000		
Specific conductance	uS	MW-1	04/23/2019		554.0000		
Specific conductance	uS	MW-1	10/22/2019		662.0000		
Specific conductance	uS	MW-1	04/21/2020		641.0000		
Specific conductance	uS	MW-1	10/13/2020		617.0000		
Specific conductance	uS	MW-1	04/14/2021		685.0000		
Specific conductance	uS	MW-1	10/19/2021		702.0000		
Specific conductance	uS	MW-1	04/14/2022		704.0000		
Specific conductance	uS	MW-1	10/13/2022		733.0000		
Specific conductance	uS	MW-1	04/19/2023		711.0000		
Specific conductance	uS	MW-1	10/20/2023		707.0000		
Specific conductance	uS	MW-1	04/10/2024		721.0000		
Specific conductance	uS	MW-1	10/23/2024		956.5000		
Ammonia	mg/L	MW-21	04/26/2018	ND	0.5000	0.1340	**
Ammonia	mg/L	MW-21	10/15/2018	ND	0.5000	0.1340	**
Ammonia	mg/L	MW-21	04/24/2019	ND	0.5000	0.1340	**
Ammonia	mg/L	MW-21	10/22/2019	ND	0.2000	0.1340	**
Ammonia	mg/L	MW-21	04/21/2020		0.1000		
Ammonia	mg/L	MW-21	10/13/2020	ND	0.2800	0.1340	**
Ammonia	mg/L	MW-21	04/14/2021	ND	0.1340		
Ammonia	mg/L	MW-21	10/20/2021		0.4000		
Ammonia	mg/L	MW-21	04/14/2022	ND	0.1340		
Ammonia	mg/L	MW-21	10/13/2022	ND	0.1140	0.1340	**
Ammonia	mg/L	MW-21	04/19/2023	ND	0.1040	0.1340	**
Ammonia	mg/L	MW-21	10/24/2023	ND	0.1040	0.1340	**
Ammonia	mg/L	MW-21	04/11/2024	ND	0.1040	0.1340	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Ammonia	mg/L	MW-21	10/23/2024		0.2000		
Ammonia	mg/L	MW-21	04/15/2025	ND	0.0550	0.1340	**
Ammonia	mg/L	MW-21	07/01/2025	ND	0.0470	0.1340	**
Ammonia	mg/L	MW-21	10/14/2025		0.2000		
Arsenic, total	ug/L	MW-21	04/26/2018		0.9800		
Arsenic, total	ug/L	MW-21	10/15/2018		1.8300		
Arsenic, total	ug/L	MW-21	04/24/2019		0.5600		
Arsenic, total	ug/L	MW-21	10/22/2019		1.1700		
Arsenic, total	ug/L	MW-21	04/21/2020	ND	2.0000	1.4500	**
Arsenic, total	ug/L	MW-21	10/13/2020		1.5200		
Arsenic, total	ug/L	MW-21	04/14/2021		1.5800		
Arsenic, total	ug/L	MW-21	10/20/2021	ND	1.1500	1.4500	**
Arsenic, total	ug/L	MW-21	04/14/2022		1.1700		
Arsenic, total	ug/L	MW-21	10/13/2022		1.5400		
Arsenic, total	ug/L	MW-21	04/19/2023		1.5400		
Arsenic, total	ug/L	MW-21	10/24/2023	ND	1.4500		
Arsenic, total	ug/L	MW-21	04/11/2024	ND	1.4500		
Arsenic, total	ug/L	MW-21	10/23/2024	ND	3.7000	1.4500	**
Arsenic, total	ug/L	MW-21	04/15/2025	ND	5.6000		*
Arsenic, total	ug/L	MW-21	07/01/2025	ND	1.4500		
Arsenic, total	ug/L	MW-21	10/14/2025	ND	1.4500		
Barium, total	ug/L	MW-21	04/26/2018		406.0000		
Barium, total	ug/L	MW-21	10/15/2018		372.0000		
Barium, total	ug/L	MW-21	04/24/2019		413.0000		
Barium, total	ug/L	MW-21	10/22/2019		438.0000		
Barium, total	ug/L	MW-21	04/21/2020		401.0000		
Barium, total	ug/L	MW-21	10/13/2020		338.0000		
Barium, total	ug/L	MW-21	04/14/2021		347.0000		
Barium, total	ug/L	MW-21	10/20/2021		229.0000		
Barium, total	ug/L	MW-21	04/14/2022		325.0000		
Barium, total	ug/L	MW-21	10/13/2022		307.0000		
Barium, total	ug/L	MW-21	04/19/2023		269.0000		
Barium, total	ug/L	MW-21	10/24/2023		301.0000		
Barium, total	ug/L	MW-21	04/11/2024		343.0000		
Barium, total	ug/L	MW-21	10/23/2024		350.0000		
Barium, total	ug/L	MW-21	04/15/2025		399.0000		
Barium, total	ug/L	MW-21	07/01/2025		312.0000		
Barium, total	ug/L	MW-21	10/14/2025		340.0000		
Chemical oxygen demand	mg/L	MW-21	04/26/2018		10.0000		
Chemical oxygen demand	mg/L	MW-21	10/15/2018		8.0000		
Chemical oxygen demand	mg/L	MW-21	04/24/2019		10.0000		
Chemical oxygen demand	mg/L	MW-21	10/22/2019		7.0000		
Chemical oxygen demand	mg/L	MW-21	04/21/2020		9.0000		
Chemical oxygen demand	mg/L	MW-21	10/13/2020		11.0000		
Chemical oxygen demand	mg/L	MW-21	04/14/2021		8.0000		
Chemical oxygen demand	mg/L	MW-21	10/20/2021		6.0000		
Chemical oxygen demand	mg/L	MW-21	04/14/2022		9.0000		
Chemical oxygen demand	mg/L	MW-21	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	04/19/2023		8.0000		
Chemical oxygen demand	mg/L	MW-21	10/24/2023		6.0000		
Chemical oxygen demand	mg/L	MW-21	04/11/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	10/23/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	04/15/2025		7.0000		
Chemical oxygen demand	mg/L	MW-21	07/01/2025	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	10/14/2025	ND	5.7000		
Chloride	mg/L	MW-21	04/26/2018		224.0000		
Chloride	mg/L	MW-21	10/15/2018		194.9500		
Chloride	mg/L	MW-21	04/24/2019		224.0000		
Chloride	mg/L	MW-21	10/22/2019		217.0000		
Chloride	mg/L	MW-21	04/21/2020		227.0000		
Chloride	mg/L	MW-21	10/13/2020		245.0000		
Chloride	mg/L	MW-21	04/14/2021		238.0000		
Chloride	mg/L	MW-21	10/20/2021		195.9450		
Chloride	mg/L	MW-21	04/14/2022		178.0400		
Chloride	mg/L	MW-21	10/13/2022		162.0000		
Chloride	mg/L	MW-21	04/19/2023		167.0000		
Chloride	mg/L	MW-21	10/24/2023		174.0000		
Chloride	mg/L	MW-21	04/11/2024		204.0000		
Chloride	mg/L	MW-21	10/23/2024		215.0000		
Chloride	mg/L	MW-21	04/15/2025		233.4683		
Chloride	mg/L	MW-21	07/01/2025		223.4822		
Chloride	mg/L	MW-21	10/14/2025		221.0000		
Cobalt, total	ug/L	MW-21	10/13/2020		0.4800		
Cobalt, total	ug/L	MW-21	04/14/2021	ND	1.2500	0.7500	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt, total	ug/L	MW-21	10/20/2021	ND	1.2500	0.7500	**
Cobalt, total	ug/L	MW-21	04/14/2022	ND	1.2500	0.7500	**
Cobalt, total	ug/L	MW-21	10/13/2022	ND	0.7500		
Cobalt, total	ug/L	MW-21	04/19/2023	ND	0.7500		
Cobalt, total	ug/L	MW-21	10/24/2023	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-21	04/11/2024	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-21	10/23/2024	ND	1.7000	0.7500	**
Cobalt, total	ug/L	MW-21	04/15/2025	ND	3.4000	0.7500	**
Cobalt, total	ug/L	MW-21	07/01/2025	ND	0.6500	0.7500	**
Cobalt, total	ug/L	MW-21	10/14/2025	ND	0.6500	0.7500	**
Iron, total	ug/L	MW-21	04/26/2018		194.0000		
Iron, total	ug/L	MW-21	10/15/2018		323.0000		
Iron, total	ug/L	MW-21	04/24/2019		193.0000		
Iron, total	ug/L	MW-21	10/22/2019		460.0000		
Iron, total	ug/L	MW-21	04/21/2020	ND	2.0000	154.3000	**
Iron, total	ug/L	MW-21	10/13/2020		134.0000		
Iron, total	ug/L	MW-21	04/14/2021	ND	681.5000	154.3000	**
Iron, total	ug/L	MW-21	10/20/2021	ND	681.5000	154.3000	**
Iron, total	ug/L	MW-21	04/14/2022	ND	681.5000	154.3000	**
Iron, total	ug/L	MW-21	10/13/2022		147.0000		
Iron, total	ug/L	MW-21	04/19/2023		162.0000		
Iron, total	ug/L	MW-21	10/24/2023		126.0000		
Iron, total	ug/L	MW-21	04/11/2024		58.0000		
Iron, total	ug/L	MW-21	10/23/2024		1070.0000		
Iron, total	ug/L	MW-21	04/15/2025	ND	154.3000		
Iron, total	ug/L	MW-21	07/01/2025	ND	42.9500	154.3000	**
Iron, total	ug/L	MW-21	10/14/2025		55.0000		
Magnesium, total	mg/L	MW-21	04/26/2018		60.1000		
Magnesium, total	mg/L	MW-21	10/15/2018		55.3000		
Magnesium, total	mg/L	MW-21	04/24/2019		58.7000		
Magnesium, total	mg/L	MW-21	10/22/2019		58.0000		
Magnesium, total	mg/L	MW-21	04/21/2020		59.6000		
Magnesium, total	mg/L	MW-21	10/13/2020		56.8000		
Magnesium, total	mg/L	MW-21	04/14/2021		55.4000		
Magnesium, total	mg/L	MW-21	10/20/2021		36.9000		
Magnesium, total	mg/L	MW-21	04/14/2022		51.5000		
Magnesium, total	mg/L	MW-21	10/13/2022		43.9000		
Magnesium, total	mg/L	MW-21	04/19/2023		47.0000		
Magnesium, total	mg/L	MW-21	10/24/2023		52.7000		
Magnesium, total	mg/L	MW-21	04/11/2024		53.1000		
Magnesium, total	mg/L	MW-21	10/23/2024		54.8000		
Magnesium, total	mg/L	MW-21	04/15/2025		64.3000		
Magnesium, total	mg/L	MW-21	07/01/2025		57.2000		
Magnesium, total	mg/L	MW-21	10/14/2025		54.3000		
pH	SU	MW-21	04/26/2018		6.7900		
pH	SU	MW-21	10/15/2018		6.3600		
pH	SU	MW-21	04/24/2019		6.7800		
pH	SU	MW-21	10/22/2019		6.8300		
pH	SU	MW-21	04/21/2020		6.8600		
pH	SU	MW-21	10/13/2020		6.7400		
pH	SU	MW-21	04/14/2021		6.8000		
pH	SU	MW-21	10/20/2021		6.7000		
pH	SU	MW-21	04/14/2022		6.7000		
pH	SU	MW-21	10/13/2022		6.8200		
pH	SU	MW-21	04/19/2023		6.9200		
pH	SU	MW-21	10/24/2023		6.9000		
pH	SU	MW-21	04/11/2024		6.6700		
pH	SU	MW-21	10/23/2024		6.8300		
pH	SU	MW-21	04/15/2025		7.1400		
pH	SU	MW-21	07/01/2025		6.9600		
pH	SU	MW-21	10/14/2025		6.8600		
Specific conductance	uS	MW-21	04/26/2018		1554.0000		
Specific conductance	uS	MW-21	10/15/2018		1391.0000		
Specific conductance	uS	MW-21	04/24/2019		1590.0000		
Specific conductance	uS	MW-21	10/22/2019		1532.0000		
Specific conductance	uS	MW-21	04/21/2020		1661.0000		
Specific conductance	uS	MW-21	10/13/2020		1542.0000		
Specific conductance	uS	MW-21	04/14/2021		1649.0000		
Specific conductance	uS	MW-21	10/20/2021		1480.0000		
Specific conductance	uS	MW-21	04/14/2022		1484.0000		
Specific conductance	uS	MW-21	10/13/2022		1520.0000		
Specific conductance	uS	MW-21	04/19/2023		1443.0000		
Specific conductance	uS	MW-21	10/24/2023		1350.0000		
Specific conductance	uS	MW-21	04/11/2024		1420.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Specific conductance	uS	MW-21	10/23/2024		874.5000		
Specific conductance	uS	MW-21	04/15/2025		1835.0000		
Specific conductance	uS	MW-21	07/01/2025		1754.0000		
Specific conductance	uS	MW-21	10/14/2025		1728.0000		
Ammonia	mg/L	MW-29	08/20/2025		5.9000		
Ammonia	mg/L	MW-29	10/14/2025		0.8700		
Arsenic, total	ug/L	MW-29	08/20/2025	ND	5.6000	1.4500	**
Arsenic, total	ug/L	MW-29	10/14/2025		1.7200		
Barium, total	ug/L	MW-29	08/20/2025		212.0000		
Barium, total	ug/L	MW-29	10/14/2025		151.0000		
Chemical oxygen demand	mg/L	MW-29	08/20/2025		100.0000		
Chemical oxygen demand	mg/L	MW-29	10/14/2025		9.0000		
Chloride	mg/L	MW-29	08/20/2025		256.1106		
Chloride	mg/L	MW-29	10/14/2025		278.0000		
Cobalt, total	ug/L	MW-29	08/20/2025		6.3400		
Cobalt, total	ug/L	MW-29	10/14/2025		2.2600		
Iron, total	ug/L	MW-29	08/20/2025		4290.0000		
Iron, total	ug/L	MW-29	10/14/2025		1280.0000		
Magnesium, total	mg/L	MW-29	08/20/2025		51.7000		
Magnesium, total	mg/L	MW-29	10/14/2025		57.6000		
pH	SU	MW-29	08/20/2025		7.4700		
pH	SU	MW-29	10/14/2025		6.9200		
Specific conductance	uS	MW-29	08/20/2025		1917.0000		
Specific conductance	uS	MW-29	10/14/2025		1927.0000		
Ammonia	mg/L	MW-4	04/26/2018		2.9000		
Ammonia	mg/L	MW-4	10/15/2018		1.3000		
Ammonia	mg/L	MW-4	04/23/2019		0.9000		
Ammonia	mg/L	MW-4	10/22/2019		1.2000		
Ammonia	mg/L	MW-4	04/21/2020		0.8400		
Ammonia	mg/L	MW-4	10/12/2020		1.4000		
Ammonia	mg/L	MW-4	04/14/2021		1.0000		
Ammonia	mg/L	MW-4	10/19/2021		2.0000		
Ammonia	mg/L	MW-4	04/14/2022		1.6000		
Ammonia	mg/L	MW-4	10/13/2022		1.5000		
Ammonia	mg/L	MW-4	04/19/2023		0.6200		
Ammonia	mg/L	MW-4	10/18/2023		1.6000		
Ammonia	mg/L	MW-4	04/10/2024		1.2000		
Ammonia	mg/L	MW-4	10/23/2024		1.0000		
Arsenic, total	ug/L	MW-4	04/26/2018		25.7000		
Arsenic, total	ug/L	MW-4	10/15/2018		26.5000		
Arsenic, total	ug/L	MW-4	04/23/2019		13.4000		
Arsenic, total	ug/L	MW-4	10/22/2019		26.3000		
Arsenic, total	ug/L	MW-4	04/21/2020		14.7000		
Arsenic, total	ug/L	MW-4	10/12/2020		15.1000		
Arsenic, total	ug/L	MW-4	04/14/2021		14.2000		
Arsenic, total	ug/L	MW-4	10/19/2021		18.8000		
Arsenic, total	ug/L	MW-4	04/14/2022		31.5000		
Arsenic, total	ug/L	MW-4	10/13/2022		22.3000		
Arsenic, total	ug/L	MW-4	04/19/2023		11.7000		
Arsenic, total	ug/L	MW-4	10/18/2023		17.4000		
Arsenic, total	ug/L	MW-4	04/10/2024		35.6000		
Arsenic, total	ug/L	MW-4	10/23/2024		13.7000		
Barium, total	ug/L	MW-4	04/26/2018		372.0000		
Barium, total	ug/L	MW-4	10/15/2018		270.0000		
Barium, total	ug/L	MW-4	04/23/2019		282.0000		
Barium, total	ug/L	MW-4	10/22/2019		350.0000		
Barium, total	ug/L	MW-4	04/21/2020		301.0000		
Barium, total	ug/L	MW-4	10/12/2020		279.0000		
Barium, total	ug/L	MW-4	04/14/2021		343.0000		
Barium, total	ug/L	MW-4	10/19/2021		378.0000		
Barium, total	ug/L	MW-4	04/14/2022		500.0000		
Barium, total	ug/L	MW-4	10/13/2022		404.0000		
Barium, total	ug/L	MW-4	04/19/2023		235.0000		
Barium, total	ug/L	MW-4	10/18/2023		458.0000		
Barium, total	ug/L	MW-4	04/10/2024		543.0000		
Barium, total	ug/L	MW-4	10/23/2024		317.0000		
Chemical oxygen demand	mg/L	MW-4	04/26/2018		17.0000		
Chemical oxygen demand	mg/L	MW-4	10/15/2018	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/23/2019		8.0000		
Chemical oxygen demand	mg/L	MW-4	10/22/2019	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/21/2020		10.0000		
Chemical oxygen demand	mg/L	MW-4	10/12/2020		7.0000		
Chemical oxygen demand	mg/L	MW-4	04/14/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	10/19/2021	ND	7.0000	5.7000	**

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Chemical oxygen demand	mg/L	MW-4	04/14/2022		14.0000		
Chemical oxygen demand	mg/L	MW-4	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-4	04/19/2023		6.0000		
Chemical oxygen demand	mg/L	MW-4	10/18/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-4	04/10/2024		18.0000		
Chemical oxygen demand	mg/L	MW-4	10/23/2024	ND	5.7000		
Chloride	mg/L	MW-4	04/26/2018		103.0000		
Chloride	mg/L	MW-4	10/15/2018		79.9900		
Chloride	mg/L	MW-4	04/23/2019		86.5000		
Chloride	mg/L	MW-4	10/22/2019		48.7000		
Chloride	mg/L	MW-4	04/21/2020		55.1000		
Chloride	mg/L	MW-4	10/12/2020		60.9000		
Chloride	mg/L	MW-4	04/14/2021		75.1000		
Chloride	mg/L	MW-4	10/19/2021		84.4000		
Chloride	mg/L	MW-4	04/14/2022		90.3400		
Chloride	mg/L	MW-4	10/13/2022		85.8000		
Chloride	mg/L	MW-4	04/19/2023		64.2000		
Chloride	mg/L	MW-4	10/18/2023		76.5000		
Chloride	mg/L	MW-4	04/10/2024		82.6000		
Chloride	mg/L	MW-4	10/23/2024		75.7000		
Cobalt, total	ug/L	MW-4	10/12/2020		4.1500		
Cobalt, total	ug/L	MW-4	04/14/2021		2.4200		
Cobalt, total	ug/L	MW-4	10/19/2021	ND	6.2500	0.7500	**
Cobalt, total	ug/L	MW-4	04/14/2022		7.1400		
Cobalt, total	ug/L	MW-4	10/13/2022		15.1000		
Cobalt, total	ug/L	MW-4	04/19/2023		8.2900		
Cobalt, total	ug/L	MW-4	10/18/2023		7.8500		
Cobalt, total	ug/L	MW-4	04/10/2024		126.0000		
Cobalt, total	ug/L	MW-4	10/23/2024		5.2900		
Iron, total	ug/L	MW-4	04/26/2018		6740.0000		
Iron, total	ug/L	MW-4	10/15/2018		6260.0000		
Iron, total	ug/L	MW-4	04/23/2019		3690.0000		
Iron, total	ug/L	MW-4	10/22/2019		7270.0000		
Iron, total	ug/L	MW-4	04/21/2020		36.2000		*
Iron, total	ug/L	MW-4	10/12/2020		4910.0000		
Iron, total	ug/L	MW-4	04/14/2021		4320.0000		
Iron, total	ug/L	MW-4	10/19/2021		5800.0000		
Iron, total	ug/L	MW-4	04/14/2022		8470.0000		
Iron, total	ug/L	MW-4	10/13/2022		11600.0000		
Iron, total	ug/L	MW-4	04/19/2023		3230.0000		
Iron, total	ug/L	MW-4	10/18/2023		3930.0000		
Iron, total	ug/L	MW-4	04/10/2024		83400.0000		*
Iron, total	ug/L	MW-4	10/23/2024		5090.0000		
Magnesium, total	mg/L	MW-4	04/26/2018		35.8000		
Magnesium, total	mg/L	MW-4	10/15/2018		27.7000		
Magnesium, total	mg/L	MW-4	04/23/2019		30.3000		
Magnesium, total	mg/L	MW-4	10/22/2019		22.7000		
Magnesium, total	mg/L	MW-4	04/21/2020		23.6000		
Magnesium, total	mg/L	MW-4	10/12/2020		23.0000		
Magnesium, total	mg/L	MW-4	04/14/2021		28.9000		
Magnesium, total	mg/L	MW-4	10/19/2021		25.1000		
Magnesium, total	mg/L	MW-4	04/14/2022		32.1000		
Magnesium, total	mg/L	MW-4	10/13/2022		32.5000		
Magnesium, total	mg/L	MW-4	04/19/2023		25.2000		
Magnesium, total	mg/L	MW-4	10/18/2023		36.9000		
Magnesium, total	mg/L	MW-4	04/10/2024		34.1000		
Magnesium, total	mg/L	MW-4	10/23/2024		29.1000		
pH	SU	MW-4	04/26/2018		6.2500		
pH	SU	MW-4	10/15/2018		6.7200		
pH	SU	MW-4	04/23/2019		6.6300		
pH	SU	MW-4	10/22/2019		6.4500		
pH	SU	MW-4	04/21/2020		6.7500		
pH	SU	MW-4	10/12/2020		6.6400		
pH	SU	MW-4	04/14/2021		6.7000		
pH	SU	MW-4	10/19/2021		6.9000		
pH	SU	MW-4	04/14/2022		6.9000		
pH	SU	MW-4	10/13/2022		6.8300		
pH	SU	MW-4	04/19/2023		6.6900		
pH	SU	MW-4	10/18/2023		6.8000		
pH	SU	MW-4	04/10/2024		6.4300		
pH	SU	MW-4	10/23/2024		6.7500		
Specific conductance	uS	MW-4	04/26/2018		986.0000		
Specific conductance	uS	MW-4	10/15/2018		874.0000		
Specific conductance	uS	MW-4	04/23/2019		895.0000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Specific conductance	uS	MW-4	10/22/2019		618.0000		
Specific conductance	uS	MW-4	04/21/2020		709.0000		
Specific conductance	uS	MW-4	10/12/2020		643.0000		
Specific conductance	uS	MW-4	04/14/2021		1090.0000		
Specific conductance	uS	MW-4	10/19/2021		917.0000		
Specific conductance	uS	MW-4	04/14/2022		915.0000		
Specific conductance	uS	MW-4	10/13/2022		934.0000		
Specific conductance	uS	MW-4	04/19/2023		782.0000		
Specific conductance	uS	MW-4	10/18/2023		869.0000		
Specific conductance	uS	MW-4	04/10/2024		848.0000		
Specific conductance	uS	MW-4	10/23/2024		447.9000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Ammonia	mg/L	MW-30	10/13/2025		3.7000	*	3.1915
Arsenic, total	ug/L	MW-30	10/13/2025		39.6000	***	31.4866
Barium, total	ug/L	MW-30	10/13/2025		284.0000		534.2616
Chemical oxygen demand	mg/L	MW-30	10/13/2025		10.0000	**	46.2962
Chloride	mg/L	MW-30	10/13/2025		57.1963		335.7395
Cobalt, total	ug/L	MW-30	10/13/2025		6.4200		126.0000
Iron, total	ug/L	MW-30	10/13/2025		47700.0000	***	10700.3317
Magnesium, total	mg/L	MW-30	10/13/2025		30.1000		72.4322
pH	SU	MW-30	10/13/2025		6.8300	**	6.25 - 7.50
Specific conductance	uS	MW-30	10/13/2025		1106.0000		1927.0000
Ammonia	mg/L	MW-31	10/13/2025		0.6400		3.1915
Arsenic, total	ug/L	MW-31	10/13/2025		27.2000		31.4866
Barium, total	ug/L	MW-31	10/13/2025		204.0000		534.2616
Chemical oxygen demand	mg/L	MW-31	10/13/2025		16.0000	**	46.2962
Chloride	mg/L	MW-31	10/13/2025		44.9032		335.7395
Cobalt, total	ug/L	MW-31	10/13/2025		27.9000		126.0000
Iron, total	ug/L	MW-31	10/13/2025		41100.0000	***	10700.3317
Magnesium, total	mg/L	MW-31	10/13/2025		25.1000		72.4322
pH	SU	MW-31	10/13/2025		6.6800		6.25 - 7.50
Specific conductance	uS	MW-31	10/13/2025		834.7000		1927.0000
Ammonia	mg/L	MW-32	10/13/2025	ND	0.0470		3.1915
Arsenic, total	ug/L	MW-32	10/13/2025		5.4000		31.4866
Barium, total	ug/L	MW-32	10/13/2025		210.0000	**	534.2616
Chemical oxygen demand	mg/L	MW-32	10/13/2025	ND	5.7000		46.2962
Chloride	mg/L	MW-32	10/13/2025		48.1612		335.7395
Cobalt, total	ug/L	MW-32	10/13/2025		16.5000		126.0000
Iron, total	ug/L	MW-32	10/13/2025		9360.0000	**	10700.3317
Magnesium, total	mg/L	MW-32	10/13/2025		19.3000		72.4322
pH	SU	MW-32	10/13/2025		6.2700		6.25 - 7.50
Specific conductance	uS	MW-32	10/13/2025		574.3000		1927.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Detect	Upgradient N	Proportion	Detect	Downgradient N	Proportion
Ammonia	34	47	0.723	5	6	0.833
Arsenic, total	36	45	0.800	6	6	1.000
Barium, total	47	47	1.000	6	6	1.000
Chemical oxygen demand	27	47	0.574	5	6	0.833
Chloride	47	47	1.000	6	6	1.000
Cobalt, total	13	32	0.406	6	6	1.000
Iron, total	38	44	0.864	6	6	1.000
Magnesium, total	47	47	1.000	6	6	1.000
pH	47	47	1.000	6	6	1.000
Specific conductance	47	47	1.000	6	6	1.000

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Ammonia	34	47	0.723	2.323	0.499					2.326	normal	normal
Arsenic, total	36	45	0.800	1.255	2.124					2.326	normal	normal
Barium, total	47	47	1.000	0.213	0.040					2.326	normal	normal
Chemical oxygen demand	27	47	0.574	0.599	0.578					2.326	normal	normal
Chloride	47	47	1.000	1.911	1.287					2.326	normal	normal
Cobalt, total	13	32	0.406	5.138	1.418					2.326	lognor	nonpar
Iron, total	38	44	0.864	2.125	0.345					2.326	normal	normal
Magnesium, total	47	47	1.000	1.643	2.370					2.326	normal	normal
pH	47	47	1.000	2.468	2.754					2.326	non-norm	nonpar
Specific conductance	47	47	1.000	2.863	3.975					2.326	non-norm	nonpar

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type	Conf
Ammonia	mg/L	34	47	0.7772	0.9912	0.0100	2.4356	3.1915	normal	
Arsenic, total	ug/L	36	45	7.5931	9.7895	0.0100	2.4407	31.4866	normal	
Barium, total	ug/L	47	47	299.1064	96.5483	0.0100	2.4356	534.2616	normal	
Chemical oxygen demand	mg/L	27	47	8.4468	15.5399	0.0100	2.4356	46.2962	normal	
Chloride	mg/L	47	47	112.0686	91.8331	0.0100	2.4356	335.7395	normal	
Cobalt, total	ug/L	13	32					126.0000	nonpar	0.99
Iron, total	ug/L	38	44	3151.8409	3089.2553	0.0100	2.4435	10700.3317	normal	
Magnesium, total	mg/L	47	47	38.6766	13.8591	0.0100	2.4356	72.4322	normal	
pH	SU	47	47					6.25- 7.50	nonpar	0.99
Specific conductance	uS	47	47					1927.0000	nonpar	0.99

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Arsenic, total	ug/L	MW-1	10/19/2021	0.2300	< 0.2300	04/26/2018-10/23/2024	14	0.6403
Iron, total	ug/L	MW-1	04/21/2020	45.8000		04/26/2018-10/23/2024	14	0.6403
Arsenic, total	ug/L	MW-21	04/15/2025	5.6000	< 5.6000	04/26/2018-10/14/2025	17	0.5798
Iron, total	ug/L	MW-4	04/21/2020	36.2000		04/26/2018-10/23/2024	14	0.6403
Iron, total	ug/L	MW-4	04/10/2024	83400.0000		04/26/2018-10/23/2024	14	0.6403

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.

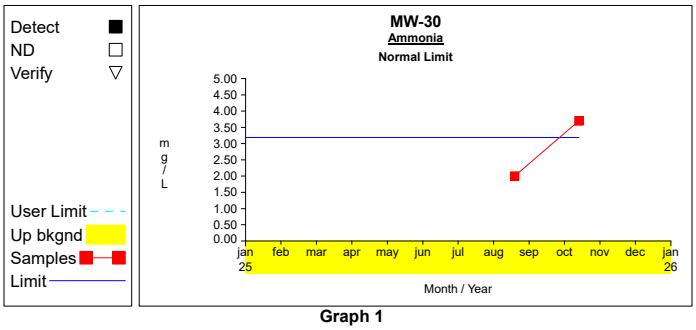
Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

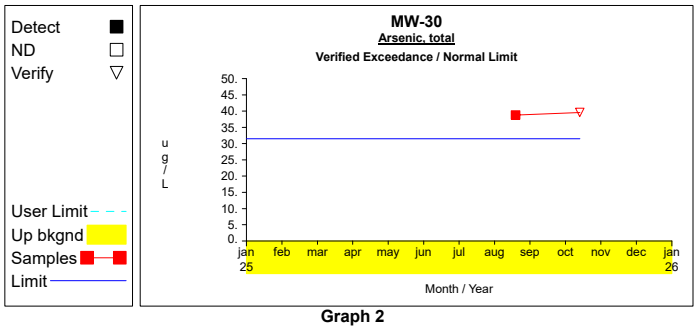
Constituent	Units	Well	Date	Result		Pred. Limit
Ammonia	mg/L	MW-30	08/19/2025	2.0000		3.1915
Ammonia	mg/L	MW-30	10/13/2025	3.7000	*	3.1915
Arsenic, total	ug/L	MW-30	08/19/2025	38.8000	*	31.4866
Arsenic, total	ug/L	MW-30	10/13/2025	39.6000	*	31.4866
Chemical oxygen demand	mg/L	MW-30	08/19/2025	47.0000	*	46.2962
Chemical oxygen demand	mg/L	MW-30	10/13/2025	10.0000		46.2962
Iron, total	ug/L	MW-30	08/19/2025	64600.0000	*	10700.3317
Iron, total	ug/L	MW-30	10/13/2025	47700.0000	*	10700.3317
pH	SU	MW-30	08/19/2025	5.9600	*	6.25 - 7.50
pH	SU	MW-30	10/13/2025	6.8300		6.25 - 7.50
Chemical oxygen demand	mg/L	MW-31	08/19/2025	58.0000	*	46.2962
Chemical oxygen demand	mg/L	MW-31	10/13/2025	16.0000		46.2962
Iron, total	ug/L	MW-31	08/19/2025	63100.0000	*	10700.3317
Iron, total	ug/L	MW-31	10/13/2025	41100.0000	*	10700.3317
Barium, total	ug/L	MW-32	08/19/2025	582.0000	*	534.2616
Barium, total	ug/L	MW-32	10/13/2025	210.0000		534.2616
Iron, total	ug/L	MW-32	08/19/2025	28200.0000	*	10700.3317
Iron, total	ug/L	MW-32	10/13/2025	9360.0000		10700.3317

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

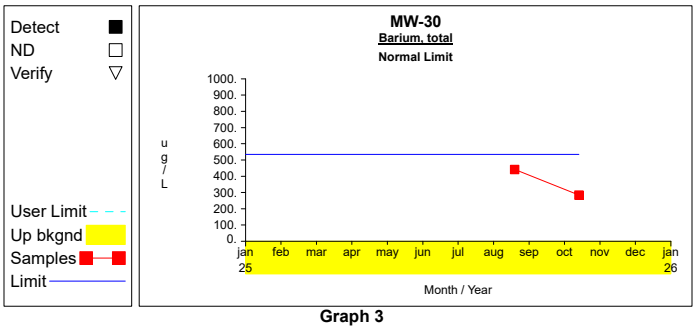
Up vs. Down Prediction Limits



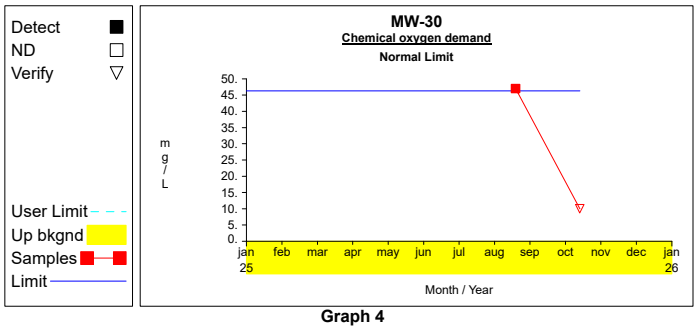
Graph 1



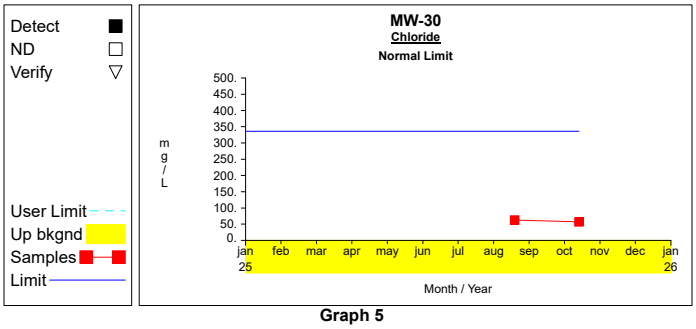
Graph 2



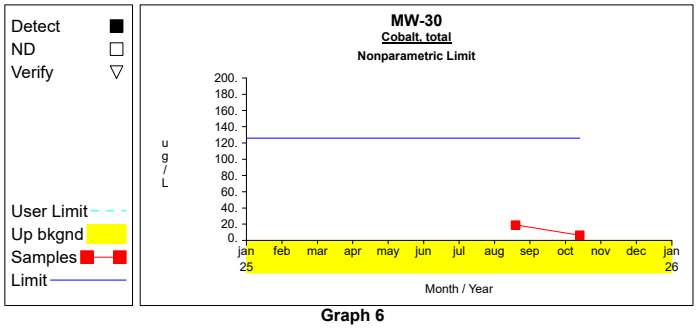
Graph 3



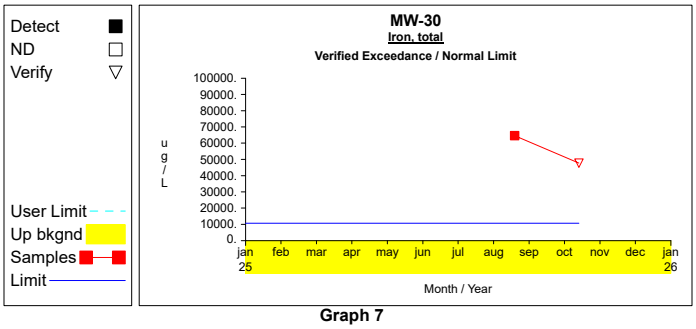
Graph 4



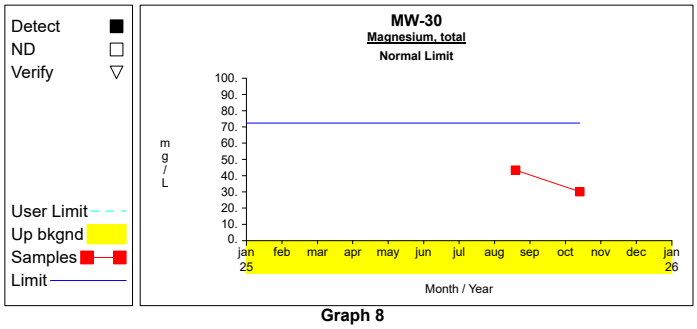
Graph 5



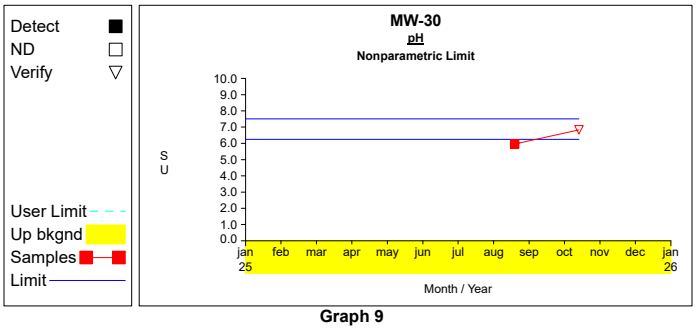
Graph 6



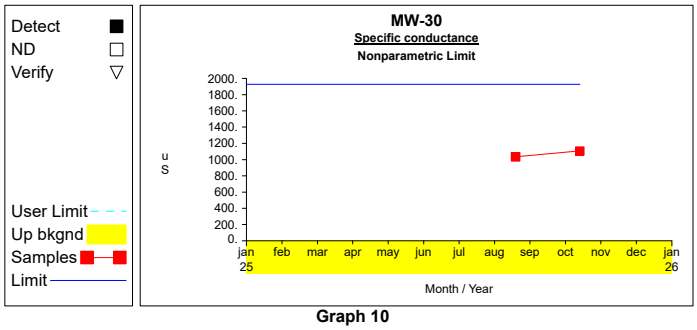
Graph 7



Graph 8



Graph 9



Graph 10

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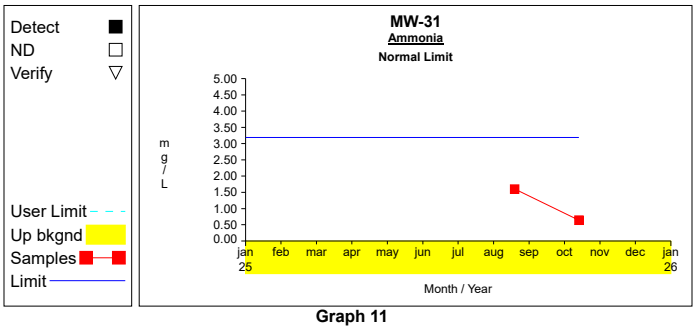
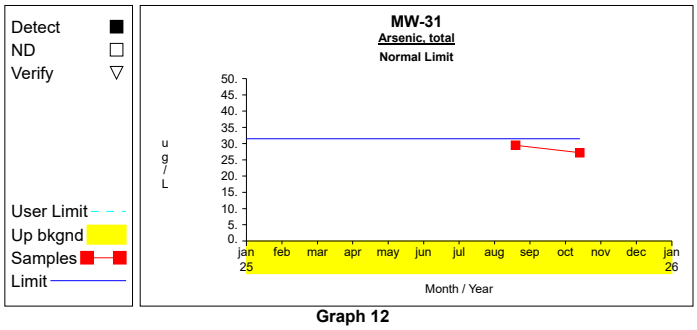
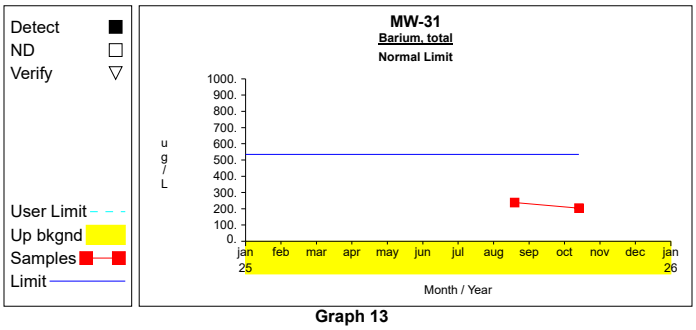
Up vs. Down Prediction Limits



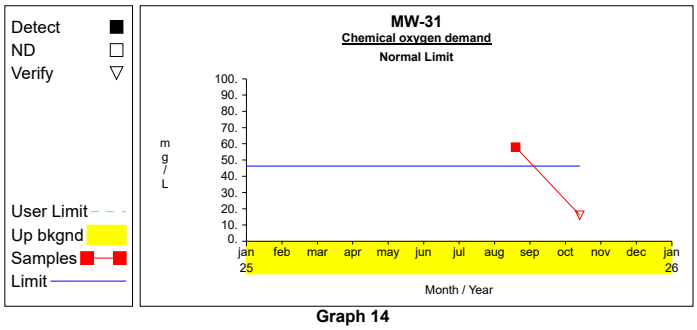
Graph 11



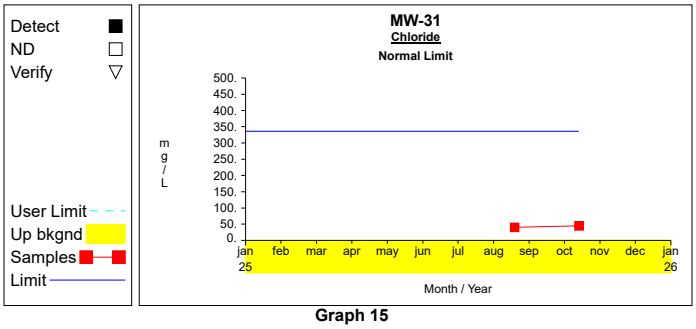
Graph 12



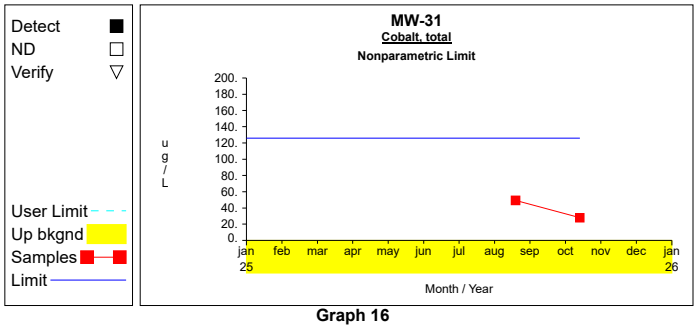
Graph 13



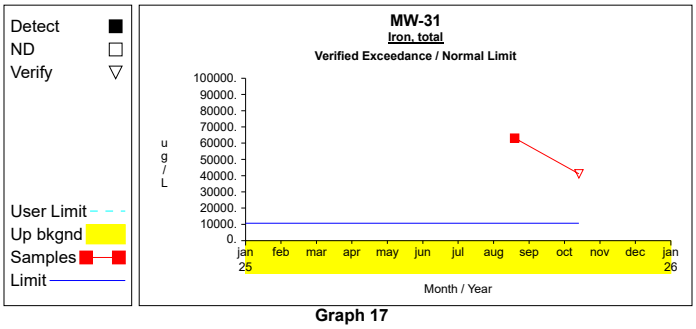
Graph 14



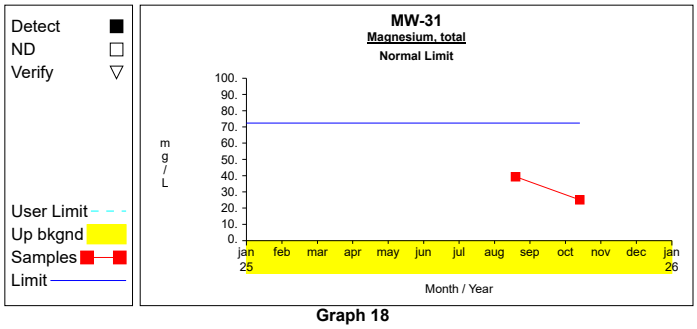
Graph 15



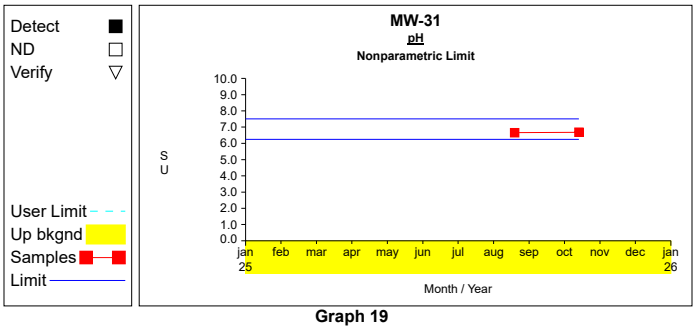
Graph 16



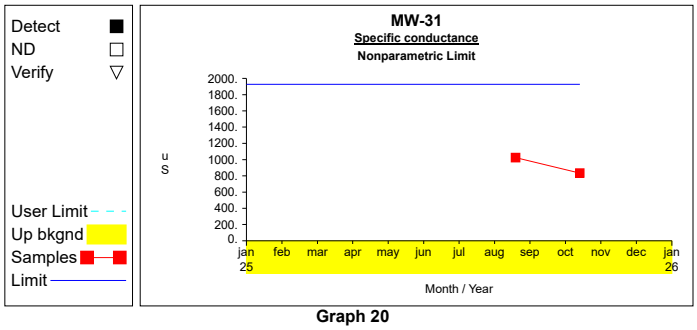
Graph 17



Graph 18



Graph 19



Graph 20

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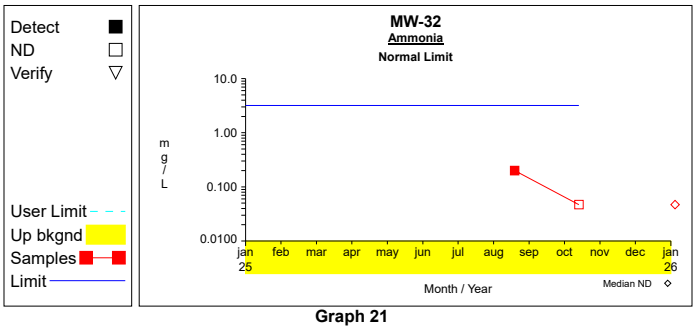
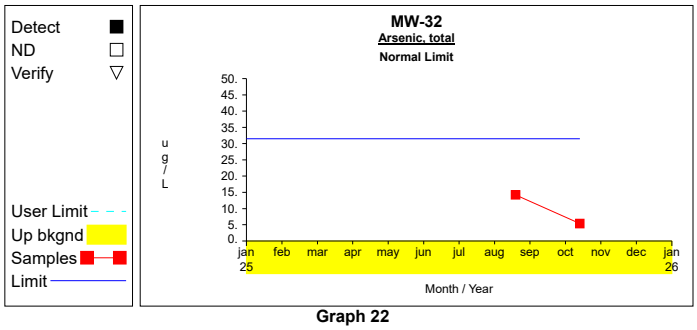
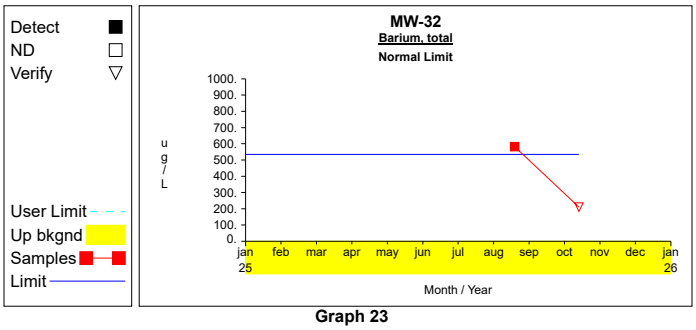
Up vs. Down Prediction Limits



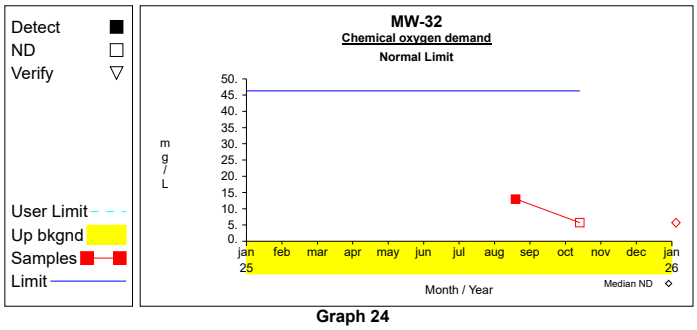
Graph 21



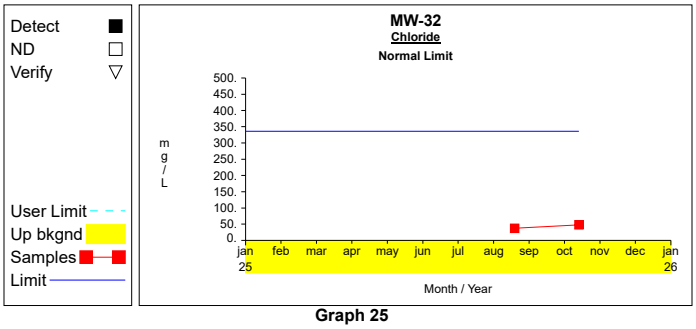
Graph 22



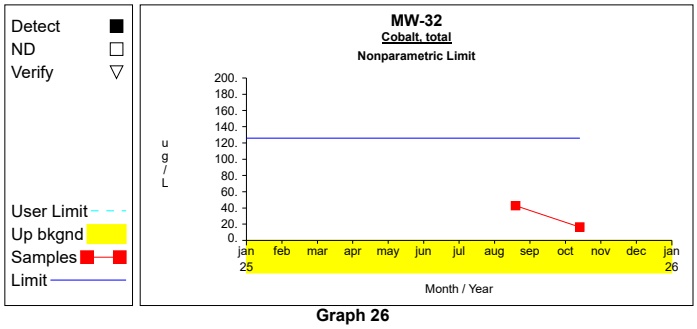
Graph 23



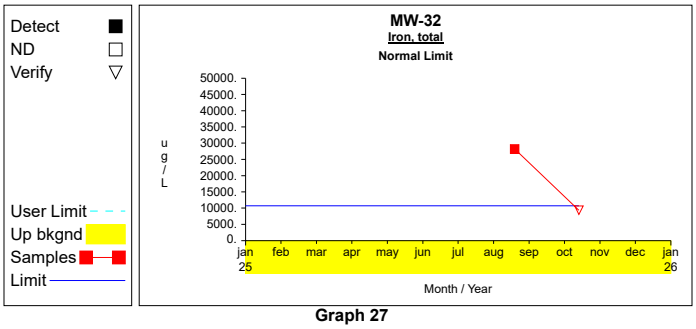
Graph 24



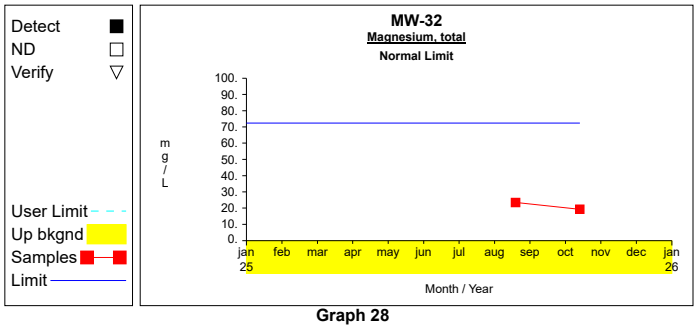
Graph 25



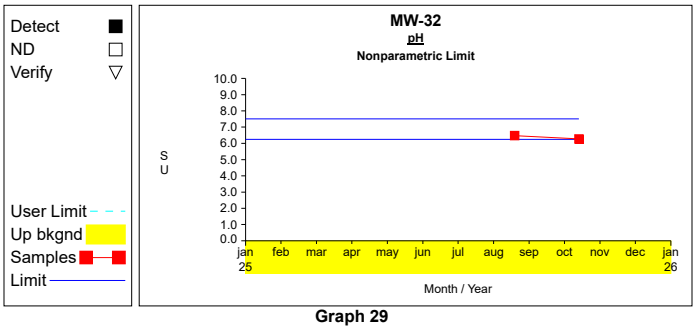
Graph 26



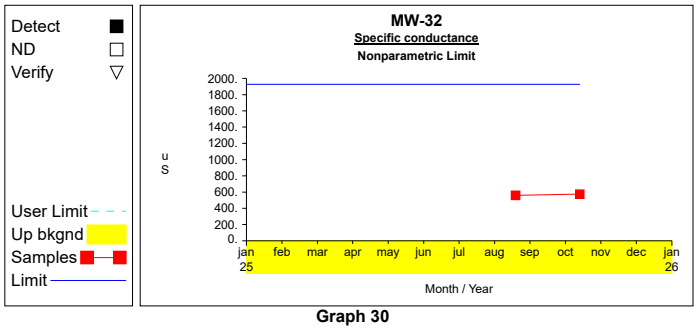
Graph 27



Graph 28



Graph 29

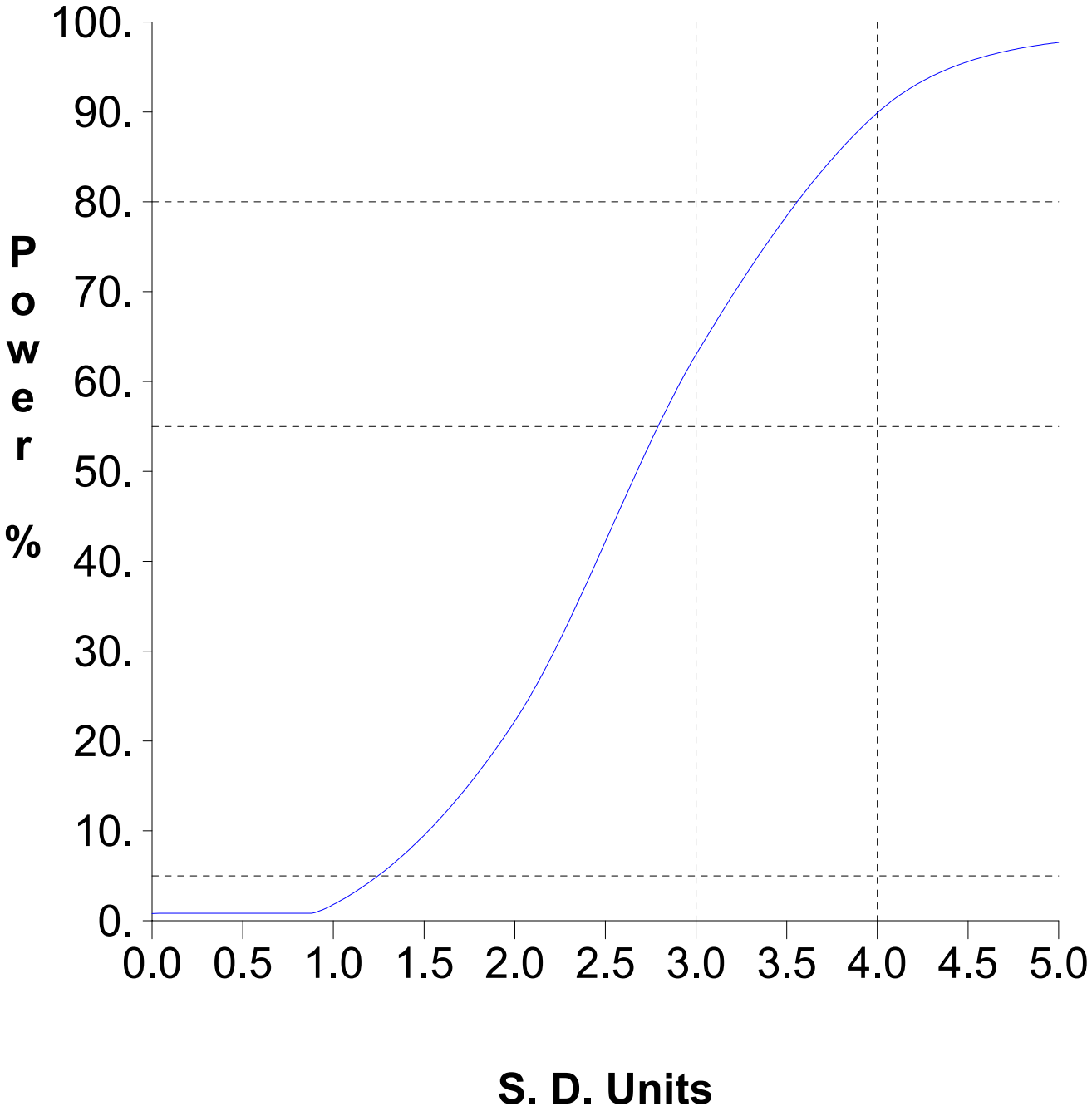


Graph 30

Prepared by: Otter Creek Environmental

False Positive and False Negative Rates for Current

Upgradient vs. Downgradient Monitoring Program



Attachment E

Summary Tables and Graphs for the Intrawell Comparisons
October 2025 Monitoring Event

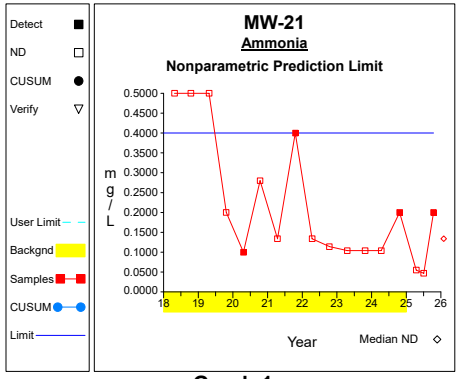
Table 1

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

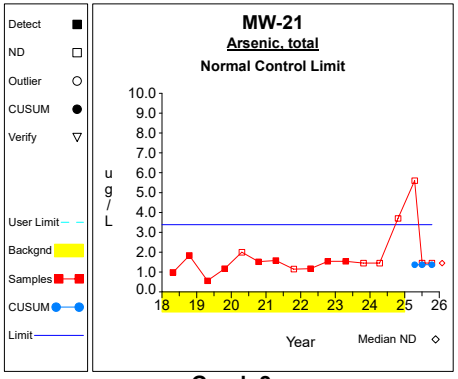
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Ammonia	mg/L	MW-21	14	3	17			0.0470	0.2000			0.4000	nonpar	.99	**
Arsenic, total	ug/L	MW-21	14	3	17	1.3671	0.3108	1.4500	1.4500	1.3671	1.3671	3.3876	normal		
Barium, total	ug/L	MW-21	14	3	17	345.6429	58.1425	312.0000	340.0000	345.6429	345.6429	723.5694	normal		
Chemical oxygen demand	mg/L	MW-21	14	3	17	7.7929	1.8244	5.7000	5.7000	7.7929	7.7929	19.6514	normal		
Chloride	mg/L	MW-21	14	3	17	204.7096	26.7505	223.4822	221.0000	212.1151	208.3426	378.5879	normal		
Cobalt, total	ug/L	MW-21	9	3	12			0.6500	0.6500			0.7500	nonpar	.99	**
Iron, total	ug/L	MW-21	13	3	17	377.8077	310.7098	42.9500	55.0000	377.8077	377.8077	2397.4217	normal		
Magnesium, total	mg/L	MW-21	14	3	17	53.1286	6.5652	57.2000	54.3000	58.5236	54.7711	95.8025	normal		
pH	SU	MW-21	14	3	17	6.7643	0.1378	6.9600	6.8600	7.1290	7.1213	5.87 - 7.66	normal		
Specific conductance	uS	MW-21	14	3	17	1463.6071	192.0977	1754.0000	1728.0000	1837.2462	1957.5658	2712.2425	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 of two verification resamples (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

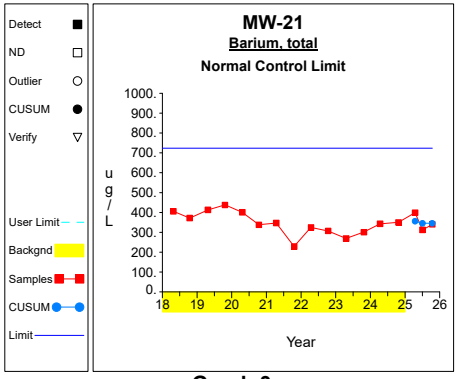
Intra-Well Control Charts / Prediction Limits



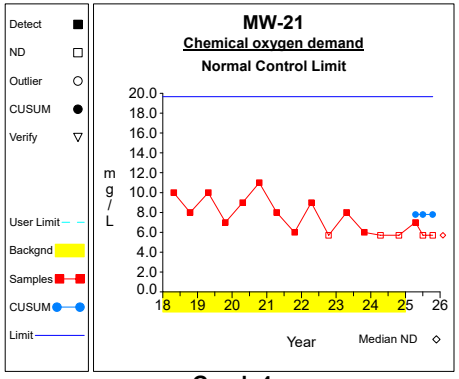
Graph 1



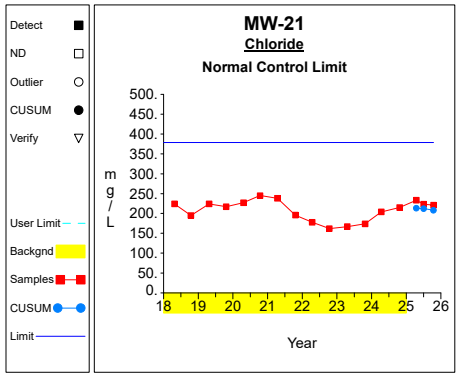
Graph 2



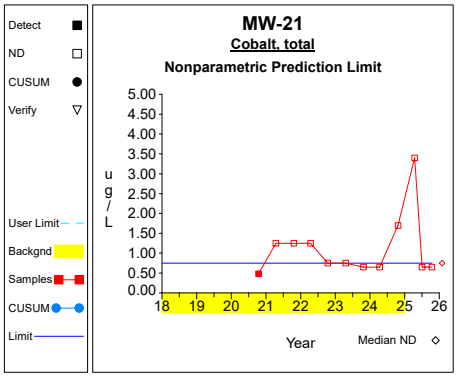
Graph 3



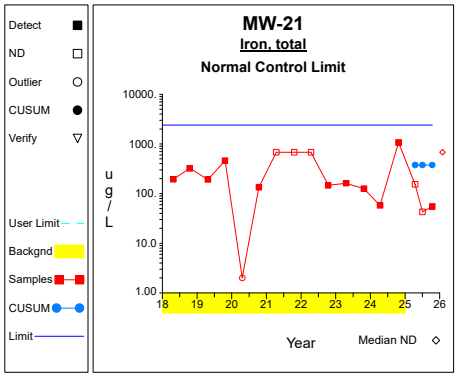
Graph 4



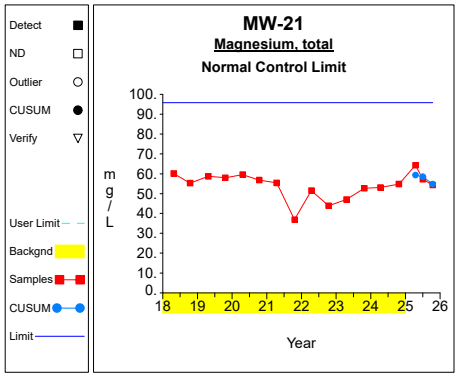
Graph 5



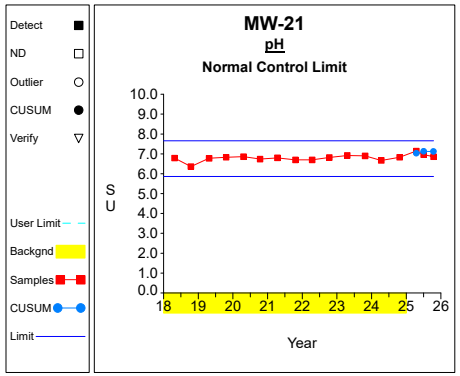
Graph 6



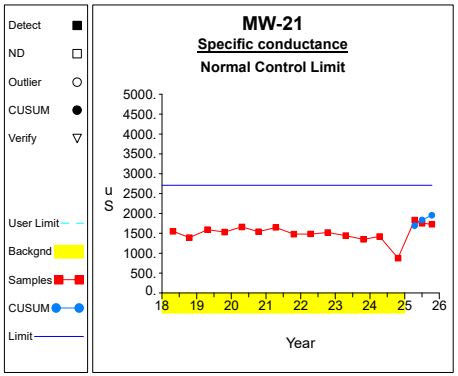
Graph 7



Graph 8



Graph 9



Graph 10

Table 4

Dixon's Test Outliers
1% Significance Level

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Iron, total	ug/L	MW-21	04/21/2020	2.0000	< 2.0000	04/26/2018-10/23/2024	14	0.6403

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.

Attachment F

Summary Tables and Graphs for the Interwell Comparisons
November 2025 Monitoring Event

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Chemical oxygen demand	mg/L	MW-1	04/26/2018		13.0000		
Chemical oxygen demand	mg/L	MW-1	10/15/2018	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-1	04/23/2019		18.0000		
Chemical oxygen demand	mg/L	MW-1	10/22/2019		7.0000		
Chemical oxygen demand	mg/L	MW-1	04/21/2020		17.0000		
Chemical oxygen demand	mg/L	MW-1	10/13/2020		22.0000		
Chemical oxygen demand	mg/L	MW-1	04/14/2021		32.0000		
Chemical oxygen demand	mg/L	MW-1	10/19/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-1	04/14/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	04/19/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/20/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	04/10/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-1	10/23/2024	ND	5.7000		
pH	SU	MW-1	04/26/2018		6.5000		
pH	SU	MW-1	10/15/2018		7.2200		
pH	SU	MW-1	04/23/2019		7.0300		
pH	SU	MW-1	10/22/2019		7.2100		
pH	SU	MW-1	04/21/2020		7.2300		
pH	SU	MW-1	10/13/2020		7.0300		
pH	SU	MW-1	04/14/2021		7.4000		
pH	SU	MW-1	10/19/2021		7.4000		
pH	SU	MW-1	04/14/2022		7.5000		
pH	SU	MW-1	10/13/2022		7.1700		
pH	SU	MW-1	04/19/2023		7.3300		
pH	SU	MW-1	10/20/2023		7.2000		
pH	SU	MW-1	04/10/2024		6.9700		
pH	SU	MW-1	10/23/2024		6.3700		
Specific conductance	uS	MW-1	04/26/2018		684.0000		
Specific conductance	uS	MW-1	10/15/2018		700.0000		
Specific conductance	uS	MW-1	04/23/2019		554.0000		
Specific conductance	uS	MW-1	10/22/2019		662.0000		
Specific conductance	uS	MW-1	04/21/2020		641.0000		
Specific conductance	uS	MW-1	10/13/2020		617.0000		
Specific conductance	uS	MW-1	04/14/2021		685.0000		
Specific conductance	uS	MW-1	10/19/2021		702.0000		
Specific conductance	uS	MW-1	04/14/2022		704.0000		
Specific conductance	uS	MW-1	10/13/2022		733.0000		
Specific conductance	uS	MW-1	04/19/2023		711.0000		
Specific conductance	uS	MW-1	10/20/2023		707.0000		
Specific conductance	uS	MW-1	04/10/2024		721.0000		
Specific conductance	uS	MW-1	10/23/2024		956.5000		
Chemical oxygen demand	mg/L	MW-21	04/26/2018		10.0000		
Chemical oxygen demand	mg/L	MW-21	10/15/2018		8.0000		
Chemical oxygen demand	mg/L	MW-21	04/24/2019		10.0000		
Chemical oxygen demand	mg/L	MW-21	10/22/2019		7.0000		
Chemical oxygen demand	mg/L	MW-21	04/21/2020		9.0000		
Chemical oxygen demand	mg/L	MW-21	10/13/2020		11.0000		
Chemical oxygen demand	mg/L	MW-21	04/14/2021		8.0000		
Chemical oxygen demand	mg/L	MW-21	10/20/2021		6.0000		
Chemical oxygen demand	mg/L	MW-21	04/14/2022		9.0000		
Chemical oxygen demand	mg/L	MW-21	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	04/19/2023		8.0000		
Chemical oxygen demand	mg/L	MW-21	10/24/2023		6.0000		
Chemical oxygen demand	mg/L	MW-21	04/11/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	10/23/2024	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	04/15/2025		7.0000		
Chemical oxygen demand	mg/L	MW-21	07/01/2025	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	10/14/2025	ND	5.7000		
Chemical oxygen demand	mg/L	MW-21	11/21/2025		10.0000		
pH	SU	MW-21	04/26/2018		6.7900		
pH	SU	MW-21	10/15/2018		6.3600		
pH	SU	MW-21	04/24/2019		6.7800		
pH	SU	MW-21	10/22/2019		6.8300		
pH	SU	MW-21	04/21/2020		6.8600		
pH	SU	MW-21	10/13/2020		6.7400		
pH	SU	MW-21	04/14/2021		6.8000		
pH	SU	MW-21	10/20/2021		6.7000		
pH	SU	MW-21	04/14/2022		6.7000		
pH	SU	MW-21	10/13/2022		6.8200		
pH	SU	MW-21	04/19/2023		6.9200		
pH	SU	MW-21	10/24/2023		6.9000		
pH	SU	MW-21	04/11/2024		6.6700		
pH	SU	MW-21	10/23/2024		6.8300		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
pH	SU	MW-21	04/15/2025		7.1400		
pH	SU	MW-21	07/01/2025		6.9600		
pH	SU	MW-21	10/14/2025		6.8600		
pH	SU	MW-21	11/21/2025		6.8900		
Specific conductance	uS	MW-21	04/26/2018		1554.0000		
Specific conductance	uS	MW-21	10/15/2018		1391.0000		
Specific conductance	uS	MW-21	04/24/2019		1590.0000		
Specific conductance	uS	MW-21	10/22/2019		1532.0000		
Specific conductance	uS	MW-21	04/21/2020		1661.0000		
Specific conductance	uS	MW-21	10/13/2020		1542.0000		
Specific conductance	uS	MW-21	04/14/2021		1649.0000		
Specific conductance	uS	MW-21	10/20/2021		1480.0000		
Specific conductance	uS	MW-21	04/14/2022		1484.0000		
Specific conductance	uS	MW-21	10/13/2022		1520.0000		
Specific conductance	uS	MW-21	04/19/2023		1443.0000		
Specific conductance	uS	MW-21	10/24/2023		1350.0000		
Specific conductance	uS	MW-21	04/11/2024		1420.0000		
Specific conductance	uS	MW-21	10/23/2024		874.5000		
Specific conductance	uS	MW-21	04/15/2025		1835.0000		
Specific conductance	uS	MW-21	07/01/2025		1754.0000		
Specific conductance	uS	MW-21	10/14/2025		1728.0000		
Specific conductance	uS	MW-21	11/21/2025		1858.0000		
Chemical oxygen demand	mg/L	MW-29	08/20/2025		100.0000		
Chemical oxygen demand	mg/L	MW-29	10/14/2025		9.0000		
Chemical oxygen demand	mg/L	MW-29	11/21/2025		21.0000		
pH	SU	MW-29	08/20/2025		7.4700		
pH	SU	MW-29	10/14/2025		6.9200		
pH	SU	MW-29	11/21/2025		6.9300		
Specific conductance	uS	MW-29	08/20/2025		1917.0000		
Specific conductance	uS	MW-29	10/14/2025		1927.0000		
Specific conductance	uS	MW-29	11/21/2025		1958.0000		
Chemical oxygen demand	mg/L	MW-4	04/26/2018		17.0000		
Chemical oxygen demand	mg/L	MW-4	10/15/2018	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/23/2019		8.0000		
Chemical oxygen demand	mg/L	MW-4	10/22/2019	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/21/2020		10.0000		
Chemical oxygen demand	mg/L	MW-4	10/12/2020		7.0000		
Chemical oxygen demand	mg/L	MW-4	04/14/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	10/19/2021	ND	7.0000	5.7000	**
Chemical oxygen demand	mg/L	MW-4	04/14/2022		14.0000		
Chemical oxygen demand	mg/L	MW-4	10/13/2022	ND	5.7000		
Chemical oxygen demand	mg/L	MW-4	04/19/2023		6.0000		
Chemical oxygen demand	mg/L	MW-4	10/18/2023	ND	5.7000		
Chemical oxygen demand	mg/L	MW-4	04/10/2024		18.0000		
Chemical oxygen demand	mg/L	MW-4	10/23/2024	ND	5.7000		
pH	SU	MW-4	04/26/2018		6.2500		
pH	SU	MW-4	10/15/2018		6.7200		
pH	SU	MW-4	04/23/2019		6.6300		
pH	SU	MW-4	10/22/2019		6.4500		
pH	SU	MW-4	04/21/2020		6.7500		
pH	SU	MW-4	10/12/2020		6.6400		
pH	SU	MW-4	04/14/2021		6.7000		
pH	SU	MW-4	10/19/2021		6.9000		
pH	SU	MW-4	04/14/2022		6.9000		
pH	SU	MW-4	10/13/2022		6.8300		
pH	SU	MW-4	04/19/2023		6.6900		
pH	SU	MW-4	10/18/2023		6.8000		
pH	SU	MW-4	04/10/2024		6.4300		
pH	SU	MW-4	10/23/2024		6.7500		
Specific conductance	uS	MW-4	04/26/2018		986.0000		
Specific conductance	uS	MW-4	10/15/2018		874.0000		
Specific conductance	uS	MW-4	04/23/2019		895.0000		
Specific conductance	uS	MW-4	10/22/2019		618.0000		
Specific conductance	uS	MW-4	04/21/2020		709.0000		
Specific conductance	uS	MW-4	10/12/2020		643.0000		
Specific conductance	uS	MW-4	04/14/2021		1090.0000		
Specific conductance	uS	MW-4	10/19/2021		917.0000		
Specific conductance	uS	MW-4	04/14/2022		915.0000		
Specific conductance	uS	MW-4	10/13/2022		934.0000		
Specific conductance	uS	MW-4	04/19/2023		782.0000		
Specific conductance	uS	MW-4	10/18/2023		869.0000		
Specific conductance	uS	MW-4	04/10/2024		848.0000		
Specific conductance	uS	MW-4	10/23/2024		447.9000		

* - Outlier for that well and constituent.
** - ND value replaced with median RL.
*** - ND value replaced with manual RL.
ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Chemical oxygen demand	mg/L	MW-30	11/21/2025		9.0000		45.9511
pH	SU	MW-30	11/21/2025		6.9100		6.25 - 7.50
Specific conductance	uS	MW-30	11/21/2025		1426.0000		1958.0000
Chemical oxygen demand	mg/L	MW-31	11/21/2025		47.0000	*	45.9511
pH	SU	MW-31	11/21/2025		6.6200		6.25 - 7.50
Specific conductance	uS	MW-31	11/21/2025		1016.0000		1958.0000
Chemical oxygen demand	mg/L	MW-32	11/20/2025	ND	5.7000		45.9511
pH	SU	MW-32	11/20/2025		6.4100		6.25 - 7.50
Specific conductance	uS	MW-32	11/20/2025		707.2000		1958.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient Detect	Upgradient N	Upgradient Proportion	Downgradient Detect	Downgradient N	Downgradient Proportion
Chemical oxygen demand	29	49	0.592	7	9	0.778
pH	49	49	1.000	9	9	1.000
Specific conductance	49	49	1.000	9	9	1.000

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Chemical oxygen demand	29	49	0.592	0.016	0.499					2.326	normal	normal
pH	49	49	1.000	3.163	3.406					2.326	non-norm	nonpar
Specific conductance	49	49	1.000	2.430	3.425					2.326	non-norm	nonpar

* - Distribution override for that constituent.
Fit to distribution is confirmed if G <= critical value.
Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type	Conf
Chemical oxygen demand	mg/L	29	49	8.7347	15.3094	0.0100	2.4310	45.9511	normal	
pH	SU	49	49					6.25- 7.50	nonpar	0.99
Specific conductance	uS	49	49					1958.0000	nonpar	0.99

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

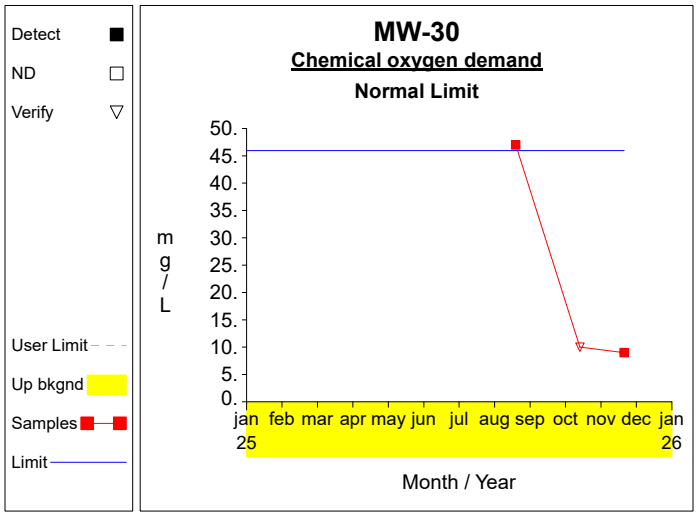
Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

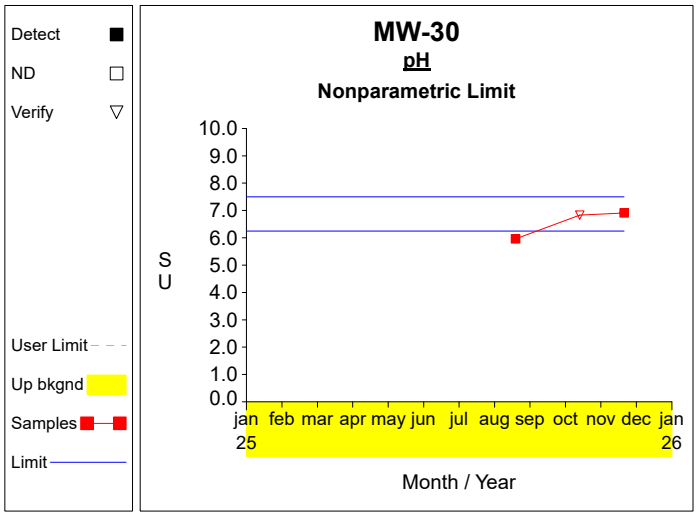
Constituent	Units	Well	Date	Result		Pred. Limit
Chemical oxygen demand	mg/L	MW-31	08/19/2025	58.0000	*	45.9511
Chemical oxygen demand	mg/L	MW-31	10/13/2025	16.0000		45.9511
Chemical oxygen demand	mg/L	MW-31	11/21/2025	47.0000	*	45.9511

* - Significantly increased over background.
** - Detect at limit for 100% NDs in background (NPPL only).
*** - Manual exclusion.
ND = Not Detected, Result = detection limit.

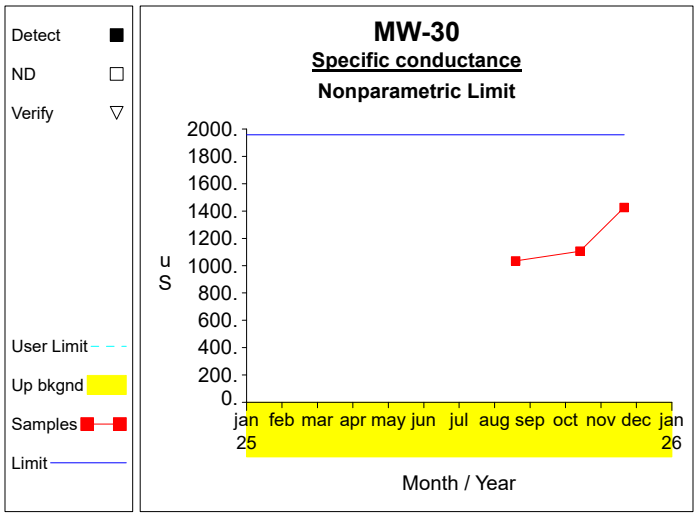
Up vs. Down Prediction Limits



Graph 1

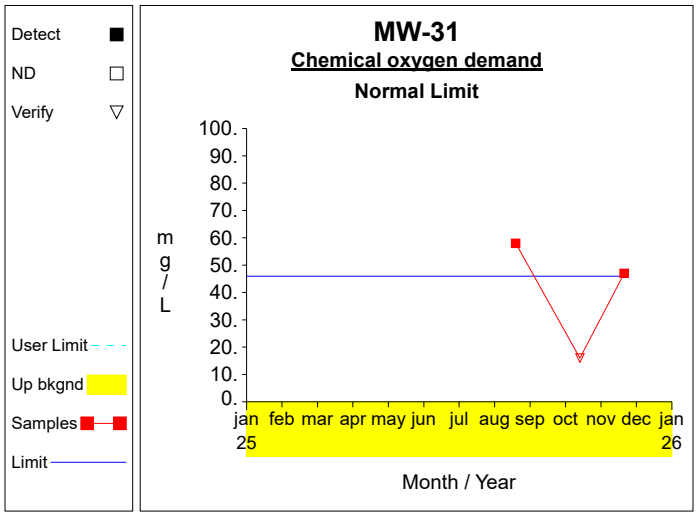


Graph 2

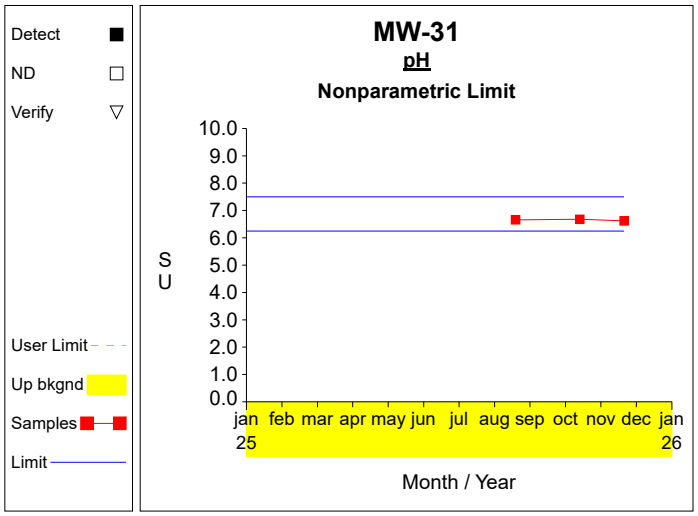


Graph 3

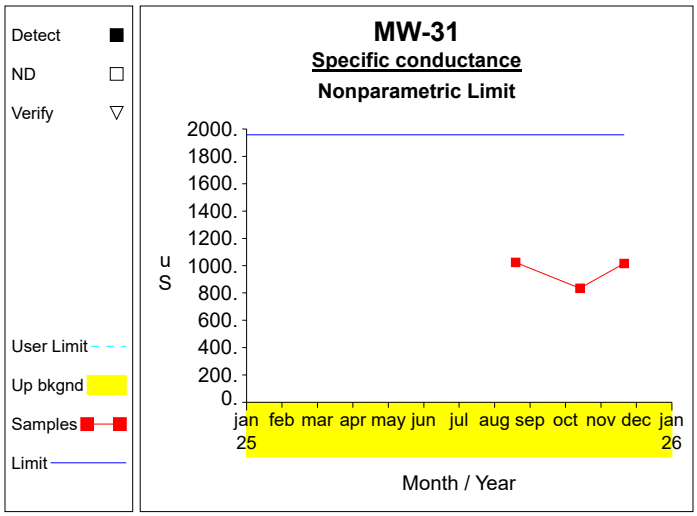
Up vs. Down Prediction Limits



Graph 4

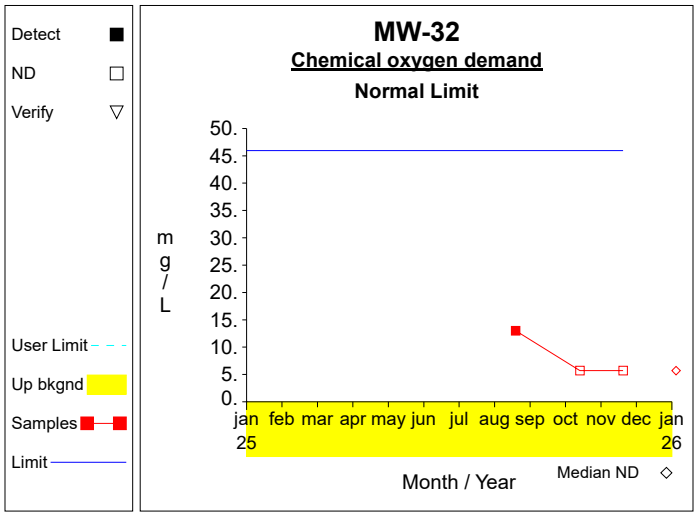


Graph 5

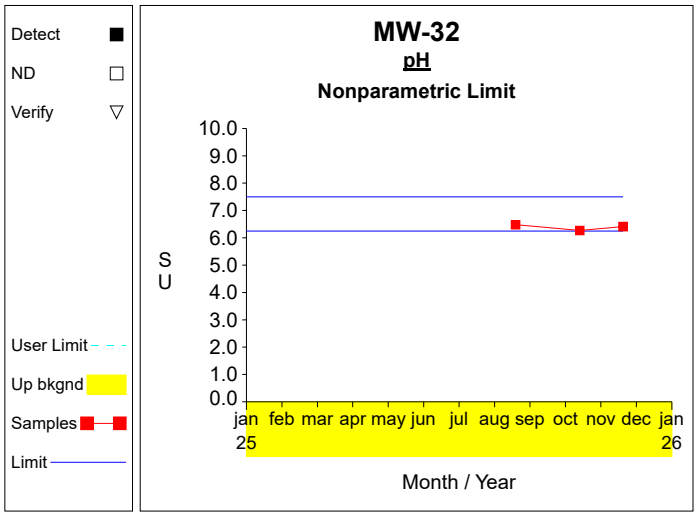


Graph 6

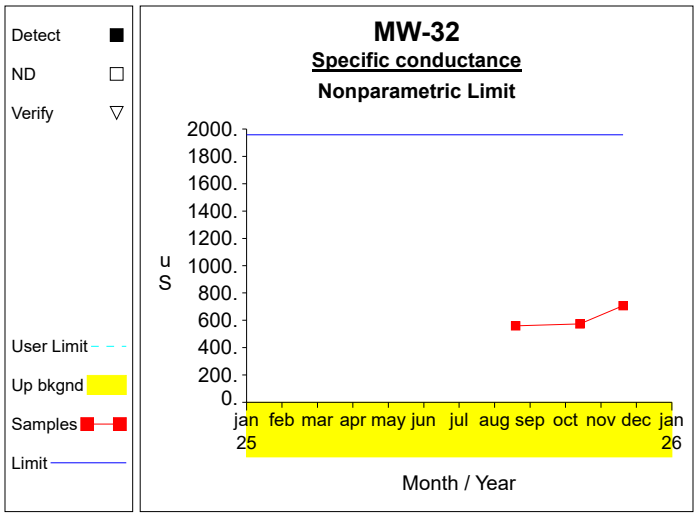
Up vs. Down Prediction Limits



Graph 7



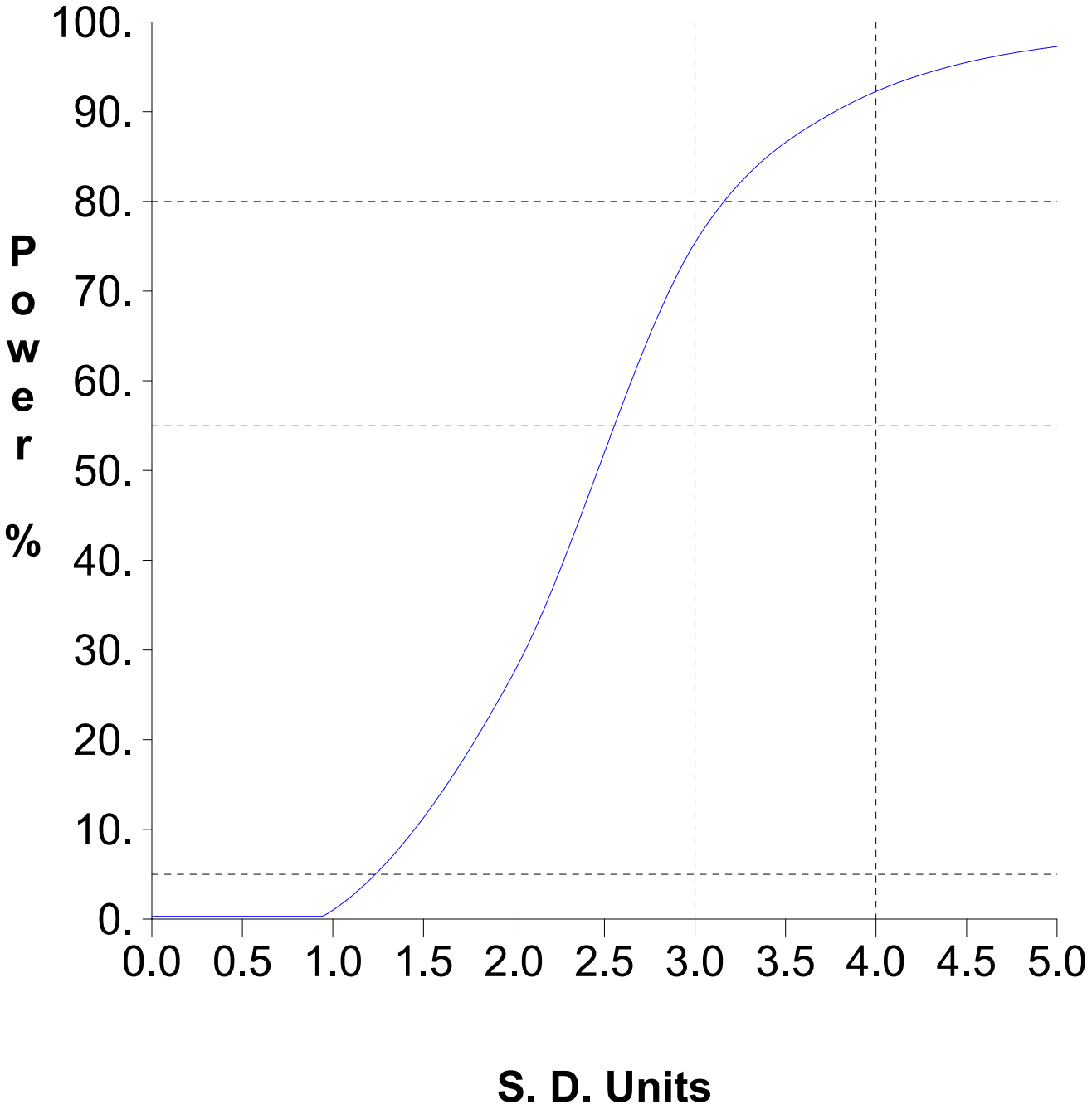
Graph 8



Graph 9

False Positive and False Negative Rates for Current

Upgradient vs. Downgradient Monitoring Program



Attachment G

Summary Tables and Graphs for the Intrawell Comparisons
November 2025 Monitoring Event

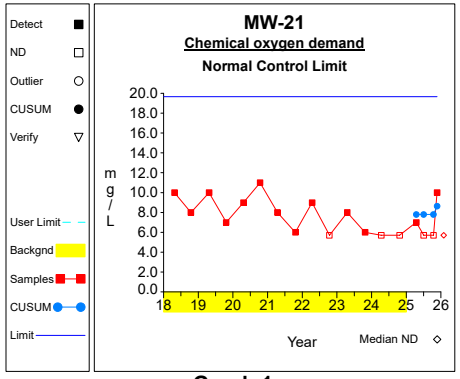
Table 1

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

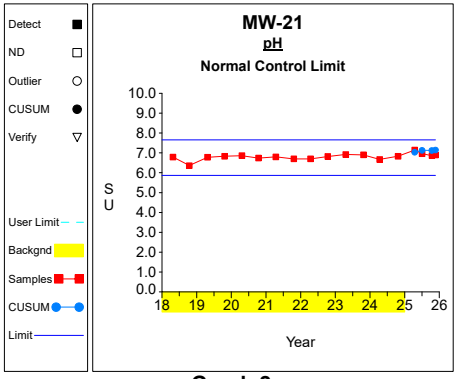
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf
Chemical oxygen demand	mg/L	MW-21	14	4	18	7.7929	1.8244	5.7000	10.0000	7.7929	8.6317	19.6514	normal	
pH	SU	MW-21	14	4	18	6.7643	0.1378	6.8600	6.8900	7.1213	7.1437	5.87 - 7.66	normal	
Specific conductance	uS	MW-21	14	4	18	1463.6071	192.0977	1728.0000	1858.0000	1957.5658	2207.8853	2712.2425	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 of two verification resamples (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

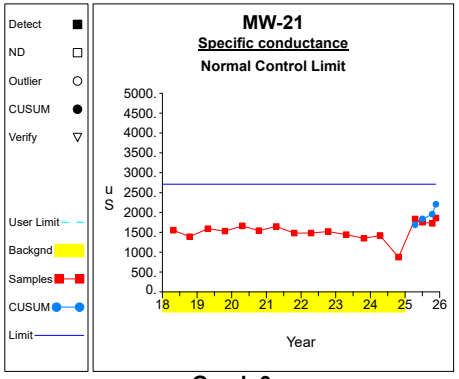
Intra-Well Control Charts / Prediction Limits



Graph 1



Graph 2



Graph 3

Table 2

Analytical Data and CUSUM Summary

Constituent	Units	Well	Date	Background	Result		Outlier	CUSUM	Adjusted
Chemical oxygen demand	mg/L	MW-21	04/26/2018	yes	10.0000				
Chemical oxygen demand	mg/L	MW-21	10/15/2018	yes	8.0000				
Chemical oxygen demand	mg/L	MW-21	04/24/2019	yes	10.0000				
Chemical oxygen demand	mg/L	MW-21	10/22/2019	yes	7.0000				
Chemical oxygen demand	mg/L	MW-21	04/21/2020	yes	9.0000				
Chemical oxygen demand	mg/L	MW-21	10/13/2020	yes	11.0000				
Chemical oxygen demand	mg/L	MW-21	04/14/2021	yes	8.0000				
Chemical oxygen demand	mg/L	MW-21	10/20/2021	yes	6.0000				
Chemical oxygen demand	mg/L	MW-21	04/14/2022	yes	9.0000				
Chemical oxygen demand	mg/L	MW-21	10/13/2022	yes	5.7000	ND			
Chemical oxygen demand	mg/L	MW-21	04/19/2023	yes	8.0000				
Chemical oxygen demand	mg/L	MW-21	10/24/2023	yes	6.0000				
Chemical oxygen demand	mg/L	MW-21	04/11/2024	yes	5.7000	ND			
Chemical oxygen demand	mg/L	MW-21	10/23/2024	yes	5.7000	ND			
Chemical oxygen demand	mg/L	MW-21	04/15/2025		7.0000			7.7929	
Chemical oxygen demand	mg/L	MW-21	07/01/2025		5.7000	ND		7.7929	
Chemical oxygen demand	mg/L	MW-21	10/14/2025		5.7000	ND		7.7929	
Chemical oxygen demand	mg/L	MW-21	11/21/2025		10.0000			8.6317	
pH	SU	MW-21	04/26/2018	yes	6.7900				
pH	SU	MW-21	10/15/2018	yes	6.3600				
pH	SU	MW-21	04/24/2019	yes	6.7800				
pH	SU	MW-21	10/22/2019	yes	6.8300				
pH	SU	MW-21	04/21/2020	yes	6.8600				
pH	SU	MW-21	10/13/2020	yes	6.7400				
pH	SU	MW-21	04/14/2021	yes	6.8000				
pH	SU	MW-21	10/20/2021	yes	6.7000				
pH	SU	MW-21	04/14/2022	yes	6.7000				
pH	SU	MW-21	10/13/2022	yes	6.8200				
pH	SU	MW-21	04/19/2023	yes	6.9200				
pH	SU	MW-21	10/24/2023	yes	6.9000				
pH	SU	MW-21	04/11/2024	yes	6.6700				
pH	SU	MW-21	10/23/2024	yes	6.8300				
pH	SU	MW-21	04/15/2025		7.1400			7.0366	
pH	SU	MW-21	07/01/2025		6.9600			7.1290	
pH	SU	MW-21	10/14/2025		6.8600			7.1213	
pH	SU	MW-21	11/21/2025		6.8900			7.1437	
Specific conductance	uS	MW-21	04/26/2018	yes	1554.0000				
Specific conductance	uS	MW-21	10/15/2018	yes	1391.0000				
Specific conductance	uS	MW-21	04/24/2019	yes	1590.0000				
Specific conductance	uS	MW-21	10/22/2019	yes	1532.0000				
Specific conductance	uS	MW-21	04/21/2020	yes	1661.0000				
Specific conductance	uS	MW-21	10/13/2020	yes	1542.0000				
Specific conductance	uS	MW-21	04/14/2021	yes	1649.0000				
Specific conductance	uS	MW-21	10/20/2021	yes	1480.0000				
Specific conductance	uS	MW-21	04/14/2022	yes	1484.0000				
Specific conductance	uS	MW-21	10/13/2022	yes	1520.0000				
Specific conductance	uS	MW-21	04/19/2023	yes	1443.0000				
Specific conductance	uS	MW-21	10/24/2023	yes	1350.0000				
Specific conductance	uS	MW-21	04/11/2024	yes	1420.0000				
Specific conductance	uS	MW-21	10/23/2024	yes	874.5000				

* - 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
Specific conductance	uS	MW-21	04/15/2025		1835.0000			1690.9267	
Specific conductance	uS	MW-21	07/01/2025		1754.0000			1837.2462	
Specific conductance	uS	MW-21	10/14/2025		1728.0000			1957.5658	
Specific conductance	uS	MW-21	11/21/2025		1858.0000			2207.8853	

* - 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.

APPENDIX C

Laboratory Analytical Data

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 5/20/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW21**

Lab Sample ID: AG44475

Sample Collection Date: 4/15/2025 Time: 7:52
Lab Submittal Date: 4/15/2025 Time: 12:14

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	27.43	ft	0.01	SOLINST	ARC	4/15/2025
Depth to water from TC	6.31	ft	0.01	SOLINST	ARC	4/15/2025
pH-Field	7.14	SU	0.01	EPA 9040	ARC	4/15/2025
Sp. Cond.-Field	1835	µS	1	EPA 9050	ARC	4/15/2025
Temperature	8.9	°C	0.1	SM 2550B	ARC	4/15/2025
Chemical Oxygen Demand	7	mg/L	5.7	HACH 8000	BKY/CCK	5/8/2025
Ammonia (as N)	<0.313	mg/L	0.055	SM 4500 NH3 F	MDK	4/16/2025
Chloride	233.46826	mg/L	2.94	EPA 300.0	AEB/ATL	4/17/2025
Metals ICP-MS						
Arsenic, Total	<0.0056	mg/L	0.00560	EPA 6020A	MLU	5/16/2025
Barium, Total	0.399	mg/L	0.00410	EPA 6020A	MLU	5/16/2025
Iron, Total	<0.1543	mg/L	0.15430	EPA 6020A	MLU	5/16/2025
Magnesium, Total	64.3	mg/L	0.15990	EPA 6020A	MLU	5/16/2025
Cobalt, Total	<0.0034	mg/L	0.00340	EPA 6020A	MLU	5/16/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 5/20/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW24R1**

Lab Sample ID: AG44476

Sample Collection Date: 4/15/2025 Time: 11:54
Lab Submittal Date: 4/15/2025 Time: 12:14

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	28.47	ft	0.01	SOLINST	ARC	4/15/2025
Depth to water from TC	19.30	ft	0.01	SOLINST	ARC	4/15/2025
pH-Field	6.87	SU	0.01	EPA 9040	ARC	4/15/2025
Sp. Cond.-Field	934.1	µS	1	EPA 9050	ARC	4/15/2025
Temperature	11.8	°C	0.1	SM 2550B	ARC	4/15/2025
Chemical Oxygen Demand	7	mg/L	5.7	HACH 8000	BKY/CCK	5/8/2025
Ammonia (as N)	<0.313	mg/L	0.055	SM 4500 NH3 F	MDK	4/16/2025
Chloride	79.69585	mg/L	0.735	EPA 300.0	AEB/ATL	4/16/2025
Metals ICP-MS						
Arsenic, Total	<0.0056	mg/L	0.00560	EPA 6020A	MLU	5/16/2025
Barium, Total	0.302	mg/L	0.00410	EPA 6020A	MLU	5/16/2025
Iron, Total	4.81	mg/L	0.15430	EPA 6020A	MLU	5/16/2025
Magnesium, Total	33.5	mg/L	0.15990	EPA 6020A	MLU	5/16/2025
Cobalt, Total	0.0159	mg/L	0.00340	EPA 6020A	MLU	5/16/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 5/20/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW2**

Lab Sample ID: AG44477

Sample Collection Date: 4/15/2025 Time: 11:08
Lab Submittal Date: 4/15/2025 Time: 12:14

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	26.09	ft	0.01	SOLINST	ARC	4/15/2025
Depth to water from TC	19.82	ft	0.01	SOLINST	ARC	4/15/2025
pH-Field	6.50	SU	0.01	EPA 9040	ARC	4/15/2025
Sp. Cond.-Field	954.1	µS	1	EPA 9050	ARC	4/15/2025
Temperature	11.6	°C	0.1	SM 2550B	ARC	4/15/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	BKY/CCK	5/8/2025
Ammonia (as N)	<0.313	mg/L	0.055	SM 4500 NH3 F	MDK	4/16/2025
Chloride	70.49243	mg/L	0.735	EPA 300.0	AEB/ATL	4/16/2025
Metals ICP-MS						
Arsenic, Total	<0.0056	mg/L	0.00560	EPA 6020A	MLU	5/16/2025
Barium, Total	0.166	mg/L	0.00410	EPA 6020A	MLU	5/16/2025
Iron, Total	<0.1543	mg/L	0.15430	EPA 6020A	MLU	5/16/2025
Magnesium, Total	24.3	mg/L	0.15990	EPA 6020A	MLU	5/16/2025
Cobalt, Total	<0.0034	mg/L	0.00340	EPA 6020A	MLU	5/16/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
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SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 5/20/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW3R1**

Lab Sample ID: AG44478

Sample Collection Date: 4/15/2025 Time: 10:25
Lab Submittal Date: 4/15/2025 Time: 12:14

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	27.33	ft	0.01	SOLINST	ARC	4/15/2025
Depth to water from TC	19.98	ft	0.01	SOLINST	ARC	4/15/2025
pH-Field	6.89	SU	0.01	EPA 9040	ARC	4/15/2025
Sp. Cond.-Field	984.3	µS	1	EPA 9050	ARC	4/15/2025
Temperature	12.5	°C	0.1	SM 2550B	ARC	4/15/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	BKY/CCK	5/8/2025
Ammonia (as N)	<0.313	mg/L	0.055	SM 4500 NH3 F	MDK	4/16/2025
Chloride	105.47595	mg/L	1.47	EPA 300.0	AEB/ATL	4/17/2025
Metals ICP-MS						
Arsenic, Total	0.0424	mg/L	0.00560	EPA 6020A	MLU	5/16/2025
Barium, Total	0.243	mg/L	0.00410	EPA 6020A	MLU	5/16/2025
Iron, Total	40.7	mg/L	0.15430	EPA 6020A	MLU	5/16/2025
Magnesium, Total	31.7	mg/L	0.15990	EPA 6020A	MLU	5/16/2025
Cobalt, Total	0.0127	mg/L	0.00340	EPA 6020A	MLU	5/16/2025

Sample Comments: Created 2018

Bruce M. Lyon
Utilities Quality Assurance Officer

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ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 5/20/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW22**

Lab Sample ID: AG44479

Sample Collection Date: 4/15/2025 Time: 8:55
Lab Submittal Date: 4/15/2025 Time: 12:14

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	26.45	ft	0.01	SOLINST	ARC	4/15/2025
Depth to water from TC	18.45	ft	0.01	SOLINST	ARC	4/15/2025
pH-Field	7.20	SU	0.01	EPA 9040	ARC	4/15/2025
Sp. Cond.-Field	1442	µS	1	EPA 9050	ARC	4/15/2025
Temperature	12.5	°C	0.1	SM 2550B	ARC	4/15/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	BKY/CCK	5/8/2025
Ammonia (as N)	4.0	mg/L	0.055	SM 4500 NH3 F	MDK	4/16/2025
Chloride	95.78461	mg/L	0.735	EPA 300.0	AEB/ATL	4/17/2025
Metals ICP-MS						
Arsenic, Total	0.00632	mg/L	0.00560	EPA 6020A	MLU	5/16/2025
Barium, Total	0.368	mg/L	0.00410	EPA 6020A	MLU	5/16/2025
Iron, Total	3.34	mg/L	0.15430	EPA 6020A	MLU	5/16/2025
Magnesium, Total	38.8	mg/L	0.15990	EPA 6020A	MLU	5/16/2025
Cobalt, Total	0.00789	mg/L	0.00340	EPA 6020A	MLU	5/16/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 5/20/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon Field Blank**

Lab Sample ID: AG44480

Sample Collection Date: 4/15/2025 Time: 10:42
Lab Submittal Date: 4/15/2025 Time: 12:14

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	NR	ft	0.01	SOLINST	ARC	4/15/2025
Depth to water from TC	NR	ft	0.01	SOLINST	ARC	4/15/2025
pH-Field	NR	SU	0.01	EPA 9040	ARC	4/15/2025
Sp. Cond.-Field	NR	µS	1	EPA 9050	ARC	4/15/2025
Temperature	NR	°C	0.1	SM 2550B	ARC	4/15/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	BKY/CCK	5/8/2025
Ammonia (as N)	<0.313	mg/L	0.055	SM 4500 NH3 F	MDK	4/16/2025
Chloride	1.72564	mg/L	0.735	EPA 300.0	AEB/ATL	4/17/2025
Metals ICP-MS						
Arsenic, Total	<0.00056	mg/L	0.00056	EPA 6020A	MLU	5/16/2025
Barium, Total	<0.00041	mg/L	0.00041	EPA 6020A	MLU	5/16/2025
Iron, Total	<0.01543	mg/L	0.01543	EPA 6020A	MLU	5/16/2025
Magnesium, Total	<0.01599	mg/L	0.01599	EPA 6020A	MLU	5/16/2025
Cobalt, Total	<0.00034	mg/L	0.00034	EPA 6020A	MLU	5/16/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 5/20/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon Field Duplicate**

Lab Sample ID: AG44481

Sample Collection Date: 4/15/2025 Time: 8:55
Lab Submittal Date: 4/15/2025 Time: 12:14

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	NR	ft	0.01	SOLINST	ARC	4/15/2025
Depth to water from TC	NR	ft	0.01	SOLINST	ARC	4/15/2025
pH-Field	7.01	SU	0.01	EPA 9040	ARC	4/15/2025
Sp. Cond.-Field	1182	µS	1	EPA 9050	ARC	4/15/2025
Temperature	12.3	°C	0.1	SM 2550B	ARC	4/15/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	BKY/CCK	5/8/2025
Ammonia (as N)	4.2	mg/L	0.055	SM 4500 NH3 F	MDK	4/16/2025
Chloride	94.95464	mg/L	0.735	EPA 300.0	AEB/ATL	4/17/2025
Metals ICP-MS						
Arsenic, Total	0.00607	mg/L	0.00560	EPA 6020A	MLU	5/16/2025
Barium, Total	0.384	mg/L	0.00410	EPA 6020A	MLU	5/16/2025
Iron, Total	3.43	mg/L	0.15430	EPA 6020A	MLU	5/16/2025
Magnesium, Total	39.5	mg/L	0.15990	EPA 6020A	MLU	5/16/2025
Cobalt, Total	0.00789	mg/L	0.00340	EPA 6020A	MLU	5/16/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 7/28/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW21**

Lab Sample ID: AG50676

Sample Collection Date: 7/1/2025 Time: 9:43
Lab Submittal Date: 7/1/2025 Time: 10:11

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	27.55	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
Depth to water from TC	8.88	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
pH-Field	6.96	SU	0.01	EPA 9040	ARC/ATL/AM	7/1/2025
Sp. Cond.-Field	1754	µS	1	EPA 9050	ARC/ATL/AM	7/1/2025
Temperature	14.7	°C	0.1	SM 2550B	ARC/ATL/AM	7/1/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	CCK	4/6/1992
Ammonia (as N)	<0.140	mg/L	0.047	SM 4500 NH3 F	CCK	7/2/2025
Chloride	223.48219	mg/L	0.735	EPA 300.0	ATL	7/2/2025
Metals ICP-MS						
Arsenic, Total	<0.00145	mg/L	0.00145	EPA 6020A	MLU	7/3/2025
Barium, Total	0.312	mg/L	0.00070	EPA 6020A	MLU	7/3/2025
Iron, Total	<0.04295	mg/L	0.04295	EPA 6020A	MLU	7/3/2025
Magnesium, Total	57.2	mg/L	0.43195	EPA 6020A	MLU	7/3/2025
Cobalt, Total	<0.00065	mg/L	0.00065	EPA 6020A	MLU	7/3/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 7/28/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW24**

Lab Sample ID: AG50677

Sample Collection Date: 6/30/2025 Time: 13:45
Lab Submittal Date: 7/1/2025 Time: 10:11

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	28.73	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
Depth to water from TC	19.26	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
pH-Field	7.16	SU	0.01	EPA 9040	ARC/ATL/AM	6/30/2025
Sp. Cond.-Field	827.4	µS	1	EPA 9050	ARC/ATL/AM	6/30/2025
Temperature	14.8	°C	0.1	SM 2550B	ARC/ATL/AM	6/30/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	CCK	4/6/1992
Ammonia (as N)	0.54	mg/L	0.047	SM 4500 NH3 F	CCK	7/2/2025
Chloride	87.73923	mg/L	0.735	EPA 300.0	AEB/ATL	7/1/2025
Metals ICP-MS						
Arsenic, Total	<0.0028	mg/L	0.00280	EPA 6020A	MLU	7/3/2025
Barium, Total	0.103	mg/L	0.00205	EPA 6020A	MLU	7/3/2025
Iron, Total	0.362	mg/L	0.07715	EPA 6020A	MLU	7/3/2025
Magnesium, Total	27.7	mg/L	0.07995	EPA 6020A	MLU	7/3/2025
Cobalt, Total	0.00184	mg/L	0.00170	EPA 6020A	MLU	7/3/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 7/28/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW2**

Lab Sample ID: AG50678

Sample Collection Date: 6/30/2025 Time: 14:10
Lab Submittal Date: 7/1/2025 Time: 10:11

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	25.81	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
Depth to water from TC	19.81	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
pH-Field	6.56	SU	0.01	EPA 9040	ARC/ATL/AM	6/30/2025
Sp. Cond.-Field	797.3	µS	1	EPA 9050	ARC/ATL/AM	6/30/2025
Temperature	18.6	°C	0.1	SM 2550B	ARC/ATL/AM	6/30/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	CCK	4/6/1992
Ammonia (as N)	<0.140	mg/L	0.047	SM 4500 NH3 F	CCK	7/2/2025
Chloride	80.60484	mg/L	0.735	EPA 300.0	AEB/ATL	7/1/2025
Metals ICP-MS						
Arsenic, Total	<0.0028	mg/L	0.00280	EPA 6020A	MLU	7/3/2025
Barium, Total	0.120	mg/L	0.00205	EPA 6020A	MLU	7/3/2025
Iron, Total	<0.07715	mg/L	0.07715	EPA 6020A	MLU	7/3/2025
Magnesium, Total	24.9	mg/L	0.07995	EPA 6020A	MLU	7/3/2025
Cobalt, Total	<0.0017	mg/L	0.00170	EPA 6020A	MLU	7/3/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

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CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 7/28/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW3R1**

Lab Sample ID: AG50679

Sample Collection Date: 7/1/2025 Time: 9:33
Lab Submittal Date: 7/1/2025 Time: 10:11

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	27.15	ft	0.01	SOLINST	ARC/ATL/AM	7/1/2025
Depth to water from TC	20.02	ft	0.01	SOLINST	ARC/ATL/AM	7/1/2025
pH-Field	6.72	SU	0.01	EPA 9040	ARC/ATL/AM	7/1/2025
Sp. Cond.-Field	859.3	µS	1	EPA 9050	ARC/ATL/AM	7/1/2025
Temperature	15.5	°C	0.1	SM 2550B	ARC/ATL/AM	7/1/2025
Chemical Oxygen Demand	6	mg/L	5.7	HACH 8000	CCK	4/6/1992
Ammonia (as N)	0.3	mg/L	0.047	SM 4500 NH3 F	CCK	7/2/2025
Chloride	85.40098	mg/L	0.735	EPA 300.0	AEB/ATL	7/1/2025
Metals ICP-MS						
Arsenic, Total	0.0251	mg/L	0.00280	EPA 6020A	MLU	7/3/2025
Barium, Total	0.179	mg/L	0.00205	EPA 6020A	MLU	7/3/2025
Iron, Total	30.5	mg/L	0.07715	EPA 6020A	MLU	7/3/2025
Magnesium, Total	22.5	mg/L	0.07995	EPA 6020A	MLU	7/3/2025
Cobalt, Total	0.0103	mg/L	0.00170	EPA 6020A	MLU	7/3/2025

Sample Comments: Created 2018

Bruce M. Lyon
Utilities Quality Assurance Officer

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ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 7/28/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW22**

Lab Sample ID: AG50680

Sample Collection Date: 6/30/2025 Time: 10:43
Lab Submittal Date: 7/1/2025 Time: 10:11

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	26.50	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
Depth to water from TC	18.42	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
pH-Field	7.03	SU	0.01	EPA 9040	ARC/ATL/AM	6/30/2025
Sp. Cond.-Field	1033	µS	1	EPA 9050	ARC/ATL/AM	6/30/2025
Temperature	21.2	°C	0.1	SM 2550B	ARC/ATL/AM	6/30/2025
Chemical Oxygen Demand	6	mg/L	5.7	HACH 8000	CCK	4/6/1992
Ammonia (as N)	2.9	mg/L	0.047	SM 4500 NH3 F	CCK	7/2/2025
Chloride	87.04522	mg/L	1.47	EPA 300.0	AEB/ATL	7/2/2025
Metals ICP-MS						
Arsenic, Total	0.0128	mg/L	0.00280	EPA 6020A	MLU	7/3/2025
Barium, Total	0.446	mg/L	0.00205	EPA 6020A	MLU	7/3/2025
Iron, Total	10.6	mg/L	0.07715	EPA 6020A	MLU	7/3/2025
Magnesium, Total	38.6	mg/L	0.07995	EPA 6020A	MLU	7/3/2025
Cobalt, Total	0.0118	mg/L	0.00170	EPA 6020A	MLU	7/3/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 7/28/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon Field Blank**

Lab Sample ID: AG50681

Sample Collection Date: 6/30/2025 Time: 10:43
Lab Submittal Date: 7/1/2025 Time: 10:11

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	CCK	4/6/1992
Ammonia (as N)	<0.140	mg/L	0.047	SM 4500 NH3 F	CCK	7/2/2025
Chloride	0.44196	mg/L	0.735	EPA 300.0	AEB/ATL	7/2/2025
Metals ICP-MS						
Arsenic, Total	<0.00056	mg/L	0.00056	EPA 6020A	MLU	7/3/2025
Barium, Total	<0.00041	mg/L	0.00041	EPA 6020A	MLU	7/3/2025
Iron, Total	<0.01543	mg/L	0.0154	EPA 6020A	MLU	7/3/2025
Magnesium, Total	<0.01599	mg/L	0.016	EPA 6020A	MLU	7/3/2025
Cobalt, Total	<0.00034	mg/L	0.00034	EPA 6020A	MLU	7/3/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 7/28/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon Field Duplicate**

Lab Sample ID: AG50682

Sample Collection Date: 6/30/2025 Time: 10:43
Lab Submittal Date: 7/1/2025 Time: 10:11

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	26.50	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
Depth to water from TC	18.42	ft	0.01	SOLINST	ARC/ATL/AM	6/30/2025
pH-Field	7.05	SU	0.01	EPA 9040	ARC/ATL/AM	6/30/2025
Sp. Cond.-Field	1045	µS	1	EPA 9050	ARC/ATL/AM	6/30/2025
Temperature	18.7	°C	0.1	SM 2550B	ARC/ATL/AM	6/30/2025
Chemical Oxygen Demand	6	mg/L	5.7	HACH 8000	CCK	4/6/1992
Ammonia (as N)	2.8	mg/L	0.047	SM 4500 NH3 F	CCK	7/2/2025
Chloride	89.17824	mg/L	0.735	EPA 300.0	AEB/ATL	7/2/2025
Metals ICP-MS						
Arsenic, Total	0.0117	mg/L	0.00056	EPA 6020A	MLU	7/3/2025
Barium, Total	0.413	mg/L	0.00041	EPA 6020A	MLU	7/3/2025
Iron, Total	9.92	mg/L	0.0154	EPA 6020A	MLU	7/3/2025
Magnesium, Total	38.8	mg/L	0.016	EPA 6020A	MLU	7/3/2025
Cobalt, Total	0.0113	mg/L	0.00034	EPA 6020A	MLU	7/3/2025

Sample Comments: Duplicate sample of MW22. ARC 7/1/2025

Bruce M. Lyon
Utilities Quality Assurance Officer

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ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CIT OF CEDAR RAPIDS - UTILITIES LABORATOR

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANAL TICAL DATA REPORT

Report Date 12/15/2025

Report To: ason Decker
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East As Lagoon MW30**

Lab Sample ID: AG54710

Sample Collection Date: 8/19/2025 Time: 10:27
Lab Submittal Date: 8/19/2025 Time: 13:08

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	34.62	ft	0.01	SOLINST	ARC/ATL	8/19/2025
Depth to water from TC	31.61	ft	0.01	SOLINST	ARC/ATL	8/19/2025
pH-Field	5.96	SU	0.01	EPA 9040	ARC/ATL	8/19/2025
Sp. Cond.-Field	1035	S	1	EPA 9050	ARC/ATL	8/19/2025
Temperature	18.0	C	0.1	SM 2550B	ARC/ATL	8/19/2025
Chemical Oxygen Demand	47	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	2.0	mg/L	0.047	SM 4500 NH3 F	MDK	8/20/2025
Chloride	63.01387	mg/L	0.775	EPA 300.0	CCK	8/25/2025
Metals ICP-MS						
Arsenic, Total	0.0388	mg/L	0.00560	EPA 6020A	MLU	8/25/2025
Barium, Total	0.442	mg/L	0.00410	EPA 6020A	MLU	8/25/2025
Iron, Total	64.6	mg/L	0.15430	EPA 6020A	MLU	8/25/2025
Magnesium, Total	43.4	mg/L	0.15990	EPA 6020A	MLU	8/25/2025
Cobalt, Total	0.0190	mg/L	0.00340	EPA 6020A	MLU	8/25/2025

Sample Comments: Q:H1:COD analysis performed past holding time. 11/18/25 HMB B1:Cl detected in m

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

CIT OF CEDAR RAPIDS - UTILITIES LABORATOR

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANAL TICAL DATA REPORT

Report Date 12/15/2025

Report To: ason Decker
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East As Lagoon MW31**

Lab Sample ID: AG54711

Sample Collection Date: 8/19/2025 Time: 9:14
Lab Submittal Date: 8/19/2025 Time: 13:08

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	33.91	ft	0.01	SOLINST	ARC/ATL	8/19/2025
Depth to water from TC	32.17	ft	0.01	SOLINST	ARC/ATL	8/19/2025
pH-Field	6.66	SU	0.01	EPA 9040	ARC/ATL	8/19/2025
Sp. Cond.-Field	1024	S	1	EPA 9050	ARC/ATL	8/19/2025
Temperature	16.2	C	0.1	SM 2550B	ARC/ATL	8/19/2025
Chemical Oxygen Demand	58	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	1.6	mg/L	0.047	SM 4500 NH3 F	MDK	8/20/2025
Chloride	40.37284	mg/L	0.775	EPA 300.0	CCK	8/25/2025
Metals ICP-MS						
Arsenic, Total	0.0295	mg/L	0.00560	EPA 6020A	MLU	8/25/2025
Barium, Total	0.238	mg/L	0.00410	EPA 6020A	MLU	8/25/2025
Iron, Total	63.1	mg/L	0.15430	EPA 6020A	MLU	8/25/2025
Magnesium, Total	39.3	mg/L	0.15990	EPA 6020A	MLU	8/25/2025
Cobalt, Total	0.0493	mg/L	0.00340	EPA 6020A	MLU	8/25/2025

Sample Comments: Q:H1:COD analysis performed past holding time. 11/18/25 HMB B1:Cl detected in m

Bruce M. Lyon
Utilities Quality Assurance Officer

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ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CIT OF CEDAR RAPIDS - UTILITIES LABORATOR

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANAL TICAL DATA REPORT

Report Date 12/15/2025

Report To: ason Decker
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East As Lagoon MW32**

Lab Sample ID: AG54712

Sample Collection Date: 8/19/2025 Time: 8:45
Lab Submittal Date: 8/19/2025 Time: 13:08

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	35.16	ft	0.01	SOLINST	ARC/ATL	8/19/2025
Depth to water from TC	31.69	ft	0.01	SOLINST	ARC/ATL	8/19/2025
pH-Field	6.48	SU	0.01	EPA 9040	ARC/ATL	8/19/2025
Sp. Cond.-Field	559.9	S	1	EPA 9050	ARC/ATL	8/19/2025
Temperature	18.8	C	0.1	SM 2550B	ARC/ATL	8/19/2025
Chemical Oxygen Demand	13	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	0.2	mg/L	0.047	SM 4500 NH3 F	MDK	8/20/2025
Chloride	37.21953	mg/L	0.775	EPA 300.0	CCK	8/25/2025
Metals ICP-MS						
Arsenic, Total	0.0142	mg/L	0.00560	EPA 6020A	MLU	8/25/2025
Barium, Total	0.582	mg/L	0.00410	EPA 6020A	MLU	8/25/2025
Iron, Total	28.2	mg/L	0.15430	EPA 6020A	MLU	8/25/2025
Magnesium, Total	23.5	mg/L	0.15990	EPA 6020A	MLU	8/25/2025
Cobalt, Total	0.0428	mg/L	0.00340	EPA 6020A	MLU	8/25/2025

Sample Comments: Q:H1:COD analysis performed past holding time. 11/18/25 HMB B1:Cl detected in m

Bruce M. Lyon
Utilities Quality Assurance Officer

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ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CIT OF CEDAR RAPIDS - UTILITIES LABORATOR

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
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ANAL TICAL DATA REPORT

Report Date 12/15/2025

Report To: ason Decker
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East As Lagoon MW29**

Lab Sample ID: AG54796

Sample Collection Date: 8/20/2025 Time: 10:05
Lab Submittal Date: 8/20/2025 Time: 10:28

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	34.22	ft	0.01	SOLINST	ARC/ATL	8/19/2025
Depth to water from TC	13.99	ft	0.01	SOLINST	ARC/ATL	8/20/2025
pH-Field	7.47	SU	0.01	EPA 9040	ARC/ATL	8/20/2025
Sp. Cond.-Field	1917	S	1	EPA 9050	ARC/ATL	8/20/2025
Temperature	18.7	C	0.1	SM 2550B	ARC/ATL	8/20/2025
Chemical Oxygen Demand	100	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	5.9	mg/L	0.047	SM 4500 NH3 F	MDK	8/20/2025
Chloride	256.11063	mg/L	0.775	EPA 300.0	CCK	8/25/2025
Metals ICP-MS						
Arsenic, Total	0.0056	mg/L	0.00560	EPA 6020A	MLU	8/25/2025
Barium, Total	0.212	mg/L	0.00410	EPA 6020A	MLU	8/25/2025
Iron, Total	4.29	mg/L	0.15430	EPA 6020A	MLU	8/25/2025
Magnesium, Total	51.7	mg/L	0.15990	EPA 6020A	MLU	8/25/2025
Cobalt, Total	0.00634	mg/L	0.00340	EPA 6020A	MLU	8/25/2025

Sample Comments: Q:H1:COD analysis performed past holding time. 11/18/25 HMB B1:Cl detected in m

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Michael Kuntz
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW21**

Lab Sample ID: AG59113

Sample Collection Date: 10/14/2025 Time: 10:54
Lab Submittal Date: 10/14/2025 Time: 11:38

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	27.42	ft	0.01	SOLINST	ARC	10/13/2025
Depth to water from TC	8.47	ft	0.01	SOLINST	ARC	10/14/2025
pH-Field	6.86	SU	0.01	EPA 9040	ARC	10/14/2025
Sp. Cond.-Field	1728	µS	1	EPA 9050	ARC	10/14/2025
Temperature	13.9	°C	0.1	SM 2550B	ARC	10/14/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	0.2	mg/L	0.047	SM 4500 NH3 F	HMB	10/16/2025
Chloride	221	mg/L	0.775	EPA 300.0	AEB	11/3/2025
Metals ICP-MS						
Arsenic, Total	<0.00145	mg/L	0.00145	EPA 6020A	MLU	10/23/2025
Barium, Total	0.340	mg/L	0.00070	EPA 6020A	MLU	10/23/2025
Iron, Total	0.0550	mg/L	0.04295	EPA 6020A	MLU	10/23/2025
Magnesium, Total	54.3	mg/L	0.43195	EPA 6020A	MLU	10/23/2025
Cobalt, Total	<0.00065	mg/L	0.00065	EPA 6020A	MLU	10/23/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW29**

Lab Sample ID: AG59114

Sample Collection Date: 10/14/2025 Time: 11:10
Lab Submittal Date: 10/14/2025 Time: 11:38

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	33.85	ft	0.01	SOLINST	ARC	10/13/2025
Depth to water from TC	25.60	ft	0.01	SOLINST	ARC	10/14/2025
pH-Field	6.92	SU	0.01	EPA 9040	ARC	10/14/2025
Sp. Cond.-Field	1927	µS	1	EPA 9050	ARC	10/14/2025
Temperature	18.0	°C	0.1	SM 2550B	ARC	10/14/2025
Chemical Oxygen Demand	9	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	0.87	mg/L	0.047	SM 4500 NH3 F	HMB	10/16/2025
Chloride	278	mg/L	0.775	EPA 300.0	AEB	11/3/2025
Metals ICP-MS						
Arsenic, Total	0.00172	mg/L	0.00145	EPA 6020A	MLU	10/23/2025
Barium, Total	0.151	mg/L	0.00070	EPA 6020A	MLU	10/23/2025
Iron, Total	1.28	mg/L	0.04295	EPA 6020A	MLU	10/23/2025
Magnesium, Total	57.6	mg/L	0.43195	EPA 6020A	MLU	10/23/2025
Cobalt, Total	0.00226	mg/L	0.00065	EPA 6020A	MLU	10/23/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW30**

Lab Sample ID: AG59115

Sample Collection Date: 10/13/2025 Time: 14:50
Lab Submittal Date: 10/14/2025 Time: 11:38

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	36.10	ft	0.01	SOLINST	ARC	10/13/2025
Depth to water from TC	32.40	ft	0.01	SOLINST	ARC	10/13/2025
pH-Field	6.83	SU	0.01	EPA 9040	ARC	10/13/2025
Sp. Cond.-Field	1106	µS	1	EPA 9050	ARC	10/13/2025
Temperature	17.5	°C	0.1	SM 2550B	ARC	10/13/2025
Chemical Oxygen Demand	10	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	3.7	mg/L	0.047	SM 4500 NH3 F	HMB	10/16/2025
Chloride	57.19633	mg/L	0.775	EPA 300.0	AEB/ATL	10/31/2025
Metals ICP-MS						
Arsenic, Total	0.0396	mg/L	0.00280	EPA 6020A	MLU	10/23/2025
Barium, Total	0.284	mg/L	0.00205	EPA 6020A	MLU	10/23/2025
Iron, Total	47.7	mg/L	0.07715	EPA 6020A	MLU	10/23/2025
Magnesium, Total	30.1	mg/L	0.07995	EPA 6020A	MLU	10/23/2025
Cobalt, Total	0.00642	mg/L	0.00170	EPA 6020A	MLU	10/23/2025

Sample Comments: QC was performed on AG59113 but exceeded the chloride highest standard. Samples

Bruce M Lyon

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW31**

Lab Sample ID: AG59116

Sample Collection Date: 10/13/2025 Time: 13:56
Lab Submittal Date: 10/14/2025 Time: 11:38

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	34.32	ft	0.01	SOLINST	ARC	10/13/2025
Depth to water from TC	32.92	ft	0.01	SOLINST	ARC	10/13/2025
pH-Field	6.68	SU	0.01	EPA 9040	ARC	10/13/2025
Sp. Cond.-Field	834.7	µS	1	EPA 9050	ARC	10/13/2025
Temperature	17.3	°C	0.1	SM 2550B	ARC	10/13/2025
Chemical Oxygen Demand	16	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	0.64	mg/L	0.047	SM 4500 NH3 F	HMB	10/16/2025
Chloride	44.90321	mg/L	0.775	EPA 300.0	AEB/ATL	10/31/2025
Metals ICP-MS						
Arsenic, Total	0.0272	mg/L	0.00145	EPA 6020A	MLU	10/23/2025
Barium, Total	0.204	mg/L	0.00070	EPA 6020A	MLU	10/23/2025
Iron, Total	41.1	mg/L	0.04295	EPA 6020A	MLU	10/23/2025
Magnesium, Total	25.1	mg/L	0.43195	EPA 6020A	MLU	10/23/2025
Cobalt, Total	0.0279	mg/L	0.00065	EPA 6020A	MLU	10/23/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW32**

Lab Sample ID: AG59117

Sample Collection Date: 10/13/2025 Time: 13:26
Lab Submittal Date: 10/14/2025 Time: 11:38

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	35.32	ft	0.01	SOLINST	ARC	10/13/2025
Depth to water from TC	32.46	ft	0.01	SOLINST	ARC	10/13/2025
pH-Field	6.27	SU	0.01	EPA 9040	ARC	10/13/2025
Sp. Cond.-Field	574.3	µS	1	EPA 9050	ARC	10/13/2025
Temperature	15.4	°C	0.1	SM 2550B	ARC	10/13/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	<0.140	mg/L	0.047	SM 4500 NH3 F	HMB	10/16/2025
Chloride	48.16122	mg/L	0.775	EPA 300.0	AEB/ATL	10/31/2025
Metals ICP-MS						
Arsenic, Total	0.00540	mg/L	0.00280	EPA 6020A	MLU	10/23/2025
Barium, Total	0.210	mg/L	0.00205	EPA 6020A	MLU	10/23/2025
Iron, Total	9.36	mg/L	0.07715	EPA 6020A	MLU	10/23/2025
Magnesium, Total	19.3	mg/L	0.07995	EPA 6020A	MLU	10/23/2025
Cobalt, Total	0.0165	mg/L	0.00170	EPA 6020A	MLU	10/23/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon Field Blank**

Lab Sample ID: AG59118

Sample Collection Date: 10/13/2025 Time: 0:00
Lab Submittal Date: 10/14/2025 Time: 11:38

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	<0.140	mg/L	0.047	SM 4500 NH3 F	HMB	10/16/2025
Chloride	0.75692	mg/L	0.775	EPA 300.0	AEB/ATL	10/31/2025
Metals ICP-MS						
Arsenic, Total	<0.00056	mg/L	0.00056	EPA 6020A	MLU	10/23/2025
Barium, Total	<0.00041	mg/L	0.00041	EPA 6020A	MLU	10/23/2025
Iron, Total	<0.01543	mg/L	0.01543	EPA 6020A	MLU	10/23/2025
Magnesium, Total	<0.01599	mg/L	0.01599	EPA 6020A	MLU	10/23/2025
Cobalt, Total	<0.00034	mg/L	0.00034	EPA 6020A	MLU	10/23/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon Field Duplicate**

Lab Sample ID: AG59119

Sample Collection Date: 10/13/2025 Time: 13:26
Lab Submittal Date: 10/14/2025 Time: 11:38

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
pH-Field	6.24	SU	0.01	EPA 9040	ARC	10/13/2025
Sp. Cond.-Field	587.1	µS	1	EPA 9050	ARC	10/13/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	HMB	11/13/2025
Ammonia (as N)	<0.140	mg/L	0.047	SM 4500 NH3 F	HMB	10/16/2025
Chloride	47.87986	mg/L	0.775	EPA 300.0	AEB/ATL	10/31/2025
Metals ICP-MS						
Arsenic, Total	0.00412	mg/L	0.00145	EPA 6020A	MLU	10/23/2025
Barium, Total	0.200	mg/L	0.00070	EPA 6020A	MLU	10/23/2025
Iron, Total	6.79	mg/L	0.04295	EPA 6020A	MLU	10/23/2025
Magnesium, Total	19.3	mg/L	0.43195	EPA 6020A	MLU	10/23/2025
Cobalt, Total	0.0160	mg/L	0.00065	EPA 6020A	MLU	10/23/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Michael Kuntz
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW21**

Lab Sample ID: AG62524

Sample Collection Date: 11/21/2025 Time: 8:36
Lab Submittal Date: 11/25/2025 Time: 10:36

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	27.62	ft	0.01	SOLINST	ARC/ATL	11/20/2025
Depth to water from TC	7.49	ft	0.01	SOLINST	ARC	11/21/2025
pH-Field	6.89	SU	0.01	EPA 9040	ARC/ATL	11/21/2025
Sp. Cond.-Field	1858	µS	1	EPA 9050	ARC/ATL	11/21/2025
Temperature	10.2	°C	0.1	SM 2550B	ARC/ATL	11/21/2025
Chemical Oxygen Demand	10	mg/L		HACH 8000	CCK	11/26/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW29**

Lab Sample ID: AG62525

Sample Collection Date: 11/21/2025 Time: 14:33
Lab Submittal Date: 11/25/2025 Time: 10:36

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	34.57	ft	0.01	SOLINST	ARC/ATL	11/20/2025
Depth to water from TC	26.75	ft	0.01	SOLINST	ARC/ATL	11/21/2025
pH-Field	6.93	SU	0.01	EPA 9040	ARC/ATL	11/21/2025
Sp. Cond.-Field	1958	µS	1	EPA 9050	ARC/ATL	11/21/2025
Temperature	13.4	°C	0.1	SM 2550B	ARC/ATL	11/21/2025
Chemical Oxygen Demand	21	mg/L	5.7	HACH 8000	CCK	11/26/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW30**

Lab Sample ID: AG62526

Sample Collection Date: 11/21/2025 Time: 9:40
Lab Submittal Date: 11/25/2025 Time: 10:36

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	35.00	ft	0.01	SOLINST	ARC/ATL	11/21/2025
Depth to water from TC	33.64	ft	0.01	SOLINST	ARC/ATL	11/21/2025
pH-Field	6.91	SU	0.01	EPA 9040	ARC/ATL	11/21/2025
Sp. Cond.-Field	1426	µS	1	EPA 9050	ARC/ATL	11/21/2025
Temperature	12.4	°C	0.1	SM 2550B	ARC/ATL	11/21/2025
Chemical Oxygen Demand	9	mg/L		HACH 8000	CCK	11/26/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

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ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW31**

Lab Sample ID: AG62527

Sample Collection Date: 11/21/2025 Time: 8:57
Lab Submittal Date: 11/25/2025 Time: 10:36

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	34.48	ft	0.01	SOLINST	ARC/ATL	11/20/2025
Depth to water from TC	33.80	ft	0.01	SOLINST	ARC/ATL	11/21/2025
pH-Field	6.62	SU	0.01	EPA 9040	ARC/ATL	11/21/2025
Sp. Cond.-Field	1016	µS	1	EPA 9050	ARC/ATL	11/21/2025
Temperature	9.3	°C	0.1	SM 2550B	ARC/ATL	11/21/2025
Chemical Oxygen Demand	47	mg/L		HACH 8000	CCK	11/26/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

CITY OF CEDAR RAPIDS - UTILITIES LABORATORY

CENTRAL LAB - WATER POLLUTION CONTROL FACILITIES
7525 BERTRAM RD SE, CEDAR RAPIDS, IA 52403-7111
(319)-286-5286 FAX (319)-286-5287

ANALYTICAL DATA REPORT

Report Date 12/12/2025

Report To: Justin Schroeder
Utilities Environmental Mgr
7525 Bertram Rd SE
Cedar Rapids IA 52403-7111

Site: Cedar Rapids Water Pollution Control Facility Sludge Ash Landfill

Permit : 57-SDP-7-85P

Sample Point: **East Ash Lagoon MW32**

Lab Sample ID: AG62528

Sample Collection Date: 11/20/2025 Time: 11:47
Lab Submittal Date: 11/25/2025 Time: 10:36

Test Parameter	Result	Units	Reporting Limit	Method	Analyst	Analysis Date
Well Depth from TC	35.59	ft	0.01	SOLINST	ARC/ATL	11/20/2025
Depth to water from TC	33.15	ft	0.01	SOLINST	ARC/ATL	11/20/2025
pH-Field	6.41	SU	0.01	EPA 9040	ARC/ATL	11/20/2025
Sp. Cond.-Field	707.2	µS	1	EPA 9050	ARC/ATL	11/20/2025
Temperature	11.3	°C	0.1	SM 2550B	ARC/ATL	11/20/2025
Chemical Oxygen Demand	<5.7	mg/L	5.7	HACH 8000	CCK	11/26/2025

Sample Comments:

Bruce M. Lyon
Utilities Quality Assurance Officer

I certify under penalty of law that I believe the reported information above is true, accurate, and complete

ug/L - microgram per liter (ppb) mg/L - milligrams per liter (ppm)
ND - Not detected at or above reporting limit.
SM - Standard Methods SW - Test Methods for Evaluating Solid Waste (SW-846)

ACCREDITATIONS:
IOWA DNR : 096

APPENDIX D

Field Sampling Forms

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW21** Well Type : Downgradient

Sample collector(s): ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Overcast, Windy

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	729.93	Ground Elevation:	
Depth of Well, from TC	27.43	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	04/14/25	10:19	6.23	723.70
After Purging	04/14/25	11:08	27.25	702.68
Before Sampling	04/15/25	7:52	6.31	723.62

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 10.5

Number of Well Volumes Purged (based on current water level) : 3.0 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	7.14	SU
Specific Conductance:	1835	uS/cm
Temperature:	8.9	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.1

Utilities QA Officer 5/14/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW24R1** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	NO	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Clear, Windy, Cold

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	720.27	Ground Elevation:	
Depth of Well, from TC	28.47	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	04/15/25	11:33	19.28	700.99
After Purging	04/15/25	11:52	19.3	700.97
Before Sampling	04/15/25	11:54	19.3	700.97

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 4.5

Number of Well Volumes Purged (based on current water level) : 3.0 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.87	SU
Specific Conductance:	934	uS/cm
Temperature:	11.8	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	SLIGHT
	Sample Color:	YELLOW	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.01

Utilities QA Officer 5/14/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW2** Well Type : Downgradient

Sample collector(s): ARC/ATL Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Clear, Windy, Cold

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	720.04	Ground Elevation:	
Depth of Well, from TC	26.09	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	04/15/25	10:45	19.82	700.22
After Purging	04/15/25	11:06	19.82	700.22
Before Sampling	04/15/25	11:08	19.82	700.22

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 3

Number of Well Volumes Purged (based on current water level) : 2.9 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.50	SU
Specific Conductance:	954	uS/cm
Temperature:	11.6	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	SLIGHT	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.09

Utilities QA Officer 5/14/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW3R1** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	CRACKED	Weather Conditions?:	Clear, Windy, Cold

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	719.42	Ground Elevation:	
Depth of Well, from TC	27.33	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	04/15/25	10:00	19.94	699.48
After Purging	04/15/25	10:24	19.98	699.44
Before Sampling	04/15/25	10:25	19.98	699.44

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 4

Number of Well Volumes Purged (based on current water level) : 3.3 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.89	SU
Specific Conductance:	984	uS/cm
Temperature:	12.5	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	SLIGHT
	Sample Color:	YELLOW	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.07

Utilities QA Officer 5/14/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW22** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Clear, Windy, Cold

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	718.40	Ground Elevation:	
Depth of Well, from TC	26.45	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	04/15/25	8:13	18.45	699.95
After Purging	04/15/25	8:53	18.45	699.95
Before Sampling	04/15/25	8:55	18.45	699.95

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 4

Number of Well Volumes Purged (based on current water level) : 3.1 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	7.20	SU
Specific Conductance:	1442	uS/cm
Temperature:	12.5	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	SLIGHT
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.13

Utilities QA Officer 5/14/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW21** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	Not Visible	Weather Conditions?:	Clear, Windy, Mild

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	729.93	Ground Elevation:	
Depth of Well, from TC	27.55	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	06/30/25	8:51	8.88	721.05
After Purging	06/30/25	9:29	27.3	702.63
Before Sampling	07/01/25	9:43	7.99	721.94

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 10

Number of Well Volumes Purged (based on current water level) : 3.3 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.96	SU
Specific Conductance:	1754	uS/cm
Temperature:	14.7	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW1** Well Type : Removed

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 730.72 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW4** Well Type : Removed

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 726.78 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW23** Well Type : Removed

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 725.41 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW24R1** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	NO	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Overcast, Hot

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	720.27	Ground Elevation:	
Depth of Well, from TC	28.73	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	06/30/25	13:23	19.26	701.01
After Purging	06/30/25	13:43	19.3	700.97
Before Sampling	06/30/25	13:45	19.3	700.97

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 4.75

Number of Well Volumes Purged (based on current water level) : 3.1 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	7.16	SU
Specific Conductance:	827	uS/cm
Temperature:	14.8	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW2** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Overcast, Hot

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	720.04	Ground Elevation:	
Depth of Well, from TC	25.81	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	06/30/25	13:53	19.81	700.23
After Purging	06/30/25	14:09	19.81	700.23
Before Sampling	06/30/25	14:10	19.81	700.23

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 3

Number of Well Volumes Purged (based on current water level) : 3.1 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.56	SU
Specific Conductance:	797	uS/cm
Temperature:	18.6	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW3R1** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Clear, Windy, Mild

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	719.42	Ground Elevation:	
Depth of Well, from TC	27.15	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	07/01/25	9:14	20.02	699.40
After Purging	07/01/25	9:33	20.02	699.40
Before Sampling	07/01/25	9:33	20.02	699.40

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 4

Number of Well Volumes Purged (based on current water level) : 3.4 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.72	SU
Specific Conductance:	859	uS/cm
Temperature:	15.5	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.01

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW22** Well Type : Downgradient

Sample collector(s): ARC/ATL/AMM Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Clear, Windy, Hot

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	718.40	Ground Elevation:	
Depth of Well, from TC	26.50	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	06/30/25	9:53	18.42	699.98
After Purging	06/30/25	10:42	18.43	699.97
Before Sampling	06/30/25	10:43	18.43	699.97

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 4

Number of Well Volumes Purged (based on current water level) : 3.0 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: GeoTech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	7.03	SU
Specific Conductance:	1033	uS/cm
Temperature:	21.2	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	SLIGHT	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.03

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW26** Well Type : Removed

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 725.81 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 7/28/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW30** Well Type : Downgradient

Sample collector(s): ATL/ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Calm, Overcast

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	733.30	Ground Elevation:	
Depth of Well, from TC	34.62	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	08/19/25	10:16	31.61	701.69
After Purging	08/19/25	10:25	31.61	701.69
Before Sampling	08/19/25	10:27	31.61	701.69

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 2

Number of Well Volumes Purged (based on current water level) : 4.1 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	5.96	SU
Specific Conductance:	1035	uS/cm
Temperature:	18.0	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	HEAVY
	Sample Color:	BROWN	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.25

Utilities QA Officer 8/21/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MR31** Well Type : Downgradient

Sample collector(s): ATL/ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Calm, Overcast

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	734.50	Ground Elevation:	
Depth of Well, from TC	33.91	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	08/19/25	9:06	32.17	702.33
After Purging	08/19/25	9:12	32.2	702.30
Before Sampling	08/19/25	9:14	32.2	702.30

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 1

Number of Well Volumes Purged (based on current water level) : 3.5 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.66	SU
Specific Conductance:	1024	uS/cm
Temperature:	16.2	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: HEAVY Sample Turbidity: HEAVY

Sample Color: GREY Sample Odor: NONE

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 8/21/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW32** Well Type : Downgradient

Sample collector(s): ATL/ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Calm, Overcast

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	734.30	Ground Elevation:	
Depth of Well, from TC	35.16	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	08/19/25	8:04	31.69	702.61
After Purging	08/19/25	8:43	31.7	702.60
Before Sampling	08/19/25	8:45	31.1	703.20

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 2

Number of Well Volumes Purged (based on current water level) : 3.5 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.48	SU
Specific Conductance:	560	uS/cm
Temperature:	18.8	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	HEAVY
	Sample Color:	BROWN	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 8/21/2025

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FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW23** Well Type : Removed

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 725.41 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 8/21/2025

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FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW24R1** Well Type : Downgradient

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 720.27 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 8/21/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW2** Well Type : Downgradient

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 720.04 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 8/21/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW3R1** Well Type : Downgradient

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 719.42 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 8/21/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW22** Well Type : Downgradient

Sample collector(s): Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked? Comments

Well Capped? Standing Water or Litter?

Concrete Seal? Weather Conditions?:

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing 718.40 Ground Elevation:

Depth of Well, from TC Inner casing dia. (in.) 2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging				
After Purging				
Before Sampling				

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons):

Number of Well Volumes Purged (based on current water level) : Was Well Purged Dry?

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer:

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	SU
Specific Conductance:	uS/cm
Temperature:	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: Sample Turbidity:

Sample Color: Sample Odor:

QC Samples:

pH Meter Checks (7 or 4):

Utilities QA Officer 8/21/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW29** Well Type : Downgradient

Sample collector(s): ATL/ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Clear, Hot

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	736.40	Ground Elevation:	
Depth of Well, from TC	34.22	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	08/19/25	9:32	13.99	722.41
After Purging	08/19/25	9:58	32.8	703.60
Before Sampling	08/20/25	10:05	14.65	721.75

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 10

Number of Well Volumes Purged (based on current water level) : 3.0 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	7.47	SU
Specific Conductance:	1917	uS/cm
Temperature:	18.7	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	HEAVY
	Sample Color:	GREY	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.04

Utilities QA Officer 8/21/2025

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542-1322

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW29** Well Type : Downgradient

Sample collector(s): ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Calm, Overcast

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	736.40	Ground Elevation:	
Depth of Well, from TC	33.85	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	10/13/25	11:32	24.32	712.08
After Purging	10/13/25	12:12	29.85	706.55
Before Sampling	10/14/25	11:10	25.6	710.80

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 5

Number of Well Volumes Purged (based on current water level) : 3.2 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.92	SU
Specific Conductance:	1927	uS/cm
Temperature:	18.0	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	PETROLEUM

QC Samples:

pH Meter Checks (7 or 4): 7.04

Utilities QA Officer 10/22/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW30** Well Type : Downgradient

Sample collector(s): ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Clear, Windy

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	733.30	Ground Elevation:	
Depth of Well, from TC	36.10	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	10/13/25	14:41	32.38	700.92
After Purging	10/13/25	14:50	32.4	700.90
Before Sampling	10/13/25	14:50	32.4	700.90

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 2

Number of Well Volumes Purged (based on current water level) : 3.3 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.83	SU
Specific Conductance:	1106	uS/cm
Temperature:	17.5	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	SLIGHT
	Sample Color:	YELLOW	Sample Odor:	TRASH

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 10/22/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW31** Well Type : Downgradient

Sample collector(s): ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Clear, Windy

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	734.50	Ground Elevation:	
Depth of Well, from TC	34.32	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	10/13/25	13:43	32.92	701.58
After Purging	10/13/25	12:57	32.92	701.58
Before Sampling	10/13/25	13:56	32.92	701.58

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 1

Number of Well Volumes Purged (based on current water level) : 4.4 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.68	SU
Specific Conductance:	835	uS/cm
Temperature:	17.3	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	HEAVY	Sample Turbidity:	MODERATE
	Sample Color:	YELLOW	Sample Odor:	TRASH

QC Samples:

pH Meter Checks (7 or 4): 7

Utilities QA Officer 10/22/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW32** Well Type : Downgradient

Sample collector(s): ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Clear, Windy

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	734.30	Ground Elevation:	
Depth of Well, from TC	35.32	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	10/13/25	13:15	32.46	701.84
After Purging	10/13/25	13:25	32.46	701.84
Before Sampling	10/13/25	13:26	32.46	701.84

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 1.5

Number of Well Volumes Purged (based on current water level) : 3.2 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.27	SU
Specific Conductance:	574	uS/cm
Temperature:	15.4	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments: Initial Turbidity: HEAVY Sample Turbidity: SLIGHT

Sample Color: YELLOW Sample Odor: NONE

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 10/22/2025

I certify under penalty of law that I believe the reported information above is true, accurate, and complete.

FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW21** Well Type : Downgradient

Sample collector(s): ARC Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	Not Visible	Weather Conditions?:	Calm, Overcast

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	729.93	Ground Elevation:	
Depth of Well, from TC	27.42	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	10/13/25	10:13	8.45	721.48
After Purging	10/13/25	11:18	26.49	703.44
Before Sampling	10/14/25	10:54	8.47	721.46

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 10

Number of Well Volumes Purged (based on current water level) : 3.2 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.86	SU
Specific Conductance:	1728	uS/cm
Temperature:	13.9	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.01

Utilities QA Officer 10/22/2025

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FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW29** Well Type : Downgradient

Sample collector(s): ARC/ATL Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Overcast, Cool

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	736.40	Ground Elevation:	
Depth of Well, from TC	34.57	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	11/20/25	12:03	24.33	712.07
After Purging	11/20/25	12:25	31.25	705.15
Before Sampling	11/21/25	14:33	26.75	709.65

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 5

Number of Well Volumes Purged (based on current water level) : 3.0 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.93	SU
Specific Conductance:	1958	uS/cm
Temperature:	13.4	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	SLIGHT	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.06

Utilities QA Officer 12/12/2025

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FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW30** Well Type : Downgradient

Sample collector(s): ARC/ATL Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	NONE	Weather Conditions?:	Overcast, Cool

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	733.30	Ground Elevation:	
Depth of Well, from TC	35.00	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	11/21/25	9:36	33.64	699.66
After Purging	11/21/25	9:39	33.64	699.66
Before Sampling	11/21/25	9:40	33.64	699.66

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 1

Number of Well Volumes Purged (based on current water level) : 4.5 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.91	SU
Specific Conductance:	1426	uS/cm
Temperature:	12.4	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	SLIGHT	Sample Turbidity:	HEAVY
	Sample Color:	BROWN	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.02

Utilities QA Officer 12/12/2025

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FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW31** Well Type : Downgradient

Sample collector(s): ARC/ATL Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Overcast, Cool, Win

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	734.50	Ground Elevation:	
Depth of Well, from TC	34.48	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	11/20/25	12:42	33.81	700.69
After Purging	11/20/25	12:53	33.82	700.68
Before Sampling	11/21/25	8:57	33.8	700.70

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 0.2

Number of Well Volumes Purged (based on current water level) : 1.8 Was Well Purged Dry? YES

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.62	SU
Specific Conductance:	1016	uS/cm
Temperature:	9.3	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	SLIGHT	Sample Turbidity:	HEAVY
	Sample Color:	GREY	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.04

Utilities QA Officer 12/12/2025

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FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW32** Well Type : Downgradient

Sample collector(s): ARC/ATL Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	OK	Weather Conditions?:	Overcast, Windy

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	734.30	Ground Elevation:	
Depth of Well, from TC	35.59	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	11/20/25	11:31	33.15	701.15
After Purging	11/20/25	11:43	33.15	701.15
Before Sampling	11/20/25	11:47	33.15	701.15

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 2

Number of Well Volumes Purged (based on current water level) : 5.0 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.41	SU
Specific Conductance:	707	uS/cm
Temperature:	11.3	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.06

Utilities QA Officer 12/12/2025

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FORM FOR
GROUNDWATER SAMPLING AND/OR
GROUNDWATER ELEVATION MEASURMENT

Site Name: Cedar Rapids Water Pollution Control Ash Lagoon Landfill Permit No.: 57-SDP-7-85P

Monitoring Well/Piezometer N **MW21** Well Type : Downgradient

Sample collector(s): ARC/ATL Laboratory Services, City of Cedar Rapids

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well Locked?	YES	Comments	
Well Capped?	YES	Standing Water or Litter?	Nearby Excavation
Concrete Seal?	Not Visible	Weather Conditions?:	Overcast, Cool

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Elevation, top of inner well casing	729.93	Ground Elevation:	
Depth of Well, from TC	27.62	Inner casing dia. (in.)	2

Groundwater Level (+/- 0.01 foot below top of inner casing, MSL):

	Date	Time	Depth to Water	Water Elevation
Before Purging	11/20/25	10:47	7.49	722.44
After Purging	11/20/25	11:14	25.95	703.98
Before Sampling	11/21/25	8:36	7.49	722.44

Water levels measured with Solinst Electronic Depth Tape

C. WELL PURGING

Quantity of Water Removed from Well (gallons): 10

Number of Well Volumes Purged (based on current water level) : 3.0 Was Well Purged Dry? NO

Equipment Used: (W) = Waterra Inertial Pump, (B) = Disposable Bailer: Geotech

All purging and sampling equipment used is dedicated or disposable.

D. FIELD MEASUREMENT

Field measurements (at sample time)

pH:	6.89	SU
Specific Conductance:	1858	uS/cm
Temperature:	10.2	deg C

Field measurements made with an Oakton pH/Con 10 meter with a combination pH/ conductivity and temperature probe.

Sampling Comments:	Initial Turbidity:	NONE	Sample Turbidity:	NONE
	Sample Color:	NONE	Sample Odor:	NONE

QC Samples:

pH Meter Checks (7 or 4): 7.03

Utilities QA Officer 12/12/2025

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