

**Annual Groundwater Monitoring and Corrective
Action Report**

Indiana Michigan Power Company

Rockport Plant

Landfill CCR Unit

Rockport, Indiana

January 31, 2025

Prepared by:

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Columbus, Ohio 43215



An **AEP** Company

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Abbreviations:

- ASD - Alternate Source Demonstration
- CCR – Coal Combustion Residual
- GWPS - Groundwater protection standards
- SSI - Statistically Significant Increase
- SSL - Statistically Significant Level

I. Overview

This *Annual Groundwater Monitoring and Corrective Action Report* (Report) has been prepared to report the status of activities for the preceding year at the CCR landfill at Indiana Michigan Power Company's (I&M) Rockport Plant. The Indiana Michigan Power Company is wholly-owned subsidiary of American Electric Power Company (AEP). The USEPA's CCR rules require that the Annual Groundwater Monitoring and Corrective Action Report covering the previous year's groundwater monitoring activities be posted to the operating record no later than January 31, 2025.

In general, the following activities were completed:

- At the start of the current annual reporting period, the landfill was operating under the detection monitoring program.
- At the end of the current annual reporting period, the landfill was operating under the detection monitoring program.
- Data and statistical analysis that was not available for the previous reporting period indicates that during the November 2023 semi-annual sampling event:
 - The following Appendix III parameters exceeded background concentrations:
 - Chloride at wells MW-017S
 - A successful Alternative Source Demonstration was completed for the November 2023 sampling event in June 2024, and the landfill remained in detection monitoring for the first semi-annual sampling event for 2024.
- The background statistical analysis report was updated in January 2024.
- During the May 2024 sampling event:
 - The following Appendix III parameters exceeded background:
 - MW-002D: Chloride
 - MW-017S: Calcium and Chloride
 - A successful Alternative Source Demonstration was completed for the Appendix III SSIs in October 2024, and the Landfill remained in detection monitoring for the second semi-annual sampling event of 2024.
- The November 2024 semi-annual sampling event data are still undergoing statistical analysis.

The major components of this annual report, to the extent applicable at this time, are presented in sections that follow:

- A map/aerial photograph showing the landfill unit, all groundwater monitoring wells and monitoring well identification numbers (Attached as **Appendix 1**);
- All of the monitoring data collected, including the rate and direction of groundwater flow, plus a summary showing the number of samples collected per monitoring well, the dates the samples were collected, and whether the sample was collected as part of background, detection monitoring, or assessment monitoring programs (Attached as **Appendix 1**);
- Statistical comparison of monitoring data to determine if there have been significant increase over background concentrations (Attached as **Appendix 2**, where applicable);
- A discussion of whether any alternate source demonstrations were performed, and the conclusions (Attached as **Appendix 3**, where applicable);
- A summary of any transition between monitoring programs, or an alternate monitoring frequency, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring, in addition to identifying the constituents detected at a statistically significant increase over background concentrations (Notices Attached as **Appendix 4**, where applicable);
- Identification of any monitoring wells that were installed, or decommissioned during the preceding year, along with a statement as to why that happened (Attached as **Appendix 5**, where applicable); and
- Other information required to be included in the annual report such as alternate source demonstration or assessment of corrective measures, if applicable

In addition, this report summarizes key actions completed, and where applicable, describes any problems encountered and actions taken to resolve those problems. The report includes a projection of key activities for the upcoming year.

II. Groundwater Monitoring Well Locations and Identification Numbers

The CCR landfill monitoring wells are listed as follows (S=shallow, I=Intermediate, D=Deep):

- Five Upgradient/Off Gradient Wells: MW-6S; MW-8(S,I); MW-11S; MW-14S.
- Sixteen Downgradient Wells: MW-17(S,I); MW-15(S,I); MW-16(S,I,D); MW-1(S,I,D); MW-21(S,I,D); and MW-2(S,I,D).

A figure that depicts the PE-certified groundwater monitoring network, the monitoring well locations, and their corresponding identification numbers is provided in **Appendix 1**.

III. Monitoring Wells Installed or Decommissioned

There were no CCR monitoring wells installed or decommissioned in 2024. The network design, as summarized in the *Groundwater Monitoring Network Design Report (Amec Foster Wheeler, 2017)* and as posted at the CCR web site for Rockport Plant's Landfill, did not change. That design

report, viewable on the AEP CCR web site, discusses the facility location, the hydrogeological setting, the hydrostratigraphic units, the uppermost aquifer, downgradient monitoring well locations and the upgradient monitoring well locations.

IV. Groundwater Quality Data and Static Water Elevation Data, With Flow Rates and Flow Directions

Appendix 1 contains tables showing the groundwater quality data collected during the establishment of background quality, detection and assessment monitoring. Static water elevation data from each monitoring event also are shown in **Appendix 1**, along with the groundwater velocity calculations, groundwater flow direction and potentiometric maps developed after each sampling event.

V. Groundwater Quality Data Statistical Analysis

Appendix 2 contains the statistical analysis reports. Additionally, the landfill background update report was completed in January 2024 and is also included in Appendix 2.

- Data and statistical analysis that was not available for the previous reporting period indicates that during the November 2023 semi-annual sampling event:
 - The following Appendix III parameters had SSIs:
 - Chloride at wells MW-017S
 - A successful Alternative Source Demonstration was completed for the November 2023 sampling event in June 2024, and the landfill remained in detection monitoring for the first semi-annual sampling event for 2024.
- During the May 2024 sampling event:
 - The following Appendix III parameters had SSIs:
 - MW-002D: Chloride
 - MW-017S: Calcium and Chloride
 - A successful Alternative Source Demonstration was completed for the Appendix III SSIs in October 2024, and the Landfill remained in detection monitoring for the second semi-annual sampling event of 2024.
- The November 2024 semi-annual sampling event data are still undergoing statistical analysis.

VI. Alternate Source Demonstrations

November 2023 Samples

An alternate source demonstration (ASD) by WSP USA relative to the Appendix III SSIs resulting from the November 2023 sampling event was undertaken and completed by report dated June 11, 2024. The demonstration concluded that the groundwater quality and Appendix III indicator parameter SSIs identified in the statistical evaluation were not the result of a release of leachate from the landfill, but were due to natural groundwater variation. The successful ASD is included in **Appendix 3**.

Because the ASD for the November 2023 samples was successful, the landfill remained in detection monitoring for the first semiannual samples of 2024 collected in May.

May 2024 Samples

The first semiannual detection monitoring samples of 2024 were collected in May with verification samples collected in July. As discussed above, there were SSIs for Appendix III parameters. An ASD by WSP USA relative to the Appendix III SSIs was undertaken and completed by report dated October 18, 2024. The demonstration concluded that the groundwater quality and Appendix III indicator parameter SSIs identified in the statistical evaluation were not the result of a release of leachate from the landfill, but were due to natural groundwater variation and impacts from historical oil and gas operations in the vicinity. The successful ASD is included in **Appendix 3**.

Because the ASD for the May 2024 samples was successful, the landfill remained in detection monitoring for the second semiannual samples of 2024 taken in November.

VII. Discussion About Transition Between Monitoring Requirements or Alternate Monitoring Frequency

Because an ASD was successful for the Appendix III SSIs resulting from the statistical analyses of results from both the November 2023 and May 2024 sampling events, the landfill remained in detection monitoring for the November 2024 sampling event. Completion of resampling and statistical analyses of results for the November 2024 sampling event will be completed in early 2025.

If there are no SSIs of Appendix III parameters resulting from statistical analyses of the November 2024 sampling results, the landfill will remain in detection monitoring. If SSIs for the Appendix III indicator parameters are identified, an ASD will be investigated. If the ASD is successful, the landfill will remain in detection monitoring. If an ASD is not successful, then the landfill will proceed with assessment monitoring as required by 40 CFR 257.95.

Regarding defining an alternate monitoring frequency, the groundwater velocity and monitoring well production is high enough at this facility that no modification of the twice-per-year detection monitoring effort is needed.

VIII. Other Information Required

The landfill is currently in detection monitoring. As required by the CCR detection monitoring rules in 40 CFR 257.94, sampling all CCR wells for the Appendix III parameters was completed in 2024.

IX. Description of Any Problems Encountered in 2024 and Actions Taken

No significant problems were encountered. The low flow sampling effort went smoothly and the schedule was met to support the annual groundwater report preparation covering the 2024 groundwater monitoring activities.

X. A Projection of Key Activities for the Upcoming Year

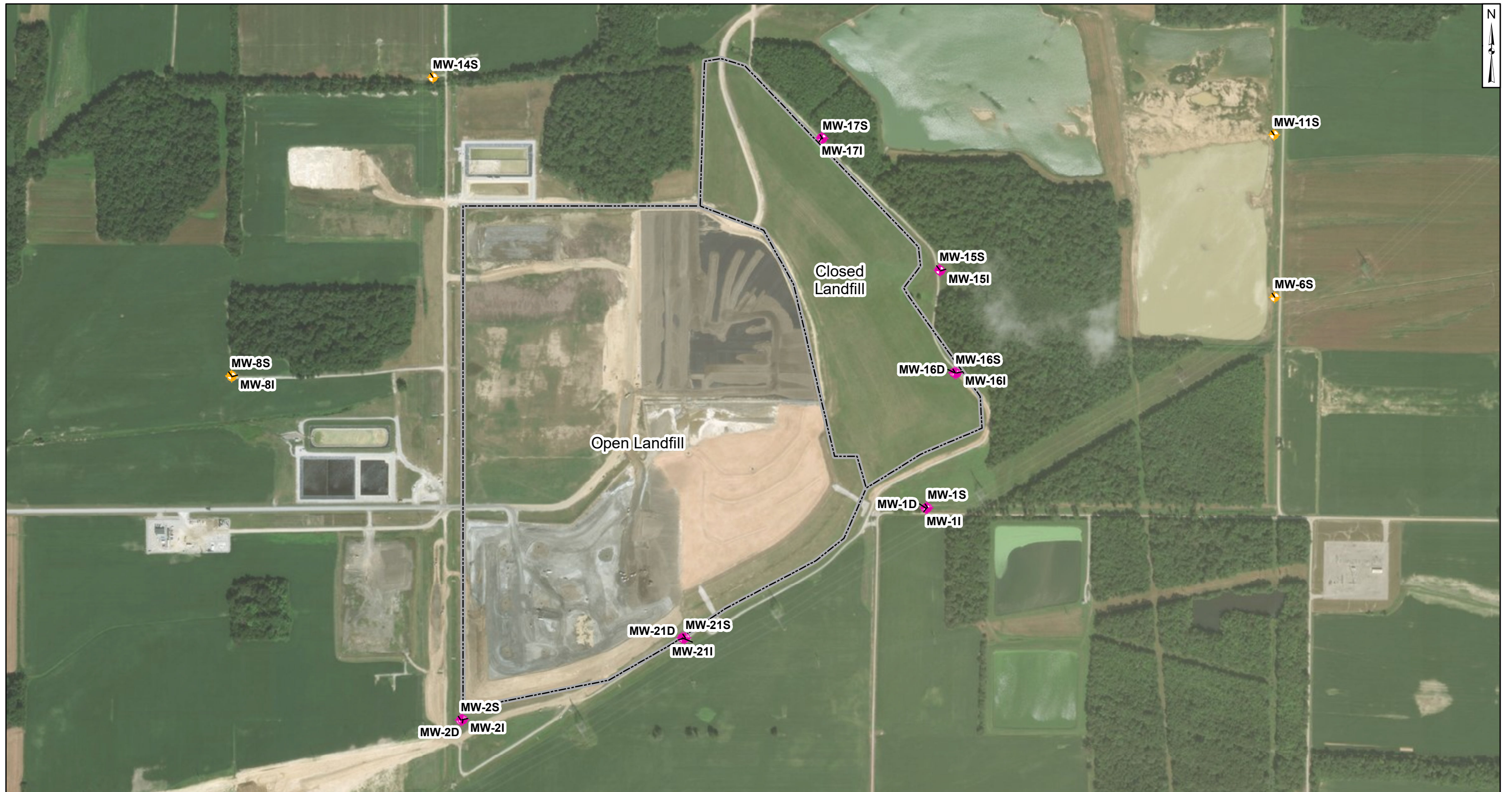
Key activities for 2025 include:

- Completion of resampling and statistical analyses of results from the November 2024 sampling event.
- Detection monitoring on a twice per year schedule (May and November) for 2025.
- Evaluation of the semiannual detection monitoring results from a statistical analysis viewpoint, looking for any statistically significant increases, or decreases when pH is considered.
- Alternate source demonstrations or assessment monitoring activities as necessary or required.
- Responding to any new data received in light of what the CCR rule requires.
- Preparation of the annual groundwater report.

APPENDIX 1 – Groundwater Data Tables and Figures

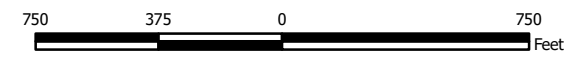
Figures and Tables follow, showing the groundwater monitoring network, data collected and the rate and direction of groundwater flow. The dates that the samples were collected and it also is shown whether the data were collected under background, detection, or assessment monitoring.

Groundwater Monitoring Network Figure



Monitoring Well Network
 ◆ Compliance Sampling Location
 ◆ Background Sampling Location
 Landfill Areas

Notes
 - Monitoring well coordinates provided by AEP.
 - Site features based on information available in the Groundwater Monitoring Network Evaluation (AMEC, 2016) provided by AEP.



**Site Layout
 CCR Landfills**

AEP-Rockport Power Plant



Figure

1

Columbus, Ohio

2018/01/26

Groundwater Data Tables

Table 1. Groundwater Data Summary: MW-001D

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.017	63.6	27.3	496	0.28	7.6	40.2	331
7/19/2016	Background	0.015	57.9	29.8	471	0.30	7.1	40.6	329
9/20/2016	Background	0.016	65.2	29.8	464	0.28	7.4	32.3	288
11/16/2016	Background	0.018	69.3	39.3	842	0.29	7.5	33.6	339
1/11/2017	Background	0.006	63.4	40.6	400	0.26	7.4	36.4	323
3/8/2017	Background	0.055	70.0	40.3	558	0.26	7.3	37.0	330
5/9/2017	Background	0.046	67.8	40.9	394	0.28	7.3	39.5	342
7/18/2017	Background	0.019	63.9	39.3	525	0.24	8.1	39.6	338
10/4/2017	Detection	0.002 J1	65.7	10.3	448	0.85	7.3	10.4	339
1/3/2018	Detection	--	--	--	539	0.31	7.7	--	--
6/7/2018	Detection	0.103	70.9	43.1	508	0.30	8.2	39.5	345
8/16/2018	Detection	0.020	--	43.8	568	--	7.4	--	--
11/14/2018	Detection	0.100	71.9	46.9	457	0.30	7.8	39.8	340
2/13/2019	Detection	< 0.02 U1	--	--	317	--	7.4	--	--
5/23/2019	Detection	0.02 J1	73.6	32.1	504	0.27	7.2	45.3	346
7/23/2019	Detection	--	--	--	510	--	7.3	39.2	--
11/22/2019	Detection	0.04 J1	72.5	49.1	609	0.27	7.3	41.2	398
2/17/2020	Detection	--	--	--	817	--	7.4	--	257
5/19/2020	Detection	0.04 J1	59.9	23.8	454	0.30	7.1	23.3	261
11/11/2020	Detection	0.04 J1	80.3	56.2	664	0.30	7.1	37.7	397
2/3/2021	Detection	--	56.8	--	467	--	7.5	--	264
5/26/2021	Detection	0.033 J1	77.2	44.0	747	0.26	7.7	38.6	410
8/5/2021	Detection	--	--	--	657	--	7.4	--	440
11/12/2021	Detection	0.042 J1	73.7	55.4	735	0.30	7.4	36.0	410
5/12/2022	Detection	< 0.009 U1	68.6	30.9	624	0.26	7.2	45.4	350
11/3/2022	Detection	0.043 J1	70.2	58.4	673	0.30	7.1	40.6	400
5/24/2023	Detection	0.034 J1	59.0	41.7	368	0.28	7.8	37.5	370
11/2/2023	Detection	0.052	67.2	46.2	701	0.32	6.8	39.1	360
5/15/2024	Detection	0.051	70.9	54.9	706	0.32	6.9	41.9	380
11/12/2024	Detection	0.054	72	52.6	657	0.36	7.2	39.9	390

Table 1. Groundwater Data Summary: MW-001D

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.05	1.29	255	0.01 J1	0.13	0.3	3.64	1.084	0.28	1.13	< 0.0002 U1	0.002 J1	3.44	0.07 J1	0.04 J1
7/19/2016	Background	0.03 J1	0.73	147	< 0.005 U1	0.07	1.5	0.373	0.195	0.30	1.37	0.017	< 0.002 U1	3.59	0.03 J1	0.02 J1
9/20/2016	Background	0.03 J1	1.07	160	0.007 J1	0.04	0.3	0.836	1.457	0.28	0.500	0.0005 J1	< 0.002 U1	3.60	0.07 J1	0.056
11/16/2016	Background	0.03 J1	0.65	147	< 0.005 U1	0.04	0.072	0.329	7.296	0.29	0.222	0.004	< 0.002 U1	3.24	0.03 J1	0.02 J1
1/11/2017	Background	0.03 J1	0.77	162	< 0.005 U1	0.15	0.439	0.577	0.649	0.26	0.807	0.007	< 0.002 U1	2.43	0.03 J1	0.05 J1
3/8/2017	Background	0.02 J1	0.58	139	< 0.005 U1	0.04	0.687	0.173	0.2384	0.26	1.92	0.007	< 0.002 U1	3.40	0.03 J1	0.03 J1
5/9/2017	Background	0.02 J1	0.75	142	0.006 J1	0.04	0.174	0.440	0.724	0.28	0.419	0.009	< 0.002 U1	3.05	0.06 J1	0.04 J1
7/18/2017	Background	0.02 J1	0.59	139	< 0.004 U1	0.05	0.131	0.212	0.946	0.24	0.355	0.002	< 0.002 U1	2.94	< 0.03 U1	0.03 J1

Table 1. Groundwater Data Summary: MW-0011

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.075	67.4	24.9	461	0.37	6.7	44.3	323
7/19/2016	Background	0.014	60.0	24.8	479	0.40	7.0	46.7	315
9/20/2016	Background	0.018	64.5	24.3	570	0.37	7.4	42.4	331
11/16/2016	Background	0.015	63.9	24.1	544	0.31	7.1	40.7	334
1/11/2017	Background	0.004 J1	60.9	24.4	370	0.33	7.6	41.4	316
3/8/2017	Background	0.045	66.9	24.1	500	0.35	7.4	41.2	300
5/9/2017	Background	0.049	65.7	26.5	443	0.38	7.2	43.8	323
7/18/2017	Background	0.047	64.8	26.5	402	0.34	6.9	43.3	330
10/4/2017	Detection	0.018	68.1	27.5	424	0.37	7.1	44.1	327
6/6/2018	Detection	0.11	66.4	28.6	480	0.42	7.5	42.0	321
8/16/2018	Detection	0.056	--	--	533	--	7.3	--	--
11/14/2018	Detection	0.05 J1	65.5	28.8	425	0.41	7.8	40.7	308
2/13/2019	Detection	--	--	30.1	443	--	7.5	--	--
4/1/2019	Detection	--	--	34.1	802	--	7.4	--	--
5/23/2019	Detection	0.02 J1	67.7	33.1	503	0.42	7.0	40.2	341
7/23/2019	Detection	--	--	30.6	493	--	7.2	--	--
9/11/2019	Detection	--	--	33.5	481	--	7.3	--	--
11/22/2019	Detection	< 0.02 U1	66.7	35.0	491	0.37	7.1	39.7	348
5/19/2020	Detection	0.02 J1	71.2	37.7	566	0.40	7.2	40.1	323
7/16/2020	Detection	--	--	35.4	575	0.39	7.4	--	340
11/11/2020	Detection	< 0.02 U1	65.9	36.3	590	0.43	7.3	39.0	322
2/3/2021	Detection	--	--	36.9	549	--	7.4	--	--
5/26/2021	Detection	0.017 J1	67.4	37.8	648	0.38	7.7	38.6	350
8/4/2021	Detection	--	--	38.2	566	--	7.3	--	--
11/12/2021	Detection	0.016 J1	68.2	42.5	598	0.40	7.5	39.0	340
2/15/2022	Detection	--	--	46.8	614	--	7.2	--	--
5/12/2022	Detection	< 0.009 U1	70.4	46.5	623	0.41	7.3	43.4	350
7/20/2022	Detection	--	--	47.2	650	--	7.5	--	--
11/3/2022	Detection	0.018 J1	67.3	52.4	568	0.42	6.9	43.2	360
2/8/2023	Detection	--	--	52.8	612	--	7.4	--	--
5/24/2023	Detection	0.017 J1	60.8	53.1	378	0.43	7.9	43.4	380
8/16/2023	Detection	--	--	54.7	654	--	7.3	--	400
11/2/2023	Detection	0.019 J1	64.3	55.4	709	0.45	6.8	42.4	360
12/20/2023	Detection	--	--	29.9	621	--	7.2	--	--
5/15/2024	Detection	0.017 J1	66.9	54.7	674	0.48	6.9	44.8	370
7/16/2024	Detection	--	--	--	549	0.45	7.2	--	--
11/12/2024	Detection	0.02 J1	74	54.9	593	0.53	7.4	43.0	380

**Table 1. Groundwater Data Summary: MW-0011
Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.04 J1	0.86	85.5	< 0.005 U1	0.08	0.2	0.341	0.3903	0.37	0.851	0.005	< 0.002 U1	2.47	< 0.03 U1	0.03 J1
7/19/2016	Background	0.04 J1	0.78	86.1	< 0.005 U1	0.10	1.0	0.364	1.675	0.40	1.25	0.022	0.002 J1	2.85	0.04 J1	0.02 J1
9/20/2016	Background	0.01 J1	0.92	84.9	< 0.005 U1	0.02	0.2	0.401	1.696	0.37	0.156	0.007	< 0.002 U1	2.89	< 0.03 U1	0.02 J1
11/16/2016	Background	0.02 J1	0.80	93.4	< 0.005 U1	0.02 J1	0.051	0.381	1.312	0.31	0.059	0.005	< 0.002 U1	3.27	< 0.03 U1	0.03 J1
1/11/2017	Background	0.02 J1	0.82	90.5	0.005 J1	0.02 J1	0.390	0.424	0.621	0.33	0.099	0.005	< 0.002 U1	3.33	< 0.03 U1	0.104
3/8/2017	Background	0.03 J1	0.69	76.7	< 0.005 U1	0.05	0.686	0.054	0.15	0.35	0.427	0.006	< 0.002 U1	1.82	0.04 J1	0.03 J1
5/9/2017	Background	0.04 J1	0.89	85.0	< 0.004 U1	0.01 J1	0.155	0.558	0.63	0.38	0.068	0.008	< 0.002 U1	2.87	< 0.03 U1	0.02 J1
7/18/2017	Background	0.02 J1	0.86	94.3	< 0.004 U1	0.007 J1	0.112	0.569	2.533	0.34	0.137	0.0005 J1	< 0.002 U1	2.85	< 0.03 U1	0.02 J1

Table 1. Groundwater Data Summary: MW-001S

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.037	70.7	29.6	687	0.59	8.1	33.7	392
7/19/2016	Background	0.015	62.9	31.1	612	0.65	7.2	35.5	392
9/20/2016	Background	0.022	68.0	31.4	703	0.60	7.1	32.4	411
11/16/2016	Background	0.020	74.4	31.9	657	0.54	7.3	30.7	398
1/11/2017	Background	0.005 J1	65.0	32.0	470	0.57	7.4	30.7	392
3/8/2017	Background	0.030	71.5	30.7	300	0.59	7.1	30.5	384
5/9/2017	Background	0.031	72.6	31.3	567	0.63	7.2	33.3	402
7/18/2017	Background	0.028	69.2	30.4	536	0.58	7.3	33.6	406
10/4/2017	Detection	0.044	67.6	33.1	635	0.57	7.1	34.6	396
1/3/2018	Detection	--	--	39.9	686	--	7.6	--	--
6/6/2018	Detection	0.046	71.8	34.9	590	0.61	7.5	34.2	386
8/16/2018	Detection	--	--	37.3	658	--	7.3	--	--
11/14/2018	Detection	0.04 J1	71.9	38.1	535	0.63	7.5	32.3	410
2/13/2019	Detection	--	--	40.4	530	--	7.5	--	--
4/1/2019	Detection	--	--	38.5	892	--	7.4	--	--
5/23/2019	Detection	< 0.02 U1	73.7	33.7	593	0.55	7.9	36.3	388
7/23/2019	Detection	--	--	30.0	618	--	7.4	--	--
11/22/2019	Detection	< 0.02 U1	69.8	30.6	612	0.57	6.9	35.9	444
2/18/2020	Detection	--	--	--	1,386	--	7.1	--	442
5/19/2020	Detection	0.02 J1	72.0	34.7	440	0.55	7.0	37.1	350
11/11/2020	Detection	< 0.02 U1	67.8	33.3	691	0.66	7.0	34.1	402
5/26/2021	Detection	0.019 J1	66.2	35.0	793	0.66	7.8	31.6	430
8/5/2021	Detection	--	--	--	699	--	7.3	--	430
11/12/2021	Detection	0.018 J1	65.8	32.9	687	0.65	7.6	31.0	380
5/12/2022	Detection	< 0.009 U1	65.9	35.0	658	0.62	7.4	36.8	380
11/3/2022	Detection	0.017 J1	66.3	50.7	593	0.41	6.9	43.2	340
2/8/2023	Detection	--	--	32.6	623	--	7.2	34.4	--
5/23/2023	Detection	< 0.007 U1	60.9	33.0	381	0.69	7.7	36.3	360
11/2/2023	Detection	0.018 J1	59.0	30.2	699	0.72	6.8	34.9	370
12/20/2023	Detection	--	--	--	620	0.43	7.2	--	--
5/15/2024	Detection	0.017 J1	64.7	30.2	679	0.65	7.2	39.2	370
11/12/2024	Detection	0.017 J1	65	31.7	619	0.79	7.3	38.9	370

Table 1. Groundwater Data Summary: MW-001S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J1	0.43	18.5	< 0.01 U1	0.02 J1	0.3	0.171	0.0665	0.59	0.204	0.004	< 0.002 U1	0.65	1.1	< 0.02 U1
7/19/2016	Background	0.20	0.69	21.9	0.160	0.22	0.7	0.398	0.819	0.65	0.572	0.024	< 0.002 U1	0.80	1.1	0.168
9/20/2016	Background	0.02 J1	0.38	17.2	< 0.005 U1	0.005 J1	0.3	0.014	0.244	0.60	0.01 J1	0.002	< 0.002 U1	0.68	0.9	< 0.01 U1
11/16/2016	Background	0.02 J1	0.38	17.9	< 0.005 U1	0.007 J1	0.207	0.01 J1	0.296	0.54	0.022	0.010	< 0.002 U1	0.74	0.9	< 0.01 U1
1/11/2017	Background	0.04 J1	0.43	17.7	< 0.005 U1	0.02	0.720	0.052	0.934	0.57	0.076	0.008	< 0.002 U1	0.59	1.0	< 0.01 U1
3/8/2017	Background	0.04 J1	0.76	36.5	0.023	0.09	1.38	1.21	0.0407	0.59	1.26	0.010	< 0.002 U1	0.97	1.1	0.03 J1
5/9/2017	Background	0.05 J1	0.50	22.3	0.01 J1	0.22	0.552	0.164	0.0324	0.63	0.526	0.009	< 0.002 U1	1.64	1.1	< 0.01 U1
7/18/2017	Background	0.02 J1	0.39	17.3	< 0.004 U1	0.01 J1	0.255	0.02 J1	0.309	0.58	0.033	0.0007 J1	< 0.002 U1	0.64	1.2	< 0.01 U1

Table 1. Groundwater Data Summary: MW-002D

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	< 0.002 U1	75.6	24.2	586	0.19	7.9	42.1	341
7/20/2016	Background	0.010	65.8	24.2	524	0.21	7.5	44.2	339
9/21/2016	Background	0.013	66.7	22.8	551	0.20	7.3	39.6	338
11/17/2016	Background	0.014	73.9	22.2	516	0.19	7.1	35.4	327
1/11/2017	Background	< 0.002 U1	64.2	22.3	386	0.19	7.4	38.3	318
3/8/2017	Background	0.030	74.2	21.7	568	0.20	7.4	37.6	318
5/9/2017	Background	0.027	70.8	23.1	388	0.21	7.3	40.5	343
7/19/2017	Background	0.073	64.7	23.0	516	0.18	8.5	40.5	340
10/4/2017	Detection	0.041	67.7	22.4	428	0.20	7.2	42.3	332
6/7/2018	Detection	0.076	78.6	43.1	460	0.22	7.6	39.8	361
8/16/2018	Detection	0.038	--	93.0	830	--	7.3	--	--
11/12/2018	Detection	0.07 J1	72.4	51.3	464	0.20	7.4	36.1	348
2/13/2019	Detection	--	--	40.9	391	--	7.3	--	--
4/1/2019	Detection	--	--	69.4	608	--	7.5	--	--
5/22/2019	Detection	< 0.02 U1	98.5	135	803	0.18	7.3	33.3	531
7/24/2019	Detection	--	114	156	834	--	6.3	--	540
9/11/2019	Detection	--	103	110	705	--	7.2	--	443
11/14/2019	Detection	0.02 J1	76.9	56.5	726	0.18	7.3	38.9	356
2/18/2020	Detection	--	--	76.3	1,377	--	7.1	--	--
5/18/2020	Detection	< 0.02 U1	88.7	93.6	617	0.21	7.8	36.2	399
7/15/2020	Detection	--	--	96.2	781	0.20	7.3	--	411
11/11/2020	Detection	< 0.02 U1	92.2	92.2	725	0.20	7.2	35.1	395
2/3/2021	Detection	--	--	74.2	674	--	7.3	--	400
5/27/2021	Detection	0.012 J1	88.5	82.9	664	0.21	9.5	37.6	440
8/5/2021	Detection	--	--	94.2	734	--	7.2	--	420
11/11/2021	Detection	0.011 J1	96.3	135	943	0.20	6.8	33.3	470
2/15/2022	Detection	--	--	159	951	--	7.2	--	--
5/12/2022	Detection	< 0.009 U1	114	184	1,050	0.20	7.3	39.1	580
7/20/2022	Detection	--	--	175	1,050	--	7.1	--	650
11/2/2022	Detection	0.012 J1	105	196	989	0.21	7.0	39.0	630
2/8/2023	Detection	--	--	162	980	--	7.3	--	550
5/24/2023	Detection	0.010 J1	88.6	140	622	0.20	7.5	38.5	530
8/14/2023	Detection	--	--	130	960	--	7.2	--	520
11/2/2023	Detection	0.012 J1	78.8	121	988	0.21	6.8	34.4	480
5/16/2024	Detection	0.012 J1	100	194	1,110	0.22	6.9	38.0	600
7/16/2024	Detection	--	--	175	950	--	7.2	--	390
11/12/2024	Detection	0.012 J1	110	184	1,090	0.21	6.9	38.0	590

Table 1. Groundwater Data Summary: MW-002D

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J1	0.78	185	< 0.005 U1	0.12	0.2	0.473	0.0495	0.19	0.648	0.002	< 0.002 U1	2.11	< 0.03 U1	0.02 J1
7/20/2016	Background	0.06	0.82	195	0.006 J1	0.12	0.4	0.439	0.328	0.21	0.359	0.018	< 0.002 U1	2.16	< 0.03 U1	0.02 J1
9/21/2016	Background	0.02 J1	0.81	180	0.007 J1	0.07	0.3	0.425	0.451	0.20	0.247	0.002	< 0.002 U1	1.97	0.05 J1	0.03 J1
11/17/2016	Background	0.02 J1	0.61	172	< 0.005 U1	0.10	0.05 J1	0.212	2.243	0.19	0.021	0.007	< 0.002 U1	2.09	0.09 J1	0.01 J1
1/11/2017	Background	0.03 J1	0.62	157	< 0.005 U1	0.26	0.277	0.327	1.278	0.19	0.378	0.007	< 0.002 U1	1.80	0.08 J1	0.02 J1
3/8/2017	Background	0.03 J1	0.59	160	< 0.005 U1	0.09	0.562	0.252	1.295	0.20	0.045	0.008	< 0.002 U1	2.13	0.03 J1	0.02 J1
5/9/2017	Background	0.04 J1	0.65	159	< 0.004 U1	0.08	0.188	0.335	0.4554	0.21	0.144	0.011	< 0.002 U1	1.90	0.06 J1	0.02 J1
7/19/2017	Background	0.02 J1	0.62	169	< 0.004 U1	0.08	0.162	0.353	0.372	0.18	0.075	0.0006 J1	< 0.002 U1	1.89	0.04 J1	0.02 J1

Table 1. Groundwater Data Summary: MW-002I

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.019	74.0	28.6	581	0.30	7.9	42.9	332
7/20/2016	Background	0.009	67.5	29.7	542	0.33	7.1	45.7	363
9/21/2016	Background	0.025	66.8	28.0	513	0.31	7.5	41.1	330
11/17/2016	Background	0.013	73.9	25.8	495	0.36	7.3	36.9	326
1/11/2017	Background	< 0.002 U1	63.9	27.1	370	0.30	7.7	39.2	314
3/8/2017	Background	0.024	71.5	25.8	557	0.31	7.6	39.2	312
5/9/2017	Background	0.034	71.0	28.6	383	0.31	8.4	42.4	343
7/19/2017	Background	0.025	68.9	29.7	431	0.28	7.0	44.1	346
10/4/2017	Detection	0.030	72.5	29.8	553	0.28	7.2	45.5	343
1/4/2018	Detection	--	--	28.8	568	--	7.8	--	--
6/6/2018	Detection	0.052	72.7	31.8	802	0.32	7.6	43.2	356
8/16/2018	Detection	0.03	--	31.5	614	--	7.5	--	--
11/13/2018	Detection	0.05 J1	64.8	27.9	434	0.32	7.2	39	308
2/13/2019	Detection	< 0.02 U1	--	--	435	--	7.6	--	--
5/22/2019	Detection	< 0.02 U1	64.3	25.4	481	0.32	7.3	39.2	328
11/14/2019	Detection	< 0.02 U1	63.4	23.3	576	0.33	7.4	39.3	296
5/18/2020	Detection	< 0.02 U1	61.9	24.4	420	0.36	7.8	40.5	297
11/11/2020	Detection	< 0.02 U1	66.6	24.3	558	0.37	6.9	38.6	296
2/3/2021	Detection	--	--	--	491	--	7.4	--	--
5/27/2021	Detection	0.013 J1	70.9	29.2	510	0.35	9.7	40.8	350
8/4/2021	Detection	--	--	--	581	--	7.3	--	--
11/11/2021	Detection	0.013 J1	72.1	31.7	647	0.32	7.0	37.2	340
5/12/2022	Detection	< 0.009 U1	78.0	51.3	700	0.3	7.5	41.1	380
7/19/2022	Detection	--	--	58.8	669	--	6.9	--	--
11/2/2022	Detection	0.013 J1	79.8	57.2	641	0.31	7.1	40.3	390
2/7/2023	Detection	--	76.7 M1	55.0	671	--	7.3	--	380
5/24/2023	Detection	0.010 J1	70.6	57.7	438	0.30	7.6	39.2	370
8/15/2023	Detection	--	--	49.1	665	--	7.4	--	--
11/2/2023	Detection	0.012 J1	70.1	42.6	676	0.32	6.8	35.4	350
12/20/2023	Detection	--	--	40.5	693	--	8.3	--	--
5/15/2024	Detection	0.011 J1	79.5	62.6	718	0.32	7.0	41.2	390
11/12/2024	Detection	0.011 J1	78	64.0	683	0.35	7.2	40.9	410

Table 1. Groundwater Data Summary: MW-0021

Rockport - LF
Phase II Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.06	0.64	78.5	< 0.005 U1	0.03	0.2	0.606	0.398	0.30	0.208	0.005	< 0.002 U1	4.91	0.7	0.051
7/20/2016	Background	0.06	0.68	84.0	0.006 J1	0.05	0.6	0.760	0.962	0.33	0.454	0.021	< 0.002 U1	5.00	0.7	0.04 J1
9/21/2016	Background	0.07	0.55	67.1	< 0.005 U1	0.05	0.1	0.415	0.508	0.31	0.178	0.002	< 0.002 U1	4.21	0.6	0.04 J1
11/17/2016	Background	0.13	0.61	60.1	< 0.005 U1	0.07	0.143	0.260	0.425	0.36	0.231	0.006	< 0.002 U1	3.14	0.4	0.02 J1
1/11/2017	Background	0.10	0.65	59.4	< 0.005 U1	0.16	0.154	0.280	0.845	0.30	0.383	0.007	< 0.002 U1	2.07	0.2	0.03 J1
3/8/2017	Background	0.10	0.74	58.4	0.01 J1	0.22	1.01	0.581	0.435	0.31	0.588	0.005	< 0.002 U1	2.06	0.2	0.03 J1
5/9/2017	Background	0.15	0.90	59.3	0.022	0.09	0.829	1.28	0.491	0.31	1.39	0.007	< 0.002 U1	2.17	0.4	< 0.01 U1
7/19/2017	Background	0.11	0.76	62.9	0.020	0.05	0.567	0.995	0.536	0.28	1.19	< 0.0002 U1	< 0.002 U1	2.07	0.2	0.064

Table 1. Groundwater Data Summary: MW-002S

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	< 0.002 U1	59.4	21.5	423	0.26	6.4	26.0	298
7/20/2016	Background	0.015	51.6	21.8	465	0.29	7.7	27.6	265
9/21/2016	Background	0.014	57.4	23.8	440	0.26	7.6	26.2	301
11/17/2016	Background	0.018	62.4	21.8	459	0.26	7.3	24.1	316
1/11/2017	Background	0.004 J1	51.6	21.2	341	0.25	7.7	25.9	284
3/8/2017	Background	0.069	57.9	21.0	522	0.26	7.7	26.6	285
5/9/2017	Background	0.084	59.0	20.8	354	0.26	7.1	30.3	321
7/19/2017	Background	0.052	53.3	19.6	409	0.23	7.5	33.8	308
10/4/2017	Detection	0.045	60.7	21.2	509	0.25	7.2	30.0	323
6/6/2018	Detection	0.073	57.0	25.3	470	0.29	7.6	28.9	329
11/13/2018	Detection	0.06 J1	54.7	24.8	425	0.28	7.5	24.7	272
2/13/2019	Detection	--	--	26.5	451	--	7.8	--	--
4/1/2019	Detection	--	--	26.1	491	--	7.7	--	--
5/22/2019	Detection	< 0.02 U1	51.3	26.4	500	0.30	7.7	26.2	352
7/23/2019	Detection	--	--	26.8	486	0.30	7.5	--	339
9/11/2019	Detection	--	--	26.6	473	--	7.3	--	--
11/14/2019	Detection	0.03 J1	59.2	27.3	657	0.28	7.5	27.8	336
2/18/2020	Detection	--	--	--	1,070	--	7.4	--	--
5/18/2020	Detection	0.02 J1	53.7	28.9	462	0.34	7.4	24.9	344
7/15/2020	Detection	--	--	28.7	584	0.33	7.6	--	347
11/11/2020	Detection	0.03 J1	58.4	27.0	588	0.34	7.4	25.7	336
2/4/2021	Detection	--	--	--	562	0.36	7.6	--	--
5/27/2021	Detection	0.043 J1	59.8	24.8	500	0.35	9.5	30.8	370
8/4/2021	Detection	--	--	--	579	0.35	7.3	--	--
11/11/2021	Detection	0.028 J1	55.2 M1, P3	23.0	588	0.33	7.0	27.1	330
5/12/2022	Detection	< 0.009 U1	42.8 M1, P3	16.8	482	0.39	7.6	17.9	280
11/2/2022	Detection	0.021 J1	43.0	13.8	420	0.43	6.8	17.7	270
2/7/2023	Detection	--	--	--	435	0.45	7.6	--	--
5/24/2023	Detection	0.018 J1	41.0	12.6	271	0.43	7.5	17.4	250
8/15/2023	Detection	--	--	--	413	0.40	7.6	--	--
11/2/2023	Detection	0.021 J1	38.8	12.4	433	0.45	7.1	16.8	230
12/20/2023	Detection	--	--	--	491	0.39	8.2	--	--
11/12/2024	Detection	0.034 J1	56	12.1	422	0.45	7.7	23.0	300

Table 1. Groundwater Data Summary: MW-002S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	< 0.02 U1	0.97	16.0	< 0.01 U1	0.01 J1	0.4	0.177	< 1.2 U1	0.26	0.158	0.0004 J1	< 0.002 U1	2.03	0.3	< 0.02 U1
7/20/2016	Background	0.02 J1	1.09	14.0	< 0.005 U1	0.01 J1	0.6	0.090	0.66	0.29	0.105	0.018	< 0.002 U1	2.39	0.3	< 0.01 U1
9/21/2016	Background	0.04 J1	0.94	12.4	< 0.005 U1	0.02 J1	0.3	0.017	0.172	0.26	0.101	0.005	< 0.002 U1	2.07	0.2	< 0.01 U1
11/17/2016	Background	0.02 J1	0.94	12.4	< 0.005 U1	0.02	0.337	0.019	0.371	0.26	0.022	0.008	< 0.002 U1	1.91	0.3	< 0.01 U1
1/11/2017	Background	0.02 J1	0.92	11.0	< 0.005 U1	0.09	0.329	0.014	0.654	0.25	0.063	0.009	< 0.002 U1	2.14	0.4	0.074
3/8/2017	Background	0.02 J1	0.95	12.3	< 0.005 U1	0.009 J1	0.670	0.051	0.5205	0.26	0.042	0.0007 J1	< 0.002 U1	1.92	0.3	< 0.01 U1
5/9/2017	Background	0.04 J1	0.95	12.3	< 0.004 U1	0.01 J1	0.370	0.064	0.434	0.26	0.047	0.002	< 0.002 U1	1.75	0.2	< 0.01 U1
7/19/2017	Background	0.12	0.96	13.6	< 0.004 U1	0.03	0.410	0.121	0.6927	0.23	0.243	0.005	< 0.002 U1	1.81	0.3	0.03 J1

Table 1. Groundwater Data Summary: MW-006S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.012	46.1	8.44	435	0.73	7.9	18.8	294
7/18/2016	Background	0.014	46.3	8.35	401	0.79	7.5	18.3	290
9/20/2016	Background	0.012	44.4	6.04	430	0.73	7.4	10.9	266
11/16/2016	Background	0.028	50.8	7.04	741	0.69	8.1	14.3	279
1/10/2017	Background	0.006	47.8	7.03	360	0.65	7.9	14.0	287
3/8/2017	Background	0.032	53.2	3.32	300	0.25	7.9	6.9	296
5/8/2017	Background	0.051	50.3	8.68	441	0.69	7.6	17.5	305
7/18/2017	Background	0.078	47.0	4.88	292	0.57	7.7	9.6	274
10/3/2017	Detection	0.094	44.8	3.28	347	0.71	7.3	7.5	261
6/5/2018	Detection	0.09	45.2	2.38	330	0.89	7.5	3.8	225
8/15/2018	Detection	0.101	52.8	11.9	483	0.81	7.7	15.6	277
9/26/2018	Detection	0.08 J1	44.1	6.83	321	0.84	7.9	9.8	261
11/1/2018	Detection	0.04 J1	42.3	3.52	430	0.86	7.3	4.9	225
11/14/2018	Detection	0.04 J1	38.8	3.91	221	0.88	7.9	5.2	196
5/23/2019	Detection	0.02 J1	52.5	9.64	473	0.95	7.4	16.8	315
11/14/2019	Detection	< 0.02 U1	47.8	5.36	452	0.90	7.3	12.0	277
5/19/2020	Detection	< 0.02 U1	43.1	1.49	373	1.02	7.7	1.6	214
11/12/2020	Detection	< 0.02 U1	43.0	2.07	366	1.11	7.1	4.4	225
5/25/2021	Detection	0.017 J1	43.4	1.29	354	1.21	8.0	0.83	210
11/12/2021	Detection	0.015 J1	46.8 M1, P3	2.03	450	1.15	7.4	2.91	240
5/13/2022	Detection	< 0.009 U1	46.3 M1, P3	2.54	506	1.09	7.3	6.24	270
11/3/2022	Detection	0.016 J1	47.8	2.88	411	1.11	7.8	6.01	280
5/25/2023	Detection	0.015 J1	40.8	1.96	302	1.09	7.7	6.0	290
11/2/2023	Detection	0.018 J1	49.5	2.30	716	0.99	7.5	7.5	330
5/16/2024	Detection	0.020 J1	45.4	1.84	542	1.08	7.2	5.6	270
11/12/2024	Detection	0.016 J1	46	1.53	404	1.17	7.5	3.0	240

Table 1. Groundwater Data Summary: MW-006S

Rockport - LF
Phase II Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.02 J1	0.28	13.9	< 0.005 U1	0.006 J1	0.4	0.097	0.156	0.73	0.396	< 0.0002 U1	0.002 J1	5.99	0.4	< 0.01 U1
7/18/2016	Background	0.03 J1	0.26	13.6	0.005 J1	0.25	0.4	0.052	0.101	0.79	0.074	0.015	< 0.002 U1	3.28	0.3	0.01 J1
9/20/2016	Background	0.03 J1	0.26	13.6	< 0.005 U1	0.02	0.3	0.019	0.8651	0.73	0.034	0.004	< 0.002 U1	3.34	0.2	< 0.01 U1
11/16/2016	Background	0.03 J1	0.26	14.1	< 0.005 U1	0.02 J1	0.200	0.027	0.202	0.69	0.050	0.006	< 0.002 U1	2.80	0.3	< 0.01 U1
1/10/2017	Background	0.03 J1	0.28	14.8	< 0.005 U1	0.008 J1	0.599	0.045	0.5825	0.65	0.032	0.014	< 0.002 U1	2.93	0.4	0.01 J1
3/8/2017	Background	0.03 J1	0.26	15.8	< 0.005 U1	0.05	1.37	0.049	0.297	0.25	0.113	0.009	< 0.002 U1	3.29	0.7	< 0.01 U1
5/8/2017	Background	0.03 J1	0.28	15.4	< 0.004 U1	0.009 J1	0.583	0.061	0.120	0.69	0.083	0.011	< 0.002 U1	2.73	0.8	< 0.01 U1
7/18/2017	Background	0.02 J1	0.27	14.3	< 0.004 U1	0.04	0.291	0.026	0.954	0.57	0.056	< 0.0002 U1	< 0.002 U1	4.36	0.4	< 0.01 U1

**Table 1. Groundwater Data Summary: MW-008I
Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.017	72.0	21.7	598	0.35	7.2	87.5	370
7/19/2016	Background	0.016	67.9	22.0	580	0.34	7.2	86.3	358
9/21/2016	Background	0.017	67.4	21.5	455	0.29	7.4	79.2	376
11/17/2016	Background	0.028	77.5	21.3	968	0.29	7.6	77.5	387
1/10/2017	Background	0.006	79.5	20.9	420	0.25	7.6	80.0	371
3/6/2017	Background	0.083	74.7	20.7	80	0.28	7.4	80.3	391
5/9/2017	Background	0.045	71.9	21.2	507	0.28	7.2	81.9	376
7/18/2017	Background	0.026	72.2	20.9	485	0.25	7.3	83.4	379
10/4/2017	Detection	0.096	74.7	20.1	471	0.27	7.6	85.9	378
12/12/2017	Detection	--	--	19.3	390	0.29	7.9	87.1	--
6/4/2018	Detection	0.044	76.7	20.9	619	0.29	7.7	79	407
11/14/2018	Detection	0.06 J1	67.7	20.6	453	0.33	7.2	68.2	390
5/23/2019	Detection	0.03 J1	70.7	21.0	607	0.34	7.2	62.3	371
11/22/2019	Detection	0.02 J1	66.9	19.7	525	0.30	6.7	68.3	381
5/19/2020	Detection	0.02 J1	68.8	20.4	601	0.32	7.8	61.7	357
11/10/2020	Detection	< 0.02 U1	66.8	19.3	621	0.38	7.4	56.7	343
5/27/2021	Detection	0.020 J1	68.1	18.8	530	0.36	8.3	56.0	390
11/12/2021	Detection	0.020 J1	67.6	19.3	643	0.34	6.8	54.0	350
5/12/2022	Detection	0.009 J1	67.0	20	619	0.35	7.3	57.6	340
11/2/2022	Detection	0.022 J1	65.1	20.8	571	0.39	7.1	55.7	360
5/25/2023	Detection	0.019 J1	59.9	20.4	406	0.35	7.8	62.6	390
11/2/2023	Detection	0.022 J1	65.7	20.1	750	0.34	7.4	61.2	350
5/16/2024	Detection	0.021 J1	62.2	21.3	639	0.40	7.1	64.1	360
11/13/2024	Detection	0.024 J1	72	20.8	676	0.38	7.2	63.0	370

Table 1. Groundwater Data Summary: MW-008I

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.12	5.86	61.4	< 0.005 U1	0.04	0.1	0.800	0.538	0.35	0.083	0.006	< 0.002 U1	2.85	6.2	0.063
7/19/2016	Background	0.27	11.5	70.1	0.119	0.28	0.5	0.961	1.2515	0.34	0.242	0.007	< 0.002 U1	3.00	7.5	0.166
9/21/2016	Background	0.07	2.08	57.0	< 0.005 U1	0.02 J1	0.1	0.643	0.678	0.29	0.02 J1	0.008	< 0.002 U1	2.34	2.7	0.03 J1
11/17/2016	Background	0.10	1.39	58.4	< 0.005 U1	0.04	0.055	0.646	1.166	0.29	0.032	0.009	< 0.002 U1	2.47	3.0	0.03 J1
1/10/2017	Background	0.08	2.58	54.9	< 0.005 U1	0.02 J1	0.817	0.671	1.825	0.25	0.025	0.005	< 0.002 U1	2.31	2.3	0.04 J1
3/6/2017	Background	0.08	2.78	56.9	< 0.005 U1	0.04	0.511	0.656	1.015	0.28	0.032	0.010	< 0.002 U1	2.73	2.9	0.05 J1
5/9/2017	Background	0.08	2.09	57.8	< 0.004 U1	0.05	0.230	0.770	1.011	0.28	0.054	0.001	< 0.002 U1	2.29	4.5	0.03 J1
7/18/2017	Background	0.07	1.31	60.4	< 0.004 U1	0.02 J1	0.077	0.672	1.079	0.25	0.01 J1	< 0.0002 U1	< 0.002 U1	2.58	4.7	0.03 J1

Table 1. Groundwater Data Summary: MW-008S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.010	42.7	23.7	520	0.56	7.3	26.5	345
7/19/2016	Background	0.012	41.5	23.5	516	0.56	7.2	26.4	321
9/21/2016	Background	0.011	42.7	22.1	540	0.54	7.1	23.4	332
11/17/2016	Background	0.032	42.9	21.1	811	0.55	7.9	21.7	322
1/9/2017	Background	< 0.002 U1	45.8	20.8	450	0.47	7.6	22.1	300
3/7/2017	Background	0.043	44.8	21.4	260	0.52	7.6	21.7	320
5/9/2017	Background	0.028	42.9	22.8	444	0.52	7.4	21.8	319
7/18/2017	Background	0.022	44.4	22.7	410	0.47	7.4	22.3	319
10/4/2017	Detection	0.016	39.8	22.4	395	0.52	7.8	23.1	317
12/12/2017	Detection	--	--	22.5	460	0.56	7.7	24.9	--
6/5/2018	Detection	0.058	42.3	23.8	400	0.59	7.6	21.2	324
11/13/2018	Detection	0.04 J1	35.6	22.9	354	0.57	7.6	19.5	288
5/23/2019	Detection	< 0.02 U1	35.9	23.6	440	0.58	7.4	20.4	312
11/21/2019	Detection	< 0.02 U1	39.0	23.1	495	0.49	7.4	20.0	324
5/19/2020	Detection	< 0.02 U1	42.2	27.2	567	0.50	6.3	23.8	342
11/10/2020	Detection	< 0.02 U1	43.5	27.1	633	0.56	6.8	23.3	326
5/27/2021	Detection	0.014 J1	39.7	26.8	513	0.59	7.8	19.8	330
11/12/2021	Detection	0.015 J1	40.0	27.3	559	0.55	6.9	20.3	310
5/12/2022	Detection	< 0.009 U1	38.9	29.4	572	0.56	7.4	23.8	340
11/2/2022	Detection	0.015 J1	41.2	30.2	572	0.57	7.1	22.6	350
5/25/2023	Detection	0.012 J1	36.0	29.1	369	0.57	7.9	22.0	330
11/2/2023	Detection	0.015 J1	40.9	29.2	673	0.55	7.5	21.6	330
5/16/2024	Detection	0.014 J1	36.1	26.1	523	0.64	7.2	19.6	280
11/13/2024	Detection	0.014 J1	35	24.5	575	0.63	7.3	18.7	280

Table 1. Groundwater Data Summary: MW-008S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.02 J1	1.61	15.4	< 0.005 U1	0.07	0.3	0.400	0.204	0.56	0.207	0.004	< 0.002 U1	0.81	0.4	< 0.01 U1
7/19/2016	Background	0.30	1.78	13.1	0.232	0.31	0.6	0.453	0.577	0.56	0.364	0.025	< 0.002 U1	1.10	0.6	0.276
9/21/2016	Background	0.02 J1	1.33	12.2	< 0.005 U1	0.02 J1	0.4	0.125	1.291	0.54	0.066	0.001	< 0.002 U1	0.80	0.2	0.03 J1
11/17/2016	Background	0.03 J1	1.26	10.9	< 0.005 U1	0.05	0.156	0.113	0.490	0.55	0.065	0.002	< 0.002 U1	0.71	0.2	< 0.01 U1
1/9/2017	Background	0.02 J1	1.56	13.8	0.006 J1	0.01 J1	1.04	0.447	0.676	0.47	0.190	0.002	< 0.002 U1	0.77	0.2	0.01 J1
3/7/2017	Background	0.04 J1	1.53	14.5	0.009 J1	0.26	0.881	0.433	0.3161	0.52	0.278	0.006	< 0.002 U1	1.56	0.2	0.170
5/9/2017	Background	0.03 J1	2.09	16.9	0.01 J1	0.09	0.423	0.981	0.127	0.52	0.389	0.006	< 0.002 U1	0.75	0.3	< 0.01 U1
7/18/2017	Background	0.02 J1	1.19	10.9	< 0.004 U1	0.13	0.277	0.052	1.653	0.47	0.038	0.001	0.015	0.83	0.2	< 0.01 U1

Table 1. Groundwater Data Summary: MW-011S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.062	41.6	1.82	285	0.74	7.9	10.9	212
7/18/2016	Background	0.062	38.8	1.83	272	0.76	7.3	10.6	201
9/20/2016	Background	0.077	45.1	1.62	330	0.73	7.3	5.3	196
11/16/2016	Background	0.053	37.3	1.54	433	0.92	8.4	4.1	182
1/10/2017	Background	0.029	40.4	2.12	200	0.96	8.1	7.6	179
3/7/2017	Background	0.057	42.8	4.63	70	1.00	7.9	13.7	197
5/9/2017	Background	0.047	41.2	9.87	307	0.86	7.8	16.4	239
7/18/2017	Background	0.067	44.2	8.19	386	0.75	7.7	15.6	224
10/3/2017	Detection	0.090	43.7	3.68	267	0.89	7.2	9.3	200
12/13/2017	Detection	--	--	2.40	260	0.82	8.3	8.0	--
6/5/2018	Detection	0.076	55.8	6.98	360	0.62	7.2	21.7	276
11/14/2018	Detection	0.11	56.4	1.79	309	0.72	7.6	5.9	238
5/23/2019	Detection	0.08 J1	54.3	1.62	440	0.82	7.7	14.7	279
11/15/2019	Detection	0.052	47.6	1.48	533	0.77	7.8	2.7	216
5/20/2020	Detection	0.04 J1	55.8	2.68	435	0.58	7.4	13.5	246
11/11/2020	Detection	0.04 J1	52.4	1.52	302	0.83	7.4	2.9	211
5/25/2021	Detection	0.038 J1	53.9	2.28	413	0.66	7.7	10.7	240
11/12/2021	Detection	0.038 J1	54.1	2.46	0	0.53	7.2	7.68	250
5/13/2022	Detection	0.030 J1	47.9	2.70	244	0.51	7.9	7.99	230
11/3/2022	Detection	0.037 J1	52.6	2.29	318	0.50	7.6	3.78	230
5/25/2023	Detection	0.037 J1	49.9	2.50	211	0.56	8.2	3.8	240
11/2/2023	Detection	0.041 J1	56.7	1.72	494	0.58	7.5	5.0	250
5/16/2024	Detection	0.038 J1	48.5 M1	3.44	406	0.52	7.0	7.1	230
11/13/2024	Detection	0.037 J1	61 M1	2.25	431	0.46	7.3	3.7	260

Table 1. Groundwater Data Summary: MW-011S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.05 J1	0.47	10.4	< 0.005 U1	0.006 J1	0.4	0.113	0.422	0.74	0.046	< 0.0002 U1	< 0.002 U1	4.70	0.07 J1	< 0.01 U1
7/18/2016	Background	0.04 J1	0.53	9.79	< 0.005 U1	0.03	0.5	0.043	0.815	0.76	0.02 J1	0.024	< 0.002 U1	4.36	0.08 J1	0.01 J1
9/20/2016	Background	0.04 J1	0.42	11.3	< 0.005 U1	0.03	0.8	0.029	0.741	0.73	0.046	0.004	< 0.002 U1	3.37	0.1	0.01 J1
11/16/2016	Background	0.05 J1	0.45	7.91	< 0.005 U1	0.02	0.416	0.027	0.288	0.92	0.027	0.005	< 0.002 U1	4.71	0.07 J1	0.02 J1
1/10/2017	Background	0.04 J1	0.52	6.52	< 0.005 U1	0.01 J1	0.725	0.022	2.101	0.96	0.02 J1	0.003	< 0.002 U1	6.09	0.05 J1	0.01 J1
3/7/2017	Background	0.04 J1	0.52	7.09	< 0.005 U1	0.007 J1	1.25	0.027	0.1865	1.00	0.02 J1	0.013	0.002 J1	6.03	0.2	0.01 J1
5/9/2017	Background	0.04 J1	0.48	7.73	< 0.004 U1	0.03	0.567	0.030	0.1247	0.86	0.023	0.009	0.002 J1	4.86	0.2	0.01 J1
7/18/2017	Background	< 0.05 U1	0.50	8.16	< 0.02 U1	< 0.02 U1	0.568	0.02 J1	0.7935	0.75	0.06 J1	0.002	< 0.002 U1	4.69	0.3 J1	0.2 J1

Table 1. Groundwater Data Summary: MW-014S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.011	59.2	28.6	544	0.39	7.2	34.9	368
7/20/2016	Background	0.008	56.3	29.4	576	0.39	7.1	36.5	364
9/21/2016	Background	0.010	59.5	28.1	640	0.36	7.0	32.5	361
11/17/2016	Background	0.008	65.4	27.8	955	0.35	7.7	29.1	362
1/9/2017	Background	< 0.002 U1	65.7	27.2	530	0.33	7.5	30.7	344
3/7/2017	Background	0.031	63.4	26.8	80	0.36	7.4	29.9	354
5/9/2017	Background	0.017	59.8	29.4	441	0.37	7.0	32.3	376
7/18/2017	Background	0.030	65.6	29.6	496	0.33	7.3	33.1	377
10/4/2017	Detection	0.042	67.0	29.9	488	0.34	7.0	34.8	376
12/12/2017	Detection	--	--	30.0	490	0.34	7.6	35.5	--
6/5/2018	Detection	0.046	61.1	27.1	450	0.39	7.6	29.4	360
11/13/2018	Detection	0.04 J1	59.2	29	461	0.37	6.8	30.8	344
5/23/2019	Detection	< 0.02 U1	66.9	28.6	604	0.37	7.2	32.4	390
11/16/2019	Detection	< 0.02 U1	65.1	28.9	655	0.38	7.5	32.8	374
5/19/2020	Detection	< 0.02 U1	66.6	28.6	550	0.33	7.7	32.5	411
11/10/2020	Detection	< 0.02 U1	66.4	26.3	742	0.39	6.7	31.4	370
5/28/2021	Detection	0.012 J1	82.0	25.4	706	0.38	7.8	31.0	430
11/12/2021	Detection	0.012 J1	69.2	23.7	741	0.33	7.0	27.0	390
5/12/2022	Detection	< 0.009 U1	68.2	25.4	583	0.33	7.1	30.1	400
11/2/2022	Detection	0.010 J1	61.7	24.8	658	0.34	7.4	27.7	390
5/25/2023	Detection	0.010 J1	57.2 M1	25.0	412	0.33	7.5	28.6	370
11/2/2023	Detection	0.011 J1	60.9	24.8	776	0.33	7.2	28.7	360
5/16/2024	Detection	0.012 J1	63.3	24.7	700	0.36	6.9	31.4	390
11/12/2024	Detection	0.011 J1	70 M1	25.4	639	0.36	7.1	30.1	390

Table 1. Groundwater Data Summary: MW-014S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.06	2.33	29.7	0.02 J1	0.32	1.0	1.49	0.512	0.39	1.02	< 0.0002 U1	0.002 J1	12.7	1.4	0.01 J1
7/20/2016	Background	0.02 J1	1.54	31.0	0.008 J1	0.21	0.3	0.573	0.594	0.39	0.307	0.018	< 0.002 U1	1.51	1.4	< 0.01 U1
9/21/2016	Background	0.02 J1	1.29	27.8	0.005 J1	0.07	0.3	0.333	0.900	0.36	0.310	0.006	< 0.002 U1	1.43	1.2	< 0.01 U1
11/17/2016	Background	0.03 J1	0.75	26.3	< 0.005 U1	0.03	0.162	0.088	1.106	0.35	0.549	0.004	< 0.002 U1	1.26	1.2	0.02 J1
1/9/2017	Background	0.02 J1	0.91	27.0	< 0.005 U1	0.05	0.575	0.187	0.780	0.33	0.115	0.006	< 0.002 U1	1.62	1.1	0.054
3/7/2017	Background	0.02 J1	0.76	26.3	< 0.005 U1	0.01 J1	0.660	0.083	0.0525	0.36	0.061	0.005	< 0.002 U1	1.84	1.1	0.055
5/9/2017	Background	0.06	0.75	25.0	< 0.004 U1	0.08	0.301	0.065	0.0316	0.37	0.071	0.001	< 0.002 U1	1.35	1.2	0.01 J1
7/18/2017	Background	< 0.05 U1	0.70	27.0	< 0.02 U1	< 0.02 U1	0.258	0.03 J1	1.883	0.33	0.116	< 0.0002 U1	< 0.002 U1	1.67	1.3	0.07 J1

**Table 1. Groundwater Data Summary: MW-015I
Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.060	44.1	59.3	555	0.25	7.2	42.5	380
7/19/2016	Background	0.032	44.6	53.8	512	0.25	7.1	41.0	356
9/21/2016	Background	0.030	46.1	43.4	530	0.23	7.1	34.0	334
11/16/2016	Background	0.022	51.4	44.9	874	0.25	7.5	33.6	340
1/10/2017	Background	0.019	46.5	48.3	420	0.34	7.7	35.4	351
3/7/2017	Background	0.047	51.1	38.5	60	0.32	7.5	31.1	331
5/10/2017	Background	0.038	46.6	32.7	457	0.31	7.2	29.7	322
7/18/2017	Background	0.050	43.9	27.1	400	0.22	7.2	26.6	300
10/4/2017	Detection	0.080	44.6	23.7	368	0.23	7.3	27.3	287
12/12/2017	Detection	--	--	22.8	350	0.22	7.8	26.7	--
1/4/2018	Detection	0.04	--	--	474	--	7.8	--	--
6/6/2018	Detection	0.066	47.0	25.1	420	0.26	8.1	25.3	279
8/16/2018	Detection	--	--	--	527	--	7.4	--	--
11/13/2018	Detection	0.07 J1	39.9	23.7	412	0.25	7.6	25.3	248
5/23/2019	Detection	0.03 J1	47.8	18.0	414	0.26	7.3	20.9	260
11/15/2019	Detection	0.03 J1	45.2	16.9	495	0.27	7.4	17.6	248
5/19/2020	Detection	0.03 J1	49.2	19.0	435	0.25	7.5	17.8	253
11/10/2020	Detection	0.03 J1	44.2	12.8	381	0.47	7.5	11.7	213
2/2/2021	Detection	--	--	--	400	0.36	7.6	--	--
5/28/2021	Detection	0.028 J1	53.3	16.0	393	0.39	7.7	14.7	240
8/4/2021	Detection	--	--	--	400	0.38	7.4	--	--
11/11/2021	Detection	0.026 J1	44.4	14.0	402	0.47	8.0	11.3	220
5/12/2022	Detection	0.019 J1	44.2	19.8	444	0.35	7.5	16	250
11/2/2022	Detection	0.029 J1	43.8	16.4	327	0.39	7.3	12.2	230
5/23/2023	Detection	< 0.007 U1	43.2	17.1	244	0.38	7.9	13.5	230
11/2/2023	Detection	0.034 J1	46.8	15.9	457	0.43	7.3	12.9	230
5/14/2024	Detection	0.063	47.1	13.7	394	0.31	7.0	12.0	210
11/13/2024	Detection	0.032 J1	46	12.6	320	0.41	7.4	11.9	210

Table 1. Groundwater Data Summary: MW-015I

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.01 J1	25.2	118	< 0.005 U1	0.02 J1	0.2	1.24	0.863	0.25	0.026	0.005	< 0.002 U1	5.76	< 0.03 U1	0.04 J1
7/19/2016	Background	0.25	27.9	132	0.165	0.23	0.5	1.66	1.091	0.25	0.254	0.018	< 0.002 U1	6.74	0.2	0.273
9/21/2016	Background	0.01 J1	21.1	119	< 0.005 U1	0.009 J1	0.1	1.32	0.504	0.23	0.026	0.004	< 0.002 U1	5.75	< 0.03 U1	0.03 J1
11/16/2016	Background	0.04 J1	23.6	107	0.005 J1	0.06	0.132	1.03	1.747	0.25	0.213	0.004	< 0.002 U1	6.73	< 0.03 U1	0.04 J1
1/10/2017	Background	0.01 J1	20.2	91.2	< 0.005 U1	0.005 J1	0.350	1.00	0.869	0.34	0.01 J1	0.011	< 0.002 U1	7.63	< 0.03 U1	0.04 J1
3/7/2017	Background	0.02 J1	20.4	88.9	< 0.005 U1	0.03	0.700	0.903	0.865	0.32	0.065	0.006	< 0.002 U1	7.91	0.07 J1	0.112
5/10/2017	Background	0.02 J1	20.2	86.1	< 0.004 U1	0.03	0.134	1.02	0.189	0.31	0.090	0.002	< 0.002 U1	6.52	0.04 J1	0.03 J1
7/18/2017	Background	0.02 J1	23.6	94.8	< 0.004 U1	0.02	0.089	1.25	1.643	0.22	0.082	< 0.0002 U1	< 0.002 U1	5.58	< 0.03 U1	0.04 J1

Table 1. Groundwater Data Summary: MW-015S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.011	46.9	21.2	512	0.65	7.2	30.3	338
7/19/2016	Background	0.012	43.6	18.7	574	0.65	7.1	27.7	319
9/21/2016	Background	0.008	46.6	18.9	510	0.63	7.2	25.1	329
11/16/2016	Background	< 0.002 U1	52.3	18.3	904	0.50	7.7	23.2	338
1/11/2017	Background	< 0.002 U1	63.6	21.9	470	0.36	7.2	28.3	374
3/7/2017	Background	0.084	62.9	16.1	60	0.42	7.2	23.4	342
5/10/2017	Background	0.077	45.7	14.1	419	0.65	7.3	21.0	294
7/19/2017	Background	0.073	44.4	11.8	368	0.66	7.3	20.3	263
10/4/2017	Detection	0.095	48.3	13.3	393	0.62	7.4	23.2	300
6/5/2018	Detection	0.078	44.7	8.84	416	0.69	7.2	16.3	274
11/13/2018	Detection	0.04 J1	41.8	8.78	317	0.72	7.5	13.1	232
5/23/2019	Detection	< 0.02 U1	41.3	8.88	348	0.88	7.5	10.2	207
7/23/2019	Detection	--	--	--	362	0.87	5.7	--	--
9/11/2019	Detection	--	--	--	269	0.81	7.4	--	--
11/15/2019	Detection	< 0.02 U1	40.2	9.48	467	0.70	7.4	8.4	234
5/19/2020	Detection	< 0.02 U1	42.4	10.3	400	0.86	7.6	9.1	218
11/10/2020	Detection	< 0.02 U1	45.4	10.1	455	0.78	7.3	10.3	236
5/28/2021	Detection	0.014 J1	66.4	10.6	430	0.81	7.7	8.82	250
11/11/2021	Detection	0.012 J1	46.3	10.4	500	0.65	7.5	8.07	270
5/12/2022	Detection	< 0.009 U1	43.7	10.2	432	0.82	7.5	9.34	220
11/2/2022	Detection	0.014 J1	45.2	8.87	402	0.79	7.4	8.13	230
5/23/2023	Detection	< 0.007 U1	40.5	8.25	228	0.85	8.0	8.2	220
8/16/2023	Detection	--	--	--	375	--	7.5	--	--
11/2/2023	Detection	0.016 J1	40.5 M1	8.32	448	0.82	7.2	7.8	230
5/14/2024	Detection	0.039 J1	50.9	8.43	438	0.79	7.5	8.3	240
11/13/2024	Detection	0.018 J1	46	8.1	340	0.87	7.4	9.0	230

Table 1. Groundwater Data Summary: MW-015S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.04 J1	0.32	4.71	0.007 J1	0.14	0.2	3.03	0.4175	0.65	0.286	0.007	< 0.002 U1	2.52	0.4	0.03 J1
7/19/2016	Background	0.04 J1	0.24	5.85	< 0.005 U1	0.25	1.7	1.17	< 0.71 U1	0.65	0.101	0.022	0.002 J1	2.89	0.7	< 0.01 U1
9/21/2016	Background	0.02 J1	0.21	3.21	< 0.005 U1	0.05	0.5	1.09	0.418	0.63	0.098	0.005	< 0.002 U1	2.54	0.5	0.02 J1
11/16/2016	Background	0.04 J1	0.18	3.27	< 0.005 U1	0.05	0.058	0.794	1.249	0.50	0.037	0.005	< 0.002 U1	1.57	0.3	0.02 J1
1/11/2017	Background	0.04 J1	0.26	6.05	< 0.005 U1	0.06	0.493	1.75	0.189	0.36	0.039	0.008	< 0.002 U1	0.78	0.3	0.03 J1
3/7/2017	Background	0.03 J1	0.21	4.98	< 0.005 U1	0.04	0.934	1.26	0.0973	0.42	0.024	0.008	< 0.002 U1	1.17	0.5	0.04 J1
5/10/2017	Background	0.04 J1	0.21	3.54	0.005 J1	0.05	0.198	1.20	0.241	0.65	0.062	0.003	< 0.002 U1	2.08	0.5	0.02 J1
7/19/2017	Background	0.02 J1	0.23	3.11	< 0.004 U1	0.05	0.096	1.25	0.0916	0.66	0.083	0.0009 J1	< 0.002 U1	2.87	0.2	0.02 J1

Table 1. Groundwater Data Summary: MW-016D

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.033	84.3	68.7	519	0.20	6.8	36.4	350
7/19/2016	Background	0.013	68.7	69.6	582	0.22	7.3	37.4	321
9/20/2016	Background	0.012	70.5	67.6	538	0.22	7.3	33.4	342
11/17/2016	Background	0.014	77.9	63.6	613	0.17	7.3	33.2	356
1/11/2017	Background	0.004 J1	72.4	67.9	525	0.21	7.5	34.0	343
3/8/2017	Background	0.023	79.2	65.4	614	0.22	7.4	35.3	347
5/10/2017	Background	0.102	75.8	69.9	436	0.22	7.5	37.2	367
7/18/2017	Background	0.017	71.7	69.6	597	0.17	9.0	36.8	363
10/4/2017	Detection	0.059	80.4	81.5	516	0.22	7.6	40.0	383
1/4/2018	Detection	--	80.1	86.0	692	--	7.7	37.9	--
6/6/2018	Detection	0.033	90.2	108	690	0.22	7.3	38.6	434
8/16/2018	Detection	--	83.8	99.7	782	--	7.3	--	447
11/14/2018	Detection	0.07 J1	84.1	102	607	0.21	7.4	38.6	434
2/12/2019	Detection	--	--	109	510	--	7.4	--	439
4/1/2019	Detection	--	--	107	945	--	7.3	--	429
5/22/2019	Detection	0.03 J1	88.5	104	755	0.20	7.3	38.0	460
7/24/2019	Detection	--	95.6	106	731	--	7.0	--	457
9/11/2019	Detection	--	109	125	813	--	7.3	--	523
11/15/2019	Detection	0.03 J1	100	127	1,070	0.17	7.3	40.8	537
2/18/2020	Detection	--	--	133	1,869	--	7.2	38.9	579
5/19/2020	Detection	0.03 J1	108	135	799	0.17	7.7	40.1	558
7/15/2020	Detection	--	102	133	969	0.20	7.2	--	519
11/11/2020	Detection	0.04 J1	109	130	1,050	0.21	7.2	39.1	547
2/2/2021	Detection	--	106	117	953	--	7.4	--	573
5/28/2021	Detection	0.038 J1	122	110	886	0.23	9.6	40.6	580
8/5/2021	Detection	--	103	110	956	0.20	7.2	--	570
11/11/2021	Detection	0.038 J1	105	98.3	1,060	0.18	6.8	37.0	560
5/12/2022	Detection	0.026 J1	102	101	1,010	0.19	7.5	41.4	550
11/3/2022	Detection	0.035 J1	84.5	81.0	816	0.21	7.6	38.4	520
5/23/2023	Detection	0.031 J1	69.2	75.0	456	0.21	8.1	35.3	440
8/16/2023	Detection	--	--	--	811	--	7.3	--	--
11/2/2023	Detection	0.033 J1	62.2	63.3	826	0.23	7.2	31.7	430
5/14/2024	Detection	0.049 J1	82.2	96.4	851	0.20	7.4	33.7	450
11/12/2024	Detection	0.031 J1	66	75.7	762	0.26	7.3	33.5	440

Table 1. Groundwater Data Summary: MW-016D

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.02 J1	0.48	240	< 0.005 U1	0.08	0.3	0.617	0.0514	0.20	0.078	0.001	< 0.002 U1	2.06	0.04 J1	0.03 J1
7/19/2016	Background	0.02 J1	0.40	246	< 0.005 U1	0.08	0.4	0.547	0.294	0.22	0.040	0.013	< 0.002 U1	2.31	0.04 J1	0.069
9/20/2016	Background	0.02 J1	0.31	221	< 0.005 U1	0.02 J1	0.1	0.418	1.348	0.22	0.021	0.003	< 0.002 U1	1.96	< 0.03 U1	0.02 J1
11/17/2016	Background	0.02 J1	0.32	217	< 0.005 U1	0.05	1.21	0.452	0.909	0.17	0.066	0.006	< 0.002 U1	1.98	< 0.03 U1	0.02 J1
1/11/2017	Background	0.01 J1	0.34	210	< 0.005 U1	0.02 J1	0.112	0.354	1.716	0.21	0.008 J1	0.013	< 0.002 U1	1.99	< 0.03 U1	0.02 J1
3/8/2017	Background	0.02 J1	0.31	224	< 0.005 U1	0.01 J1	0.188	0.401	0.811	0.22	0.022	0.007	< 0.002 U1	2.27	0.05 J1	0.04 J1
5/10/2017	Background	0.03 J1	0.33	212	< 0.004 U1	0.07	0.151	0.466	0.151	0.22	0.070	0.008	< 0.002 U1	1.90	< 0.03 U1	0.02 J1
7/18/2017	Background	0.03 J1	0.39	247	< 0.004 U1	0.10	0.141	0.571	0.514	0.17	0.103	0.0006 J1	< 0.002 U1	2.03	< 0.03 U1	0.02 J1

**Table 1. Groundwater Data Summary: MW-016I
Rockport - LF
Phase I Constituents**

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.031	110	80.4	957	0.1 J1	7.7	38.7	539
7/20/2016	Background	0.027	93.9	86.8	870	0.15	7.6	42.2	532
9/21/2016	Background	0.026	95.9	90.2	867	0.1 J1	7.4	36.8	544
11/17/2016	Background	0.024	96.2	59.1	702	0.1 J1	7.1	33.0	508
1/11/2017	Background	0.015	89.3	44.1	674	0.1 J1	7.4	34.0	481
3/8/2017	Background	0.100	101	39.3	779	0.16	7.3	35.4	460
5/19/2017	Background	0.032	86.7	39.4	569	0.15	7.0	35.4	455
7/18/2017	Background	0.044	91.3	50.2	665	0.08 J1	7.2	36.1	465
10/4/2017	Detection	0.050	84.0	70.8	644	0.1 J1	7.5	40.4	495
1/4/2018	Detection	--	71.9	71.2	821	--	7.7	--	487
6/6/2018	Detection	0.046	82.9	58.6	720	0.17	7.4	38.7	480
8/16/2018	Detection	--	61.6	61.1	797	--	7.2	--	456
11/14/2018	Detection	0.139	53.7	47.8	545	0.17	7.3	32.5	408
2/12/2019	Detection	0.02 J1	--	--	476	--	7.4	--	--
5/22/2019	Detection	0.03 J1	56.0	45.5	641	0.17	7.4	33.2	405
11/15/2019	Detection	0.02 J1	41.0	31.2	659	0.14	7.4	25.2	343
5/19/2020	Detection	0.02 J1	51.9	31.3	481	0.14	7.8	25.8	350
11/10/2020	Detection	0.02 J1	44.5	19.6	567	0.20	6.8	21.4	273
5/28/2021	Detection	0.019 J1	50.4	16.5	460	0.18	7.5	18.5	270
11/11/2021	Detection	0.019 J1	50.0	16.6	538	0.15	6.9	17.6	280
5/12/2022	Detection	< 0.009 U1	61.8	25.6	618	0.15	7.5	24.2	330
11/3/2022	Detection	0.019 J1	51.9	19.6	505	0.16	7.6	18.3	300
5/23/2023	Detection	0.018 J1	53.3	29.6	341	0.14	7.8	20.8	330
11/2/2023	Detection	0.020 J1	48.9	19.3	582	0.16	7.1	15.1	300
5/15/2024	Detection	0.017 J1	44.5	21.1	509	0.18	7.2	14.6	270
11/13/2024	Detection	0.02 J1	44	21.5	489	0.18	7.0	13.9	260

**Table 1. Groundwater Data Summary: MW-0161
Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.02 J1	0.71	267	< 0.005 U1	0.06	0.1	0.602	0.592	0.1 J1	0.023	0.005	< 0.002 U1	1.02	0.2	0.085
7/20/2016	Background	0.01 J1	0.75	267	< 0.005 U1	0.03	0.2	0.627	1.576	0.15	0.025	0.005	< 0.002 U1	1.02	0.2	0.060
9/21/2016	Background	0.01 J1	0.75	262	< 0.005 U1	0.03	0.1	0.576	1.225	0.1 J1	0.023	0.006	< 0.002 U1	1.03	0.1	0.074
11/17/2016	Background	0.05	0.67	234	< 0.005 U1	0.05	0.082	0.546	0.587	0.1 J1	0.053	0.013	< 0.002 U1	0.93	0.2	0.069
1/11/2017	Background	0.01 J1	0.72	220	< 0.005 U1	0.04	0.085	0.514	2.632	0.1 J1	0.01 J1	0.010	< 0.002 U1	1.00	0.1	0.071
3/8/2017	Background	0.02 J1	0.68	221	< 0.005 U1	0.03	0.422	0.580	0.581	0.16	0.034	0.013	< 0.002 U1	1.17	0.2	0.075
5/19/2017	Background	0.06	0.70	206	< 0.004 U1	0.08	0.204	0.707	0.938	0.15	0.153	0.010	< 0.002 U1	0.91	0.4	0.075
7/18/2017	Background	0.02 J1	0.73	238	< 0.004 U1	0.03	0.118	0.599	0.787	0.08 J1	0.065	0.003	< 0.002 U1	1.07	0.2	0.070

Table 1. Groundwater Data Summary: MW-016S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.028	96.2	18.7	822	0.44	7.5	46.9	483
7/20/2016	Background	0.025	83.0	19.0	764	0.46	7.1	50.1	471
9/21/2016	Background	0.024	93.5	17.1	719	0.38	7.3	42.1	509
11/17/2016	Background	0.025	96.4	16.4	669	0.30	6.9	38.3	486
1/11/2017	Background	0.017	94.6	17.5	677	0.35	7.2	39.2	474
3/8/2017	Background	0.038	106	19.3	804	0.36	7.1	39.6	473
5/10/2017	Background	0.082	105	22.9	581	0.38	8.3	42.3	499
7/19/2017	Background	0.037	91.8	19.8	595	0.33	6.3	40.7	484
10/4/2017	Detection	0.061	108	19.3	647	0.41	7.3	45.0	503
1/4/2018	Detection	--	109	--	872	--	7.3	--	517
6/6/2018	Detection	0.109	108	17.3	770	0.42	7.2	40.8	520
8/16/2018	Detection	0.034	109	--	920	--	7.1	--	533
11/14/2018	Detection	0.107	104	16.2	720	0.39	7.0	40.3	548
2/12/2019	Detection	0.02 J1	--	--	570	--	7.1	--	517
5/22/2019	Detection	0.03 J1	99.2	18.0	774	0.38	7.1	34.5	493
11/15/2019	Detection	0.02 J1	92.2	20.7	961	0.32	7.0	35.2	497
5/19/2020	Detection	0.03 J1	104	26.7	675	0.34	7.5	34.9	470
7/15/2020	Detection	--	--	25.8	823	0.37	7.1	--	489
11/11/2020	Detection	0.02 J1	103	21.8	948	0.38	6.5	34.5	473
5/28/2021	Detection	0.021 J1	96.8	21.2	763	0.41	7.2	32.2	480
11/11/2021	Detection	0.019 J1	86.7	13.3	832	0.37	6.6	24.4	440
5/12/2022	Detection	< 0.009 U1	85.9	13.0	680	0.39	7.5	25.6	400
11/3/2022	Detection	0.018 J1	82.6	11.8	711	0.38	7.3	26.6	430
5/23/2023	Detection	0.019 J1	84.2	14.6	466	0.36	7.6	26.1	440
11/2/2023	Detection	0.020 J1	83.3	12.1	862	0.38	6.8	27.2	440
5/14/2024	Detection	0.047 J1	95.0	11.7	789	0.38	7.0	31.4	440
11/12/2024	Detection	0.028 J1	87	10.7	652	0.44	7.1	32.4	460

Table 1. Groundwater Data Summary: MW-016S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J1	0.37	32.3	< 0.005 U1	0.03	0.2	0.073	0.163	0.44	0.074	0.007	< 0.002 U1	1.15	0.6	0.01 J1
7/20/2016	Background	0.03 J1	0.37	29.9	< 0.005 U1	0.03	0.5	0.025	1.047	0.46	0.057	0.031	< 0.002 U1	1.21	0.6	< 0.01 U1
9/21/2016	Background	0.25	0.38	29.5	< 0.005 U1	0.10	0.3	0.070	0.0255	0.38	0.182	0.005	< 0.002 U1	1.11	0.8	< 0.01 U1
11/17/2016	Background	0.02 J1	0.34	25.3	< 0.005 U1	0.006 J1	1.03	0.028	0.2943	0.30	< 0.004 U1	0.018	< 0.002 U1	1.19	0.4	< 0.01 U1
1/11/2017	Background	0.02 J1	0.42	25.1	< 0.005 U1	0.008 J1	0.081	0.014	1.993	0.35	0.039	0.013	< 0.002 U1	1.21	0.4	0.02 J1
3/8/2017	Background	0.02 J1	0.31	25.7	< 0.005 U1	0.004 J1	0.463	0.012	0.282	0.36	0.006 J1	0.013	< 0.002 U1	1.32	0.4	0.02 J1
5/10/2017	Background	0.02 J1	0.39	29.8	< 0.004 U1	0.01 J1	0.196	0.063	0.145	0.38	0.027	0.008	< 0.002 U1	1.14	0.3	0.01 J1
7/19/2017	Background	0.02 J1	0.33	25.6	< 0.004 U1	0.04	0.101	0.01 J1	2.8533	0.33	0.01 J1	0.010	< 0.002 U1	0.98	0.4	0.01 J1

Table 1. Groundwater Data Summary: MW-0171

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.058	73.7	195	839	0.57	7.6	43.1	609
7/20/2016	Background	0.056	83.1	209	913	0.56	7.2	49.3	569
9/20/2016	Background	0.051	88.9	214	1,000	0.52	7.1	48.1	620
11/16/2016	Background	0.041	80.0	164	607	0.56	7.8	44.1	540
1/10/2017	Background	0.034	72.3	159	670	0.56	7.5	43.2	513
3/7/2017	Background	0.079	81.4	158	60	0.58	7.5	44.9	549
5/9/2017	Background	0.083	69.6	151	768	0.61	7.2	43.5	528
7/19/2017	Background	0.052	64.4	145	678	0.63	7.3	44.7	509
10/4/2017	Detection	0.061	63.0	115	786	0.66	7.4	46.6	486
12/13/2017	Detection	--	--	86.0	530	0.76	7.5	44.8	--
1/4/2018	Detection	--	--	110	848	0.65	7.8	--	471
6/5/2018	Detection	0.081	51.2	80.2	652	0.87	7.4	41.0	418
8/16/2018	Detection	--	--	61.1	728	0.98	7.5	--	376
9/26/2018	Detection	--	--	--	456	1.03	7.5	--	--
11/13/2018	Detection	0.07 J1	36.5	50.1	450	1.00	7.6	29.6	328
2/12/2019	Detection	--	--	--	391	1.05	7.7	--	--
4/1/2019	Detection	--	--	--	786	1.08	7.6	--	--
5/23/2019	Detection	0.04 J1	45.1	60.2	570	1.07	7.5	32.8	352
7/23/2019	Detection	--	--	--	488	1.06	6.7	--	--
9/12/2019	Detection	--	--	--	363	1.08	7.6	--	--
11/15/2019	Detection	0.04 J1	43.9	41.2	654	0.95	7.4	23.2	309
5/19/2020	Detection	0.04 J1	40.3	32.8	487	1.07	7.9	20.7	273
7/15/2020	Detection	--	--	--	521	--	7.3	--	--
11/10/2020	Detection	0.04 J1	38.1	25.5	437	1.16	8.4	16.8	239
5/27/2021	Detection	0.043 J1	41.0	30.0	389	1.07	7.8	15.5	280
8/5/2021	Detection	0.038 J1	39.4	31.7	431	1.06	7.5	17	260
11/11/2021	Detection	0.039 J1	46.4	40.8	500	0.99	7.8	25.3	270
5/13/2022	Detection	0.030 J1	40.2	36.6	495	1.04	7.9	20.5	260
11/2/2022	Detection	0.037 J1	39.5	33.4	442	0.99	7.8	19.1	260
5/23/2023	Detection	< 0.007 U1	37.5	29.5	267	0.98	8.2	17.2	250
11/2/2023	Detection	0.045 J1	38.6	25.4	486	0.94	7.0	15.9	240
5/14/2024	Detection	0.055	45.1	22.7	0	0.85	7.0	16.8	220
11/13/2024	Detection	0.046 J1	44	21.0	352	0.88	7.6	14.0	240

Table 1. Groundwater Data Summary: MW-0171

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.07	7.14	168	0.020	0.12	0.6	1.24	1.925	0.57	1.19	< 0.0002 U1	0.003 J1	3.60	0.1	0.03 J1
7/20/2016	Background	0.05 J1	7.41	190	0.006 J1	0.13	2.1	0.778	1.167	0.56	0.284	0.004	< 0.002 U1	3.66	0.05 J1	0.02 J1
9/20/2016	Background	0.04 J1	6.45	198	< 0.005 U1	0.04	0.1	0.472	1.587	0.52	0.133	0.005	< 0.002 U1	3.08	0.05 J1	0.02 J1
11/16/2016	Background	0.03 J1	3.38	149	< 0.005 U1	0.04	0.059	0.370	0.762	0.56	0.049	0.006	< 0.002 U1	3.37	< 0.03 U1	0.056
1/10/2017	Background	0.02 J1	3.94	148	< 0.005 U1	0.008 J1	0.254	0.391	1.510	0.56	0.02 J1	0.009	< 0.002 U1	3.20	< 0.03 U1	0.02 J1
3/7/2017	Background	0.02 J1	4.61	159	< 0.005 U1	0.007 J1	0.776	0.406	1.023	0.58	0.026	0.008	< 0.002 U1	3.62	0.05 J1	0.02 J1
5/9/2017	Background	0.02 J1	3.61	133	< 0.004 U1	0.03	0.196	0.394	1.007	0.61	0.115	0.005	< 0.002 U1	3.26	0.03 J1	0.01 J1
7/19/2017	Background	0.02 J1	3.76	140	< 0.004 U1	0.02 J1	0.127	0.372	0.8141	0.63	0.02 J1	< 0.0002 U1	< 0.002 U1	3.42	< 0.03 U1	0.05 J1

Table 1. Groundwater Data Summary: MW-017S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.015	36.9	13.9	350	0.85	7.8	14.3	272
7/20/2016	Background	0.016	34.8	15.4	373	0.86	7.3	14.8	235
9/20/2016	Background	0.016	34.8	12.3	344	0.73	7.7	10.9	233
11/16/2016	Background	0.017	35.9	11.4	1,460	0.70	7.7	10.5	232
1/10/2017	Background	0.006	32.3	11.0	310	0.48	7.6	10.7	262
3/7/2017	Background	0.058	40.0	10.7	60	0.46	7.5	12.0	251
5/9/2017	Background	0.041	35.5	10.4	357	0.58	7.3	13.1	250
7/19/2017	Background	0.020	34.4	10.8	287	0.82	7.5	10.2	201
10/4/2017	Detection	0.033	34.1	10.5	351	0.89	7.4	10.7	214
6/5/2018	Detection	0.045	32.4	10.8	319	0.98	7.4	9.5	214
11/13/2018	Detection	0.05 J1	33.1	11.5	280	0.91	7.5	8.4	196
5/23/2019	Detection	0.03 J1	32.7	12.0	322	1.08	7.6	7.7	217
11/15/2019	Detection	0.02 J1	28.7	12.6	396	0.96	7.6	6.2	207
5/19/2020	Detection	0.02 J1	32.8	12.7	358	0.95	7.8	6.5	200
7/14/2020	Detection	--	--	--	385	--	6.8	--	--
11/10/2020	Detection	0.02 J1	33.9	12.9	403	0.90	7.5	8.2	211
5/27/2021	Detection	0.025 J1	35.9	11.0	389	0.95	7.6	5.92	210
11/11/2021	Detection	0.023 J1	35.2 M1, P3	9.41	420	0.81	7.7	4.62	230
5/13/2022	Detection	0.013 J1	34.4	10.2	404	0.82	7.9	5.24	230
11/2/2022	Detection	0.022 J1	33.5	13.5	373	0.81	7.6	5.22	210
5/23/2023	Detection	< 0.007 U1	34.5	12.8	240	0.78	8.1	5.9	230
11/2/2023	Detection	0.025 J1	37.7	19.9	476	0.78	7.0	7.9	240
12/20/2023	Detection	--	--	19.8	480	--	7.2	--	--
5/14/2024	Detection	0.038 J1	44.3	18.7	471	0.69	7.2	8.6	260
7/16/2024	Detection	--	42.8	19.6	390	--	7.5	--	--
11/13/2024	Detection	0.025 J1	44	16.2	385	0.84	7.4	7.0	250

Table 1. Groundwater Data Summary: MW-017S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.01 J1	0.24	2.12	< 0.005 U1	0.02	0.5	0.047	1.036	0.85	0.024	< 0.0002 U1	< 0.002 U1	3.98	0.07 J1	0.01 J1
7/20/2016	Background	0.03 J1	0.26	2.74	< 0.005 U1	0.08	0.2	0.105	0.0439	0.86	0.098	0.020	0.002 J1	4.20	0.06 J1	0.01 J1
9/20/2016	Background	0.02 J1	0.22	2.24	< 0.005 U1	0.01 J1	0.1	0.034	0.0759	0.73	0.025	0.003	< 0.002 U1	4.08	0.08 J1	0.01 J1
11/16/2016	Background	0.03 J1	0.20	2.40	< 0.005 U1	0.02	0.066	0.029	1.594	0.70	0.020	0.004	< 0.002 U1	3.39	0.1	0.053
1/10/2017	Background	0.03 J1	0.21	3.45	< 0.005 U1	0.02 J1	0.489	0.040	0.17	0.48	0.02 J1	0.003	< 0.002 U1	0.44	0.2	0.02 J1
3/7/2017	Background	0.04 J1	0.20	3.94	< 0.005 U1	0.09	0.776	0.076	0.47	0.46	0.079	0.008	0.002 J1	0.70	0.1	0.02 J1
5/9/2017	Background	0.04 J1	0.22	4.37	< 0.004 U1	0.02 J1	0.233	0.138	0.433	0.58	0.108	0.003	< 0.002 U1	1.14	0.1	< 0.01 U1
7/19/2017	Background	0.02 J1	0.22	2.25	< 0.004 U1	0.06	0.124	0.053	1.748	0.82	0.038	< 0.0002 U1	< 0.002 U1	4.38	0.08 J1	0.03 J1

Table 1. Groundwater Data Summary: MW-021D

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.022	74.2	19.2	591	0.36	8.1	39.2	328
7/19/2016	Background	0.015	60.6	19.6	544	0.38	7.8	41.0	299
9/21/2016	Background	0.015	70.4	18.9	478	0.36	7.7	35.5	315
11/16/2016	Background	0.013	74.7	19.1	585	0.33	7.5	32.0	346
1/11/2017	Background	0.004 J1	67.3	19.4	441	0.36	7.2	34.4	332
3/8/2017	Background	0.024	76.2	18.9	600	0.33	7.6	35.1	304
5/9/2017	Background	0.062	71.5	19.9	493	0.35	7.4	37.1	339
7/19/2017	Background	0.015	70.9	19.5	531	0.30	8.5	36.5	332
10/4/2017	Detection	0.092	67.8	18.5	449	0.32	7.5	37.4	339
1/11/2018	Detection	0.088	--	--	564	--	7.0	--	--
6/6/2018	Detection	0.03	70.7	19.9	470	0.40	7.7	38.4	347
11/13/2018	Detection	0.04 J1	62.1	18.8	451	0.34	7.7	35.2	314
5/22/2019	Detection	< 0.02 U1	69.3	19.1	511	0.36	7.5	36.8	348
11/14/2019	Detection	< 0.02 U1	69.4	19.2	670	0.32	7.4	38.6	323
5/19/2020	Detection	0.02 J1	69.2	19.9	449	0.26	7.6	33.3	328
11/11/2020	Detection	< 0.02 U1	70.9	19.5	599	0.38	7.0	37.1	318
5/27/2021	Detection	0.014 J1	69.8	19.8	538	0.40	9.7	36.4	330
8/4/2021	Detection	--	--	--	567	--	7.5	--	--
11/11/2021	Detection	0.014 J1	69.7	19.5	555	0.38	7.8	34.2	330
5/12/2022	Detection	< 0.009 U1	72.1	21.0	593	0.38	7.6	40.0	330
7/20/2022	Detection	--	--	19.9	604	--	7.5	--	--
11/2/2022	Detection	0.013 J1	67.8	20.5	0	0.40	6.8	37.4	340
2/7/2023	Detection	--	--	--	575	--	7.6	--	--
5/24/2023	Detection	0.012 J1	61.3	22.9	353	0.38	8.2	39.1	360 S7
8/16/2023	Detection	--	--	21.6	596	--	7.5	--	--
11/2/2023	Detection	0.014 J1	68.5	21.2	632	0.37	7.1	36.9	330
12/20/2023	Detection	--	--	21.2	658	--	8.9	--	--
5/15/2024	Detection	0.014 J1	67.3	19.9	620	0.37	7.3	36.5	330
11/12/2024	Detection	0.015 J1	68	20.8	476	0.40	7.6	37.0	350

Table 1. Groundwater Data Summary: MW-021D

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.08	1.07	241	< 0.005 U1	0.02	0.2	0.216	0.567	0.36	0.107	0.002	< 0.002 U1	6.31	0.2	0.03 J1
7/19/2016	Background	0.08	1.06	240	< 0.005 U1	0.03	0.3	0.210	1.428	0.38	0.075	0.025	< 0.002 U1	6.66	0.2	0.02 J1
9/21/2016	Background	0.06	0.95	226	< 0.005 U1	0.02 J1	0.1	0.195	0.834	0.36	0.066	0.005	< 0.002 U1	6.13	0.3	0.03 J1
11/16/2016	Background	0.06	0.86	206	< 0.005 U1	0.03	0.05 J1	0.171	1.078	0.33	0.056	0.007	< 0.002 U1	5.33	0.3	0.02 J1
1/11/2017	Background	0.07	0.99	220	0.01 J1	0.02	0.124	0.202	1.144	0.36	0.091	0.009	< 0.002 U1	6.09	0.2	0.04 J1
3/8/2017	Background	0.07	0.92	220	< 0.005 U1	0.02	0.433	0.182	0.938	0.33	0.092	0.005	< 0.002 U1	5.68	0.5	0.02 J1
5/9/2017	Background	0.08	0.97	216	< 0.004 U1	0.04	0.165	0.208	0.4495	0.35	0.118	0.013	< 0.002 U1	5.07	0.6	0.02 J1
7/19/2017	Background	0.12	1.04	226	< 0.004 U1	0.02	0.110	0.203	0.856	0.30	0.089	0.0005 J1	< 0.002 U1	5.29	0.5	0.03 J1

**Table 1. Groundwater Data Summary: MW-0211
Rockport - LF
Phase I Constituents**

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.007	69.0	21.1	548	0.33	8.0	46.2	331
7/19/2016	Background	0.012	64.7	21.7	500	0.36	7.6	47.9	334
9/21/2016	Background	0.011	65.1	20.4	488	0.34	7.6	43.2	305
11/16/2016	Background	0.012	68.4	20.0	432	0.34	7.3	40.4	317
1/11/2017	Background	< 0.002 U1	59.5	19.9	397	0.30	7.4	41.0	292
3/8/2017	Background	0.028	66.5	19.6	520	0.32	7.5	39.6	275
5/9/2017	Background	0.027	62.9	21.0	361	0.34	8.6	42.4	306
7/19/2017	Background	0.080	60.1	20.4	422	0.30	7.4	43.6	322
10/4/2017	Detection	0.029	63.9	20.5	399	0.31	7.4	45.7	306
6/6/2018	Detection	0.034	66.5	20.6	430	0.38	7.5	44.6	317
11/13/2018	Detection	0.08 J1	61.5	20.2	402	0.36	7.7	43.4	294
5/21/2019	Detection	< 0.02 U1	62.4	18.1	403	0.36	7.3	36.0	278
5/22/2019	Detection	--	--	--	438	--	7.5	--	--
11/14/2019	Detection	< 0.02 U1	56.5	17.5	526	0.38	7.5	35.5	262
5/19/2020	Detection	< 0.02 U1	58.5	19.3	386	0.35	7.4	38.8	283
11/11/2020	Detection	< 0.02 U1	58.6	18.0	518	0.45	7.0	36.4	266
2/3/2021	Detection	--	--	--	452	0.46	7.5	--	--
5/27/2021	Detection	0.011 J1	57.1	17.9	413	0.48	9.7	35.4	290
8/4/2021	Detection	--	--	--	469	0.43	7.4	--	--
11/11/2021	Detection	0.011 J1	57.2	18.2	500	0.40	7.7	35.8	280
5/12/2022	Detection	< 0.009 U1	55.2	19.1	491	0.40	7.6	38.5	280
11/3/2022	Detection	0.013 J1	55.1	19.7	390	0.40	7.4	38.0	280
5/24/2023	Detection	0.011 J1	54.8	21.0	307	0.40	8.0	41.9	300
11/2/2023	Detection	0.014 J1	59.6 M1	20.2	541	0.40	7.0	41.0	290
5/15/2024	Detection	0.011 J1	58.5	20.8	538	0.41	7.0	45.2	320
11/12/2024	Detection	0.012 J1	59	20.9	435	0.44	7.6	44.5	300

Table 1. Groundwater Data Summary: MW-0211

Rockport - LF
Phase II Constituents

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.02 J1	1.55	127	< 0.005 U1	0.02	0.1	0.514	0.349	0.33	0.02 J1	< 0.0002 U1	< 0.002 U1	4.92	< 0.03 U1	0.03 J1
7/19/2016	Background	0.02 J1	1.67	136	< 0.005 U1	0.02	0.2	0.558	1.406	0.36	0.021	0.019	< 0.002 U1	5.25	0.05 J1	0.03 J1
9/21/2016	Background	0.02 J1	1.55	121	< 0.005 U1	0.02	0.1	0.422	0.981	0.34	0.046	0.004	< 0.002 U1	4.46	0.03 J1	0.02 J1
11/16/2016	Background	0.02 J1	1.41	126	< 0.005 U1	0.04	0.386	0.524	0.6556	0.34	0.035	0.006	< 0.002 U1	4.40	0.09 J1	0.02 J1
1/11/2017	Background	0.02 J1	1.39	126	0.01 J1	0.02 J1	1.04	0.437	2.733	0.30	< 0.004 U1	0.005	< 0.002 U1	4.63	0.07 J1	0.04 J1
3/8/2017	Background	0.03 J1	1.08	123	< 0.005 U1	0.01 J1	0.349	0.437	0.882	0.32	0.01 J1	0.007	< 0.002 U1	4.31	0.07 J1	0.02 J1
5/9/2017	Background	0.05	1.20	116	< 0.004 U1	0.01 J1	0.125	0.412	0.591	0.34	0.022	0.008	< 0.002 U1	4.06	0.05 J1	0.03 J1
7/19/2017	Background	0.03 J1	1.38	123	< 0.004 U1	0.01 J1	0.143	0.517	1.225	0.30	0.033	0.004	< 0.002 U1	4.18	0.05 J1	0.03 J1

Table 1. Groundwater Data Summary: MW-021S

Geosyntec Consultants, Inc.

**Rockport - LF
Phase I Constituents**

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Conductivity	Fluoride	pH	Sulfate	Total Dissolved Solids
		mg/L	mg/L	mg/L	µS/cm	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.002 J1	55.1	15.0	387	0.61	6.6	21.2	275
7/19/2016	Background	0.011	52.8	15.1	450	0.64	7.5	21.2	292
9/21/2016	Background	0.007	52.0	14.7	454	0.62	7.6	17.4	285
11/16/2016	Background	0.015	60.0	14.7	501	0.63	7.5	14.9	294
1/11/2017	Background	0.002 J1	54.4	14.4	410	0.54	7.3	15.9	287
3/8/2017	Background	0.018	59.0	14.8	540	0.58	7.6	16.5	298
5/9/2017	Background	0.033	56.0	15.7	344	0.60	8.9	17.6	296
7/19/2017	Background	0.034	55.9	15.9	398	0.54	7.2	18.8	304
10/4/2017	Detection	0.027	59.8	17.7	402	0.60	7.5	20.1	300
12/12/2017	Detection	--	--	18.0	390	0.6	8.0	21.1	--
6/6/2018	Detection	0.039	52.8	17.5	400	0.66	7.8	18.7	283
11/14/2018	Detection	0.06 J1	55.0	17.9	380	0.66	7.3	17	278
2/12/2019	Detection	< 0.02 U1	--	17.9	318	--	7.7	--	--
4/1/2019	Detection	--	--	17.5	404	--	7.8	--	--
5/21/2019	Detection	< 0.02 U1	52.5	16.0	424	0.65	7.6	14.1	258
11/14/2019	Detection	< 0.02 U1	50.4	17.4	530	0.73	7.5	15.8	241
2/18/2020	Detection	--	--	--	856	0.79	7.5	--	--
5/19/2020	Detection	< 0.02 U1	49.1	18.0	347	0.76	8.1	15.1	238
7/16/2020	Detection	--	--	16.1	416	0.77	7.9	--	228
11/11/2020	Detection	< 0.02 U1	50.9	18.1	499	0.83	7.6	16.4	259
2/3/2021	Detection	--	--	--	529	0.85	7.7	--	--
5/28/2021	Detection	0.011 J1	62.6	19.1	450	0.81	10.3	18.4	300
8/4/2021	Detection	--	--	--	519	0.78	7.5	--	--
11/11/2021	Detection	0.012 J1	57.1	19.3	585	0.74	7.8	20.0	320
5/12/2022	Detection	< 0.009 U1	55.6	19.5	545	0.67	7.6	23.1	320
11/2/2022	Detection	0.013 J1	54.9	20.2	500	0.77	7.2	23.6	330
2/7/2023	Detection	--	--	--	554	--	7.6	23.6	--
5/24/2023	Detection	0.011 J1	46.8	19.6	330	0.69	8.2	26.4	330
8/16/2023	Detection	--	--	--	545	--	7.6	26.8	--
11/2/2023	Detection	0.013 J1	50.3	19.5	589	0.68	7.1	23.5	320
5/15/2024	Detection	0.012 J1	55.6	20.0	602	0.67	7.1	27.7	340
11/12/2024	Detection	0.014 J1	55	20.1	472	0.72	7.7	27.9	340

Table 1. Groundwater Data Summary: MW-021S

**Rockport - LF
Phase II Constituents**

Collection Date	Monitoring Program	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Combined Radium	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J1	0.53	18.5	< 0.005 U1	0.02	0.4	0.104	0.1599	0.61	0.095	0.003	< 0.002 U1	1.78	0.7	0.01 J1
7/19/2016	Background	0.02 J1	0.47	19.6	< 0.005 U1	0.02 J1	0.7	0.033	0.5728	0.64	0.042	0.013	< 0.002 U1	1.85	0.5	0.01 J1
9/21/2016	Background	0.02 J1	0.46	19.4	< 0.005 U1	0.006 J1	0.3	0.030	0.452	0.62	0.025	0.003	< 0.002 U1	1.74	0.2	< 0.01 U1
11/16/2016	Background	0.02 J1	0.43	19.1	< 0.005 U1	0.02	0.292	0.023	0.484	0.63	0.023	0.009	< 0.002 U1	1.63	0.2	< 0.01 U1
1/11/2017	Background	0.03 J1	0.47	19.3	0.006 J1	0.01 J1	0.401	0.022	2.067	0.54	0.024	0.007	< 0.002 U1	1.74	0.1	0.058
3/8/2017	Background	0.03 J1	0.49	21.9	< 0.005 U1	0.01 J1	0.536	0.053	0.0305	0.58	0.095	0.002	< 0.002 U1	2.00	0.1	< 0.01 U1
5/9/2017	Background	0.04 J1	0.47	17.7	< 0.004 U1	0.01 J1	0.300	0.027	0.2351	0.60	0.023	0.005	< 0.002 U1	1.62	0.1	< 0.01 U1
7/19/2017	Background	0.05 J1	0.42	21.9	< 0.004 U1	0.01 J1	0.272	0.006 J1	1.098	0.54	0.024	< 0.0002 U1	< 0.002 U1	2.31	0.2	< 0.01 U1

**Table 1. Groundwater Data Summary
Rockport - Landfill**

Geosyntec Consultants, Inc.

Notes:

Combined radium values were calculated from the sum of the reported radium-226 and radium-228 results.

Radium data quality flags were not included. Reported negative radium-226 or radium-228 results were replaced with zero.

--: Not analyzed

<: Non-detect value. Analytes which were not detected are shown as less than the method detection limit (MDL) followed by a 'U1' flag.

In analytical data prior to 5/18/2021, U1 flags were reported as U in the analytical report.

J1: Concentration estimated. Analyte was detected between the method detection limit and the reporting limit.

In analytical data prior to 5/18/2021, J1 flags were reported as J in the analytical report.

M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.

mg/L: milligrams per liter

P3: The precision on the matrix spike duplicate (MSD) was above acceptance limits.

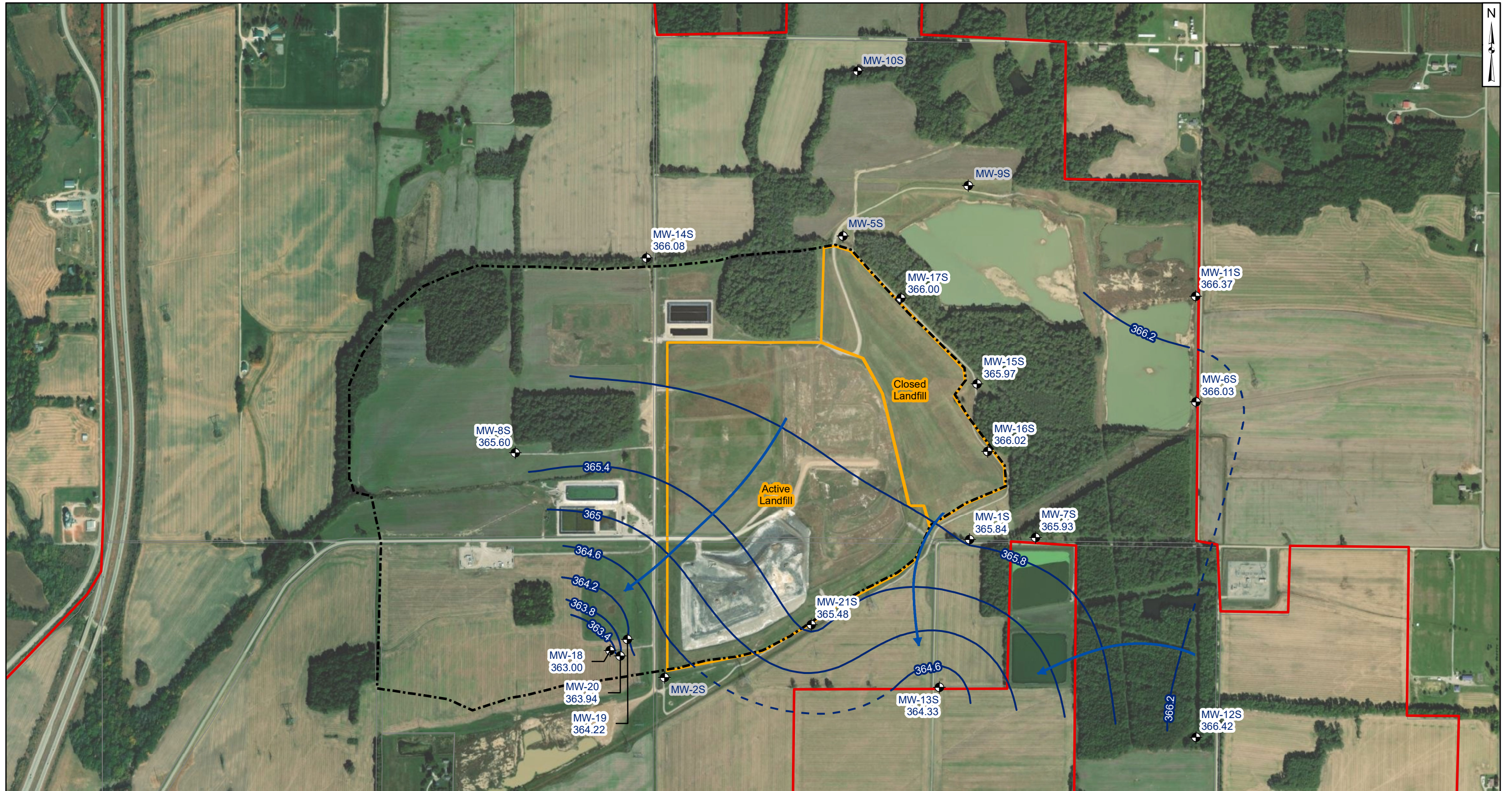
pCi/L: picocuries per liter

S7: Sample did not achieve constant weight.

SU: standard unit

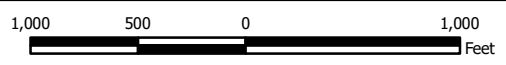
µg/L: micrograms per liter

Groundwater Flow Direction Maps



- Legend**
- ◆ Groundwater Monitoring Well
 - ➔ Approximate Groundwater Flow Direction
 - Groundwater Elevation Contour
 - - - Groundwater Elevation Contour (Inferred)
 - ⬜ 1984 Landfill Permit Boundary (Area 1)
 - ▭ Property Boundary
 - ▭ Landfill Area 1A (Active and Closed)

- Notes**
1. Monitoring well coordinates and water level data (collected on May 13, 2024) provided by AEP.
 2. MW-5S, MW-9S, and MW-10S were not used during contouring as they are not representative of the Site's features.
 3. Wells not used for contouring are highlighted in gray.
 4. Site features based on information available in the Groundwater Monitoring Network Evaluation (Amec 2017) provided by AEP.
 5. Property and parcel boundaries taken from Spencer County Assessor.
 6. The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
 7. Groundwater elevation units are feet above mean sea level (ft amsl).
 8. Aerial imagery provided by ESRI.



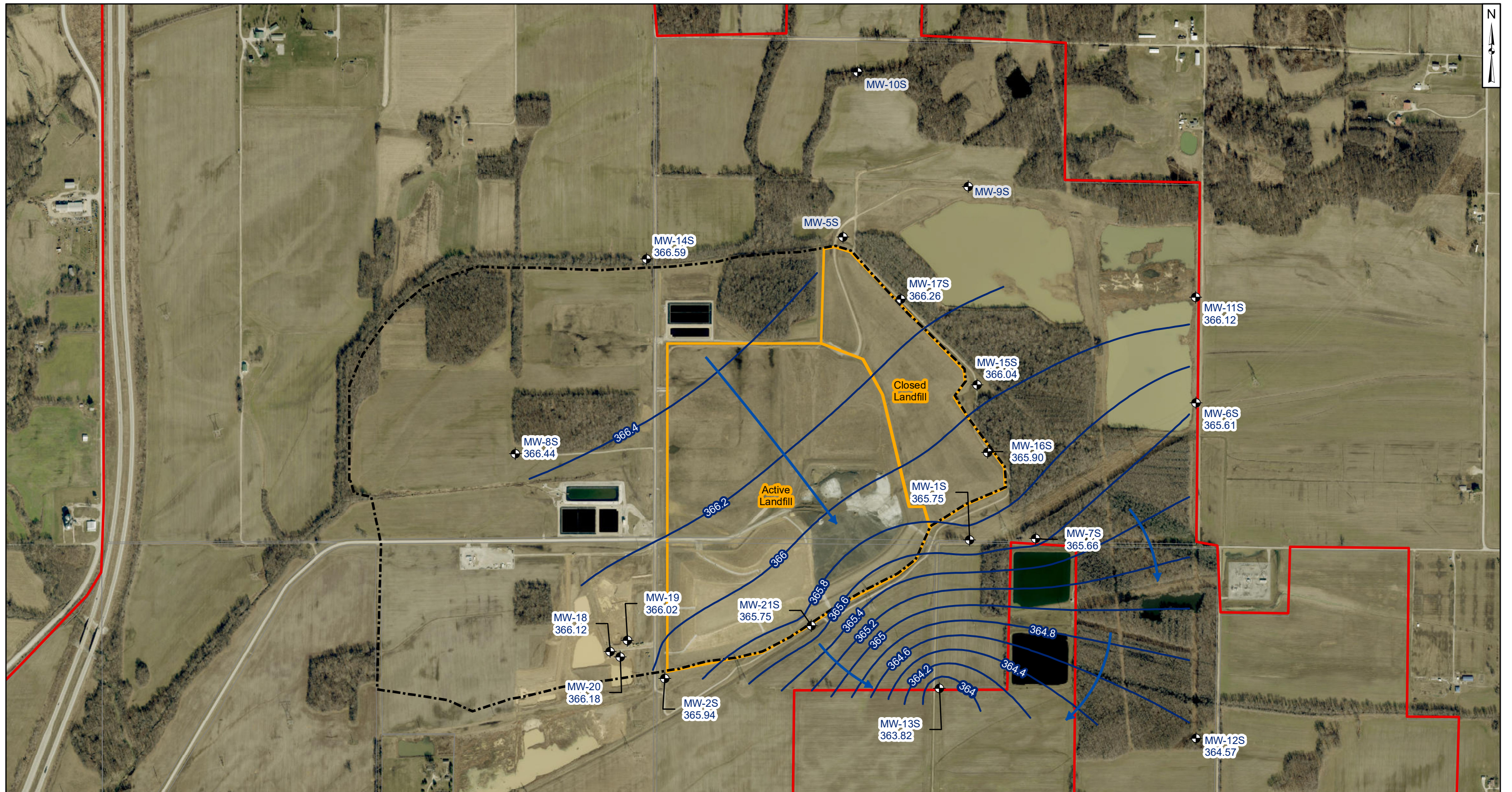
**Potentiometric Surface Contours - Uppermost Aquifer
May 2024**

AEP-Rockport Power Plant - CCR Landfill
Rockport, Indiana

Geosyntec
consultants

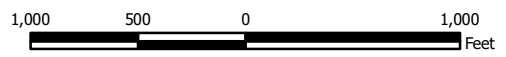
Columbus, Ohio 2024/08/06

Figure X



- Legend**
- ◆ Groundwater Monitoring Well
 - ➔ Approximate Groundwater Flow Direction
 - Groundwater Elevation Contour
 - - - 1984 Landfill Permit Boundary (Area 1)
 - ▭ Property Boundary
 - ▭ Landfill Area 1A (Active and Closed)

- Notes**
1. Monitoring well coordinates and water level data (collected on November 11, 2024) provided by AEP.
 2. Wells shaded in gray were not used for contouring.
 3. Site features based on information available in the Groundwater Monitoring Network Evaluation (Amec 2017) provided by AEP.
 4. Property and parcel boundaries taken from Spencer County Assessor.
 5. The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
 6. Groundwater elevation units are feet above mean sea level (ft amsl).
 7. Aerial imagery provided by ESRI (dated February 2023).



Potentiometric Surface Contours - Uppermost Aquifer November 2024	
AEP-Rockport Power Plant - CCR Landfill Rockport, Indiana	
Geosyntec consultants	
Columbus, Ohio	2025/01/16
Figure X	

Groundwater Flow Velocity Calculations

**Table 1: Residence Time Calculation Summary
Rockport - Landfill**

CCR Management Unit	Monitoring Well	Well Diameter (inches)	2024-05		2024-07 ^[3]		2024-11	
			Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Landfill	MW-11S ^[1]	2.0	227	0.27	239	0.25	315	0.19
	MW-14S ^[1]	2.0	163	0.37	92	0.66	99	0.62
	MW-15I ^[2]	2.0	107	0.57	74	0.82	283	0.22
	MW-15S ^[2]	2.0	79	0.77	77	0.79	141	0.43
	MW-16D ^[2]	2.0	160	0.38	107	0.57	153	0.40
	MW-16I ^[2]	2.0	114	0.54	53	1.14	221	0.28
	MW-16S ^[2]	2.0	147	0.41	89	0.68	170	0.36
	MW-17I ^[2]	2.0	166	0.37	14	4.28	463	0.13
	MW-17S ^[2]	2.0	81	0.75	107	0.57	111	0.55
	MW-1D ^[2]	2.0	1,175	0.05	1,829	0.03	809	0.08
	MW-1I ^[2]	2.0	1,058	0.06	2,134	0.03	809	0.08
	MW-1S ^[2]	2.0	470	0.13	610	0.10	714	0.09
	MW-21D ^[2]	2.0	608	0.10	461	0.13	627	0.10
	MW-21I ^[2]	2.0	782	0.08	831	0.07	570	0.11
	MW-21S ^[2]	2.0	695	0.09	461	0.13	856	0.07
	MW-2D ^[2]	2.0	3,798	0.02	167	0.36	273	0.22
	MW-2I ^[2]	2.0	4,266	0.01	4,483	0.01	471	0.13
	MW-2S ^[2]	2.0	NC	NC	286	0.21	347	0.18
	MW-6S ^[1]	2.0	244	0.25	249	0.24	354	0.17
	MW-8I ^[1]	2.0	237	0.26	296	0.21	146	0.42
MW-8S ^[1]	2.0	169	0.36	271	0.22	98	0.62	

Notes:

[1] - Upgradient Well

[2] - Downgradient Well

[3] - Two-of-two verification sampling

NC - Not calculated

APPENDIX 2 – Statistical Analyses

The memorandums summarizing the statistical evaluation follow.

STATISTICAL ANALYSIS SUMMARY, BACKGROUND UPDATE CALCULATIONS

Landfill

Rockport Plant

Rockport, Indiana

Prepared for

American Electric Power

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Columbus, Ohio 43215-2372

Prepared by

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Project Number: CHA8500B

January 25, 2024

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Table 1:	Groundwater Data Summary
Table 2:	Background Level Summary

LIST OF ATTACHMENTS

Attachment A:	Certification by Qualified Professional Engineer
Attachment B:	Statistical Analysis Output

ACRONYMS AND ABBREVIATIONS

ANOVA	analysis of variance
CCR	coal combustion residuals
CFR	Code of Federal Regulations
IAC	Indiana Administrative Code
LPL	lower prediction limit
PQL	practical quantitative limit
QA/QC	quality assurance and quality control
TDS	total dissolved solids
UPL	upper prediction limit
USEPA	United States Environmental Protection Agency

1. INTRODUCTION

Groundwater monitoring has been conducted at the Landfill, an existing coal combustions residuals (CCR) unit at the Rockport Power Plant in Rockport, Indiana, in accordance with the United States Environmental Protection Agency (USEPA) regulations regarding the disposal of CCR in landfills and surface impoundments (Code of Federal Regulations [CFR], Title 40, Section 257, Subpart D, “CCR rule”) and the solid waste permit (74-02) requirements through Indiana Administrative Code (IAC) (IAC, Title 329, Article 10). It is required under the CCR rule and solid waste permit to establish background concentrations for Appendix III and Phase I parameters, respectively, in groundwater. These background concentrations are used to calculate prediction limits for future detection monitoring events.

Background concentration values for Appendix III/Phase I parameters were last calculated for the Landfill in January 2022. Since then, four semiannual detection monitoring events were conducted. This report details how data from these recent groundwater monitoring results were analyzed and incorporated into the Landfill background dataset and provides updated prediction limits.

1.1 Previous Monitoring Events and Background Calculations

Before July 2017, at least eight monitoring events were completed to establish background concentrations and calculate prediction limits for Appendix III and Appendix IV parameters under the CCR rule. The data were reviewed for outliers and trends before upper prediction limits (UPLs) were calculated for each Appendix III parameter and lower prediction limits (LPLs) were established for pH. Intrawell prediction limits with a one-of-three resampling plan were selected for boron, fluoride, pH, and sulfate. Interwell prediction limits with a one-of-two- resampling plan were selected for calcium, chloride, and TDS. The statistical analyses completed to establish background levels are detailed in the January 2018 *Statistical Analysis Summary* report (Geosyntec 2018). The selected interwell tests were revised to intrawell approach based on an alternative source demonstration which identified evidence of natural variability at the site (Geosyntec 2019).

Calculated background values should be updated every four to eight measurements, as recommended in the USEPA *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance* (USEPA 2009). These updated background concentration values are used to revise the site-specific prediction limits. The prediction limits have previously been updated twice.

In February 2020, prediction limits for Appendix III parameters were updated with data collected up to July 2019 (Geosyntec 2020a). Intrawell testing (using a one-of-two retesting procedure) was selected as the method of analysis and these prediction limits were used for detection monitoring events completed between September 2019 and August 2021.

In 2021, conductivity was added to the list of Appendix III/Phase I parameters in the solid waste permit (74-02), and upper prediction limits for conductivity were established using data up to September 2019. Intrawell testing (using a one-of-two retesting procedure) was selected as the method of analysis for conductivity.

In January 2022, prediction limits for Appendix III/Phase I parameters were again updated, this time with data collected through August 2021 (Geosyntec 2022). At this time, intrawell testing

(using a one-of-two retesting procedure) was selected as the method of analysis, and these prediction limits were used for detection monitoring events completed between November 2021 and August 2023.

2. STATISTICAL ANALYSIS AND BACKGROUND DATA UPDATE

Four semiannual detection monitoring events were conducted since the last background update (Table 1). Verification sampling was completed (on an individual well or parameter basis) if the initial results for each detection monitoring event identified possible exceedances. Therefore, a minimum of four samples have been collected from each compliance well since the previous background update.

Data from the four semiannual detection monitoring events conducted at the Landfill between November 2021 and August 2023, including both initial and verification results, have been evaluated for inclusion in the background dataset. The detection monitoring data were submitted to Groundwater Stats Consulting, LLC for statistical analysis. The data were reviewed for outliers before the UPLs for each Appendix III/Phase I parameter and the LPL for pH were updated to represent background values. The selected statistical methods have been certified by a qualified professional engineer (Attachment A).

2.1 Data Validation and QA/QC

Chemical analysis was completed by an analytical laboratory certified by the National Environmental Laboratory Accreditation Program. Quality assurance and quality control (QA/QC) samples used by the analytical laboratory included laboratory reagent blanks, continuing calibration verification samples, and laboratory fortified blanks.

The analytical data were imported into a Microsoft Access database, where checks were completed to assess the accuracy of sample location identification and analyte identification. Where necessary, unit conversions were applied to standardize reported units across all sampling events. Exported data files were created for use with the Sanitas™ v.10.0.15 statistics software. The export file was checked against the analytical data for transcription errors and completeness. No QA/QC issues that would impact data usability were noted.

2.2 Statistical Analysis

Statistical analyses for the Landfill were conducted in accordance with the *Statistical Analysis Plan* (Geosyntec 2020b). These statistical analysis incorporated data from the four semiannual detection monitoring events and associated verification sampling events conducted between November 2021 and August 2023 (Table 1). The complete statistical analysis results are included in Attachment B.

Time series plots of Appendix III/Phase I parameters (Appendix B) were used to evaluate concentrations over time and to provide an initial screening of suspected outliers and trends. Box plots were also compiled to provide visual representation of variations between wells and within individual wells (Attachment B).

2.2.1 Outlier Evaluation

Potential outliers were evaluated using Tukey's outlier test. That is, data points were considered potential outliers if they met one of the following criteria:

$$x_i < \tilde{x}_{0.25} - 3 \times IQR \quad (1)$$

or

$$x_i > \tilde{x}_{0.75} + 3 \times IQR \quad (2)$$

where:

- x_i = individual data point
- $\tilde{x}_{0.25}$ = first quartile
- $\tilde{x}_{0.75}$ = third quartile
- IQR = the interquartile range = $\tilde{x}_{0.75} - \tilde{x}_{0.25}$

Data that were evaluated as potential outliers are summarized in Attachment B. Two outliers were identified in the data collected for the four most recent detection monitoring events: low conductivity values of 0 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) at background well MW-011S on November 12, 2021 and at compliance well MW-021D on November 2, 2022. These outliers were flagged and removed from the dataset to reduce variation in the dataset and construct more prediction limits which are more conservative from a regulatory perspective.

2.2.2 Establishment of Updated Background Dataset

Analysis of variance (ANOVA) was conducted during the initial background screening to assist in evaluating whether intrawell testing is the most appropriate statistical approach for assessing Appendix III/Phase I parameters. Intrawell tests, which compare compliance data from a single well to background data within the same well, are most appropriate 1) when upgradient wells exhibit spatial variation; 2) when statistical limits constructed from upgradient wells would not be conservative from a regulatory perspective; or 3) when downgradient water quality is not impacted compared to upgradient water quality for the same parameter. It is necessary to update background statistical limits (calculated prediction limits) periodically because natural systems change continuously with physical changes to the environment. For intrawell analyses, data for all wells and constituents are reevaluated when a minimum of four new data points are available. These four (or more) new data points are used to determine whether earlier concentrations are representative of present-day groundwater quality.

Mann-Whitney (Wilcoxon rank-sum) tests were used to compare the medians of historical data (June 2016–August 2021) to the new compliance samples (November 2021–August 2023). Results (Attachment B) were evaluated to determine whether the medians of the two groups were similar at the 99% confidence level. Where no significant difference was found, the new compliance data were added to the background dataset. Where a statistically significant difference was found, the data were reviewed to evaluate the cause of the difference and to assess which was most appropriate: adding newer data to the background dataset, replacing the background dataset with the newer data, or continuing to use the existing background dataset. If the differences appeared to have been caused by a release, then the previous background dataset would continue to be used.

Significant differences were found between the two groups for the following upgradient well/parameter pairs:

- A decrease was found for boron at MW-011S.
- A decrease was found for calcium at MW-008I.

- An increase was found for chloride at MW-008S, and a decrease was found for chloride at MW-014S.
- A decrease was found for fluoride at MW-011S.
- A decrease was found for sulfate at MW-014S.

The background datasets for all upgradient wells were updated because concentrations are similar to existing historical measurements, and these data represent naturally occurring groundwater quality not impacted by a release.

Statistically significant differences were found between the two groups for the following downgradient well/parameter pairs:

- Decreases were found for calcium at MW-016S and MW-021I.
- Increases were found for chloride at MW-001I, MW-002D, MW-002I, MW-021D, and MW-021S, and decreases were found for chloride at MW-016D and MW-016S.
- Increases were found for conductivity at MW-002D and MW-002I.
- An increase was found for fluoride at MW-002S.
- An increase was found for sulfate at MW-021S, and decreases were found for sulfate at MW-016I, MW-016S, and MW-017S.
- Increases were found for TDS at MW-001I, MW-002D, MW-002I, and MW-021S, and decreases were found for TDS at MW-001S and MW-016S.

For chloride and TDS at downgradient well MW-002D, the statistically significant increases and compliance concentrations were substantially above historical measurements. The datasets for the chloride and TDS at MW-002D were not updated at this time. Although statistically significant increases were observed for chloride at MW-001I and MW-002I, the increasing concentrations were attributed to an alternative source (Wood 2022). Therefore, the datasets for chloride at MW-001I and MW-002I were updated to use the eight most recent events to generate statistical limits that are representative of present-day groundwater conditions.

Consistent with the previous analysis (Geosyntec 2022), the following well-constituent pairs either exhibit more stable concentrations during recent sampling events or were attributed to an alternative source previously and were truncated to eliminate earlier data points: calcium at MW-016I; chloride at MW-015I, MW-016I, MW-017I; conductivity at MW-001I, MW-002S, MW-016D, and MW-017S; sulfate at MW-015I, MW-015S, MW-016I, and MW-017I; and TDS at MW-015I, MW-015S, MW-016I, MW-016D, and MW-017I. A list of the data ranges used in the prediction limit calculations for these well-constituent pairs is provided in Attachment B.

For the remaining well-constituent pairs, recent compliance concentrations in downgradient wells were similar to existing historical concentrations; therefore, the background dataset was updated to include the more recent results.

After the revised background set was established, a parametric or nonparametric analysis was selected based on the distribution of the data and the frequency of nondetect data. Estimated results less than the practical quantitation limit (PQL)—that is, “J-flagged” data—were considered

detections, and the estimated results were used in the statistical analyses. Nonparametric analyses were selected for datasets with at least 50% nondetect data or datasets that could not be normalized. Parametric analyses were selected for datasets (either transformed or untransformed) that passed the Shapiro-Wilk/Shapiro-Francia test for normality. The Kaplan-Meier nondetect adjustment was applied to datasets with between 15% and 50% nondetect data. For datasets with fewer than 15% nondetect data, nondetect data were replaced with one half of the PQL. The selected analysis (i.e., parametric or nonparametric) and transformation (where applicable) for each background dataset are shown in Attachment B.

2.2.3 Updated Prediction Limits

All historical data through August 2023, except where noted above, were used to update the intrawell UPLs (and intrawell LPLs, for pH) and to represent background values (Table 2).

The intrawell UPLs and LPLs were calculated for a one-of-two retesting procedure; that is, if at least one sample in a series of two has no measurement greater than the UPL and if the pH result is greater than or equal to the LPL, then it can be concluded that a statistically significant increase has not occurred. In practice, where the initial result is not greater than the UPL and where the pH result is greater than or equal to the LPL, a second sample will not be collected. The retesting procedures allow an acceptably high statistical power to detect changes at downgradient wells for constituents evaluated with intrawell prediction limits.

2.3 Conclusions

Four detection monitoring events were completed between November 2021 and August 2023 in accordance with the CCR rule and solid waste permit (74-02). The laboratory and field data from these events were reviewed prior to statistical analysis, and no QA/QC issues that impacted data usability were identified. Mann-Whitney tests were completed to evaluate whether data from the detection monitoring events could be added to the existing background dataset. Where appropriate, the background datasets were updated, and UPLs and LPLs were recalculated. Intrawell testing (using a one-of-two retesting procedure) was selected as the method of analysis, and testing data were updated for all Appendix III/Phase I parameters.

3. REFERENCES

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TABLES

**Table 1. Groundwater Data Summary
Statistical Analysis Summary, Background Update Calculations
Rockport – Landfill**

Parameter	Unit	MW-001D				MW-001I						
		11/12/2021	5/12/2022	11/3/2022	5/24/2023	11/12/2021	2/15/2022	5/12/2022	7/20/2022	11/3/2022	2/8/2023	8/16/2023
		2021-D2	2022-D1	2022-D2	2023-D1	2021-D2	2021-D2-R1	2022-D1	2022-D1-R1	2022-D2	2022-D2-R1	2023-D1
Boron	mg/L	0.042 J1	0.05 U1	0.043 J1	0.034 J1	0.016 J1	-	0.05 U1	-	0.018 J1	-	-
Calcium	mg/L	73.7	68.6	70.2	59.0	68.2	-	70.4	-	67.3	-	-
Chloride	mg/L	55.4	30.9	58.4	41.7	42.5	46.8	46.5	47.2	52.4	52.8	54.7
Conductivity	µS/cm	735	624	673	368	598	614	623	650	568	612	654
Fluoride	mg/L	0.30	0.26	0.30	0.28	0.40	-	0.41	-	0.42	-	-
Sulfate	mg/L	36.0	45.4	40.6	37.5	39.0	-	43.4	-	43.2	-	-
Total Dissolved Solids	mg/L	410	350	400	370	340	-	350	-	360	-	400
pH	SU	7.4	7.2	7.1	7.8	7.5	7.2	7.3	7.5	6.9	7.4	7.3

Parameter	Unit	MW-001S					MW-002D								
		11/12/2021	5/12/2022	11/3/2022	2/8/2023	5/23/2023	11/11/2021	2/15/2022	5/12/2022	7/20/2022	11/2/2022	2/8/2023	5/24/2023	8/15/2023	
		2021-D1	2022-D1	2022-D2	2023-D1	2023-D1	2021-D2	2021-D2-R1	2022-D1	2022-D1-R1	2022-D2	2022-D2-R1	2023-D1	2023-D1-R1	
Boron	mg/L	0.018 J1	0.05 U1	0.017 J1	-	0.050	0.011 J1	-	0.05 U1	-	0.012 J1	-	0.010 J1	-	
Calcium	mg/L	65.8	65.9	66.3	-	60.9	96.3	-	114	-	105	-	88.6	-	
Chloride	mg/L	32.9	35	50.7	32.6	33.0	135	159	184	175	196	162	140	130	
Conductivity	µS/cm	687	658	593	623	381	943	951	1,050	1,050	989	980	622	960	
Fluoride	mg/L	0.65	0.62	0.41	-	0.69	0.20	-	0.2	-	0.21	-	0.20	-	
Sulfate	mg/L	31.0	36.8	43.2	34.4	36.3	33.3	-	39.1	-	39.0	-	38.5	-	
Total Dissolved Solids	mg/L	380	380	340	-	360	470	-	580	650	630	550	530	520	
pH	SU	7.6	7.4	6.9	7.2	7.7	6.8	7.2	7.3	7.1	7.0	7.3	7.5	7.2	

Parameter	Unit	MW-002I						MW-002S							
		11/11/2021	5/12/2022	7/19/2022	11/2/2022	2/7/2023	5/24/2023	11/11/2021	5/12/2022	11/2/2022	2/7/2023	5/24/2023	8/15/2023		
		2021-D2	2022-D1	2022-D1-R1	2022-D2	2022-D2-R1	2023-D1	2021-D1	2022-D1	2022-D2	2022-D2-R1	2023-D1	2023-D1-R1		
Boron	mg/L	0.013 J1	0.05 U1	-	0.013 J1	-	0.010 J1	-	0.028 J1	0.05 U1	0.021 J1	-	0.018 J1	-	
Calcium	mg/L	72.1	78	-	79.8	76.7 M1	70.6	-	55.2 M1, P3	42.8 M1, P3	43.0	-	41.0	-	
Chloride	mg/L	31.7	51.3	58.8	57.2	55.0	57.7	49.1	23.0	16.8	13.8	-	12.6	-	
Conductivity	µS/cm	647	700	669	641	671	438	665	588	482	420	435	271	413	
Fluoride	mg/L	0.32	0.3	-	0.31	-	0.30	-	0.33	0.39	0.43	0.45	0.43	0.4	
Sulfate	mg/L	37.2	41.1	-	40.3	-	39.2	-	27.1	17.9	17.7	-	17.4	-	
Total Dissolved Solids	mg/L	340	380	-	390	380	370	-	330	280	270	-	250	-	
pH	SU	7.0	7.5	6.9	7.1	7.3	7.6	7.4	7.0	7.6	6.8	7.6	7.5	7.6	

Parameter	Unit	MW-006S				MW-008I				MW-008S			
		11/12/2021	5/13/2022	11/3/2022	5/25/2023	11/12/2021	5/12/2022	11/2/2022	5/25/2023	11/12/2021	5/12/2022	11/2/2022	5/25/2023
		2021-D2	2022-D1	2022-D2	2023-D1	2021-D2	2022-D1	2022-D2	2023-D1	2021-D2	2022-D1	2022-D2	2023-D1
Boron	mg/L	0.015 J1	0.05 U1	0.016 J1	0.015 J1	0.020 J1	0.009 J1	0.022 J1	0.019 J1	0.020 J1	0.05 U1	0.015 J1	0.012 J1
Calcium	mg/L	46.8 M1, P3	46.3 M1, P3	47.8	40.8	67.6	67	65.1	59.9	67.6	38.9	41.2	36.0
Chloride	mg/L	2.03	2.54	2.88	1.96	19.3	20	20.8	20.4	19.3	29.4	30.2	29.1
Conductivity	µS/cm	450	506	411	302	643	619	571	406	643	572	572	369
Fluoride	mg/L	1.15	1.09	1.11	1.09	0.34	0.35	0.39	0.35	0.34	0.56	0.57	0.57
Sulfate	mg/L	2.91	6.24	6.01	6.0	54.0	57.6	55.7	62.6	54.0	23.8	22.6	22.0
Total Dissolved Solids	mg/L	240	270	280	290	350	340	360	390	350	340	350	330
pH	SU	7.4	7.3	7.8	7.7	6.8	7.3	7.1	7.8	6.8	7.4	7.1	7.9

Parameter	Unit	MW-011S				MW-014S				MW-015I			
		11/12/2021	5/13/2022	11/3/2022	5/25/2023	11/12/2021	5/12/2022	11/2/2022	5/25/2023	11/11/2021	5/12/2022	11/2/2022	5/23/2023
		2021-D2	2022-D1	2022-D2	2023-D1	2021-D2	2022-D1	2022-D2	2023-D1	2021-D2	2022-D1	2022-D2	2023-D1
Boron	mg/L	0.038 J1	0.030 J1	0.037 J1	0.037 J1	0.012 J1	0.05 U1	0.010 J1	0.010 J1	0.026 J1	0.019 J1	0.029 J1	0.050
Calcium	mg/L	54.1	47.9	52.6	49.9	69.2	68.2	61.7	57.2 M1	44.4	44.2	43.8	43.2
Chloride	mg/L	2.46	2.70	2.29	2.50	23.7	25.4	24.8	25.0	14.0	19.8	16.4	17.1
Conductivity	µS/cm	0	244	318	211	741	583	658	412	402	444	327	244
Fluoride	mg/L	0.53	0.51	0.50	0.56	0.33	0.33	0.34	0.33	0.47	0.35	0.39	0.38
Sulfate	mg/L	7.68	7.99	3.78	3.8	27.0	30.1	27.7	28.6	11.3	16	12.2	13.5
Total Dissolved Solids	mg/L	250	230	230	240	390	400	390	370	220	250	230	230
pH	SU	7.2	7.9	7.6	8.2	7.0	7.1	7.4	7.5	8.0	7.5	7.3	7.9

**Table 1. Groundwater Data Summary
Statistical Analysis Summary, Background Update Calculations
Rockport – Landfill**

Parameter	Unit	MW-015S					MW-016D				
		11/11/2021	5/12/2022	11/2/2022	5/23/2023	8/16/2023	11/11/2021	5/12/2022	11/3/2022	5/23/2023	8/16/2023
		2021-D2	2022-D1	2022-D2	2023-D1	2023-D1-R1	2021-D2	2022-D1	2022-D2	2023-D1	2023-D1-R1
Boron	mg/L	0.012 J1	0.05 U1	0.014 J1	0.050	-	0.038 J1	0.026 J1	0.035 J1	0.031 J1	-
Calcium	mg/L	46.3	43.7	45.2	40.5	-	105	102	84.5	69.2	-
Chloride	mg/L	10.4	10.2	8.87	8.25	-	98.3	101	81.0	75.0	-
Conductivity	µS/cm	500	432	402	228	375	1,060	1,010	816	456	811
Fluoride	mg/L	0.65	0.82	0.79	0.85	-	0.18	0.19	0.21	0.21	-
Sulfate	mg/L	8.07	9.34	8.13	8.2	-	37.0	41.4	38.4	35.3	-
Total Dissolved Solids	mg/L	270	220	230	220	-	560	550	520	440	-
pH	SU	7.5	7.5	7.4	8.0	7.5	6.8	7.5	7.6	8.1	7.3

Parameter	Unit	MW-016I				MW-016S				MW-017I			
		11/11/2021	5/12/2022	11/3/2022	5/23/2023	11/11/2021	5/12/2022	11/3/2022	5/23/2023	11/11/2021	5/13/2022	11/2/2022	5/23/2023
		2021-D2	2022-D1	2022-D2	2023-D1	2021-D1	2022-D1	2022-D2	2023-D1	2021-D2	2022-D1	2022-D2	2023-D1
Boron	mg/L	0.019 J1	0.05 U1	0.019 J1	0.018 J1	0.019 J1	0.05 U1	0.018 J1	0.019 J1	0.039 J1	0.030 J1	0.037 J1	0.050
Calcium	mg/L	50.0	61.8	51.9	53.3	86.7	85.9	82.6	84.2	46.4	40.2	39.5	37.5
Chloride	mg/L	16.6	25.6	19.6	29.6	13.3	13	11.8	14.6	40.8	36.6	33.4	29.5
Conductivity	µS/cm	538	618	505	341	832	680	711	466	500	495	442	267
Fluoride	mg/L	0.15	0.15	0.16	0.14	0.37	0.39	0.38	0.36	0.99	1.04	0.99	0.98
Sulfate	mg/L	17.6	24.2	18.3	20.8	24.4	25.6	26.6	26.1	25.3	20.5	19.1	17.2
Total Dissolved Solids	mg/L	280	330	300	330	440	400	430	440	270	260	260	250
pH	SU	6.9	7.5	7.6	7.8	6.6	7.5	7.3	7.6	7.8	7.9	7.8	8.2

Parameter	Unit	MW-017S				MW-021D							
		11/11/2021	5/13/2022	11/2/2022	5/23/2023	11/11/2021	5/12/2022	7/20/2022	11/2/2022	2/7/2023	5/24/2023	8/16/2023	
		2021-D2	2022-D1	2022-D2	2023-D1	2021-D1	2022-D1	2022-D1-R1	2022-D2	2022-D2-R1	2023-D1	2023-D1-R1	
Boron	mg/L	0.023 J1	0.013 J1	0.022 J1	0.050	0.014 J1	0.05 U1	-	0.013 J1	-	0.012 J1	-	
Calcium	mg/L	35.2 M1, P3	34.4	33.5	34.5	69.7	72.1	-	67.8	-	61.3	-	
Chloride	mg/L	9.41	10.2	13.5	12.8	19.5	21	19.9	20.5	-	22.9	21.6	
Conductivity	µS/cm	420	404	373	240	555	593	604	0	575	353	596	
Fluoride	mg/L	0.81	0.82	0.81	0.78	0.38	0.38	-	0.40	-	0.38	-	
Sulfate	mg/L	4.62	5.24	5.22	5.9	34.2	40	-	37.4	-	39.1	-	
Total Dissolved Solids	mg/L	230	230	210	230	330	330	-	340	-	360 S7	-	
pH	SU	7.7	7.9	7.6	8.1	7.8	7.6	7.5	6.8	7.6	8.2	7.5	

Parameter	Unit	MW-021I				MW-021S					
		11/11/2021	5/12/2022	11/3/2022	5/24/2023	11/11/2021	5/12/2022	11/2/2022	2/7/2023	5/24/2023	8/16/2023
		2021-D2	2022-D1	2022-D2	2023-D1	2021-D2	2022-D1	2022-D2	2022-D2-R1	2023-D1	2023-D1-R1
Boron	mg/L	0.011 J1	0.05 U1	0.013 J1	0.011 J1	0.012 J1	0.05 U1	0.013 J1	-	0.011 J1	-
Calcium	mg/L	57.2	55.2	55.1	54.8	57.1	55.6	54.9	-	46.8	-
Chloride	mg/L	18.2	19.1	19.7	21.0	19.3	19.5	20.2	-	19.6	-
Conductivity	µS/cm	500	491	390	307	585	545	500	554	330	545
Fluoride	mg/L	0.40	0.4	0.40	0.40	0.74	0.67	0.77	-	0.69	-
Sulfate	mg/L	35.8	38.5	38.0	41.9	20.0	23.1	23.6	23.6	26.4	26.8
Total Dissolved Solids	mg/L	280	280	280	300	320	320	330	-	330	-
pH	SU	7.7	7.6	7.4	8.0	7.8	7.6	7.2	7.6	8.2	7.6

Notes:
 -: Not Measured
 D1: First semi-annual detection monitoring event of the year
 D2: Second semi-annual detection monitoring event of the year
 J1: Estimated value. Parameter was detected in concentrations below the reporting limit
 M1: The associated matrix spike (MS) or matrix spike duplicate (MSD) recovery was outside acceptance limits.
 mg/L: milligrams per liter
 P3: The precision on the matrix spike duplicate (MSD) was above acceptance limits.
 R1: First verification event associated with detection monitoring round
 SU: standard unit
 U1: Parameter was not present in concentrations above the method detection limit and is reported as the reporting limit

Table 2. Background Level Summary
Statistical Analysis Summary, Background Update Calculations
Rockport - Landfill

Analyte	Unit	Description	MW-001D	MW-001I	MW-001S	MW-002D	MW-002I	MW-002S	MW-015I	MW-015S
Boron	mg/L	Intrawell Background Value (UPL)	0.111	0.104	0.0588	0.0794	0.0520	0.0936	0.0820	0.109
Calcium	mg/L	Intrawell Background Value (UPL)	83.2	73.2	77.8	123	82.3	69.7	54.0	66.4
Chloride	mg/L	Intrawell Background Value (UPL)	67.5	64.7	50.7	132	72.9	33.3	29.4	26.1
Conductivity	uS/cm	Intrawell Background Value (UPL)	864	730	892	1,150	792	775	593	614
Fluoride	mg/L	Intrawell Background Value (UPL)	0.330	0.468	0.746	0.226	0.381	0.466	0.496	1.04
pH	SU	Intrawell Background Value (UPL)	8.1	7.9	8.0	8.5	8.2	8.0	8.1	7.9
		Intrawell Background Value (LPL)	6.8	6.7	6.7	6.3	6.6	6.7	6.9	6.9
Sulfate	mg/L	Intrawell Background Value (UPL)	47.9	47.2	41.4	45.5	47.0	36.6	33.7	23.2
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	463	392	461	506	408	391	310	401

Analyte	Unit	Description	MW-016D	MW-016I	MW-016S	MW-017I	MW-017S	MW-021D	MW-021I	MW-021S
Boron	mg/L	Intrawell Background Value (UPL)	0.100	0.139	0.109	0.0899	0.0626	0.0956	0.0652	0.0552
Calcium	mg/L	Intrawell Background Value (UPL)	125	87.2	119	53.8	39.8	79.5	72.5	64.3
Chloride	mg/L	Intrawell Background Value (UPL)	171	79.1	28.1	73.4	15.4	22.9	22.7	21.4
Conductivity	uS/cm	Intrawell Background Value (UPL)	1,250	1,020	1,030	1,030	517	707	590	627
Fluoride	mg/L	Intrawell Background Value (UPL)	0.244	0.222	0.471	1.16	1.22	0.445	0.497	0.902
pH	SU	Intrawell Background Value (UPL)	8.0	8.0	8.1	8.3	8.2	8.5	8.6	8.5
		Intrawell Background Value (LPL)	6.7	6.8	6.3	6.8	6.9	6.7	7.0	6.7
Sulfate	mg/L	Intrawell Background Value (UPL)	43.4	33.0	54.9	45.4	16.7	42.4	50.3	28.0
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	627	554	565	412	278	368	348	357

Notes
mg/L: milligrams per liter
LPL: lower prediction limit
SU: standard units
UPL: upper prediction limit
μS/cm: microsiemens per centimeter

ATTACHMENT A
Certification by Qualified Professional Engineer

Certification by Qualified Professional Engineer

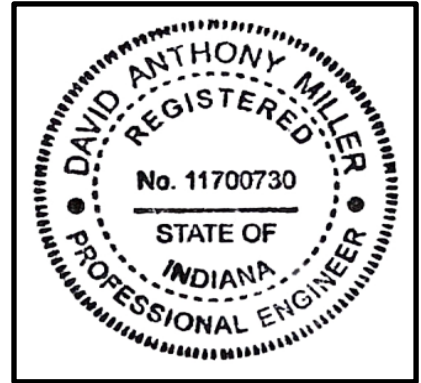
I certify that selected and above described statistical method is appropriate for evaluating the groundwater monitoring data for the Rockport Landfill CCR management area and that the requirements of 40 CFR 257.93(f) and 329 IAC 10 have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature



11700730

License Number

Indiana

Licensing State

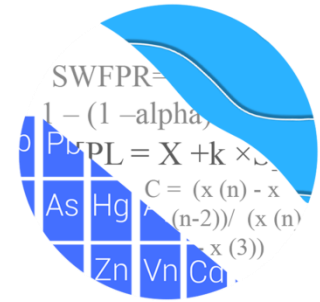
01.26.2024

Date

ATTACHMENT B

Statistical Analysis Output

GROUNDWATER STATS CONSULTING



January 25, 2024

Geosyntec Consultants
Attn: Ms. Allison Kreinberg
500 W. Wilson Bridge Road, Suite 250
Worthington, OH 43085

RE: Rockport Landfill Background Update - 2023

Dear Ms. Kreinberg,

Groundwater Stats Consulting (GSC), formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the background update for statistical limits with groundwater data through 2023 for American Electric Power's Rockport Landfill. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities (CCR Rule, 2015) as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009).

Sampling began at Rockport Landfill for the CCR program in 2016, and at least 8 background samples have been collected at each of the groundwater monitoring wells. The monitoring well network, as provided by Geosyntec Consultants, consists of the following:

- **Upgradient wells:** MW-008I, MW-008S, MW-014S, MW-011S, MW-06S
- **Downgradient wells:** MW-001D, MW-001I, MW-001S, MW-002D, MW-002I, MW-002S, MW-015I, MW-015S, MW-016D, MW-016I, MW-016S, MW-021D, MW-021I, MW-021S, MW-017I, and MW-017S

Data were provided electronically to Groundwater Stats Consulting, and the statistical analysis was performed according to the groundwater data screening that was performed in December 2017 by GSC and approved by Dr. Kirk Cameron, PhD Statistician with MacStat Consulting and primary author of the USEPA Unified Guidance.

The background update performed during this analysis was reviewed by Kristina Rayner, Founder and Senior Statistician for Groundwater Stats Consulting.

Note that the Indiana Department of Environmental Management (IDEM) modified the permit (74-02) at Rockport Landfill for the CCR program to include the analysis of conductivity with the Appendix III parameters. Throughout this document, these parameters will be referred to collectively as Appendix III/Phase I.

The following CCR Detection Monitoring constituents were evaluated:

- Phase I: Boron, calcium, chloride, conductivity, fluoride, pH, sulfate, and TDS

Time series plots for Phase I parameters at all wells are provided for the purpose of screening data at these wells (Figure A). Additionally, box plots are included for all constituents at upgradient and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells.

Data at all wells were screened during the December 2017 analysis for all constituents, except conductivity which was screened in May 2021, for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for parameters in this analysis based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided with the previous update to demonstrate that the selected statistical methods for Phase I parameters comply with the USEPA Unified Guidance recommendations as discussed below.

Summary of Statistical Method:

- Intrawell prediction limits, combined with a 1-of-2 resample plan for boron, calcium, chloride, conductivity fluoride, pH, sulfate, and TDS

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits. Non-detects are handled as follows:

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the most recent practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to accommodate these types of changes. In the intrawell case, data for all wells and constituents are re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In some cases, the earlier portion of data are deselected prior to construction of limits in order to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Historical Summary – December 2017 Background Screening

Outlier Evaluation

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not conservative from a regulatory perspective, in proposed background data. Suspected outliers at all wells for boron, calcium, chloride, fluoride, sulfate, pH, and TDS were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. A discussion of flagged outliers was included with screening.

Seasonality

No seasonal patterns were observed on the time series plots for any of the detected data at the time of the screening; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the

resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

Trend Tests

While trends may be visual, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend thus reducing variation in background. When statistically significant decreasing trends are present, earlier data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When the historical records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

The results of the trend analyses were submitted with the background screening report and showed several statistically significant decreasing and increasing trends. All of these trends were relatively low in magnitude when compared to average concentrations; therefore, no adjustments were made to the data sets during the 2017 screening. All data were re-evaluated during this 2021 analysis and further discussion is provided in the Mann-Whitney evaluation section when records required adjustments.

Determination of Spatial Variation

The Analysis of Variance (ANOVA) was used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most appropriate statistical approach. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation; when statistical limits constructed from upgradient wells would not be conservative from a regulatory perspective; and when downgradient water quality is unimpacted compared to upgradient water quality for the same parameter.

The ANOVA identified variation among upgradient well data for boron, calcium, chloride, fluoride, pH, TDS, and sulfate. Therefore, all data were further evaluated for the

appropriateness of intrawell testing to accommodate the groundwater quality. A summary table of the ANOVA results was included with the previous screening.

As a result of the screening, initially intrawell prediction limits were recommended for boron, fluoride, pH, and sulfate, and interwell prediction limits were recommended for calcium, chloride, and TDS. However, further studies were conducted by Geosyntec Consultants and demonstrated that intrawell methods are appropriate for all parameters due to variation in groundwater quality unrelated to practices at the landfill.

All available data through July 2017 at each well were used to establish intrawell background limits based on a 1-of-3 resample plan. Currently however, background data sets have sufficient samples to utilize a 1-of-2 resample plan, which will be used for all future comparisons. Measurements in all wells will be compared to corresponding intrawell background limits during each subsequent semi-annual sampling event.

Background Update Summary – Conducted in January 2024

Outlier Analysis

The previous background update for boron, calcium, chloride, conductivity fluoride, pH, sulfate, and TDS was performed in January 2021. Data were re-evaluated during this analysis for all well/constituent pairs using Tukey's outlier test and visual screening for historical samples through August 2023 (Figure C). In most cases, wells had samples reported only through May 2023.

Visual screening and Tukey's outlier test confirmed previously flagged outliers; therefore, no changes were made to flagged measurements identified during earlier screenings. Additional values, however, were flagged in the more recent data for conductivity at upgradient well MW-011S and downgradient well MW-021D to reduce variation in the record and construct more conservative limits. Any values identified by Tukey's test but not flagged appeared to be representative of remaining concentrations within their respective wells.

As mentioned above, any flagged data are displayed in a lighter font and as a disconnected symbol on the time series reports, as well as in a lighter font on the accompanying data pages. An updated summary of Tukey's test results and flagged outliers follows this letter (Figure C).

Seasonality

Although no seasonal effects were observed during the 2017 background screening, sulfate in upgradient well MW-011S exhibits apparent seasonal influences. Seasonality for this well/constituent pair was evaluated and confirmed with the Kruskal Wallis test (Figure D). Therefore, data are deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release. This procedure includes subtracting the seasonal mean from each value within a given season, and adding the overall mean to each observation.

Mann-Whitney Evaluation

For constituents requiring intrawell prediction limits, the Mann-Whitney (Wilcoxon Rank Sum) test was used to compare the medians of historical data through May 2021 (and in some cases through September 2021) to compliance samples at each well through the most recent sample event to evaluate whether the groups are significantly different at the 99% confidence level. Any records that were truncated during previous updates due to concentrations that were not representative of present-day groundwater quality conditions used curtailed portions of the respective record for comparison with the Mann-Whitney test. Discussions of any truncated records were included in previous background update reports.

When no statistically significant differences are present, background data may be updated with compliance data (Figure E). Statistically significant differences (either an increase or decrease in median concentrations) were found between the two groups for the following well/constituent pairs:

Increase

- Chloride: MW-008S (upgradient), MW-001I, MW-002D, MW-002I, MW-021D, and MW-021S
- Conductivity: MW-002D and MW-002I
- Fluoride: MW-002S
- Sulfate: MW-021S
- TDS: MW-001I, MW-002D, MW-002I, and MW-021S

Decrease

- Boron: MW-011S (upgradient)
- Calcium: MW-008I (upgradient), MW-016S, and MW-021I
- Chloride: MW-014S (upgradient), MW-016D, and MW-016S
- Fluoride: MW-011S (upgradient)

- Sulfate: MW-014S (upgradient), MW-016I, MW-016S, and MW-017S
- TDS: MW-001S and MW-016S

Typically, when the test concludes that the medians of the two groups are statistically significantly different, particularly in the downgradient wells, the background data are not updated to include the newer data unless it can be reasonably justified that the change in concentrations reflects a shift unrelated to practices at the site. In studies such as the current one, in which at least one of the segments being compared is of short duration, the comparison is complicated by the fact that normal short-term variation may be mistaken for long-term change in medians.

All upgradient well/constituent pairs with significant differences in median concentrations had compliance concentrations similar to existing historical measurements. Therefore, background data sets for the following well/constituent pairs were updated for construction of intrawell prediction limits to better reflect present-day groundwater quality: boron and fluoride at well MW-011S, chloride and sulfate at well MW-014S, and calcium and chloride at MW-008I.

Similarly, the following downgradient well/constituent pairs with statistically significant differences in median concentrations had compliance concentrations similar to existing historical measurements; therefore, the respective records were updated: calcium at wells MW-016S and MW-021I; chloride at wells MW-016D, MW-016S, MW-021D, and MW-021S; conductivity at wells MW-002D and MW-002I; fluoride at well MW-002S; sulfate at wells MW-016I, MW-016S, MW-017S, and MW-021S; and TDS at wells MW-001I, MW-001S, MW-002I, MW-016S, and MW-021S.

Statistically significant increases in medians identified for chloride at MW-002D and TDS at MW-002D were elevated above historic medians and more recent concentrations are substantially higher than those reported historically; therefore, these records were not updated at this time to maintain conservative limits. Although statistically significant increases in medians were noted for chloride at MW-001I and MW-002I, the increase in concentrations were, reportedly, not a result of practices from the facility according to an alternate source demonstration. Therefore, these records were updated to use the most 8 recent concentrations to generate statistical limits that are representative of present-day groundwater quality conditions.

As mentioned during the previous update, concentrations continued to decrease for some well/constituent pairs such as sulfate at MW-016I, and prediction limits were updated to use a moving window approach where a minimum of the 8 most recent stable concentrations are used in the construction of statistical limits. During the next update, if

concentrations for the following well/constituent pairs continue to decrease or remain stable at lower concentrations, the moving window approach will be applied and prediction limits constructed using, at a minimum, the 8 most recent observations: sulfate at MW-016S and MW-017S.

A full list of well/constituent pairs with truncated records follows this letter in the Date Range Table. Table entries with "overall" date ranges indicate background data sets not updated with data through May/August 2023.

Background data sets for all other well/constituent pairs were updated with data through May/August 2023 for construction of intrawell prediction limits. A summary of the Mann-Whitney results follows this letter, and the test results are included with the Mann-Whitney test section at the end of this report. All records will be re-evaluated for updating statistical limits when a minimum of 4 samples are available.

Intrawell Prediction Limits

Intrawell prediction limits using reported data through May/August 2023, except for the cases mentioned earlier, combined with a 1-of-2 resample plan, were constructed and a summary of the updated limits follows this letter (Figure F). No comparison of the May/August 2023 compliance data to statistical limits was made during this analysis. As mentioned above, due to observed seasonal patterns for sulfate in upgradient well MW-011S, a prediction limit was constructed using deseasonalized data at this well and is included at the end of Figure F.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Rockport Landfill. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,



Andrew T. Collins
Project Manager



Kristina Rayner
Senior Statistician

Date Ranges

Date: 1/25/2024 8:10 AM

Rockport Landfill Data: Rockport_LF

Calcium, total (mg/L)

MW-016I background:6/6/2018-5/23/2023

MW-017I background:6/5/2018-5/23/2023

Chloride, total (mg/L)

MW-001I background:11/12/2021-8/16/2023

MW-002D background:11/14/2019-8/5/2021, overall:11/14/2019-8/5/2021

MW-002I background:11/11/2021-8/15/2023

MW-015I background:12/12/2017-5/23/2023

MW-016D background:11/15/2019-5/23/2023

MW-016I background:6/6/2018-5/23/2023

MW-017I background:8/16/2018-5/23/2023

Conductivity (uS/cm)

MW-001I background:9/11/2019-8/16/2023

MW-002S background:9/11/2019-8/15/2023

MW-016D background:9/11/2019-8/16/2023

MW-017S background:6/5/2018-5/23/2023

Sulfate, total (mg/L)

MW-015I background:12/12/2017-5/23/2023

MW-015S background:10/4/2017-5/23/2023

MW-016I background:11/15/2019-5/23/2023

MW-017I background:6/5/2018-5/23/2023

Total Dissolved Solids [TDS] (mg/L)

MW-002D background:9/11/2019-8/5/2021, overall:9/11/2019-8/5/2021

MW-015I background:10/4/2017-5/23/2023

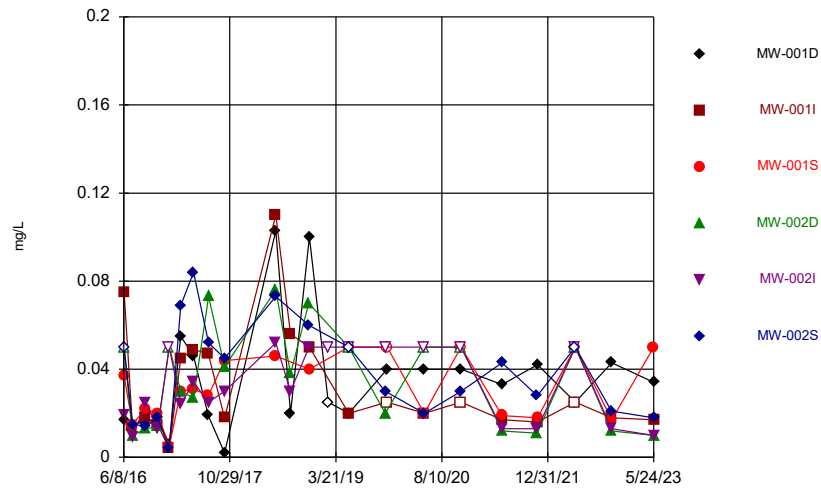
MW-016D background:9/11/2019-5/23/2023

MW-016I background:6/6/2018-5/23/2023

MW-017I background:8/16/2018-5/23/2023

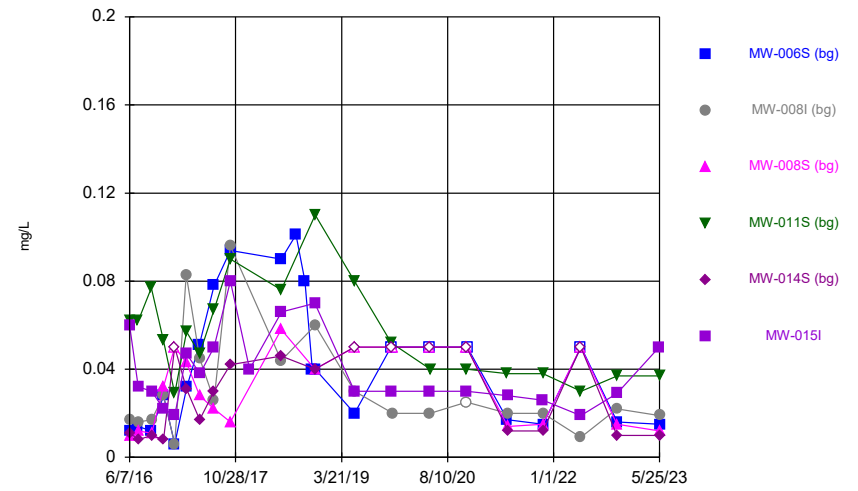
FIGURE A
Time Series

Time Series



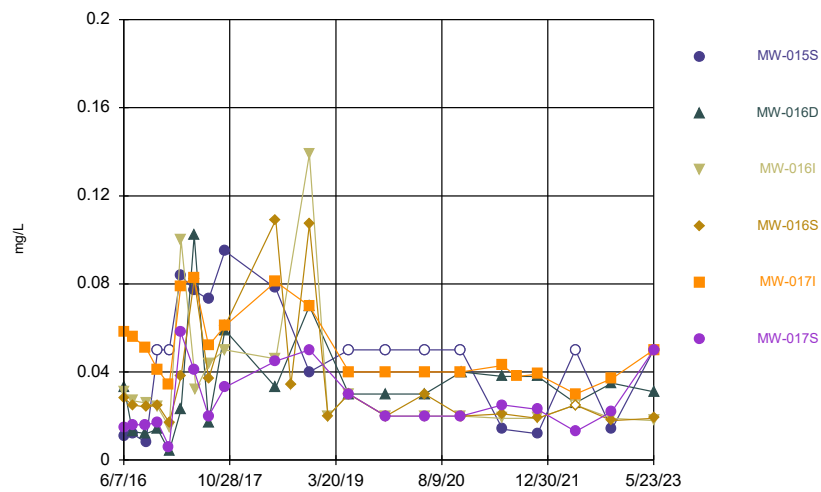
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



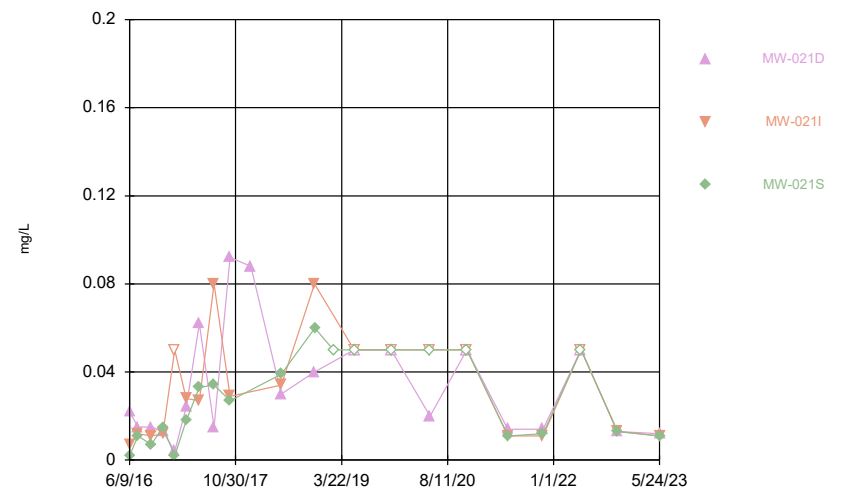
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Time Series



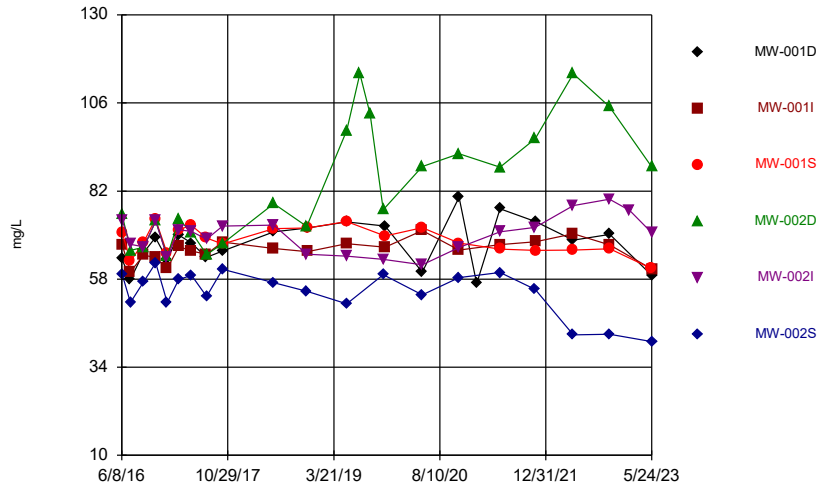
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Time Series



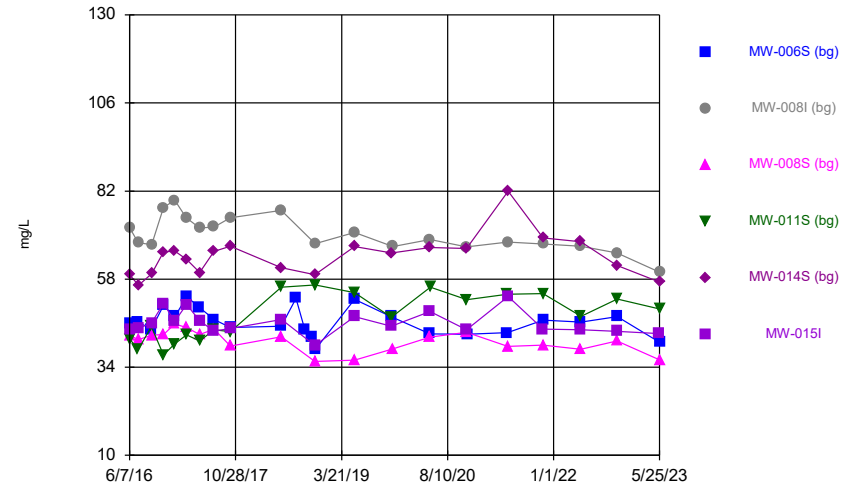
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Time Series



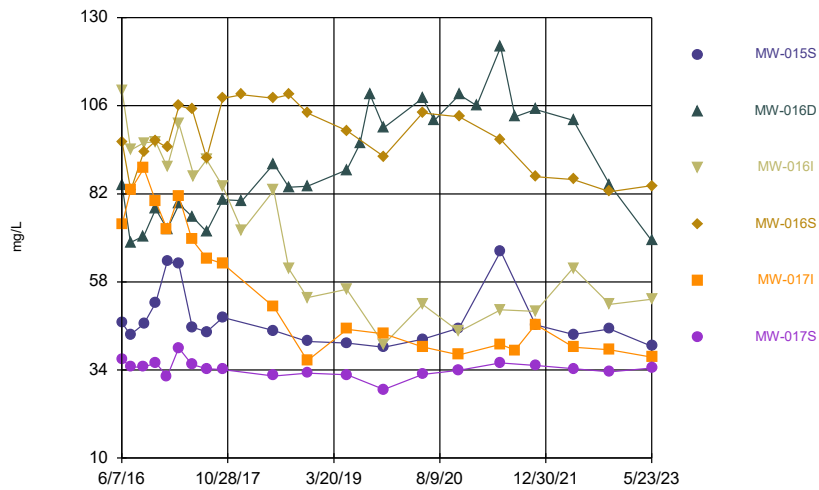
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



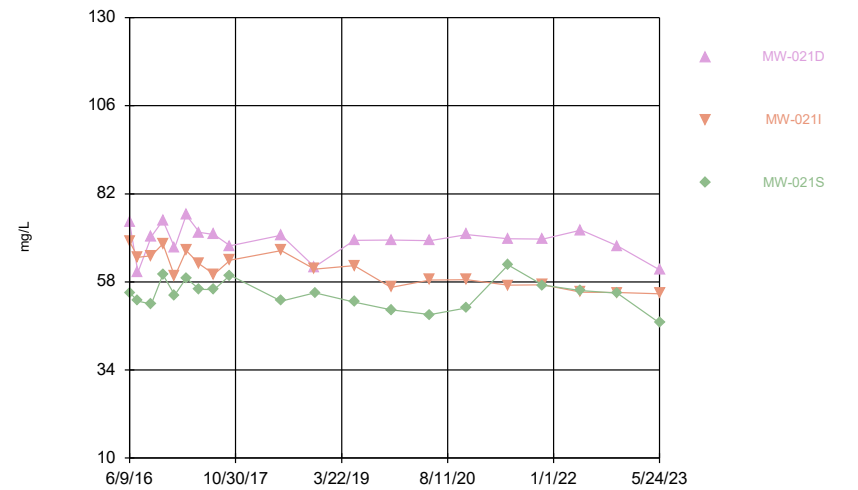
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



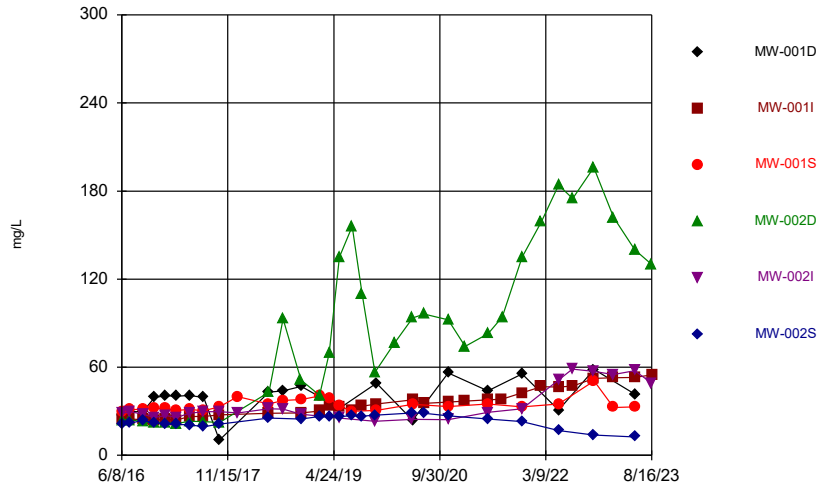
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



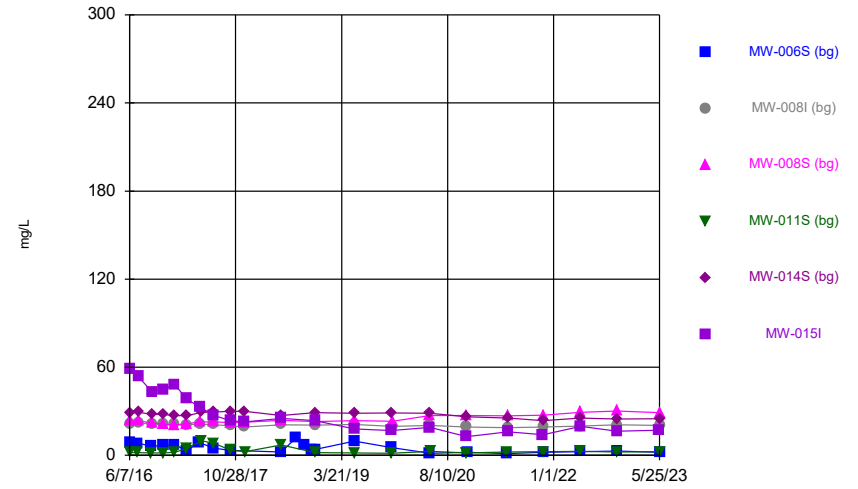
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



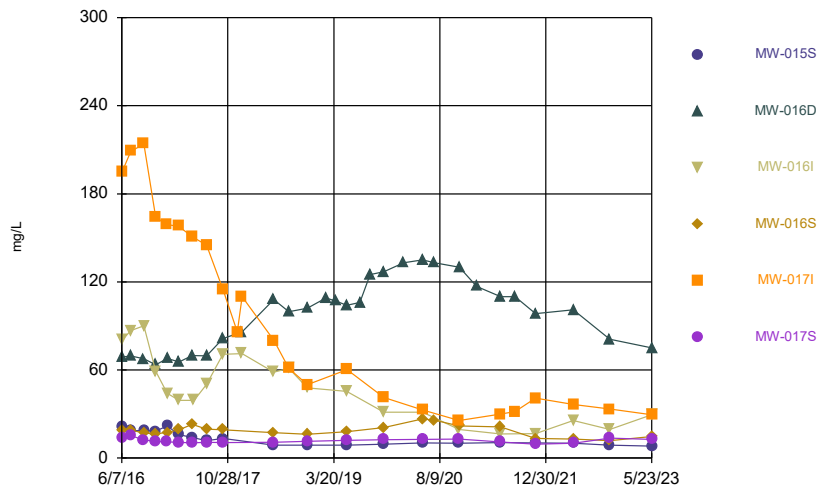
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Time Series



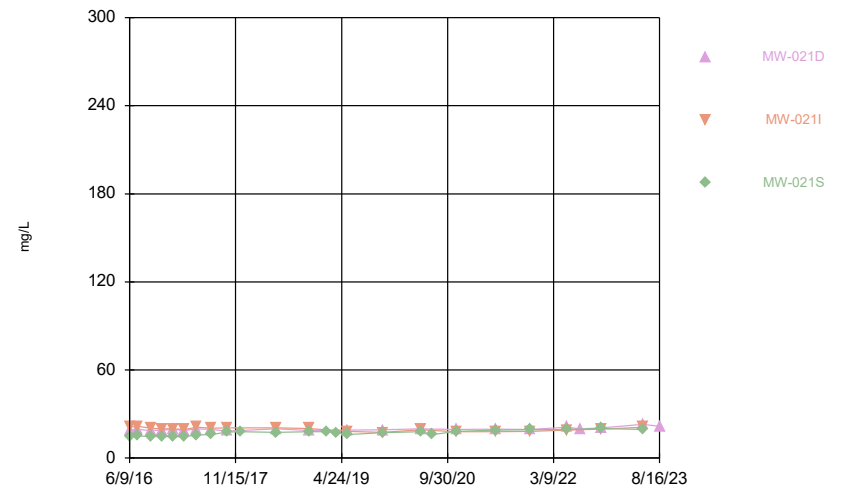
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Time Series



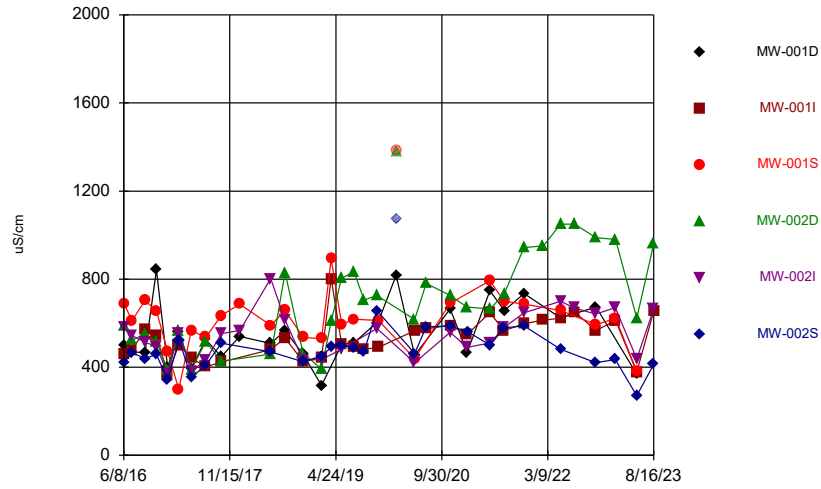
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



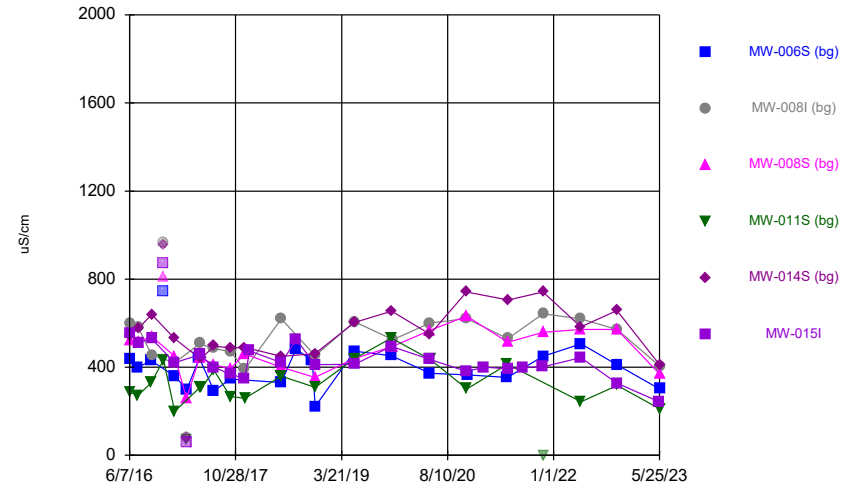
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



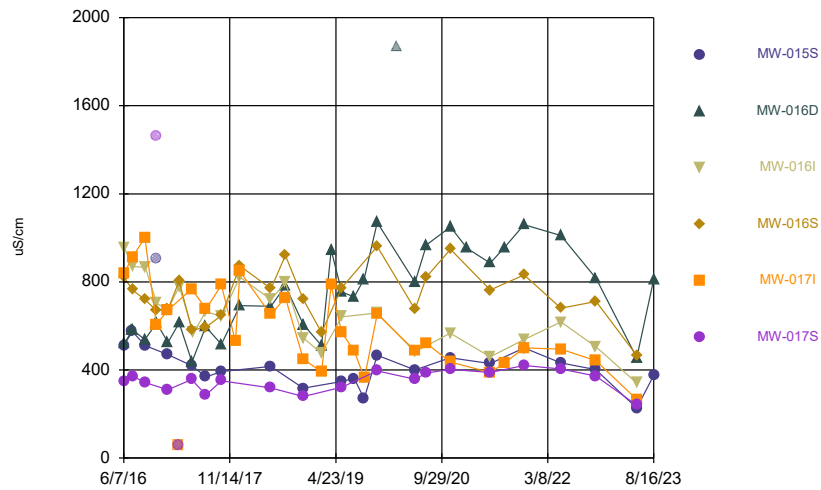
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



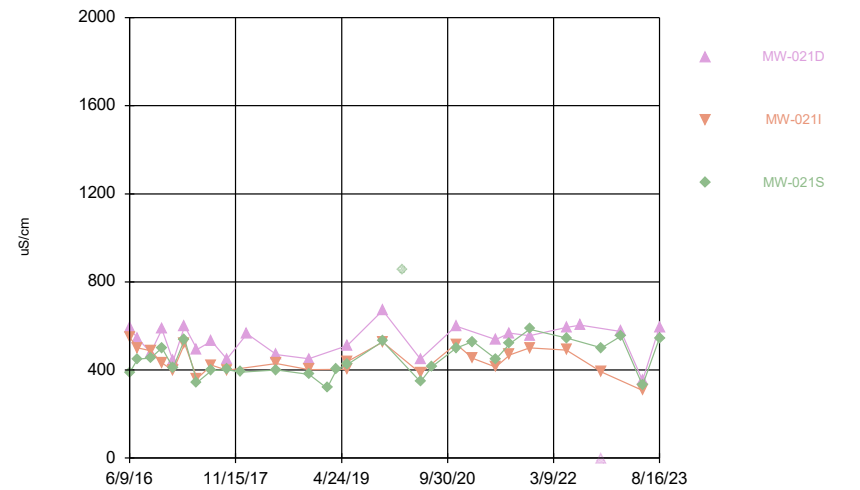
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Time Series



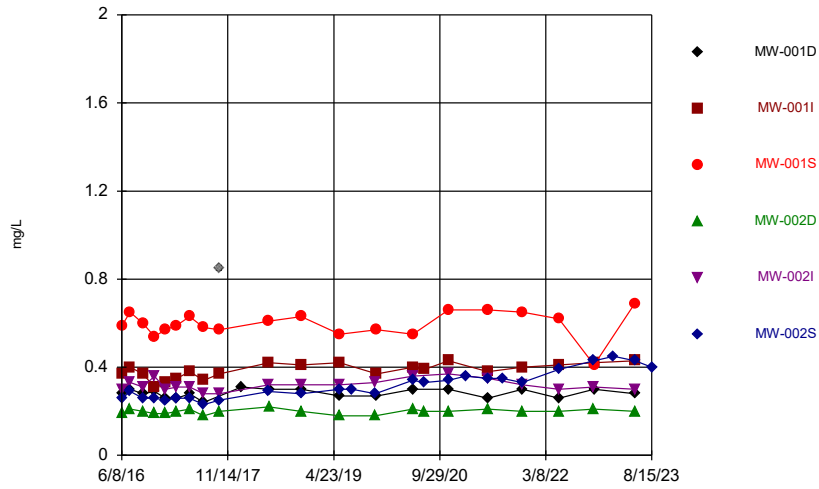
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Time Series



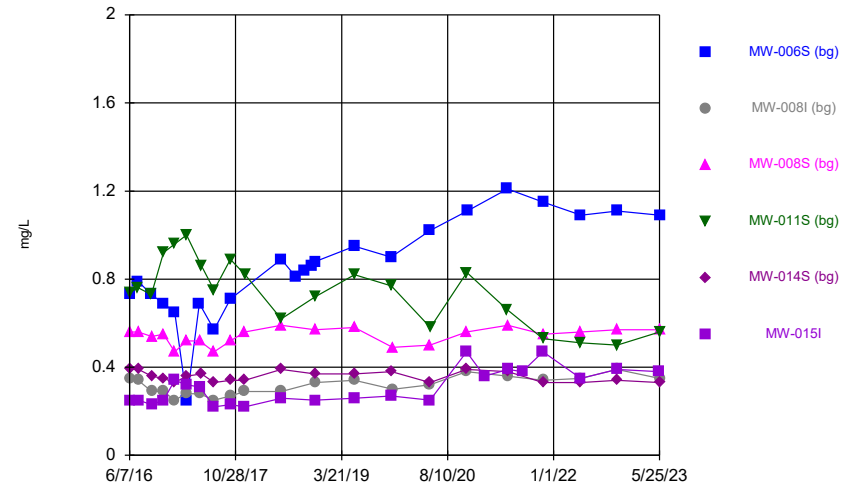
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Time Series



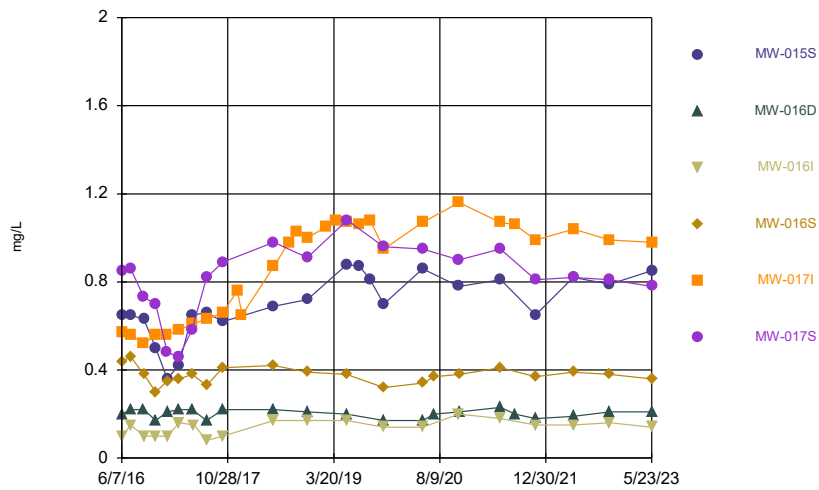
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Time Series



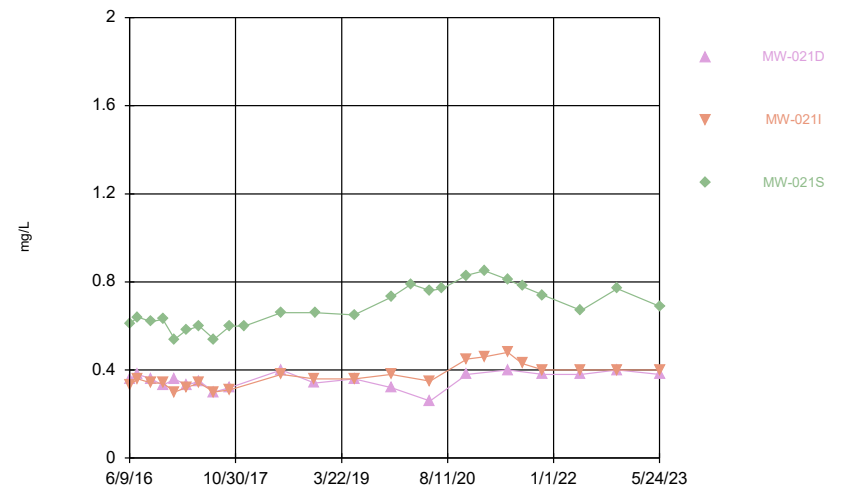
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Time Series



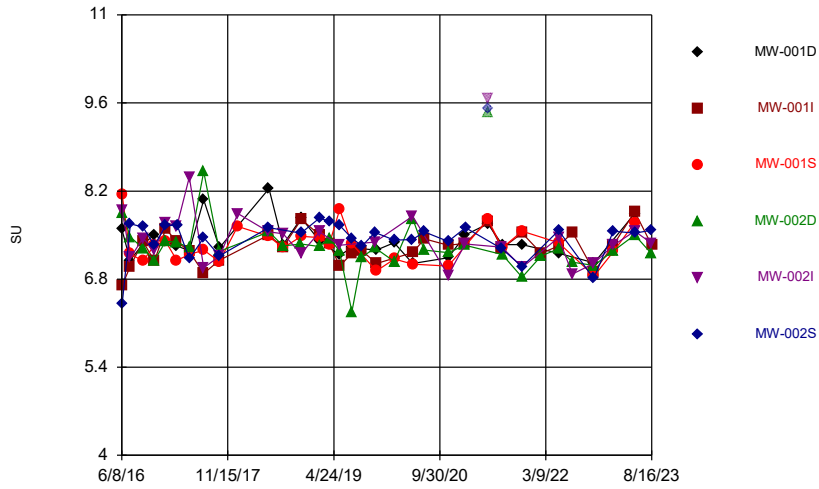
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



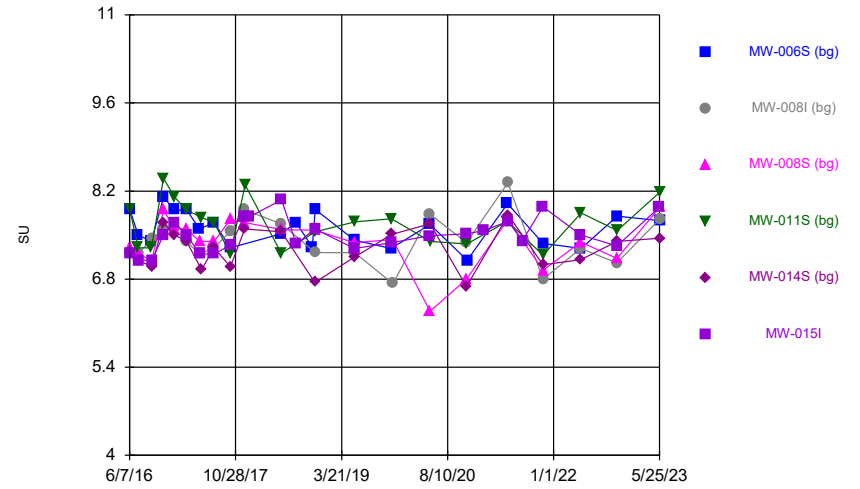
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



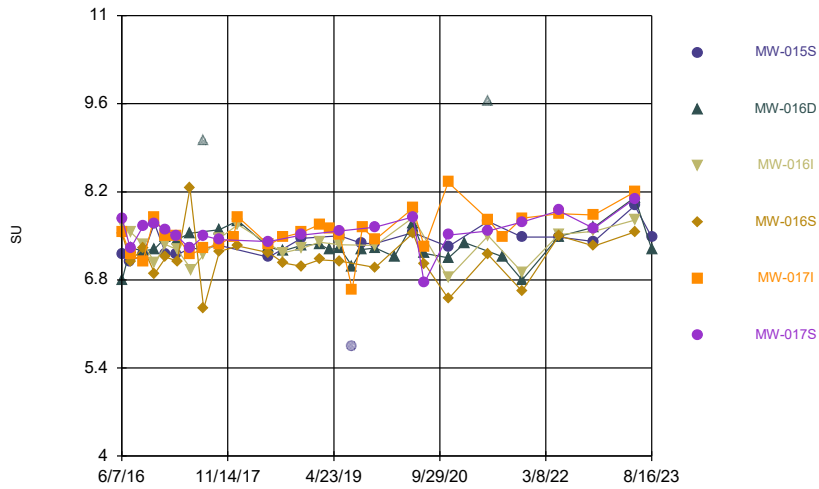
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Time Series



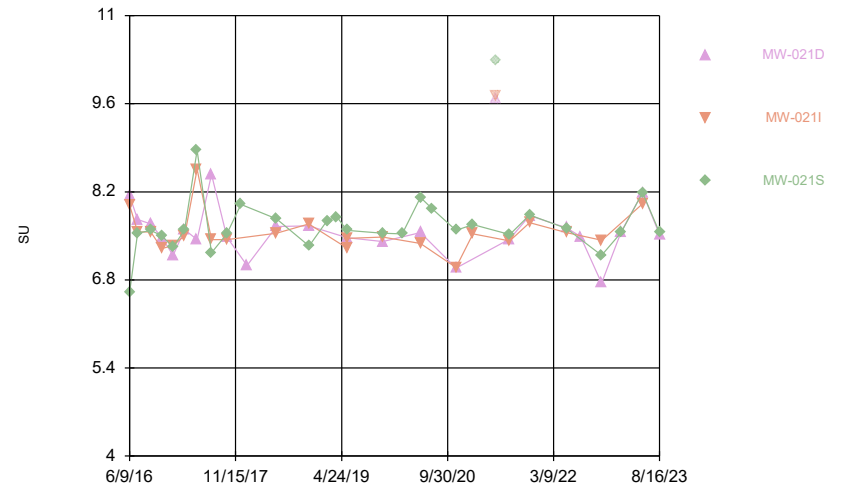
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



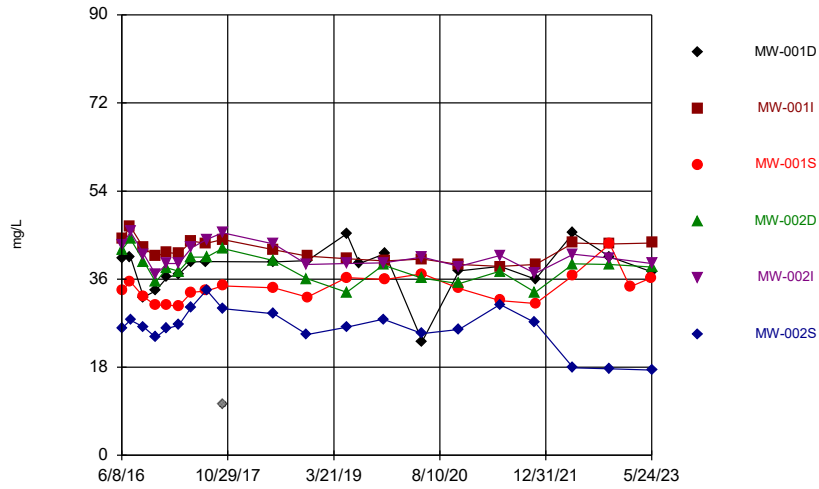
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



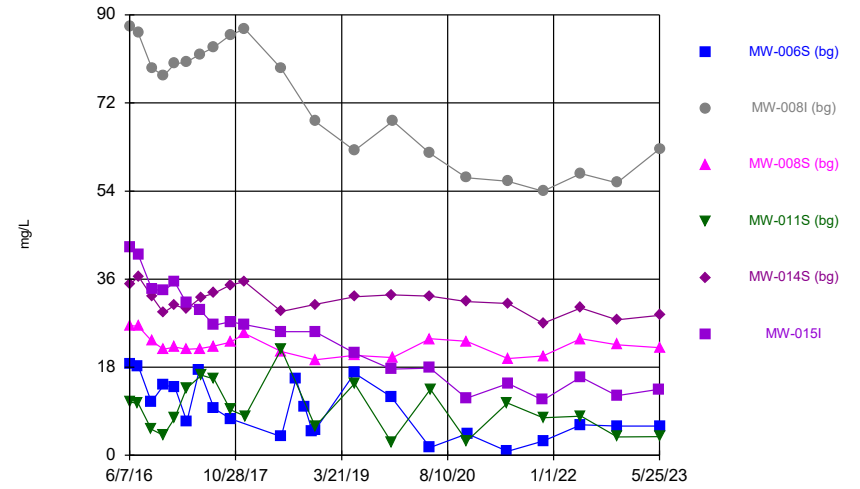
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Time Series



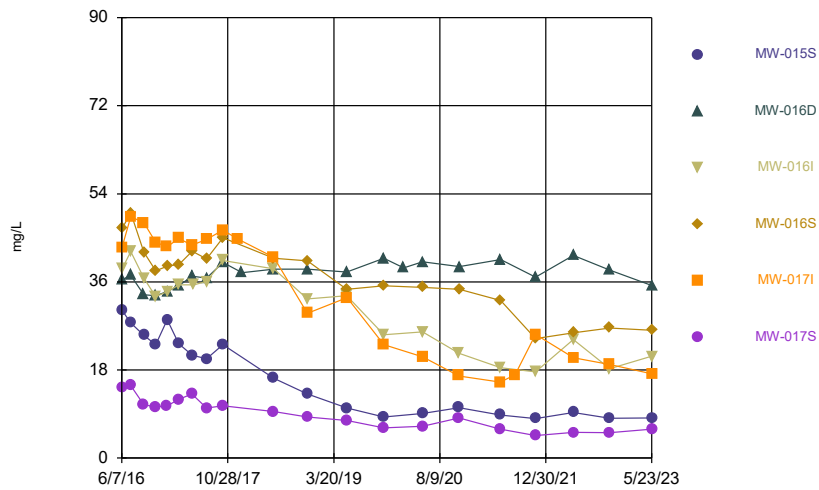
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



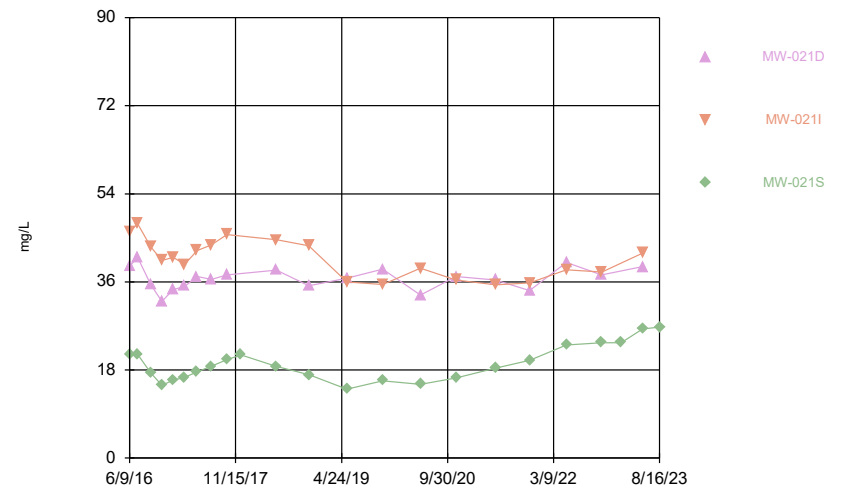
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Time Series



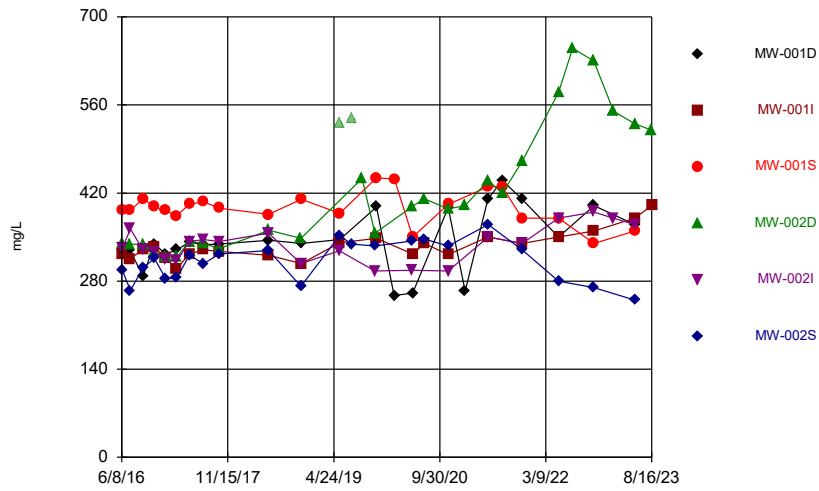
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



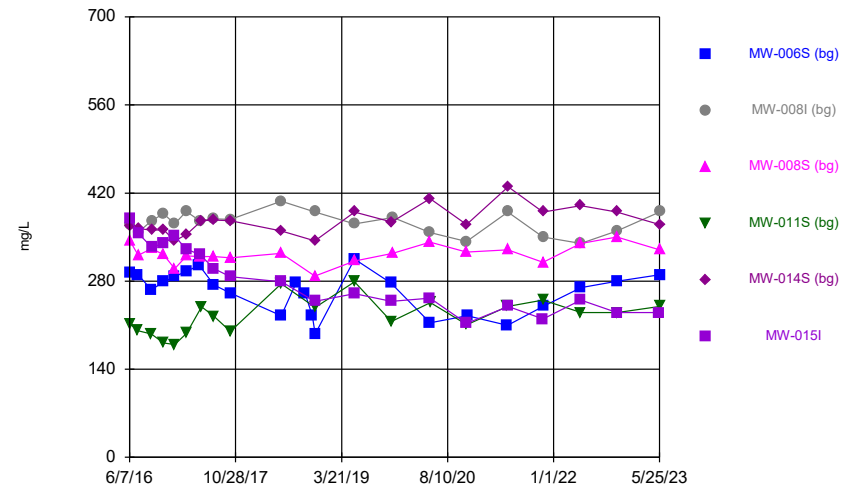
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



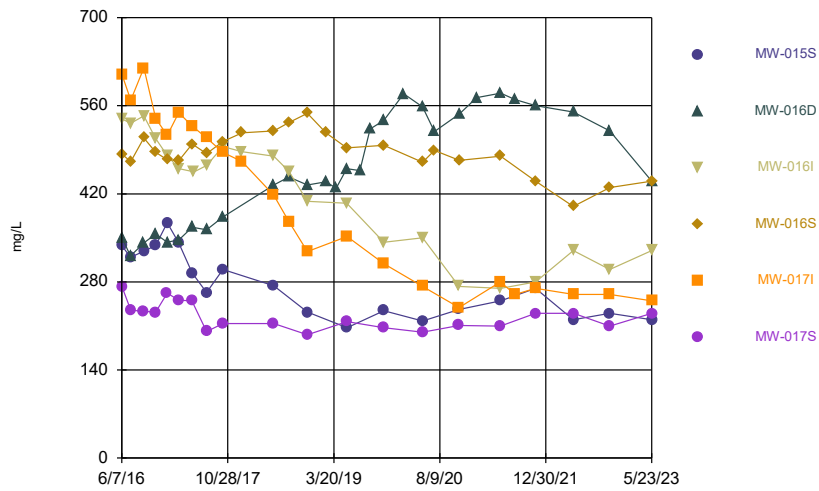
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Time Series



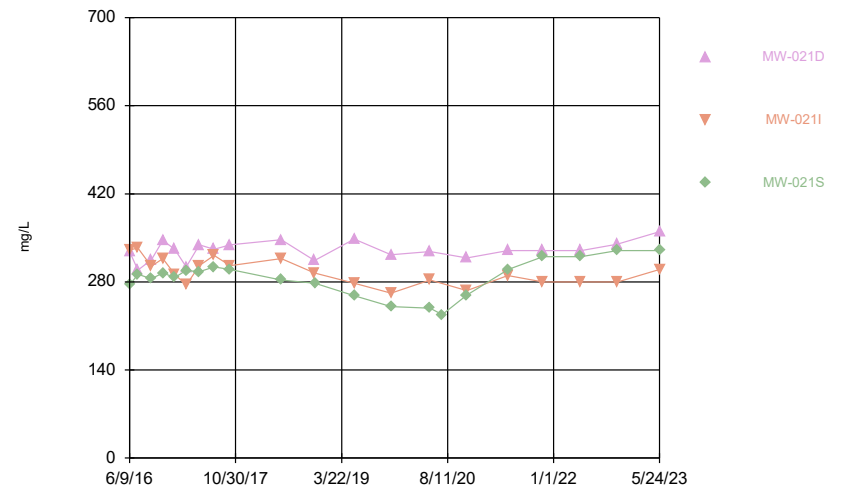
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:47 PM
Rockport Landfill Client: Geosyntec Data: Rockport_LF

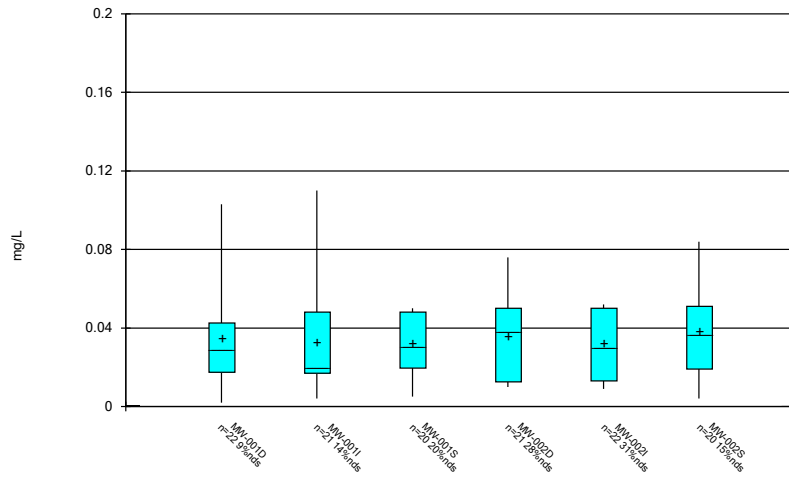
Time Series



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Rockport Landfill Client: Geosyntec Data: Rockport_LF

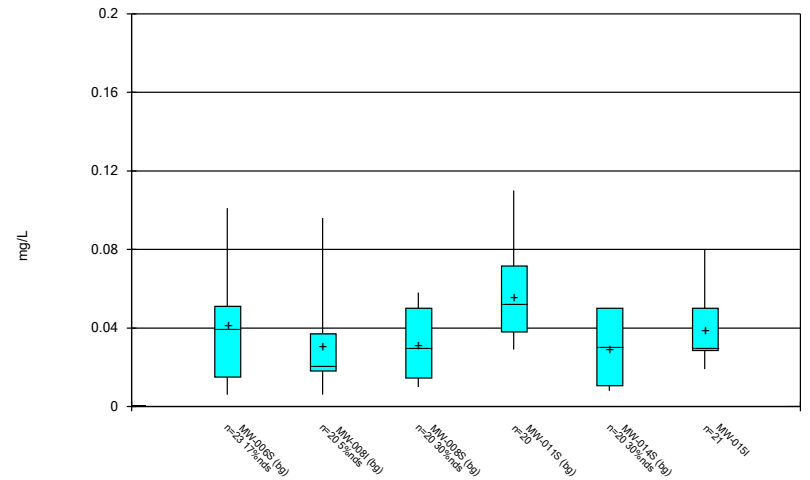
FIGURE B
Box Plots

Box & Whiskers Plot



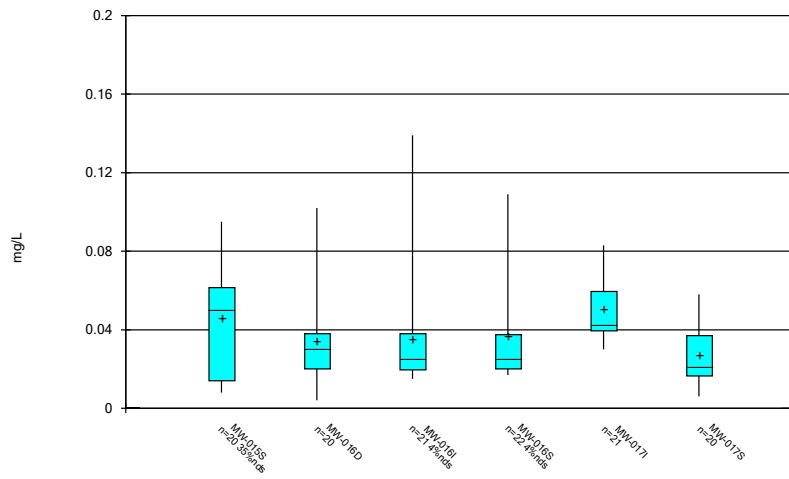
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



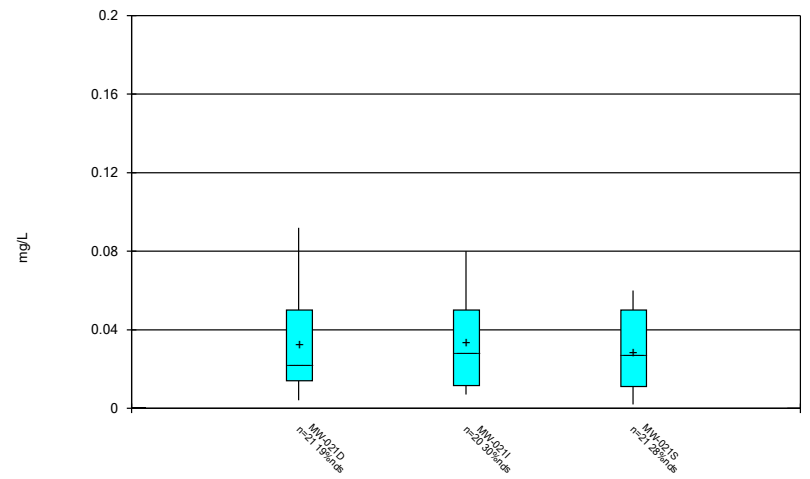
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



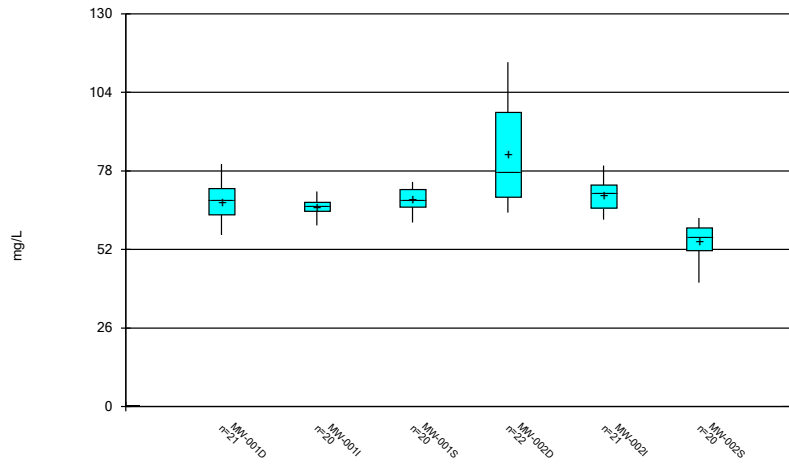
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



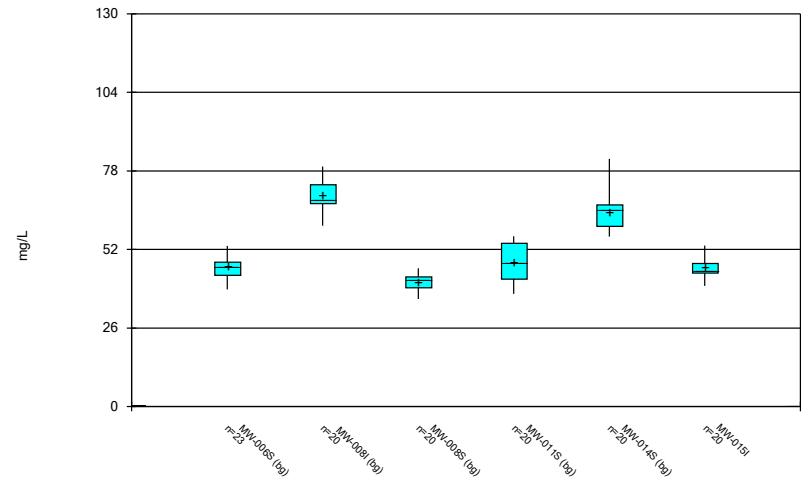
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



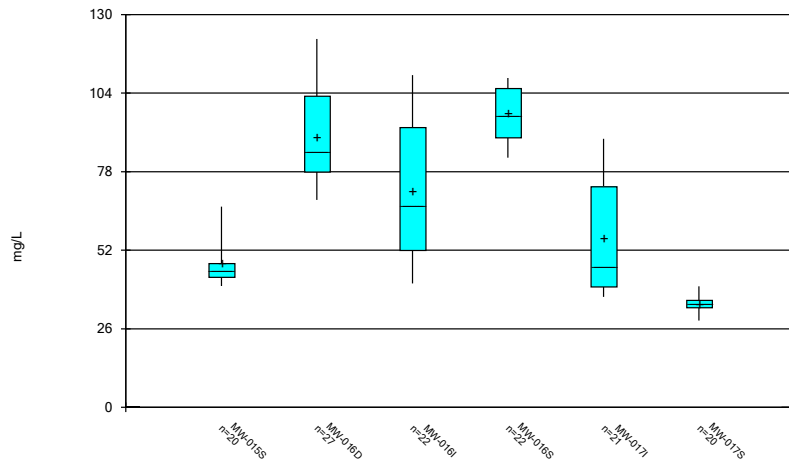
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



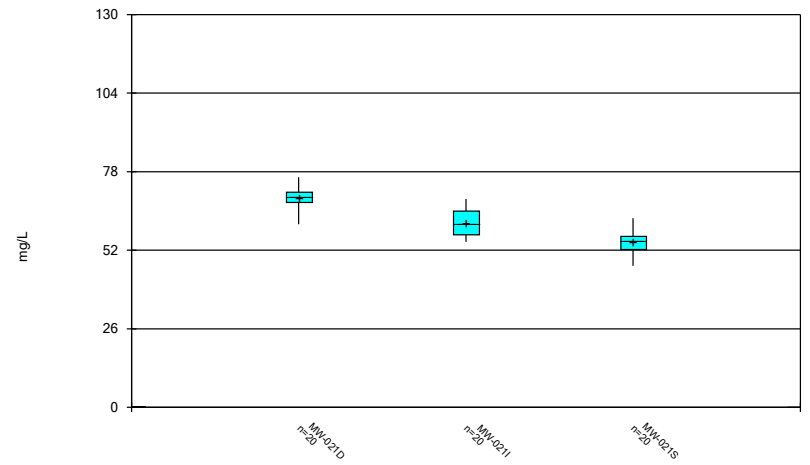
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Box & Whiskers Plot



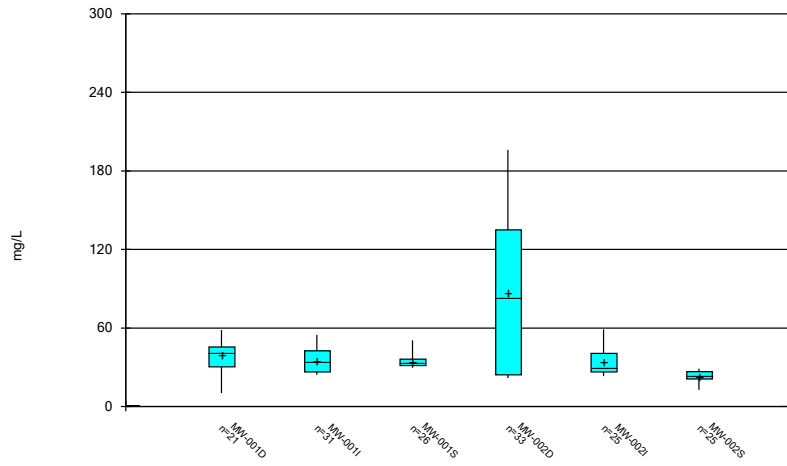
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



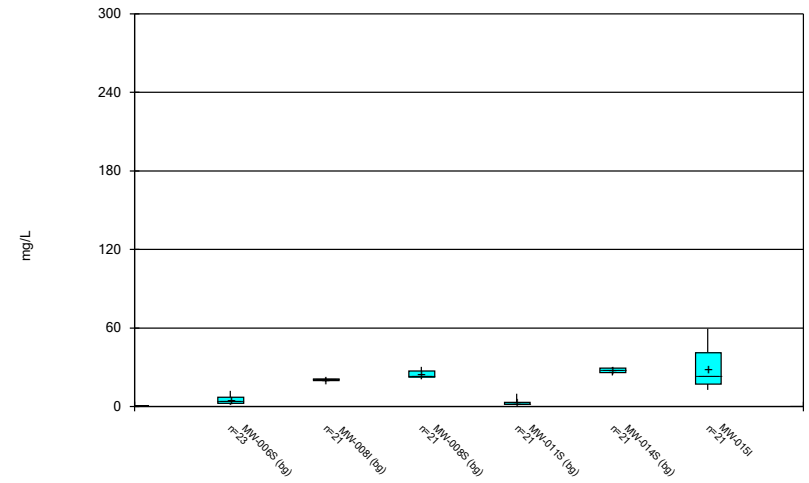
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



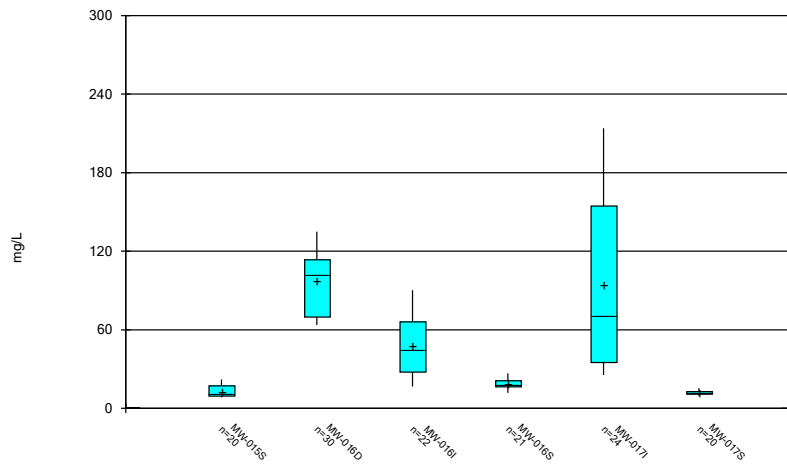
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



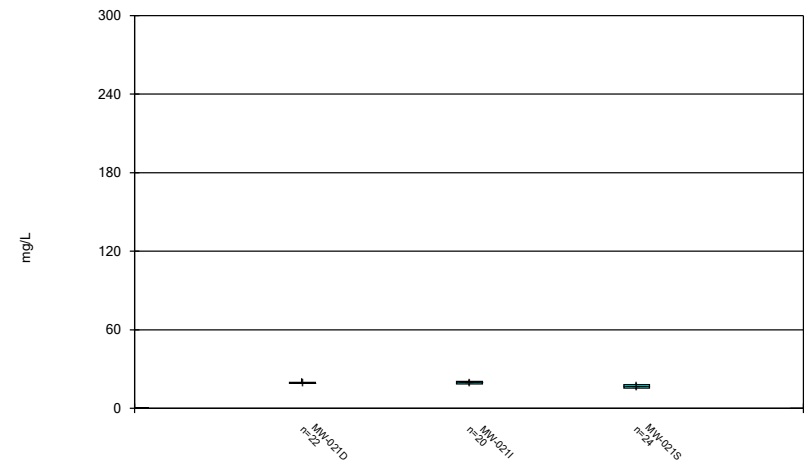
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Box & Whiskers Plot



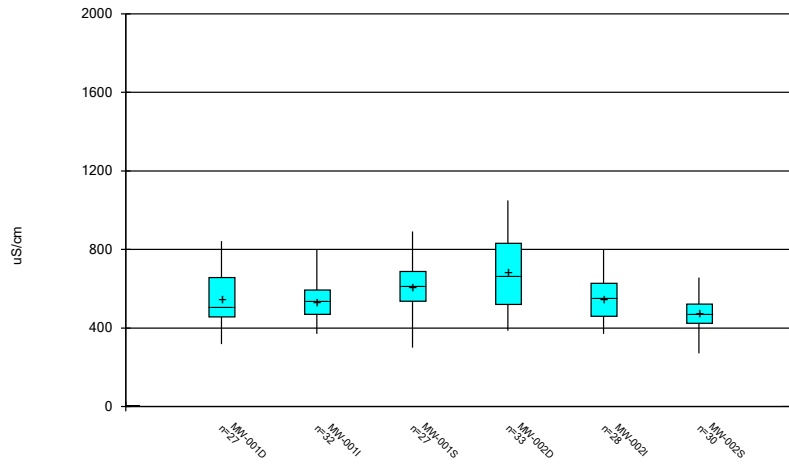
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Box & Whiskers Plot



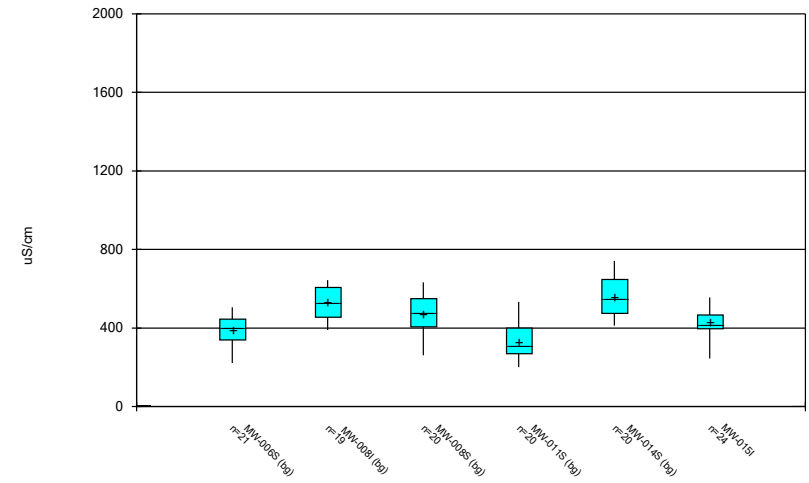
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



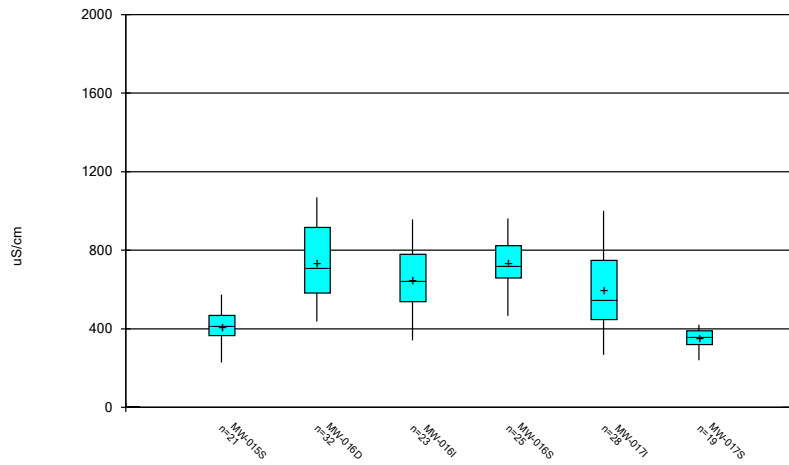
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Box & Whiskers Plot



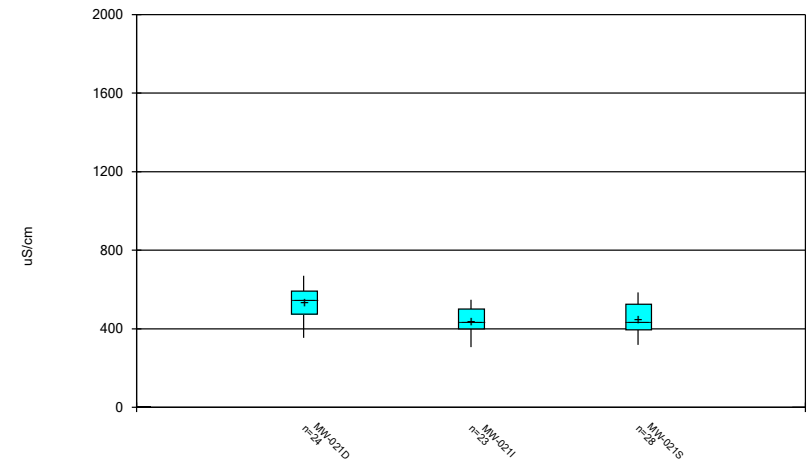
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Box & Whiskers Plot



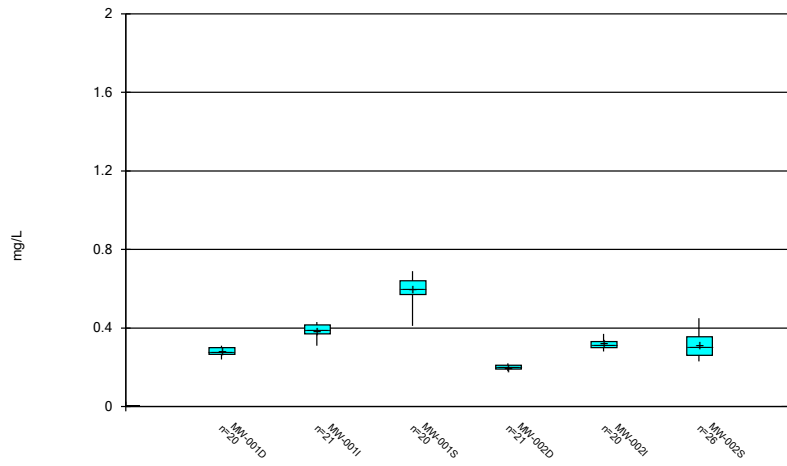
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Box & Whiskers Plot



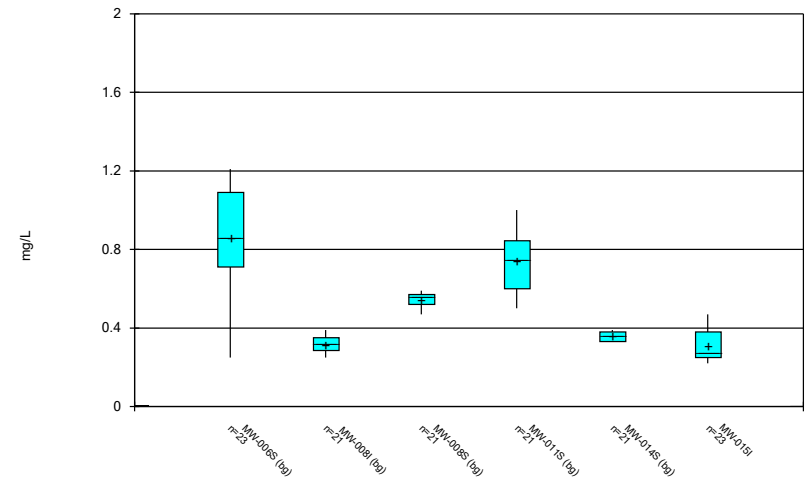
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



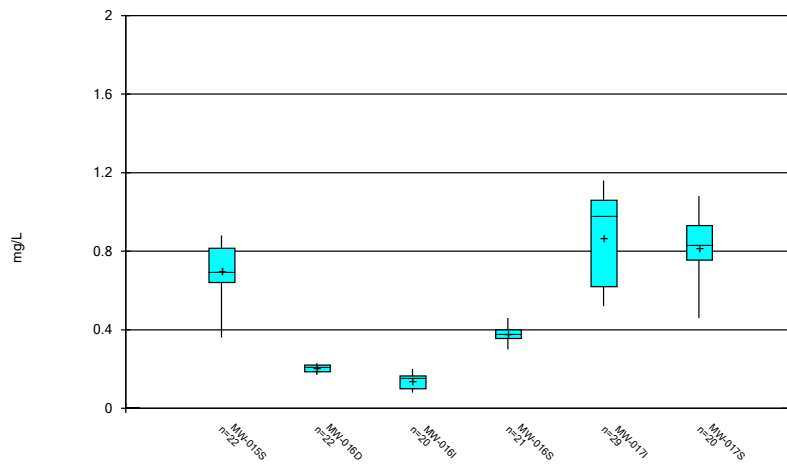
Constituent: Fluoride, total Analysis Run 12/13/2023 1:48 PM
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



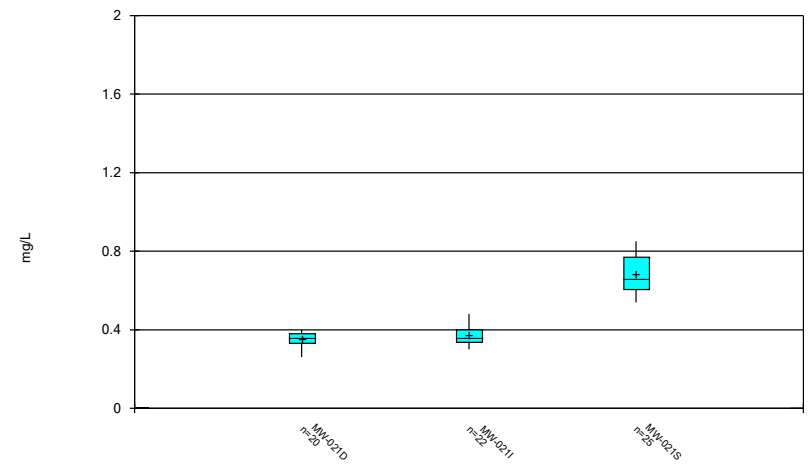
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



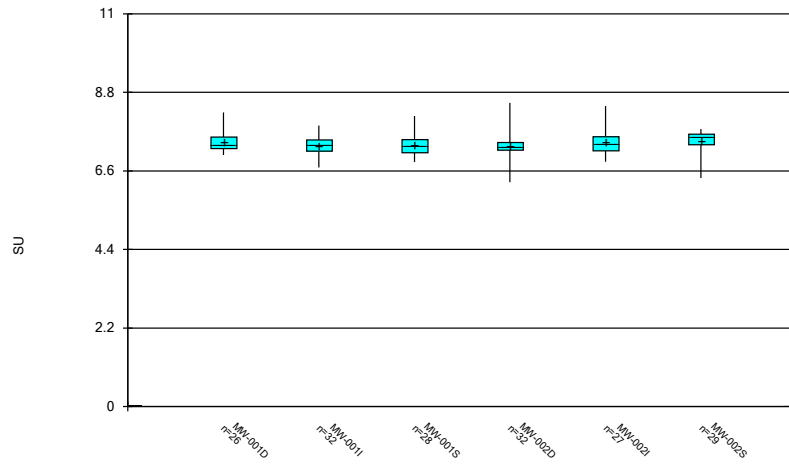
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



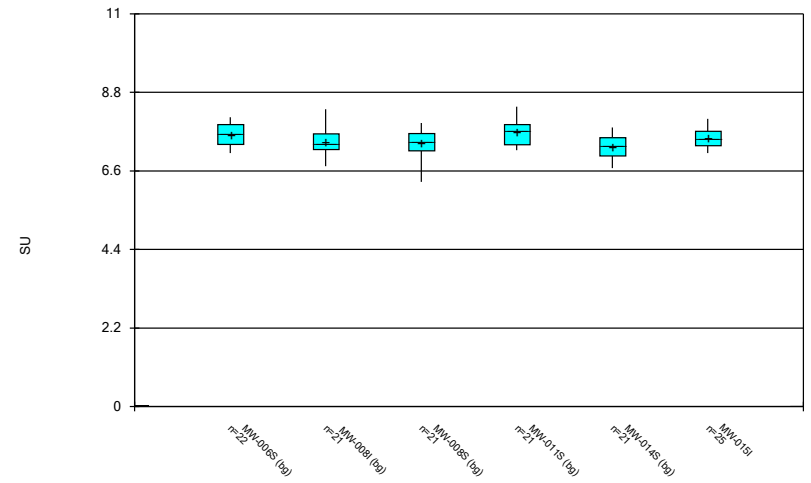
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



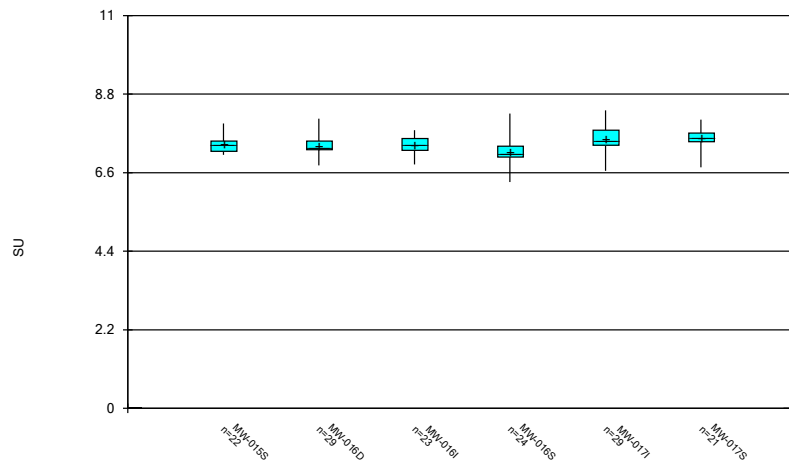
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



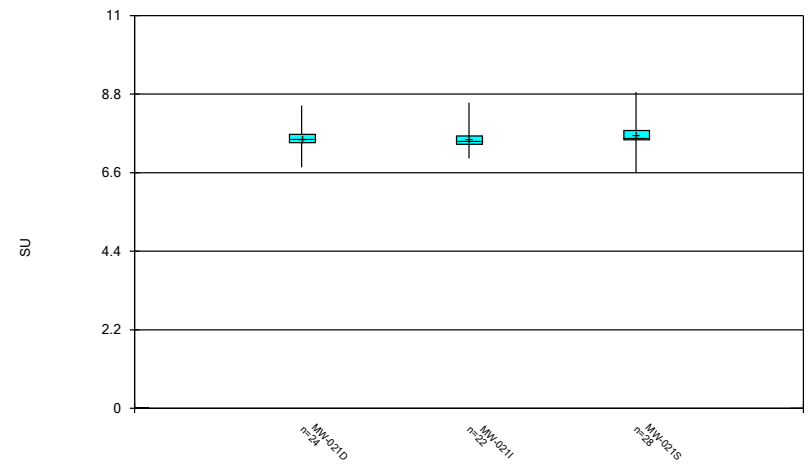
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



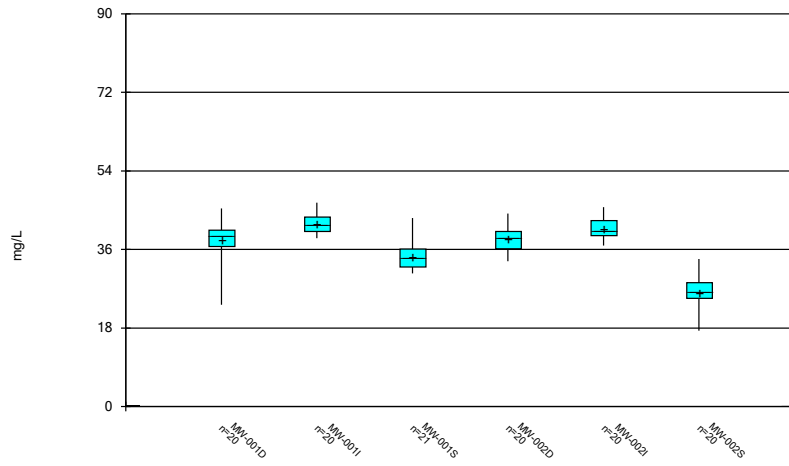
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



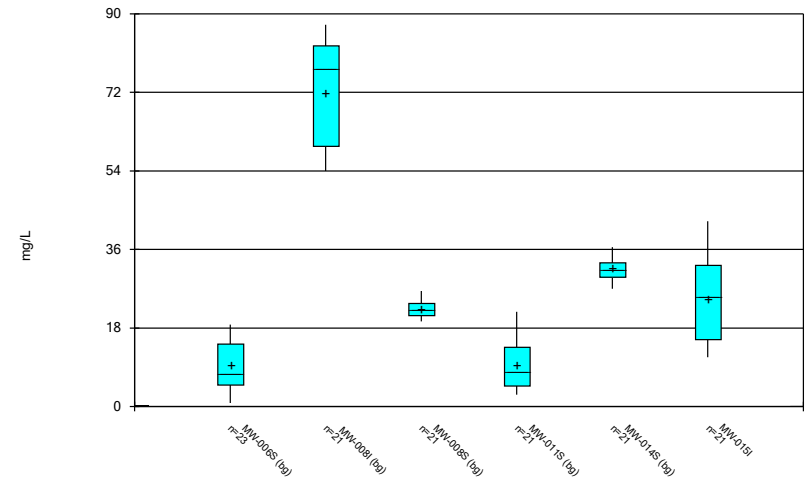
Constituent: pH, field Analysis Run 12/13/2023 1:48 PM
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



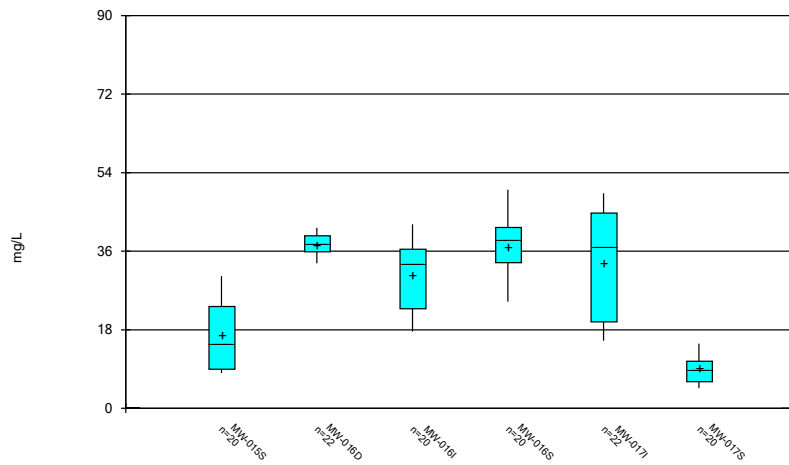
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



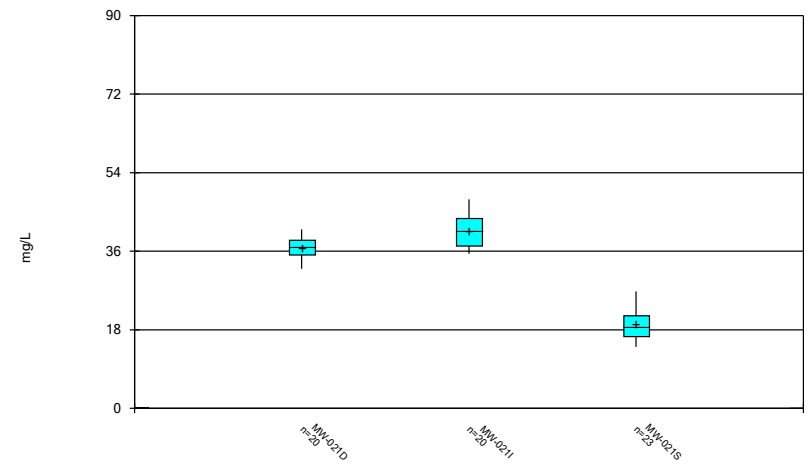
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



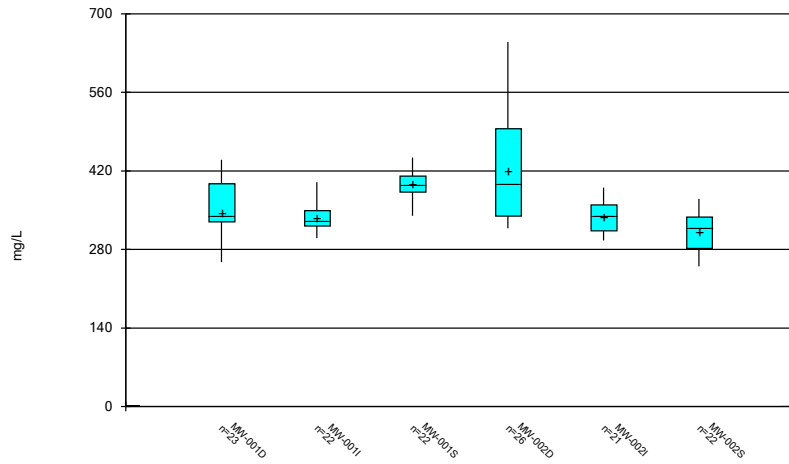
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



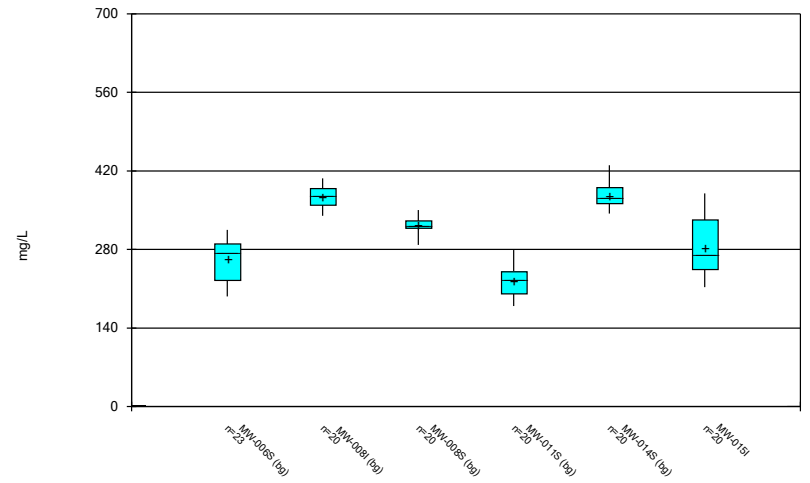
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



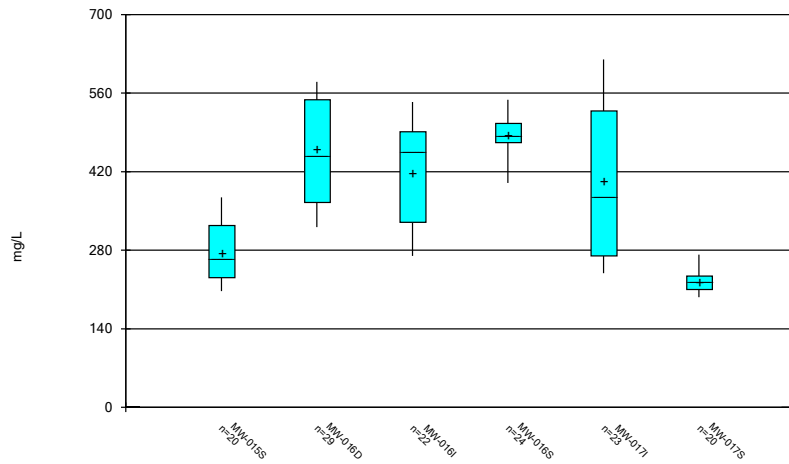
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:48 PM
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Box & Whiskers Plot



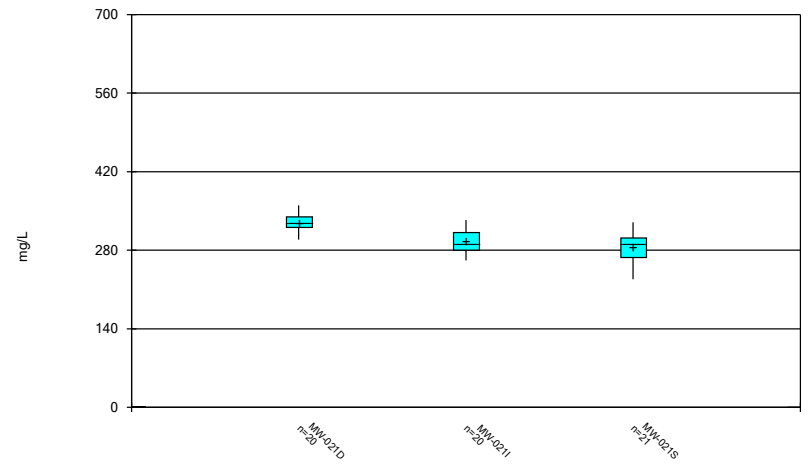
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:48 PM
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:48 PM
Rockport Landfill Client: Geosyntec Data: Rockport_LF

FIGURE C

Outlier Summary and Tukey's Outlier Test

Outlier Summary

Rockport Landfill Data: Rockport_LF Printed 12/7/2023, 2:32 PM

Date	MW-001S Conductivity (uS/cm)	MW-002D Conductivity (uS/cm)	MW-002S Conductivity (uS/cm)	MW-006S Conductivity (uS/cm)	MW-008I Conductivity (uS/cm)	MW-008S Conductivity (uS/cm)	MW-011S Conductivity (uS/cm)	MW-014S Conductivity (uS/cm)	MW-015I Conductivity (uS/cm)	MW-015S Conductivity (uS/cm)
11/16/2016			741 (o)						874 (o)	904 (o)
11/17/2016				968 (o)	811 (o)			955 (o)		
3/6/2017				80 (o)						
3/7/2017						70 (o)	80 (o)	60 (o)		60 (o)
7/18/2017										
10/4/2017										
5/22/2019										
7/23/2019										
7/24/2019										
2/18/2020	1386 (o)	1377 (o)	1070 (o)							
5/27/2021										
5/28/2021										
11/12/2021						0 (o)				
11/2/2022										

Date	MW-016D Conductivity (uS/cm)	MW-017I Conductivity (uS/cm)	MW-017S Conductivity (uS/cm)	MW-021D Conductivity (uS/cm)	MW-021S Conductivity (uS/cm)	MW-001D Fluoride, total (mg/L)	MW-002D pH, field (SU)	MW-002I pH, field (SU)	MW-002S pH, field (SU)	MW-015S pH, field (SU)
11/16/2016			1460 (o)							
11/17/2016										
3/6/2017										
3/7/2017		60 (o)	60 (o)							
7/18/2017										
10/4/2017					0.85 (o)					
5/22/2019										
7/23/2019										5.74 (o)
7/24/2019										
2/18/2020	1869 (o)				856 (o)					
5/27/2021						9.45 (o)	9.66 (o)	9.5 (o)		
5/28/2021										
11/12/2021										
11/2/2022			0 (o)							

Outlier Summary

Rockport Landfill Data: Rockport_LF Printed 12/7/2023, 2:32 PM

	MW-016D pH, field (SU)	MW-021D pH, field (SU)	MW-0211 pH, field (SU)	MW-021S pH, field (SU)	MW-001D Sulfate, total (mg/L)	MW-002D Total Dissolved Solids [TDS] (mg/L)
11/16/2016						
11/17/2016						
3/6/2017						
3/7/2017						
7/18/2017	9.03 (o)					
10/4/2017				10.4 (o)		
5/22/2019					531 (o)	
7/23/2019						
7/24/2019						540 (o)
2/18/2020						
5/27/2021		9.68 (o)	9.72 (o)			
5/28/2021	9.64 (o)			10.28 (o)		
11/12/2021						
11/2/2022						

Tukey's Outlier Test - Significant Results

Rockport Landfill Data: Rockport_LF Printed 12/7/2023, 2:19 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Calcium, total (mg/L)	MW-015S	Yes	66.4	5/28/2021	NP	NaN	20	47.61	7.742	In(x)	ShapiroWilk
Chloride, total (mg/L)	MW-021D	Yes	22.9	5/24/2023	NP	NaN	22	19.75	1.006	In(x)	ShapiroWilk
Conductivity (uS/cm)	MW-001S	Yes	1386	2/18/2020	NP	NaN	28	636.9	188.6	In(x)	ShapiroWilk
Conductivity (uS/cm)	MW-002S	Yes	1070	2/18/2020	NP	NaN	31	495.2	133.2	In(x)	ShapiroWilk
Conductivity (uS/cm)	MW-015I	Yes	874,60	11/16/2016,3/7/2017	NP	NaN	26	428.9	133.7	normal	ShapiroWilk
Conductivity (uS/cm)	MW-015S	Yes	904	11/16/2016	NP	NaN	23	417.9	151	normal	ShapiroWilk
Conductivity (uS/cm)	MW-017S	Yes	1460,60	11/16/2016,3/7/2017	NP	NaN	21	389.6	257.3	In(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-001D	Yes	0.85	10/4/2017	NP	NaN	21	0.309	0.1254	In(x)	ShapiroWilk
pH, field (SU)	MW-002D	Yes	8.51,6.28,9.45	7/19/2017,7/23/2019,5/27/2021	NP	NaN	33	7.369	0.506	In(x)	ShapiroWilk
pH, field (SU)	MW-002I	Yes	9.66	5/27/2021	NP	NaN	28	7.488	0.5441	In(x)	ShapiroWilk
pH, field (SU)	MW-002S	Yes	6.4,9.5	6/9/2016,5/27/2021	NP	NaN	30	7.499	0.4775	In(x)	ShapiroWilk
pH, field (SU)	MW-016D	Yes	9.03,9.64	7/18/2017,5/28/2021	NP	NaN	31	7.476	0.5636	In(x)	ShapiroWilk
pH, field (SU)	MW-021D	Yes	9.68	5/27/2021	NP	NaN	25	7.644	0.5599	In(x)	ShapiroWilk
pH, field (SU)	MW-021I	Yes	9.72	5/27/2021	NP	NaN	23	7.649	0.5443	In(x)	ShapiroWilk
pH, field (SU)	MW-021S	Yes	6.6,8.86,10.28	6/9/2016,5/9/2017,5/28/2021	NP	NaN	29	7.728	0.6213	In(x)	ShapiroWilk

Tukey's Outlier Test - All Results

Rockport Landfill Data: Rockport_LF Printed 12/7/2023, 2:19 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Boron, total (mg/L)	MW-001D	No	n/a	n/a	NP	NaN	22	0.0345	0.0256	x^(1/3)	ShapiroWilk
Boron, total (mg/L)	MW-001I	No	n/a	n/a	NP	NaN	21	0.03257	0.02513	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-001S	No	n/a	n/a	NP	NaN	20	0.0321	0.01463	sqrt(x)	ShapiroWilk
Boron, total (mg/L)	MW-002D	No	n/a	n/a	NP	NaN	21	0.03605	0.02219	sqrt(x)	ShapiroWilk
Boron, total (mg/L)	MW-002I	No	n/a	n/a	NP	NaN	22	0.03227	0.01661	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-002S	No	n/a	n/a	NP	NaN	20	0.0387	0.02222	sqrt(x)	ShapiroWilk
Boron, total (mg/L)	MW-006S (bg)	No	n/a	n/a	NP	NaN	23	0.04178	0.02938	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-008I (bg)	No	n/a	n/a	NP	NaN	20	0.03115	0.02366	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-008S (bg)	No	n/a	n/a	NP	NaN	20	0.0314	0.01747	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-011S (bg)	No	n/a	n/a	NP	NaN	20	0.0561	0.02186	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-014S (bg)	No	n/a	n/a	NP	NaN	20	0.02935	0.01812	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-015I	No	n/a	n/a	NP	NaN	21	0.03933	0.01739	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-015S	No	n/a	n/a	NP	NaN	20	0.0459	0.0269	normal	ShapiroWilk
Boron, total (mg/L)	MW-016D	No	n/a	n/a	NP	NaN	20	0.0339	0.02221	x^(1/3)	ShapiroWilk
Boron, total (mg/L)	MW-016I	No	n/a	n/a	NP	NaN	21	0.03543	0.0302	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-016S	No	n/a	n/a	NP	NaN	22	0.03677	0.02761	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-017I	No	n/a	n/a	NP	NaN	21	0.05062	0.01601	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-017S	No	n/a	n/a	NP	NaN	20	0.027	0.01441	x^(1/3)	ShapiroWilk
Boron, total (mg/L)	MW-021D	No	n/a	n/a	NP	NaN	21	0.033	0.02521	ln(x)	ShapiroWilk
Boron, total (mg/L)	MW-021I	No	n/a	n/a	NP	NaN	20	0.0333	0.02308	x^(1/3)	ShapiroWilk
Boron, total (mg/L)	MW-021S	No	n/a	n/a	NP	NaN	21	0.02833	0.01939	sqrt(x)	ShapiroWilk
Calcium, total (mg/L)	MW-001D	No	n/a	n/a	NP	NaN	21	67.69	6.313	normal	ShapiroWilk
Calcium, total (mg/L)	MW-001I	No	n/a	n/a	NP	NaN	20	65.99	2.93	x^6	ShapiroWilk
Calcium, total (mg/L)	MW-001S	No	n/a	n/a	NP	NaN	20	68.7	3.668	x^4	ShapiroWilk
Calcium, total (mg/L)	MW-002D	No	n/a	n/a	NP	NaN	22	83.65	16.05	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-002I	No	n/a	n/a	NP	NaN	21	70.09	4.968	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-002S	No	n/a	n/a	NP	NaN	20	54.47	6.146	x^6	ShapiroWilk
Calcium, total (mg/L)	MW-006S (bg)	No	n/a	n/a	NP	NaN	23	46.32	3.79	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-008I (bg)	No	n/a	n/a	NP	NaN	20	70.16	4.758	x^(1/3)	ShapiroWilk
Calcium, total (mg/L)	MW-008S (bg)	No	n/a	n/a	NP	NaN	20	41.09	2.94	x^6	ShapiroWilk
Calcium, total (mg/L)	MW-011S (bg)	No	n/a	n/a	NP	NaN	20	47.79	6.324	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-014S (bg)	No	n/a	n/a	NP	NaN	20	64.28	5.663	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-015I	No	n/a	n/a	NP	NaN	20	46.06	3.204	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-015S	Yes	66.4	5/28/2021	NP	NaN	20	47.61	7.742	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-016D	No	n/a	n/a	NP	NaN	27	89.74	14.99	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-016I	No	n/a	n/a	NP	NaN	22	71.78	21.49	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-016S	No	n/a	n/a	NP	NaN	22	97.23	8.94	x^3	ShapiroWilk
Calcium, total (mg/L)	MW-017I	No	n/a	n/a	NP	NaN	21	55.98	18.18	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-017S	No	n/a	n/a	NP	NaN	20	34.29	2.215	normal	ShapiroWilk
Calcium, total (mg/L)	MW-021D	No	n/a	n/a	NP	NaN	20	69.3	4.118	x^6	ShapiroWilk
Calcium, total (mg/L)	MW-021I	No	n/a	n/a	NP	NaN	20	61.18	4.561	ln(x)	ShapiroWilk
Calcium, total (mg/L)	MW-021S	No	n/a	n/a	NP	NaN	20	54.64	3.914	sqrt(x)	ShapiroWilk
Chloride, total (mg/L)	MW-001D	No	n/a	n/a	NP	NaN	21	39.19	11.53	normal	ShapiroWilk
Chloride, total (mg/L)	MW-001I	No	n/a	n/a	NP	NaN	31	35.46	9.724	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-001S	No	n/a	n/a	NP	NaN	26	34.31	4.519	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-002D	No	n/a	n/a	NP	NaN	33	86.42	55.48	normal	ShapiroWilk
Chloride, total (mg/L)	MW-002I	No	n/a	n/a	NP	NaN	25	34.42	12.06	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-002S	No	n/a	n/a	NP	NaN	25	23.12	4.271	x^3	ShapiroWilk
Chloride, total (mg/L)	MW-006S (bg)	No	n/a	n/a	NP	NaN	23	4.994	2.999	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-008I (bg)	No	n/a	n/a	NP	NaN	21	20.51	0.865	x^6	ShapiroWilk
Chloride, total (mg/L)	MW-008S (bg)	No	n/a	n/a	NP	NaN	21	24.45	2.893	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-011S (bg)	No	n/a	n/a	NP	NaN	21	3.143	2.348	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-014S (bg)	No	n/a	n/a	NP	NaN	21	27.6	1.88	x^6	ShapiroWilk
Chloride, total (mg/L)	MW-015I	No	n/a	n/a	NP	NaN	21	28.25	14.11	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-015S	No	n/a	n/a	NP	NaN	20	12.95	4.555	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-016D	No	n/a	n/a	NP	NaN	30	97.36	23.53	normal	ShapiroWilk

Tukey's Outlier Test - All Results

Rockport Landfill Data: Rockport_LF Printed 12/7/2023, 2:19 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Chloride, total (mg/L)	MW-016I	No	n/a	n/a	NP	NaN	22	47.02	22.83	sqrt(x)	ShapiroWilk
Chloride, total (mg/L)	MW-016S	No	n/a	n/a	NP	NaN	21	18.59	3.858	sqrt(x)	ShapiroWilk
Chloride, total (mg/L)	MW-017I	No	n/a	n/a	NP	NaN	24	94.13	64.32	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-017S	No	n/a	n/a	NP	NaN	20	11.79	1.467	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-021D	Yes	22.9	5/24/2023	NP	NaN	22	19.75	1.006	ln(x)	ShapiroWilk
Chloride, total (mg/L)	MW-021I	No	n/a	n/a	NP	NaN	20	19.71	1.224	x^6	ShapiroWilk
Chloride, total (mg/L)	MW-021S	No	n/a	n/a	NP	NaN	24	17.09	1.785	x^2	ShapiroWilk
Conductivity (uS/cm)	MW-001D	No	n/a	n/a	NP	NaN	27	548.7	134.5	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-001I	No	n/a	n/a	NP	NaN	32	532.3	94.3	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-001S	Yes	1386	2/18/2020	NP	NaN	28	636.9	188.6	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-002D	No	n/a	n/a	NP	NaN	34	704.5	232.5	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-002I	No	n/a	n/a	NP	NaN	28	547.4	105	x^(1/3)	ShapiroWilk
Conductivity (uS/cm)	MW-002S	Yes	1070	2/18/2020	NP	NaN	31	495.2	133.2	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-006S (bg)	No	n/a	n/a	NP	NaN	22	404.5	103.7	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-008I (bg)	No	n/a	n/a	NP	NaN	21	530.9	160.6	normal	ShapiroWilk
Conductivity (uS/cm)	MW-008S (bg)	No	n/a	n/a	NP	NaN	21	489.5	116	x^(1/3)	ShapiroWilk
Conductivity (uS/cm)	MW-011S (bg)	No	n/a	n/a	NP	NaN	22	303.7	120	normal	ShapiroWilk
Conductivity (uS/cm)	MW-014S (bg)	No	n/a	n/a	NP	NaN	22	556.5	167.4	normal	ShapiroWilk
Conductivity (uS/cm)	MW-015I	Yes	874.60	11/16/2016,3/7/2017	NP	NaN	26	428.9	133.7	normal	ShapiroWilk
Conductivity (uS/cm)	MW-015S	Yes	904	11/16/2016	NP	NaN	23	417.9	151	normal	ShapiroWilk
Conductivity (uS/cm)	MW-016D	No	n/a	n/a	NP	NaN	33	768.6	274.5	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-016I	No	n/a	n/a	NP	NaN	23	647.7	153	sqrt(x)	ShapiroWilk
Conductivity (uS/cm)	MW-016S	No	n/a	n/a	NP	NaN	25	734.3	124	normal	ShapiroWilk
Conductivity (uS/cm)	MW-017I	No	n/a	n/a	NP	NaN	29	577.6	207	normal	ShapiroWilk
Conductivity (uS/cm)	MW-017S	Yes	1460.60	11/16/2016,3/7/2017	NP	NaN	21	389.6	257.3	ln(x)	ShapiroWilk
Conductivity (uS/cm)	MW-021D	No	n/a	n/a	NP	NaN	25	512.3	128.3	x^3	ShapiroWilk
Conductivity (uS/cm)	MW-021I	No	n/a	n/a	NP	NaN	23	443.1	60.8	normal	ShapiroWilk
Conductivity (uS/cm)	MW-021S	No	n/a	n/a	NP	NaN	29	462.3	106.9	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-001D	Yes	0.85	10/4/2017	NP	NaN	21	0.309	0.1254	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-001I	No	n/a	n/a	NP	NaN	21	0.3857	0.03355	x^4	ShapiroWilk
Fluoride, total (mg/L)	MW-001S	No	n/a	n/a	NP	NaN	20	0.596	0.06082	x^4	ShapiroWilk
Fluoride, total (mg/L)	MW-002D	No	n/a	n/a	NP	NaN	21	0.199	0.01091	x^4	ShapiroWilk
Fluoride, total (mg/L)	MW-002I	No	n/a	n/a	NP	NaN	20	0.319	0.02511	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-002S	No	n/a	n/a	NP	NaN	26	0.3181	0.06274	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-006S (bg)	No	n/a	n/a	NP	NaN	23	0.8574	0.2232	x^2	ShapiroWilk
Fluoride, total (mg/L)	MW-008I (bg)	No	n/a	n/a	NP	NaN	21	0.3162	0.0408	normal	ShapiroWilk
Fluoride, total (mg/L)	MW-008S (bg)	No	n/a	n/a	NP	NaN	21	0.5429	0.03635	x^6	ShapiroWilk
Fluoride, total (mg/L)	MW-011S (bg)	No	n/a	n/a	NP	NaN	21	0.7395	0.1486	x^2	ShapiroWilk
Fluoride, total (mg/L)	MW-014S (bg)	No	n/a	n/a	NP	NaN	21	0.3571	0.02369	normal	ShapiroWilk
Fluoride, total (mg/L)	MW-015I	No	n/a	n/a	NP	NaN	23	0.3087	0.07759	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-015S	No	n/a	n/a	NP	NaN	22	0.6986	0.1414	x^3	ShapiroWilk
Fluoride, total (mg/L)	MW-016D	No	n/a	n/a	NP	NaN	22	0.2023	0.01926	x^6	ShapiroWilk
Fluoride, total (mg/L)	MW-016I	No	n/a	n/a	NP	NaN	20	0.1405	0.033	x^2	ShapiroWilk
Fluoride, total (mg/L)	MW-016S	No	n/a	n/a	NP	NaN	21	0.3771	0.03836	sqrt(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-017I	No	n/a	n/a	NP	NaN	29	0.8686	0.219	x^6	ShapiroWilk
Fluoride, total (mg/L)	MW-017S	No	n/a	n/a	NP	NaN	20	0.816	0.1615	x^3	ShapiroWilk
Fluoride, total (mg/L)	MW-021D	No	n/a	n/a	NP	NaN	20	0.3545	0.03649	x^4	ShapiroWilk
Fluoride, total (mg/L)	MW-021I	No	n/a	n/a	NP	NaN	22	0.3723	0.05108	ln(x)	ShapiroWilk
Fluoride, total (mg/L)	MW-021S	No	n/a	n/a	NP	NaN	25	0.6848	0.09161	ln(x)	ShapiroWilk
pH, field (SU)	MW-001D	No	n/a	n/a	NP	NaN	26	7.422	0.2936	ln(x)	ShapiroWilk
pH, field (SU)	MW-001I	No	n/a	n/a	NP	NaN	32	7.308	0.2578	x^2	ShapiroWilk
pH, field (SU)	MW-001S	No	n/a	n/a	NP	NaN	28	7.345	0.2959	ln(x)	ShapiroWilk
pH, field (SU)	MW-002D	Yes	8.51,6.28,9.45	7/19/2017,7/23/2019,5/27/2021	NP	NaN	33	7.369	0.506	ln(x)	ShapiroWilk
pH, field (SU)	MW-002I	Yes	9.66	5/27/2021	NP	NaN	28	7.488	0.5441	ln(x)	ShapiroWilk
pH, field (SU)	MW-002S	Yes	6.4,9.5	6/9/2016,5/27/2021	NP	NaN	30	7.499	0.4775	ln(x)	ShapiroWilk
pH, field (SU)	MW-006S (bg)	No	n/a	n/a	NP	NaN	22	7.61	0.2772	sqrt(x)	ShapiroWilk

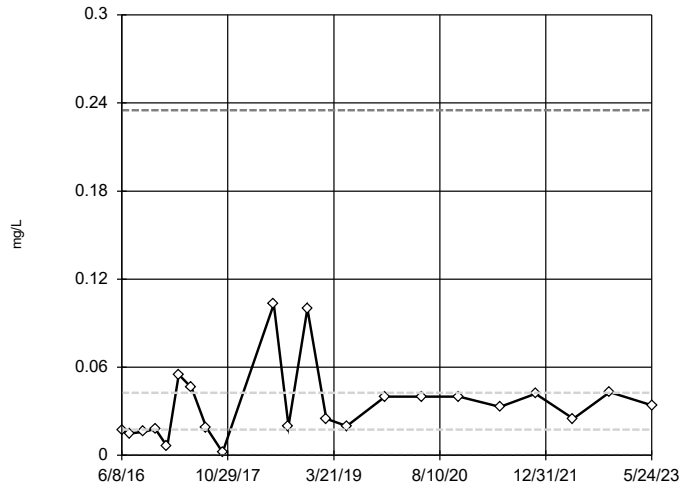
Tukey's Outlier Test - All Results

Rockport Landfill Data: Rockport_LF Printed 12/7/2023, 2:19 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
pH, field (SU)	MW-008I (bg)	No	n/a	n/a	NP	NaN	21	7.414	0.3698	ln(x)	ShapiroWilk
pH, field (SU)	MW-008S (bg)	No	n/a	n/a	NP	NaN	21	7.389	0.3899	x^6	ShapiroWilk
pH, field (SU)	MW-011S (bg)	No	n/a	n/a	NP	NaN	21	7.684	0.3656	ln(x)	ShapiroWilk
pH, field (SU)	MW-014S (bg)	No	n/a	n/a	NP	NaN	21	7.28	0.3175	x^3	ShapiroWilk
pH, field (SU)	MW-015I	No	n/a	n/a	NP	NaN	25	7.502	0.2676	ln(x)	ShapiroWilk
pH, field (SU)	MW-015S	No	n/a	n/a	NP	NaN	23	7.331	0.403	x^6	ShapiroWilk
pH, field (SU)	MW-016D	Yes	9.03,9.64	7/18/2017,5/28/2021	NP	NaN	31	7.476	0.5636	ln(x)	ShapiroWilk
pH, field (SU)	MW-016I	No	n/a	n/a	NP	NaN	23	7.371	0.2569	x^6	ShapiroWilk
pH, field (SU)	MW-016S	No	n/a	n/a	NP	NaN	24	7.173	0.3849	ln(x)	ShapiroWilk
pH, field (SU)	MW-017I	No	n/a	n/a	NP	NaN	29	7.56	0.3329	x^2	ShapiroWilk
pH, field (SU)	MW-017S	No	n/a	n/a	NP	NaN	21	7.565	0.2649	x^6	ShapiroWilk
pH, field (SU)	MW-021D	Yes	9.68	5/27/2021	NP	NaN	25	7.644	0.5599	ln(x)	ShapiroWilk
pH, field (SU)	MW-021I	Yes	9.72	5/27/2021	NP	NaN	23	7.649	0.5443	ln(x)	ShapiroWilk
pH, field (SU)	MW-021S	Yes	6.6,8.86,10.28	6/9/2016,5/9/2017,5/28/2021	NP	NaN	29	7.728	0.6213	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-001D	No	n/a	n/a	NP	NaN	21	36.84	7.61	x^4	ShapiroWilk
Sulfate, total (mg/L)	MW-001I	No	n/a	n/a	NP	NaN	20	41.86	2.151	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-001S	No	n/a	n/a	NP	NaN	21	34.2	2.943	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-002D	No	n/a	n/a	NP	NaN	20	38.37	2.894	normal	ShapiroWilk
Sulfate, total (mg/L)	MW-002I	No	n/a	n/a	NP	NaN	20	40.77	2.502	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-002S	No	n/a	n/a	NP	NaN	20	25.98	4.288	x^3	ShapiroWilk
Sulfate, total (mg/L)	MW-006S (bg)	No	n/a	n/a	NP	NaN	23	9.3	5.617	sqrt(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-008I (bg)	No	n/a	n/a	NP	NaN	21	71.96	12.17	x^3	ShapiroWilk
Sulfate, total (mg/L)	MW-008S (bg)	No	n/a	n/a	NP	NaN	21	22.41	1.971	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-011S (bg)	No	n/a	n/a	NP	NaN	21	9.374	5.123	x^(1/3)	ShapiroWilk
Sulfate, total (mg/L)	MW-014S (bg)	No	n/a	n/a	NP	NaN	21	31.57	2.552	ln(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-015I	No	n/a	n/a	NP	NaN	21	24.49	9.647	sqrt(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-015S	No	n/a	n/a	NP	NaN	20	16.62	8.05	normal	ShapiroWilk
Sulfate, total (mg/L)	MW-016D	No	n/a	n/a	NP	NaN	22	37.65	2.347	x^5	ShapiroWilk
Sulfate, total (mg/L)	MW-016I	No	n/a	n/a	NP	NaN	20	30.41	8.092	x^3	ShapiroWilk
Sulfate, total (mg/L)	MW-016S	No	n/a	n/a	NP	NaN	20	36.97	7.251	x^2	ShapiroWilk
Sulfate, total (mg/L)	MW-017I	No	n/a	n/a	NP	NaN	22	33.23	12.61	x^2	ShapiroWilk
Sulfate, total (mg/L)	MW-017S	No	n/a	n/a	NP	NaN	20	9.03	3.115	sqrt(x)	ShapiroWilk
Sulfate, total (mg/L)	MW-021D	No	n/a	n/a	NP	NaN	20	36.74	2.303	x^2	ShapiroWilk
Sulfate, total (mg/L)	MW-021I	No	n/a	n/a	NP	NaN	20	40.72	3.876	normal	ShapiroWilk
Sulfate, total (mg/L)	MW-021S	No	n/a	n/a	NP	NaN	23	19.29	3.612	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-001D	No	n/a	n/a	NP	NaN	23	345.5	48.89	normal	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-001I	No	n/a	n/a	NP	NaN	22	335.5	23.09	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-001S	No	n/a	n/a	NP	NaN	22	396.1	26.5	normal	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-002D	No	n/a	n/a	NP	NaN	28	427.5	100.7	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-002I	No	n/a	n/a	NP	NaN	21	338.1	28.44	sqrt(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-002S	No	n/a	n/a	NP	NaN	22	311.6	32.52	x^2	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-006S (bg)	No	n/a	n/a	NP	NaN	23	263.3	33.19	x^4	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-008I (bg)	No	n/a	n/a	NP	NaN	20	373.3	17.58	x^4	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-008S (bg)	No	n/a	n/a	NP	NaN	20	323.6	14.82	x^4	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-011S (bg)	No	n/a	n/a	NP	NaN	20	224.3	27.79	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-014S (bg)	No	n/a	n/a	NP	NaN	20	375.6	21.51	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-015I	No	n/a	n/a	NP	NaN	20	283.6	51.63	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-015S	No	n/a	n/a	NP	NaN	20	274.4	51.22	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-016D	No	n/a	n/a	NP	NaN	29	459.6	87.75	sqrt(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-016I	No	n/a	n/a	NP	NaN	22	417.8	92.27	x^3	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-016S	No	n/a	n/a	NP	NaN	24	484.5	33.64	x^4	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-017I	No	n/a	n/a	NP	NaN	23	403	132.6	sqrt(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-017S	No	n/a	n/a	NP	NaN	20	225.3	21.13	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-021D	No	n/a	n/a	NP	NaN	20	330.1	15.14	x^3	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-021I	No	n/a	n/a	NP	NaN	20	295.9	20.95	ln(x)	ShapiroWilk
Total Dissolved Solids [TDS] (mg/L)	MW-021S	No	n/a	n/a	NP	NaN	21	286.5	28.85	x^3	ShapiroWilk

Tukey's Outlier Screening

MW-001D



n = 22

No outliers found. Tukey's method selected by user.

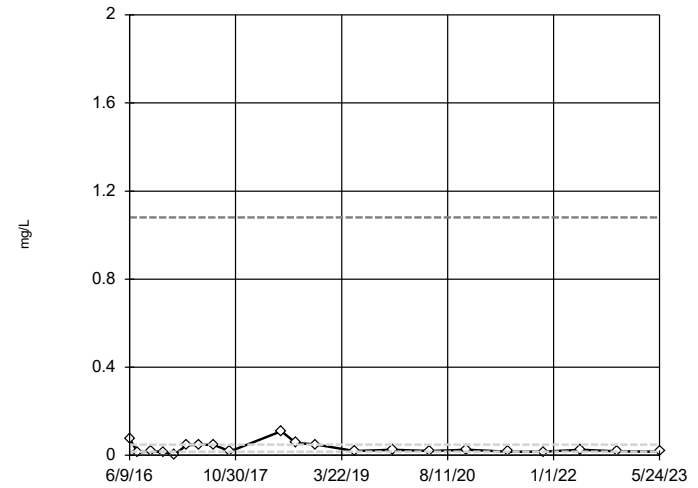
Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.235, low cutoff = -6.2e-7, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001I



n = 21

No outliers found. Tukey's method selected by user.

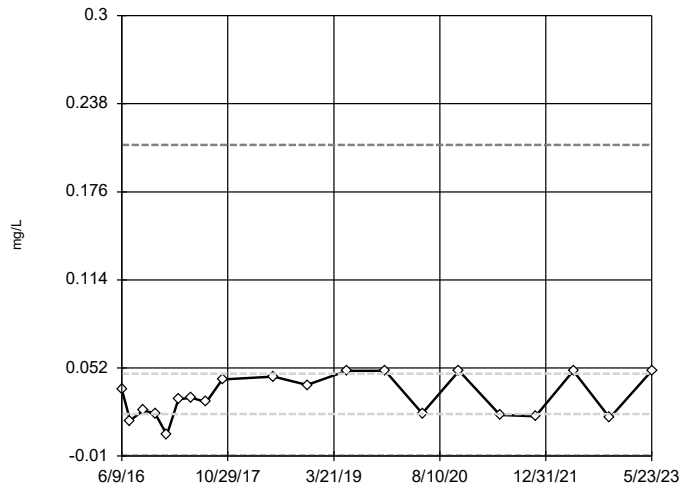
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.08, low cutoff = 0.0007557, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001S



n = 20

No outliers found. Tukey's method selected by user.

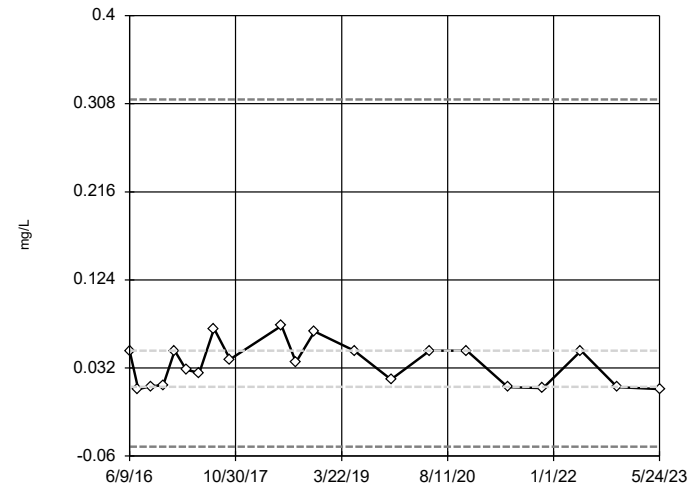
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2091, low cutoff = -0.009722, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002D



n = 21

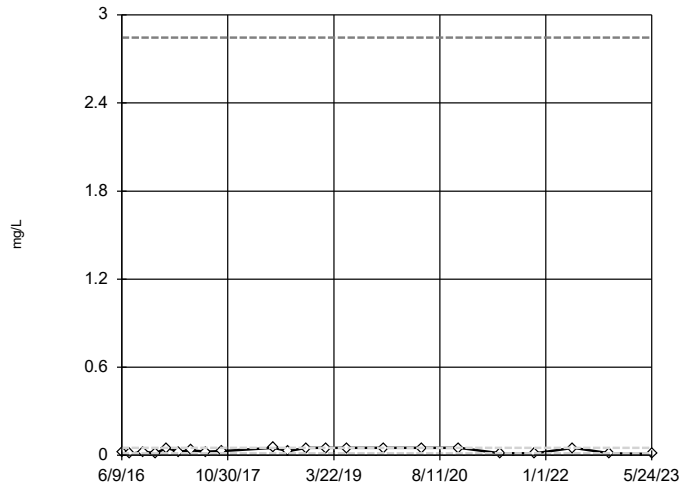
No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3126, low cutoff = -0.05004, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

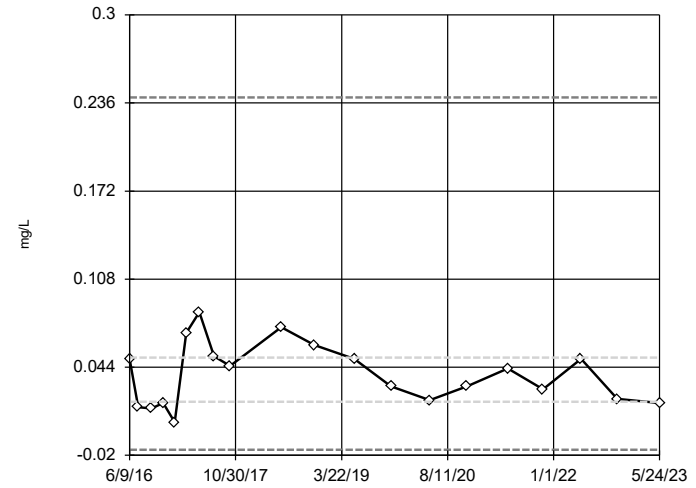
Tukey's Outlier Screening MW-002I



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 2.845, low cutoff = 0.0002285, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

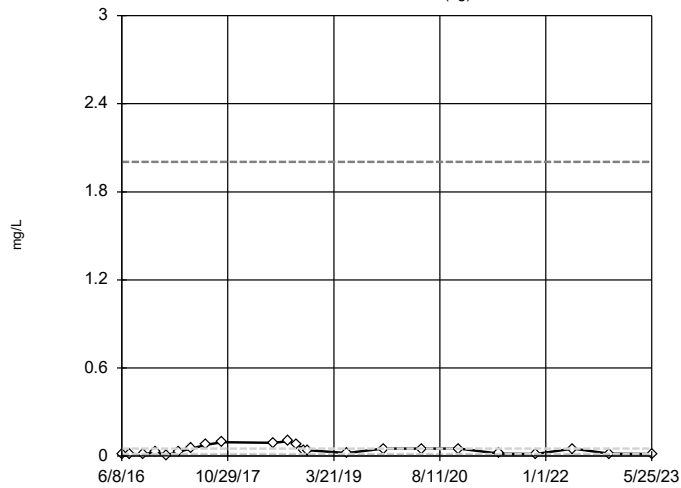
Tukey's Outlier Screening MW-002S



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.24, low cutoff = -0.01595, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

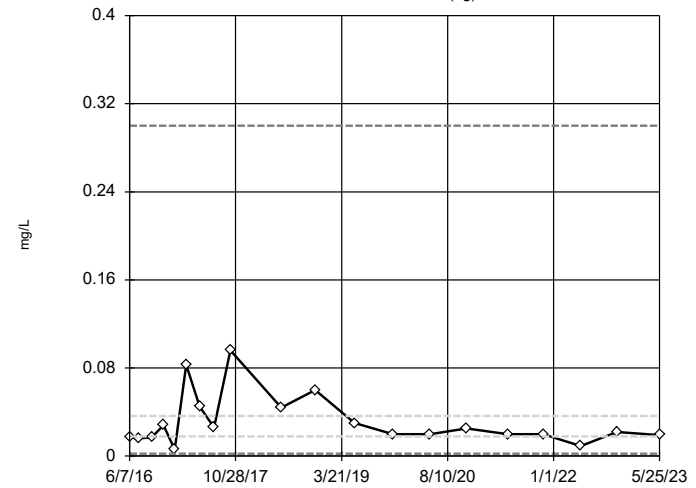
Tukey's Outlier Screening MW-006S (bg)



n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 2.005, low cutoff = 0.0003816, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

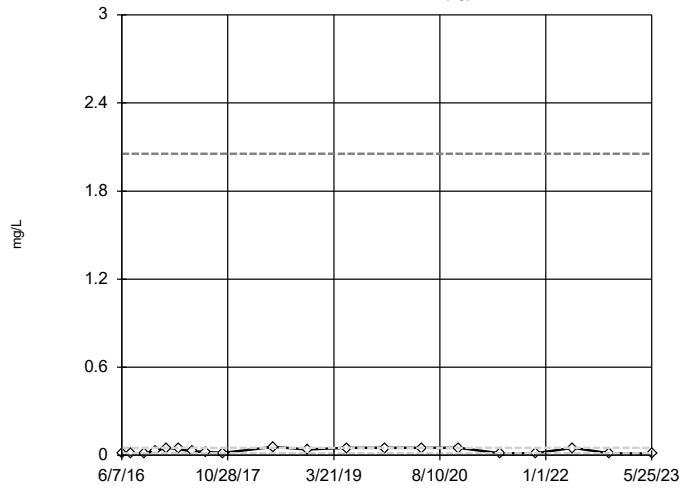
Tukey's Outlier Screening MW-008I (bg)



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.3002, low cutoff = 0.002175, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

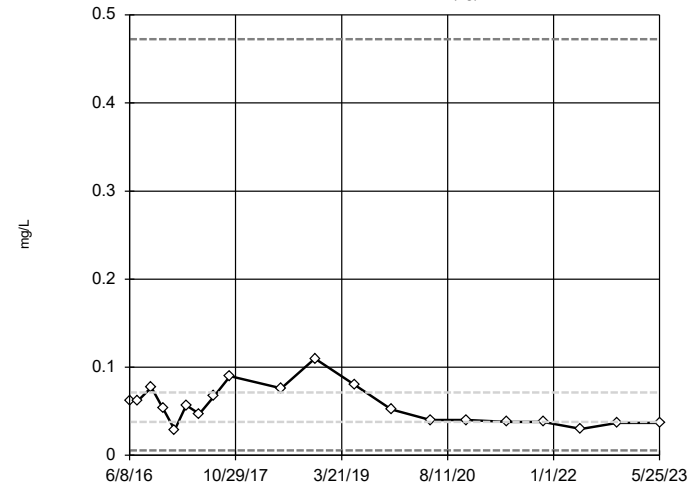
Tukey's Outlier Screening MW-008S (bg)



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 2.054, low cutoff = 0.0003528, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

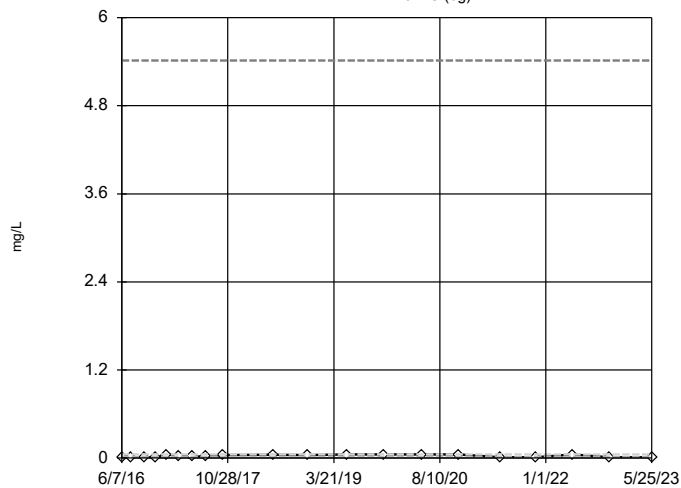
Tukey's Outlier Screening MW-011S (bg)



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.4725, low cutoff = 0.005739, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

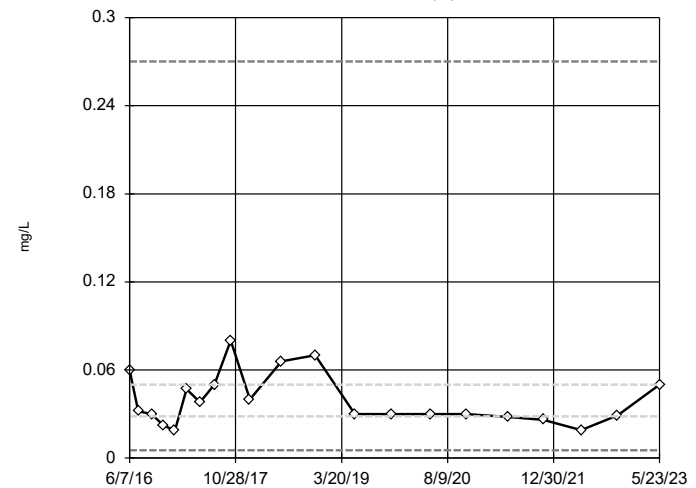
Tukey's Outlier Screening MW-014S (bg)



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 5.417, low cutoff = 0.0000968, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

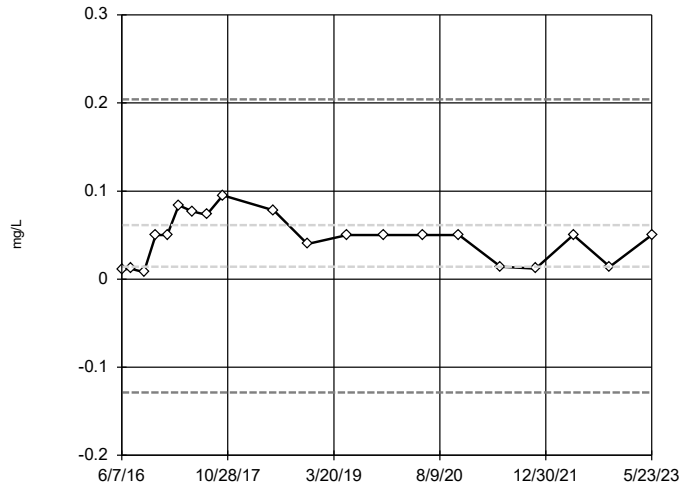
Tukey's Outlier Screening MW-015I



n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2701, low cutoff = 0.005275, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

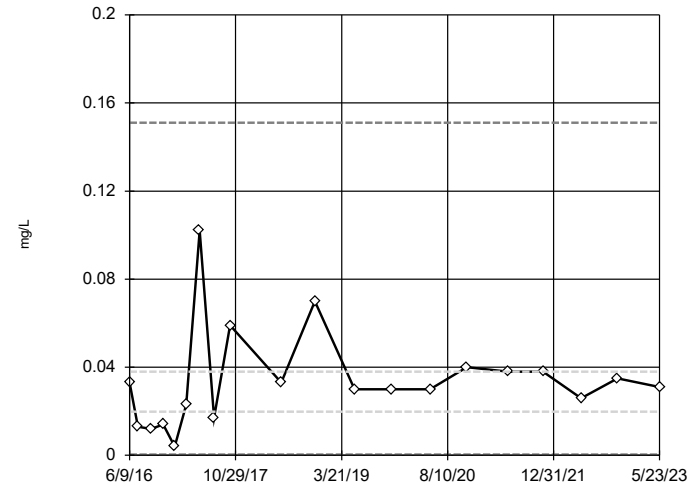
Tukey's Outlier Screening MW-015S



n = 20
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 0.204, low cutoff = -0.1285, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

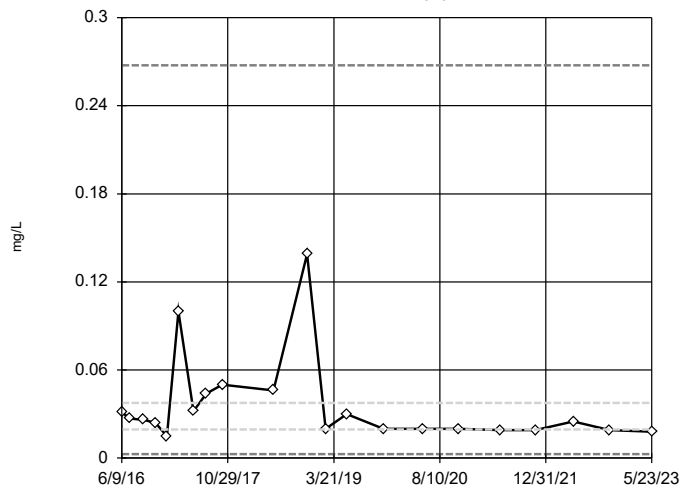
Tukey's Outlier Screening MW-016D



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were cube root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.151, low cutoff = 0.0004124, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

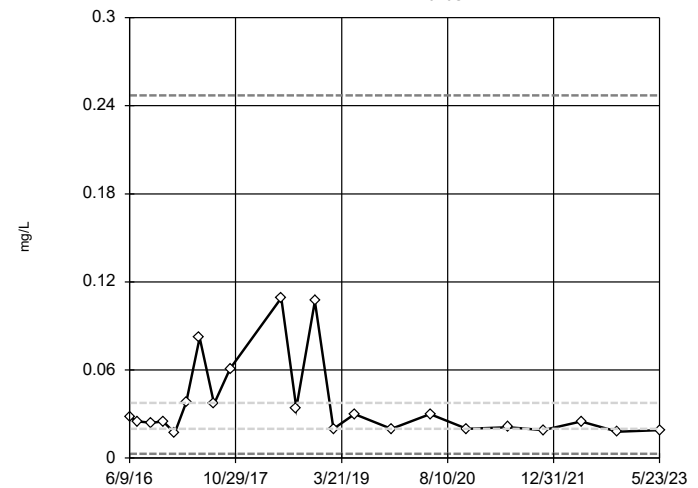
Tukey's Outlier Screening MW-016I



n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2676, low cutoff = 0.002733, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

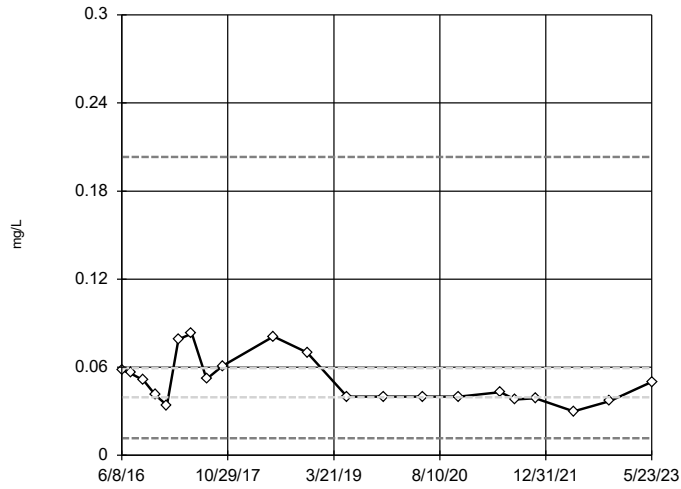
Tukey's Outlier Screening MW-016S



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2471, low cutoff = 0.003035, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

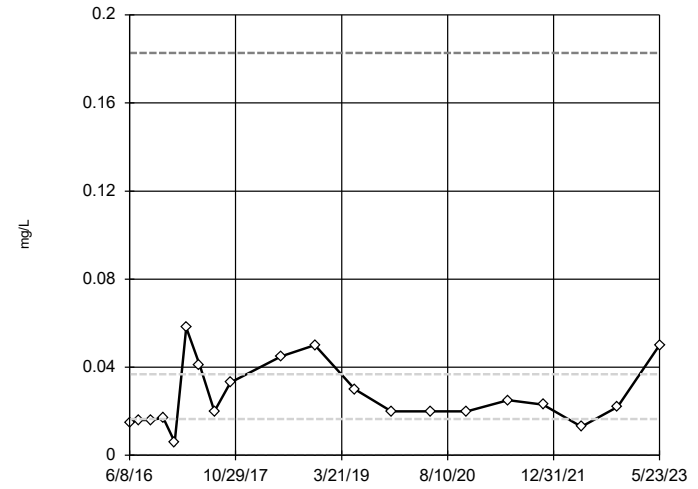
Tukey's Outlier Screening MW-017I



n = 21
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.2032, low cutoff = 0.01156, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

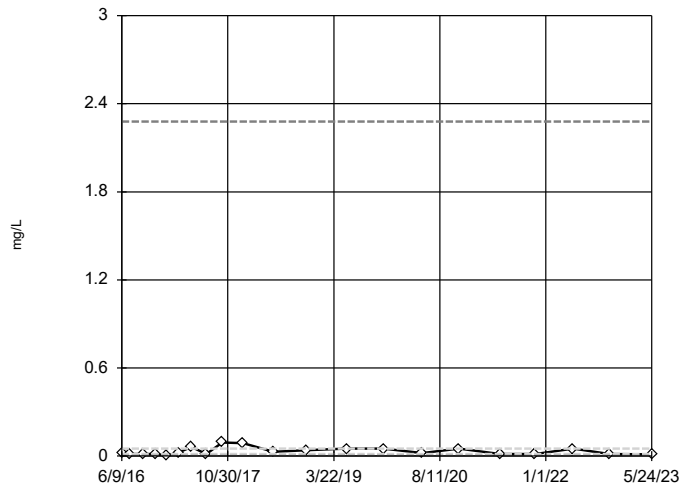
Tukey's Outlier Screening MW-017S



n = 20
No outliers found.
Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.1827, low cutoff = 0.00007836, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

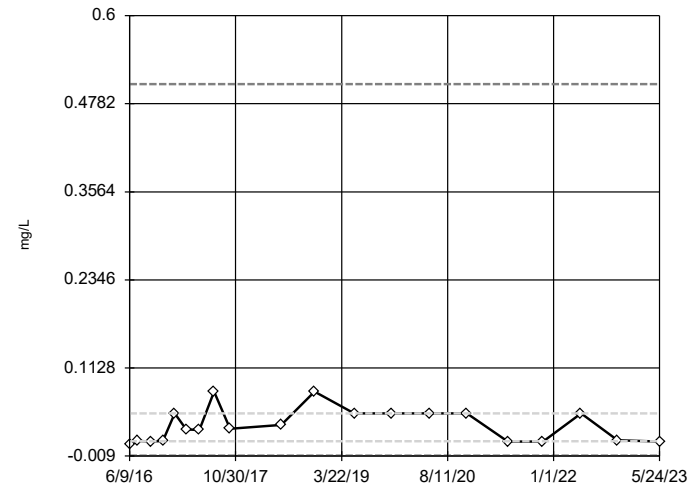
Tukey's Outlier Screening MW-021D



n = 21
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 2.278, low cutoff = 0.0003073, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-021I

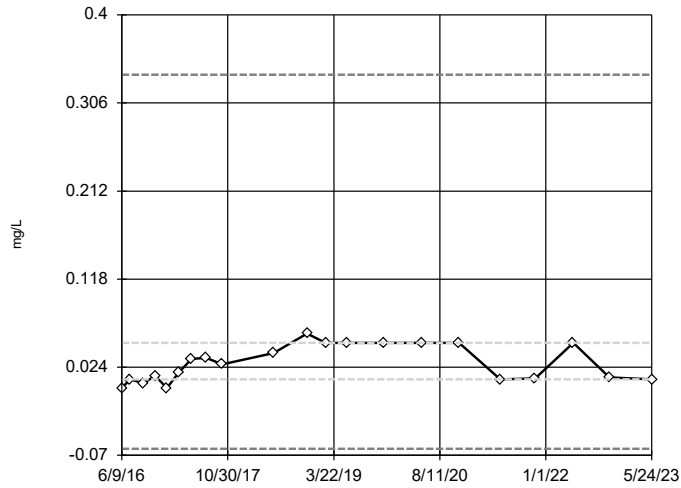


n = 20
No outliers found.
Tukey's method selected by user.
Data were cube root transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.5055, low cutoff = -0.008307, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-021S



n = 21

No outliers found. Tukey's method selected by user.

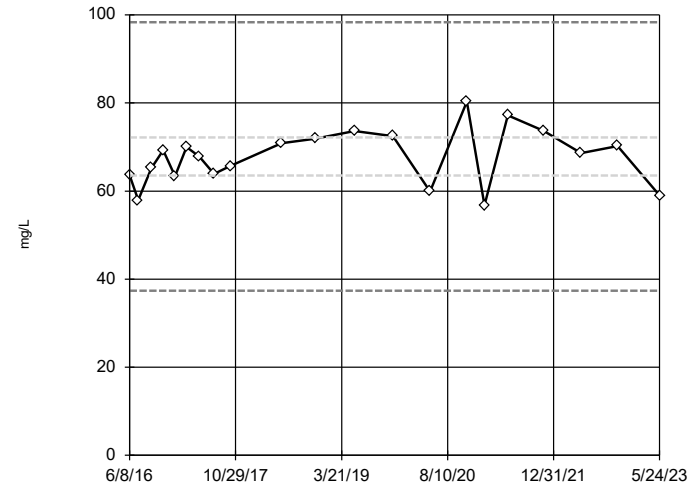
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.3362, low cutoff = -0.06315, based on IQR multiplier of 3.

Constituent: Boron, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001D



n = 21

No outliers found. Tukey's method selected by user.

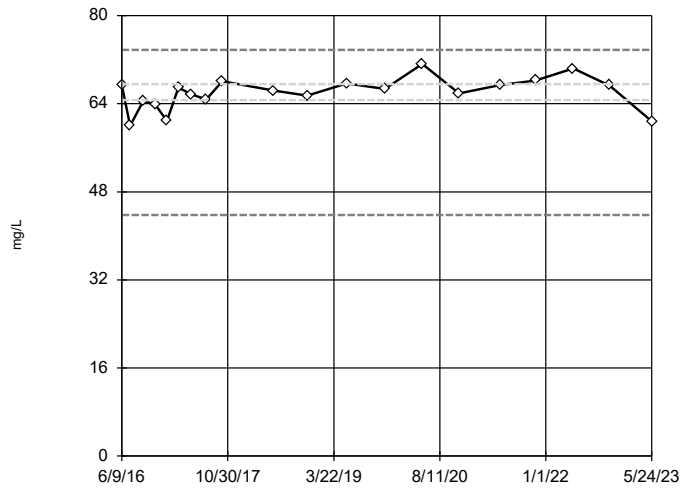
Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 98.3, low cutoff = 37.4, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-0011



n = 20

No outliers found. Tukey's method selected by user.

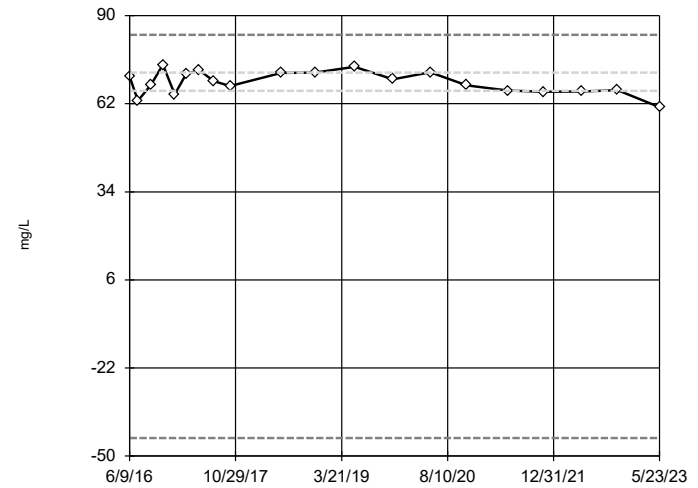
Data were x*6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 73.76, low cutoff = 43.78, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001S



n = 20

No outliers found. Tukey's method selected by user.

Data were x*4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 83.88, low cutoff = -44.21, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002D



n = 22

No outliers found. Tukey's method selected by user.

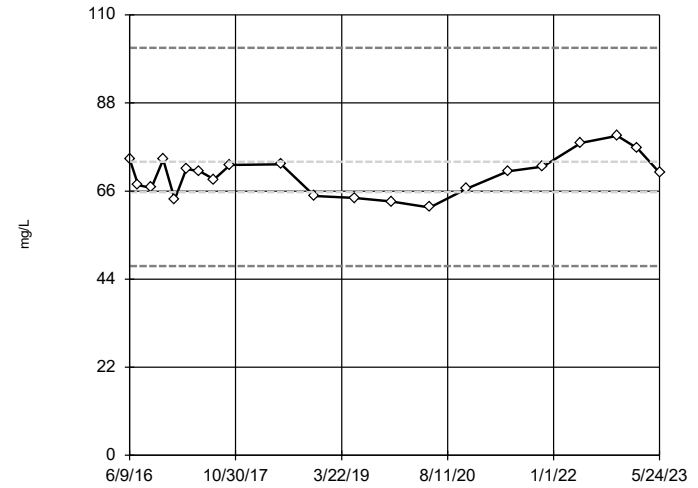
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 271.1, low cutoff = 24.87, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002I



n = 21

No outliers found. Tukey's method selected by user.

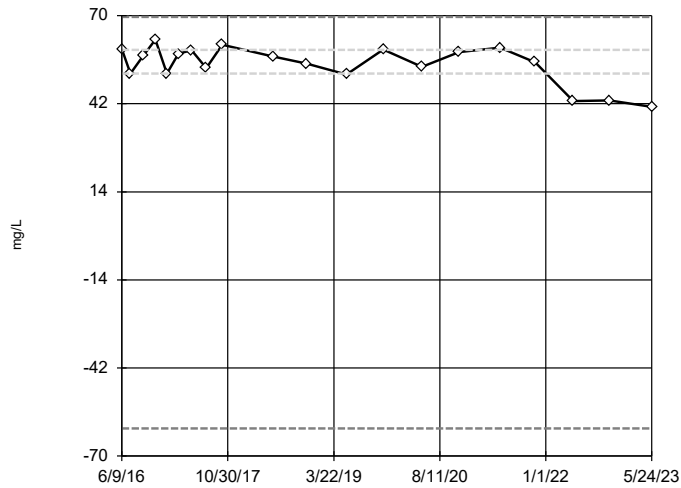
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 101.8, low cutoff = 47.3, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002S



n = 20

No outliers found. Tukey's method selected by user.

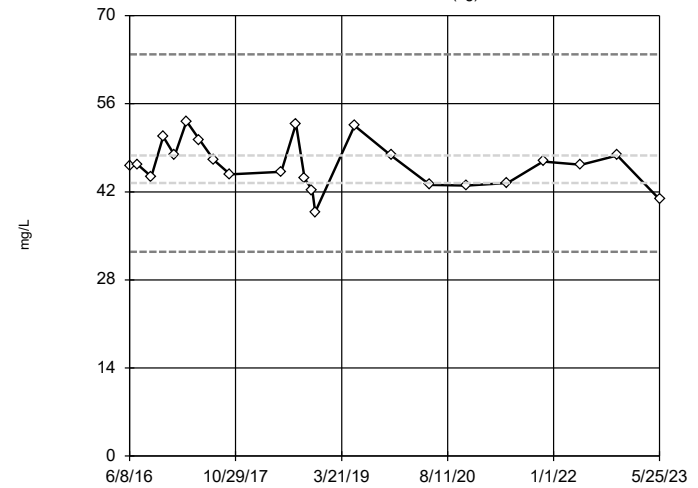
Data were x*6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 69.62, low cutoff = -61.16, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-006S (bg)



n = 23

No outliers found. Tukey's method selected by user.

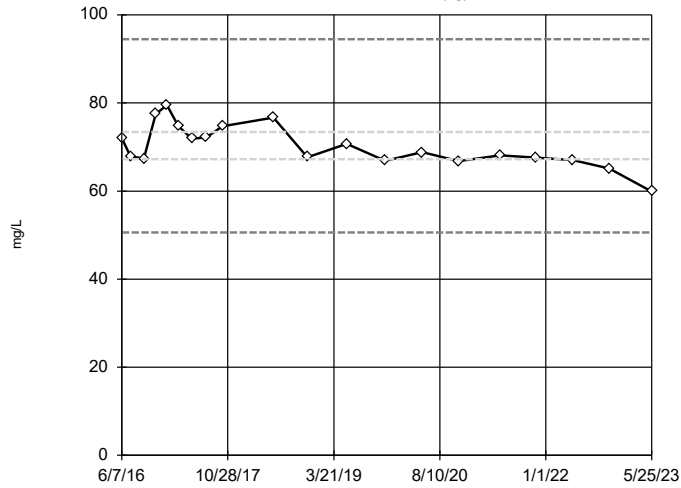
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 63.86, low cutoff = 32.48, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008I (bg)

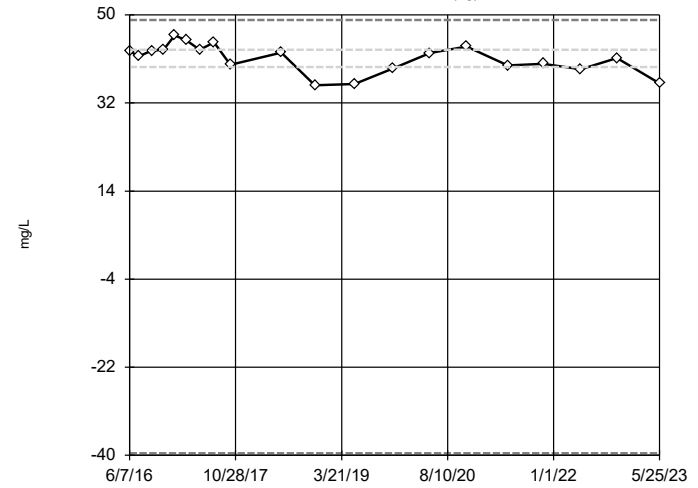


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were cube root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 94.47, low cutoff = 50.61, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008S (bg)



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 48.97, low cutoff = -39.56, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-011S (bg)

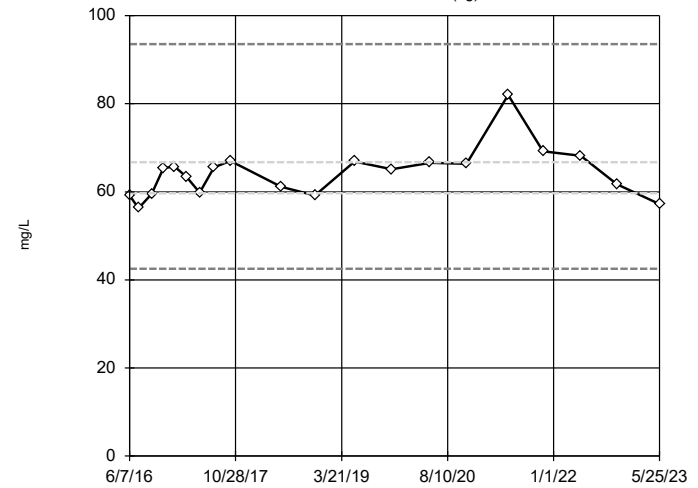


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 113.2, low cutoff = 20.13, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

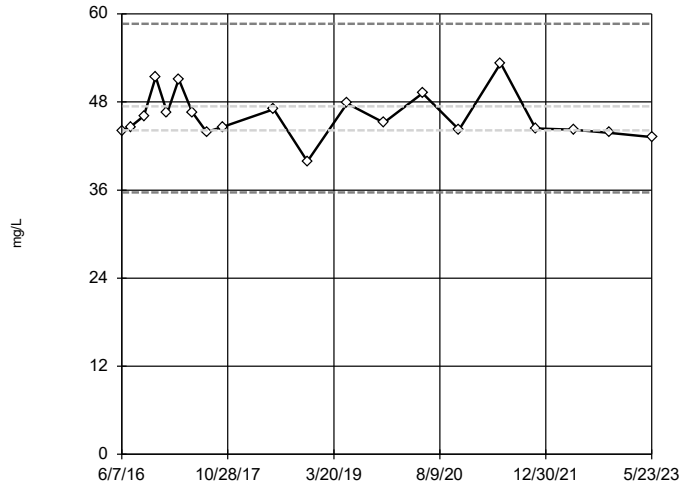
MW-014S (bg)



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 93.53, low cutoff = 42.57, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
 Rockport Landfill Data: Rockport_LF

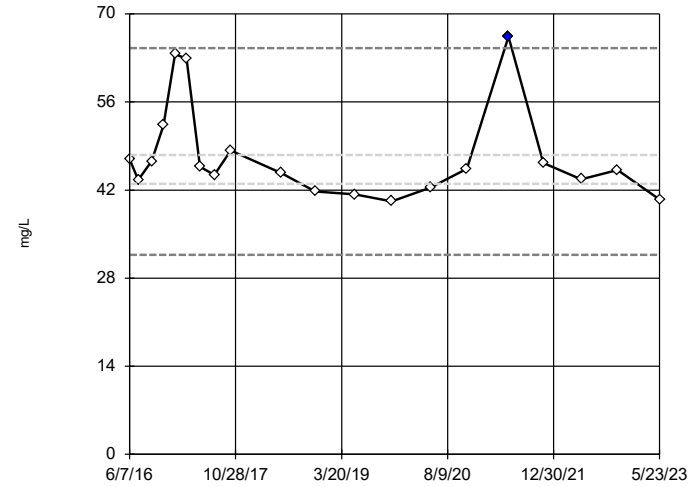
Tukey's Outlier Screening MW-015I



n = 20
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 58.65, low cutoff = 35.68, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

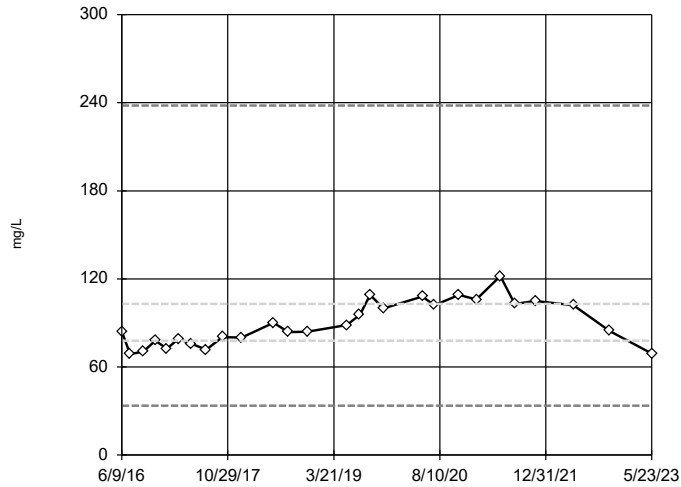
Tukey's Outlier Screening MW-015S



n = 20
Outlier is drawn as solid. Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 64.56, low cutoff = 31.7, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

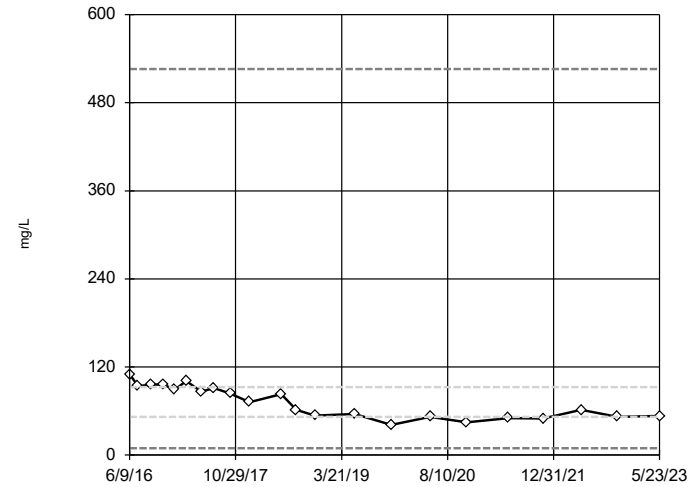
Tukey's Outlier Screening MW-016D



n = 27
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 238.1, low cutoff = 33.7, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-016I

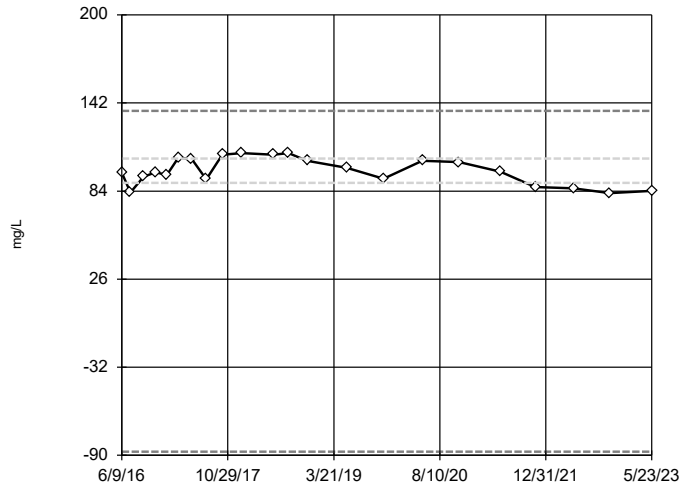


n = 22
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 525.7, low cutoff = 9.14, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-016S



n = 22

No outliers found. Tukey's method selected by user.

Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 136.8, low cutoff = -87.6, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-017I



n = 21

No outliers found. Tukey's method selected by user.

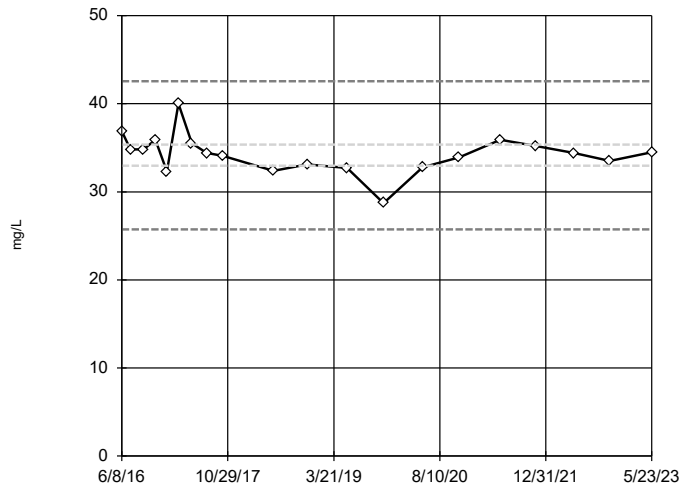
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 448.7, low cutoff = 6.482, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-017S



n = 20

No outliers found. Tukey's method selected by user.

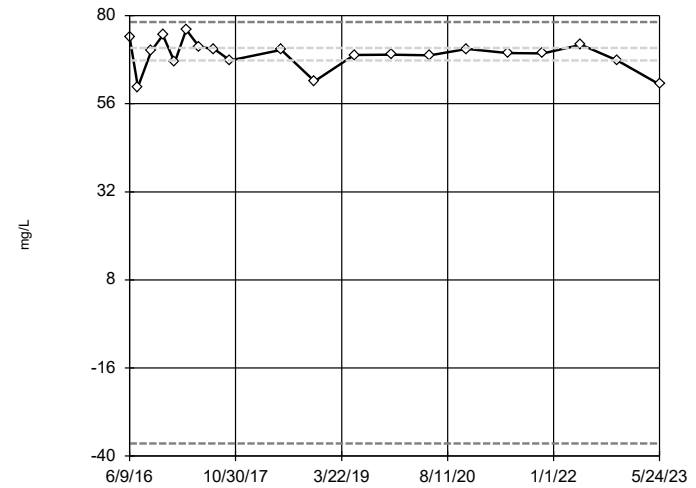
Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 42.55, low cutoff = 25.75, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:15 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-021D



n = 20

No outliers found. Tukey's method selected by user.

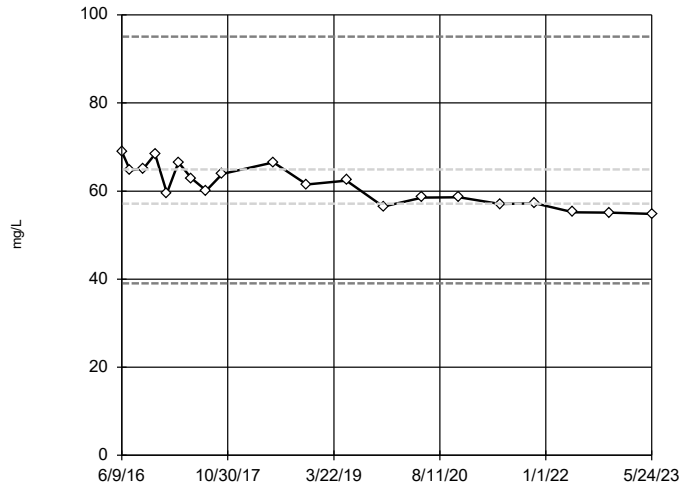
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 78.27, low cutoff = -36.6, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-0211

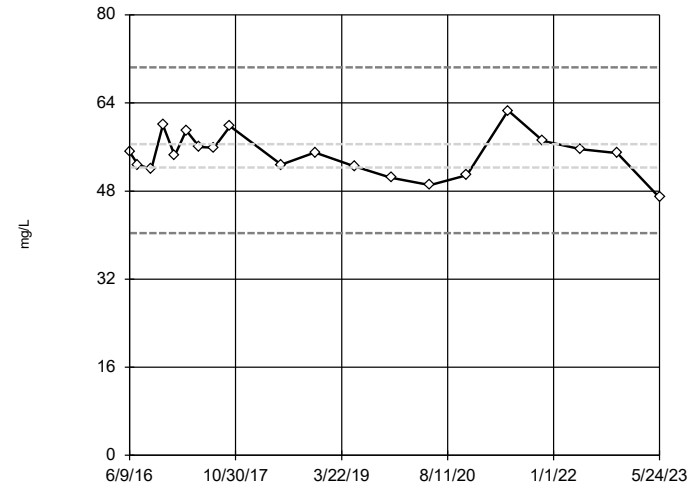


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 95.04, low cutoff = 39.02, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-021S

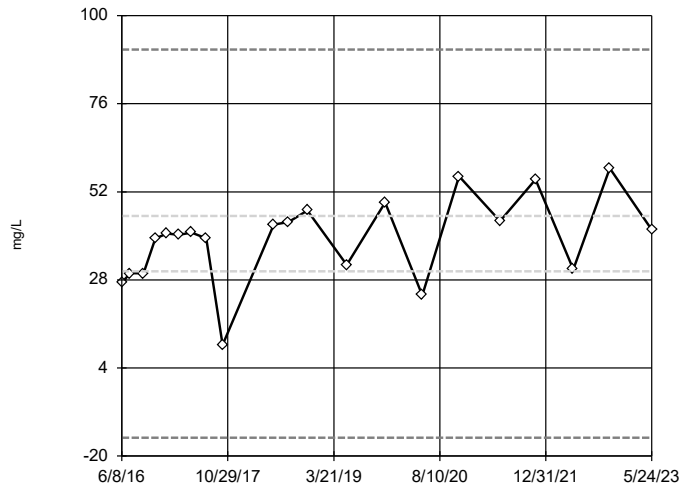


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 70.47, low cutoff = 40.37, based on IQR multiplier of 3.

Constituent: Calcium, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001D

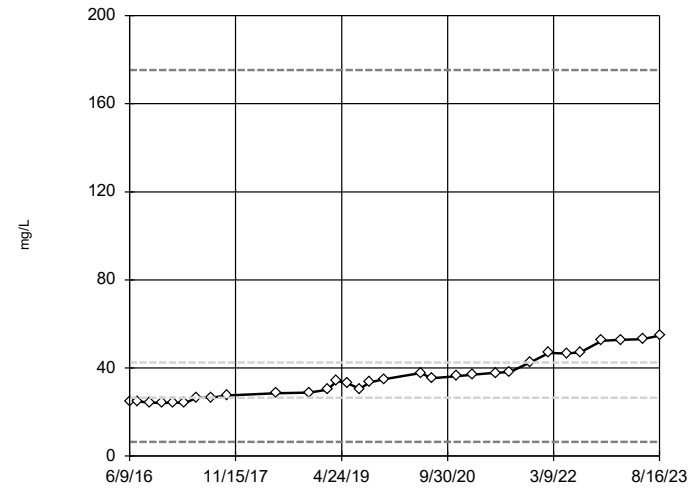


n = 21
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 90.75, low cutoff = -14.95, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-0011

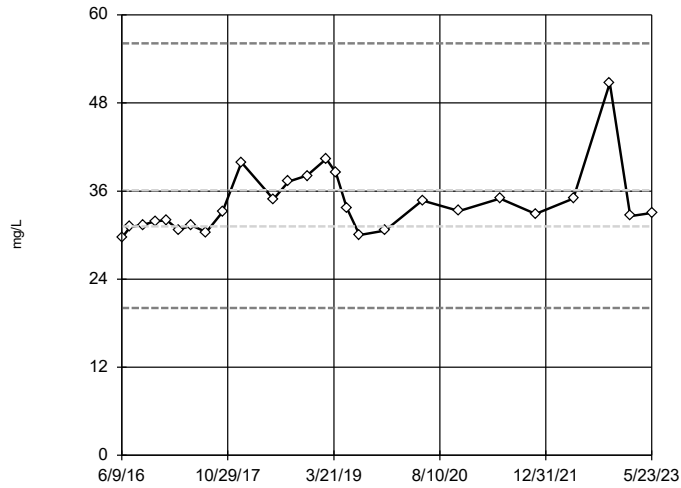


n = 31
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 175.3, low cutoff = 6.424, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001S

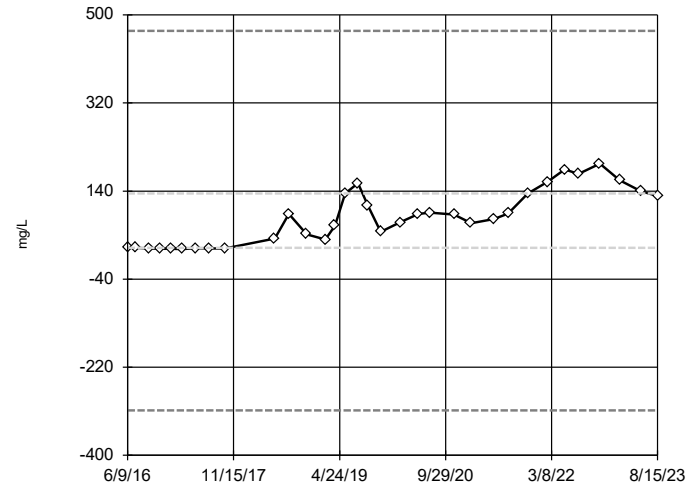


n = 26
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 56.12, low cutoff = 20.09, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002D

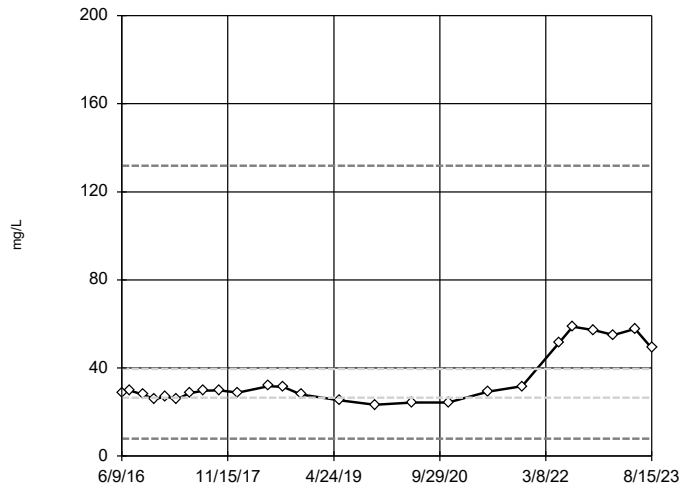


n = 33
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 467.4, low cutoff = -308.2, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002I

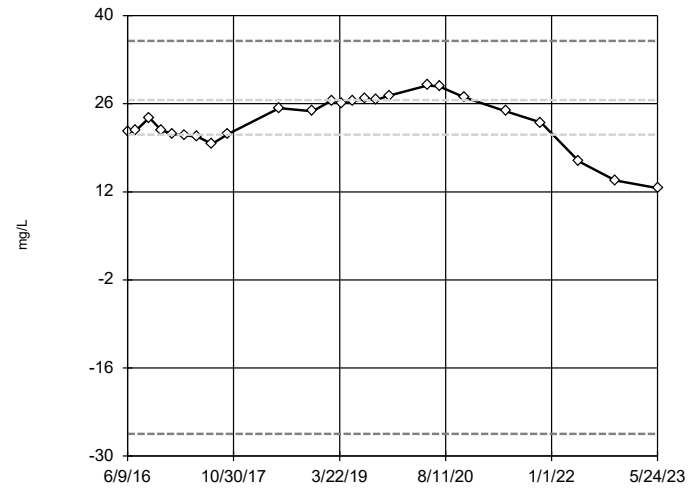


n = 25
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 131.9, low cutoff = 7.923, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002S

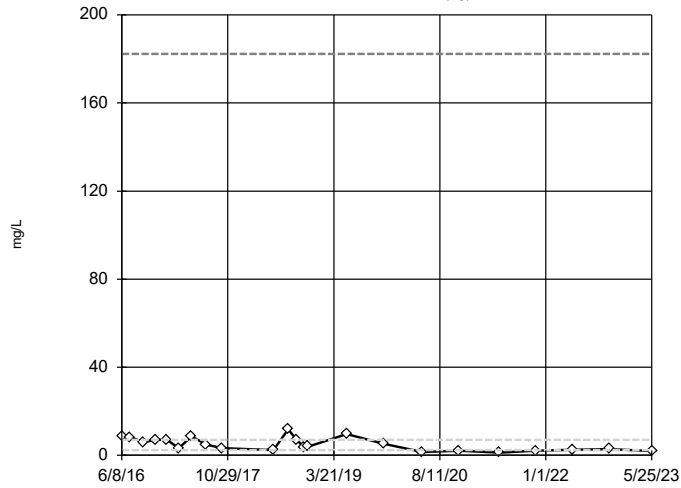


n = 25
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 36.01, low cutoff = -26.48, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-006S (bg)

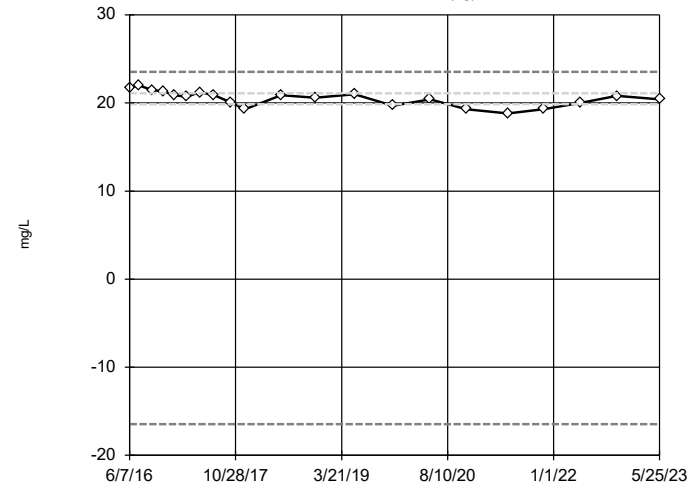


n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 182.2, low cutoff = 0.09196, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008I (bg)

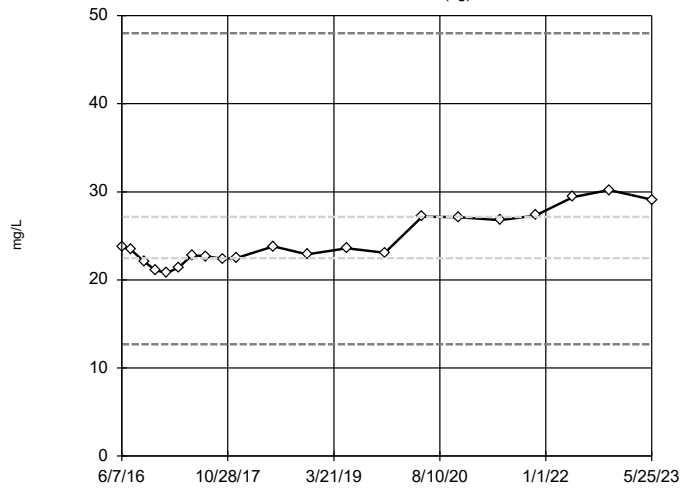


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were x^6 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 23.52, low cutoff = -16.46, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008S (bg)

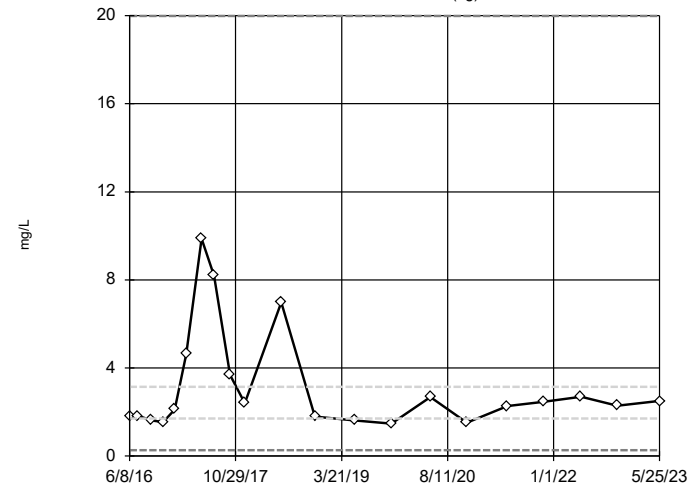


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 48.02, low cutoff = 12.69, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-011S (bg)

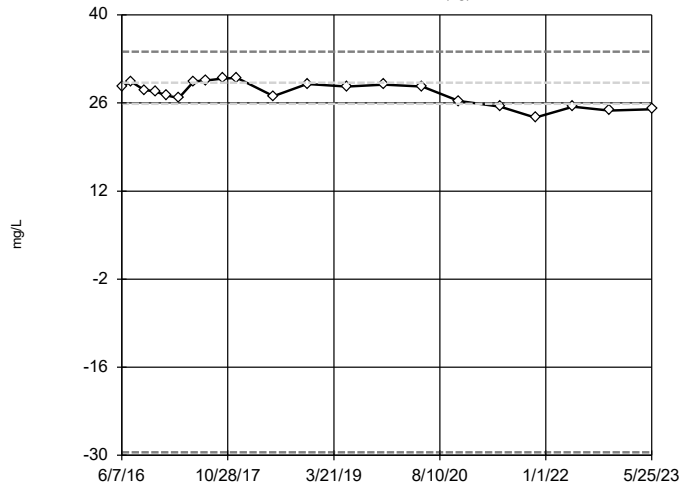


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 19.99, low cutoff = 0.2685, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-014S (bg)

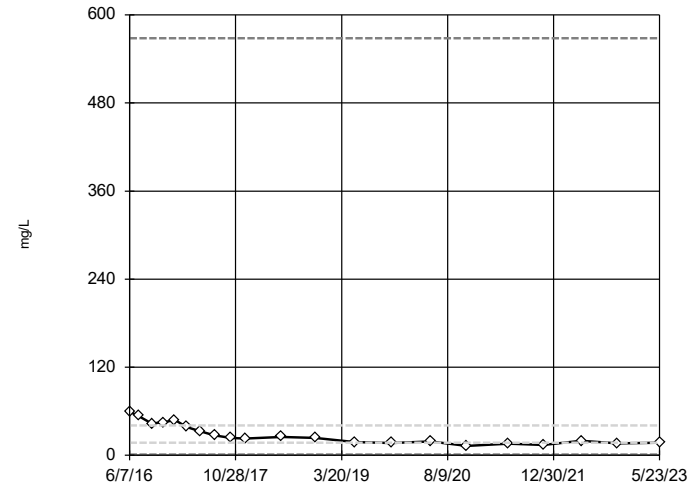


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were $\times 6$ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 34.14, low cutoff = -29.52, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-015I

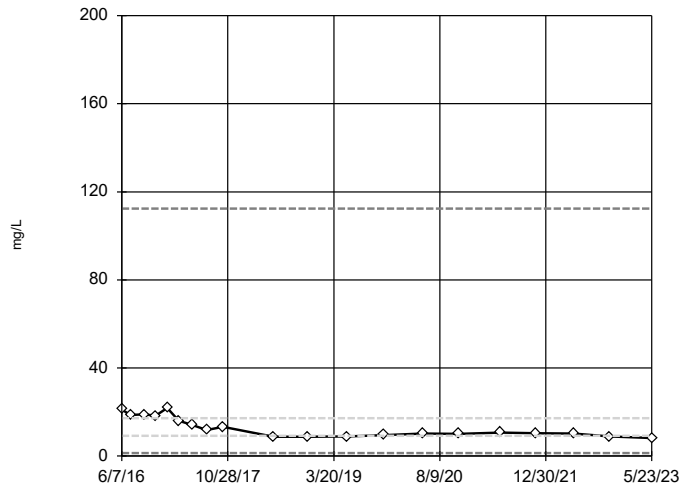


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 568.3, low cutoff = 1.223, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-015S

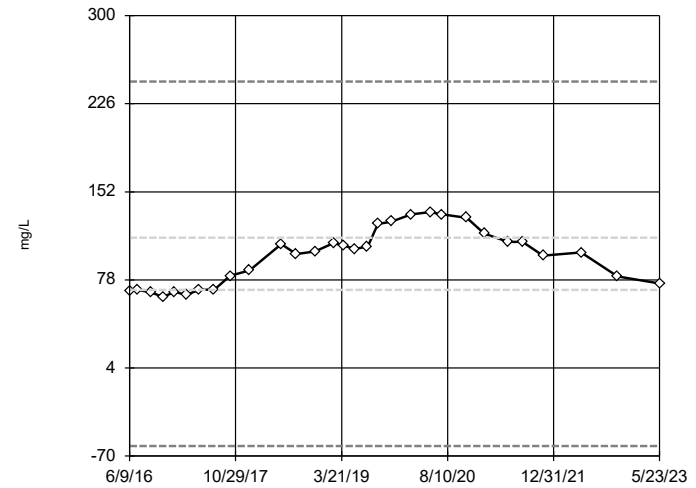


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 112.4, low cutoff = 1.401, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-016D

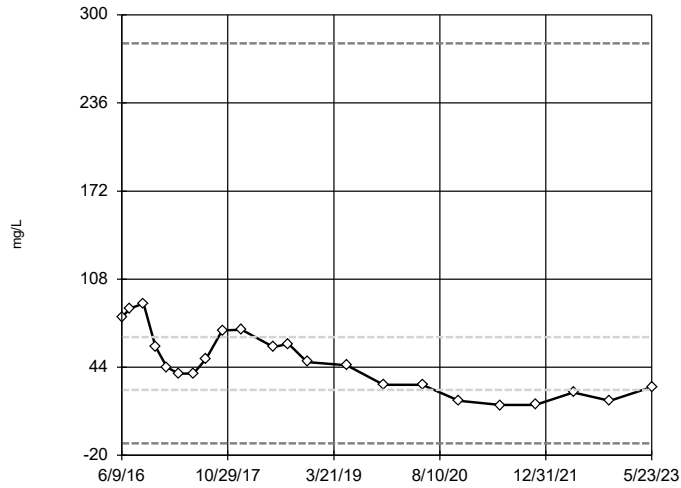


n = 30
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 244.8, low cutoff = -61.5, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-016I



n = 22

No outliers found. Tukey's method selected by user.

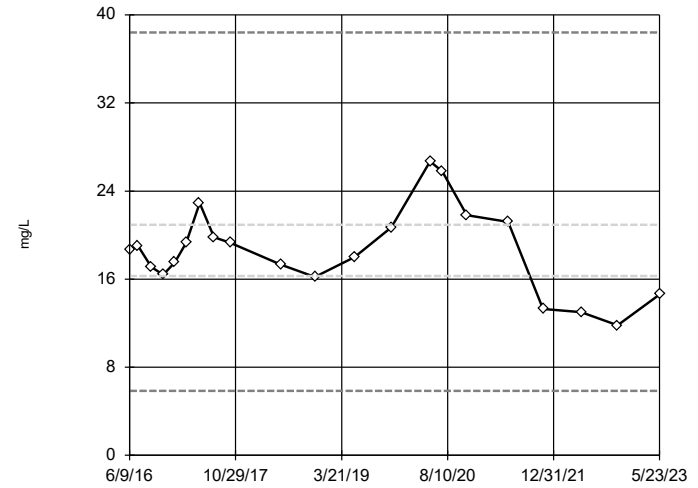
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 279.3, low cutoff = -11.2, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-016S



n = 21

No outliers found. Tukey's method selected by user.

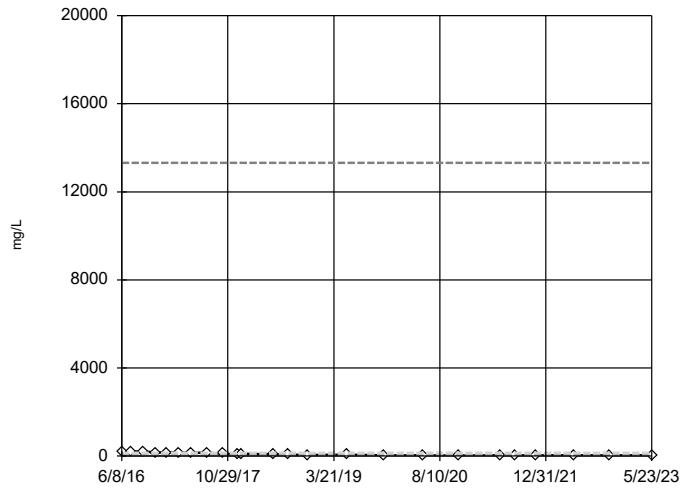
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 38.39, low cutoff = 5.847, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-017I



n = 24

No outliers found. Tukey's method selected by user.

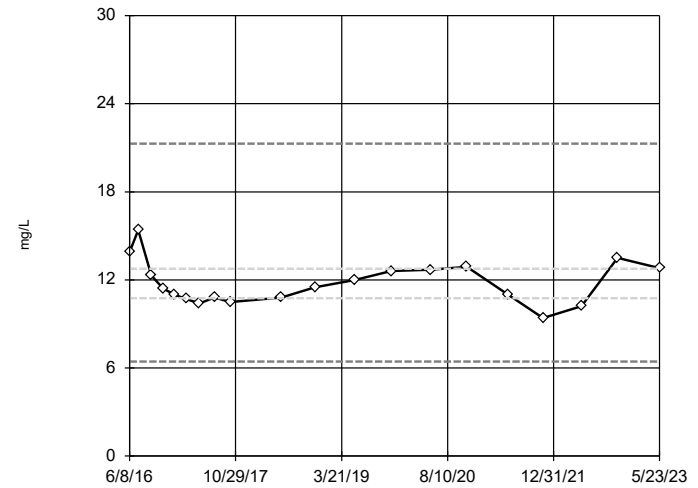
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 13318, low cutoff = 0.4055, based on IQR multiplier of 3.

Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-017S



n = 20

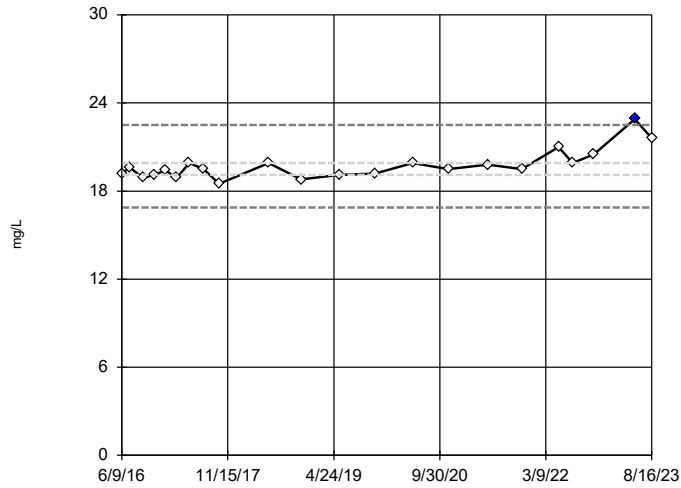
No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 21.27, low cutoff = 6.443, based on IQR multiplier of 3.

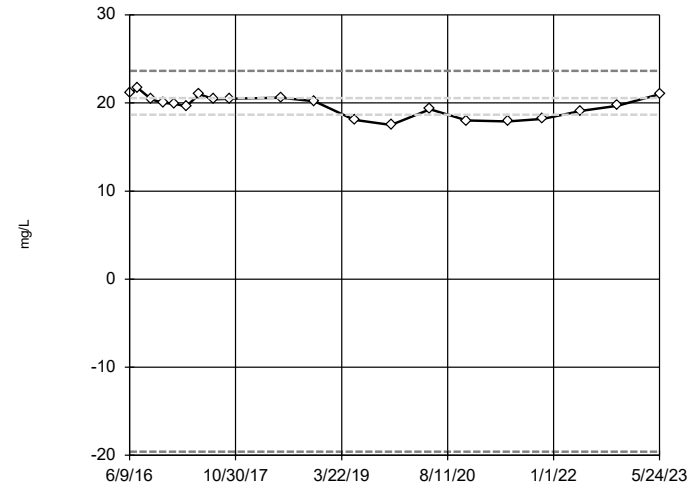
Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-021D



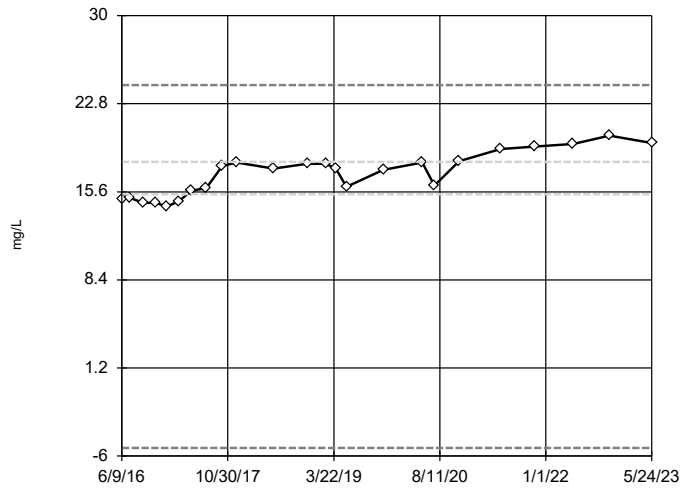
Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-021I



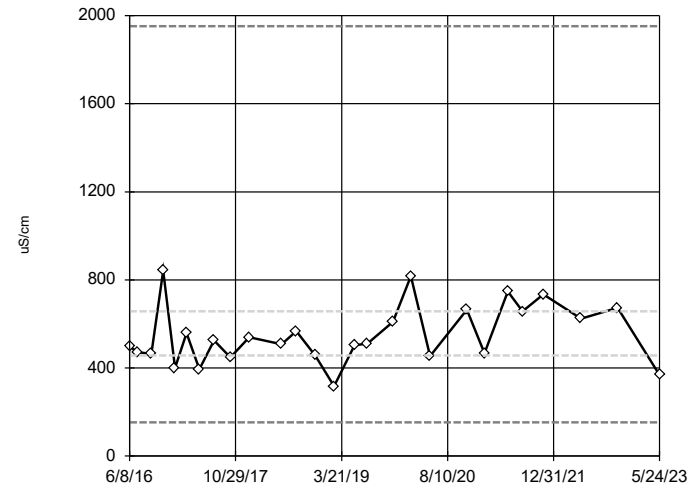
Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-021S



Constituent: Chloride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

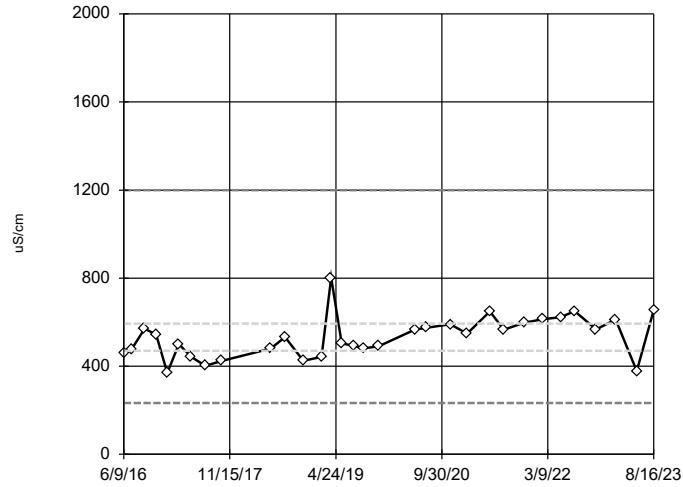
Tukey's Outlier Screening MW-001D



Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-0011

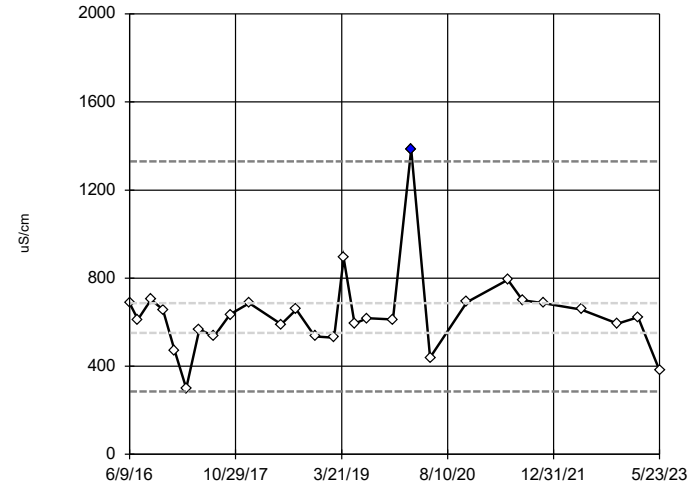


n = 32
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1200, low cutoff = 232.7, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001S

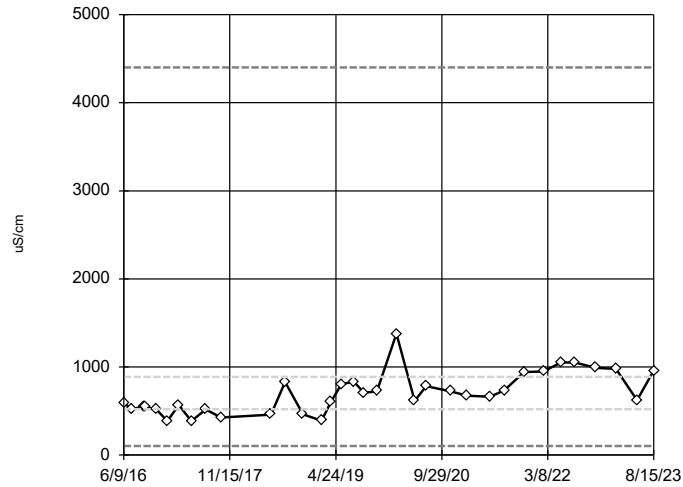


n = 28
 Outlier is drawn as solid. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1330, low cutoff = 284.9, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002D

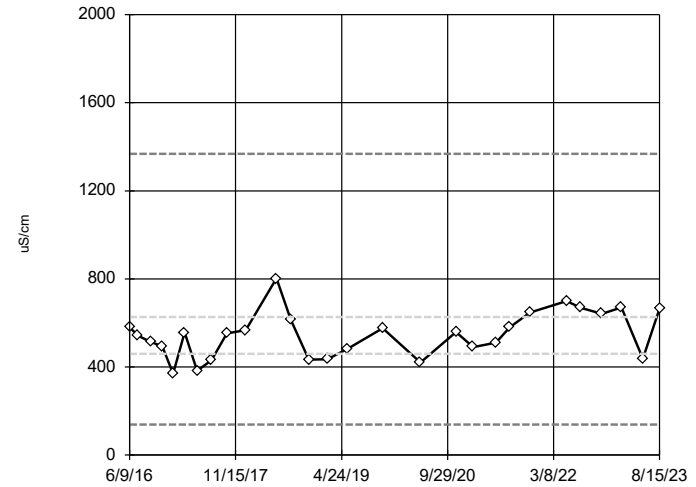


n = 34
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 4399, low cutoff = 104.8, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

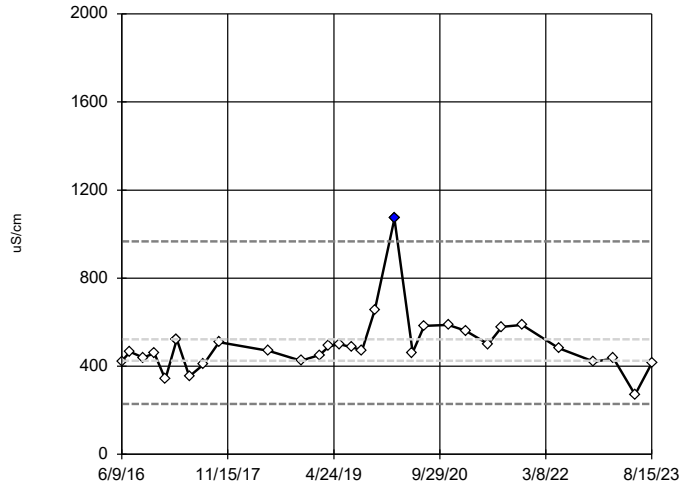
MW-002I



n = 28
 No outliers found.
 Tukey's method selected by user.
 Data were cube root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1367, low cutoff = 138.7, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

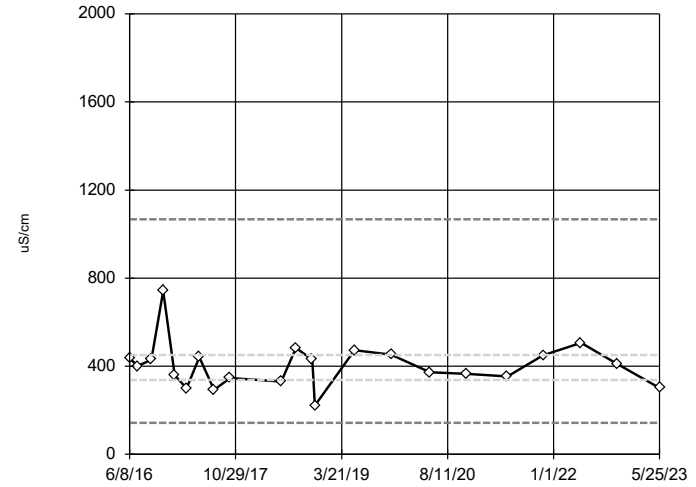
Tukey's Outlier Screening MW-002S



n = 31
 Outlier is drawn as solid.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 967.2, low cutoff = 229.4, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

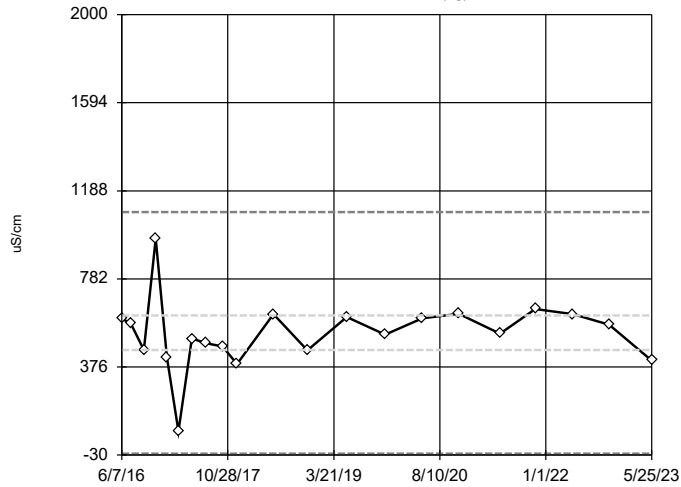
Tukey's Outlier Screening MW-006S (bg)



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1068, low cutoff = 142.9, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

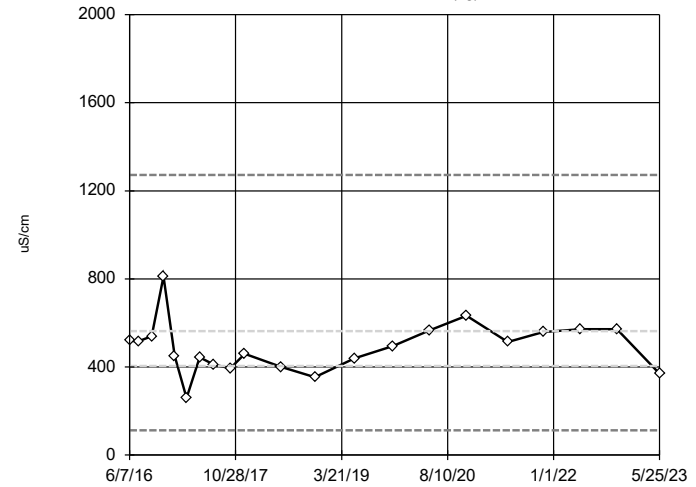
Tukey's Outlier Screening MW-008I (bg)



n = 21
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 1090, low cutoff = -23, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-008S (bg)

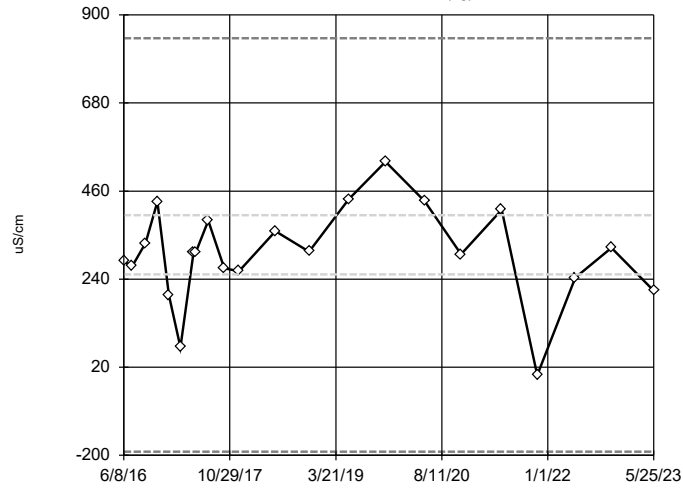


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were cube root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1271, low cutoff = 112.1, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-011S (bg)

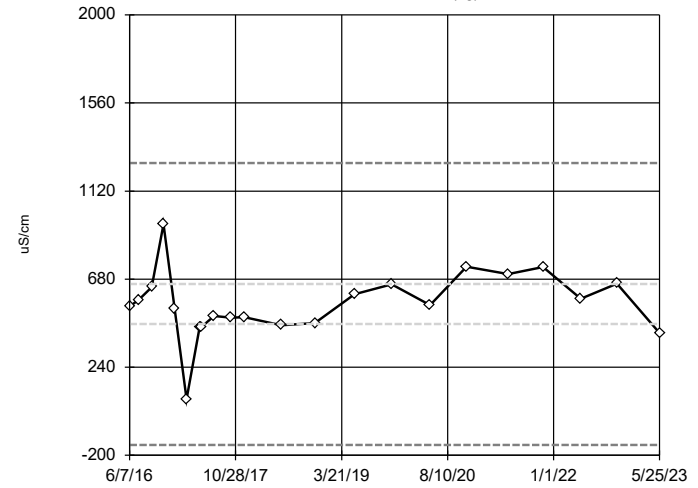


n = 22
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 842, low cutoff = -190.5, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-014S (bg)

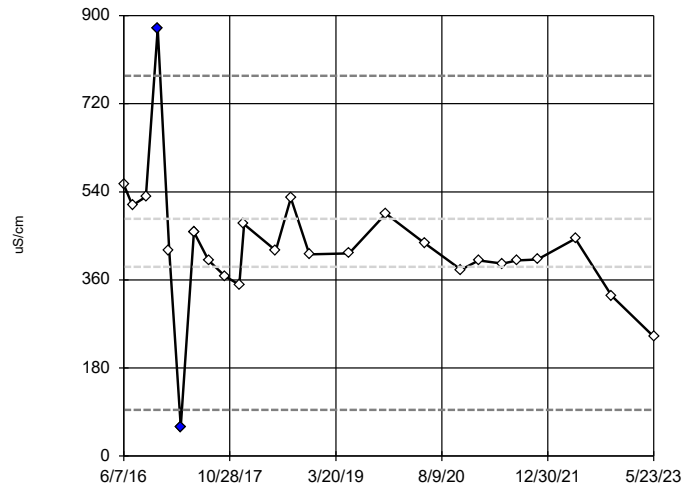


n = 22
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 1260, low cutoff = -147.5, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-015I

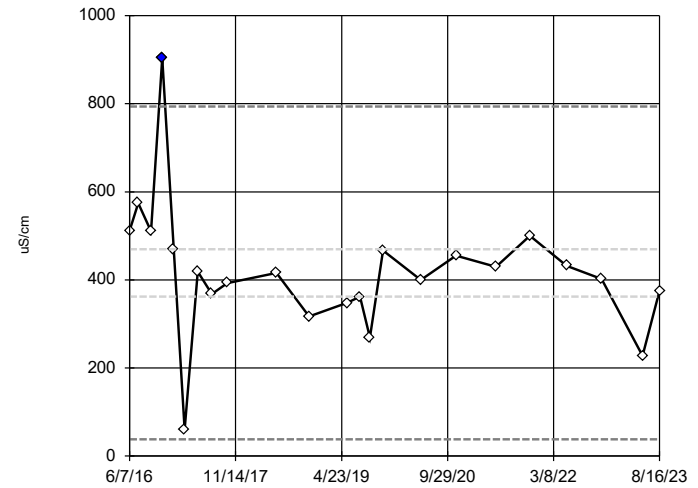


n = 26
 Outliers are drawn as solid.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 777, low cutoff = 94.5, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

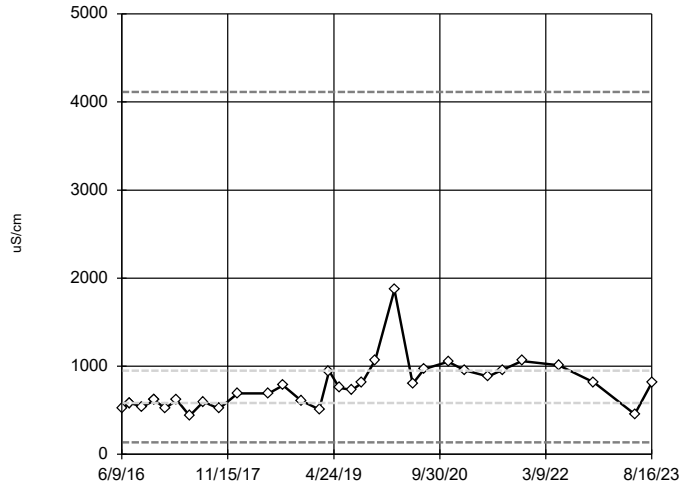
MW-015S



n = 23
 Outlier is drawn as solid.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 794, low cutoff = 38, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

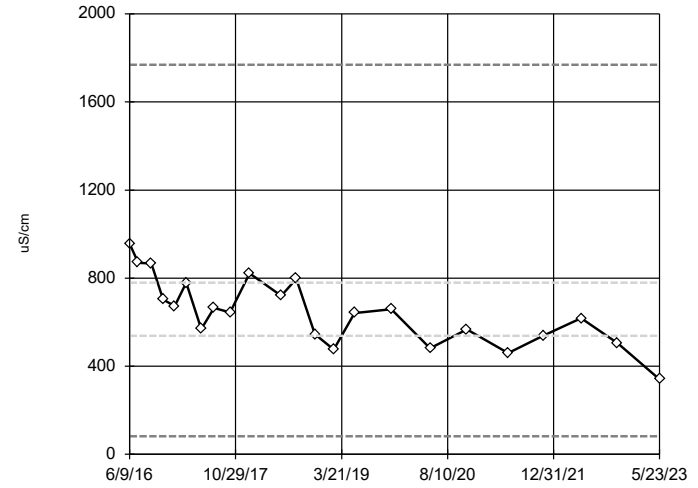
Tukey's Outlier Screening MW-016D



n = 33
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 4114, low cutoff = 134.2, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

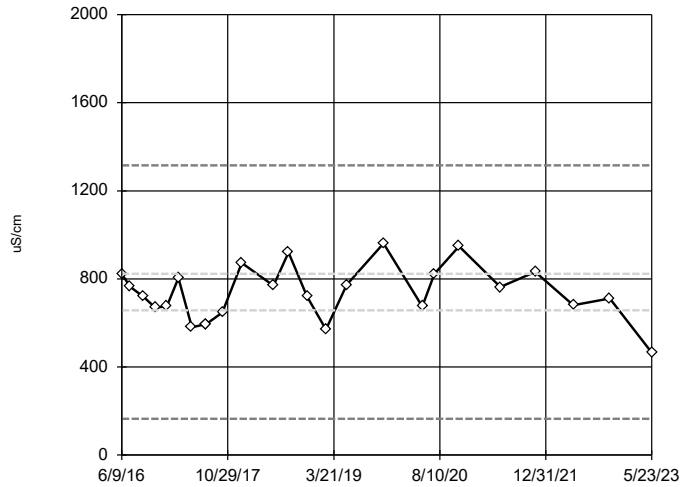
Tukey's Outlier Screening MW-016I



n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1769, low cutoff = 81.86, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

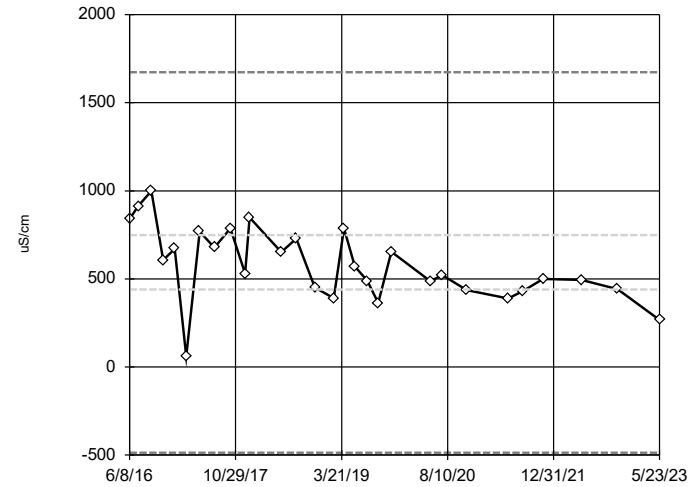
Tukey's Outlier Screening MW-016S



n = 25
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 1316, low cutoff = 164.5, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

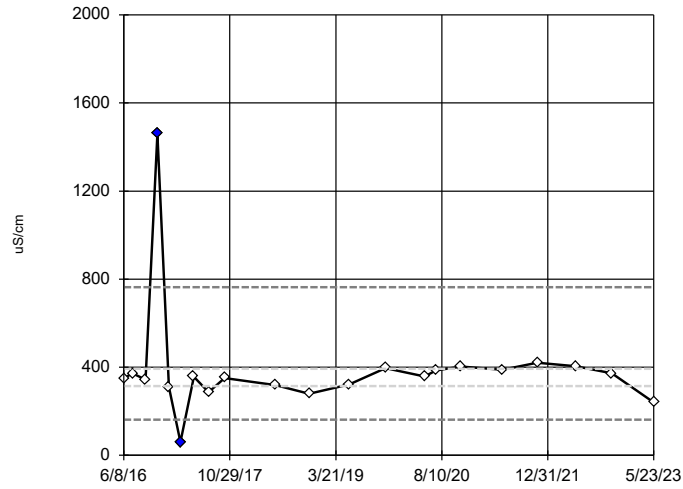
Tukey's Outlier Screening MW-017I



n = 29
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 1674, low cutoff = -486, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

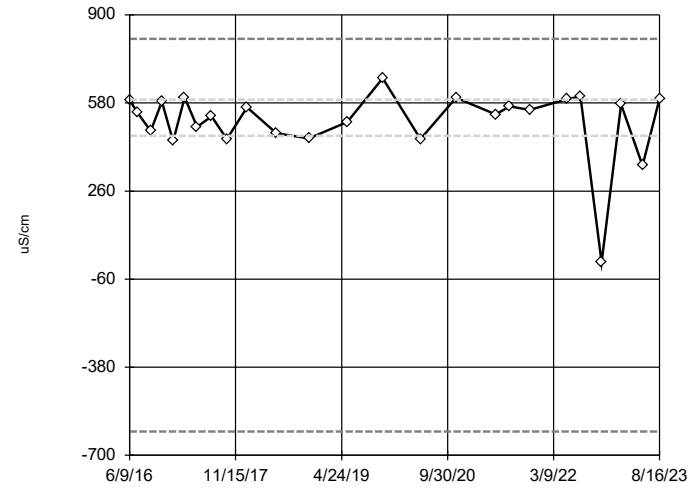
Tukey's Outlier Screening MW-017S



n = 21
 Outliers are drawn as solid.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 763.1, low cutoff = 161.7, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

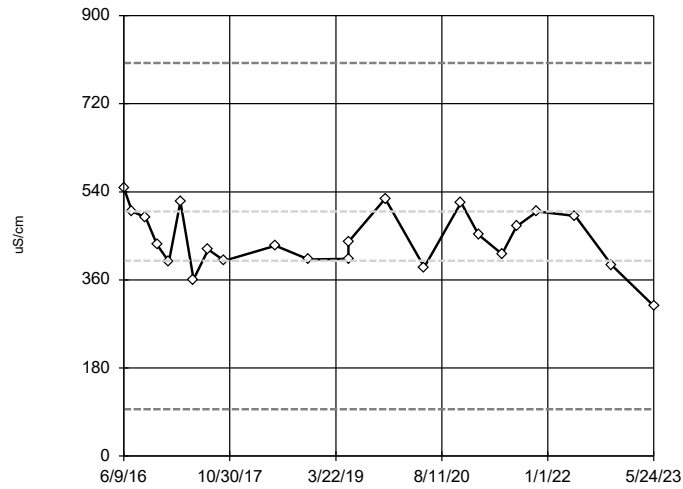
Tukey's Outlier Screening MW-021D



n = 25
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 812.6, low cutoff = -613.9, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

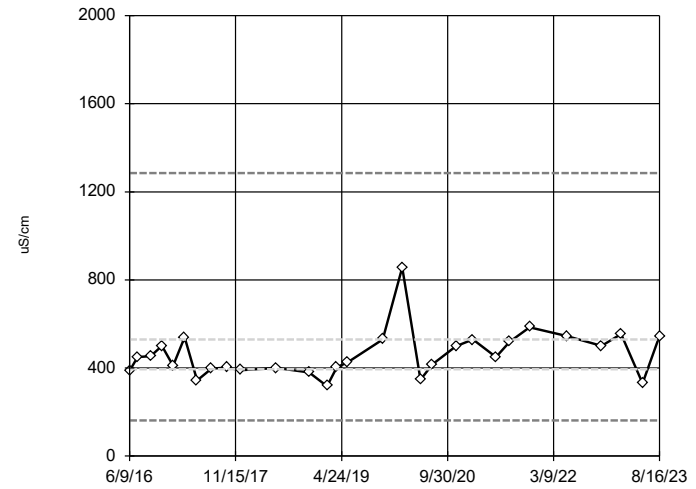
Tukey's Outlier Screening MW-021I



n = 23
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality, analysis run on raw data.
 High cutoff = 803, low cutoff = 96, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-021S

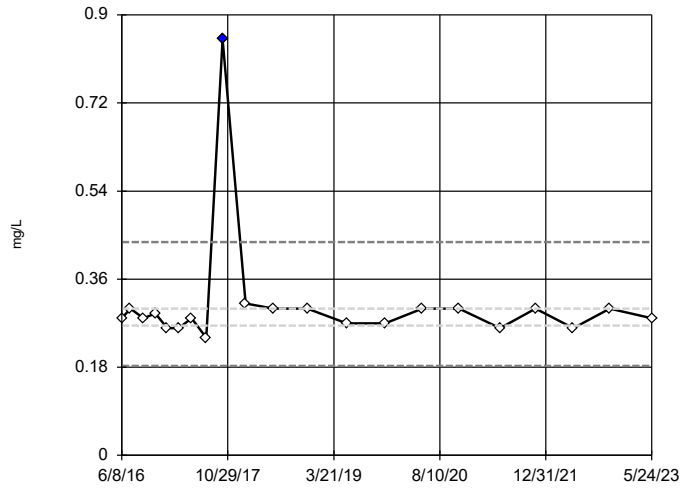


n = 29
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1285, low cutoff = 162.3, based on IQR multiplier of 3.

Constituent: Conductivity Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001D

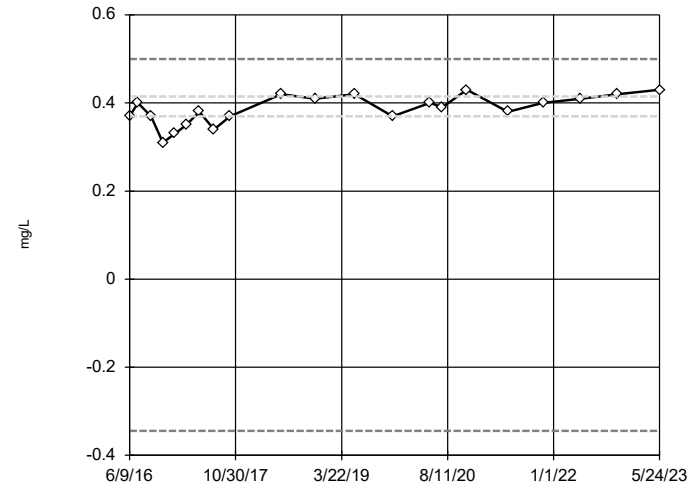


n = 21
 Outlier is drawn as solid. Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.4355, low cutoff = 0.1825, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001I

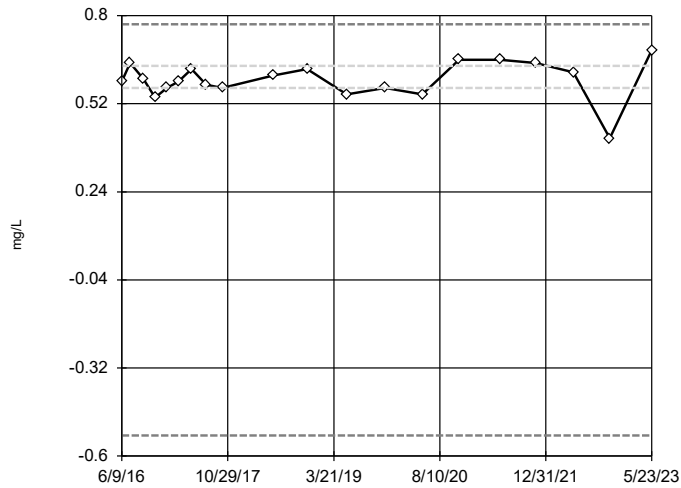


n = 21
 No outliers found. Tukey's method selected by user.
 Data were x^4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.5, low cutoff = -0.3446, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001S

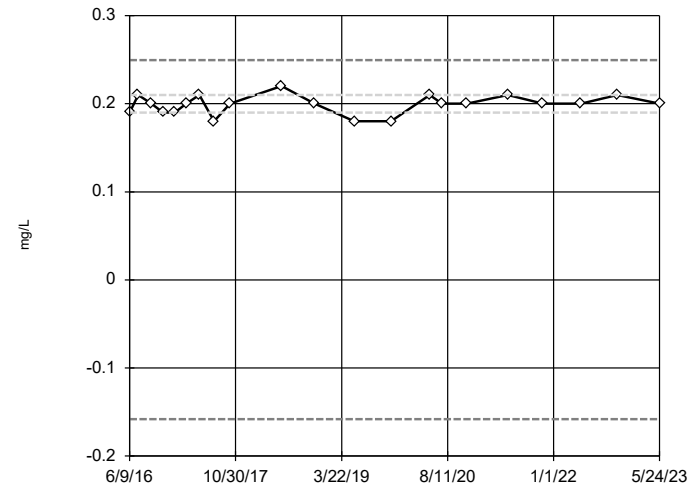


n = 20
 No outliers found. Tukey's method selected by user.
 Data were x^4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.7721, low cutoff = -0.5348, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

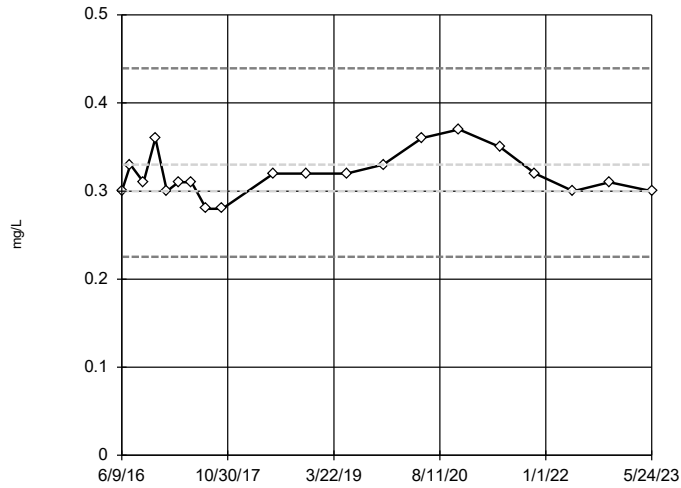
MW-002D



n = 21
 No outliers found. Tukey's method selected by user.
 Data were x^4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2494, low cutoff = -0.1579, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

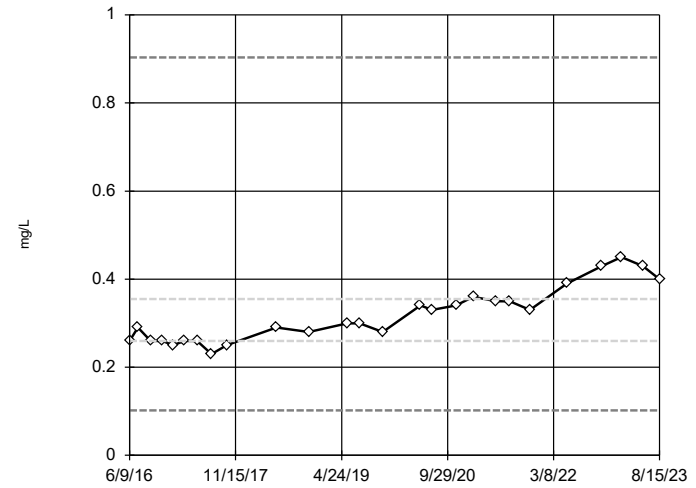
Tukey's Outlier Screening
MW-0021



n = 20
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.4392, low cutoff = 0.2254, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening
MW-002S



n = 26
No outliers found.
Tukey's method selected by user.
Data were natural log transformed to achieve best W statistic (graph shown in original units).
High cutoff = 0.9033, low cutoff = 0.1022, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

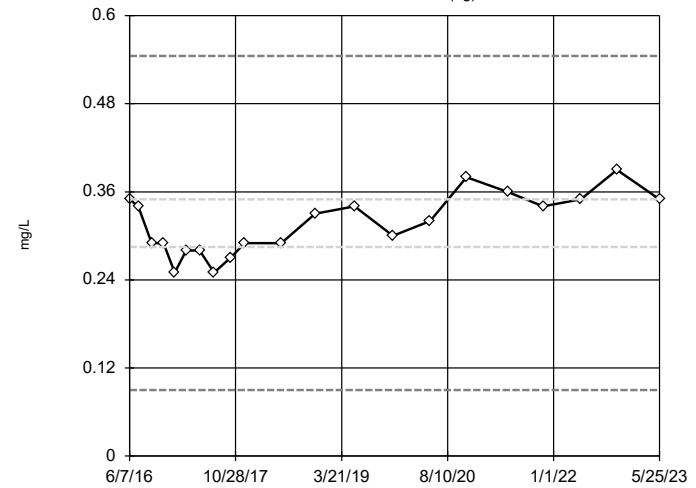
Tukey's Outlier Screening
MW-006S (bg)



n = 23
No outliers found.
Tukey's method selected by user.
Data were square transformed to achieve best W statistic (graph shown in original units).
High cutoff = 1.8, low cutoff = -1.244, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening
MW-008I (bg)

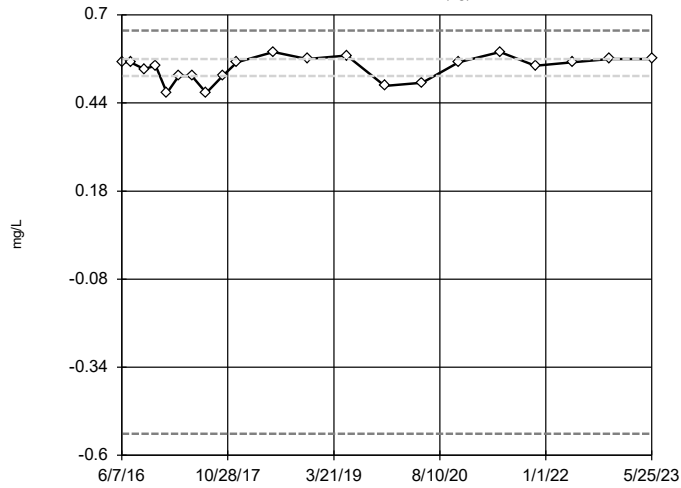


n = 21
No outliers found.
Tukey's method selected by user.
Ladder of Powers transformations did not improve normality; analysis run on raw data.
High cutoff = 0.545, low cutoff = 0.09, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008S (bg)

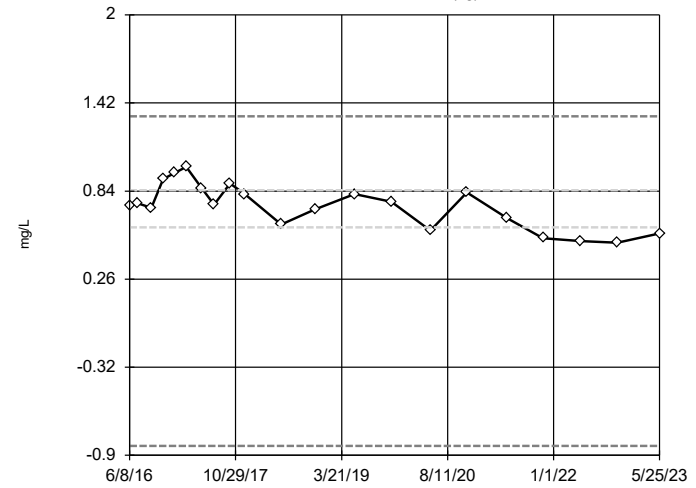


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.6535, low cutoff = -0.5364, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-011S (bg)

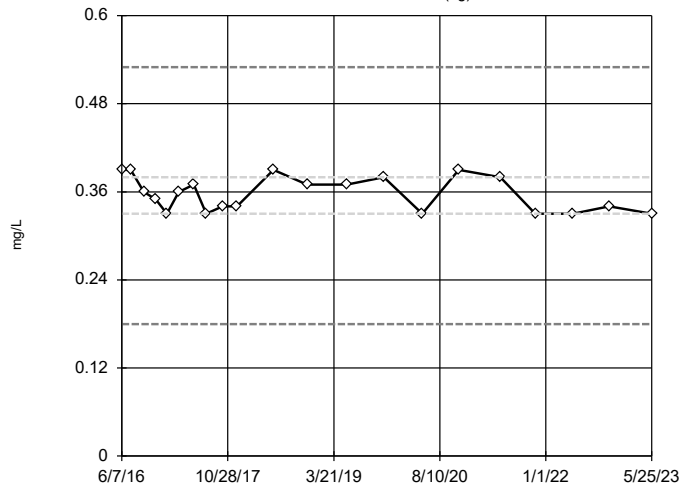


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1.333, low cutoff = -0.8373, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-014S (bg)

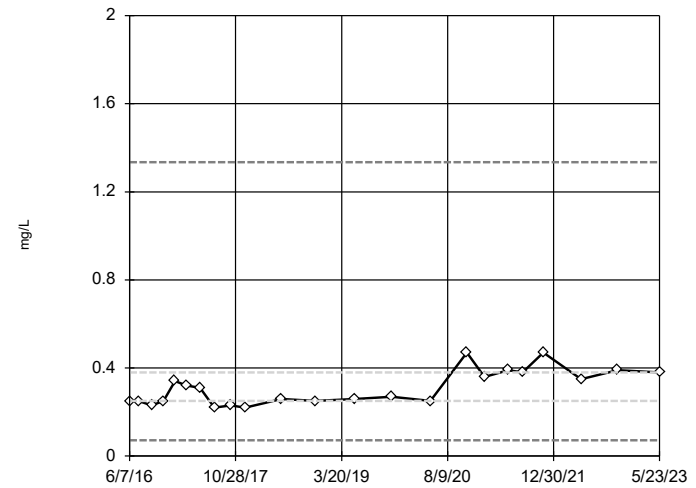


n = 21
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality, analysis run on raw data.
 High cutoff = 0.53, low cutoff = 0.18, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

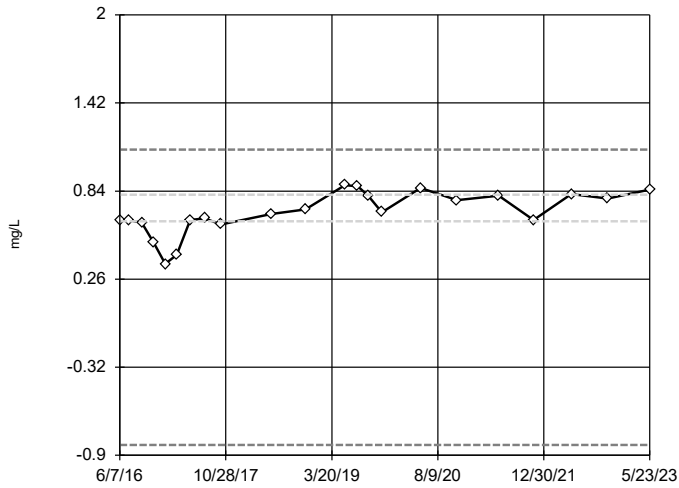
MW-015I



n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1.334, low cutoff = 0.07119, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

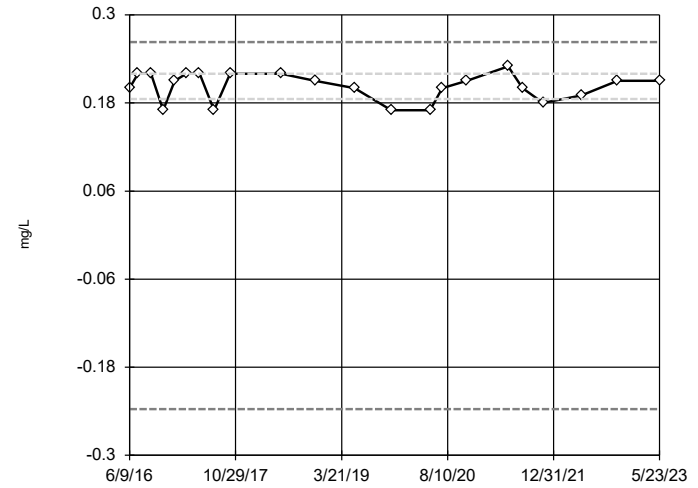
Tukey's Outlier Screening MW-015S



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1.113, low cutoff = -0.8315, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

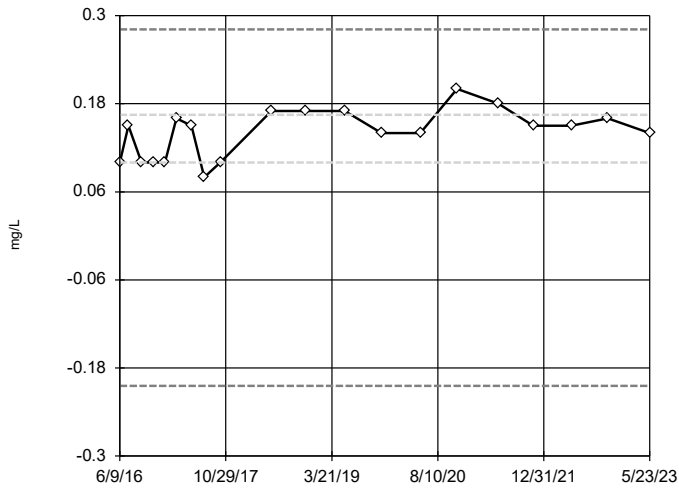
Tukey's Outlier Screening MW-016D



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2631, low cutoff = -0.2372, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

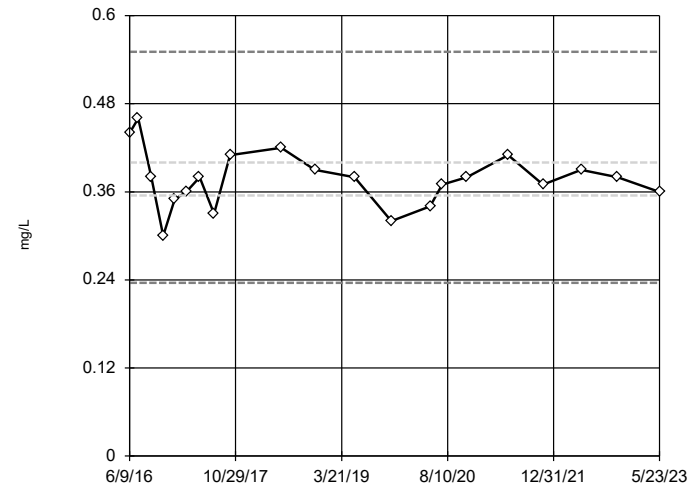
Tukey's Outlier Screening MW-016I



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.2811, low cutoff = -0.2043, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-016S

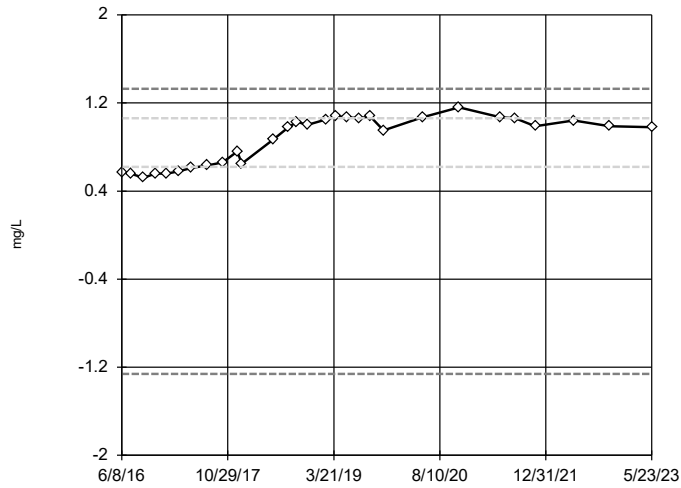


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.5509, low cutoff = 0.2362, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-017I

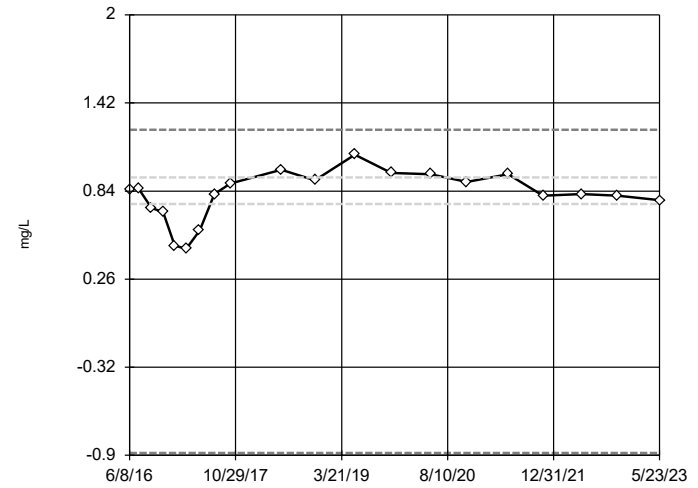


n = 29
 No outliers found.
 Tukey's method selected by user.
 Data were x*6 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1.329, low cutoff = -1.261, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-017S

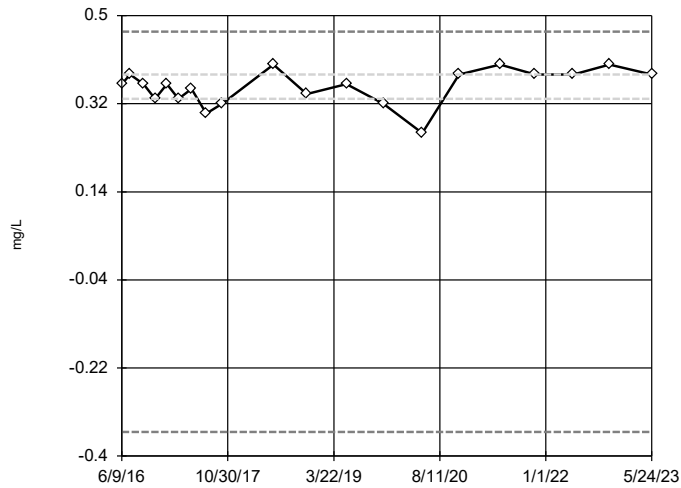


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1.244, low cutoff = -0.8833, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-021D

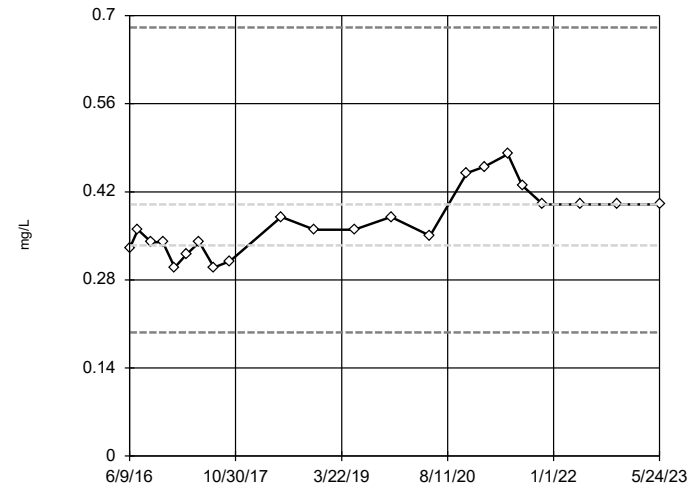


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were x*4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.4676, low cutoff = -0.3506, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

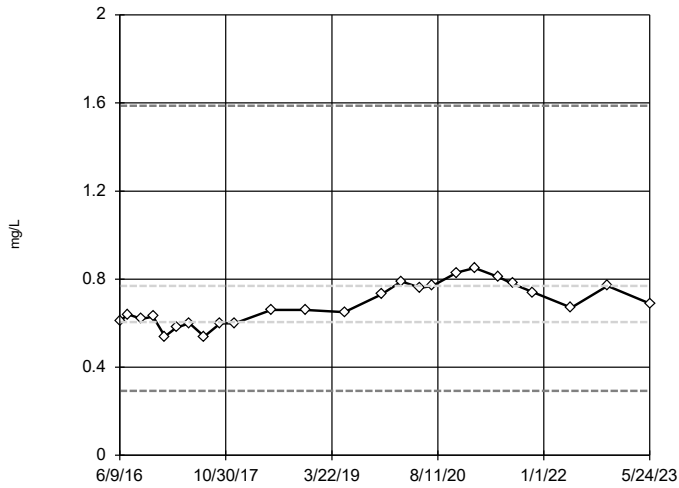
MW-021I



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 0.6812, low cutoff = 0.1967, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

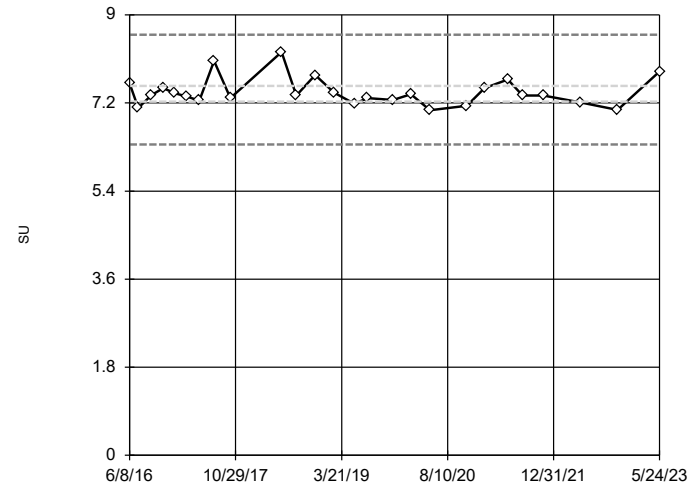
Tukey's Outlier Screening MW-021S



n = 25
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1.588, low cutoff = 0.2934, based on IQR multiplier of 3.

Constituent: Fluoride, total Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

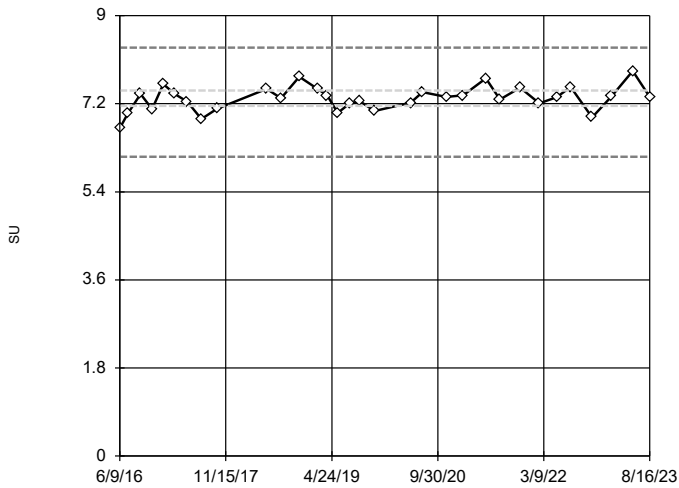
Tukey's Outlier Screening MW-001D



n = 26
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.597, low cutoff = 6.349, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

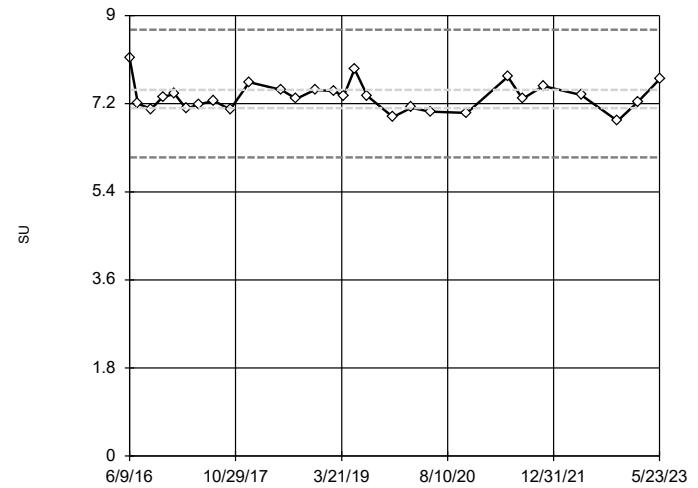
Tukey's Outlier Screening MW-0011



n = 32
 No outliers found.
 Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.344, low cutoff = 6.114, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-001S

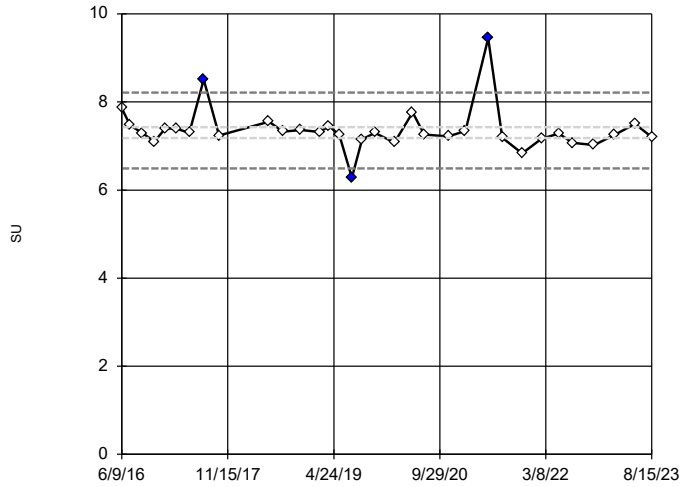


n = 28
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.71, low cutoff = 6.106, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002D



n = 33

Outliers are drawn as solid.
Tukey's method selected by user.

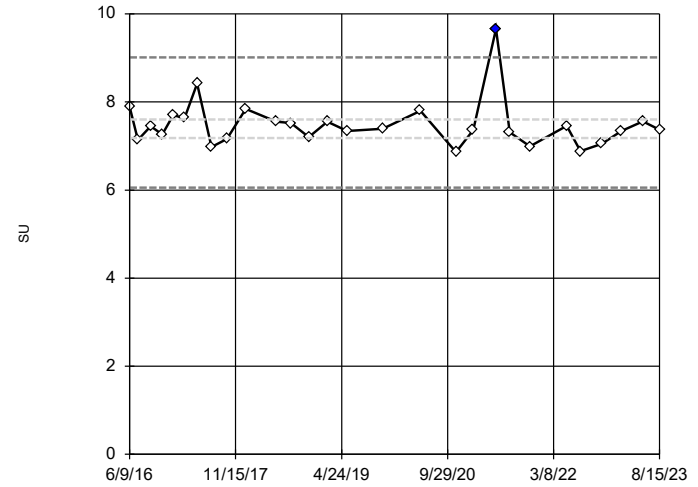
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.211, low cutoff = 6.493, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002I



n = 28

Outlier is drawn as solid.
Tukey's method selected by user.

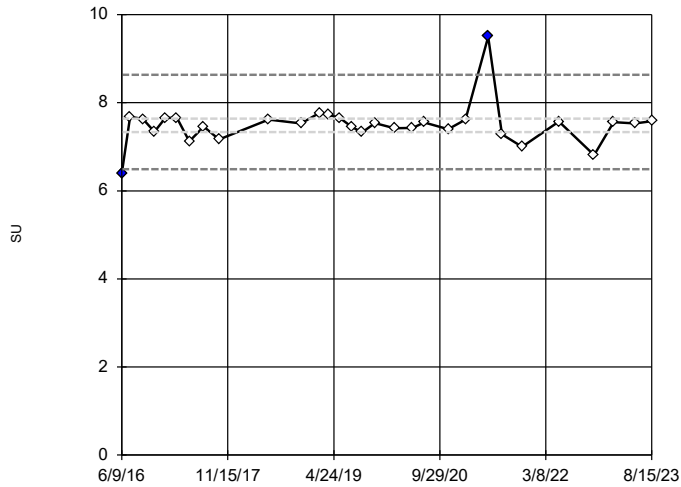
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.013, low cutoff = 6.054, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002S



n = 30

Outliers are drawn as solid.
Tukey's method selected by user.

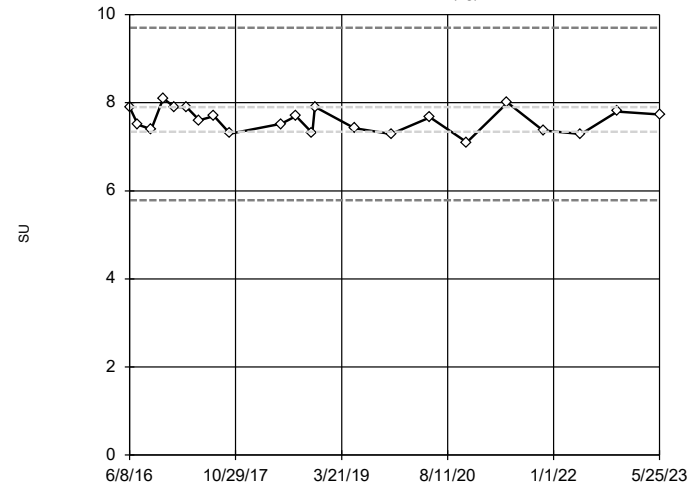
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.633, low cutoff = 6.491, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-006S (bg)



n = 22

No outliers found.
Tukey's method selected by user.

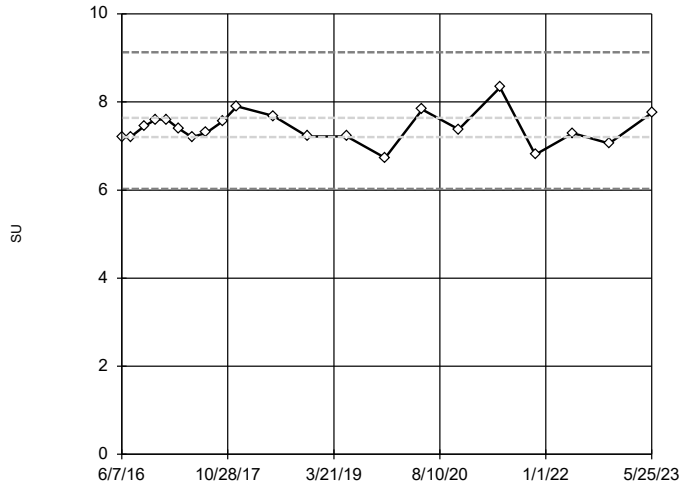
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 9.704, low cutoff = 5.783, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008I (bg)

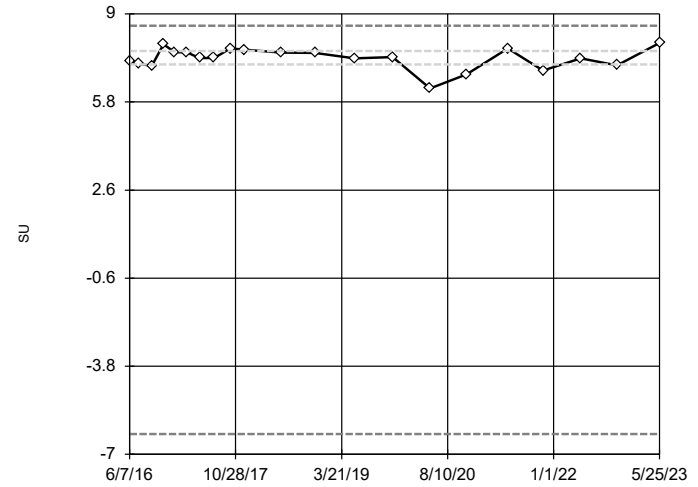


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 9.128, low cutoff = 6.027, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008S (bg)

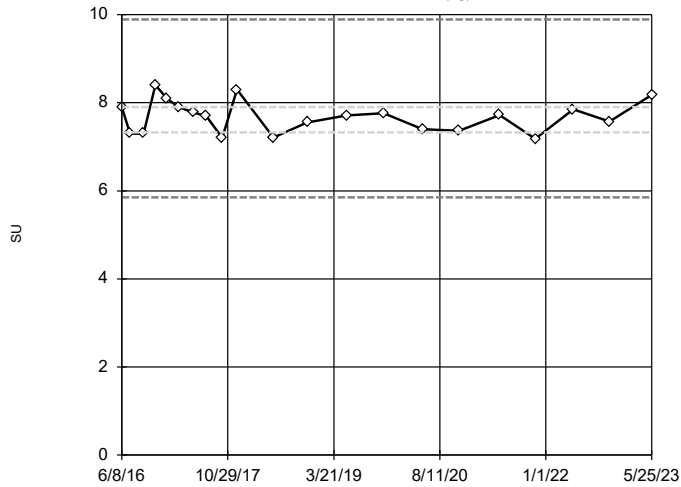


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were x^6 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.57, low cutoff = -6.262, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-011S (bg)

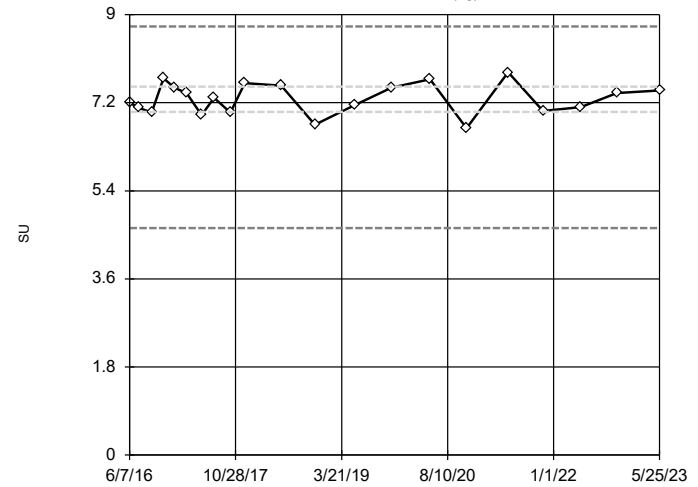


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 9.89, low cutoff = 5.855, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:16 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

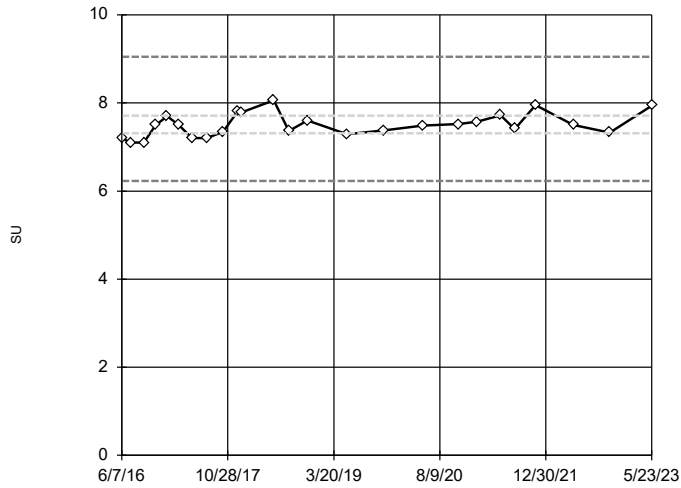
MW-014S (bg)



n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.76, low cutoff = 4.641, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

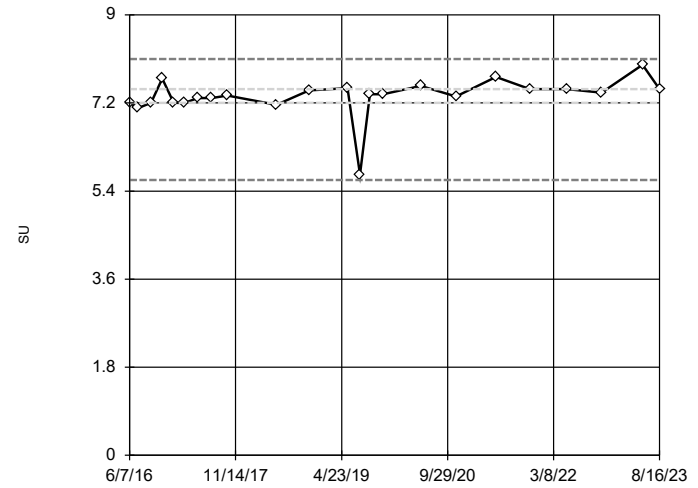
Tukey's Outlier Screening MW-015I



n = 25
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 9.046, low cutoff = 6.23, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

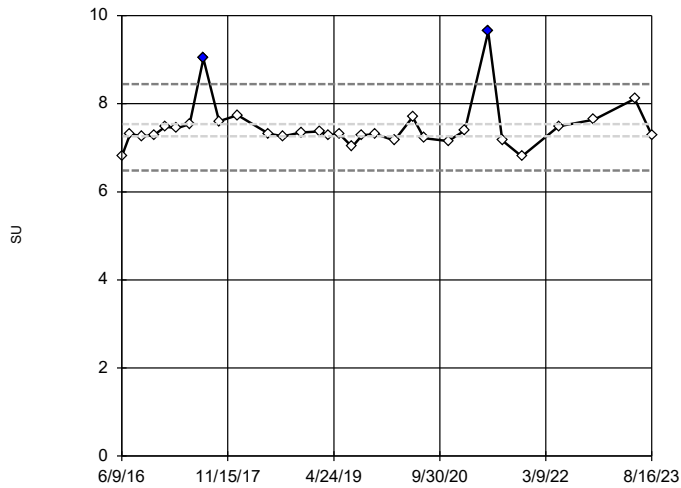
Tukey's Outlier Screening MW-015S



n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.101, low cutoff = 5.629, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

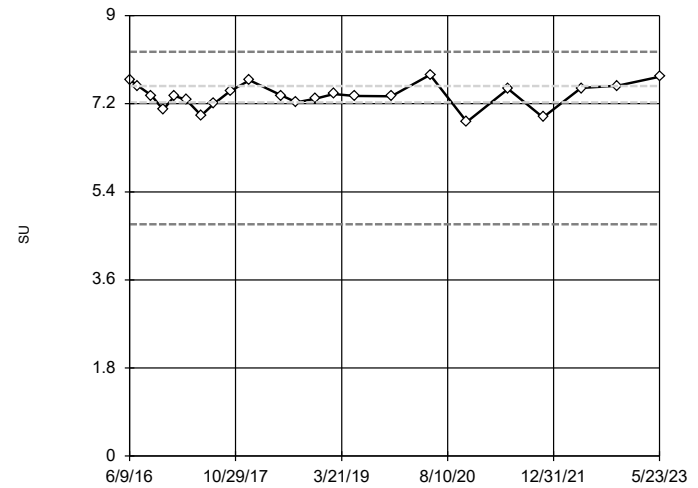
Tukey's Outlier Screening MW-016D



n = 31
 Outliers are drawn as solid.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.446, low cutoff = 6.481, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

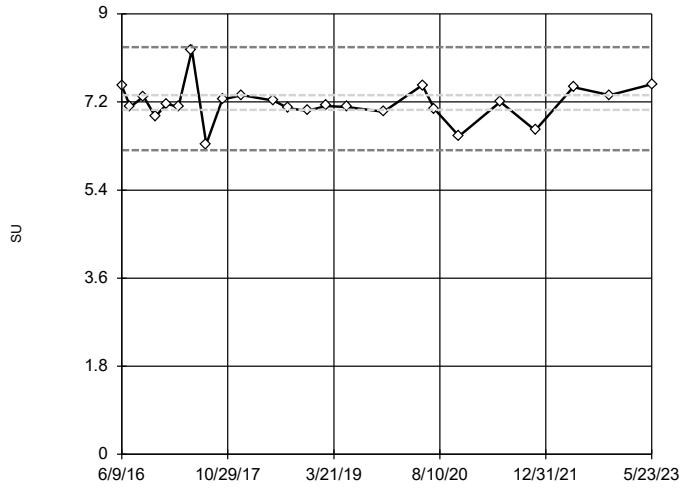
Tukey's Outlier Screening MW-016I



n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were x⁶ transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.263, low cutoff = 4.734, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

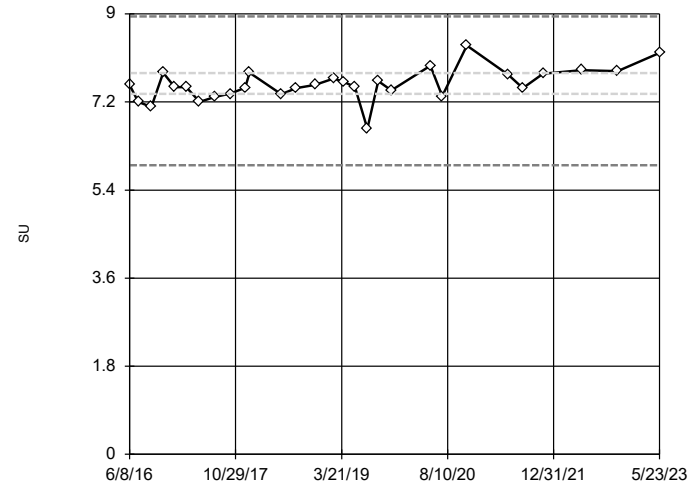
Tukey's Outlier Screening MW-016S



n = 24
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.319, low cutoff = 6.211, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

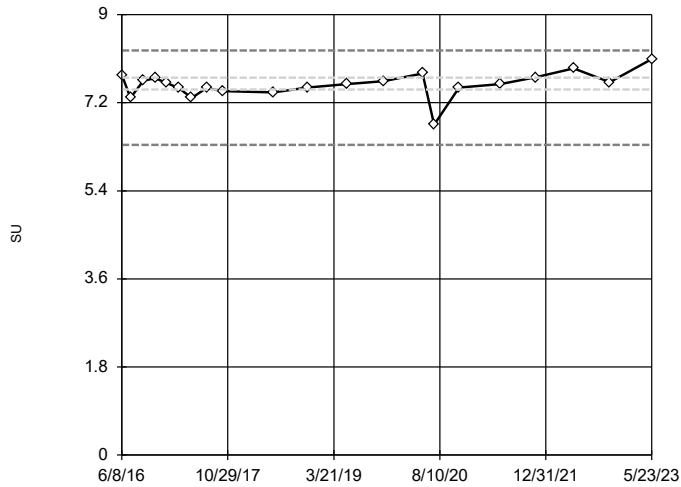
Tukey's Outlier Screening MW-017I



n = 29
 No outliers found.
 Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.945, low cutoff = 5.909, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

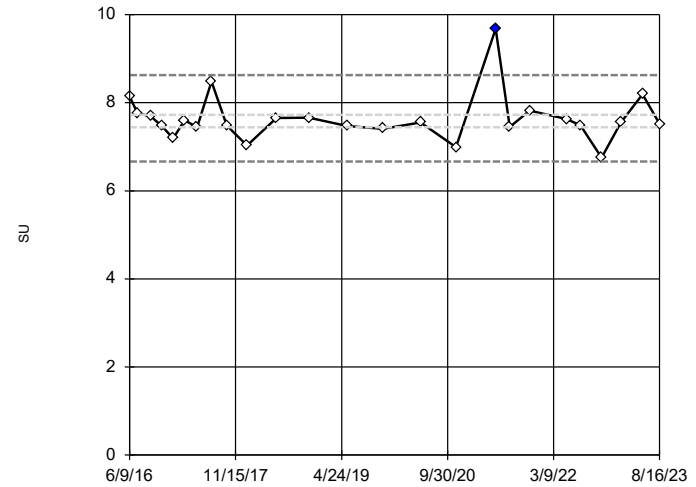
Tukey's Outlier Screening MW-017S



n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were x*6 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.265, low cutoff = 6.341, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

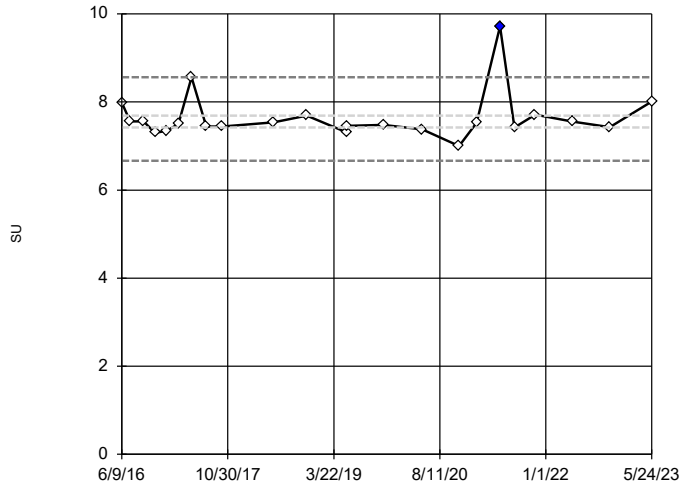
Tukey's Outlier Screening MW-021D



n = 25
 Outlier is drawn as solid.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.629, low cutoff = 6.665, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

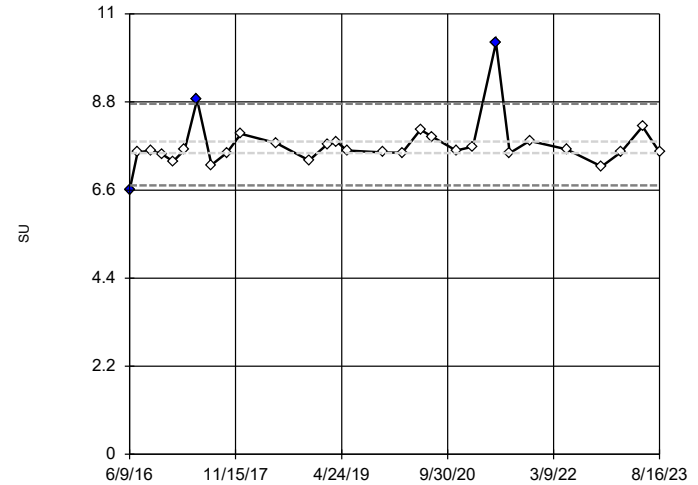
Tukey's Outlier Screening MW-Q21I



n = 23
 Outlier is drawn as solid.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.56, low cutoff = 6.666, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

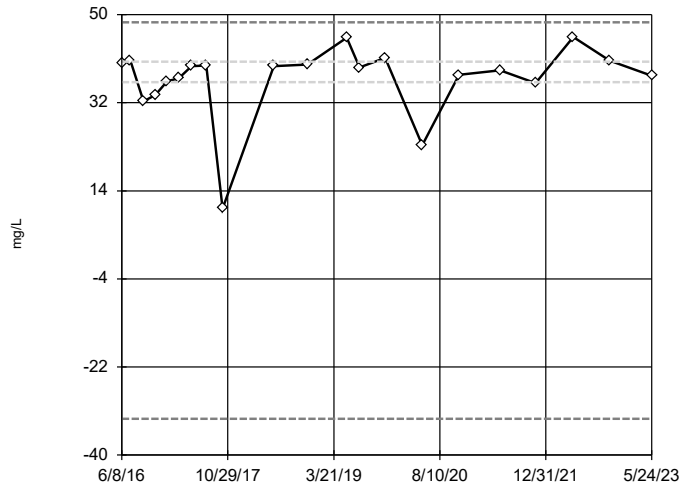
Tukey's Outlier Screening MW-Q21S



n = 29
 Outliers are drawn as solid.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 8.754, low cutoff = 6.718, based on IQR multiplier of 3.

Constituent: pH, field Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

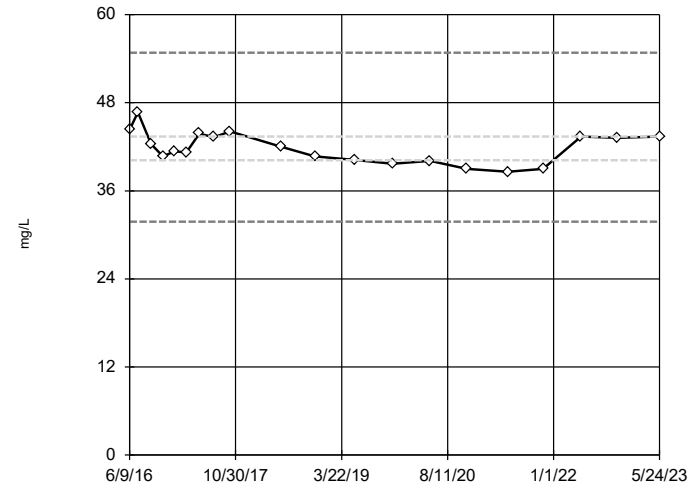
Tukey's Outlier Screening MW-001D



n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were x*4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 48.44, low cutoff = -32.55, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-001I

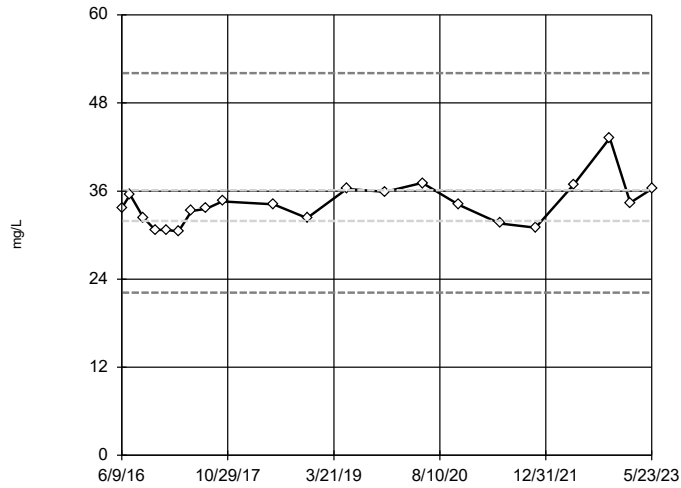


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 54.82, low cutoff = 31.79, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001S



n = 21

No outliers found.
Tukey's method selected by user.

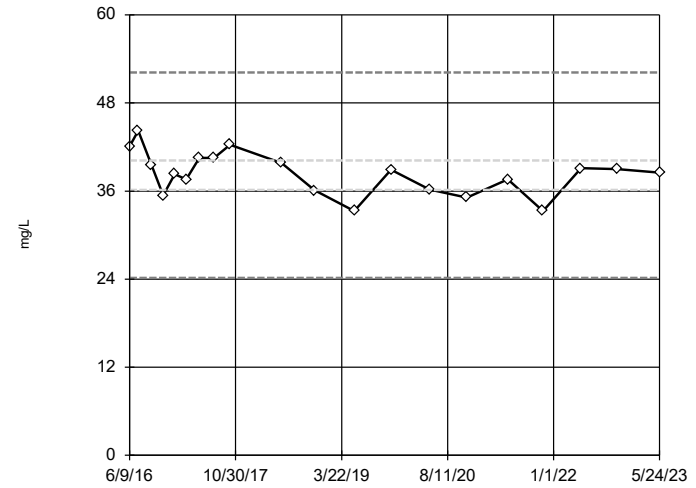
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 52.08, low cutoff = 22.15, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002D



n = 20

No outliers found.
Tukey's method selected by user.

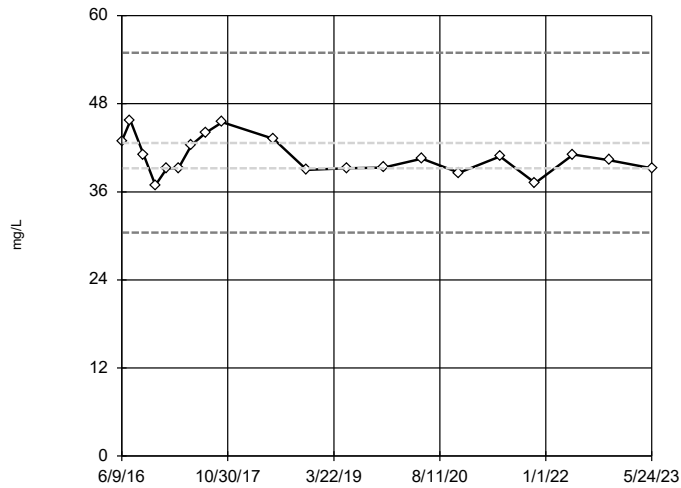
Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 52.15, low cutoff = 24.15, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002I



n = 20

No outliers found.
Tukey's method selected by user.

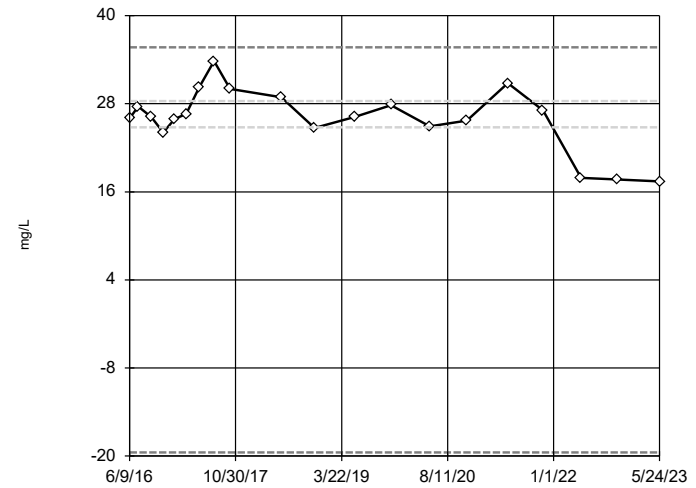
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 54.93, low cutoff = 30.44, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002S



n = 20

No outliers found.
Tukey's method selected by user.

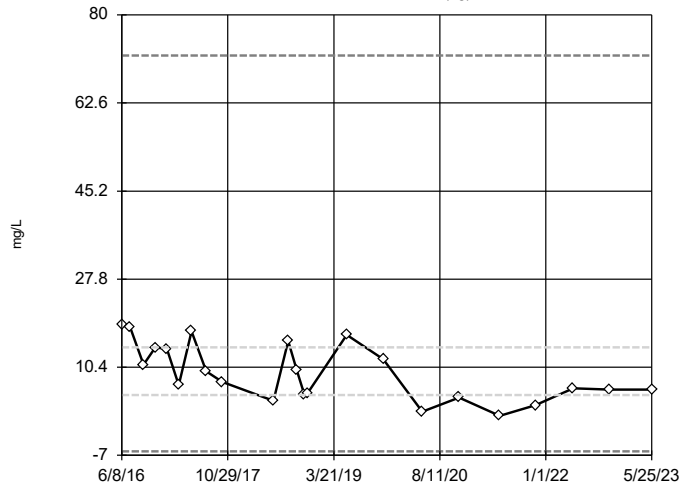
Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 35.7, low cutoff = -19.5, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-006S (bg)



n = 23

No outliers found.
Tukey's method selected by user.

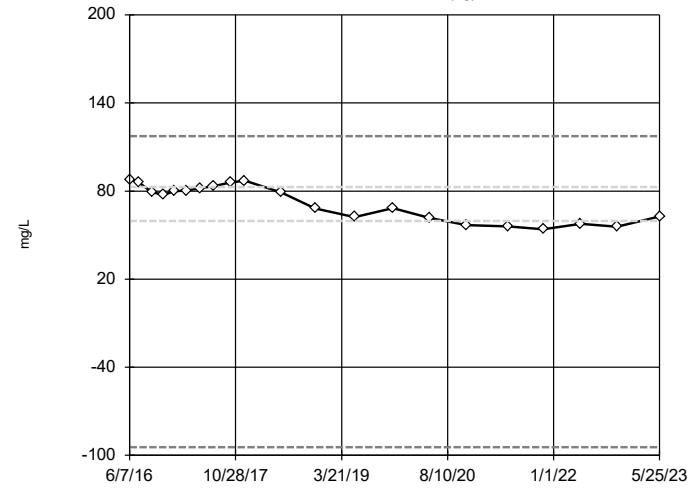
Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 72, low cutoff = -6.201, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008I (bg)



n = 21

No outliers found.
Tukey's method selected by user.

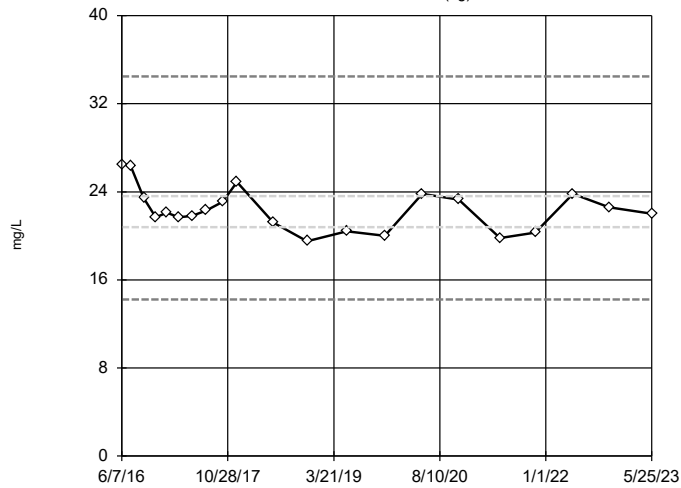
Data were cube transformed to achieve best W statistic (graph shown in original units).

High cutoff = 117.4, low cutoff = -94.44, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008S (bg)



n = 21

No outliers found.
Tukey's method selected by user.

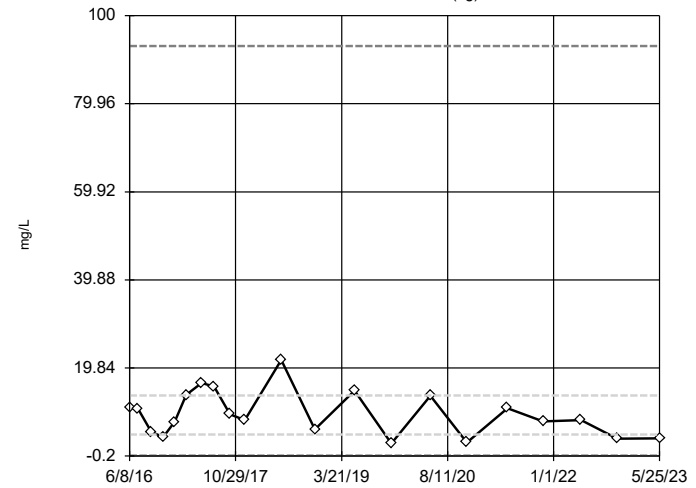
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 34.49, low cutoff = 14.23, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-011S (bg)



n = 21

No outliers found.
Tukey's method selected by user.

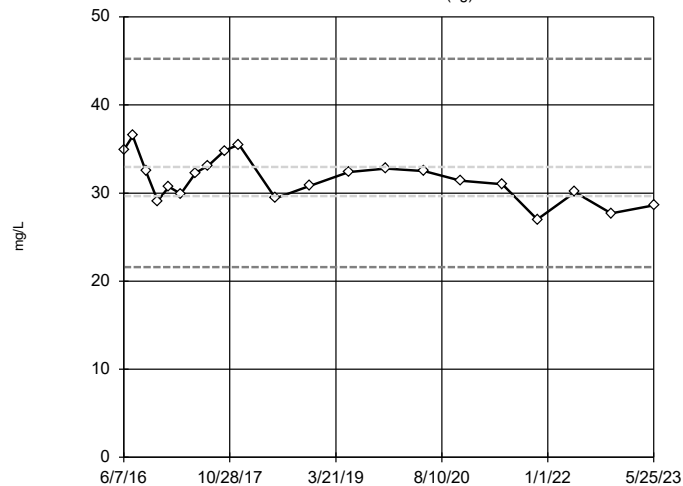
Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 93.07, low cutoff = -0.1057, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-014S (bg)

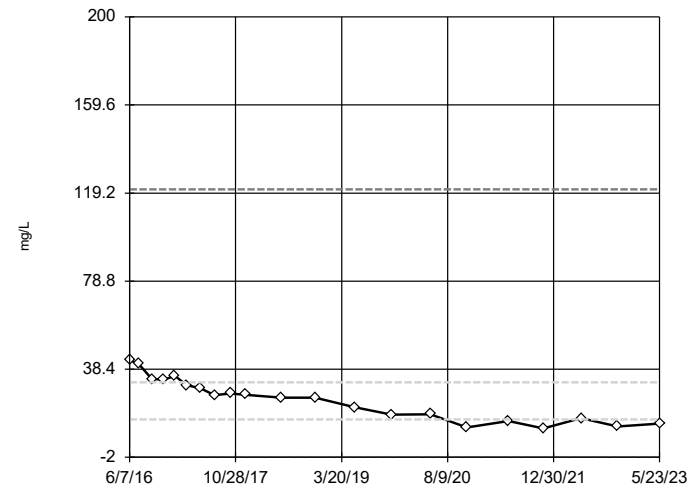


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 45.22, low cutoff = 21.6, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-015I

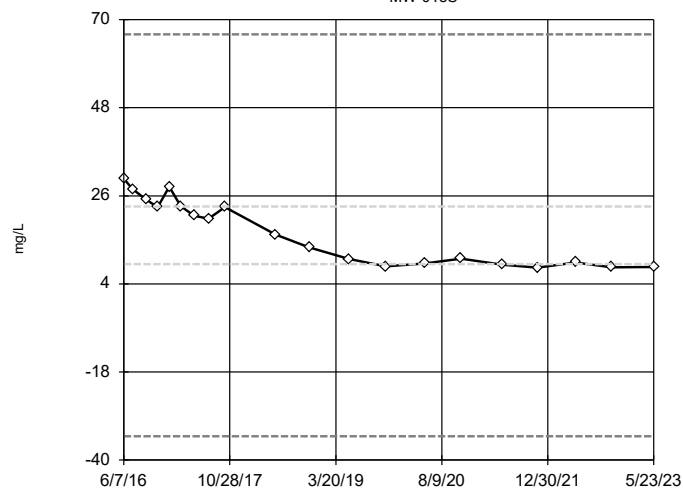


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 120.9, low cutoff = -1.937, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-015S

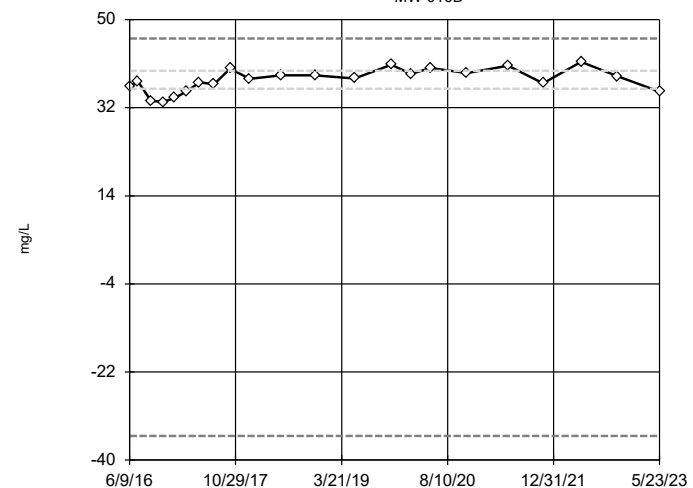


n = 20
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality, analysis run on raw data.
 High cutoff = 66.32, low cutoff = -34.06, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

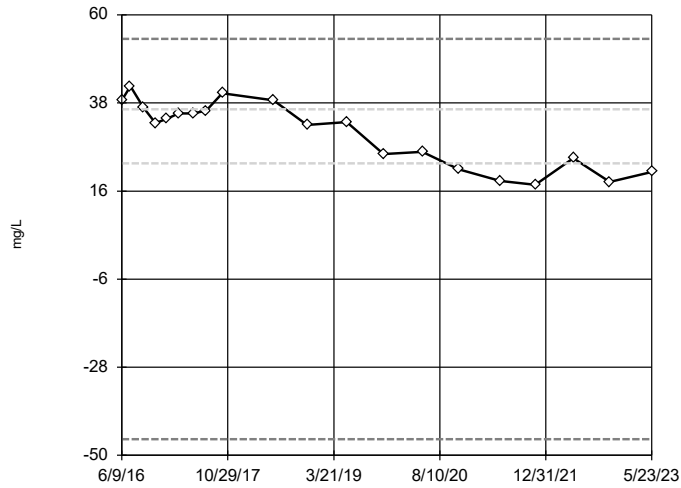
MW-016D



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were x^5 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 46.16, low cutoff = -35.1, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

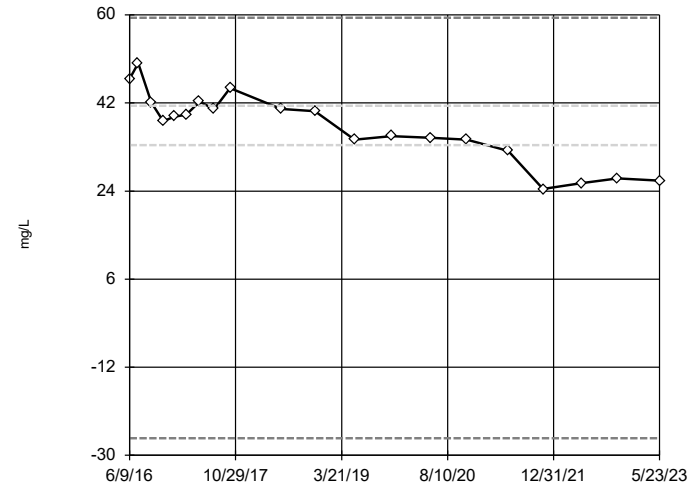
Tukey's Outlier Screening MW-016I



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 54.04, low cutoff = -46.01, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

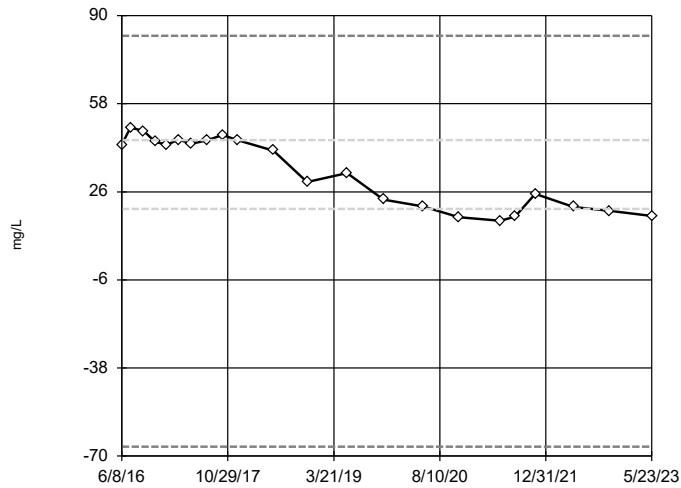
Tukey's Outlier Screening MW-016S



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 59.44, low cutoff = -26.48, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

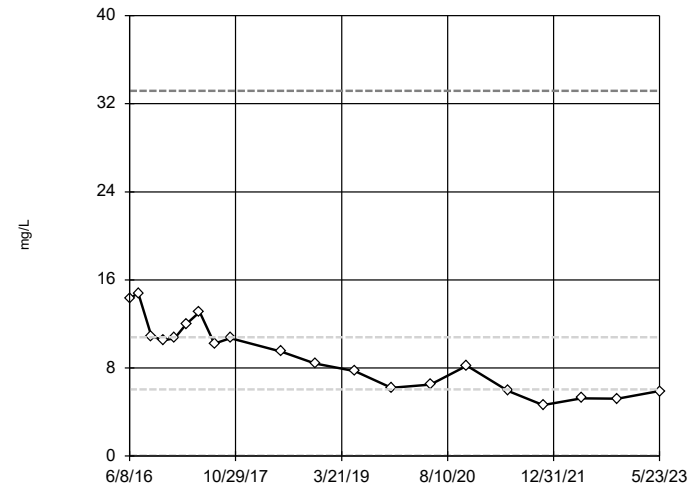
Tukey's Outlier Screening MW-017I



n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 82.66, low cutoff = -66.62, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-017S

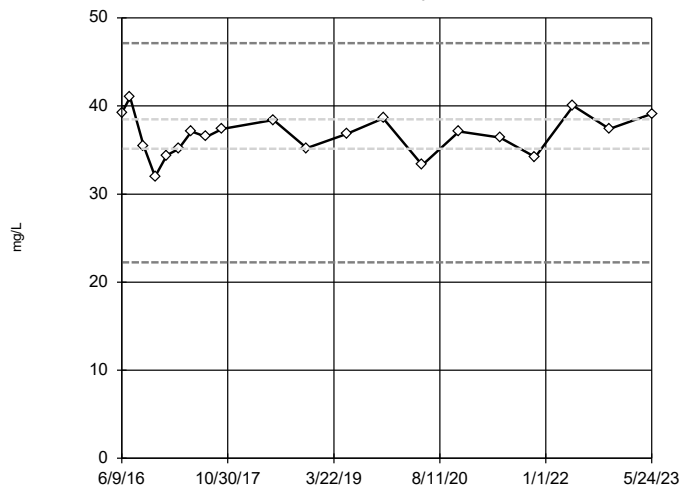


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 33.18, low cutoff = -0.0001621, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-021D



n = 20

No outliers found.
Tukey's method selected by user.

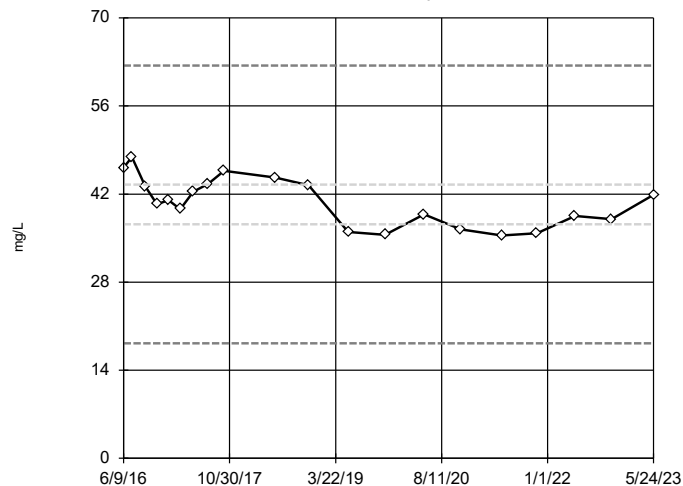
Data were square transformed to achieve best W statistic (graph shown in original units).

High cutoff = 47.14, low cutoff = 22.26, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-021I



n = 20

No outliers found.
Tukey's method selected by user.

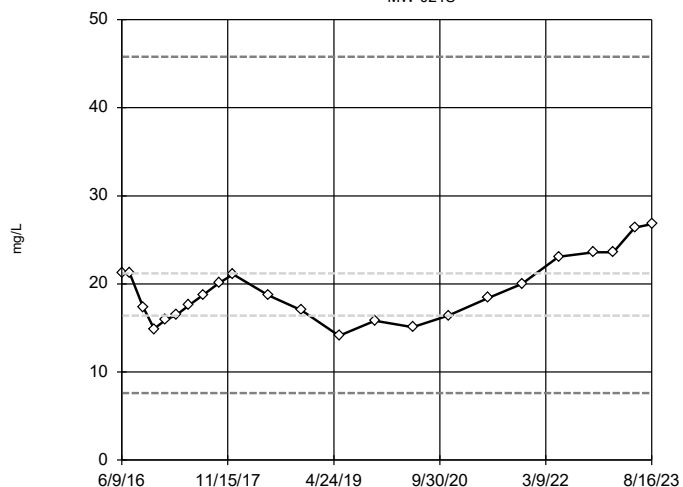
Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 62.4, low cutoff = 18.3, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-021S



n = 23

No outliers found.
Tukey's method selected by user.

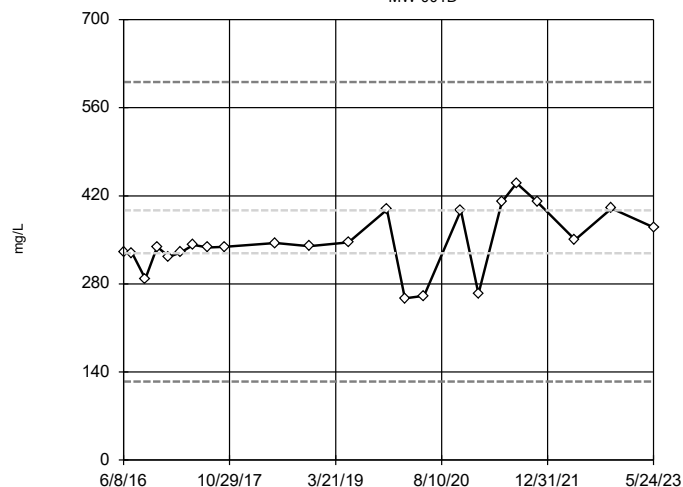
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 45.79, low cutoff = 7.592, based on IQR multiplier of 3.

Constituent: Sulfate, total Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001D



n = 23

No outliers found.
Tukey's method selected by user.

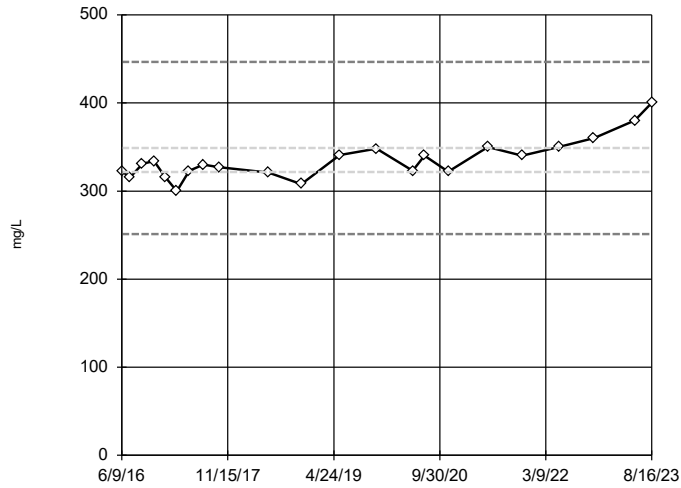
Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 601, low cutoff = 125, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-0011

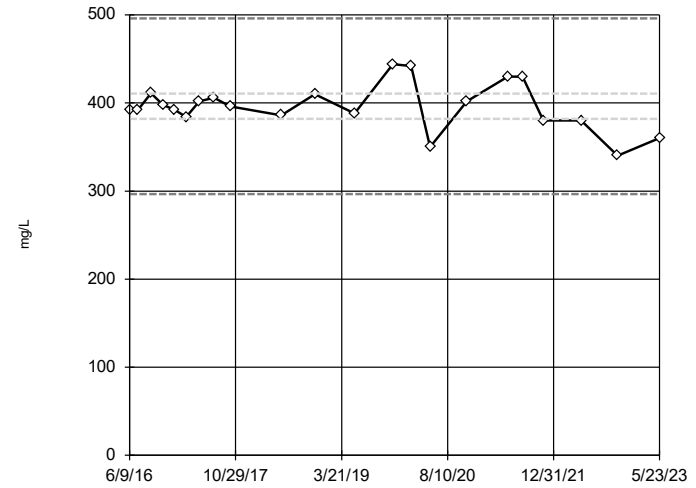


n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 446.4, low cutoff = 251.3, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-001S

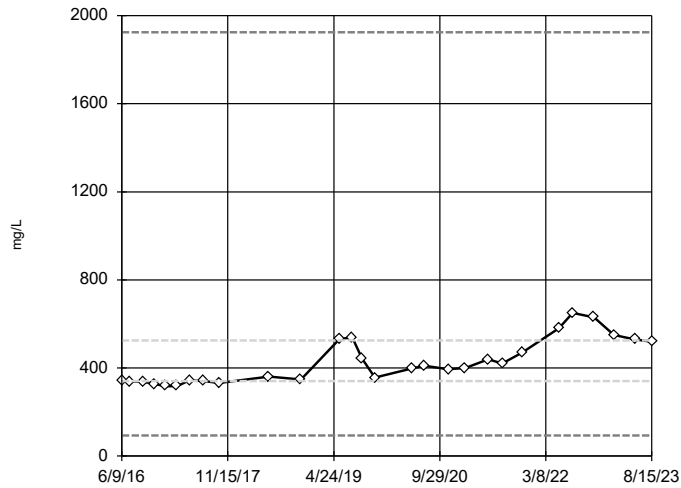


n = 22
 No outliers found.
 Tukey's method selected by user.
 Ladder of Powers transformations did not improve normality; analysis run on raw data.
 High cutoff = 496, low cutoff = 296.5, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002D

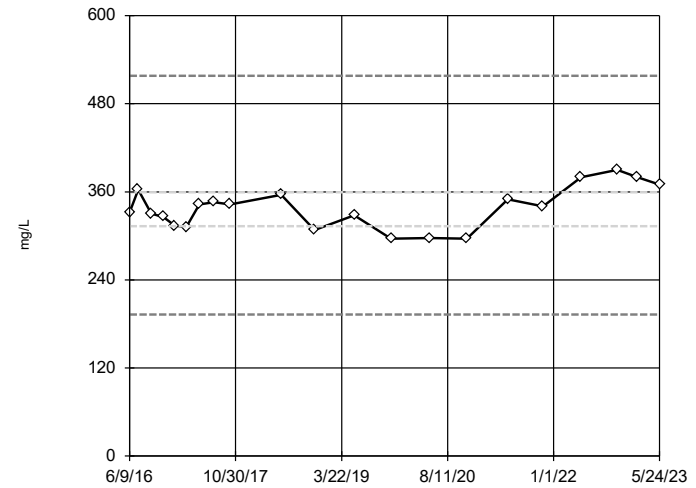


n = 28
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1924, low cutoff = 92.91, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002I

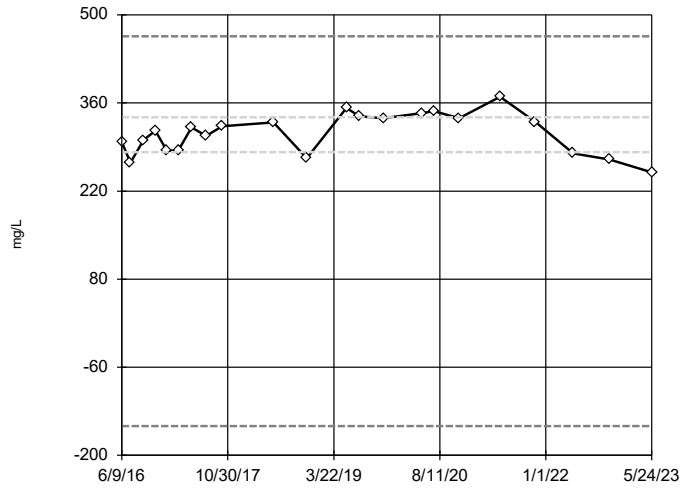


n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 518.3, low cutoff = 192.8, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-002S

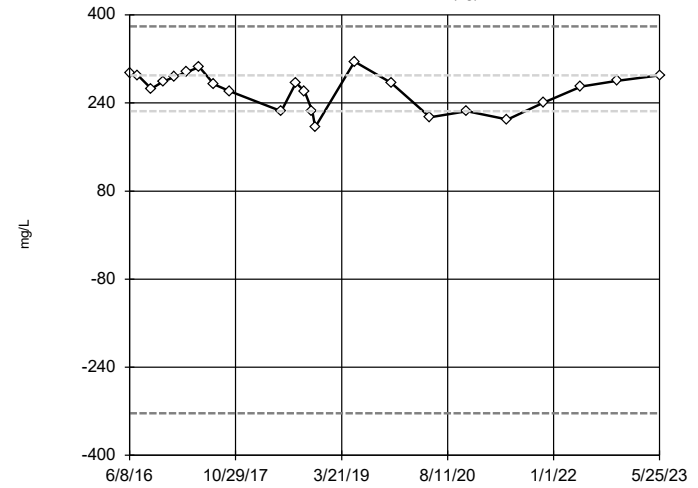


n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were square transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 465.9, low cutoff = -153.7, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-006S (bg)

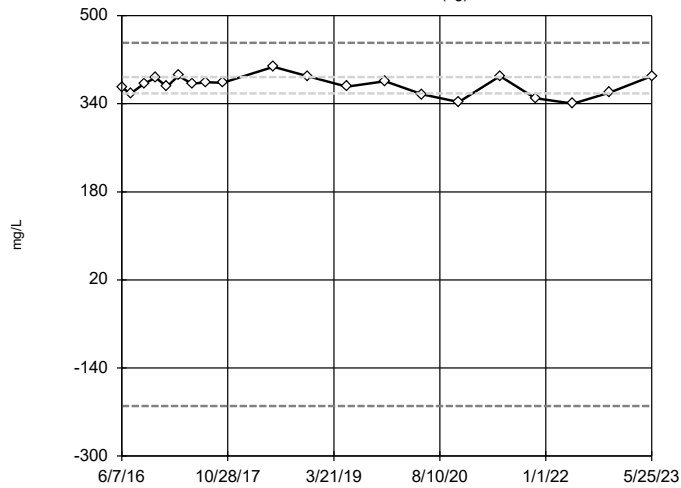


n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were x^4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 378.9, low cutoff = -323.6, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008I (bg)

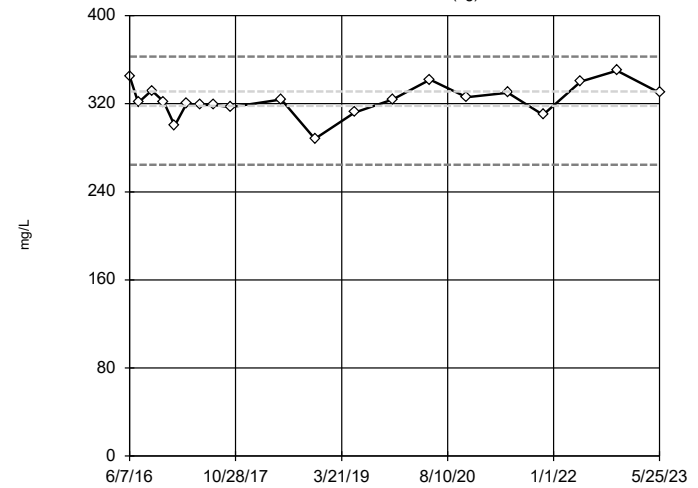


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were x^4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 450.8, low cutoff = -208.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-008S (bg)

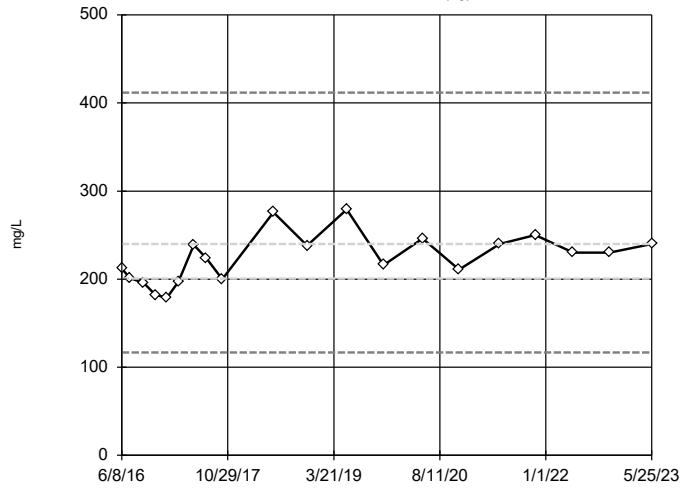


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were x^4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 362.9, low cutoff = 264.5, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-011S (bg)

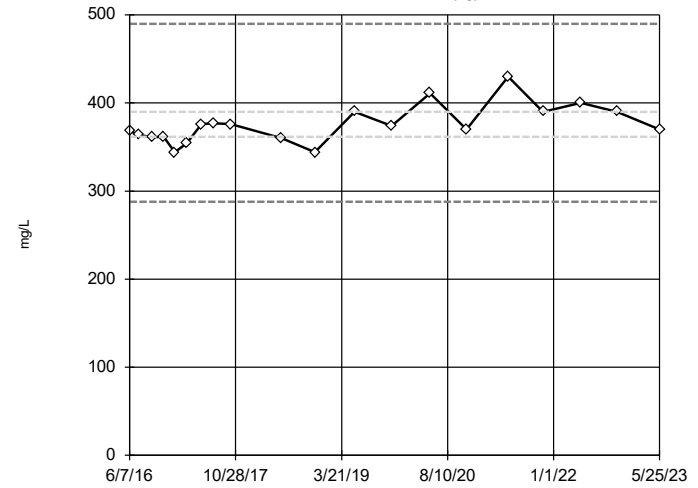


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 411.6, low cutoff = 116.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-014S (bg)

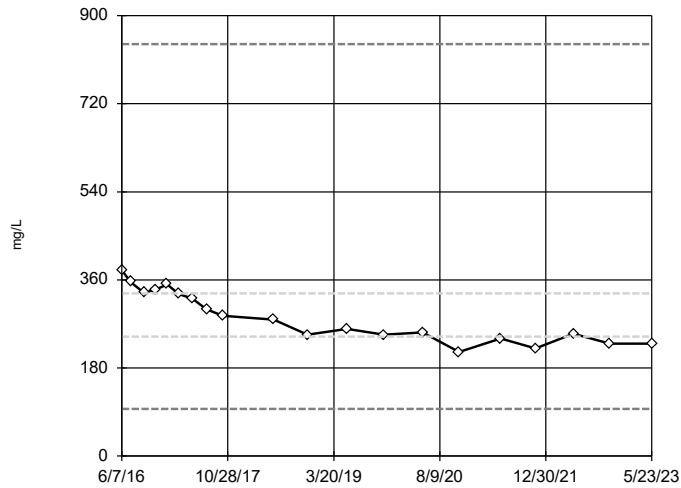


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 489.7, low cutoff = 287.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-015I

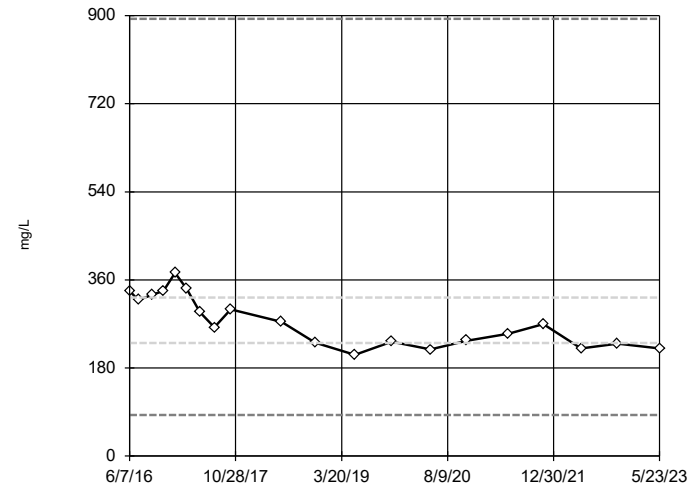


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 841.7, low cutoff = 96.37, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-015S

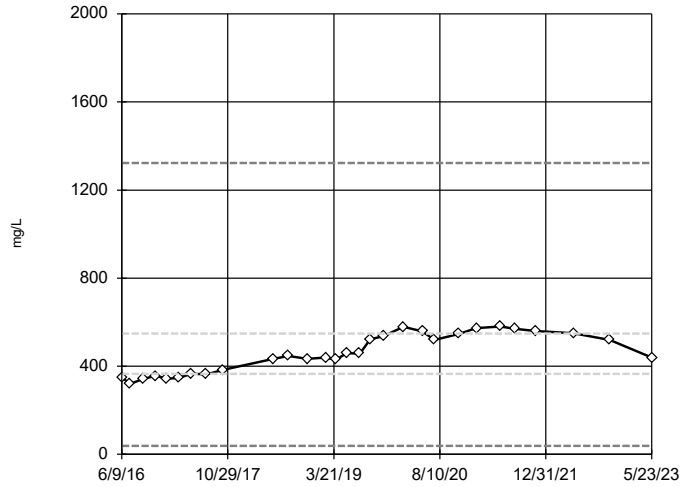


n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 893.6, low cutoff = 83.74, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-016D

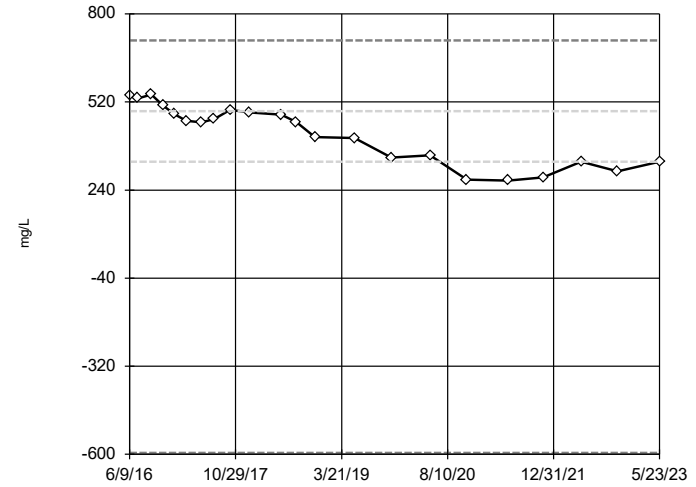


n = 29
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1322, low cutoff = 37.94, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-016I

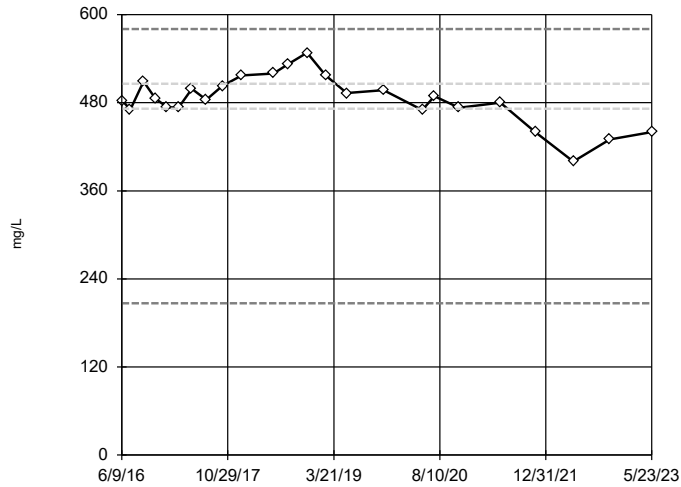


n = 22
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 715.2, low cutoff = -595.7, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

MW-016S



n = 24
 No outliers found.
 Tukey's method selected by user.
 Data were x^4 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 580.3, low cutoff = 206.9, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening

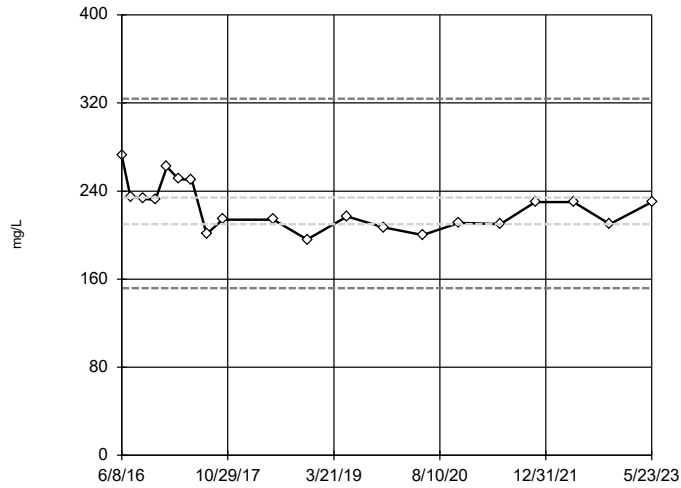
MW-017I



n = 23
 No outliers found.
 Tukey's method selected by user.
 Data were square root transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 1816, low cutoff = -10.29, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

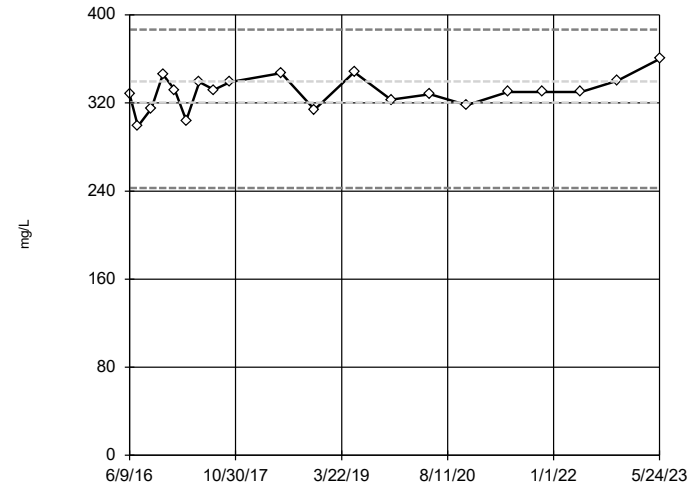
Tukey's Outlier Screening MW-017S



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 323.7, low cutoff = 151.8, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

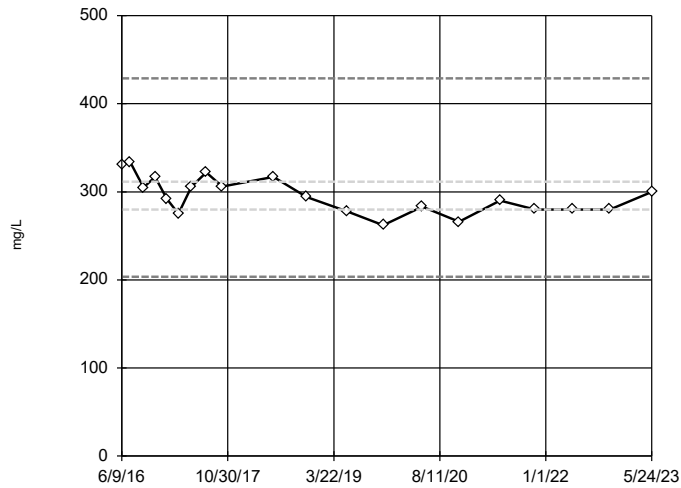
Tukey's Outlier Screening MW-021D



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 386.5, low cutoff = 242.8, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

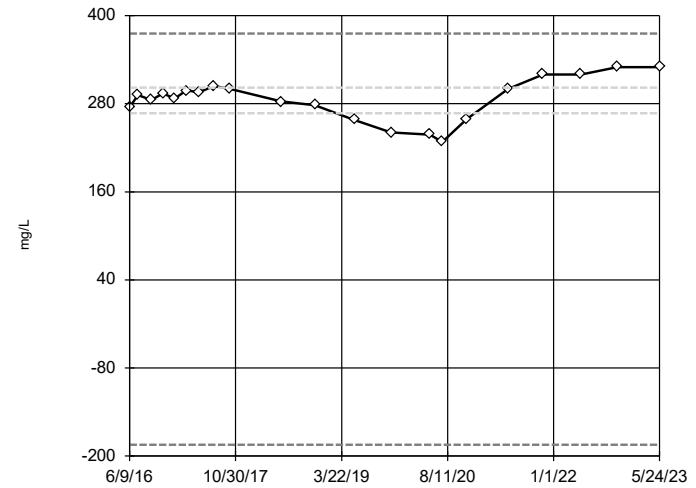
Tukey's Outlier Screening MW-0211



n = 20
 No outliers found.
 Tukey's method selected by user.
 Data were natural log transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 428.6, low cutoff = 203.5, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

Tukey's Outlier Screening MW-021S



n = 21
 No outliers found.
 Tukey's method selected by user.
 Data were cube transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 375.5, low cutoff = -184.7, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids [TDS] Analysis Run 12/7/2023 2:17 PM
 Rockport Landfill Data: Rockport_LF

FIGURE D
Seasonality

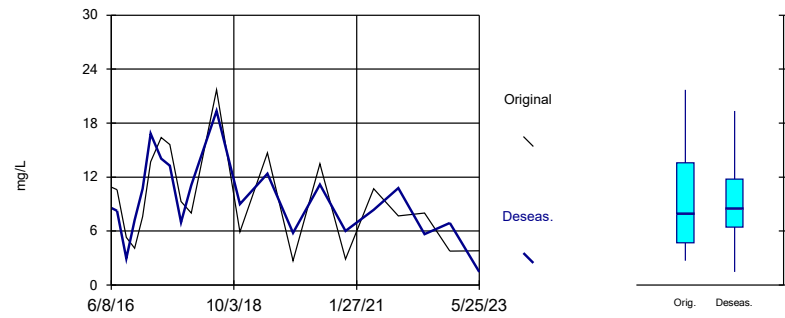
Seasonality

Rockport Landfill Client: Geosyntec Data: Rockport_LF Printed 12/13/2023, 2:10 PM

<u>Constituent</u>	<u>Well</u>	<u>Sig.</u>	<u>K.-W.</u>	<u>Chi-Sq.</u>	<u>df</u>	<u>N</u>	<u>Alpha</u>
Sulfate, total (mg/L)	MW-011S (bg)	Yes	6.545	3.841	1	21	0.05

Seasonality: MW-011S (bg)

For the selected data, the Kruskal-Wallis test indicates SEASONALITY at the 5% significance level. Because the calculated Kruskal-Wallis statistic is greater than the Chi-squared value, we conclude that at least one season has a significantly different median concentration of this constituent than any other season.
Calculated Kruskal-Wallis statistic = 6.545
Tabulated Chi-Squared value = 3.841 with 1 degrees of freedom at the 5% significance level.
There were 0 groups of ties in the data, so no adjustment to the Kruskal-Wallis statistic (H) was necessary.



Constituent: Sulfate, total Analysis Run 12/13/2023 2:09 PM View: Seasonality
Rockport Landfill Client: Geosyntec Data: Rockport_LF

FIGURE E
Mann-Whitney Tests

Welch's t-test/Mann-Whitney - Significant Results

Rockport Landfill Client: Geosyntec Data: Rockport_LF Printed 12/13/2023, 1:53 PM

<u>Constituent</u>	<u>Well</u>	<u>Calc.</u>	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	<u>Method</u>
Boron, total (mg/L)	MW-011S (bg)	-2.65	Yes	0.01	Yes	Mann-W
Calcium, total (mg/L)	MW-008I (bg)	-2.599	Yes	0.01	Yes	Mann-W
Calcium, total (mg/L)	MW-016S	-2.854	Yes	0.01	Yes	Mann-W
Calcium, total (mg/L)	MW-021I	-2.883	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-001I	3.308	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-002D	3.308	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-002I	3.724	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-008S (bg)	3	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-014S (bg)	-3.051	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-016D	-2.812	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-016S	-3.091	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-021D	2.963	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-021S	3.062	Yes	0.01	Yes	Mann-W
Conductivity (uS/cm)	MW-002D	3.761	Yes	0.01	Yes	Mann-W
Conductivity (uS/cm)	MW-002I	2.759	Yes	0.01	Yes	Mann-W
Fluoride, total (mg/L)	MW-002S	3.302	Yes	0.01	Yes	Mann-W
Fluoride, total (mg/L)	MW-011S (bg)	-3.091	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-014S (bg)	-2.822	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-016I	-2.79	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-016S	-3.072	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-017S	-3.072	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-021S	3.257	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-001I	2.982	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-001S	-2.857	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-002D	3.183	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-002I	2.769	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-016S	-3.139	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-021S	3.003	Yes	0.01	Yes	Mann-W

Welch's t-test/Mann-Whitney - All Results

Rockport Landfill Client: Geosyntec Data: Rockport_LF Printed 12/13/2023, 1:53 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Boron, total (mg/L)	MW-001D	1.023	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-001I	-1.258	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-001S	-0.09488	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-002D	-1.813	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-002I	-1.519	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-002S	-0.8523	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-006S (bg)	-1.221	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-008I (bg)	-1.423	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-008S (bg)	-0.9104	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-011S (bg)	-2.65	Yes	0.01	Yes	Mann-W
Boron, total (mg/L)	MW-014S (bg)	-0.9118	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-015I	-1.488	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-015S	-1.304	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-016D	0.4735	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-016I	-2.114	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-016S	-2.175	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-017I	-2.112	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-017S	0.09492	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-021D	-1.531	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-021I	-1.154	No	0.01	No	Mann-W
Boron, total (mg/L)	MW-021S	-0.6352	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-001D	0.2239	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-001I	0.898	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-001S	-2.41	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-002D	2.214	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-002I	2.353	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-002S	-2.505	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-006S (bg)	-0.2436	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-008I (bg)	-2.599	Yes	0.01	Yes	Mann-W
Calcium, total (mg/L)	MW-008S (bg)	-1.749	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-011S (bg)	0.9925	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-014S (bg)	0.4254	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-015I	-2.175	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-015S	-0.9922	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-016D	0.06827	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-016I	0	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-016S	-2.854	Yes	0.01	Yes	Mann-W
Calcium, total (mg/L)	MW-017I	-0.4246	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-017S	0.1892	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-021D	-0.7565	No	0.01	No	Mann-W
Calcium, total (mg/L)	MW-021I	-2.883	Yes	0.01	Yes	Mann-W
Calcium, total (mg/L)	MW-021S	-0.2363	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-001D	1.299	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-001I	3.308	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-001S	0.8785	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-002D	3.308	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-002I	3.724	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-002S	-2.559	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-006S (bg)	-2.149	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-008I (bg)	-1.347	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-008S (bg)	3	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-011S (bg)	0.8511	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-014S (bg)	-3.051	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-015I	-0.9341	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-015S	-1.843	No	0.01	No	Mann-W

Welch's t-test/Mann-Whitney - All Results

Rockport Landfill Client: Geosyntec Data: Rockport_LF Printed 12/13/2023, 1:53 PM

Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
Chloride, total (mg/L)	MW-016D	-2.812	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-016I	-1.701	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-016S	-3.091	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-017I	-0.5944	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-017S	-0.5201	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-021D	2.963	Yes	0.01	Yes	Mann-W
Chloride, total (mg/L)	MW-021I	-0.4728	No	0.01	No	Mann-W
Chloride, total (mg/L)	MW-021S	3.062	Yes	0.01	Yes	Mann-W
Conductivity (uS/cm)	MW-001D	0.8532	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-001I	1.734	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-001S	-0.1874	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-002D	3.761	Yes	0.01	Yes	Mann-W
Conductivity (uS/cm)	MW-002I	2.759	Yes	0.01	Yes	Mann-W
Conductivity (uS/cm)	MW-002S	-2.068	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-006S (bg)	0.8511	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-008I (bg)	0.8004	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-008S (bg)	1.276	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-011S (bg)	-1.588	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-014S (bg)	0.7089	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-015I	-1.668	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-015S	-0.4541	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-016D	-0.6587	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-016I	-2.149	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-016S	-0.7043	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-017I	-1.806	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-017S	0.5944	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-021D	1.1	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-021I	-0.649	No	0.01	No	Mann-W
Conductivity (uS/cm)	MW-021S	2.212	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-001D	0.2434	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-001I	2.029	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-001S	0.7585	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-002D	0.6123	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-002I	-1.196	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-002S	3.302	Yes	0.01	Yes	Mann-W
Fluoride, total (mg/L)	MW-006S (bg)	2.517	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-008I (bg)	2.209	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-008S (bg)	1.086	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-011S (bg)	-3.091	Yes	0.01	Yes	Mann-W
Fluoride, total (mg/L)	MW-014S (bg)	-2.371	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-015I	2.367	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-015S	1.11	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-016D	-0.8264	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-016I	0.2877	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-016S	-0.1805	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-017I	0.4434	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-017S	-1.135	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-021D	2.06	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-021I	1.669	No	0.01	No	Mann-W
Fluoride, total (mg/L)	MW-021S	0.9649	No	0.01	No	Mann-W
pH, field (SU)	MW-001D	-0.6758	No	0.01	No	Mann-W
pH, field (SU)	MW-001I	0.849	No	0.01	No	Mann-W
pH, field (SU)	MW-001S	0.3	No	0.01	No	Mann-W
pH, field (SU)	MW-002D	-2.089	No	0.01	No	Mann-W
pH, field (SU)	MW-002I	-1.328	No	0.01	No	Mann-W

Welch's t-test/Mann-Whitney - All Results

Rockport Landfill Client: Geosyntec Data: Rockport_LF Printed 12/13/2023, 1:53 PM

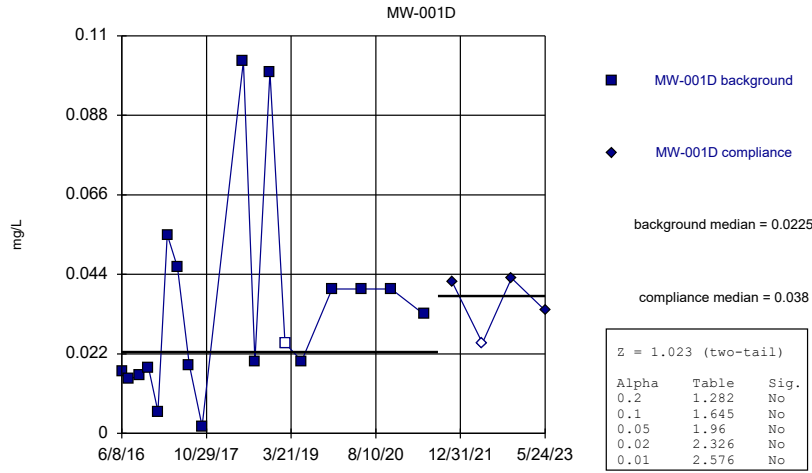
Constituent	Well	Calc.	0.01	Alpha	Sig.	Method
pH, field (SU)	MW-002S	-0.754	No	0.01	No	Mann-W
pH, field (SU)	MW-006S (bg)	-0.5969	No	0.01	No	Mann-W
pH, field (SU)	MW-008I (bg)	-1.122	No	0.01	No	Mann-W
pH, field (SU)	MW-008S (bg)	-0.5827	No	0.01	No	Mann-W
pH, field (SU)	MW-011S (bg)	-0.04481	No	0.01	No	Mann-W
pH, field (SU)	MW-014S (bg)	-0.3585	No	0.01	No	Mann-W
pH, field (SU)	MW-015I	1.151	No	0.01	No	Mann-W
pH, field (SU)	MW-015S	1.968	No	0.01	No	Mann-W
pH, field (SU)	MW-016D	0.9537	No	0.01	No	Mann-W
pH, field (SU)	MW-016I	0.9332	No	0.01	No	Mann-W
pH, field (SU)	MW-016S	1.086	No	0.01	No	Mann-W
pH, field (SU)	MW-017I	2.563	No	0.01	No	Mann-W
pH, field (SU)	MW-017S	2.376	No	0.01	No	Mann-W
pH, field (SU)	MW-021D	0.6352	No	0.01	No	Mann-W
pH, field (SU)	MW-021I	1.32	No	0.01	No	Mann-W
pH, field (SU)	MW-021S	0.4203	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-001D	0.4728	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-001I	0.3784	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-001S	1.57	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-002D	-0.5676	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-002I	-0.9963	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-002S	-2.221	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-006S (bg)	-1.501	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-008I (bg)	-2.553	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-008S (bg)	0	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-011S (bg)	-1.657	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-014S (bg)	-2.822	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-015I	-2.127	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-015S	-2.293	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-016D	0.08517	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-016I	-2.79	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-016S	-3.072	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-017I	-0.4246	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-017S	-3.072	Yes	0.01	Yes	Mann-W
Sulfate, total (mg/L)	MW-021D	0.9456	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-021I	-1.37	No	0.01	No	Mann-W
Sulfate, total (mg/L)	MW-021S	3.257	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-001D	2.11	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-001I	2.982	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-001S	-2.857	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-002D	3.183	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-002I	2.769	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-002S	-1.916	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-006S (bg)	0.325	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-008I (bg)	-1.468	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-008S (bg)	1.135	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-011S (bg)	1.324	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-014S (bg)	1.611	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-015I	-1.619	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-015S	-1.844	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-016D	-1.312	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-016I	-1.446	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-016S	-3.139	Yes	0.01	Yes	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-017I	-1.796	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-017S	-0.0947	No	0.01	No	Mann-W

Welch's t-test/Mann-Whitney - All Results

Rockport Landfill Client: Geosyntec Data: Rockport_LF Printed 12/13/2023, 1:53 PM

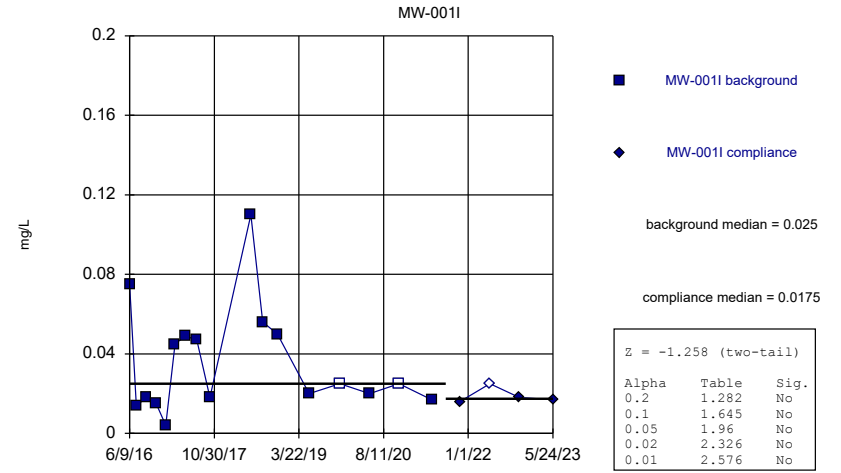
<u>Constituent</u>	<u>Well</u>	<u>Calc.</u>	<u>0.01</u>	<u>Alpha</u>	<u>Sig.</u>	<u>Method</u>
Total Dissolved Solids [TDS] (mg/L)	MW-021D	1.279	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-021I	-1.184	No	0.01	No	Mann-W
Total Dissolved Solids [TDS] (mg/L)	MW-021S	3.003	Yes	0.01	Yes	Mann-W

Mann-Whitney (Wilcoxon Rank Sum)



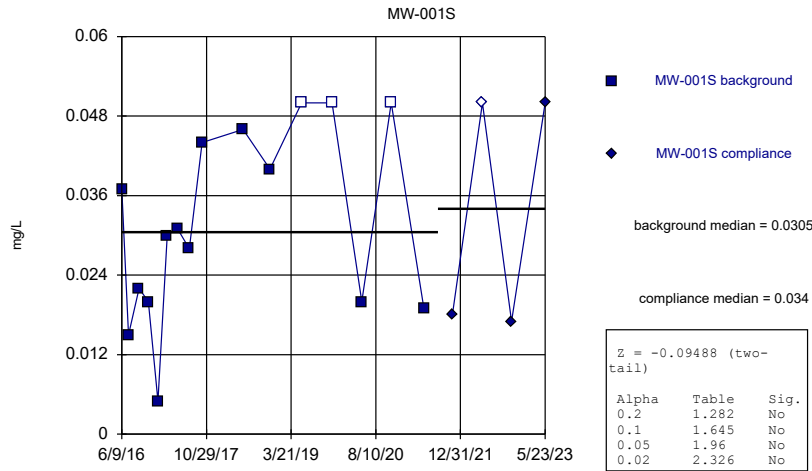
Constituent: Boron, total Analysis Run 12/13/2023 1:49 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



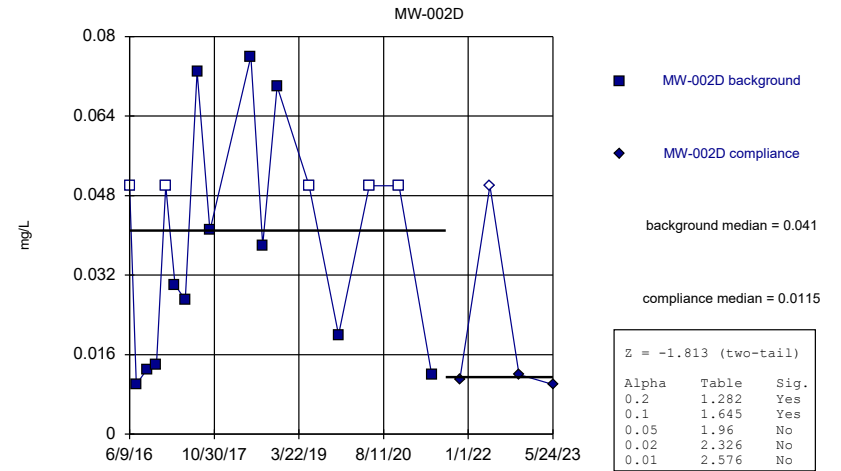
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



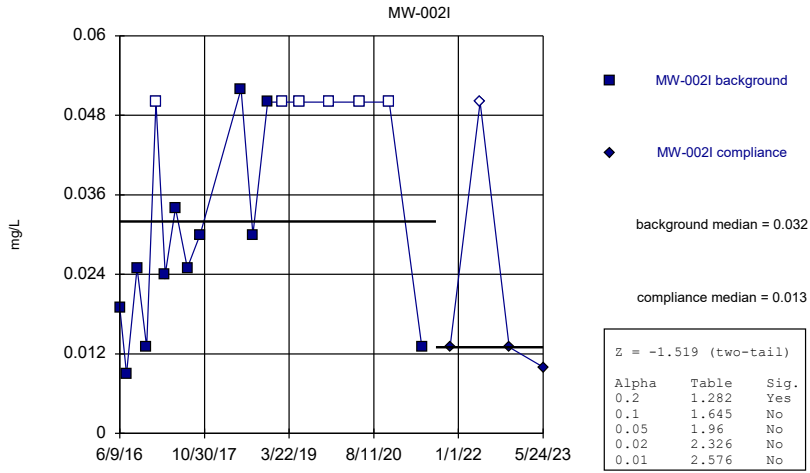
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



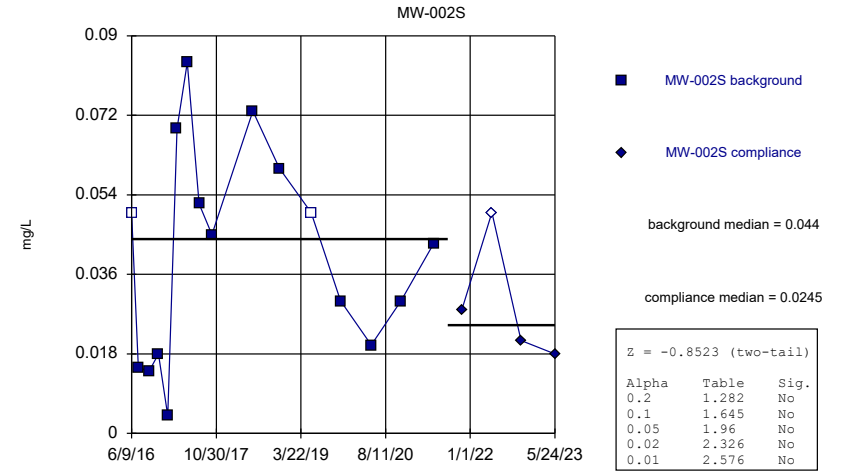
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



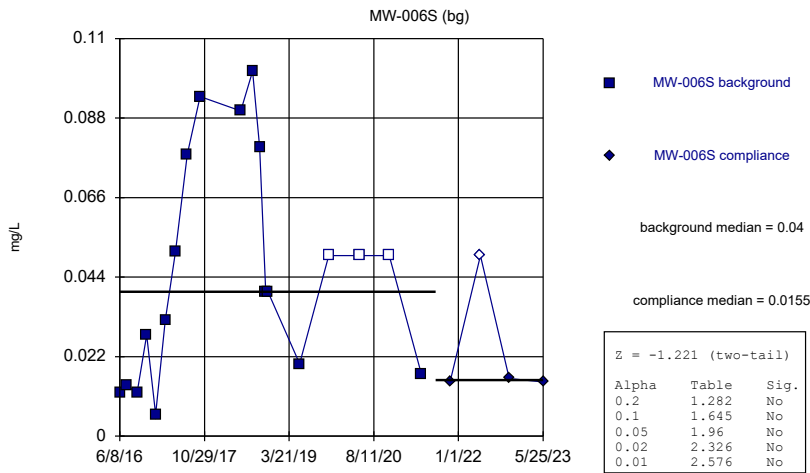
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



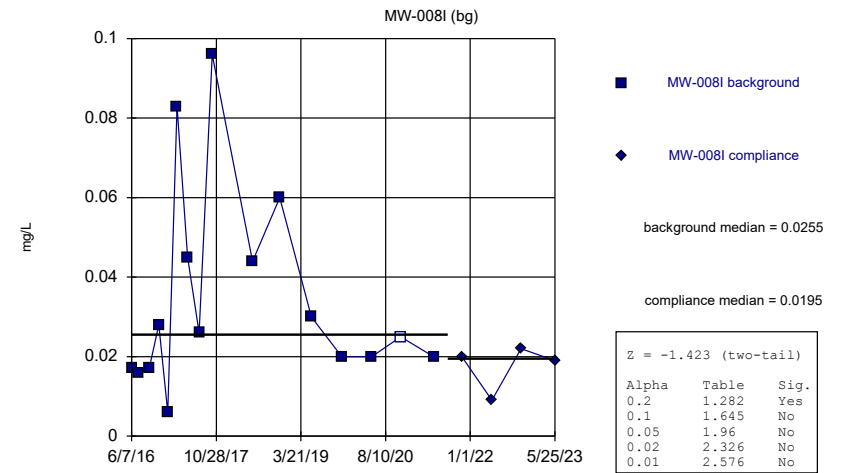
Constituent: Boron, total Analysis Run 12/13/2023 1:49 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Boron, total Analysis Run 12/13/2023 1:49 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

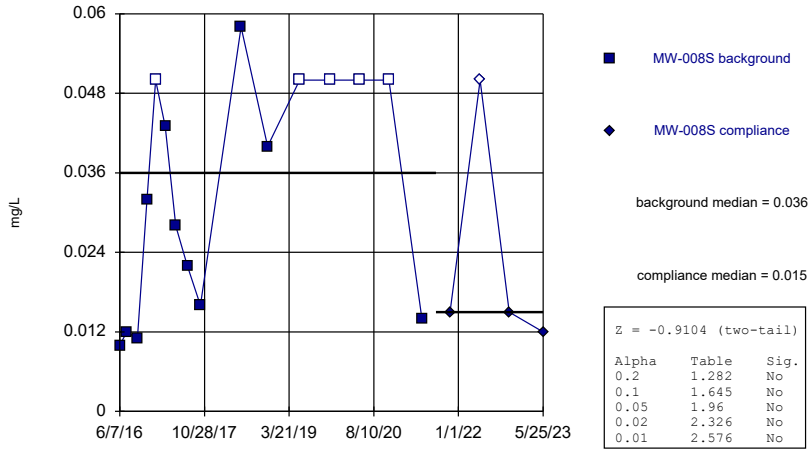
Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Boron, total Analysis Run 12/13/2023 1:49 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

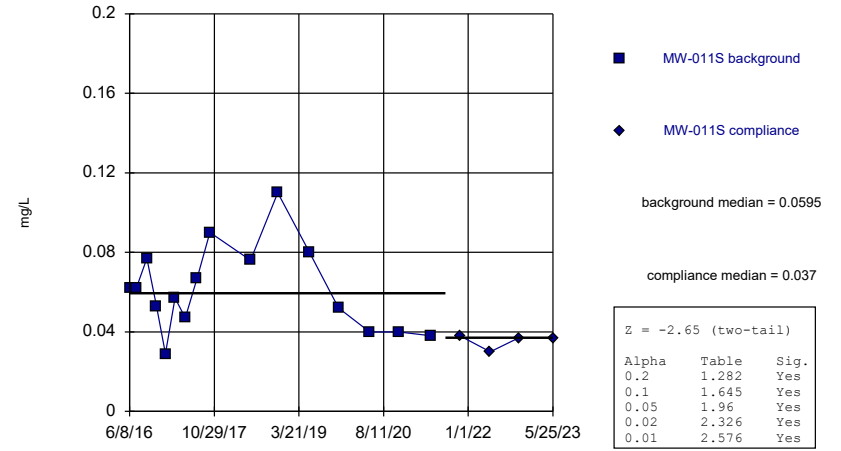
MW-008S (bg)



Constituent: Boron, total Analysis Run 12/13/2023 1:49 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

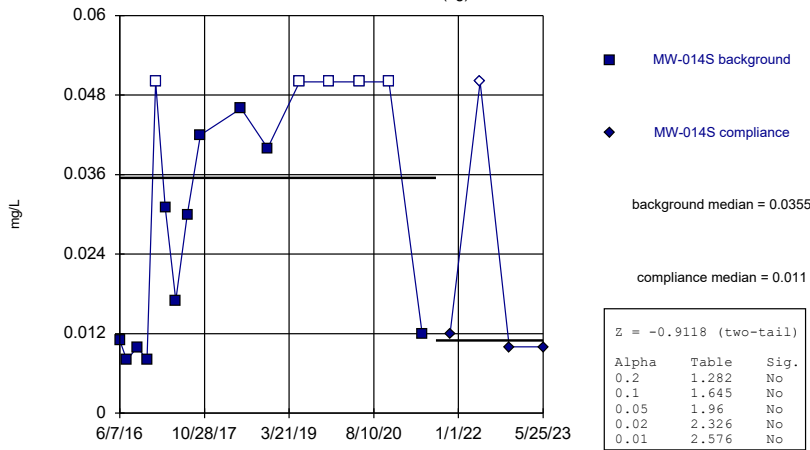
MW-011S (bg)



Constituent: Boron, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

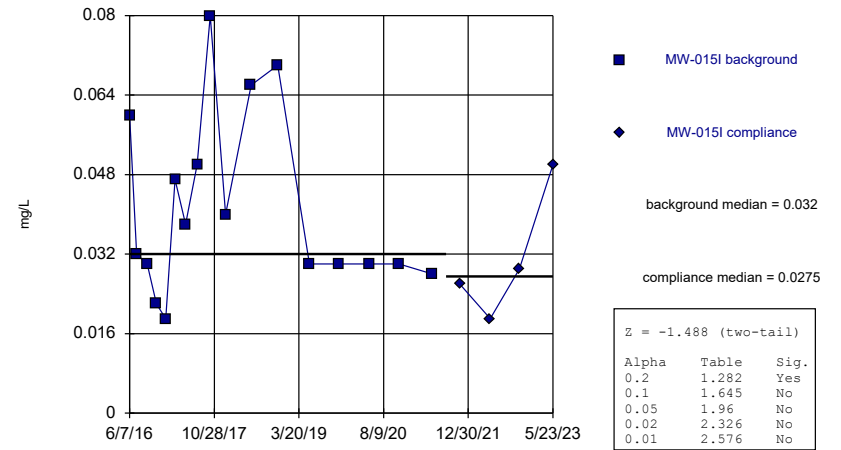
MW-014S (bg)



Constituent: Boron, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

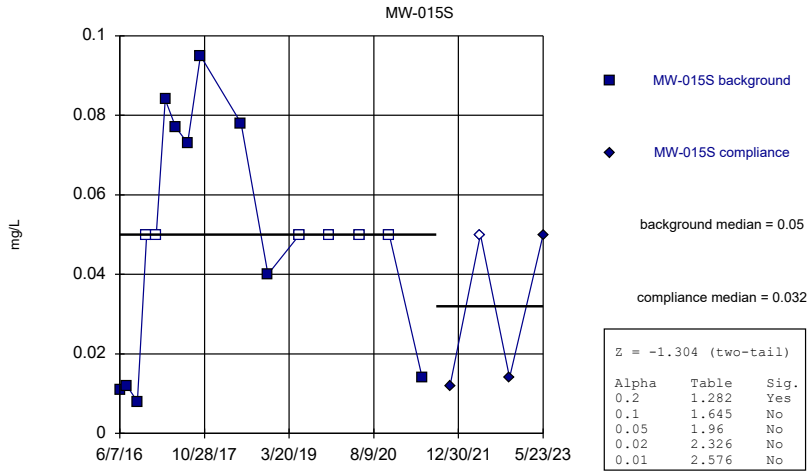
Mann-Whitney (Wilcoxon Rank Sum)

MW-015I



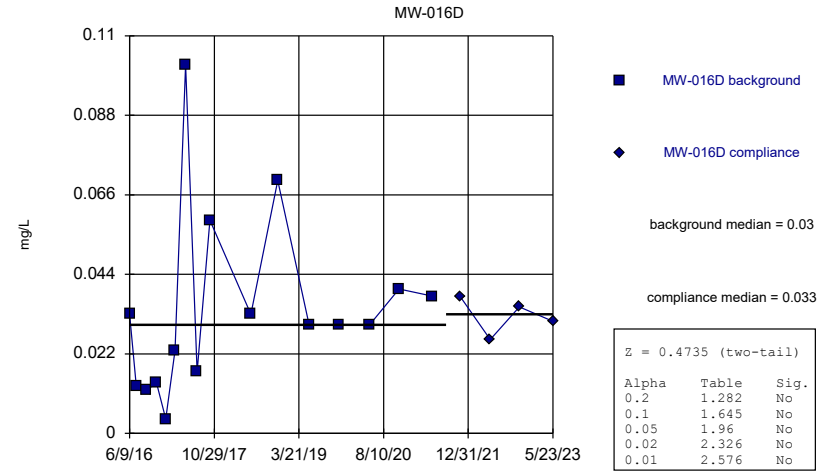
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



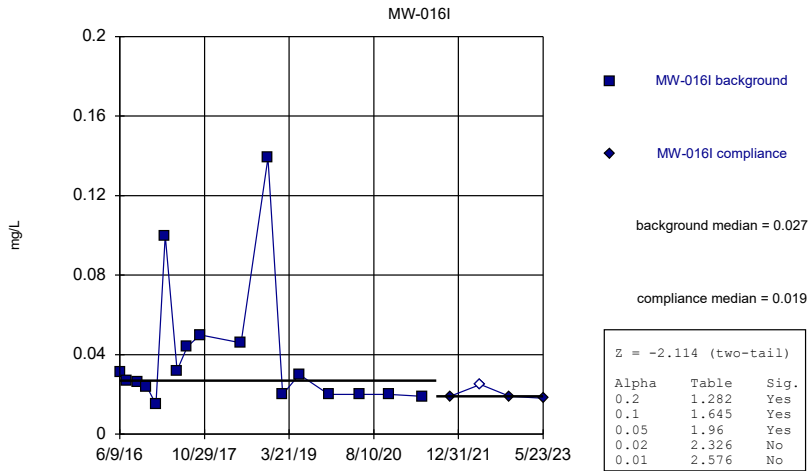
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



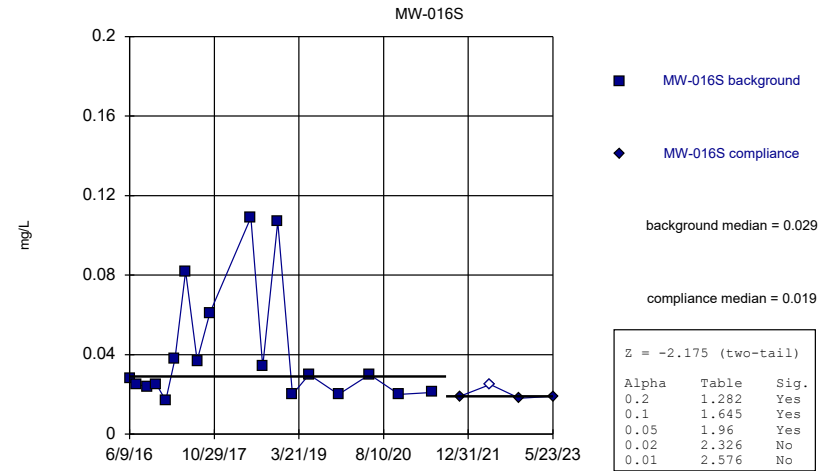
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



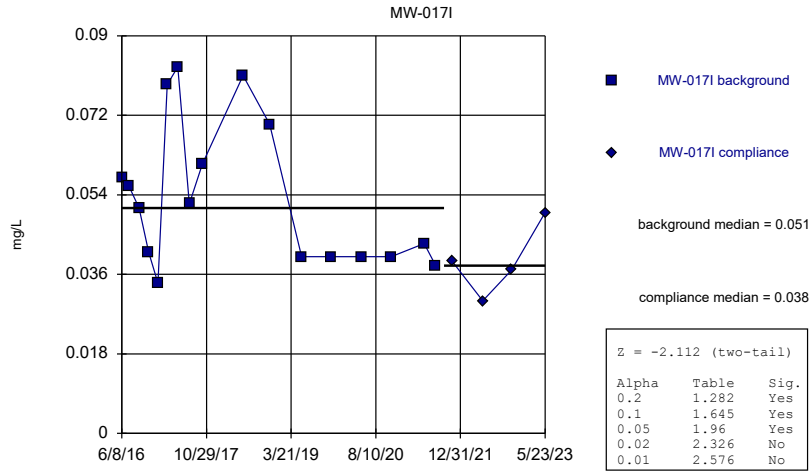
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



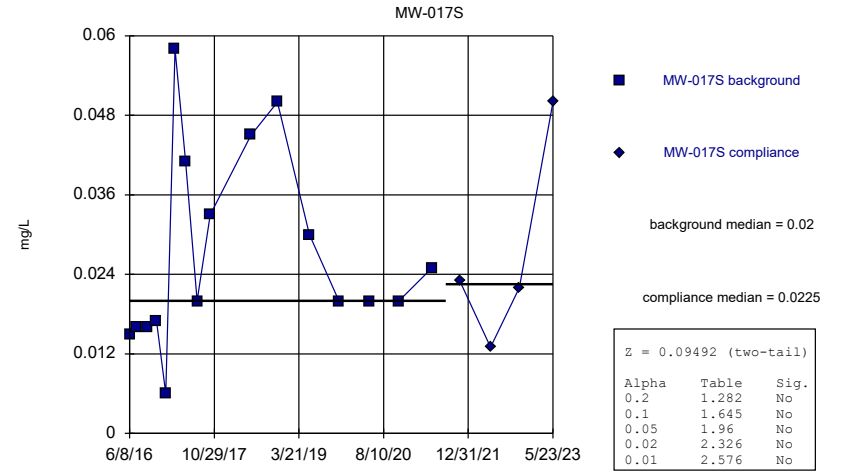
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



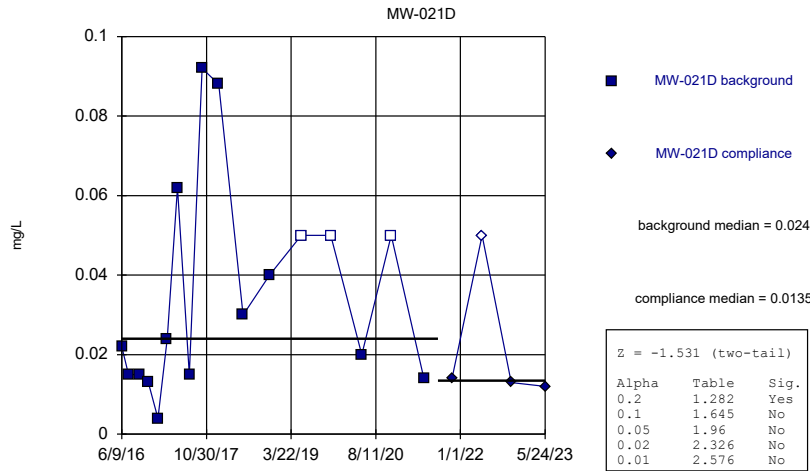
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



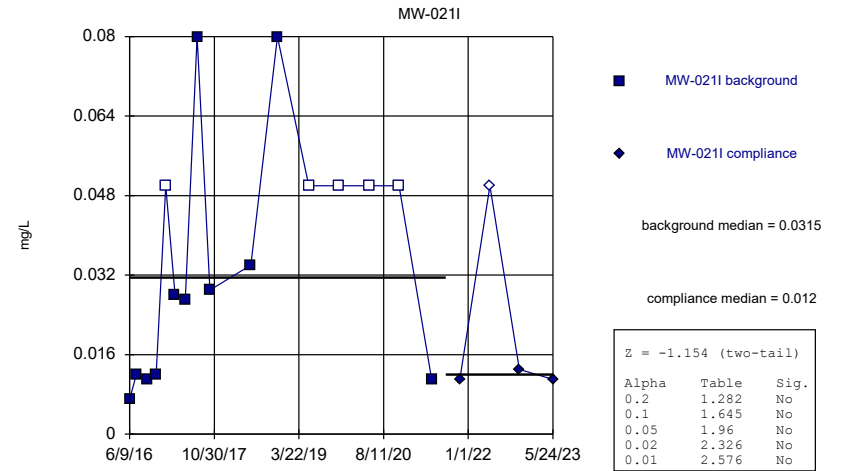
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



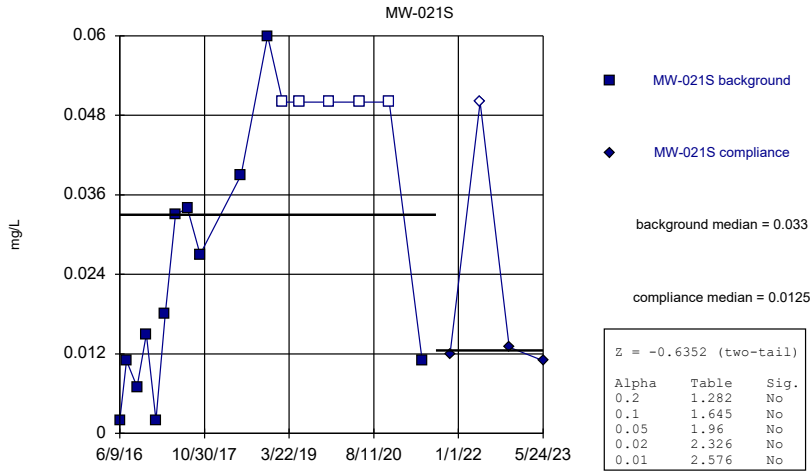
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



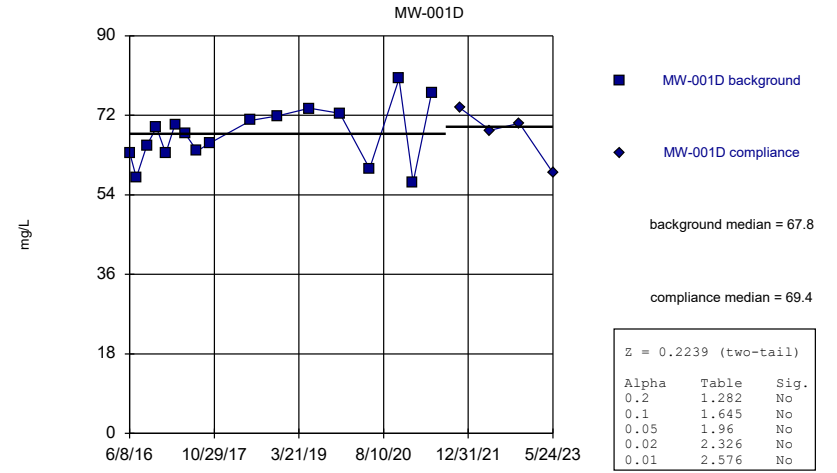
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



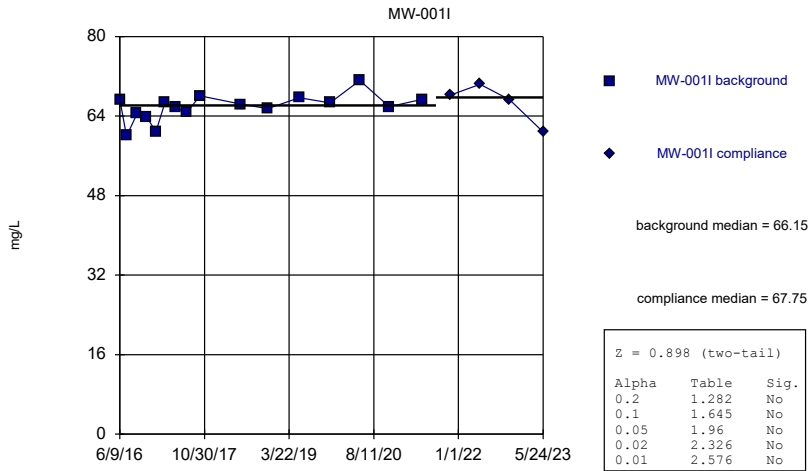
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



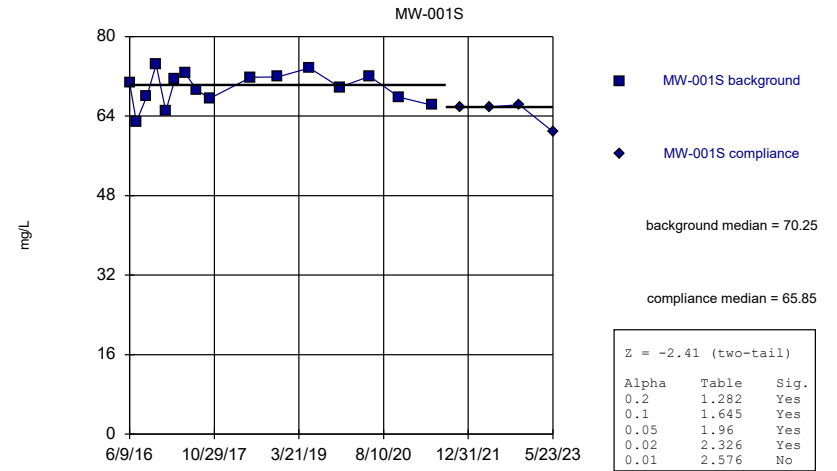
Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

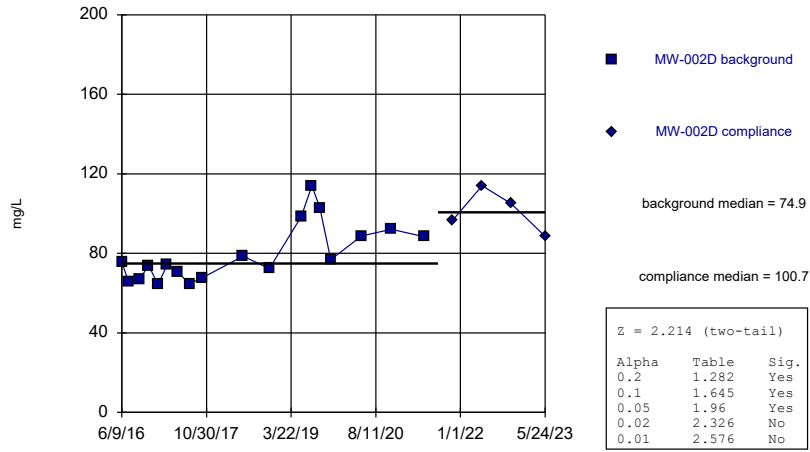
Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

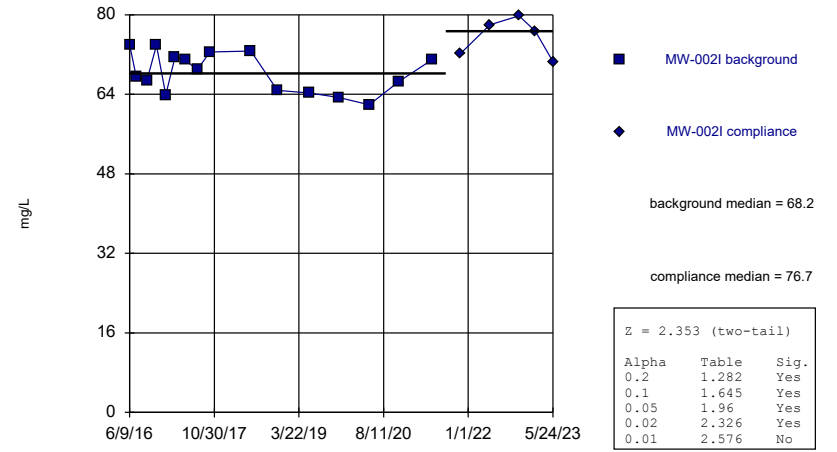
MW-002D



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

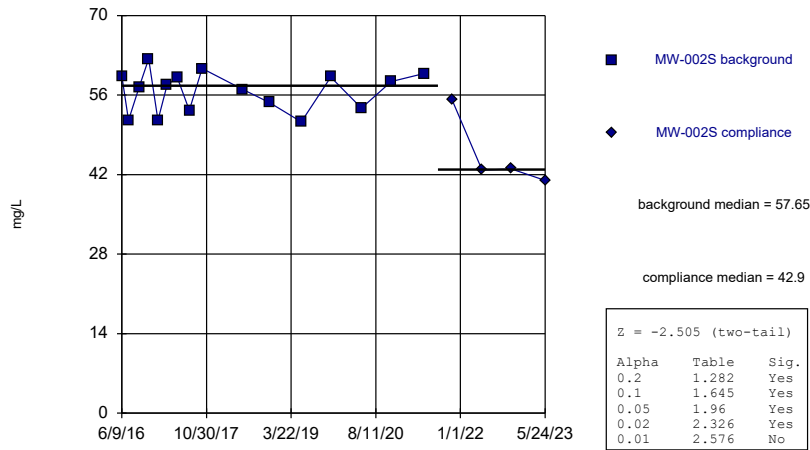
MW-002I



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
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Mann-Whitney (Wilcoxon Rank Sum)

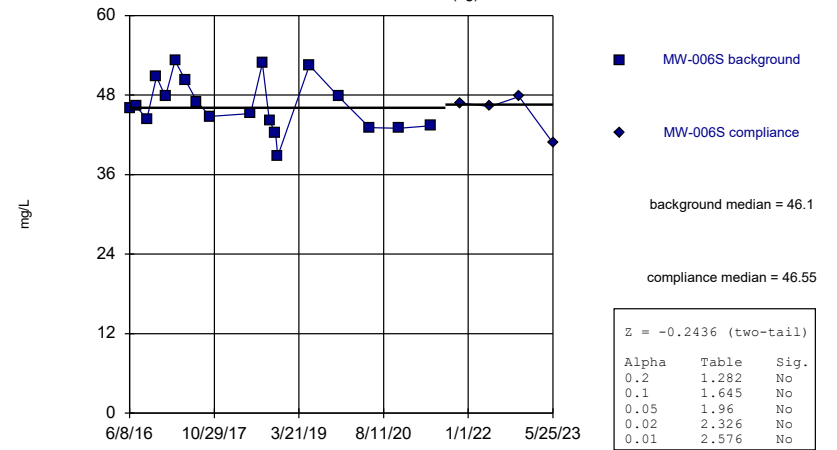
MW-002S



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Mann-Whitney (Wilcoxon Rank Sum)

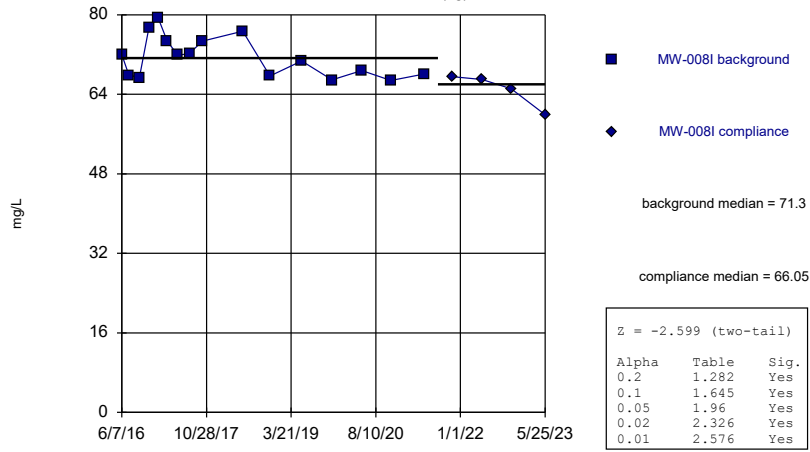
MW-006S (bg)



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

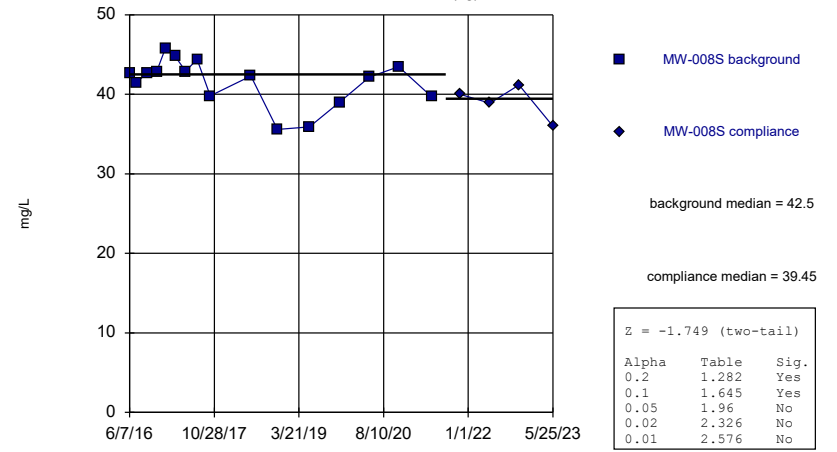
MW-008I (bg)



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

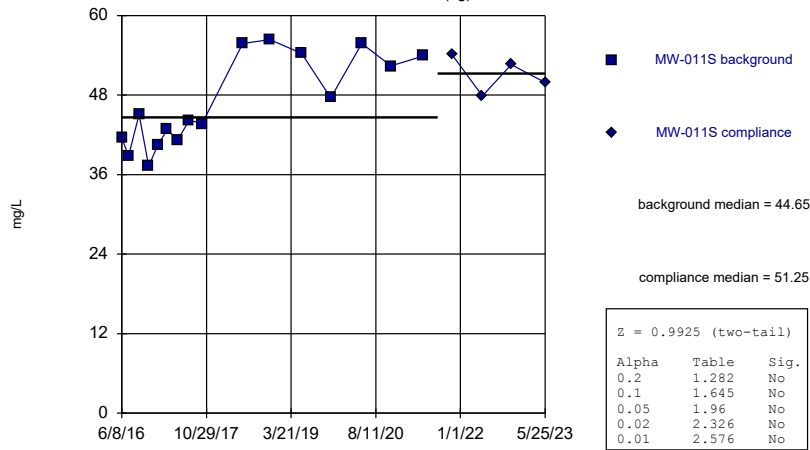
MW-008S (bg)



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

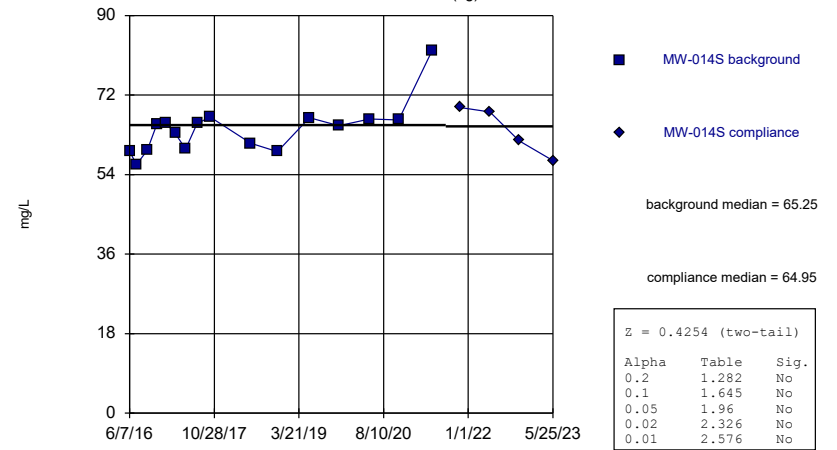
MW-011S (bg)



Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

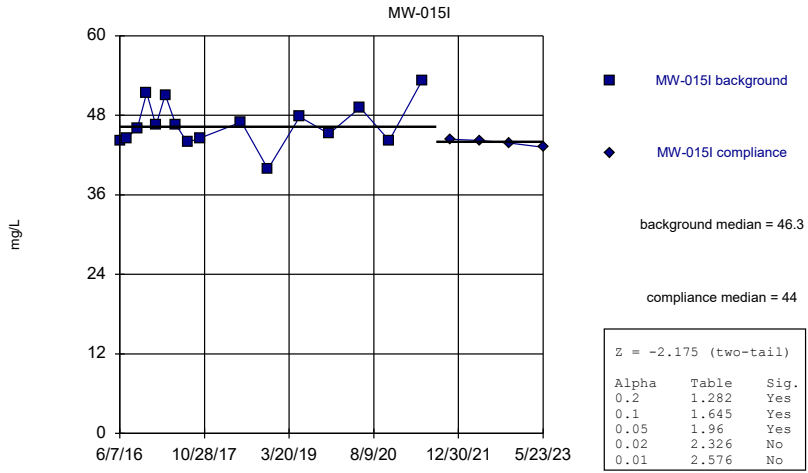
Mann-Whitney (Wilcoxon Rank Sum)

MW-014S (bg)



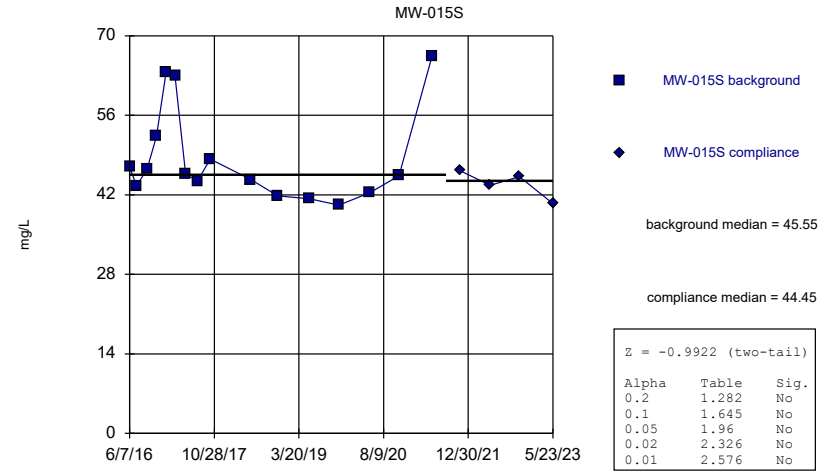
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



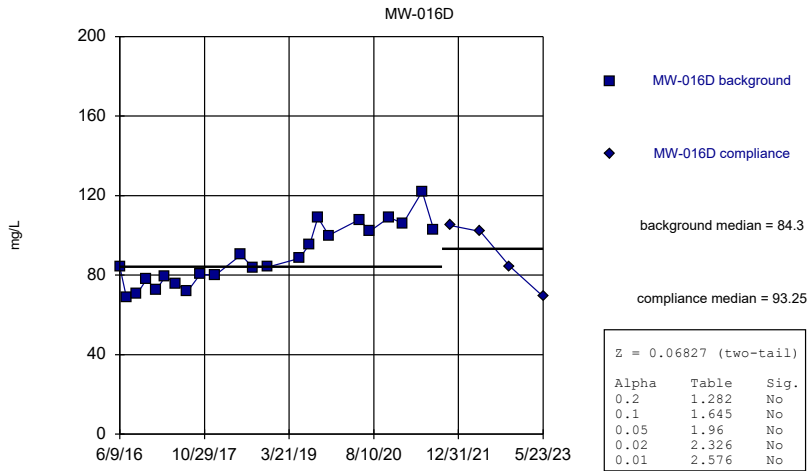
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



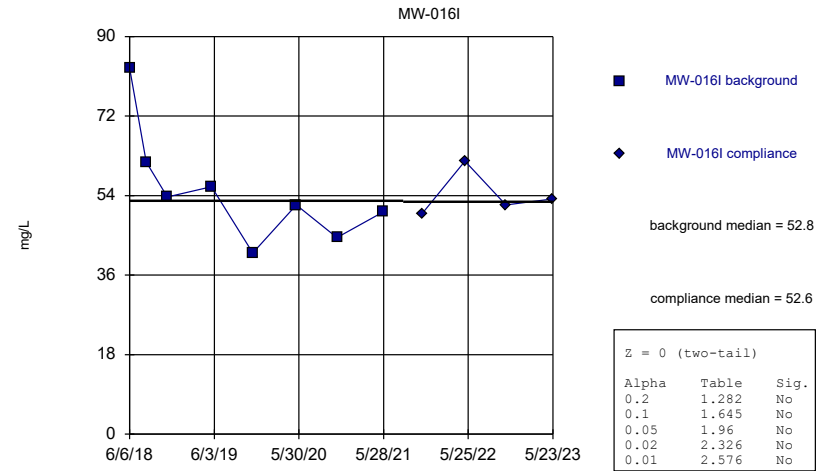
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



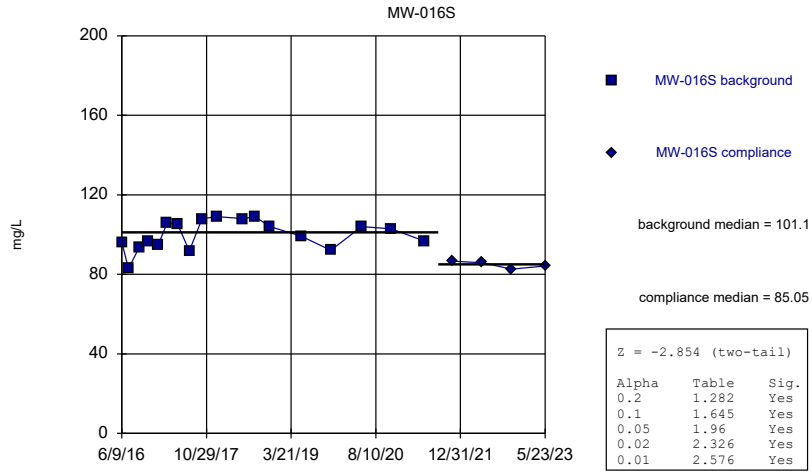
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



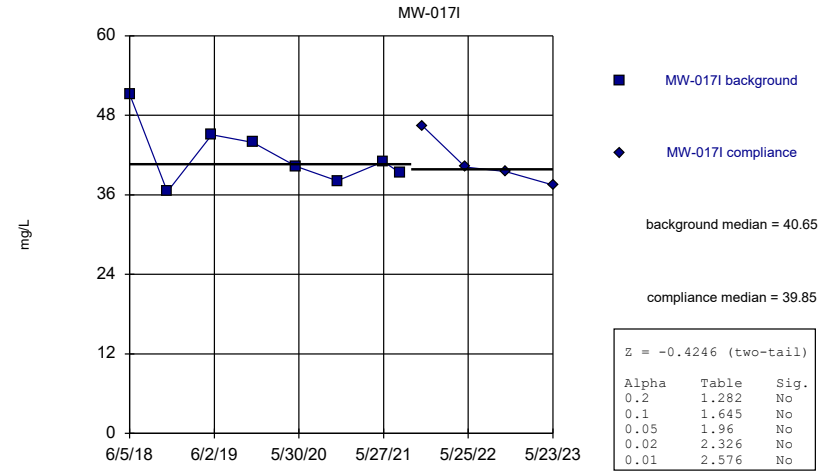
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



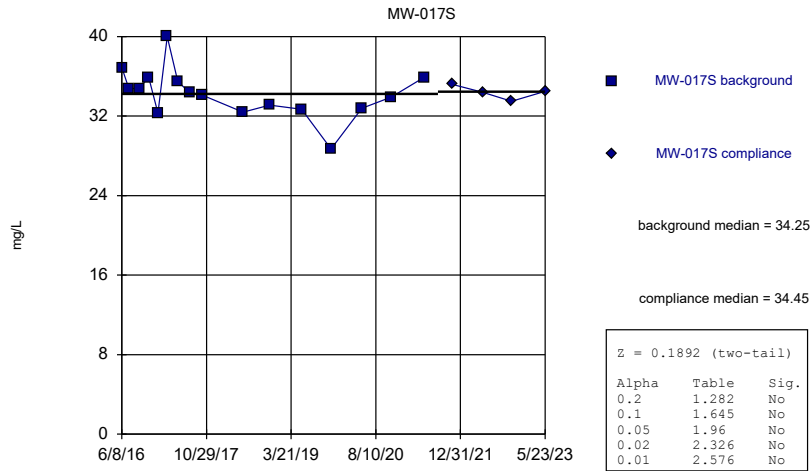
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



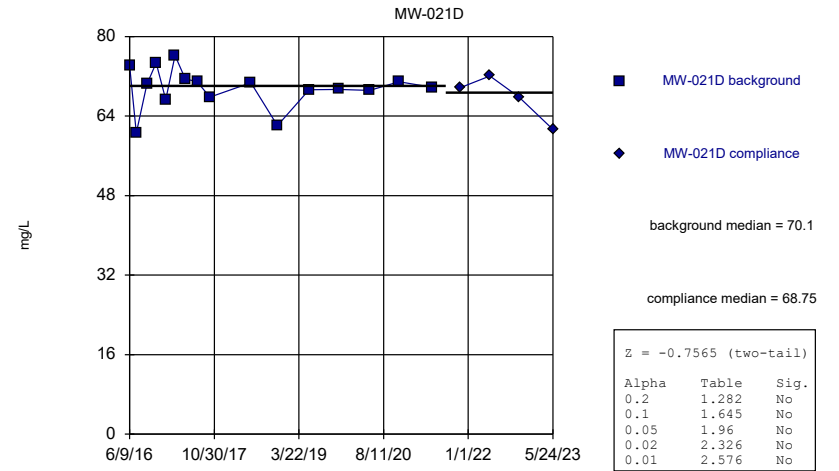
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



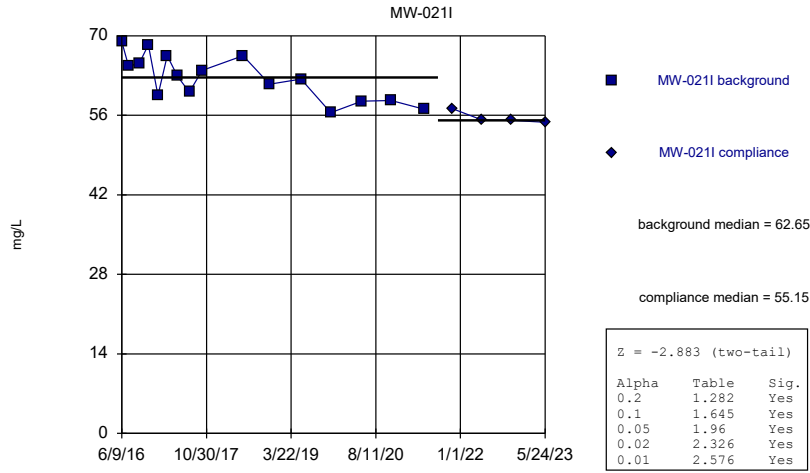
Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



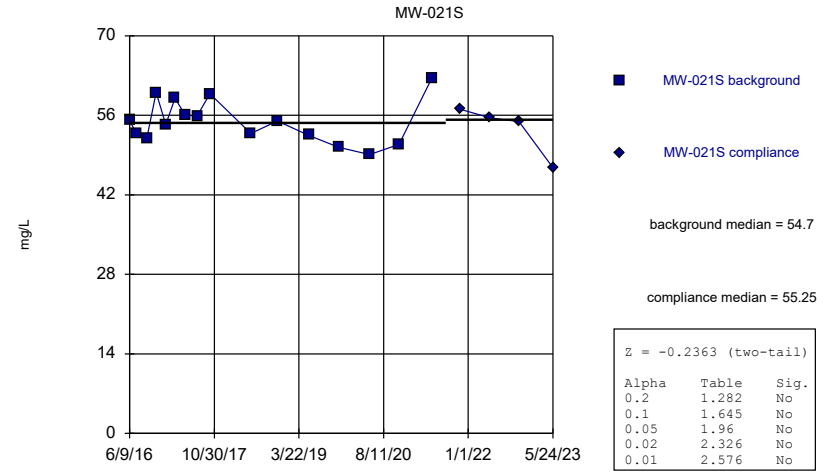
Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



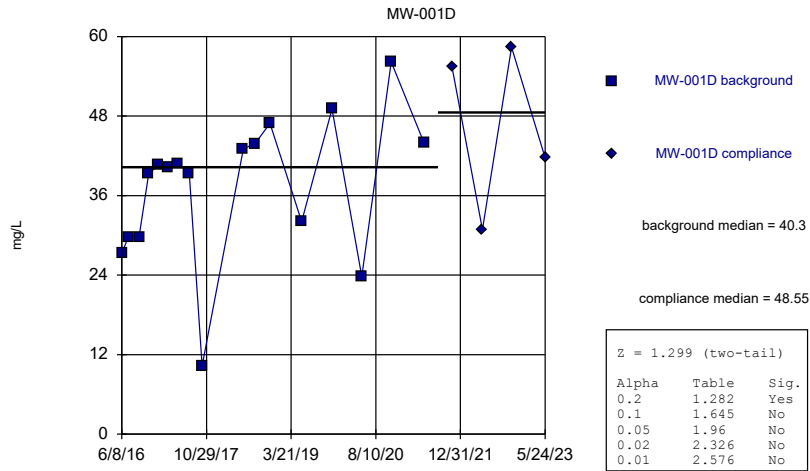
Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



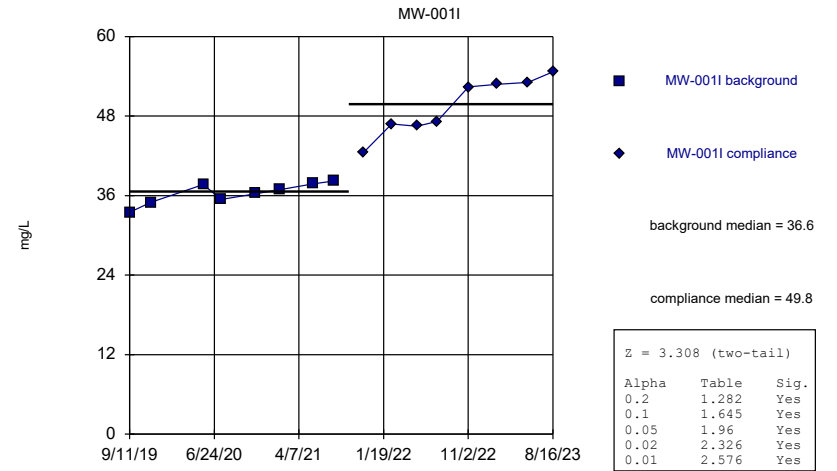
Constituent: Calcium, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



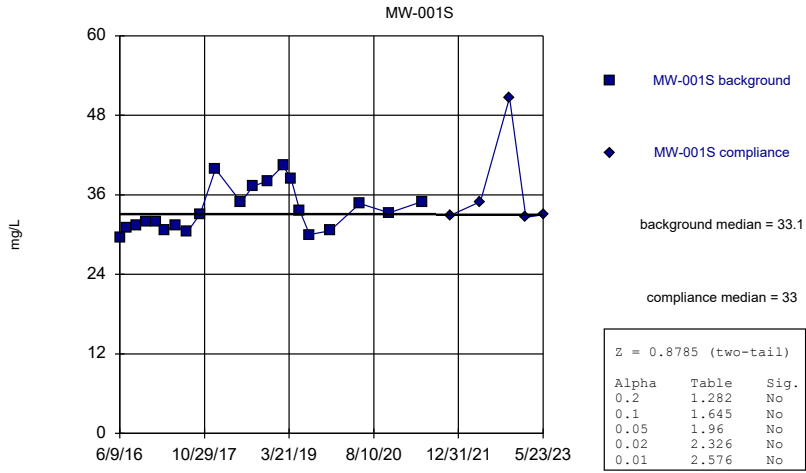
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



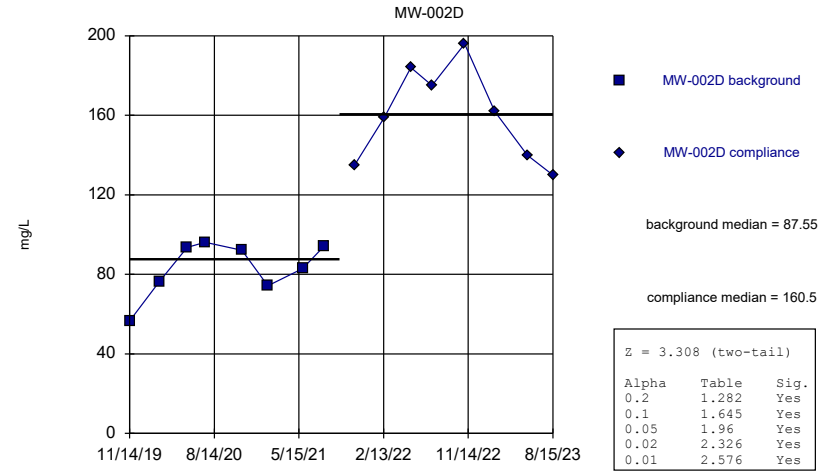
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



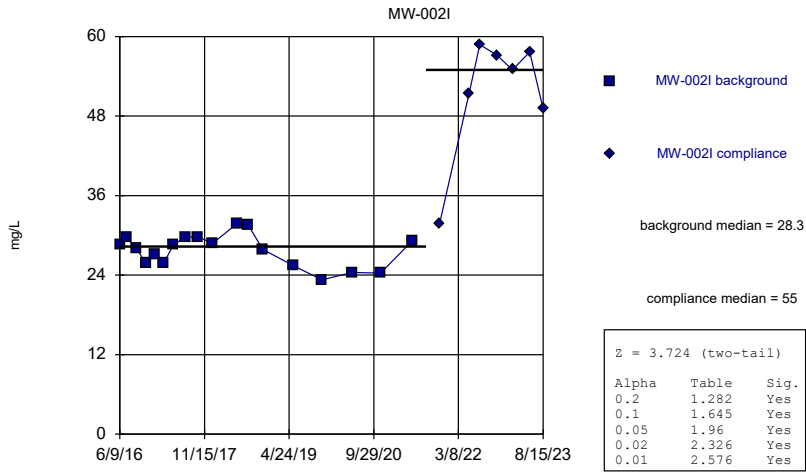
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



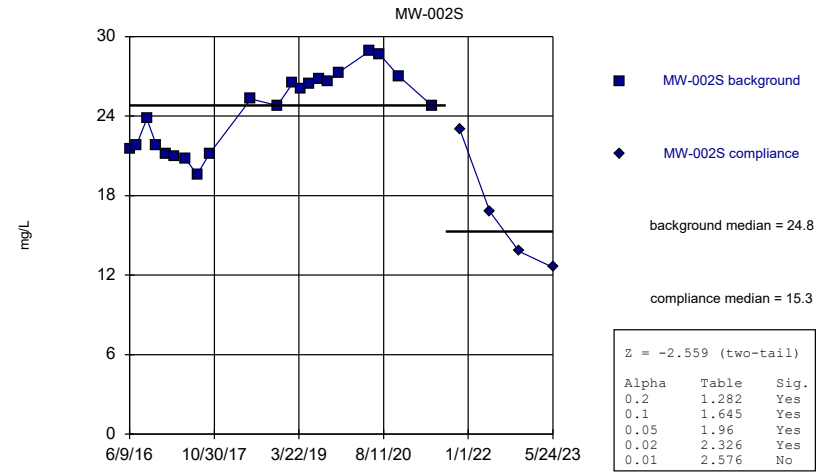
Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

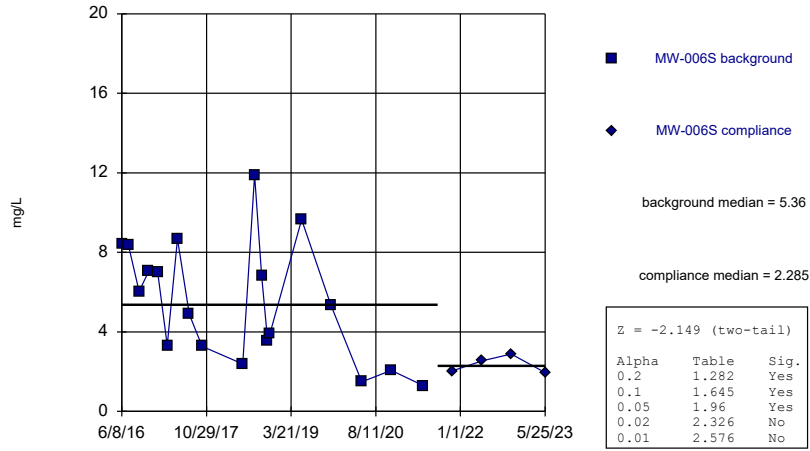
Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

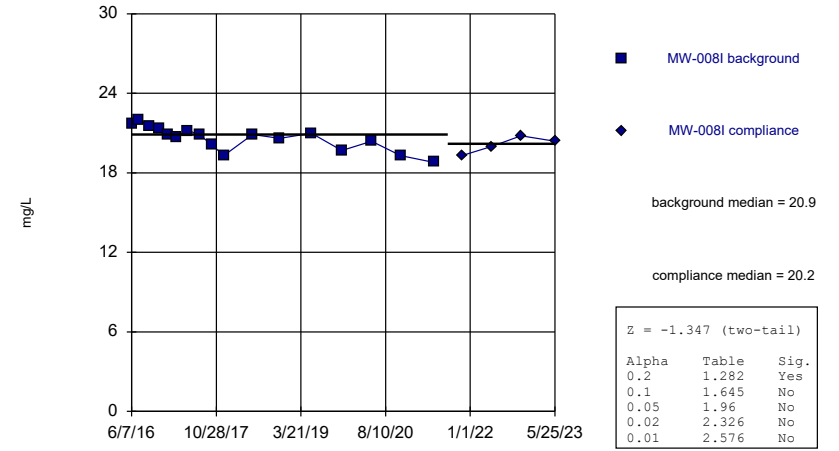
MW-006S (bg)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

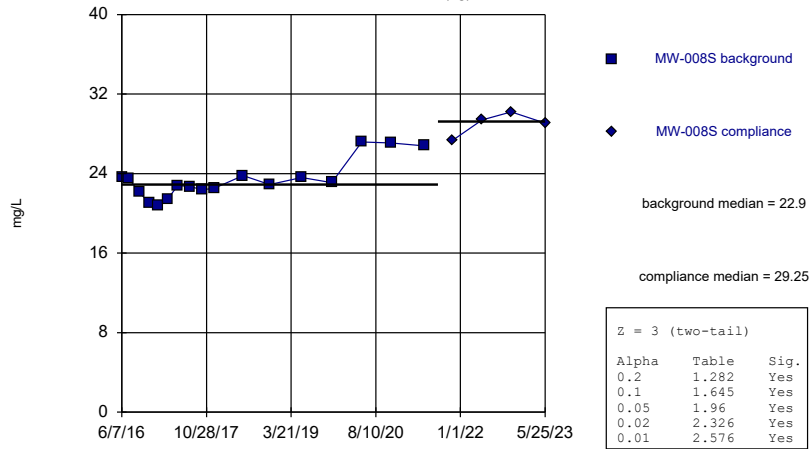
MW-008I (bg)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

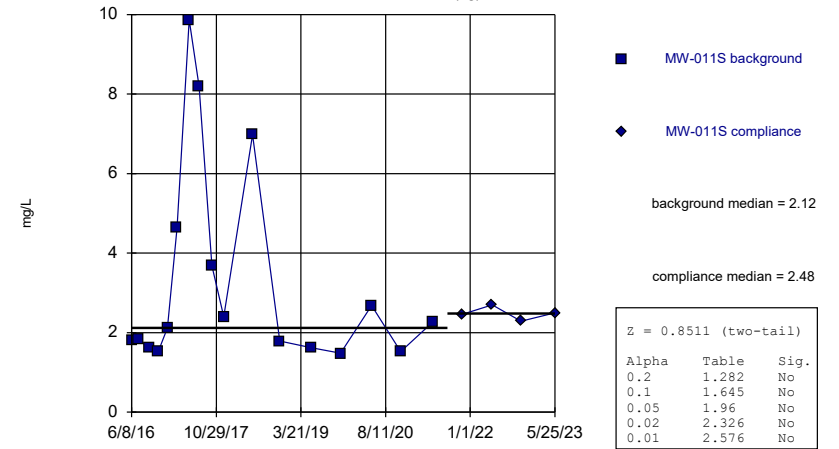
MW-008S (bg)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

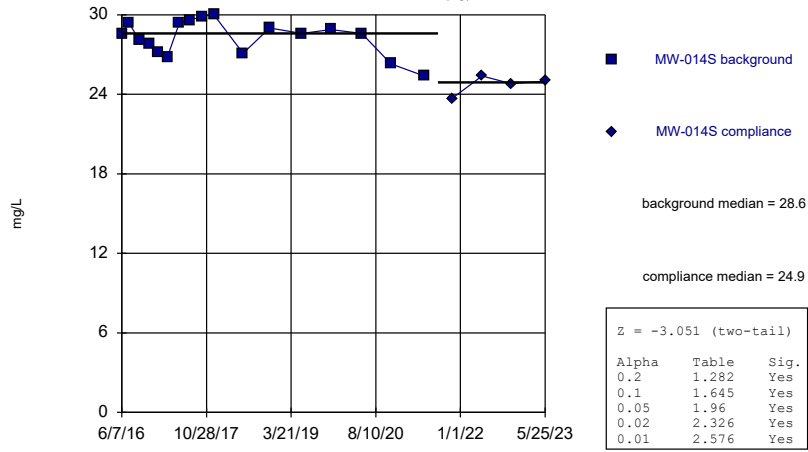
MW-011S (bg)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

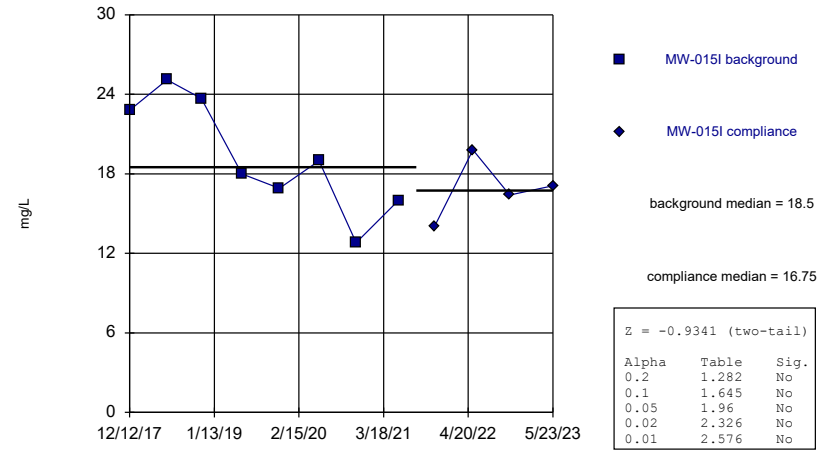
MW-014S (bg)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

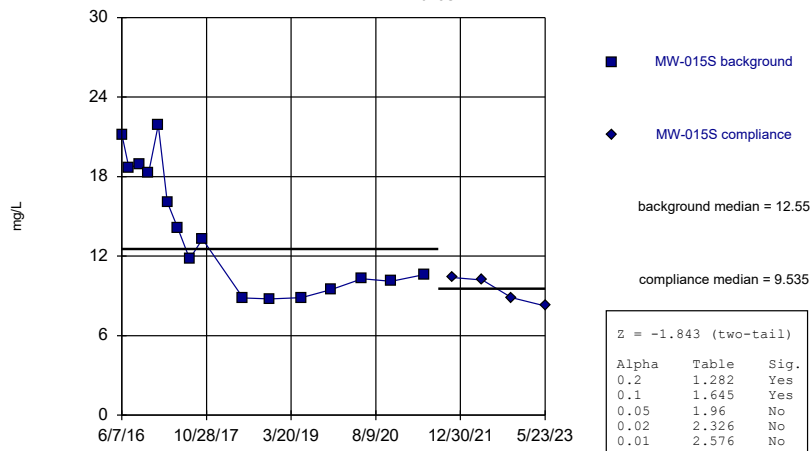
MW-015I



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

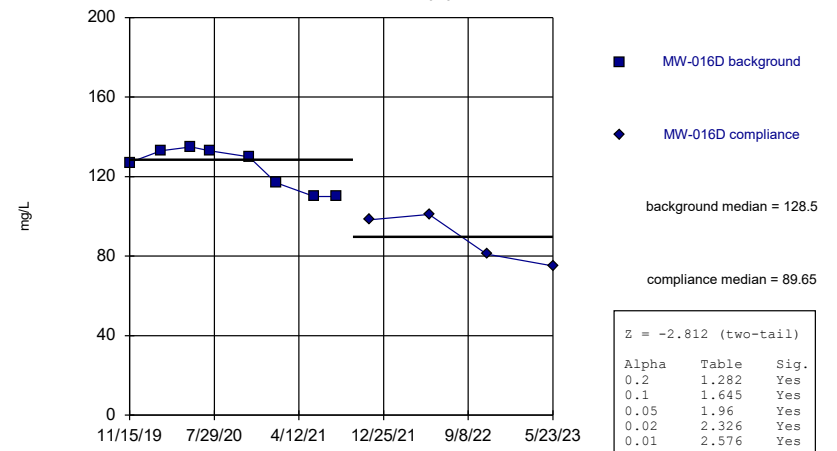
MW-015S



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

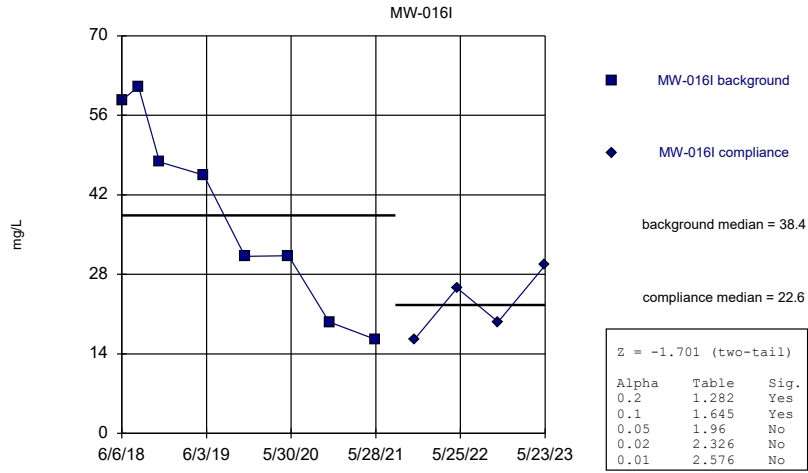
Mann-Whitney (Wilcoxon Rank Sum)

MW-016D



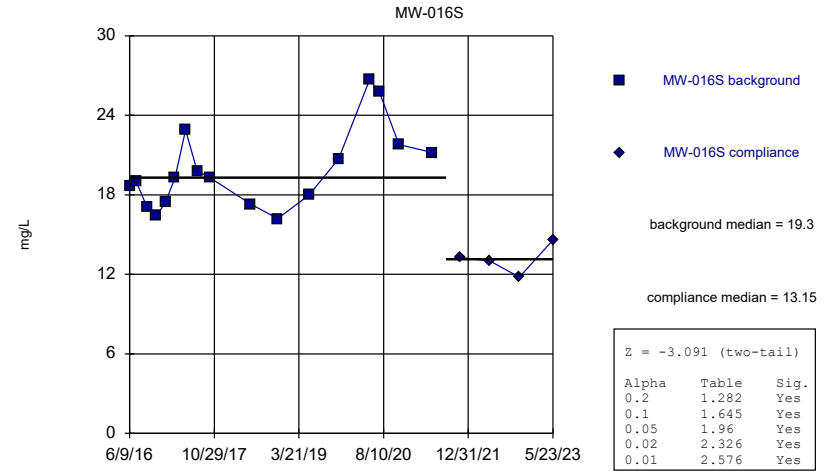
Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



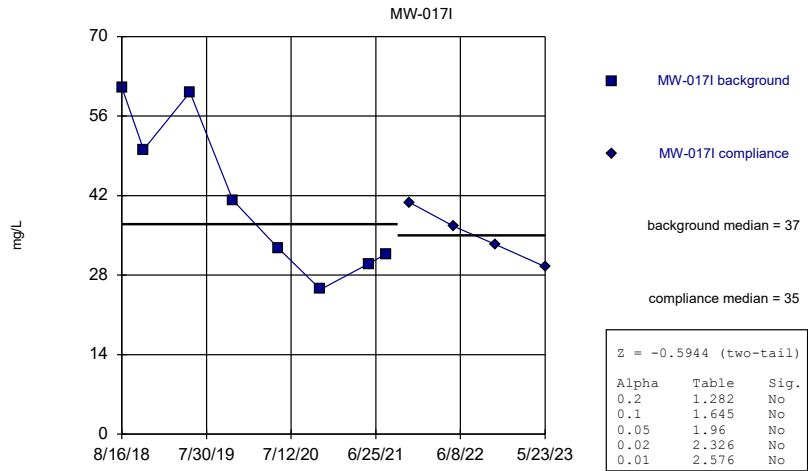
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



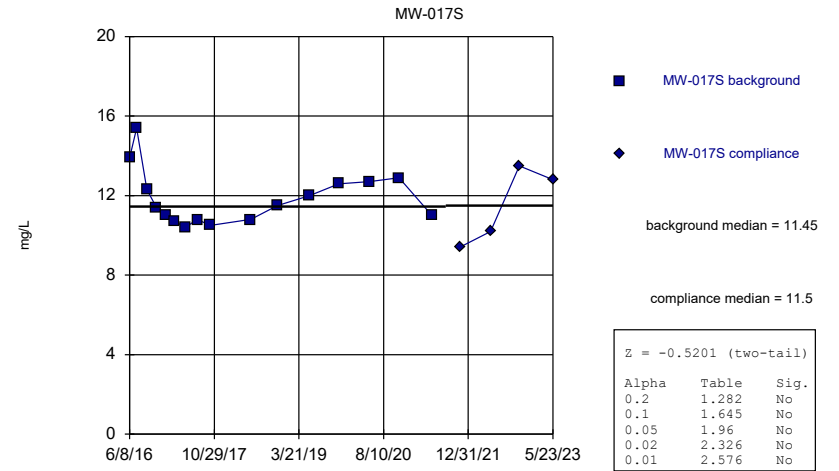
Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

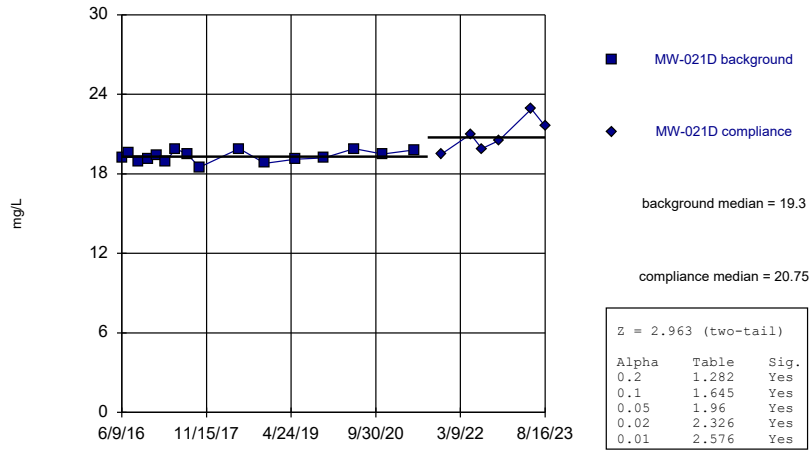
Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

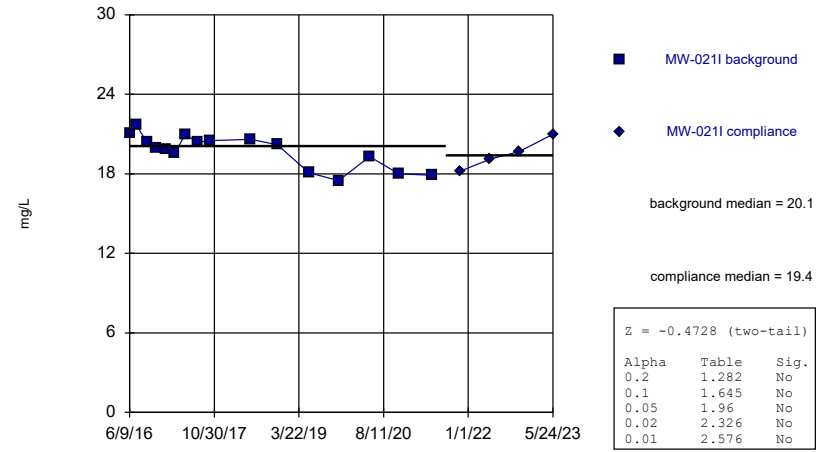
MW-021D



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

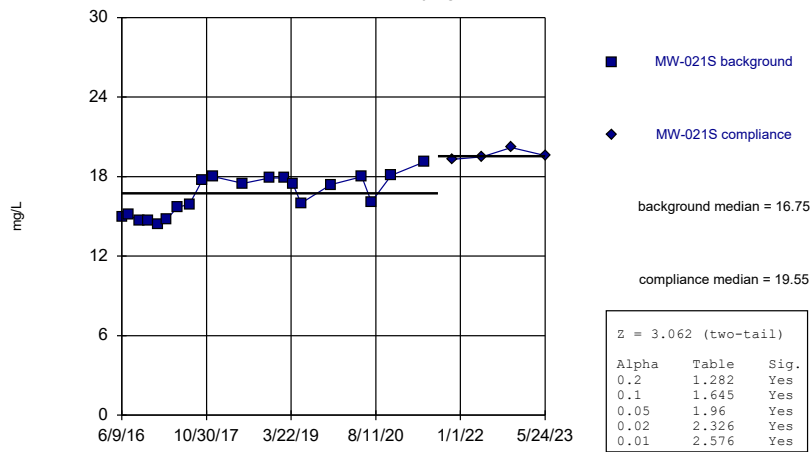
MW-021I



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

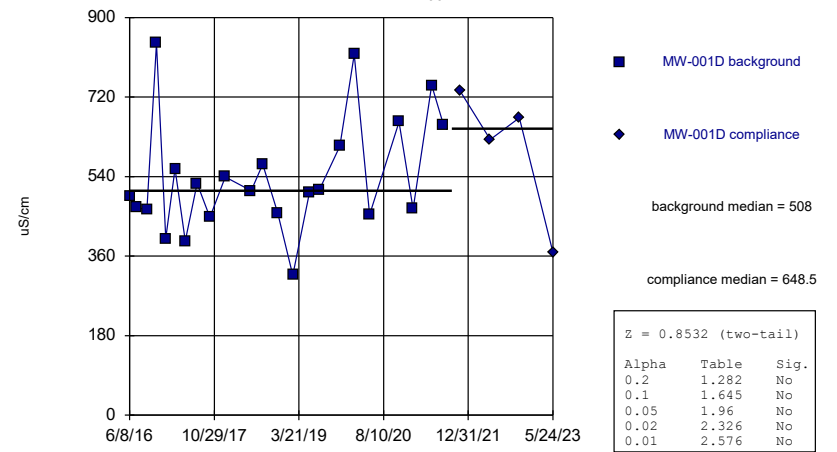
MW-021S



Constituent: Chloride, total Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

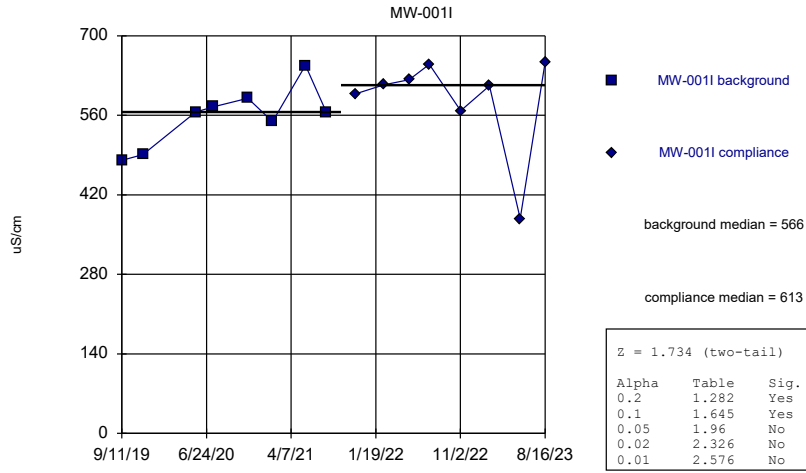
Mann-Whitney (Wilcoxon Rank Sum)

MW-001D



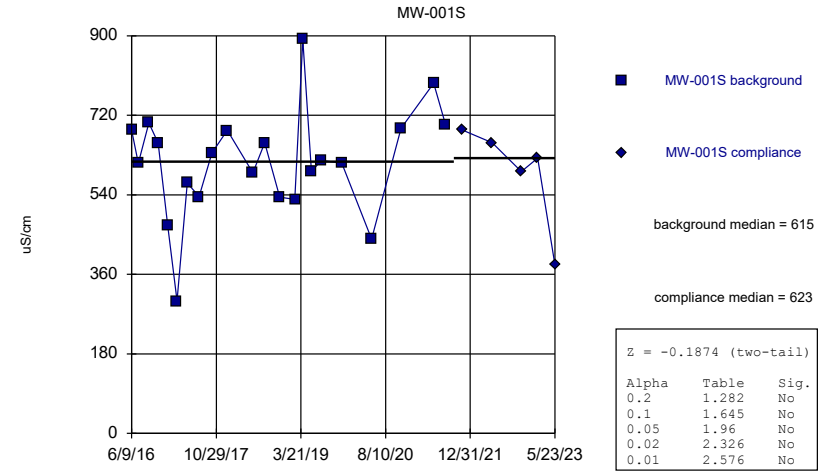
Constituent: Conductivity Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



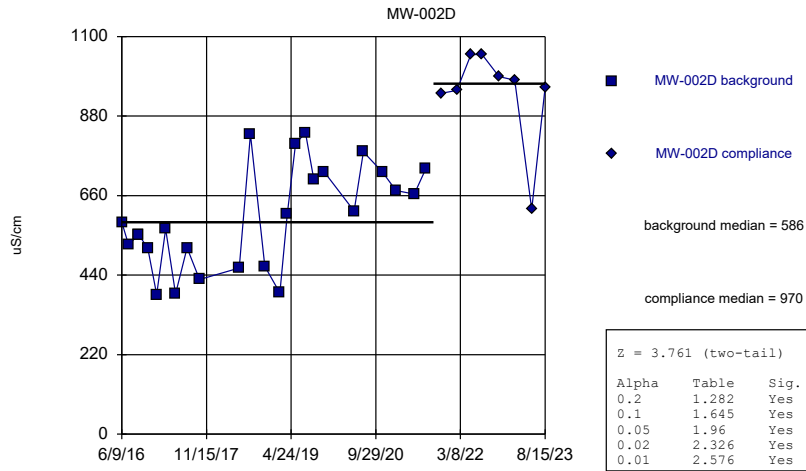
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



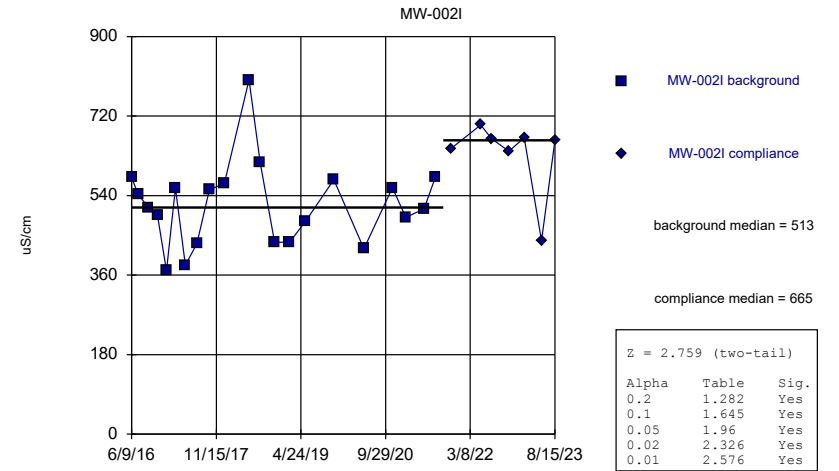
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



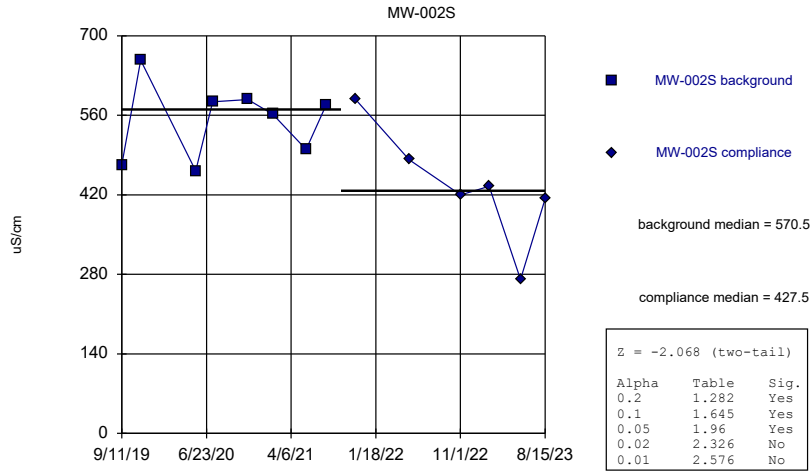
Constituent: Conductivity Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



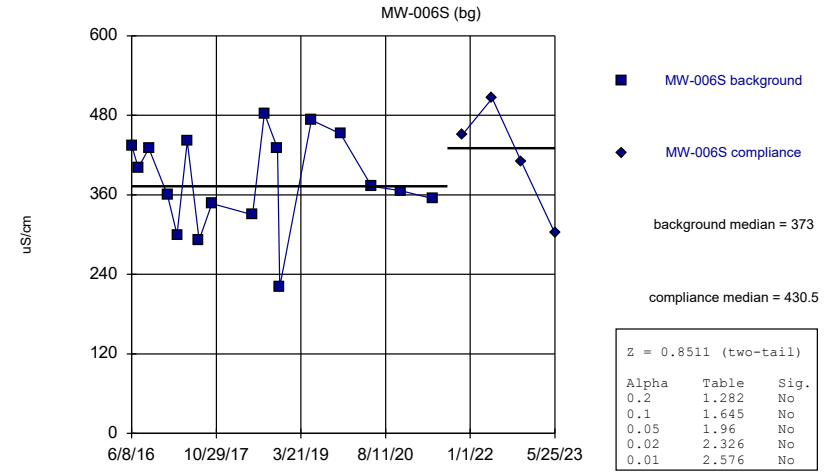
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



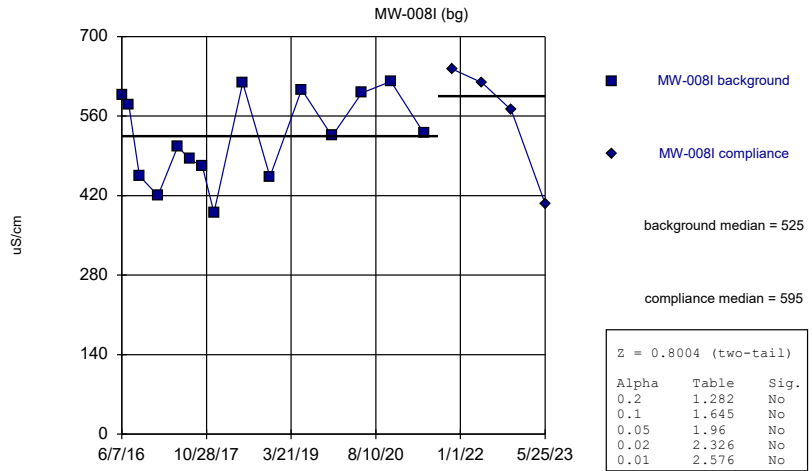
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



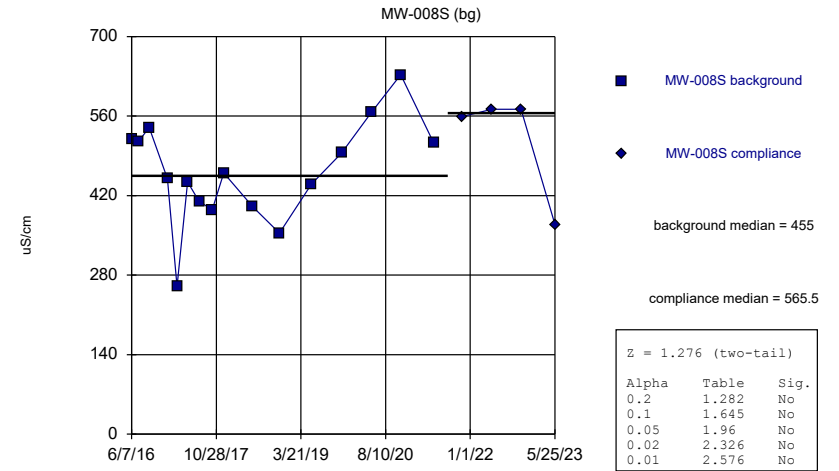
Constituent: Conductivity Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Conductivity Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

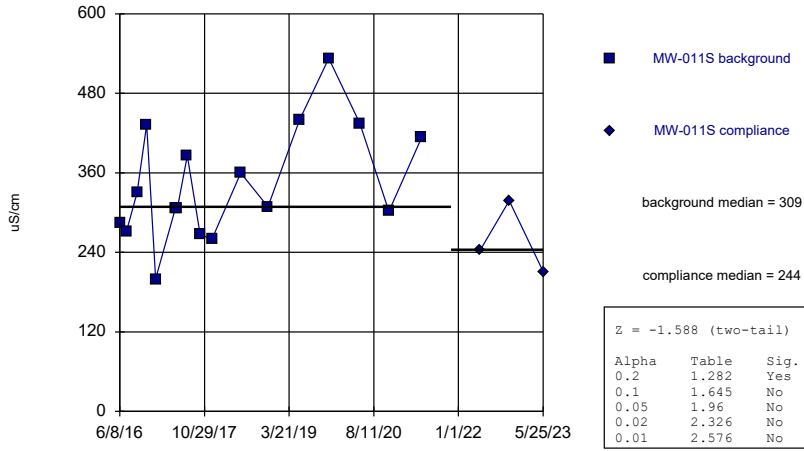
Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Conductivity Analysis Run 12/13/2023 1:50 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

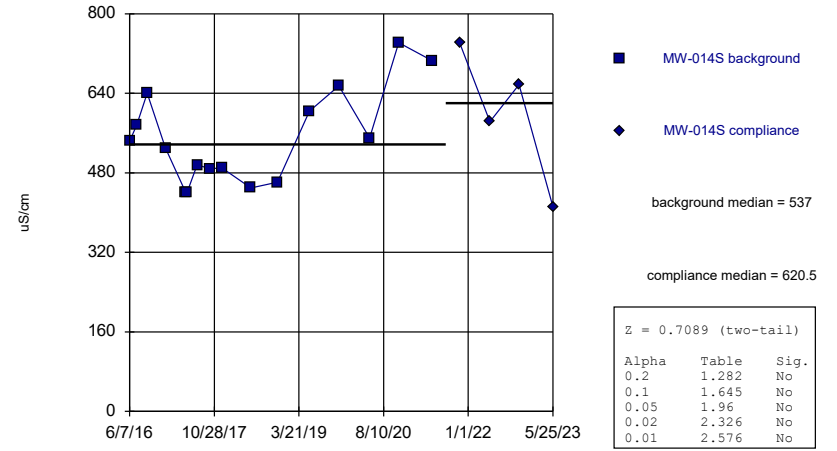
MW-011S (bg)



Constituent: Conductivity Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

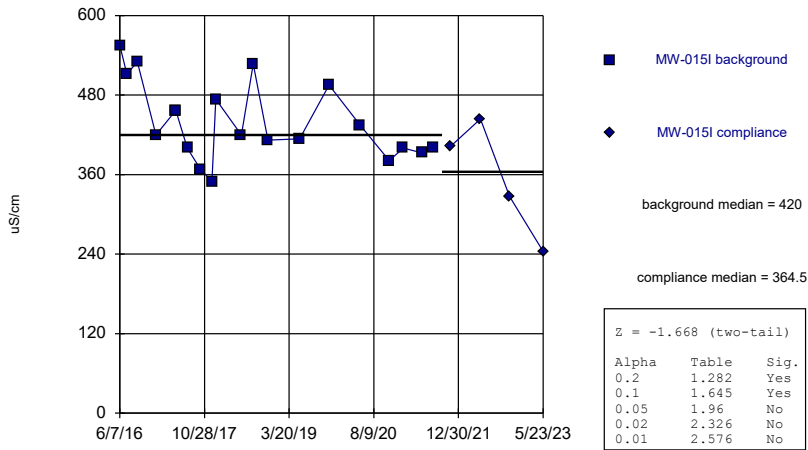
MW-014S (bg)



Constituent: Conductivity Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

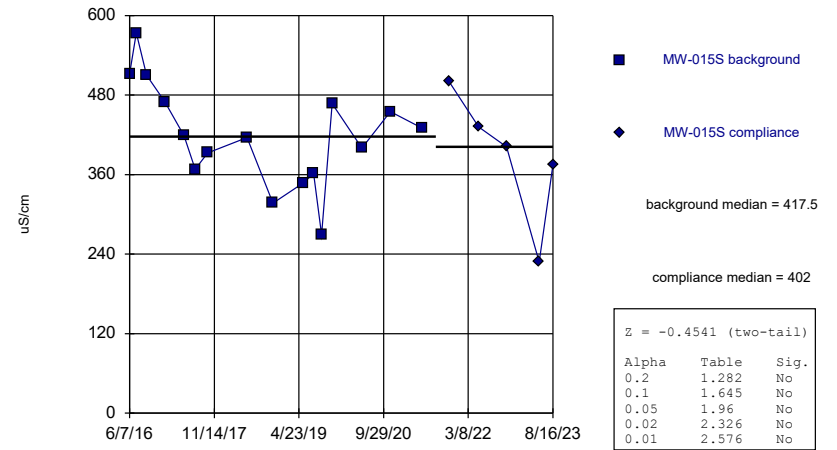
MW-015I



Constituent: Conductivity Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
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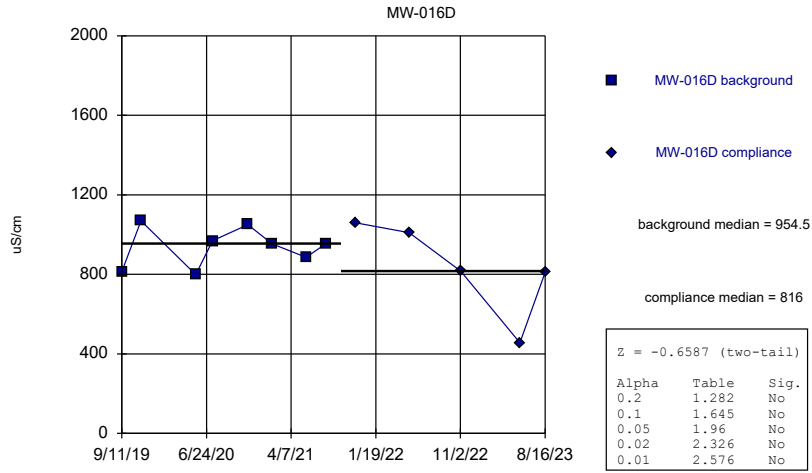
Mann-Whitney (Wilcoxon Rank Sum)

MW-015S



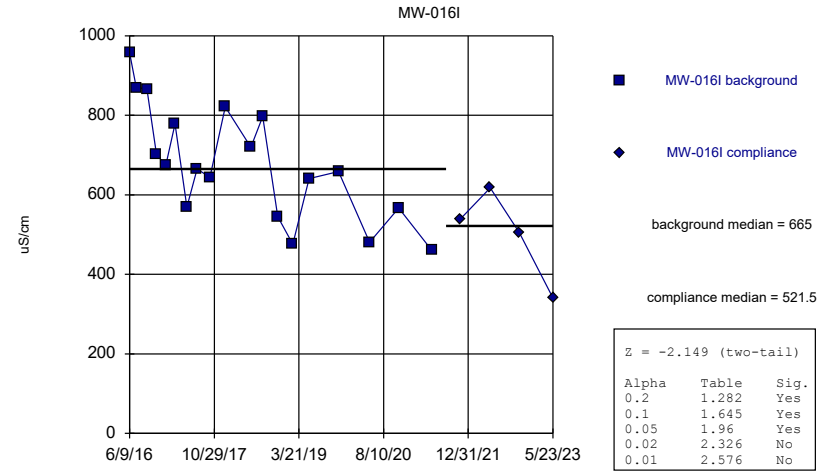
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



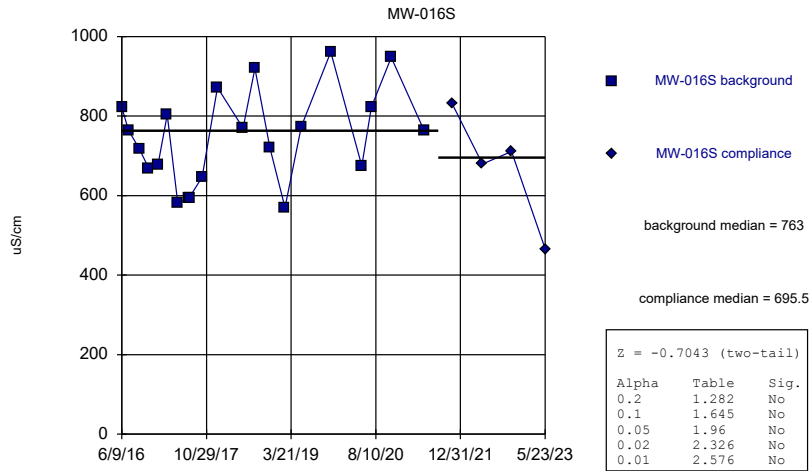
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Mann-Whitney (Wilcoxon Rank Sum)



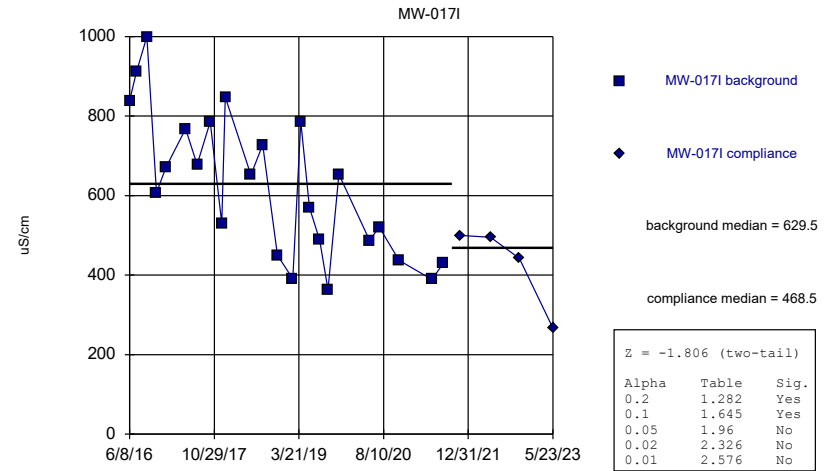
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



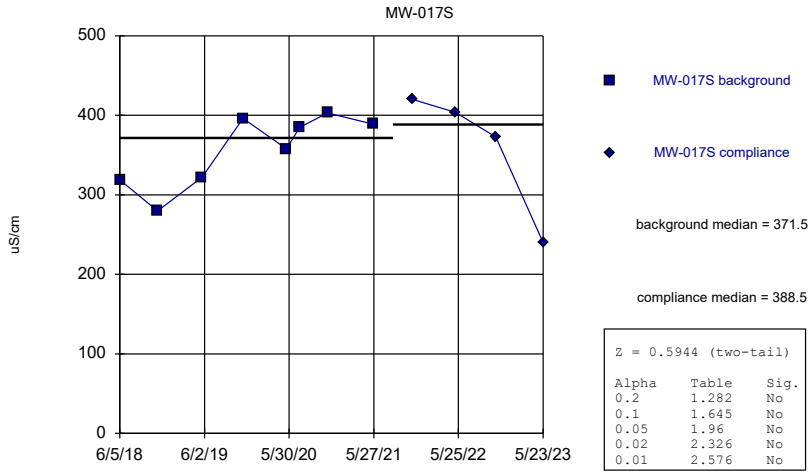
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Mann-Whitney (Wilcoxon Rank Sum)



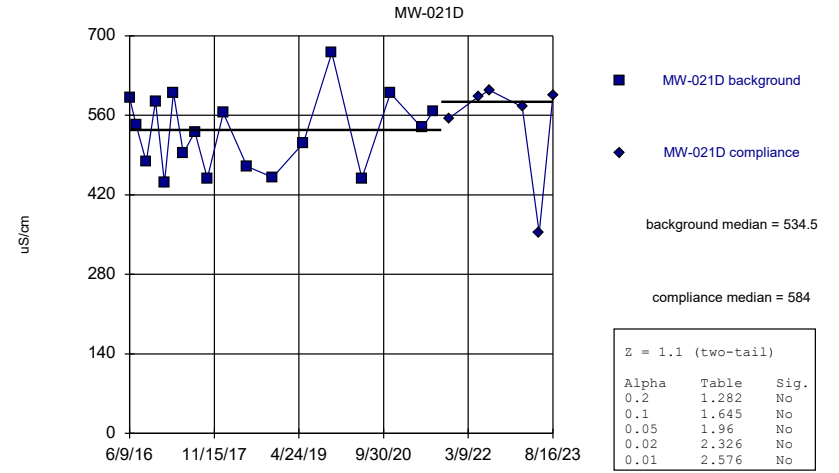
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



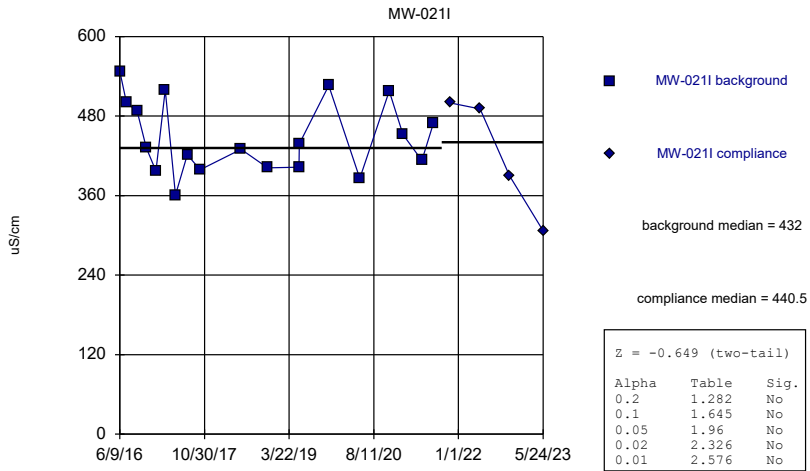
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



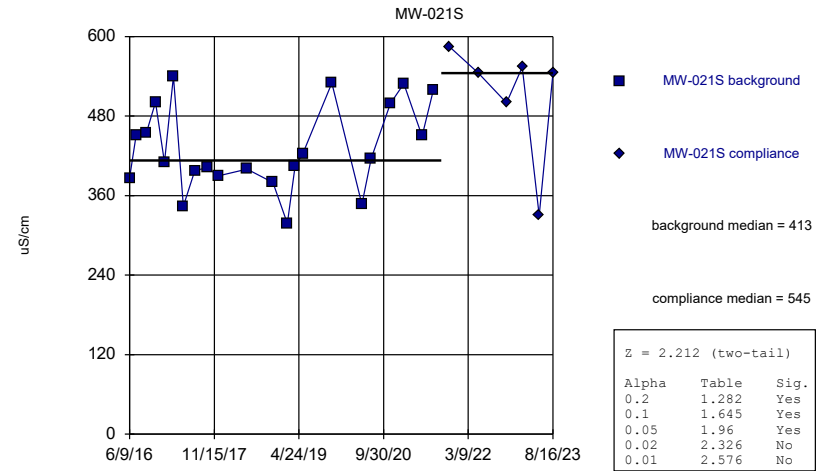
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



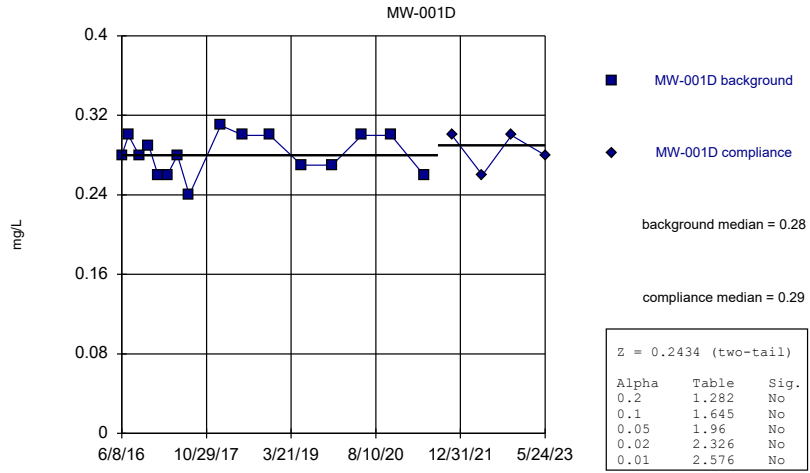
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



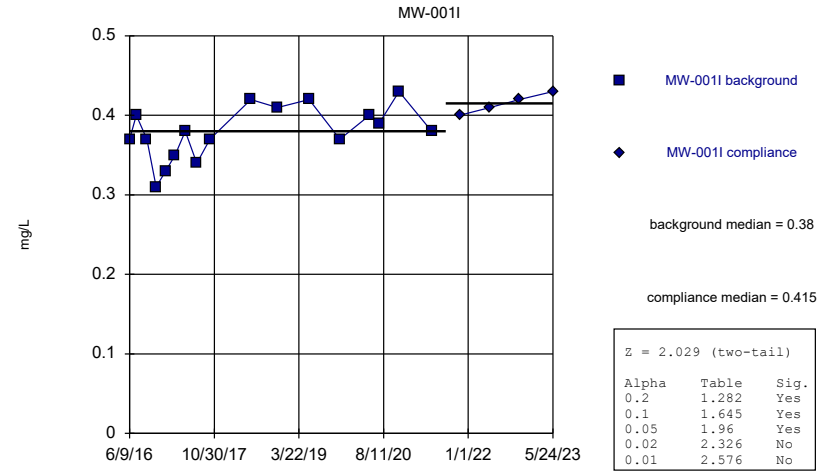
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



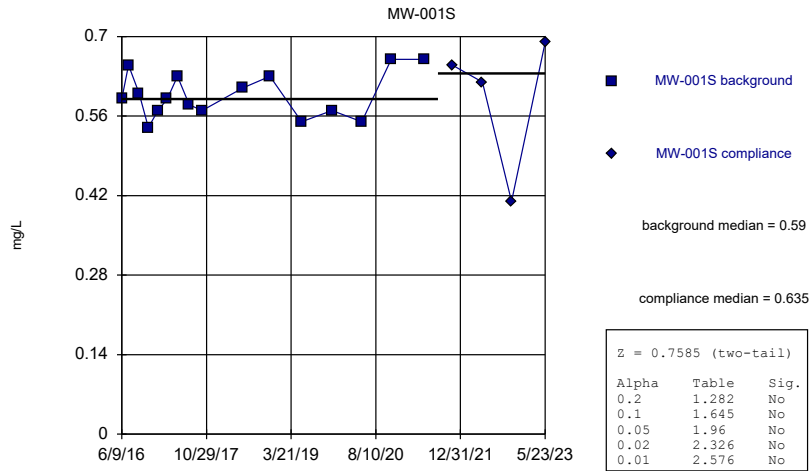
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



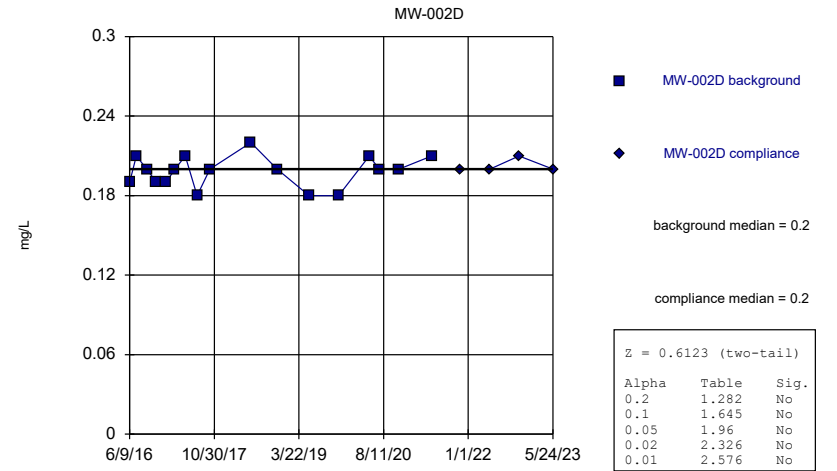
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



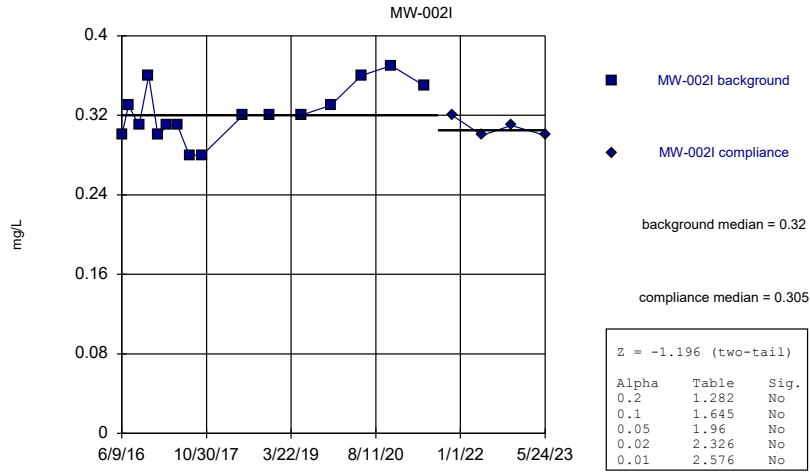
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



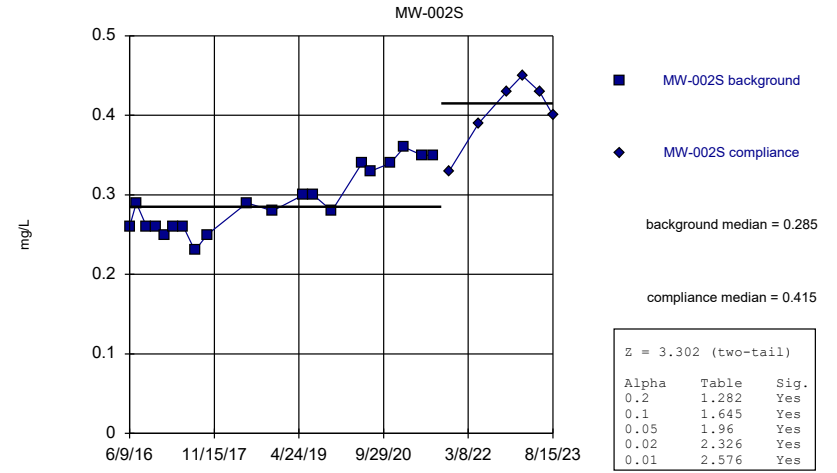
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



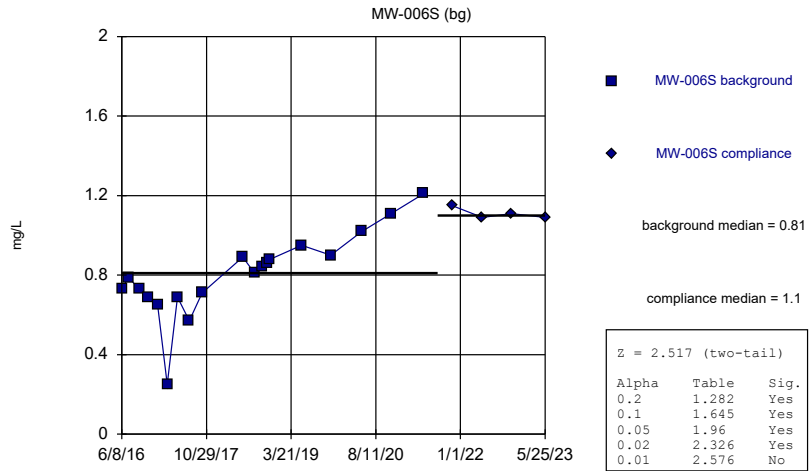
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



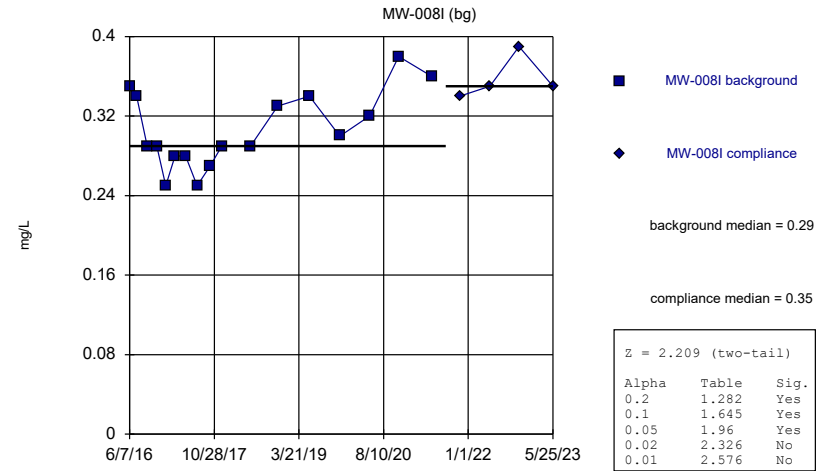
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

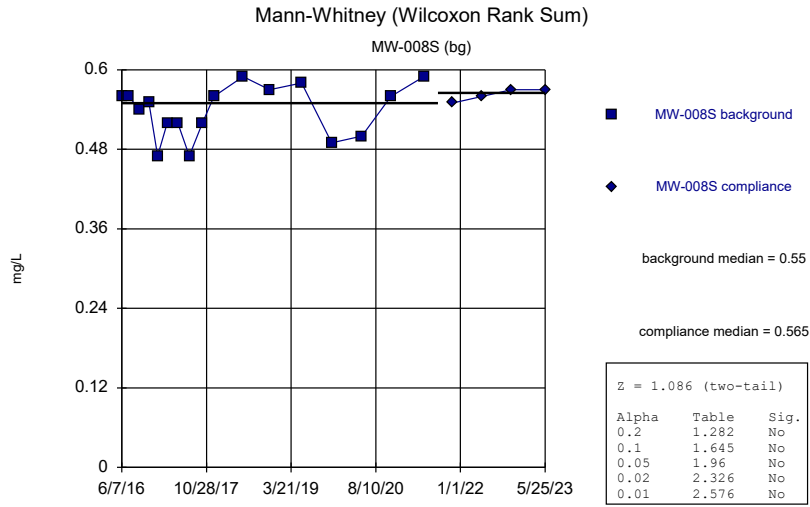


Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

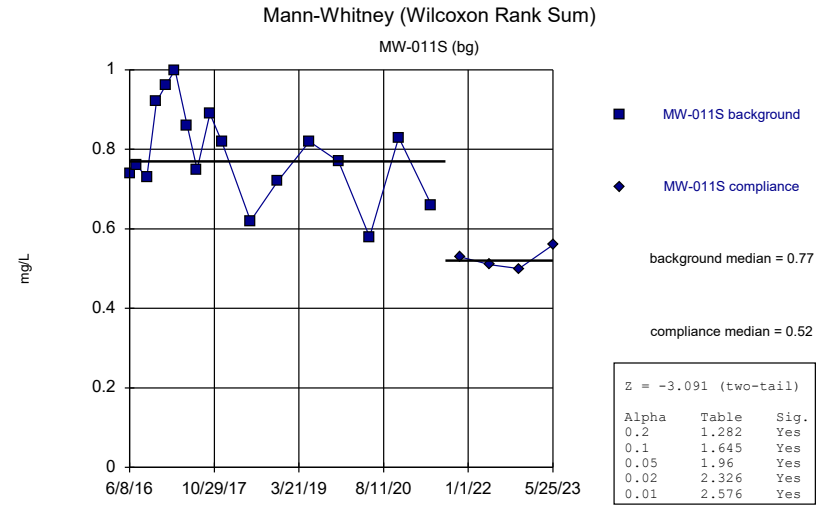
Mann-Whitney (Wilcoxon Rank Sum)



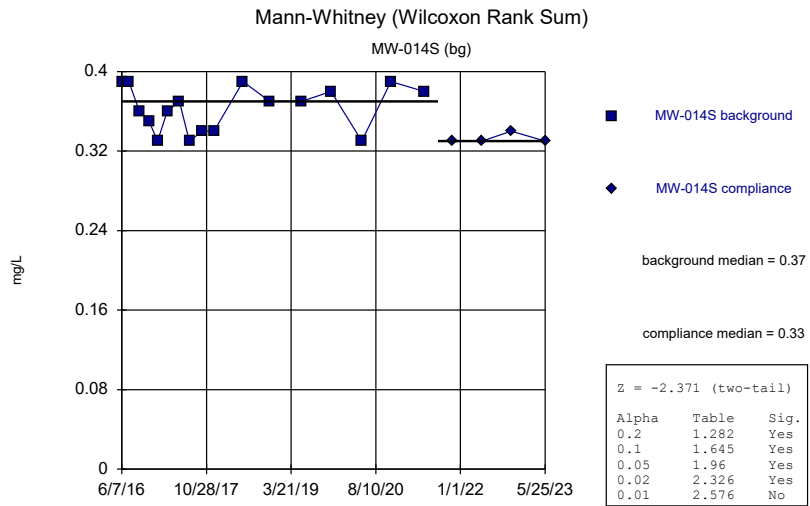
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF



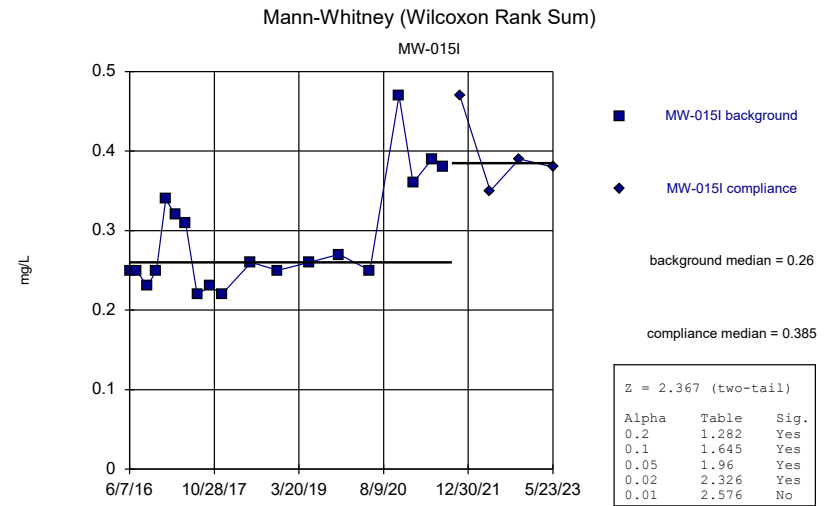
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF



Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

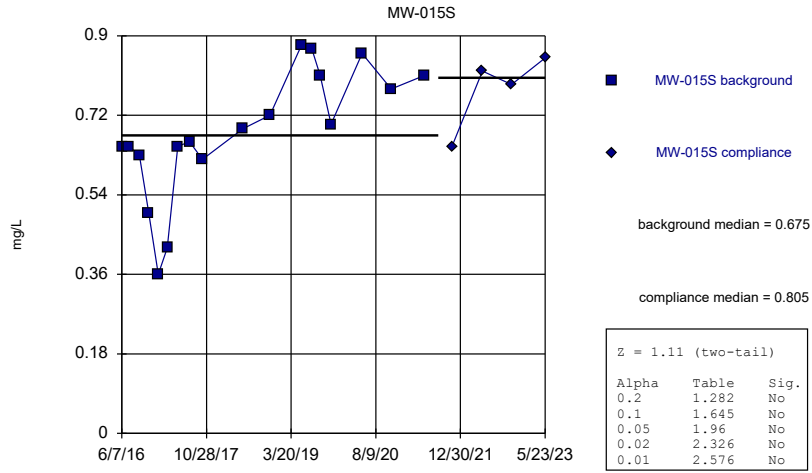


Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF



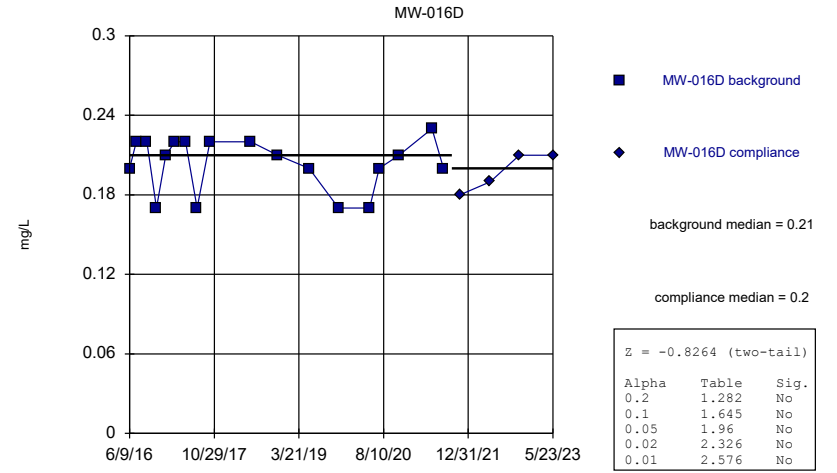
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



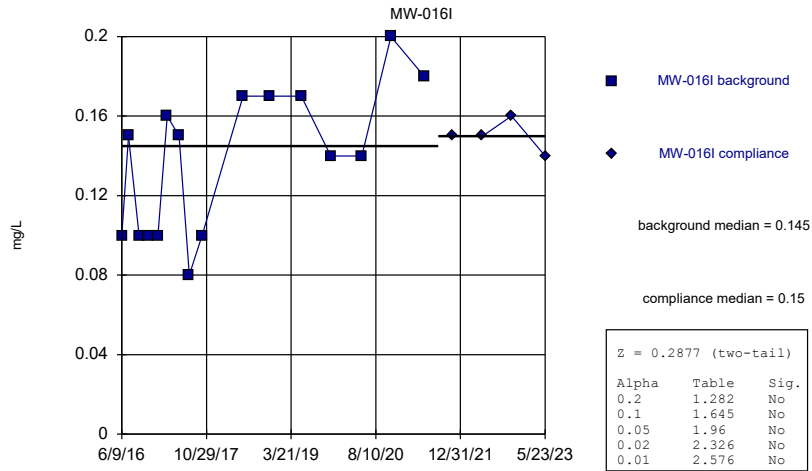
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



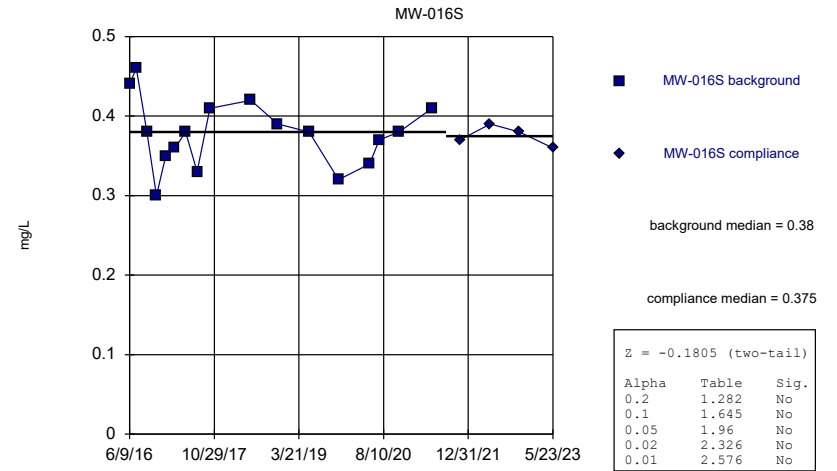
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



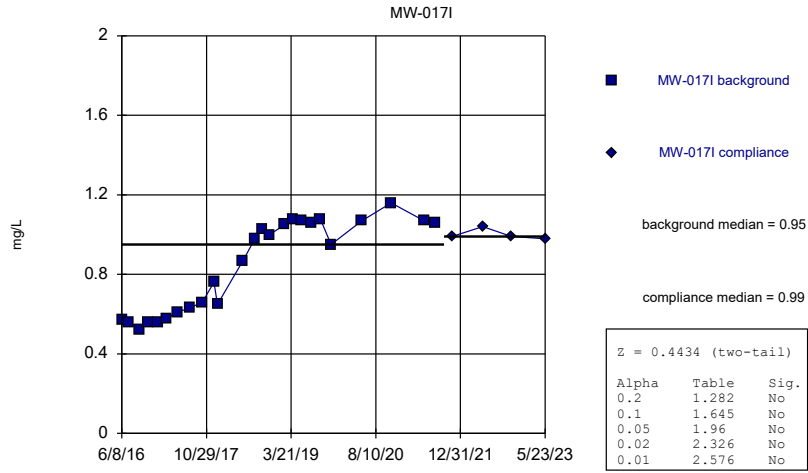
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



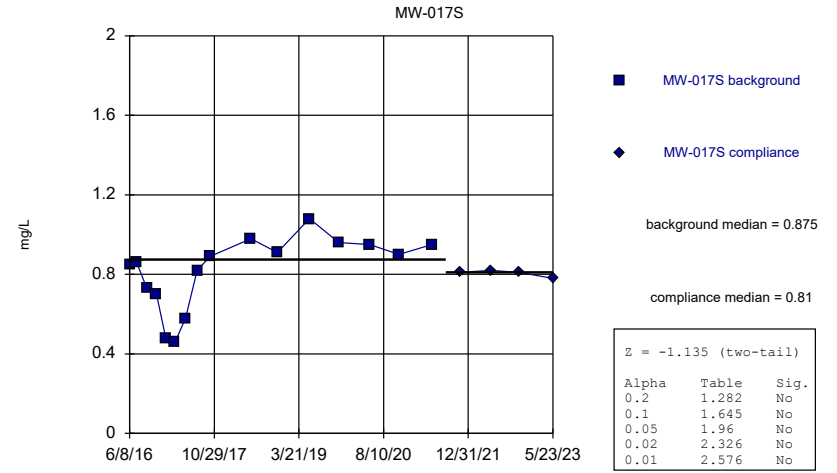
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



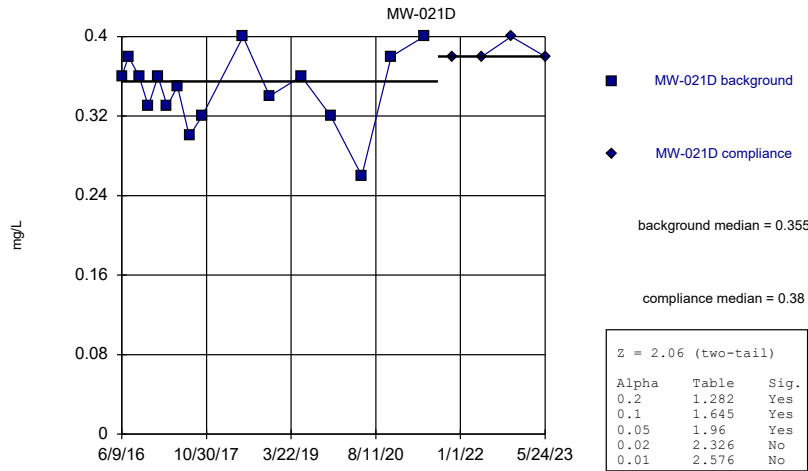
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



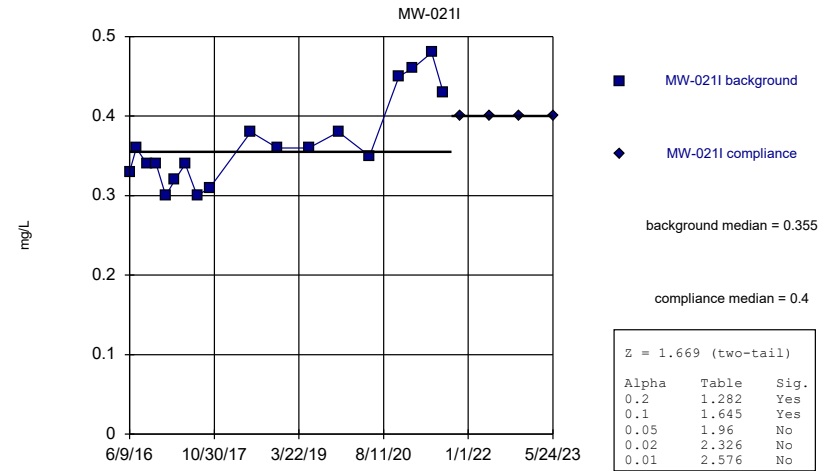
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



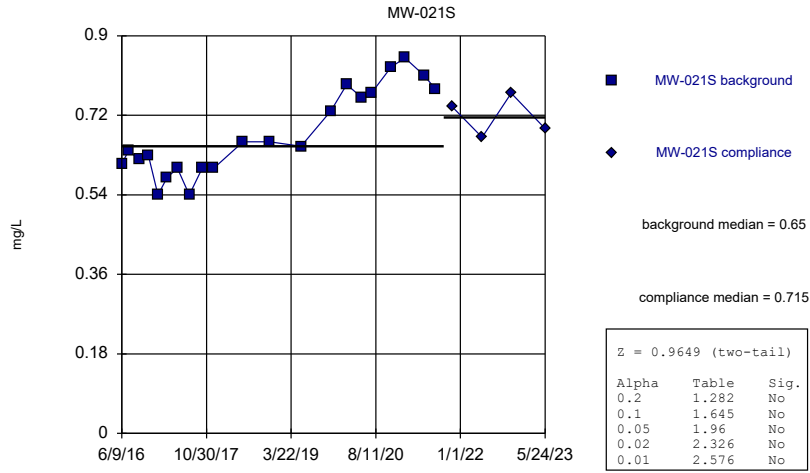
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



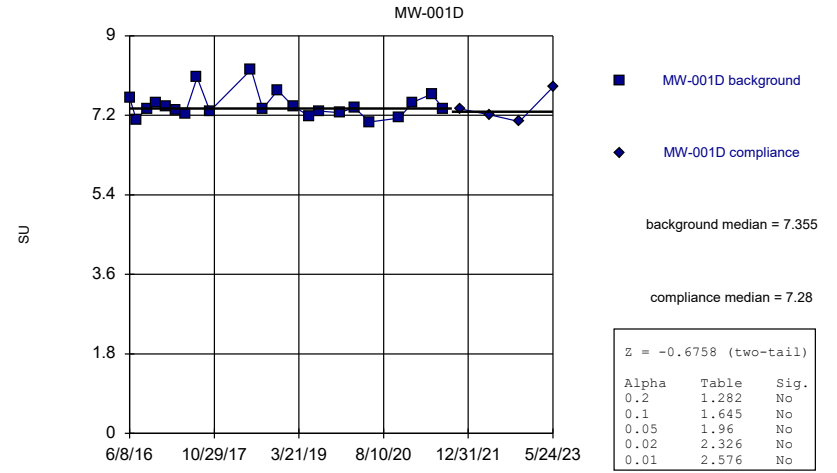
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



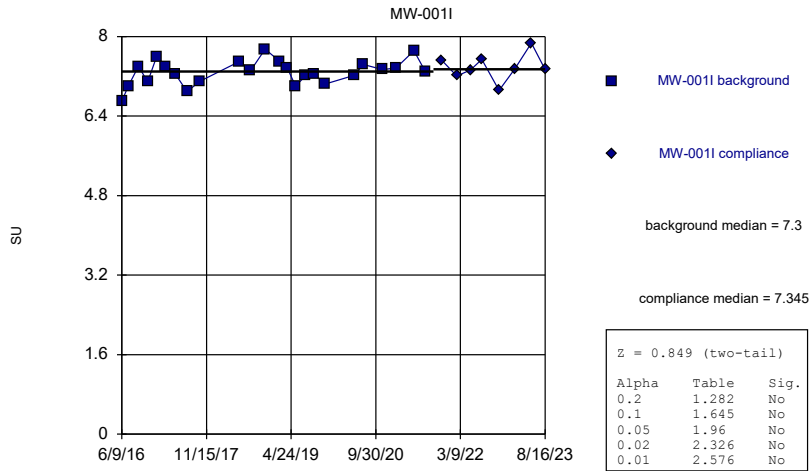
Constituent: Fluoride, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



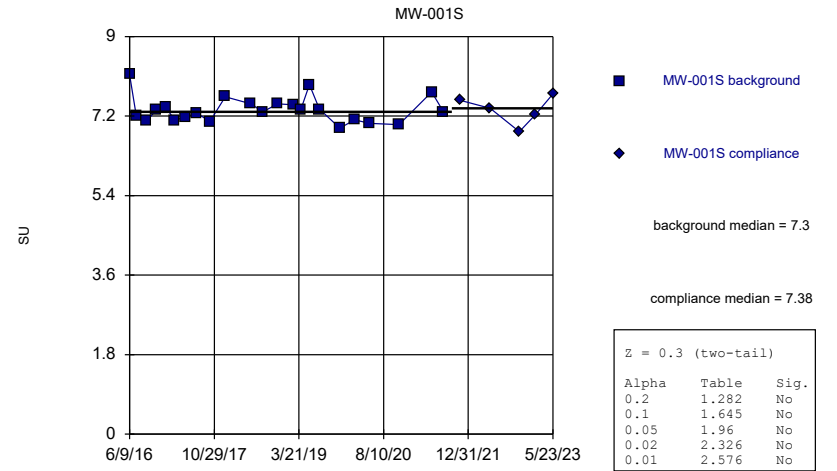
Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

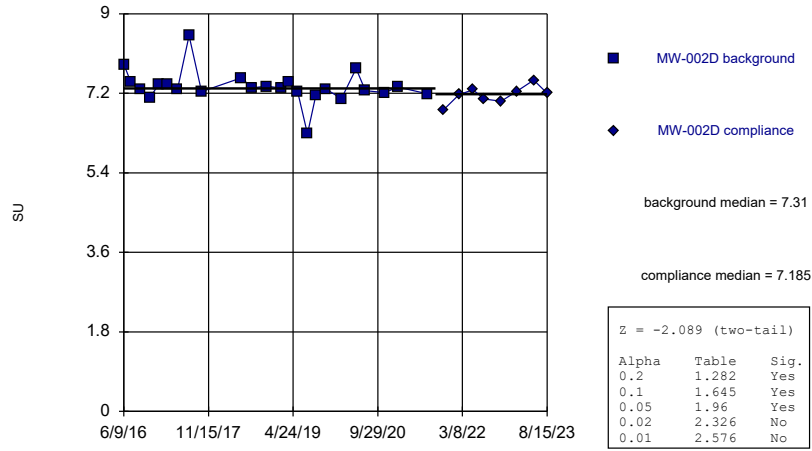
Mann-Whitney (Wilcoxon Rank Sum)



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

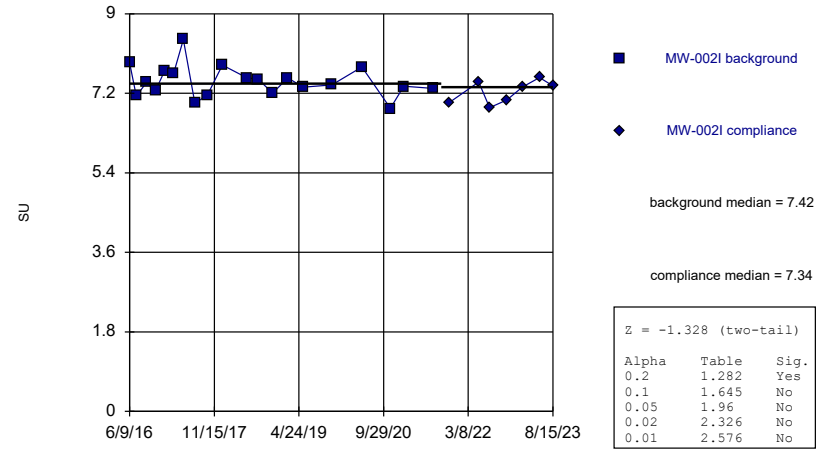
MW-002D



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

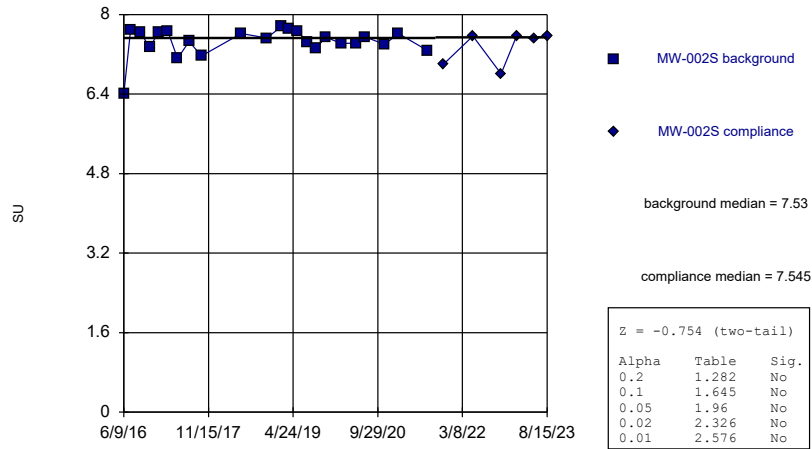
MW-002I



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
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Mann-Whitney (Wilcoxon Rank Sum)

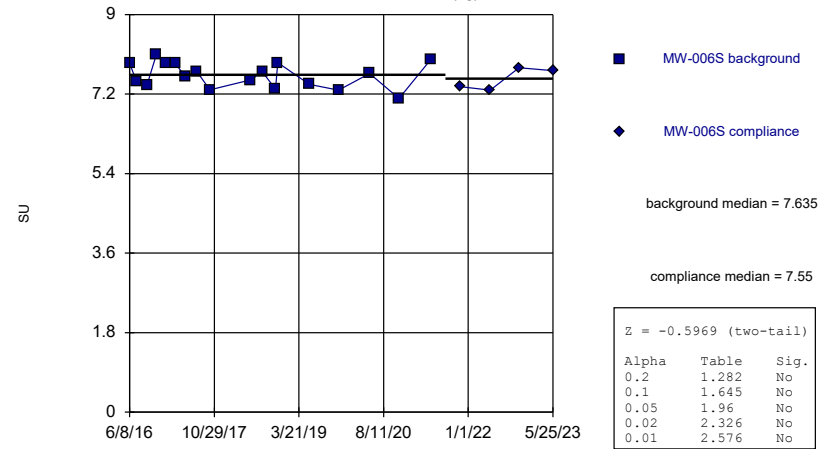
MW-002S



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

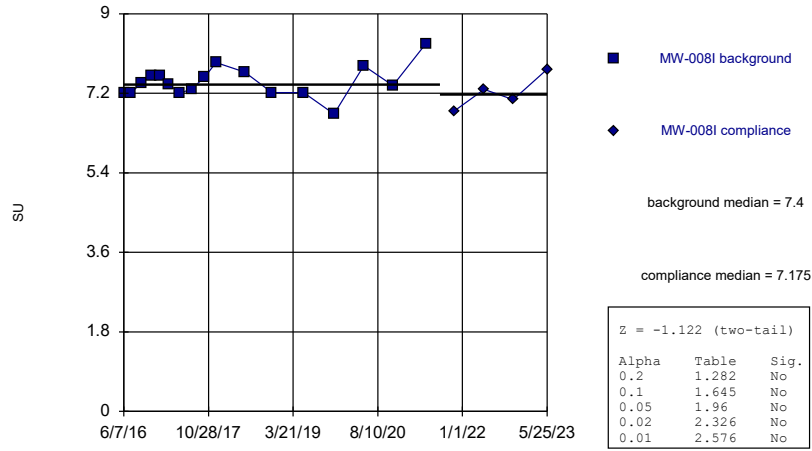
MW-006S (bg)



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

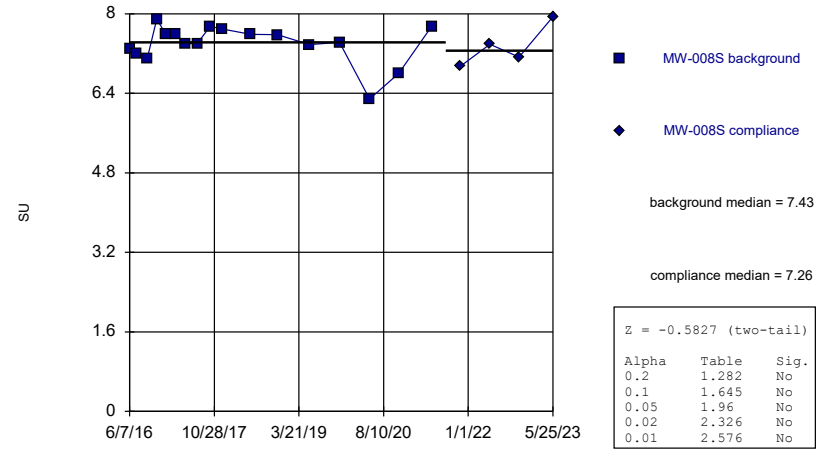
MW-008I (bg)



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

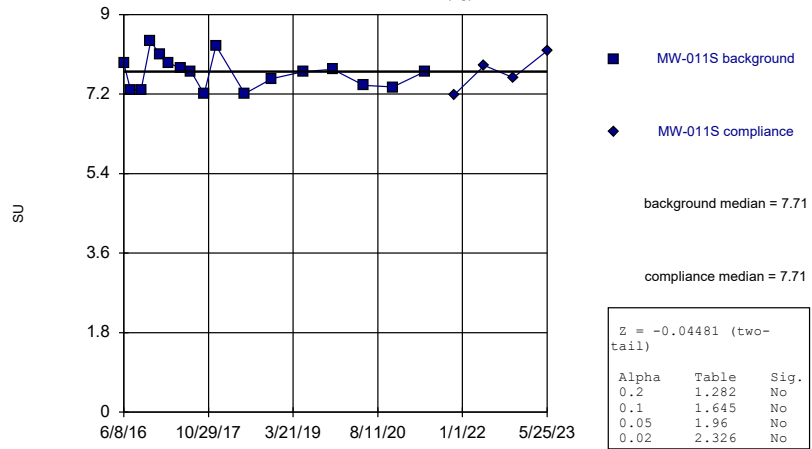
MW-008S (bg)



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

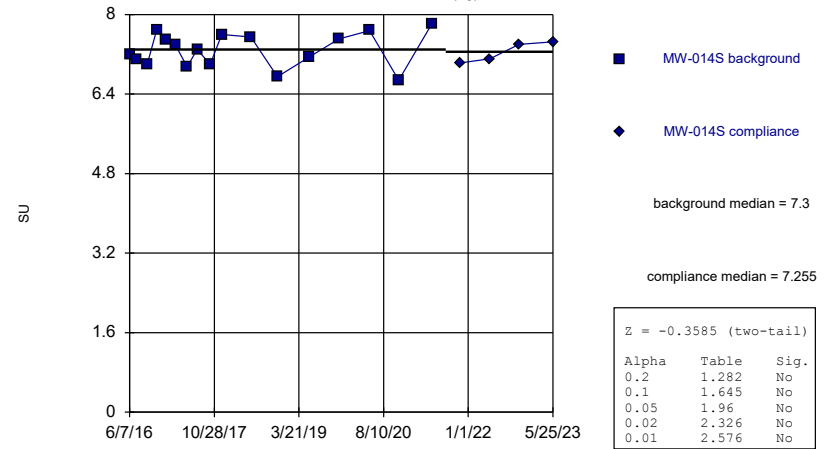
MW-011S (bg)



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

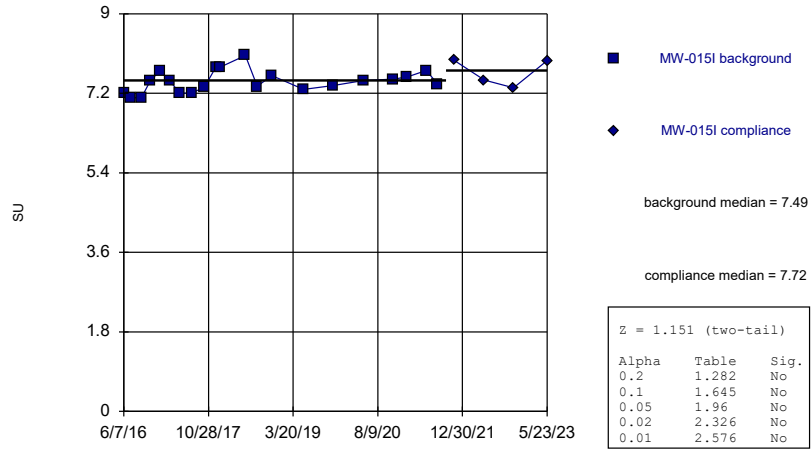
MW-014S (bg)



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

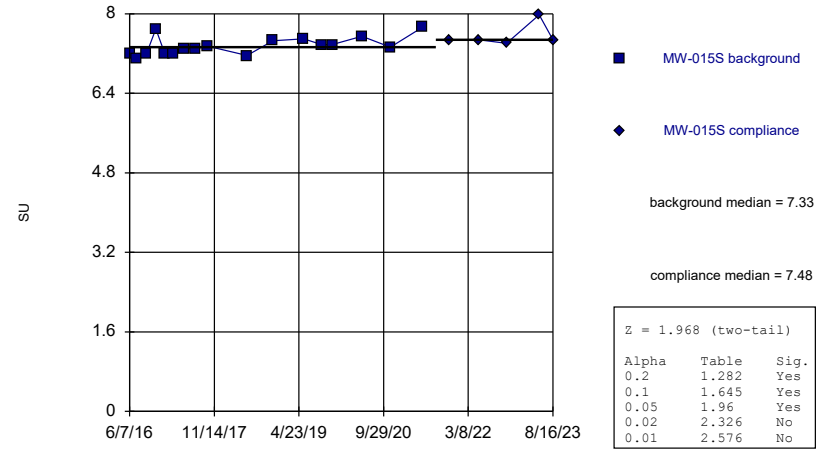
MW-015I



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

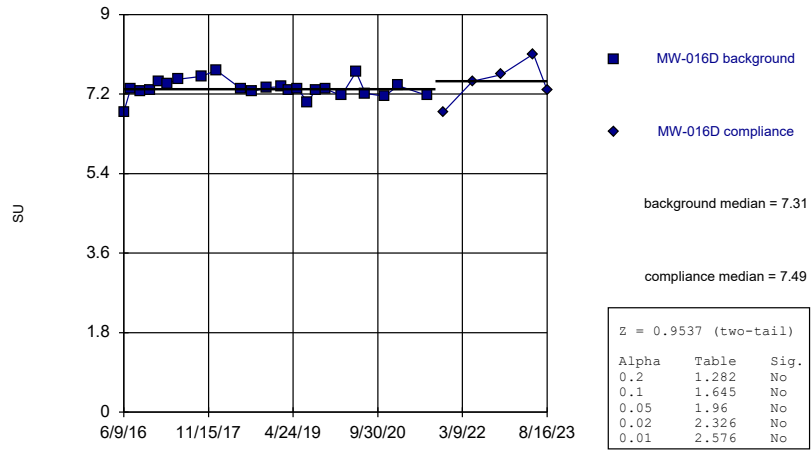
MW-015S



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

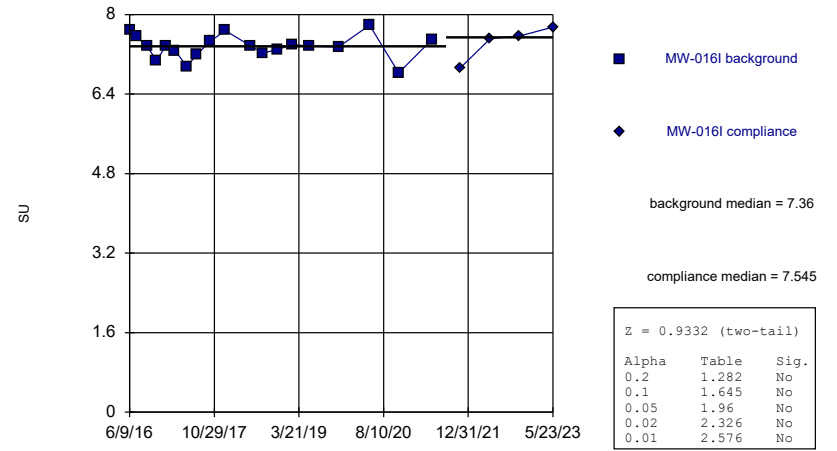
MW-016D



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

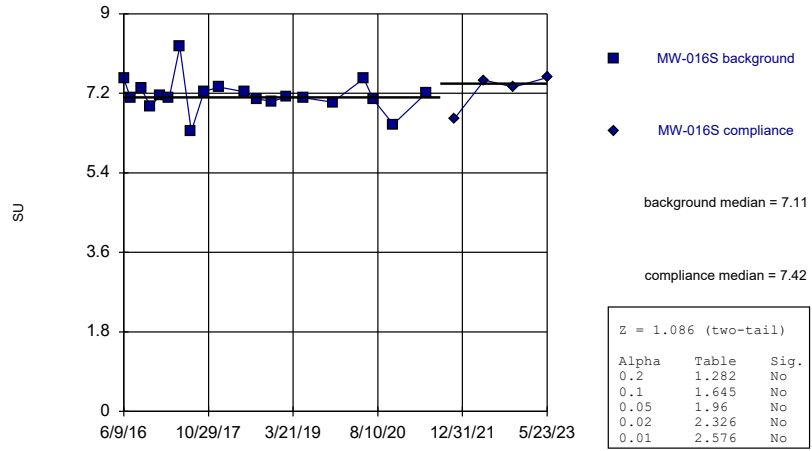
MW-016I



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

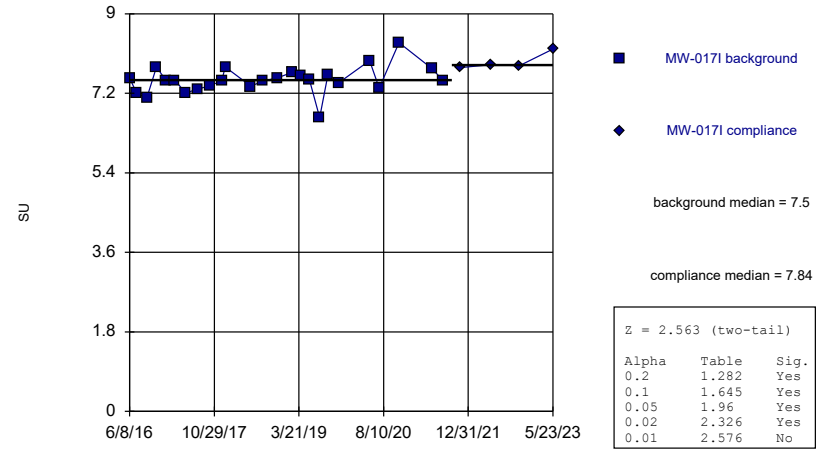
MW-016S



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

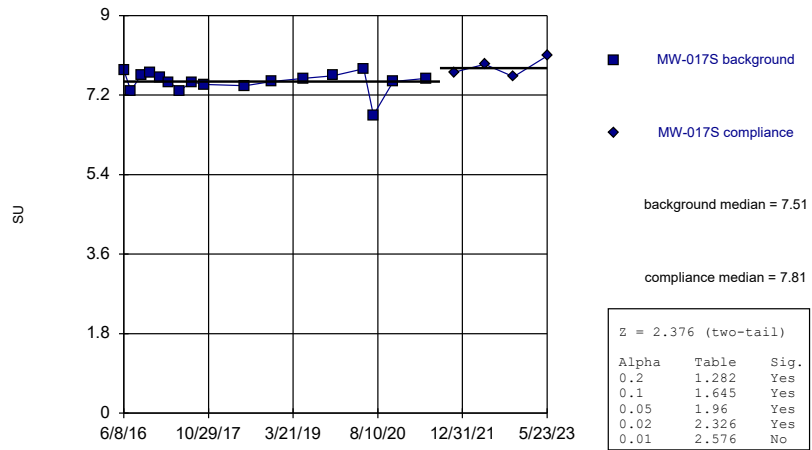
MW-0171



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

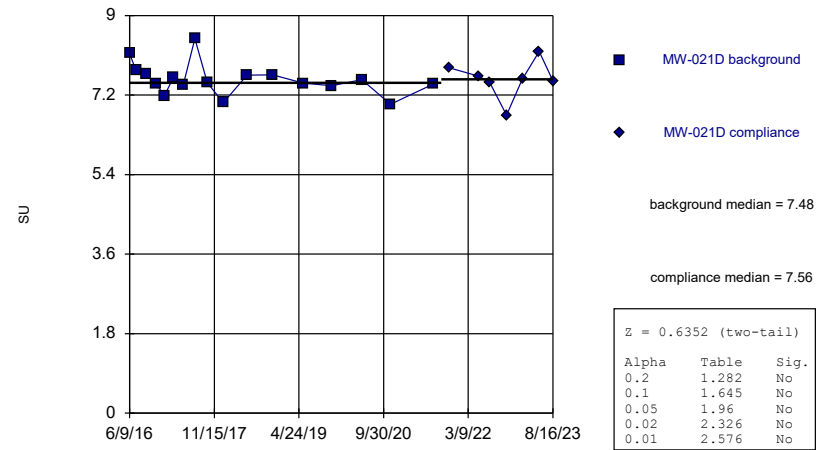
MW-017S



Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

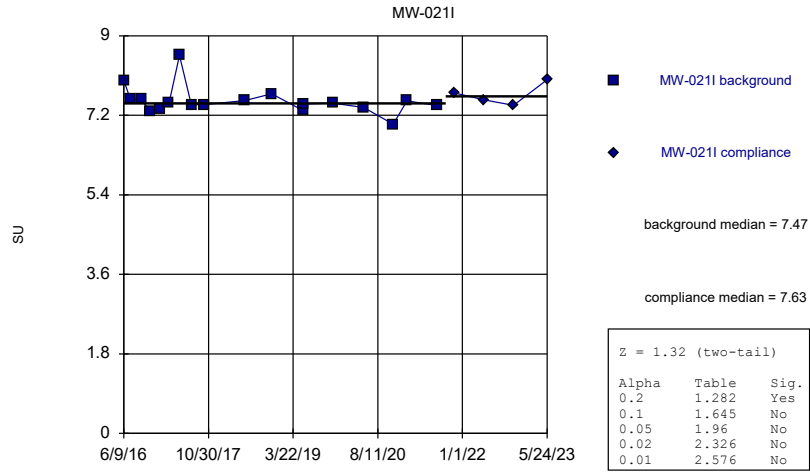
Mann-Whitney (Wilcoxon Rank Sum)

MW-021D



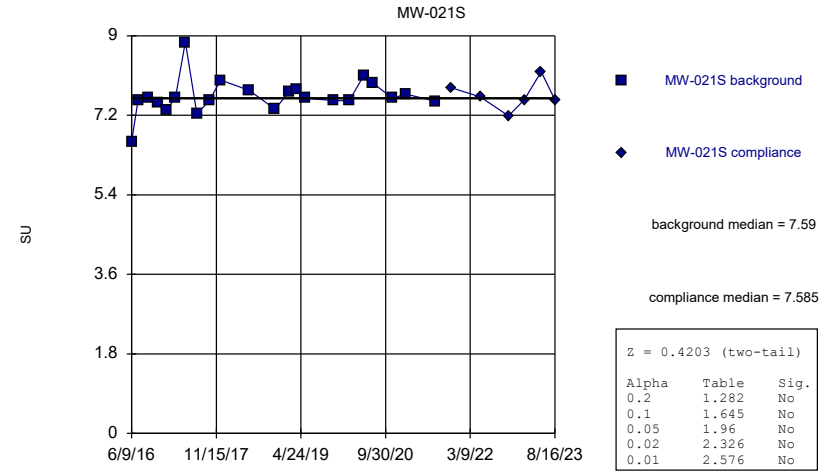
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Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



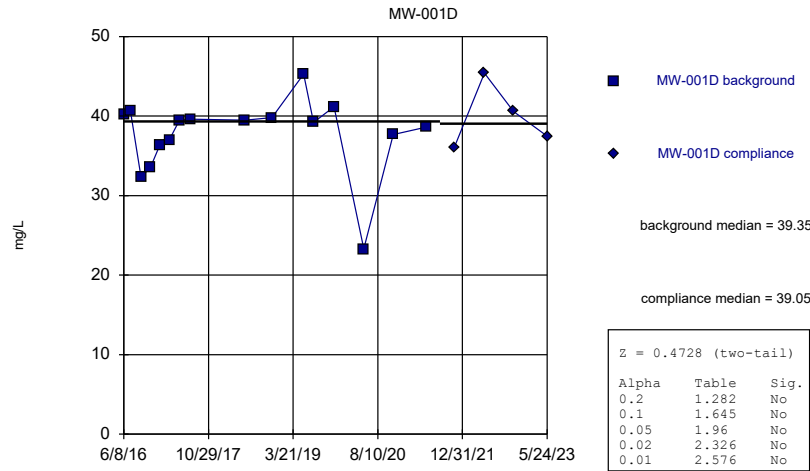
Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



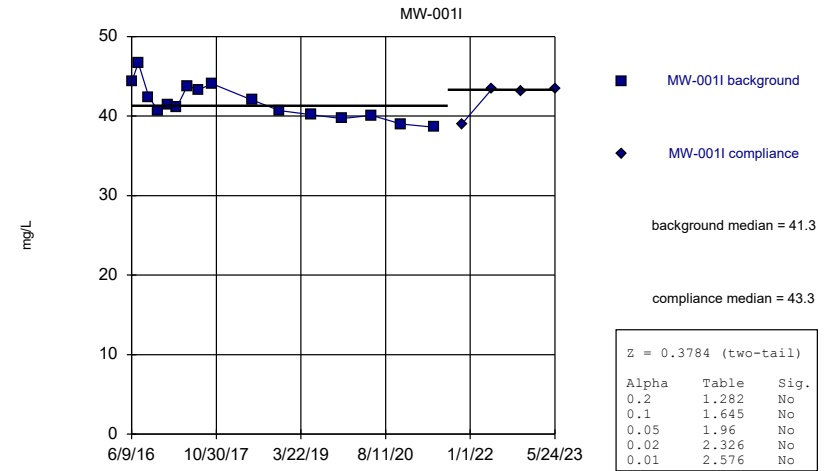
Constituent: pH, field Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



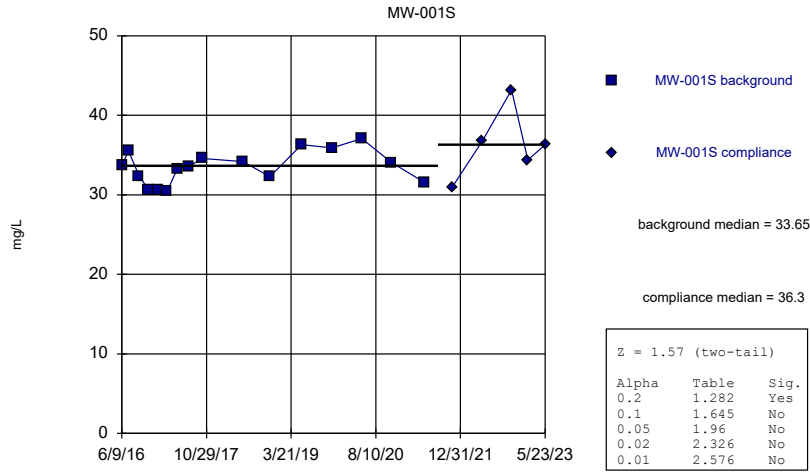
Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



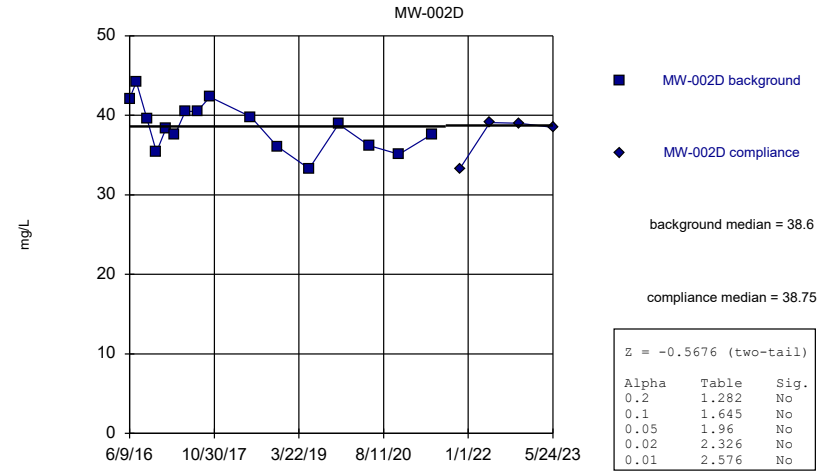
Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



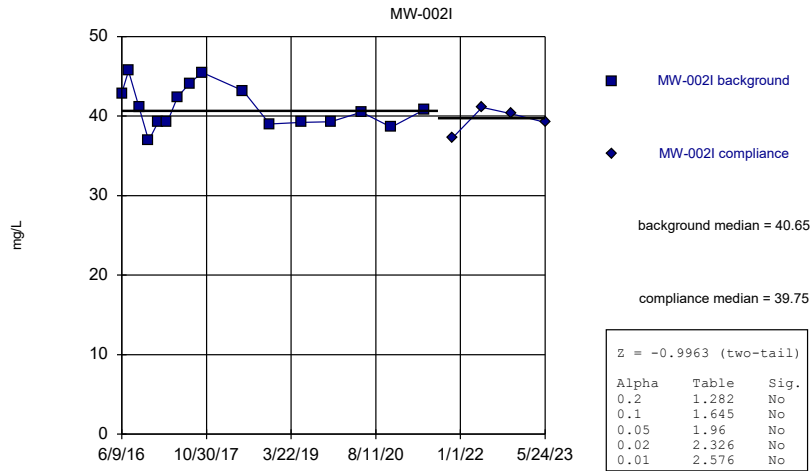
Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



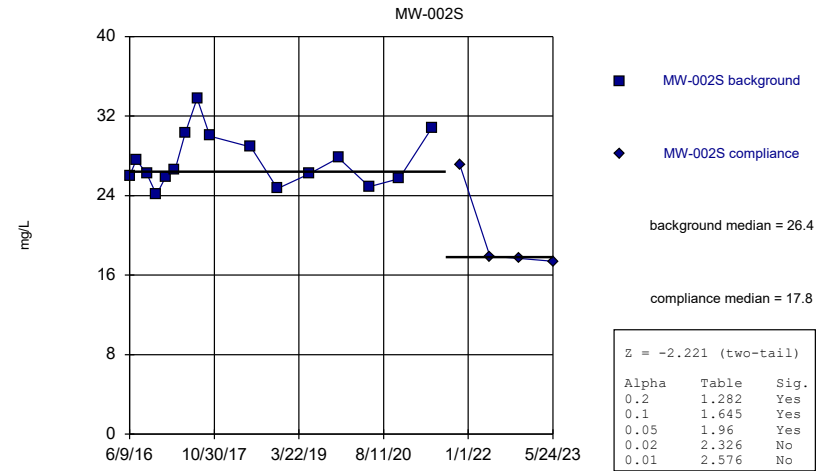
Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

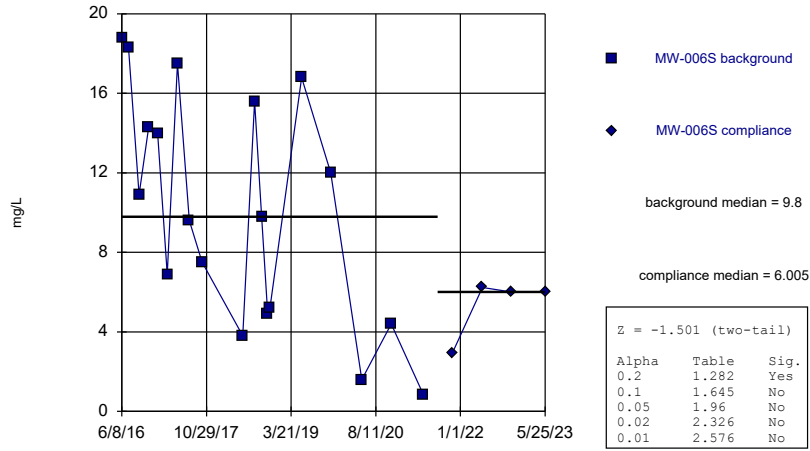
Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

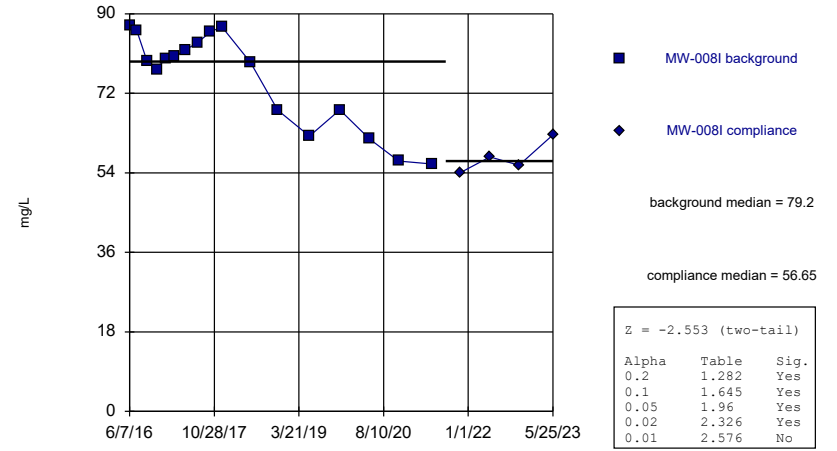
MW-006S (bg)



Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

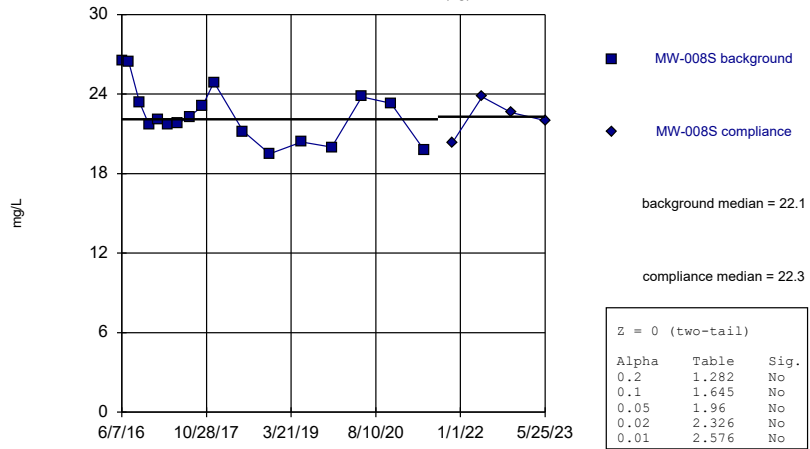
MW-008I (bg)



Constituent: Sulfate, total Analysis Run 12/13/2023 1:51 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

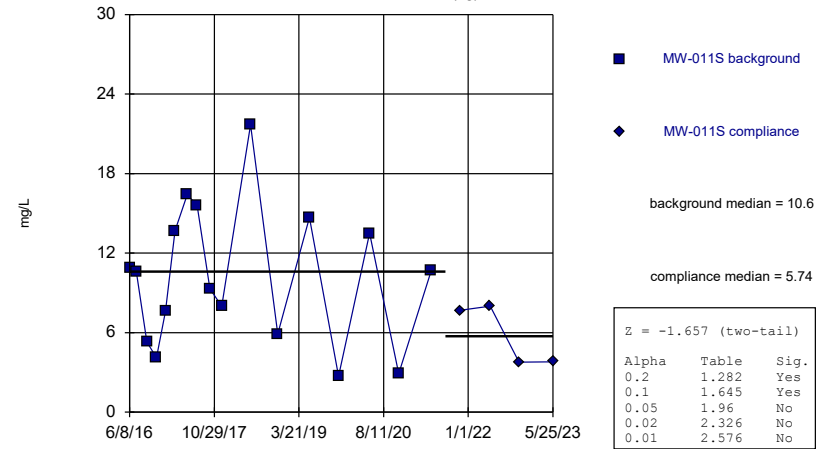
MW-008S (bg)



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

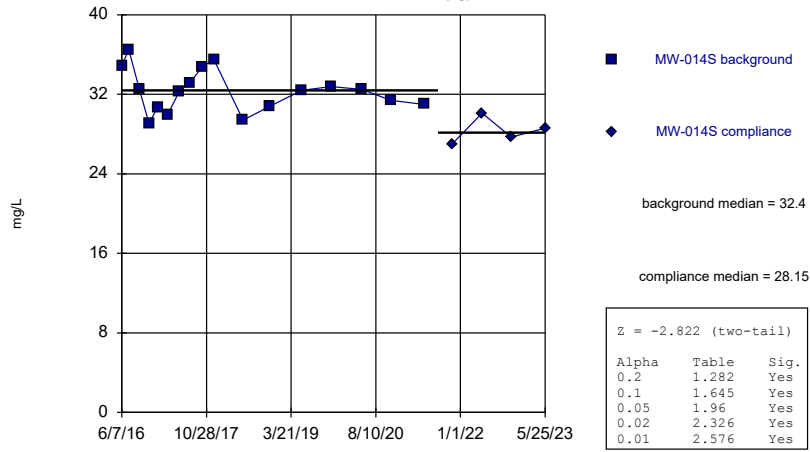
MW-011S (bg)



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

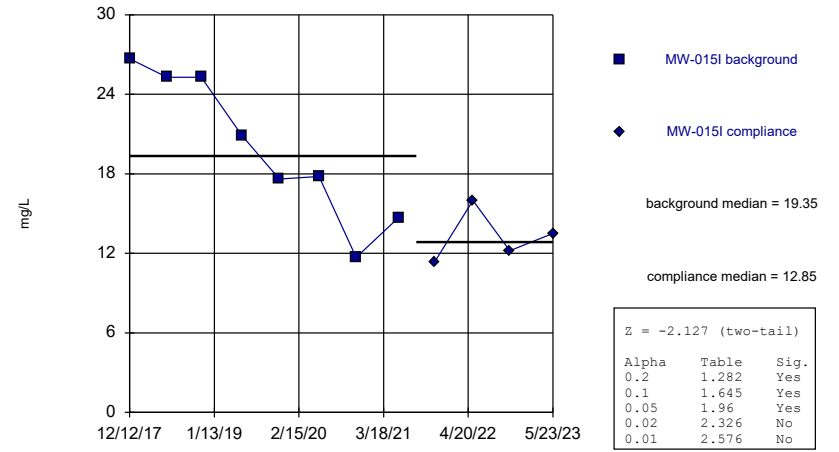
MW-014S (bg)



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

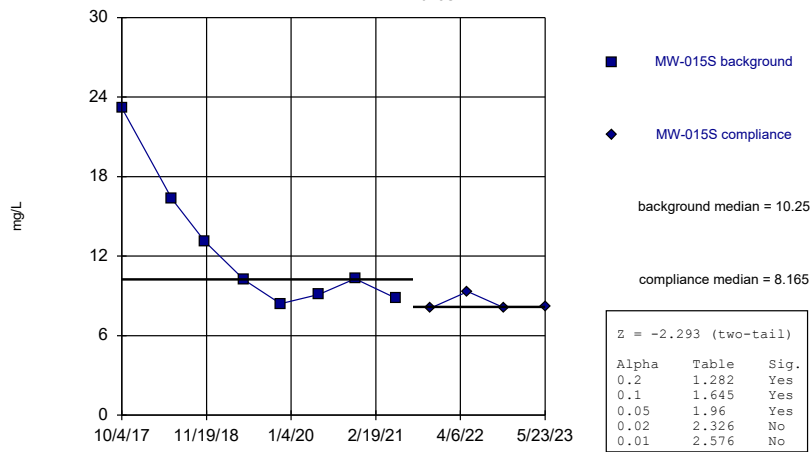
MW-015I



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

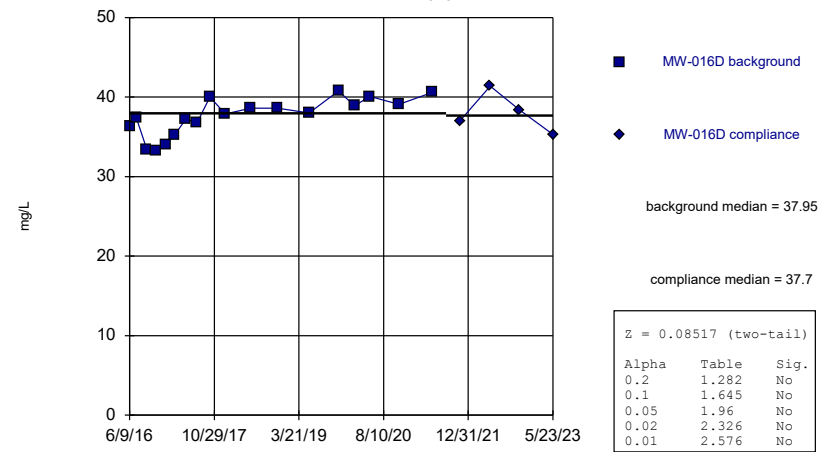
MW-015S



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

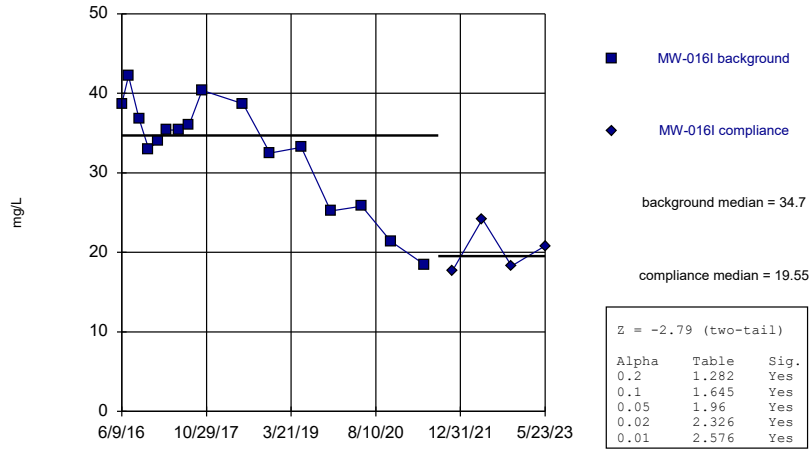
MW-016D



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

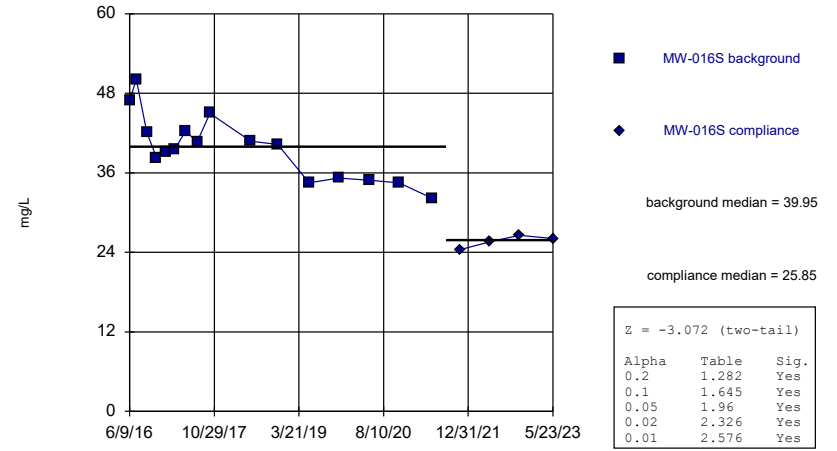
MW-016I



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

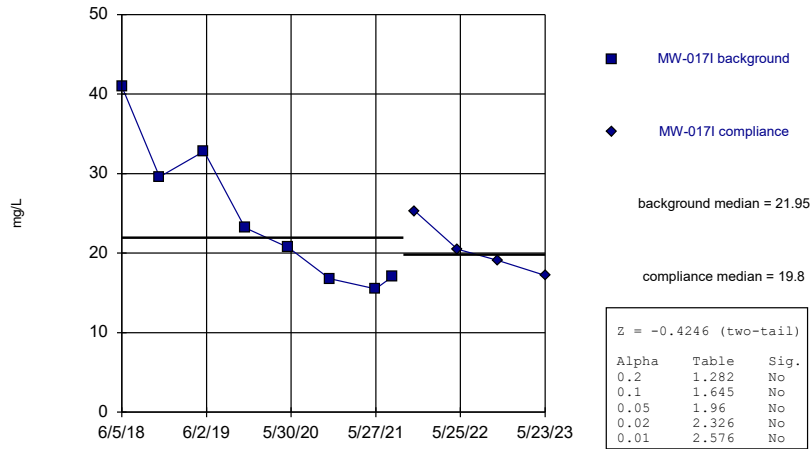
MW-016S



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

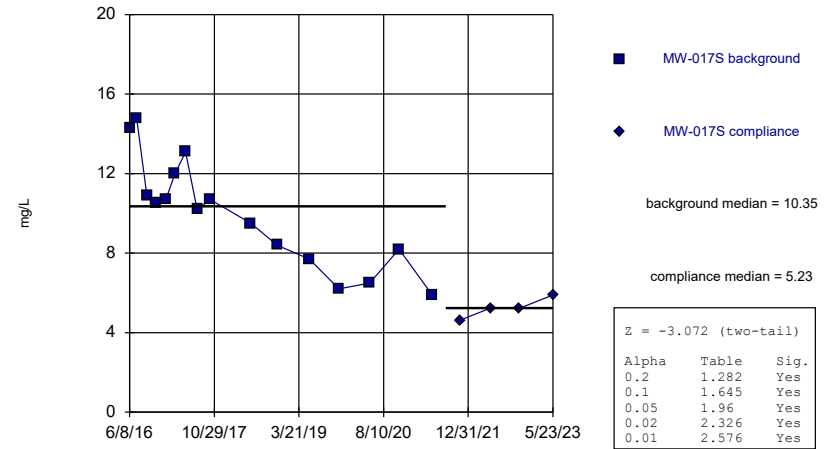
MW-017I



Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

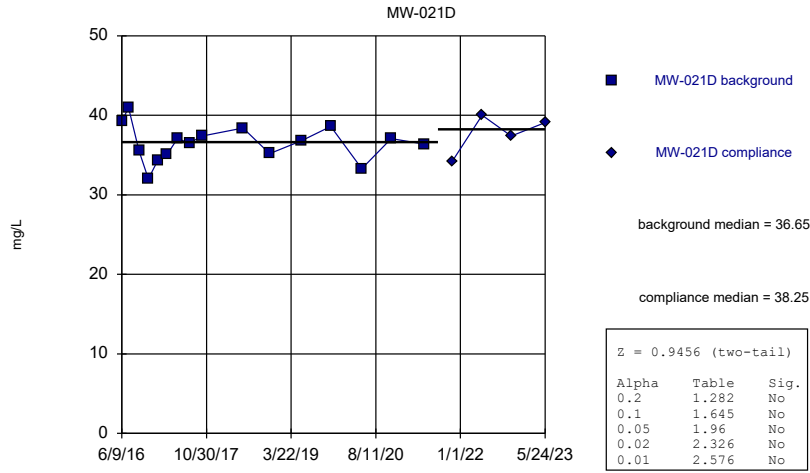
Mann-Whitney (Wilcoxon Rank Sum)

MW-017S



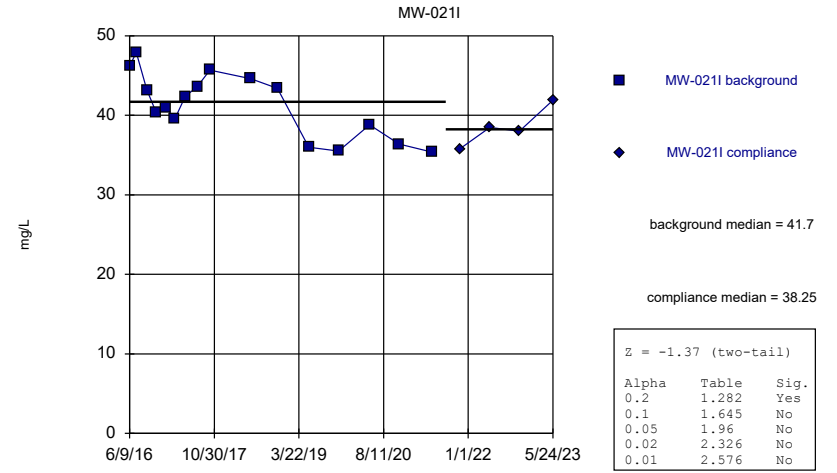
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



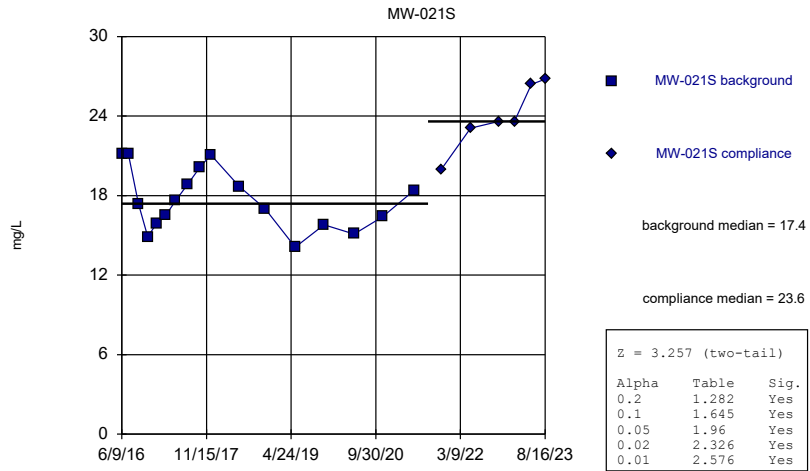
Constituent: Sulfate, total Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



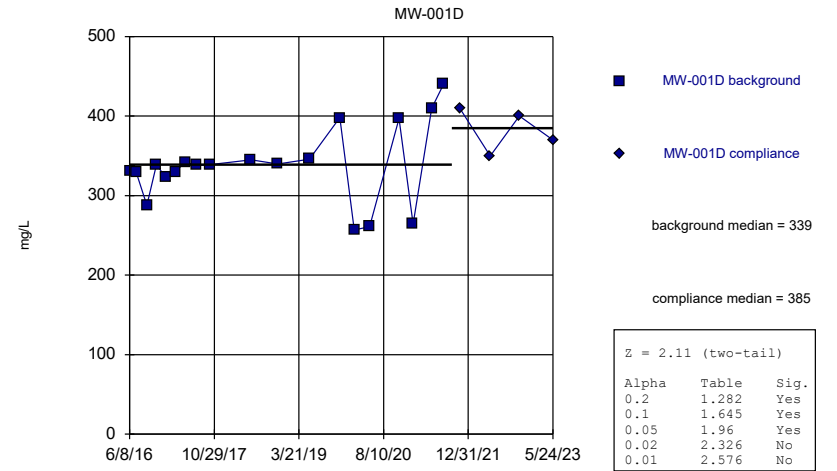
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



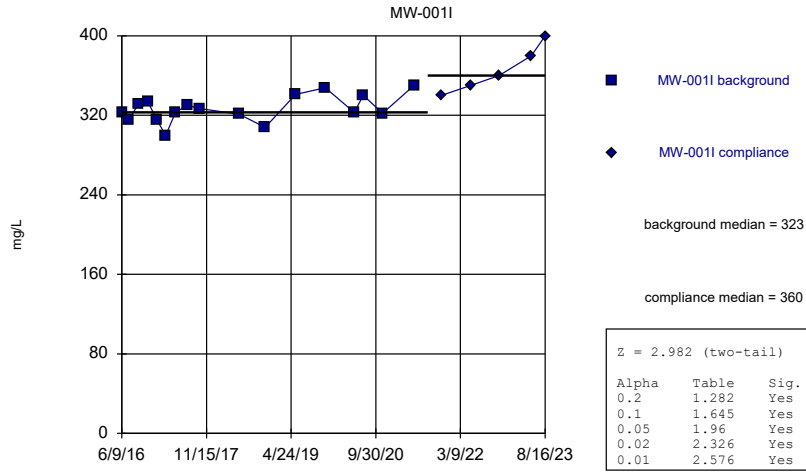
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



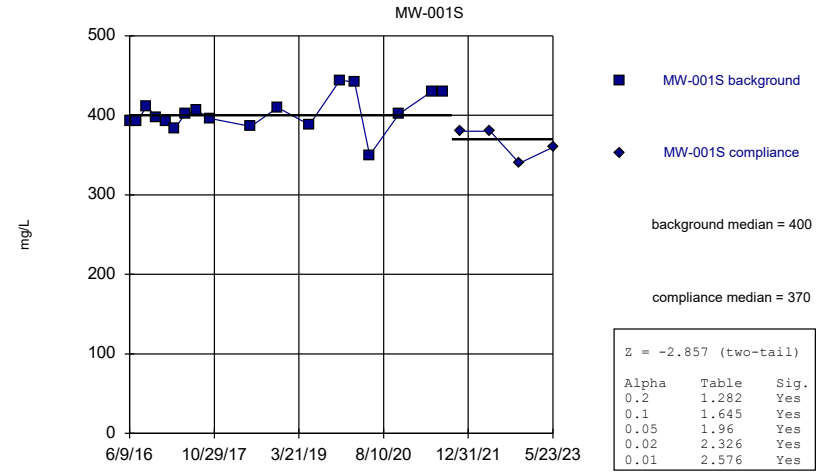
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



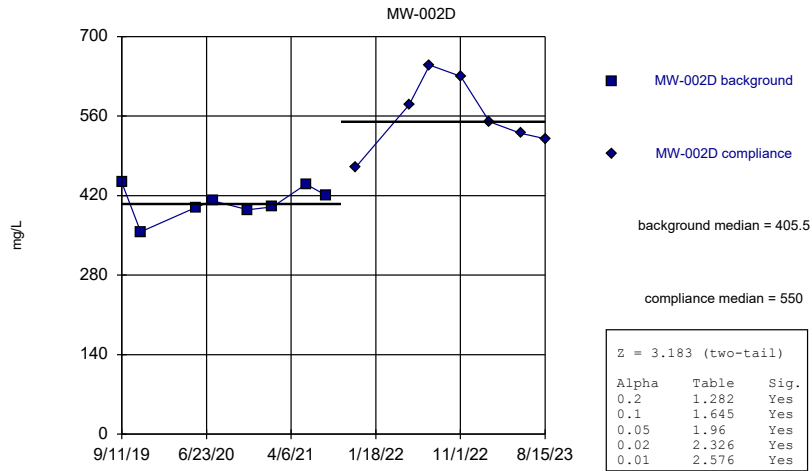
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



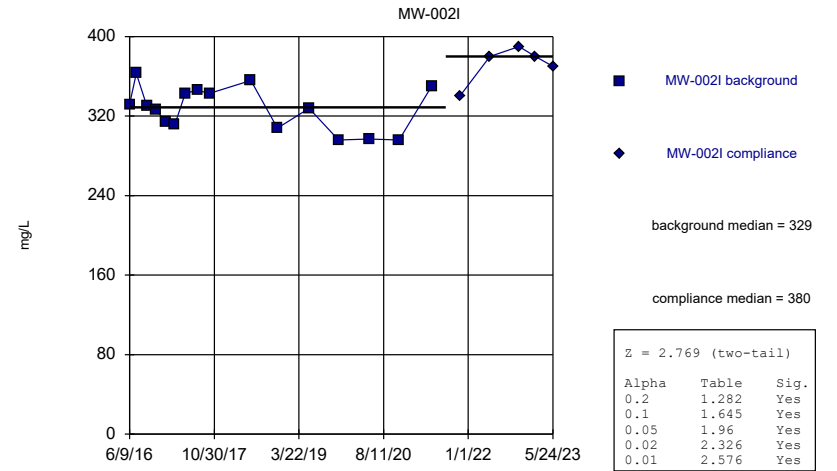
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



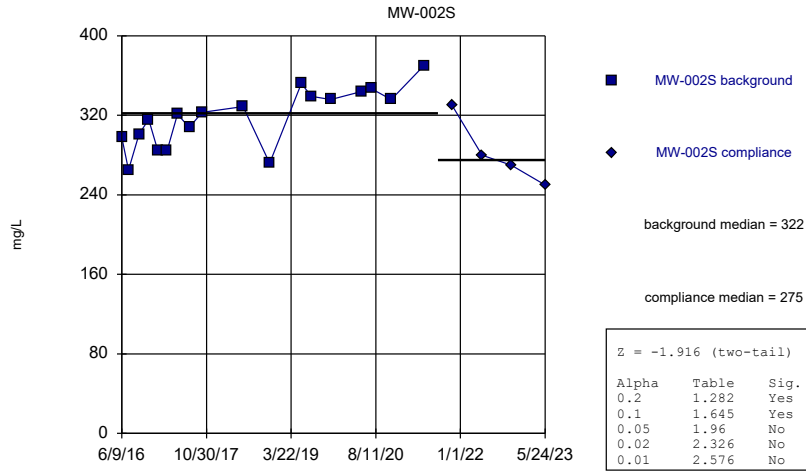
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



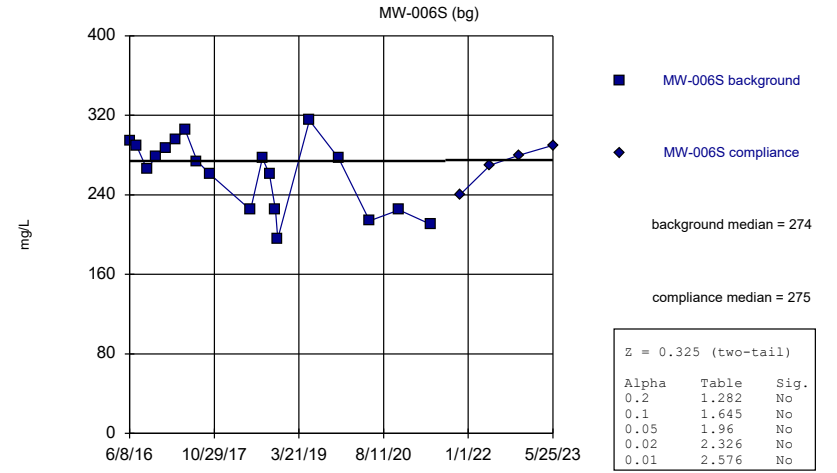
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



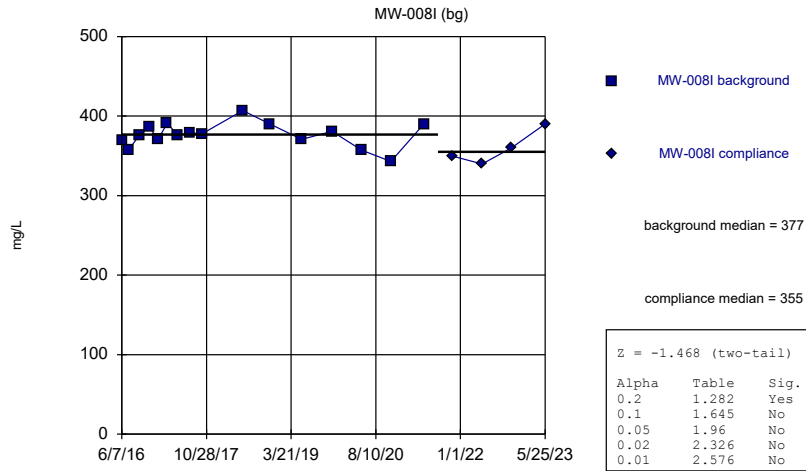
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



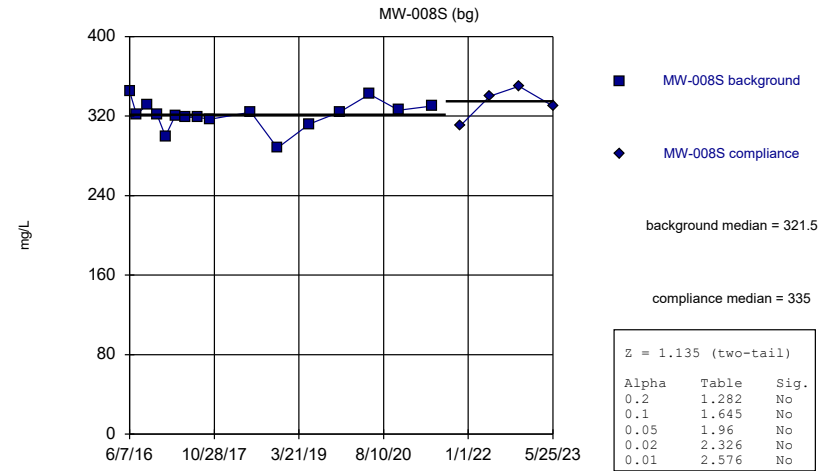
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 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)

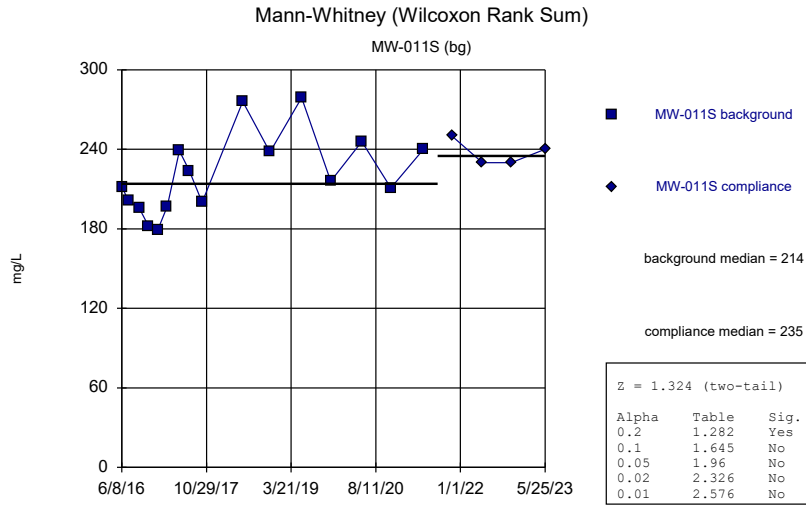


Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

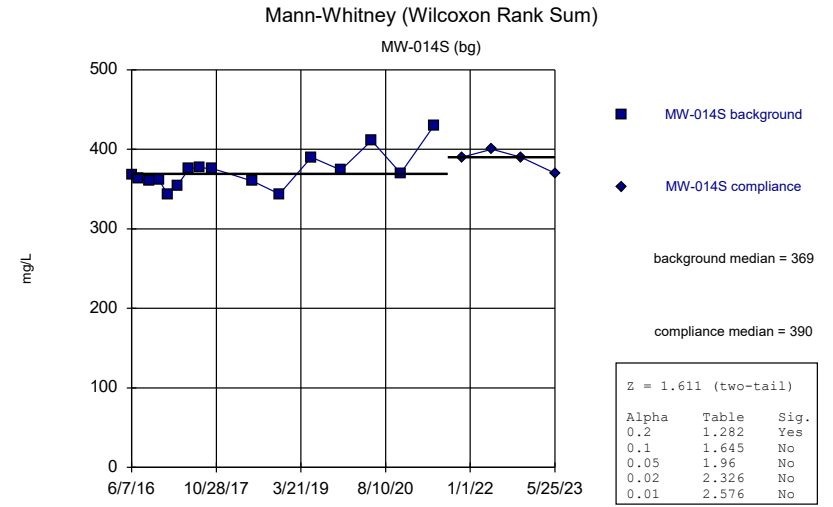
Mann-Whitney (Wilcoxon Rank Sum)



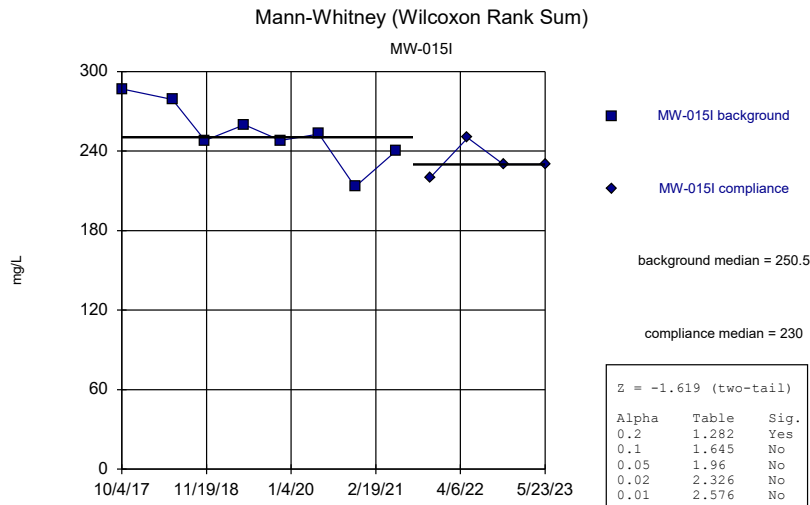
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF



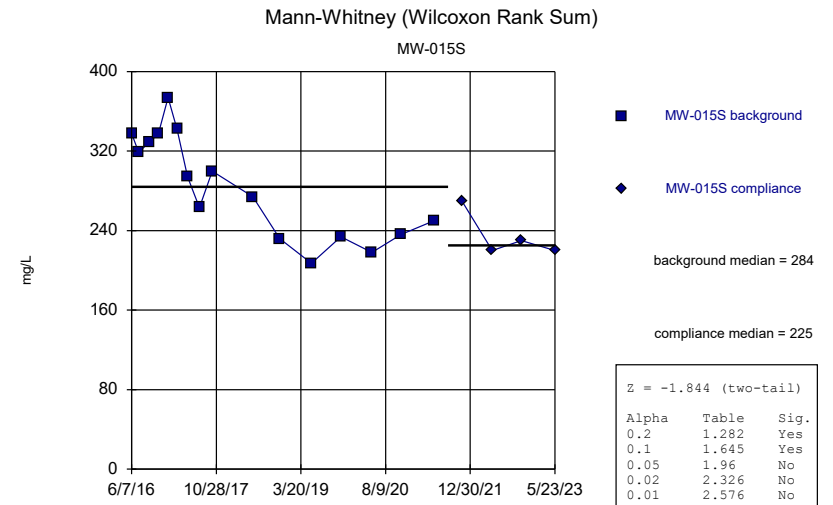
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

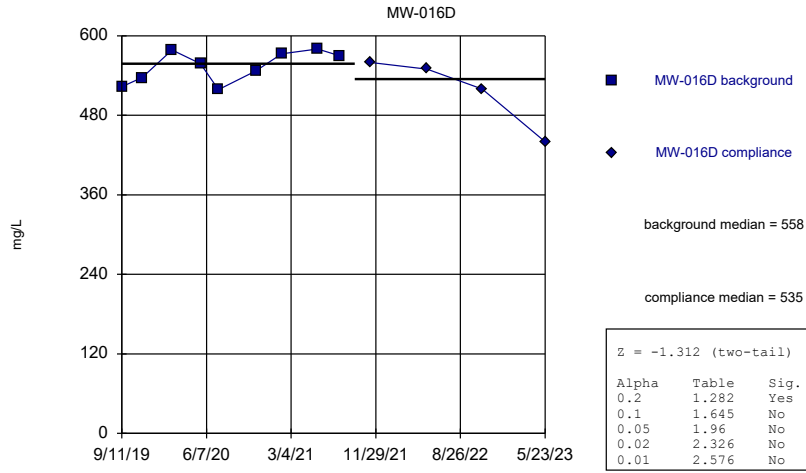


Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF



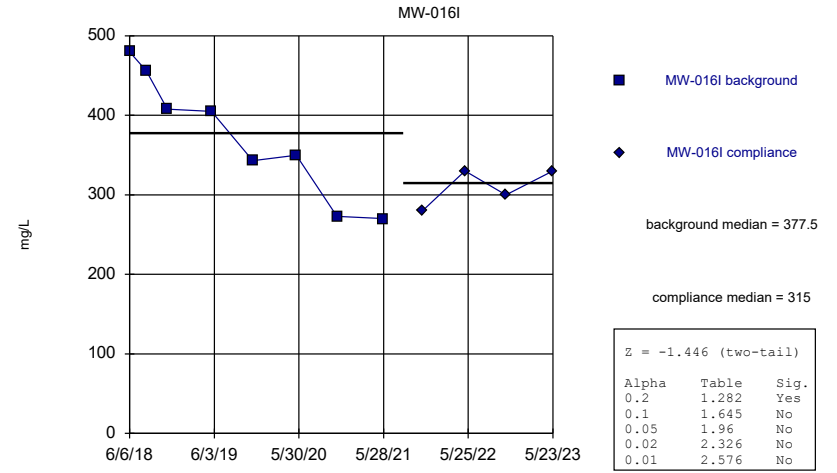
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



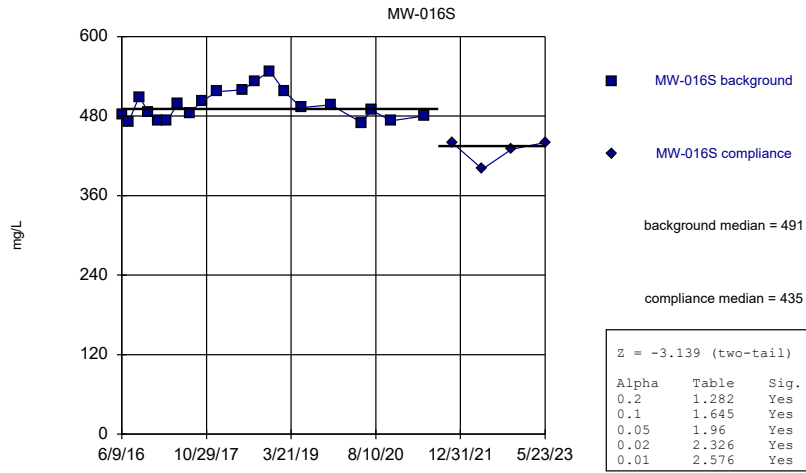
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



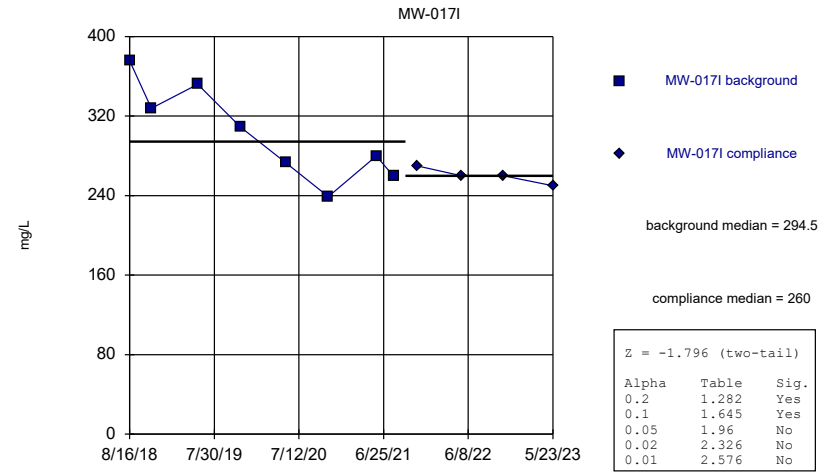
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



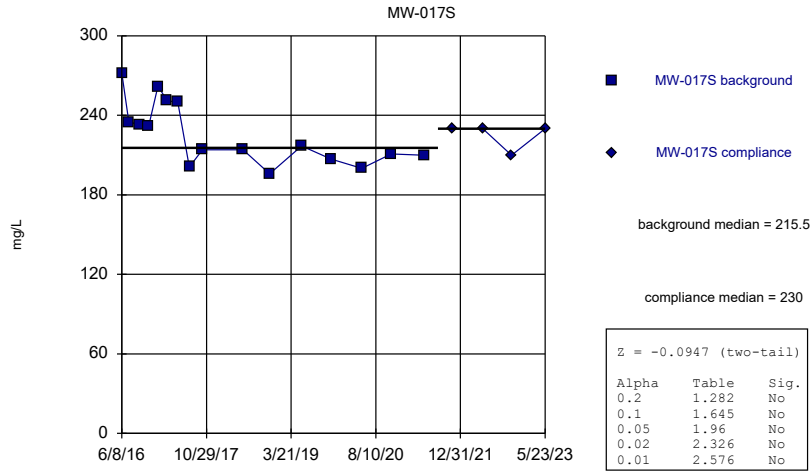
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



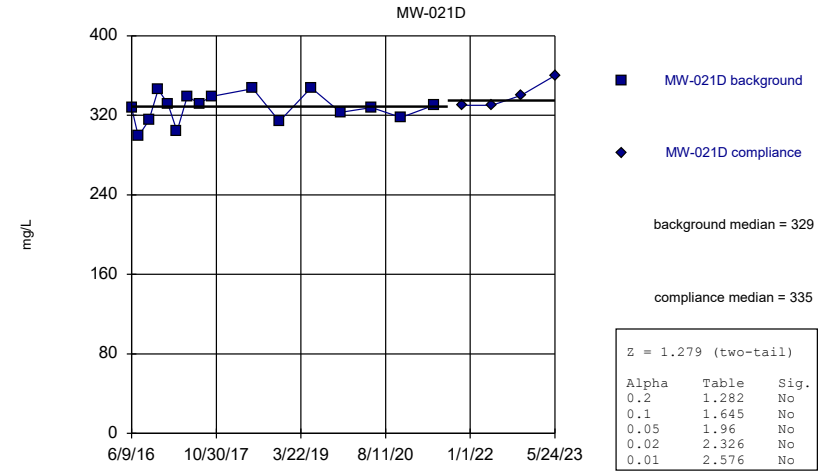
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



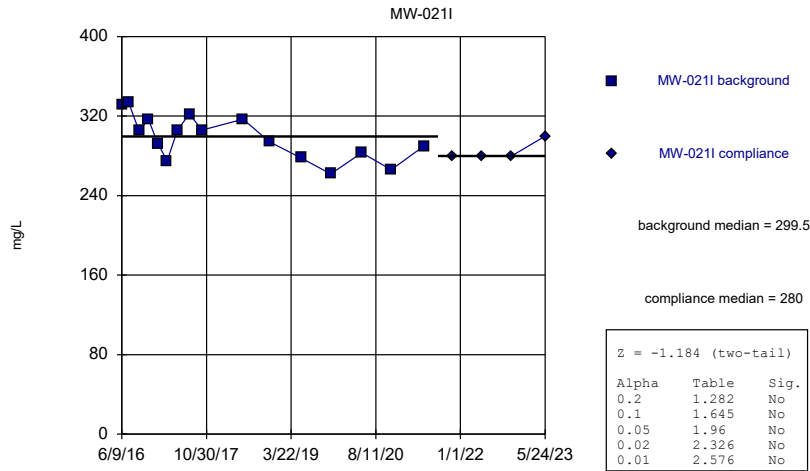
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Mann-Whitney (Wilcoxon Rank Sum)



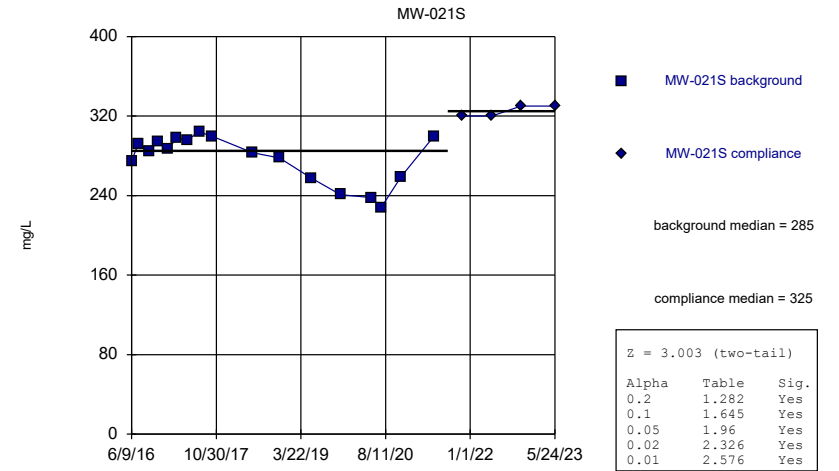
Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

Mann-Whitney (Wilcoxon Rank Sum)



Constituent: Total Dissolved Solids [TDS] Analysis Run 12/13/2023 1:52 PM View: Mann-Whitney
 Rockport Landfill Client: Geosyntec Data: Rockport_LF

FIGURE F
Intrawell Prediction Limits

Intrawell Prediction Limits - All Results

Rockport Landfill Data: Rockport_LF Printed 1/16/2024, 10:35 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron, total (mg/L)	MW-001D	0.1111	n/a	n/a	1 future	n/a	22	0.1744	0.06537	9.091	None	sqrt(x)	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-001I	0.1044	n/a	n/a	1 future	n/a	21	0.1699	0.06249	14.29	None	sqrt(x)	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-001S	0.05878	n/a	n/a	1 future	n/a	20	0.0273	0.01273	20	Kaplan-Meier	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-002D	0.0794	n/a	n/a	1 future	n/a	21	0.02731	0.02125	28.57	Kaplan-Meier	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-002I	0.052	n/a	n/a	1 future	n/a	22	n/a	n/a	31.82	n/a	n/a	0.003707	NP Intra (normality) 1 of 2
Boron, total (mg/L)	MW-002S	0.09363	n/a	n/a	1 future	n/a	20	0.0387	0.02222	15	None	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-006S	0.1087	n/a	n/a	1 future	n/a	23	0.03464	0.03072	17.39	Kaplan-Meier	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-008I	0.09801	n/a	n/a	1 future	n/a	20	0.1668	0.05917	5	None	sqrt(x)	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-008S	0.058	n/a	n/a	1 future	n/a	20	n/a	n/a	30	n/a	n/a	0.004291	NP Intra (normality) 1 of 2
Boron, total (mg/L)	MW-011S	0.1101	n/a	n/a	1 future	n/a	20	0.0561	0.02186	0	None	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-014S	0.05	n/a	n/a	1 future	n/a	20	n/a	n/a	30	n/a	n/a	0.004291	NP Intra (normality) 1 of 2
Boron, total (mg/L)	MW-015I	0.08198	n/a	n/a	1 future	n/a	21	0.03933	0.01739	0	None	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-015S	0.1094	n/a	n/a	1 future	n/a	20	0.03485	0.03015	35	Kaplan-Meier	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-016D	0.1	n/a	n/a	1 future	n/a	20	0.1756	0.05692	0	None	sqrt(x)	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-016I	0.139	n/a	n/a	1 future	n/a	21	n/a	n/a	4.762	n/a	n/a	0.003999	NP Intra (normality) 1 of 2
Boron, total (mg/L)	MW-016S	0.109	n/a	n/a	1 future	n/a	22	n/a	n/a	4.545	n/a	n/a	0.003707	NP Intra (normality) 1 of 2
Boron, total (mg/L)	MW-017I	0.08988	n/a	n/a	1 future	n/a	21	0.05062	0.01601	0	None	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-017S	0.06263	n/a	n/a	1 future	n/a	20	0.027	0.01441	0	None	No	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-021D	0.09562	n/a	n/a	1 future	n/a	21	0.1457	0.06669	19.05	Kaplan-Meier	sqrt(x)	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-021I	0.06523	n/a	n/a	1 future	n/a	20	0.1279	0.05157	30	Kaplan-Meier	sqrt(x)	0.0004115	Param Intra 1 of 2
Boron, total (mg/L)	MW-021S	0.05519	n/a	n/a	1 future	n/a	21	0.01785	0.01523	28.57	Kaplan-Meier	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-001D	83.16	n/a	n/a	1 future	n/a	21	67.69	6.313	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-001I	73.23	n/a	n/a	1 future	n/a	20	65.99	2.93	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-001S	77.77	n/a	n/a	1 future	n/a	20	68.7	3.668	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-002D	122.7	n/a	n/a	1 future	n/a	22	83.65	16.05	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-002I	82.26	n/a	n/a	1 future	n/a	21	70.09	4.968	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-002S	69.66	n/a	n/a	1 future	n/a	20	54.47	6.146	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-006S	55.46	n/a	n/a	1 future	n/a	23	46.32	3.79	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-008I	81.92	n/a	n/a	1 future	n/a	20	70.16	4.758	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-008S	48.36	n/a	n/a	1 future	n/a	20	41.09	2.94	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-011S	63.42	n/a	n/a	1 future	n/a	20	47.79	6.324	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-014S	78.27	n/a	n/a	1 future	n/a	20	64.28	5.663	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-015I	53.97	n/a	n/a	1 future	n/a	20	46.06	3.204	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-015S	66.4	n/a	n/a	1 future	n/a	20	n/a	n/a	0	n/a	n/a	0.004291	NP Intra (normality) 1 of 2
Calcium, total (mg/L)	MW-016D	124.9	n/a	n/a	1 future	n/a	27	89.74	14.99	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-016I	87.17	n/a	n/a	1 future	n/a	12	7.382	0.6835	0	None	sqrt(x)	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-016S	119	n/a	n/a	1 future	n/a	22	97.23	8.94	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-017I	53.82	n/a	n/a	1 future	n/a	12	41.59	4.275	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-017S	39.77	n/a	n/a	1 future	n/a	20	34.29	2.215	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-021D	79.47	n/a	n/a	1 future	n/a	20	69.3	4.118	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-021I	72.45	n/a	n/a	1 future	n/a	20	61.18	4.561	0	None	No	0.0004115	Param Intra 1 of 2
Calcium, total (mg/L)	MW-021S	64.31	n/a	n/a	1 future	n/a	20	54.64	3.914	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-001D	67.46	n/a	n/a	1 future	n/a	21	39.19	11.53	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-001I	64.68	n/a	n/a	1 future	n/a	8	49.5	4.307	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-001S	50.7	n/a	n/a	1 future	n/a	26	n/a	n/a	0	n/a	n/a	0.002667	NP Intra (normality) 1 of 2
Chloride, total (mg/L)	MW-002D	131.7	n/a	n/a	1 future	n/a	8	83.26	13.74	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-002I	72.89	n/a	n/a	1 future	n/a	7	147736	59734	0	None	x^3	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-002S	33.25	n/a	n/a	1 future	n/a	25	23.12	4.271	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-006S	12.22	n/a	n/a	1 future	n/a	23	4.994	2.999	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-008I	22.64	n/a	n/a	1 future	n/a	21	20.51	0.865	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-008S	31.55	n/a	n/a	1 future	n/a	21	24.45	2.893	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-011S	9.87	n/a	n/a	1 future	n/a	21	n/a	n/a	0	n/a	n/a	0.003999	NP Intra (normality) 1 of 2
Chloride, total (mg/L)	MW-014S	32.21	n/a	n/a	1 future	n/a	21	27.6	1.88	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-015I	29.35	n/a	n/a	1 future	n/a	12	18.47	3.804	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-015S	26.12	n/a	n/a	1 future	n/a	20	2.32	0.2617	0	None	x^(1/3)	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-016D	171.2	n/a	n/a	1 future	n/a	12	112.5	20.51	0	None	No	0.0004115	Param Intra 1 of 2

Intrawell Pediction Limits - All Results

Rockport Landfill Data: Rockport_LF Printed 1/16/2024, 10:35 AM

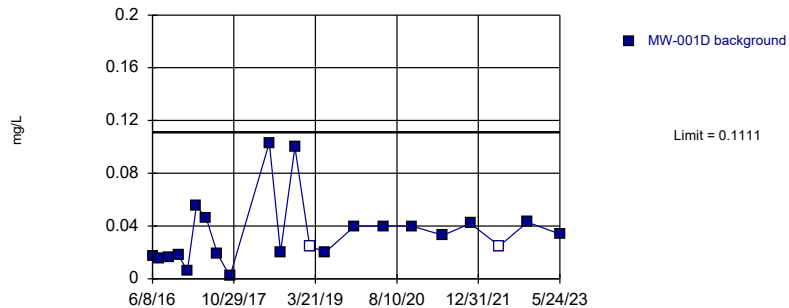
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Chloride, total (mg/L)	MW-016I	79.12	n/a	n/a	1 future	n/a	12	33.58	15.92	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-016S	28.05	n/a	n/a	1 future	n/a	21	18.59	3.858	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-017I	73.35	n/a	n/a	1 future	n/a	12	39.41	11.87	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-017S	15.42	n/a	n/a	1 future	n/a	20	11.79	1.467	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-021D	22.9	n/a	n/a	1 future	n/a	22	n/a	n/a	0	n/a	n/a	0.003707	NP Intra (normality) 1 of 2
Chloride, total (mg/L)	MW-021I	22.74	n/a	n/a	1 future	n/a	20	19.71	1.224	0	None	No	0.0004115	Param Intra 1 of 2
Chloride, total (mg/L)	MW-021S	21.35	n/a	n/a	1 future	n/a	24	17.09	1.785	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-001D	864.3	n/a	n/a	1 future	n/a	27	548.7	134.5	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-001I	729.9	n/a	n/a	1 future	n/a	16	332886	76778	0	None	x^2	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-001S	892.2	n/a	n/a	1 future	n/a	27	609.1	120.7	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-002D	1148	n/a	n/a	1 future	n/a	33	684.1	203	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-002I	792.2	n/a	n/a	1 future	n/a	28	547.4	105	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-002S	774.6	n/a	n/a	1 future	n/a	14	501	100.2	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-006S	568	n/a	n/a	1 future	n/a	21	388.4	73.24	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-008I	737.3	n/a	n/a	1 future	n/a	19	531.6	82.09	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-008S	700.6	n/a	n/a	1 future	n/a	20	473.5	91.89	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-011S	543.6	n/a	n/a	1 future	n/a	20	330.6	86.15	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-014S	815.6	n/a	n/a	1 future	n/a	20	560.4	103.2	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-015I	593	n/a	n/a	1 future	n/a	24	425.7	69.98	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-015S	614.3	n/a	n/a	1 future	n/a	21	411.8	82.6	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-016D	1251	n/a	n/a	1 future	n/a	13	828314	263257	0	None	x^2	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-016I	1017	n/a	n/a	1 future	n/a	23	647.7	153	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-016S	1028	n/a	n/a	1 future	n/a	25	734.3	124	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-017I	1027	n/a	n/a	1 future	n/a	28	596.1	184.9	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-017S	516.8	n/a	n/a	1 future	n/a	12	357.4	55.73	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-021D	707.4	n/a	n/a	1 future	n/a	24	533.6	72.7	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-021I	589.7	n/a	n/a	1 future	n/a	23	443.1	60.8	0	None	No	0.0004115	Param Intra 1 of 2
Conductivity (uS/cm)	MW-021S	627.4	n/a	n/a	1 future	n/a	28	448.3	76.79	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-001D	0.3299	n/a	n/a	1 future	n/a	20	0.282	0.01936	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-001I	0.468	n/a	n/a	1 future	n/a	21	0.3857	0.03355	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-001S	0.7463	n/a	n/a	1 future	n/a	20	0.596	0.06082	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-002D	0.2258	n/a	n/a	1 future	n/a	21	0.199	0.01091	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-002I	0.3811	n/a	n/a	1 future	n/a	20	0.319	0.02511	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-002S	0.466	n/a	n/a	1 future	n/a	26	0.3181	0.06274	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-006S	1.395	n/a	n/a	1 future	n/a	23	0.8574	0.2232	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-008I	0.4162	n/a	n/a	1 future	n/a	21	0.3162	0.0408	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-008S	0.632	n/a	n/a	1 future	n/a	21	0.5429	0.03635	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-011S	1.104	n/a	n/a	1 future	n/a	21	0.7395	0.1486	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-014S	0.39	n/a	n/a	1 future	n/a	21	n/a	n/a	0	n/a	n/a	0.003999	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	MW-015I	0.4958	n/a	n/a	1 future	n/a	23	0.3087	0.07759	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-015S	1.042	n/a	n/a	1 future	n/a	22	0.6986	0.1414	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-016D	0.2443	n/a	n/a	1 future	n/a	22	0.04127	0.007573	0	None	x^2	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-016I	0.2221	n/a	n/a	1 future	n/a	20	0.1405	0.033	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-016S	0.4712	n/a	n/a	1 future	n/a	21	0.3771	0.03836	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-017I	1.16	n/a	n/a	1 future	n/a	29	n/a	n/a	0	n/a	n/a	0.002172	NP Intra (normality) 1 of 2
Fluoride, total (mg/L)	MW-017S	1.215	n/a	n/a	1 future	n/a	20	0.816	0.1615	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-021D	0.4447	n/a	n/a	1 future	n/a	20	0.3545	0.03649	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-021I	0.4965	n/a	n/a	1 future	n/a	22	0.3723	0.05108	0	None	No	0.0004115	Param Intra 1 of 2
Fluoride, total (mg/L)	MW-021S	0.9019	n/a	n/a	1 future	n/a	25	0.6848	0.09161	0	None	No	0.0004115	Param Intra 1 of 2
pH, field (SU)	MW-001D	8.119	6.751	n/a	1 future	n/a	26	2.724	0.05329	0	None	sqrt(x)	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-001I	7.898	6.717	n/a	1 future	n/a	32	7.308	0.2578	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-001S	8.035	6.655	n/a	1 future	n/a	28	7.345	0.2959	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-002D	8.51	6.28	n/a	1 future	n/a	32	n/a	n/a	0	n/a	n/a	0.003606	NP Intra (normality) 1 of 2
pH, field (SU)	MW-002I	8.218	6.598	n/a	1 future	n/a	27	7.408	0.3455	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-002S	7.95	6.71	n/a	1 future	n/a	29	171849	34711	0	None	x^6	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-006S	8.284	6.936	n/a	1 future	n/a	22	7.61	0.2772	0	None	No	0.0002057	Param Intra 1 of 2

Intrawell Pediction Limits - All Results

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Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
pH, field (SU)	MW-008I	8.321	6.507	n/a	1 future	n/a	21	7.414	0.3698	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-008S	8.345	6.433	n/a	1 future	n/a	21	7.389	0.3899	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-011S	8.581	6.788	n/a	1 future	n/a	21	7.684	0.3656	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-014S	8.058	6.502	n/a	1 future	n/a	21	7.28	0.3175	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-015I	8.136	6.868	n/a	1 future	n/a	25	7.502	0.2676	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-015S	7.914	6.893	n/a	1 future	n/a	22	7.403	0.21	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-016D	7.961	6.735	n/a	1 future	n/a	29	7.348	0.2643	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-016I	7.99	6.751	n/a	1 future	n/a	23	7.371	0.2569	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-016S	8.093	6.253	n/a	1 future	n/a	24	7.173	0.3849	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-017I	8.332	6.787	n/a	1 future	n/a	29	7.56	0.3329	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-017S	8.215	6.916	n/a	1 future	n/a	21	7.565	0.2649	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-021D	8.452	6.667	n/a	1 future	n/a	24	7.559	0.3733	0	None	No	0.0002057	Param Intra 1 of 2
pH, field (SU)	MW-021I	8.56	7	n/a	1 future	n/a	22	n/a	n/a	0	n/a	n/a	0.007415	NP Intra (normality) 1 of 2
pH, field (SU)	MW-021S	8.542	6.732	n/a	1 future	n/a	28	7.637	0.388	0	None	No	0.0002057	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-001D	47.94	n/a	n/a	1 future	n/a	20	1478	331.9	0	None	x^2	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-001I	47.18	n/a	n/a	1 future	n/a	20	41.86	2.151	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-001S	41.42	n/a	n/a	1 future	n/a	21	34.2	2.943	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-002D	45.53	n/a	n/a	1 future	n/a	20	38.37	2.894	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-002I	46.96	n/a	n/a	1 future	n/a	20	40.77	2.502	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-002S	36.58	n/a	n/a	1 future	n/a	20	25.98	4.288	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-006S	22.84	n/a	n/a	1 future	n/a	23	9.3	5.617	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-008I	101.8	n/a	n/a	1 future	n/a	21	71.96	12.17	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-008S	27.24	n/a	n/a	1 future	n/a	21	22.41	1.971	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-011S	19.95	n/a	n/a	1 future	n/a	21	9.374	4.315	0	None	No	0.0004115	Param Intra 1 of 2 Deseas
Sulfate, total (mg/L)	MW-014S	37.83	n/a	n/a	1 future	n/a	21	31.57	2.552	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-015I	33.73	n/a	n/a	1 future	n/a	12	17.75	5.588	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-015S	23.2	n/a	n/a	1 future	n/a	12	n/a	n/a	0	n/a	n/a	0.01077	NP Intra (normality) 1 of 2
Sulfate, total (mg/L)	MW-016D	43.36	n/a	n/a	1 future	n/a	22	37.65	2.347	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-016I	32.96	n/a	n/a	1 future	n/a	8	21.48	3.26	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-016S	54.89	n/a	n/a	1 future	n/a	20	36.97	7.251	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-017I	45.37	n/a	n/a	1 future	n/a	12	23.23	7.742	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-017S	16.73	n/a	n/a	1 future	n/a	20	9.03	3.115	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-021D	42.43	n/a	n/a	1 future	n/a	20	36.74	2.303	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-021I	50.3	n/a	n/a	1 future	n/a	20	40.72	3.876	0	None	No	0.0004115	Param Intra 1 of 2
Sulfate, total (mg/L)	MW-021S	28	n/a	n/a	1 future	n/a	23	19.29	3.612	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-001D	463.4	n/a	n/a	1 future	n/a	23	345.5	48.89	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-001I	391.7	n/a	n/a	1 future	n/a	22	335.5	23.09	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-001S	460.6	n/a	n/a	1 future	n/a	22	396.1	26.5	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-002D	506.1	n/a	n/a	1 future	n/a	8	408	27.83	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-002I	407.8	n/a	n/a	1 future	n/a	21	338.1	28.44	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-002S	390.7	n/a	n/a	1 future	n/a	22	311.6	32.52	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-006S	343.4	n/a	n/a	1 future	n/a	23	263.3	33.19	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-008I	416.7	n/a	n/a	1 future	n/a	20	373.3	17.58	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-008S	360.2	n/a	n/a	1 future	n/a	20	323.6	14.82	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-011S	293	n/a	n/a	1 future	n/a	20	224.3	27.79	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-014S	428.7	n/a	n/a	1 future	n/a	20	375.6	21.51	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-015I	309.6	n/a	n/a	1 future	n/a	12	246.5	22.05	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-015S	401	n/a	n/a	1 future	n/a	20	274.4	51.22	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-016D	627	n/a	n/a	1 future	n/a	13	1.6e8	3.0e7	0	None	x^3	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-016I	554.4	n/a	n/a	1 future	n/a	12	352.1	70.74	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-016S	564.9	n/a	n/a	1 future	n/a	24	484.5	33.64	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-017I	412.1	n/a	n/a	1 future	n/a	12	288.1	43.37	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-017S	277.5	n/a	n/a	1 future	n/a	20	225.3	21.13	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-021D	367.5	n/a	n/a	1 future	n/a	20	330.1	15.14	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-021I	347.7	n/a	n/a	1 future	n/a	20	295.9	20.95	0	None	No	0.0004115	Param Intra 1 of 2
Total Dissolved Solids [TDS] (mg/L)	MW-021S	357.2	n/a	n/a	1 future	n/a	21	286.5	28.85	0	None	No	0.0004115	Param Intra 1 of 2

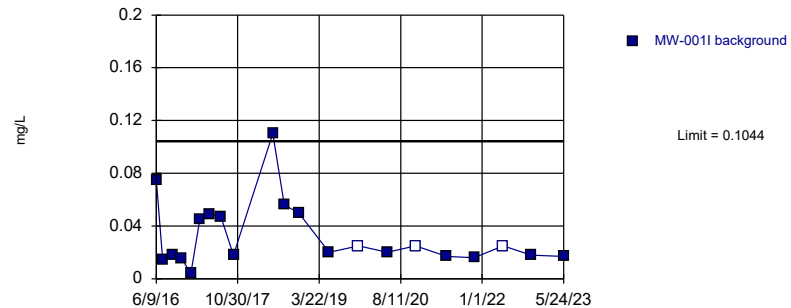
Prediction Limit
Intrawell Parametric, MW-001D



Background Data Summary (based on square root transformation): Mean=0.1744, Std. Dev.=0.06537, n=22, 9.091% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9413, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

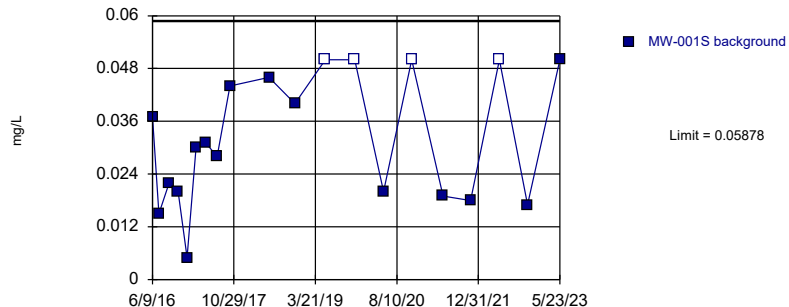
Prediction Limit
Intrawell Parametric, MW-001I



Background Data Summary (based on square root transformation): Mean=0.1699, Std. Dev.=0.06249, n=21, 14.29% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8937, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

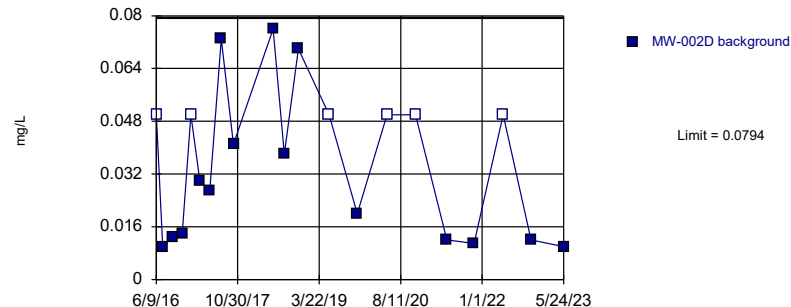
Prediction Limit
Intrawell Parametric, MW-001S



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0273, Std. Dev.=0.01273, n=20, 20% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8996, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

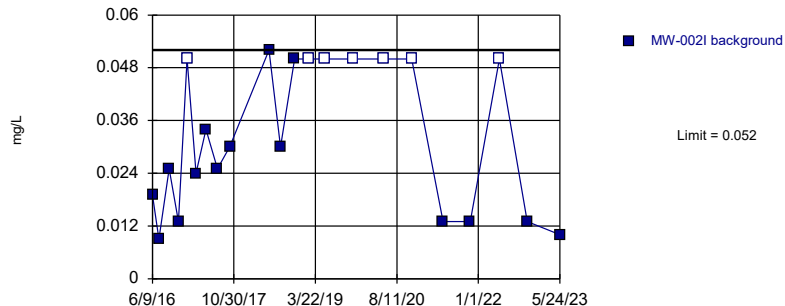
Prediction Limit
Intrawell Parametric, MW-002D



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.02731, Std. Dev.=0.02125, n=21, 28.57% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

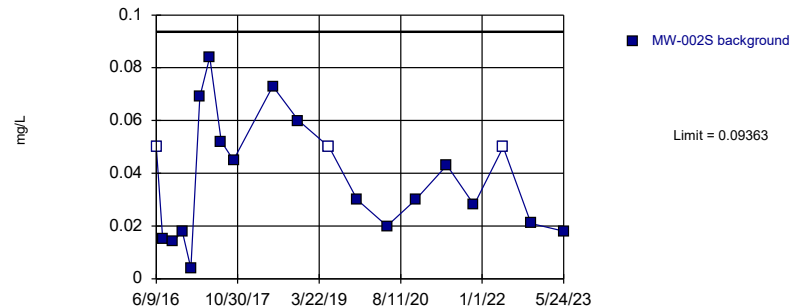
Prediction Limit
Intrawell Non-parametric, MW-002I



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. 31.82% NDs. Well-constituent pair annual alpha = 0.007401. Individual comparison alpha = 0.003707 (1 of 2). Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

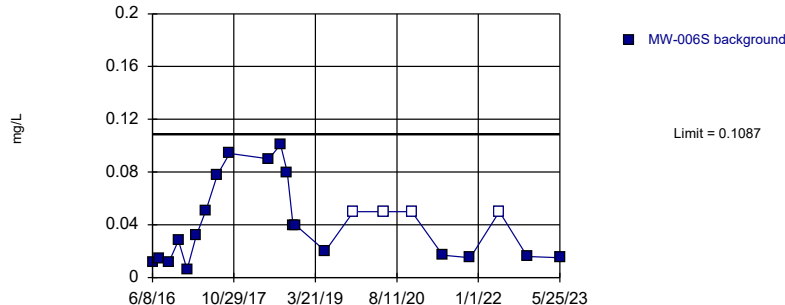
Prediction Limit
Intrawell Parametric, MW-002S



Background Data Summary: Mean=0.0387, Std. Dev.=0.02222, n=20, 15% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9516, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

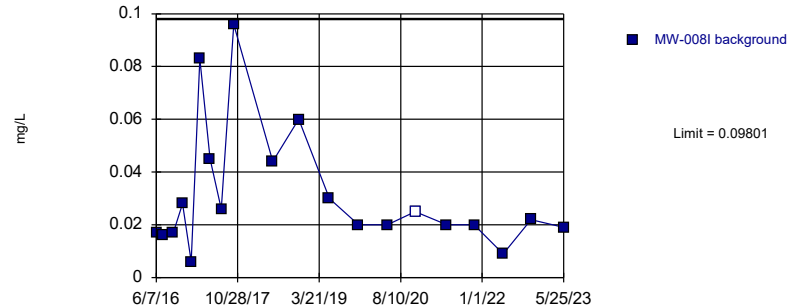
Prediction Limit
Intrawell Parametric, MW-006S (bg)



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.03464, Std. Dev.=0.03072, n=23, 17.39% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8891, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

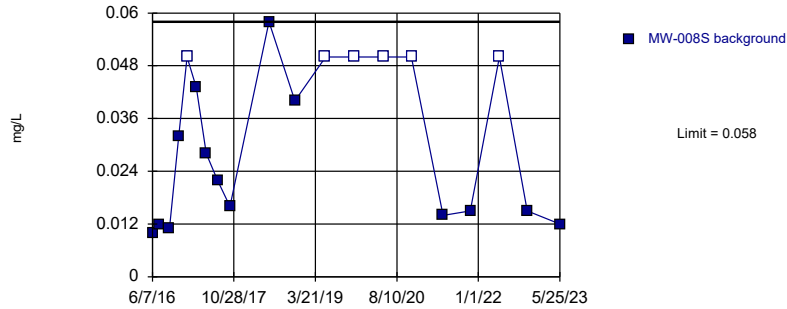
Prediction Limit
Intrawell Parametric, MW-008I (bg)



Background Data Summary (based on square root transformation): Mean=0.1668, Std. Dev.=0.05917, n=20, 5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8835, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

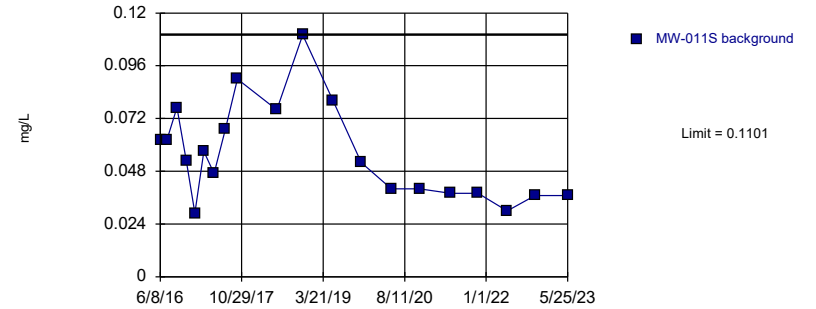
Prediction Limit
 Intrawell Non-parametric, MW-008S (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. 30% NDs. Well-constituent pair annual alpha = 0.008564. Individual comparison alpha = 0.004291 (1 of 2). Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

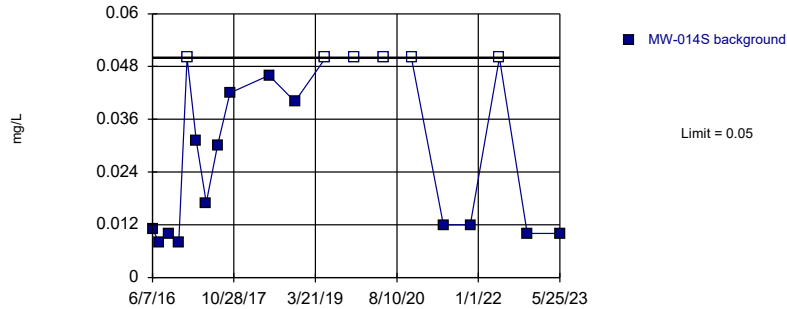
Prediction Limit
 Intrawell Parametric, MW-011S (bg)



Background Data Summary: Mean=0.0561, Std. Dev.=0.02186, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9222, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

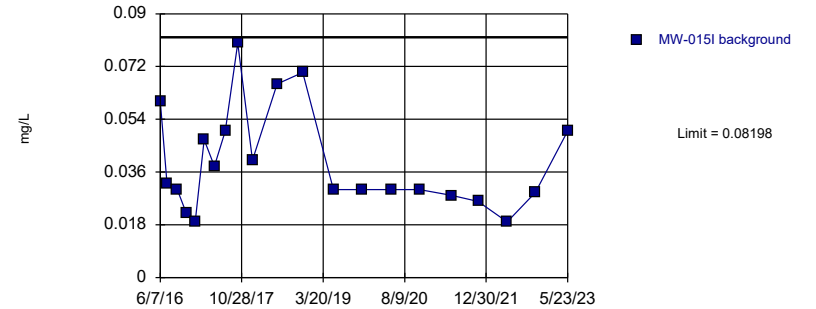
Prediction Limit
 Intrawell Non-parametric, MW-014S (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. 30% NDs. Well-constituent pair annual alpha = 0.008564. Individual comparison alpha = 0.004291 (1 of 2). Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

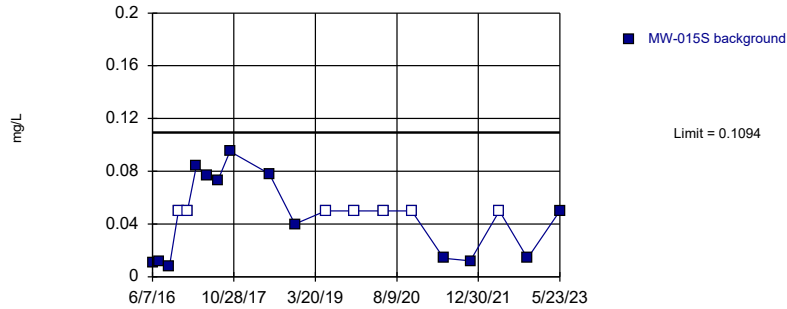
Prediction Limit
 Intrawell Parametric, MW-015I



Background Data Summary: Mean=0.03933, Std. Dev.=0.01739, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8809, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

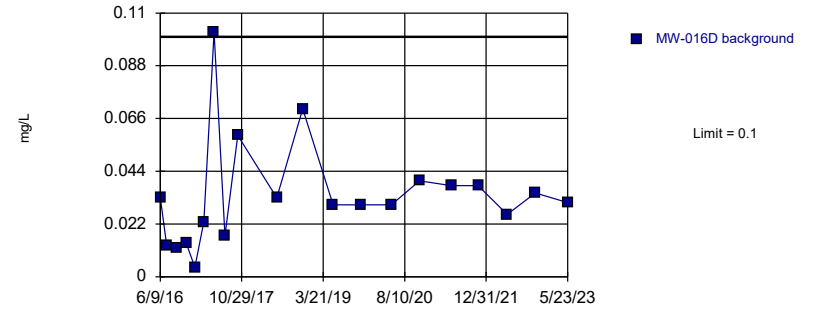
Prediction Limit
 Intrawell Parametric, MW-015S



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.03485, Std. Dev.=0.03015, n=20, 35% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8939, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

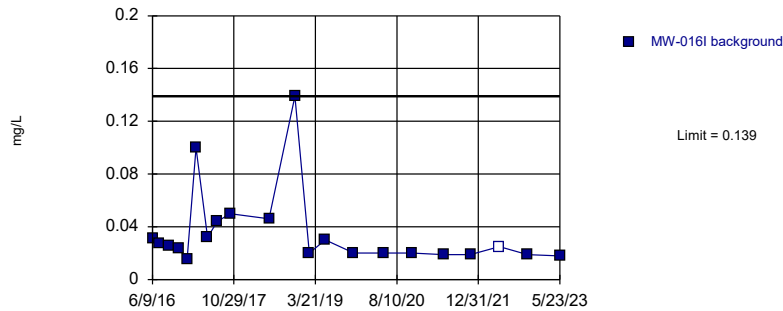
Prediction Limit
 Intrawell Parametric, MW-016D



Background Data Summary (based on square root transformation): Mean=0.1756, Std. Dev.=0.05692, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9465, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

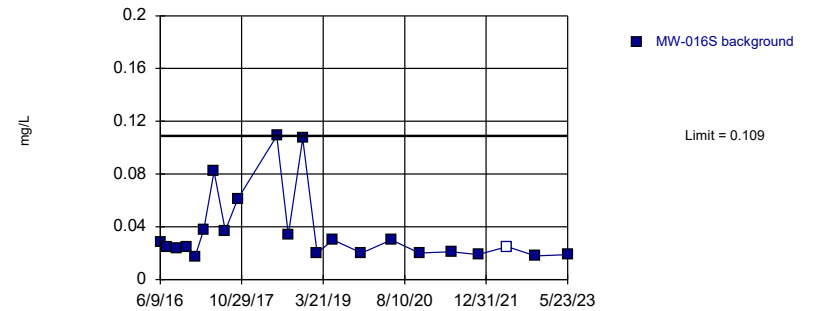
Prediction Limit
 Intrawell Non-parametric, MW-016I



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 21 background values. 4.762% NDs. Well-constituent pair annual alpha = 0.007982. Individual comparison alpha = 0.003999 (1 of 2). Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

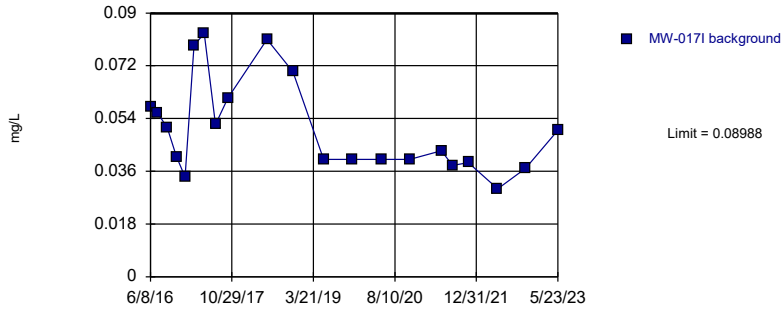
Prediction Limit
 Intrawell Non-parametric, MW-016S



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. 4.545% NDs. Well-constituent pair annual alpha = 0.007401. Individual comparison alpha = 0.003707 (1 of 2). Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

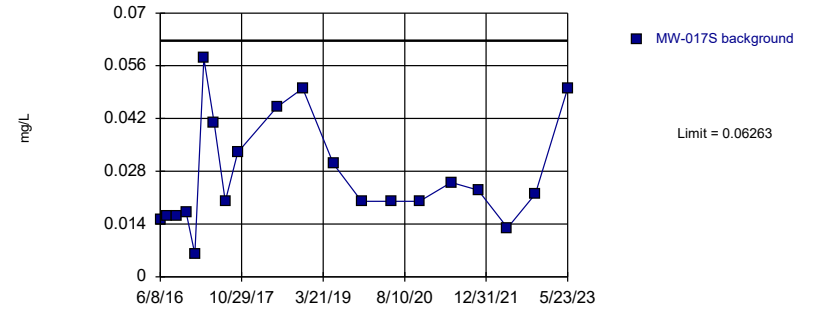
Prediction Limit
Intrawell Parametric, MW-017I



Background Data Summary: Mean=0.05062, Std. Dev.=0.01601, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8767, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

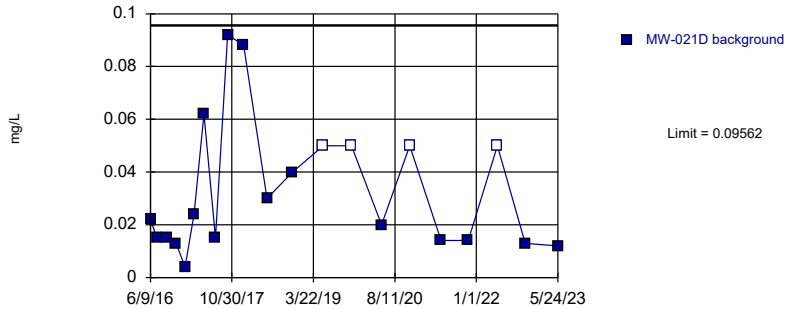
Prediction Limit
Intrawell Parametric, MW-017S



Background Data Summary: Mean=0.027, Std. Dev.=0.01441, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8935, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

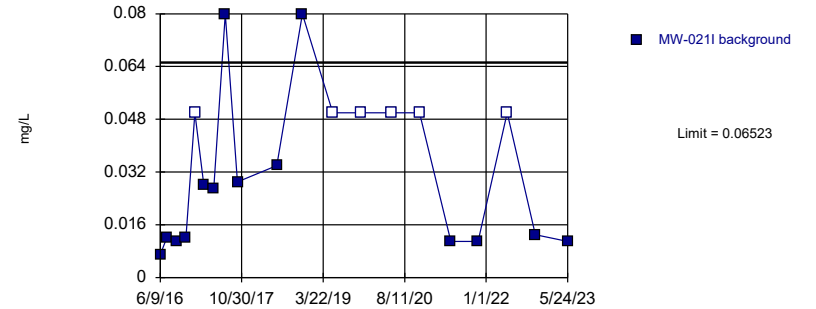
Prediction Limit
Intrawell Parametric, MW-021D



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.1457, Std. Dev.=0.06669, n=21, 19.05% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9124, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

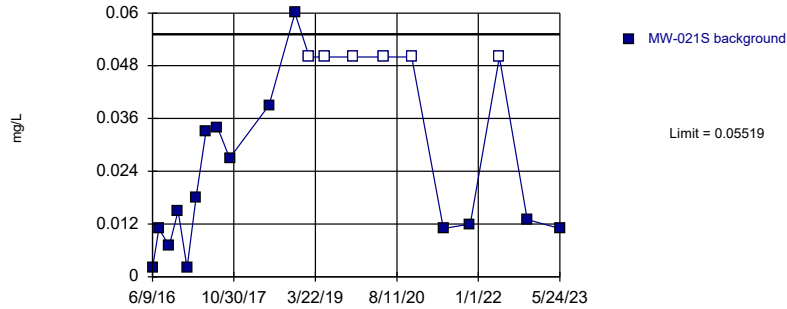
Prediction Limit
Intrawell Parametric, MW-021I



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.1279, Std. Dev.=0.05157, n=20, 30% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8834, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
Rockport Landfill Data: Rockport_LF

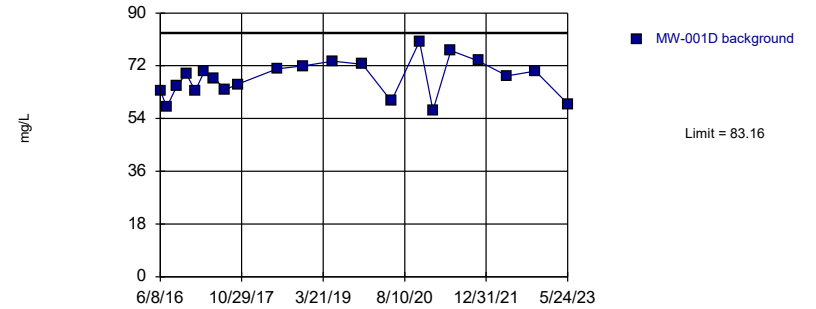
Prediction Limit
 Intrawell Parametric, MW-021S



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.01785, Std. Dev.=0.01523, n=21, 28.57% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.882, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Boron, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

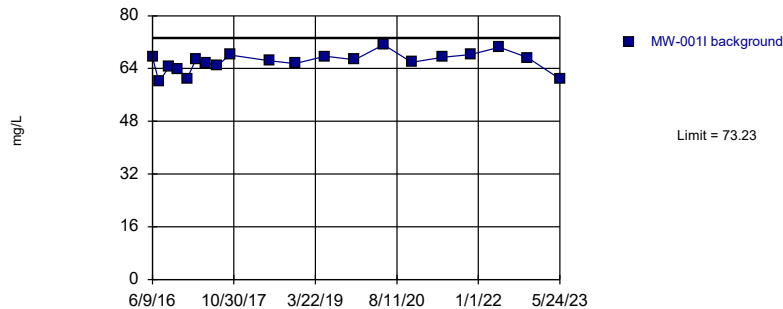
Prediction Limit
 Intrawell Parametric, MW-001D



Background Data Summary: Mean=67.69, Std. Dev.=6.313, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9784, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:29 AM
 Rockport Landfill Data: Rockport_LF

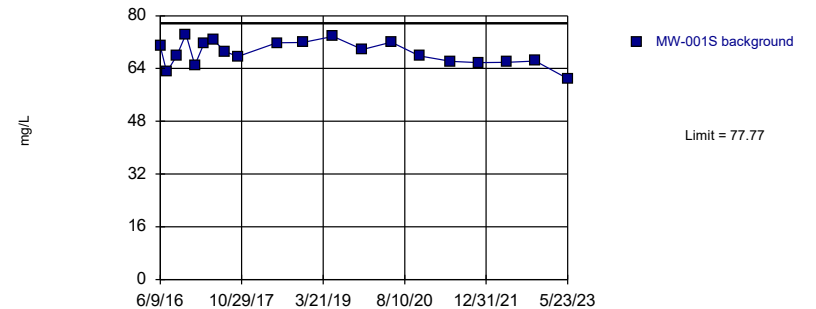
Prediction Limit
 Intrawell Parametric, MW-001I



Background Data Summary: Mean=65.99, Std. Dev.=2.93, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9384, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
 Rockport Landfill Data: Rockport_LF

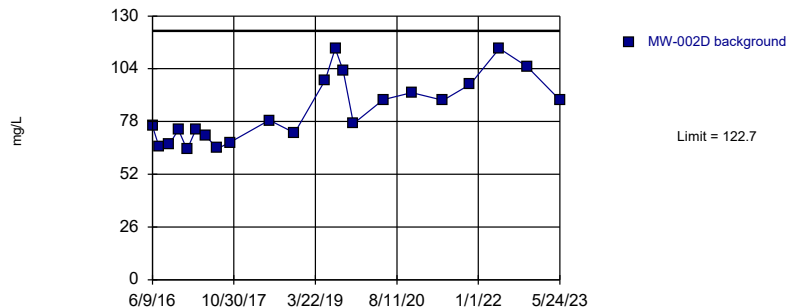
Prediction Limit
 Intrawell Parametric, MW-001S



Background Data Summary: Mean=68.7, Std. Dev.=3.668, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.965, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
 Rockport Landfill Data: Rockport_LF

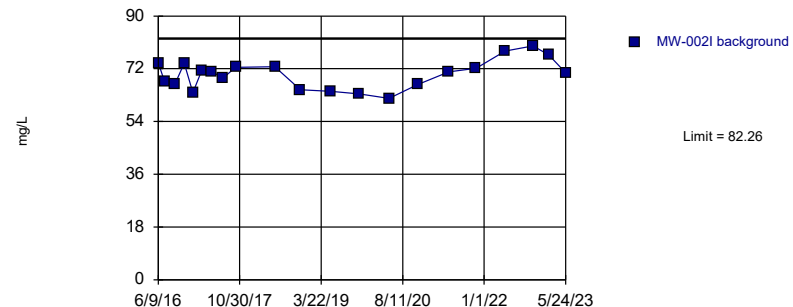
Prediction Limit
Intrawell Parametric, MW-002D



Background Data Summary: Mean=83.65, Std. Dev.=16.05, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9138, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

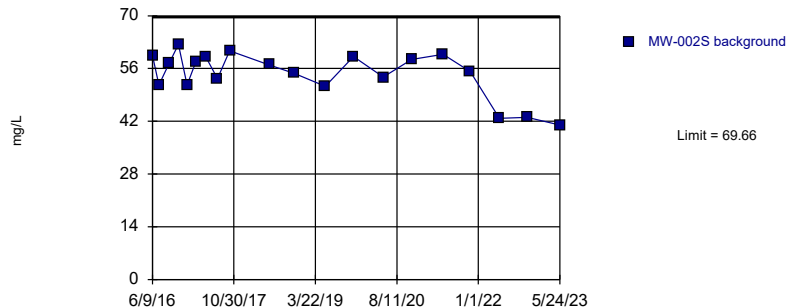
Prediction Limit
Intrawell Parametric, MW-002I



Background Data Summary: Mean=70.09, Std. Dev.=4.968, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9709, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

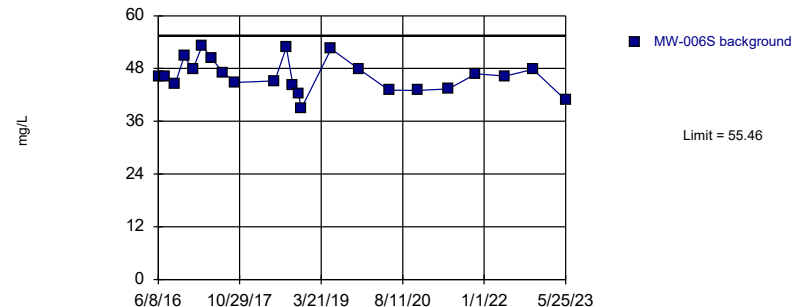
Prediction Limit
Intrawell Parametric, MW-002S



Background Data Summary: Mean=54.47, Std. Dev.=6.146, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8777, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Parametric, MW-006S (bg)

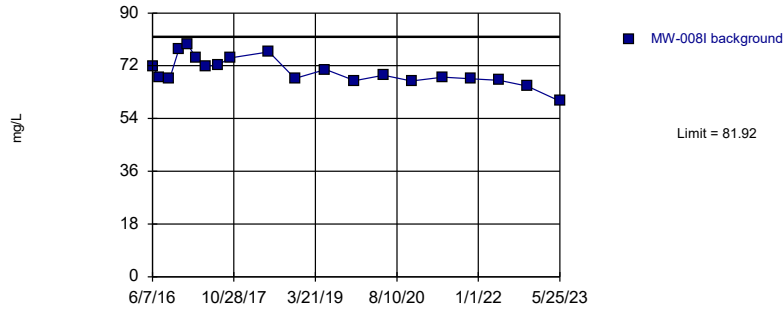


Background Data Summary: Mean=46.32, Std. Dev.=3.79, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9699, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-008I (bg)

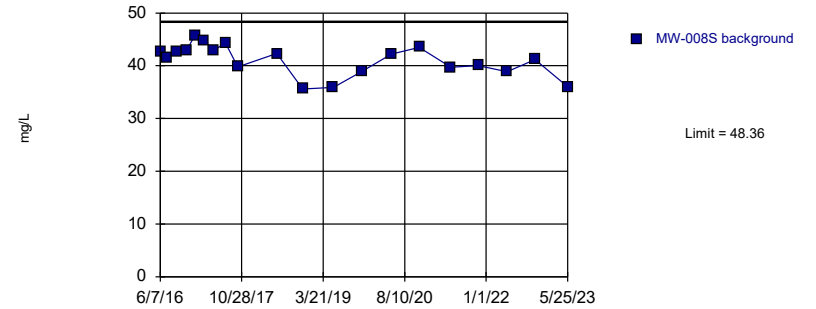


Background Data Summary: Mean=70.16, Std. Dev.=4.758, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.952, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-008S (bg)

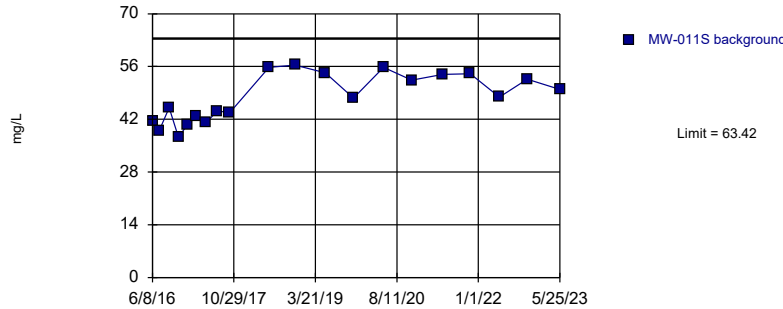


Background Data Summary: Mean=41.09, Std. Dev.=2.94, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9401, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-011S (bg)

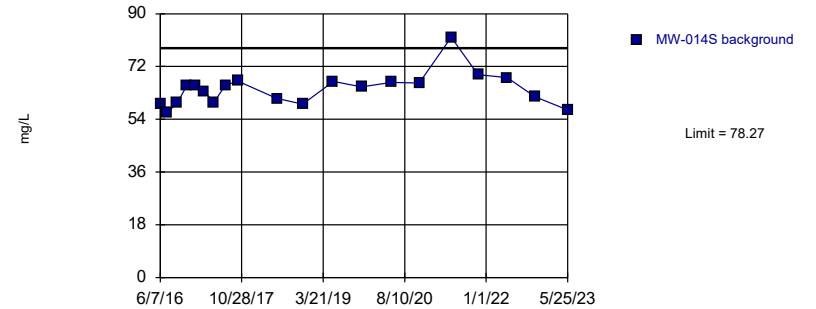


Background Data Summary: Mean=47.79, Std. Dev.=6.324, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9215, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

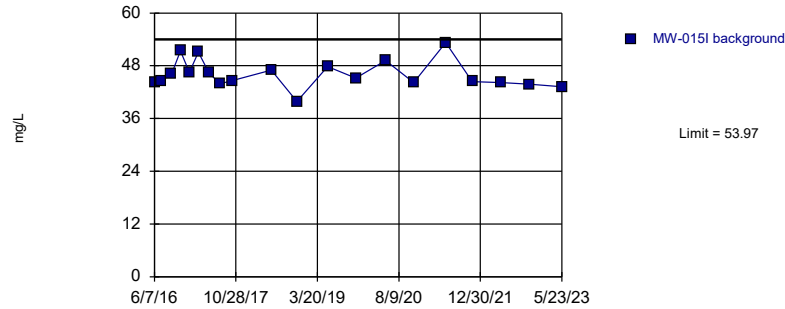
Intrawell Parametric, MW-014S (bg)



Background Data Summary: Mean=64.28, Std. Dev.=5.663, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8703, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

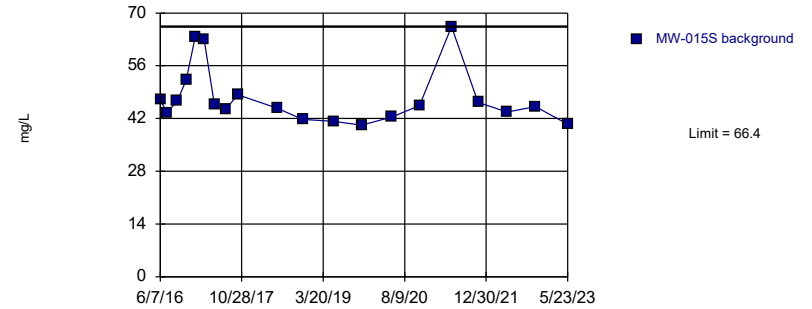
Prediction Limit
Intrawell Parametric, MW-015I



Background Data Summary: Mean=46.06, Std. Dev.=3.204, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9229, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

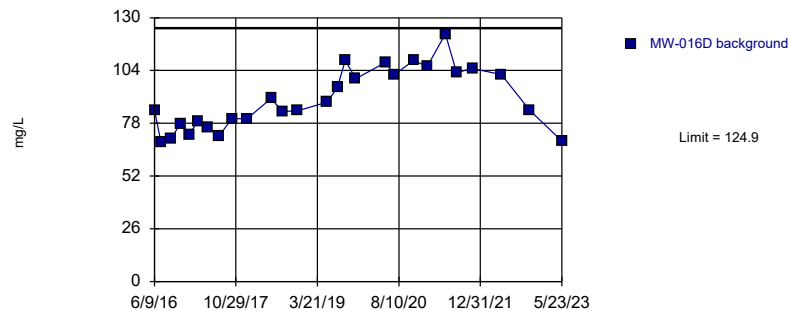
Prediction Limit
Intrawell Non-parametric, MW-015S



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. Well-constituent pair annual alpha = 0.008564. Individual comparison alpha = 0.004291 (1 of 2). Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

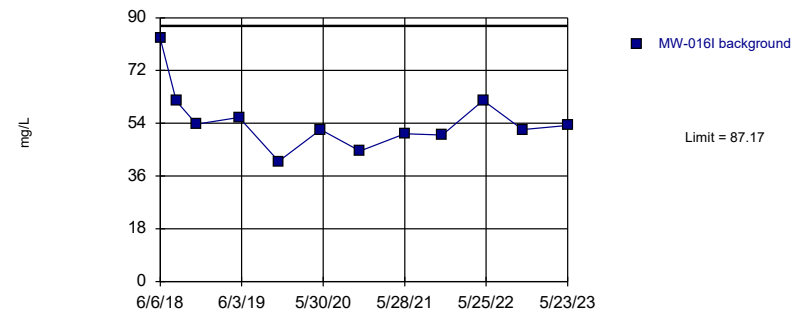
Prediction Limit
Intrawell Parametric, MW-016D



Background Data Summary: Mean=89.74, Std. Dev.=14.99, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9365, critical = 0.894. Kappa = 2.345 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Parametric, MW-016I

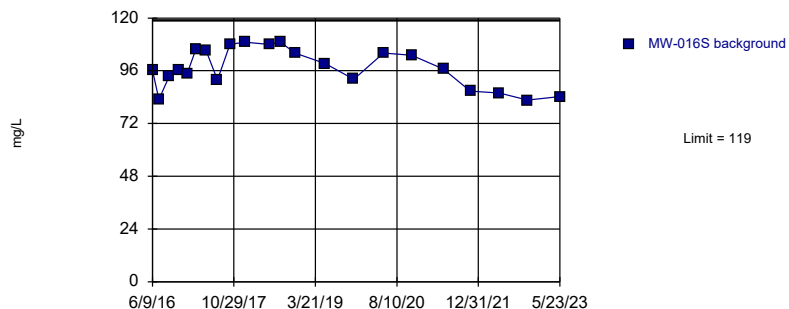


Background Data Summary (based on square root transformation): Mean=7.382, Std. Dev.=0.6835, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8851, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-016S

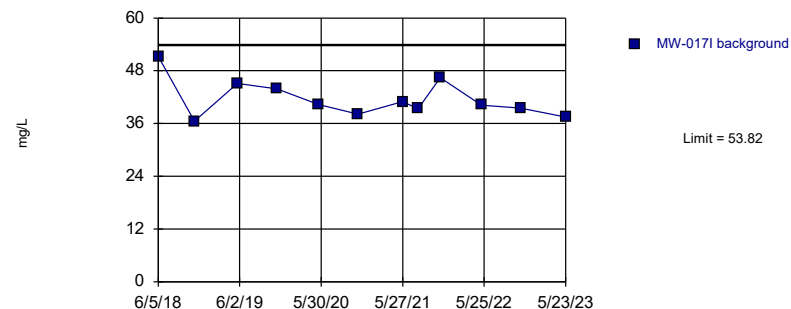


Background Data Summary: Mean=97.23, Std. Dev.=8.94, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9238, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-017I

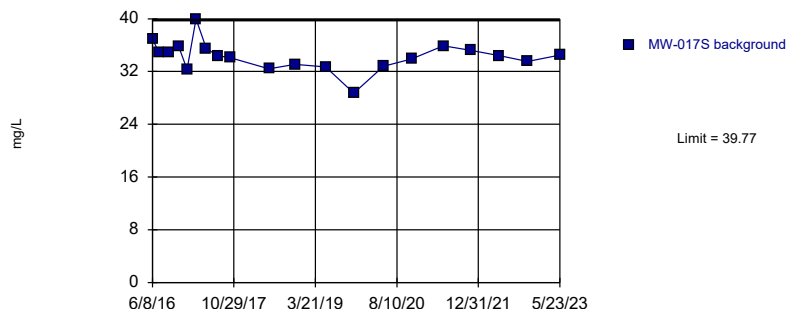


Background Data Summary: Mean=41.59, Std. Dev.=4.275, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9071, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-017S

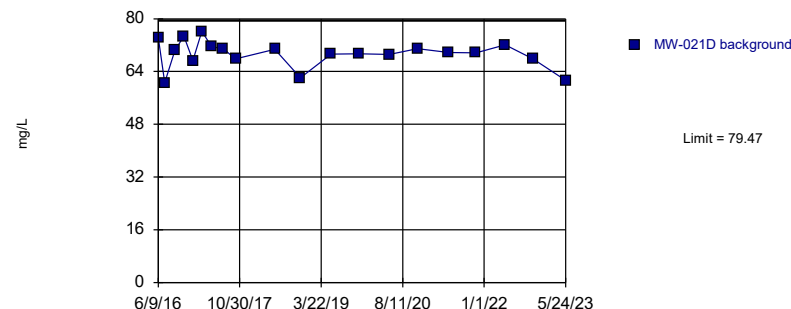


Background Data Summary: Mean=34.29, Std. Dev.=2.215, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

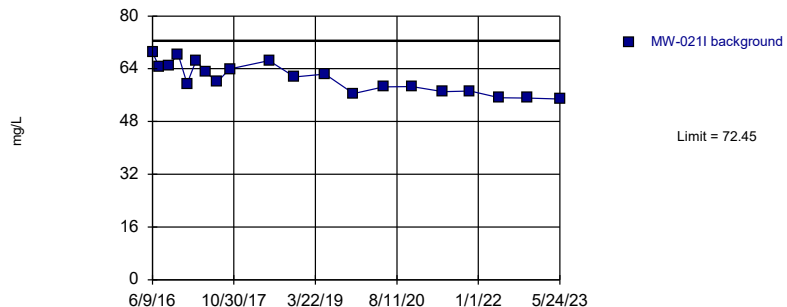
Intrawell Parametric, MW-021D



Background Data Summary: Mean=69.3, Std. Dev.=4.118, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9123, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

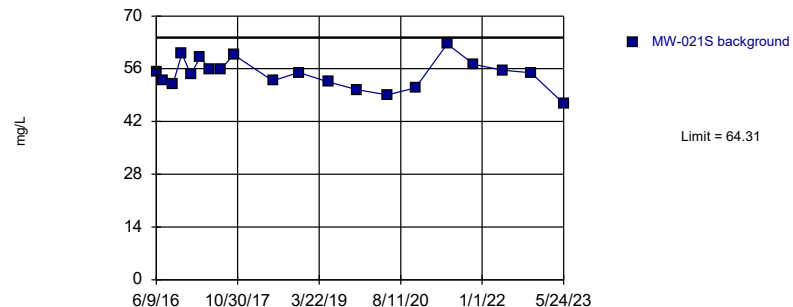
Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Parametric, MW-021I



Background Data Summary: Mean=61.18, Std. Dev.=4.561, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Prediction Limit
Intrawell Parametric, MW-021S

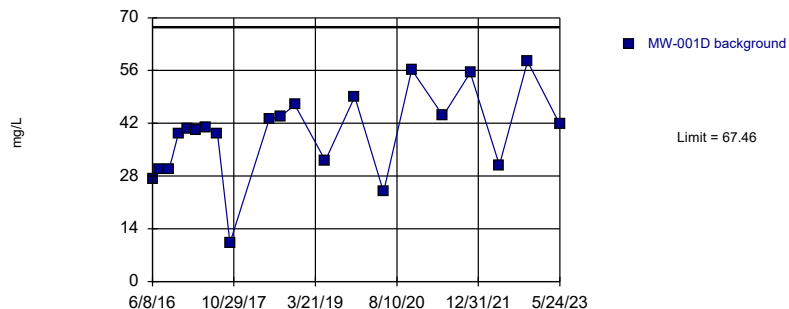


Background Data Summary: Mean=54.64, Std. Dev.=3.914, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9872, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Constituent: Calcium, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

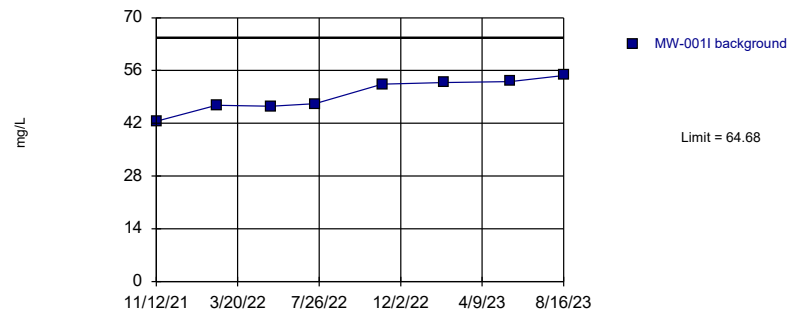
Prediction Limit
Intrawell Parametric, MW-001D



Background Data Summary: Mean=39.19, Std. Dev.=11.53, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9596, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

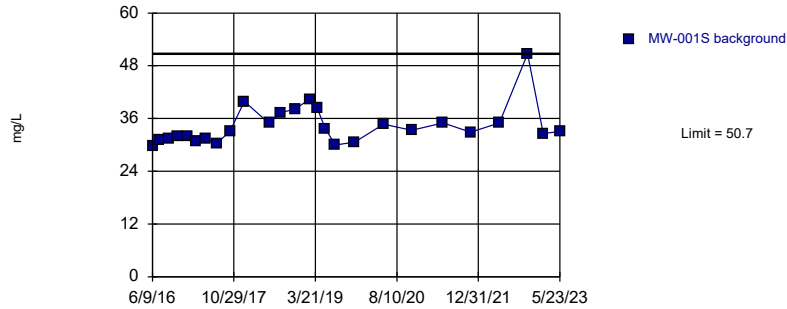
Prediction Limit
Intrawell Parametric, MW-001I



Background Data Summary: Mean=49.5, Std. Dev.=4.307, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8996, critical = 0.851. Kappa = 3.524 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

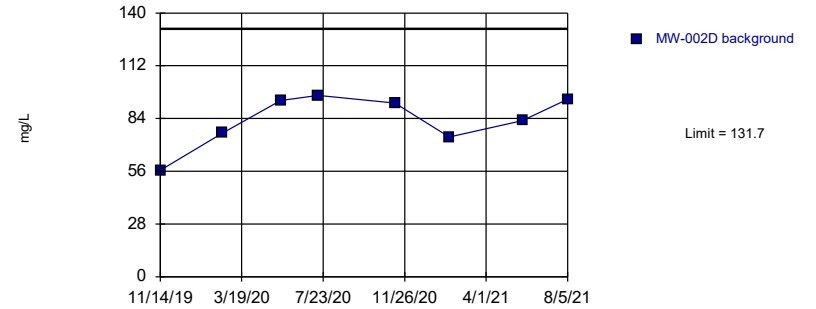
Prediction Limit
Intrawell Non-parametric, MW-001S



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 26 background values. Well-constituent pair annual alpha = 0.005327. Individual comparison alpha = 0.002667 (1 of 2). Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

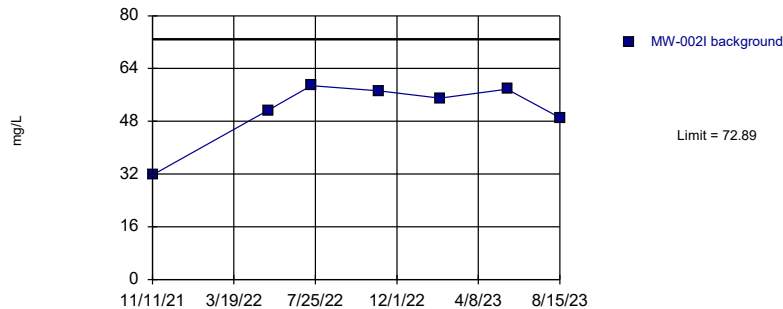
Prediction Limit
Intrawell Parametric, MW-002D



Background Data Summary: Mean=83.26, Std. Dev.=13.74, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8697, critical = 0.851. Kappa = 3.524 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

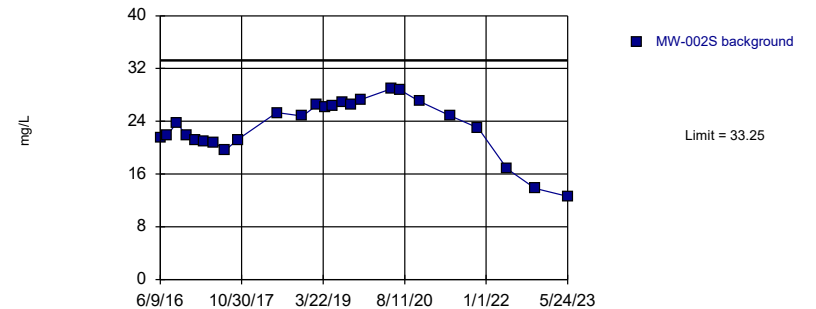
Prediction Limit
Intrawell Parametric, MW-002I



Background Data Summary (based on cube transformation): Mean=147736, Std. Dev.=59734, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8705, critical = 0.838. Kappa = 4.009 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

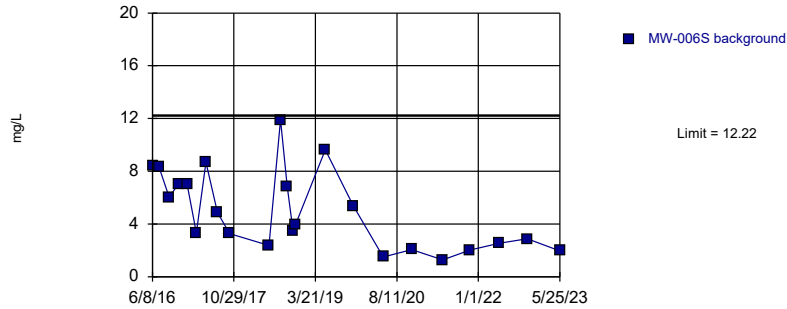
Prediction Limit
Intrawell Parametric, MW-002S



Background Data Summary: Mean=23.12, Std. Dev.=4.271, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9148, critical = 0.888. Kappa = 2.37 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

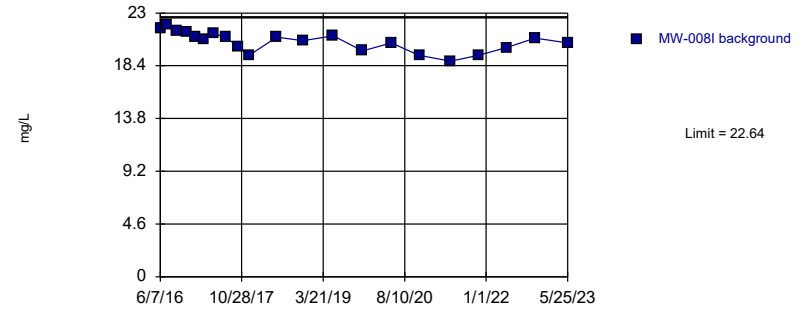
Prediction Limit
Intrawell Parametric, MW-006S (bg)



Background Data Summary: Mean=4.994, Std. Dev.=2.999, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9209, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

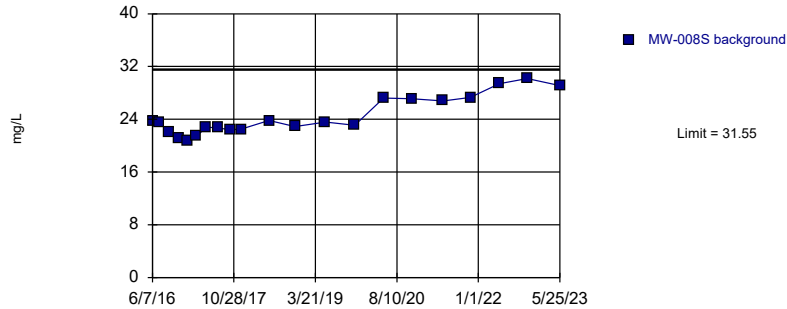
Prediction Limit
Intrawell Parametric, MW-008I (bg)



Background Data Summary: Mean=20.51, Std. Dev.=0.865, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9652, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

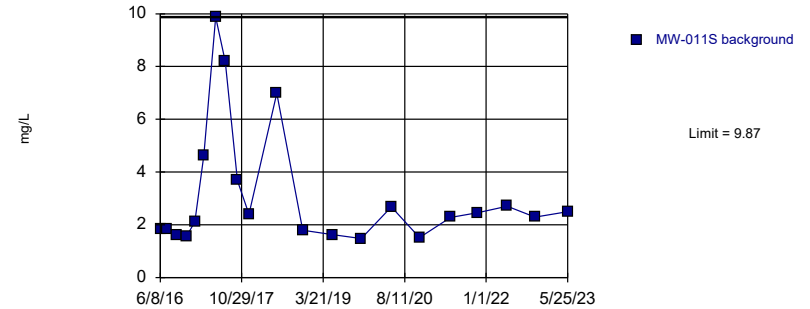
Prediction Limit
Intrawell Parametric, MW-008S (bg)



Background Data Summary: Mean=24.45, Std. Dev.=2.893, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8826, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

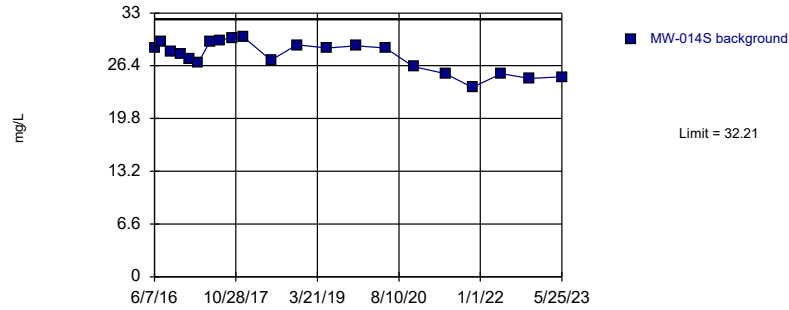
Prediction Limit
Intrawell Non-parametric, MW-011S (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 21 background values. Well-constituent pair annual alpha = 0.007982. Individual comparison alpha = 0.003999 (1 of 2). Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

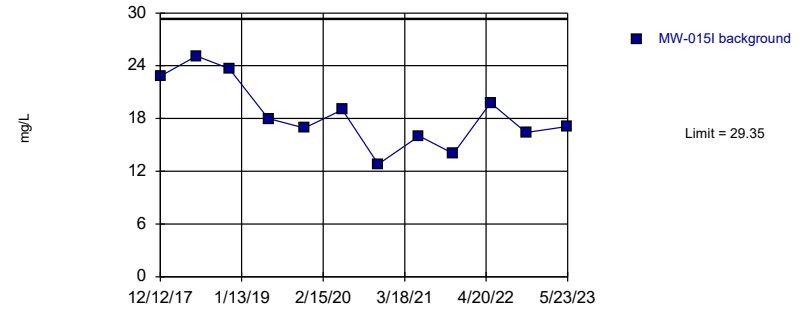
Prediction Limit
Intrawell Parametric, MW-014S (bg)



Background Data Summary: Mean=27.6, Std. Dev.=1.88, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9281, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

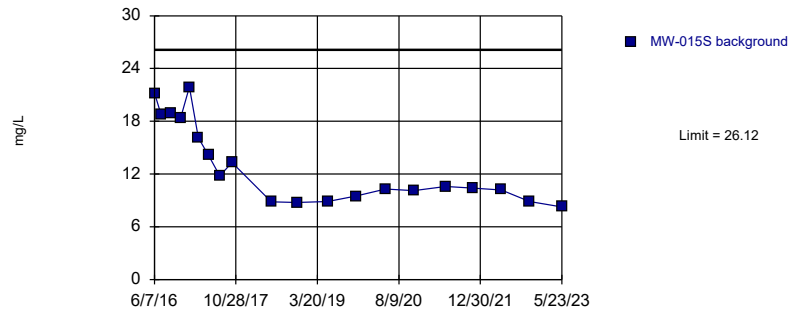
Prediction Limit
Intrawell Parametric, MW-015I



Background Data Summary: Mean=18.47, Std. Dev.=3.804, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9528, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

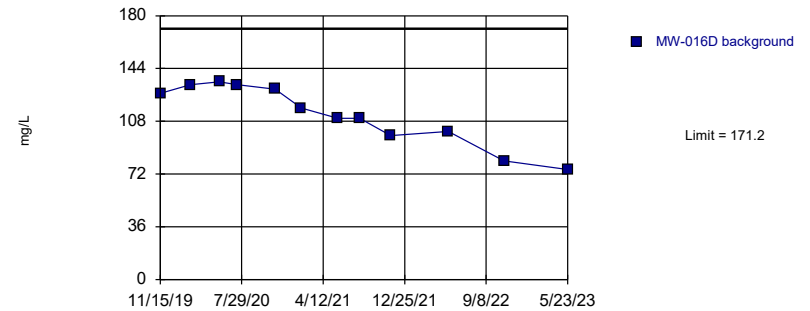
Prediction Limit
Intrawell Parametric, MW-015S



Background Data Summary (based on cube root transformation): Mean=2.32, Std. Dev.=0.2617, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8681, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

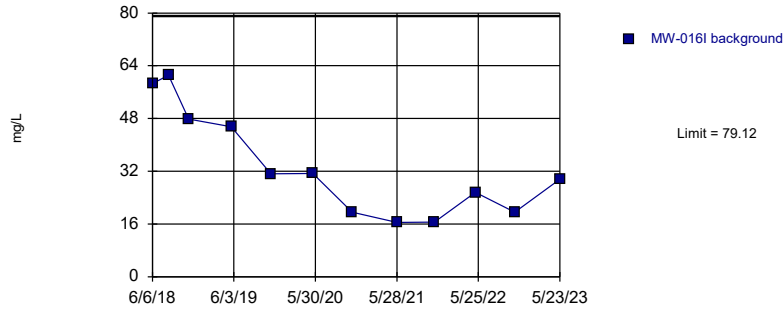
Prediction Limit
Intrawell Parametric, MW-016D



Background Data Summary: Mean=112.5, Std. Dev.=20.51, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9034, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

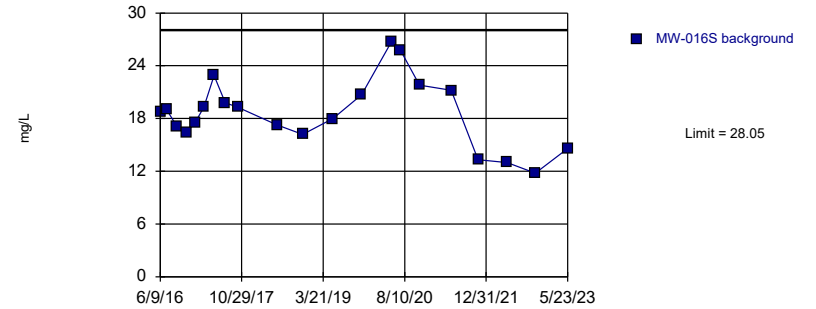
Prediction Limit Intrawell Parametric, MW-016I



Background Data Summary: Mean=33.58, Std. Dev.=15.92, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8851, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

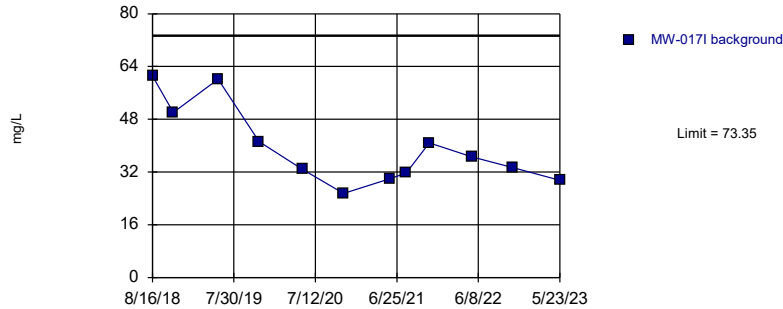
Prediction Limit Intrawell Parametric, MW-016S



Background Data Summary: Mean=18.59, Std. Dev.=3.858, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9755, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

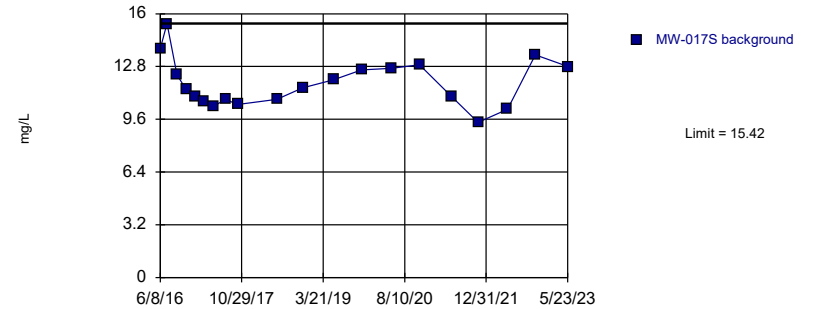
Prediction Limit Intrawell Parametric, MW-017I



Background Data Summary: Mean=39.41, Std. Dev.=11.87, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.872, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

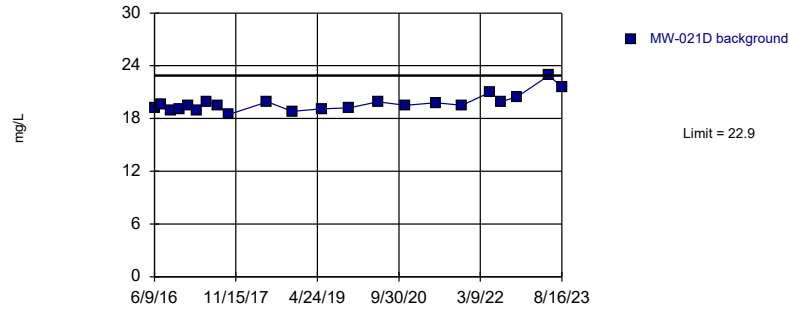
Prediction Limit Intrawell Parametric, MW-017S



Background Data Summary: Mean=11.79, Std. Dev.=1.467, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9543, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

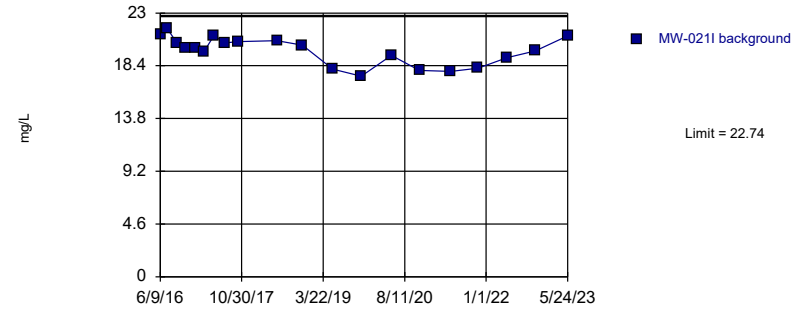
Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Non-parametric, MW-021D



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. Well-constituent pair annual alpha = 0.007401. Individual comparison alpha = 0.003707 (1 of 2). Assumes 1 future value.

Prediction Limit
Intrawell Parametric, MW-021I

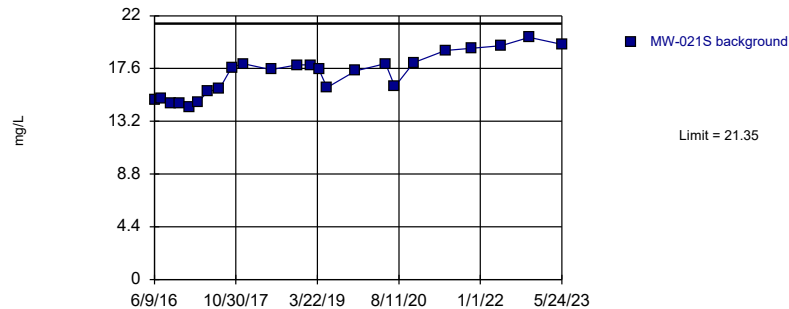


Background Data Summary: Mean=19.71, Std. Dev.=1.224, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.94, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

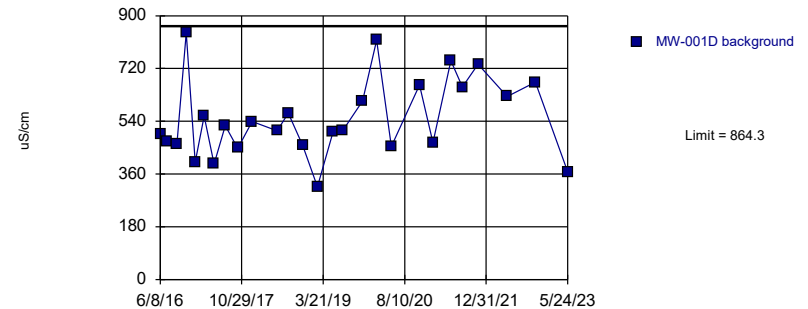
Prediction Limit
Intrawell Parametric, MW-021S



Background Data Summary: Mean=17.09, Std. Dev.=1.785, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9308, critical = 0.884. Kappa = 2.39 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Chloride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

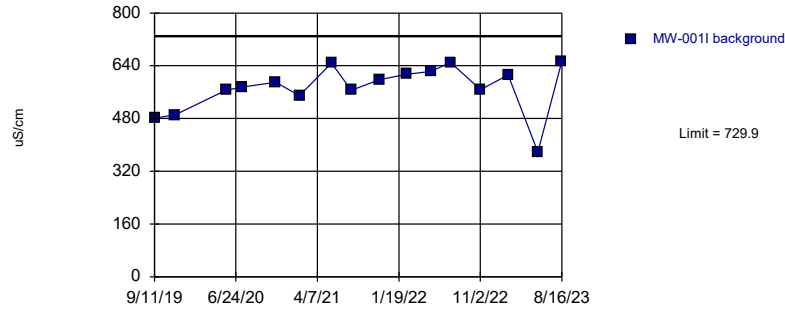
Prediction Limit
Intrawell Parametric, MW-001D



Background Data Summary: Mean=548.7, Std. Dev.=134.5, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9559, critical = 0.894. Kappa = 2.345 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

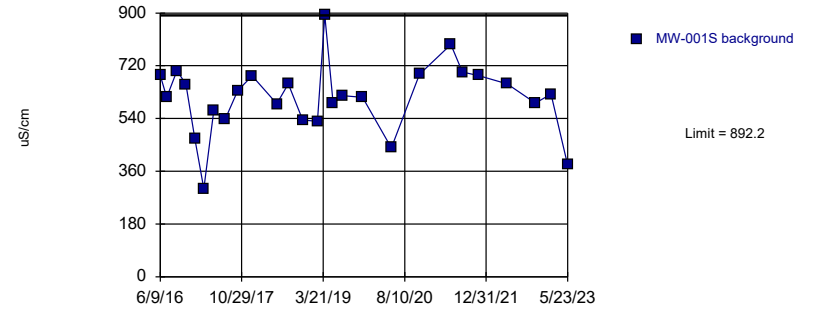
Prediction Limit
Intrawell Parametric, MW-001I



Background Data Summary (based on square transformation): Mean=332886, Std. Dev.=76778, n=16. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9176, critical = 0.887. Kappa = 2.604 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

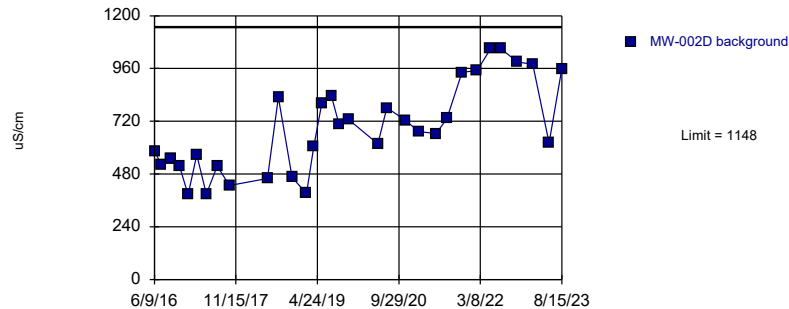
Prediction Limit
Intrawell Parametric, MW-001S



Background Data Summary: Mean=609.1, Std. Dev.=120.7, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.955, critical = 0.894. Kappa = 2.345 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

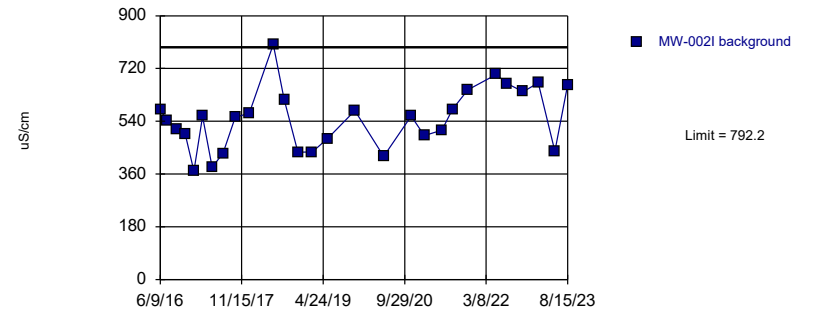
Prediction Limit
Intrawell Parametric, MW-002D



Background Data Summary: Mean=684.1, Std. Dev.=203, n=33. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9383, critical = 0.906. Kappa = 2.284 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

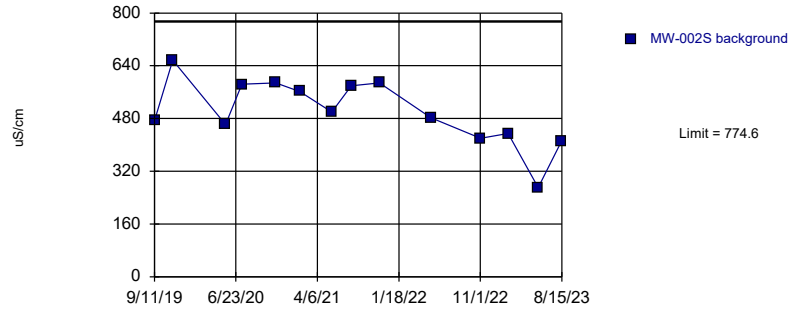
Prediction Limit
Intrawell Parametric, MW-002I



Background Data Summary: Mean=547.4, Std. Dev.=105, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9737, critical = 0.896. Kappa = 2.333 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

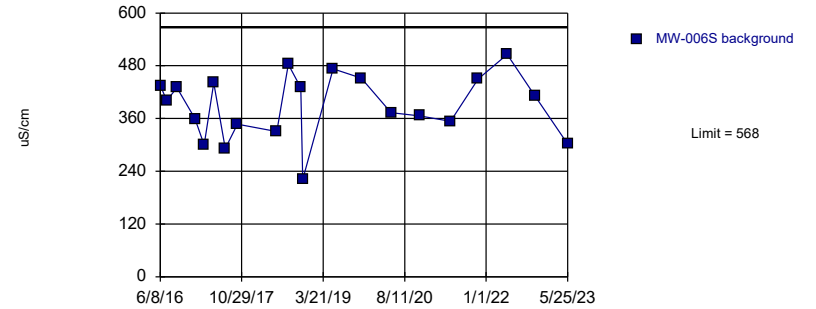
Prediction Limit
Intrawell Parametric, MW-002S



Background Data Summary: Mean=501, Std. Dev.=100.2, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9413, critical = 0.874. Kappa = 2.732 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

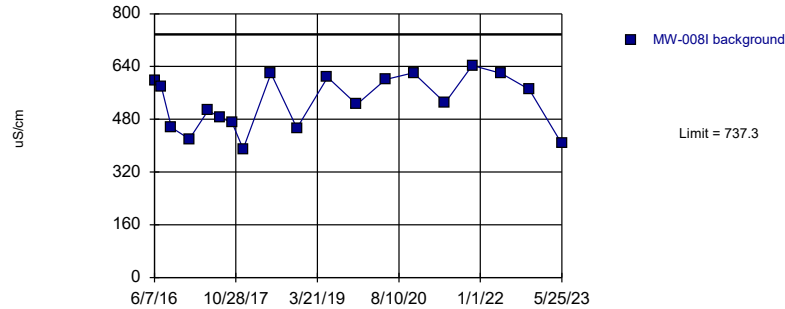
Prediction Limit
Intrawell Parametric, MW-006S (bg)



Background Data Summary: Mean=388.4, Std. Dev.=73.24, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9687, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

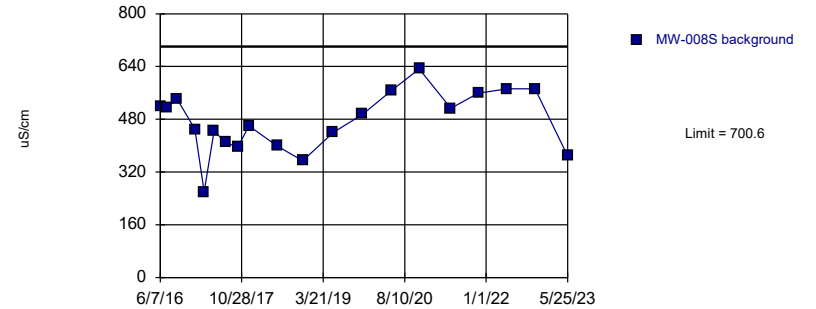
Prediction Limit
Intrawell Parametric, MW-008I (bg)



Background Data Summary: Mean=531.6, Std. Dev.=82.09, n=19. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9204, critical = 0.901. Kappa = 2.505 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Parametric, MW-008S (bg)

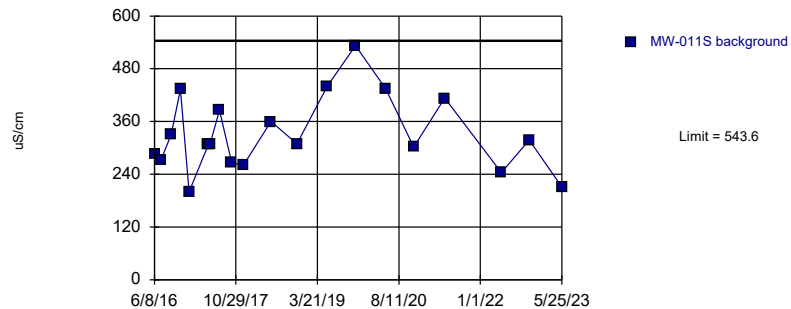


Background Data Summary: Mean=473.5, Std. Dev.=91.89, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9728, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-011S (bg)

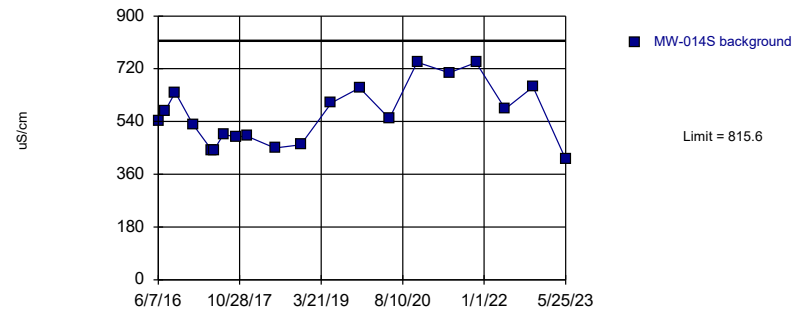


Background Data Summary: Mean=330.6, Std. Dev.=86.15, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9507, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-014S (bg)

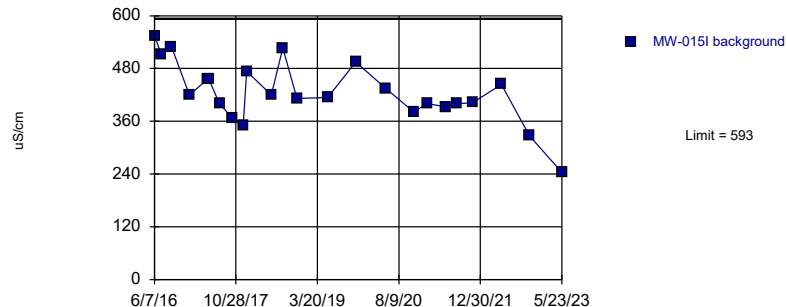


Background Data Summary: Mean=560.4, Std. Dev.=103.2, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9414, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-015I

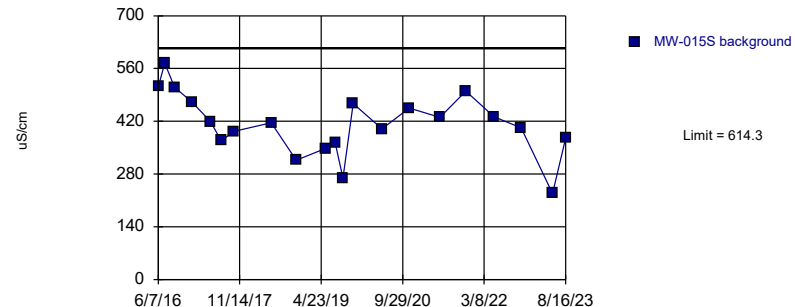


Background Data Summary: Mean=425.7, Std. Dev.=69.98, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9657, critical = 0.884. Kappa = 2.39 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

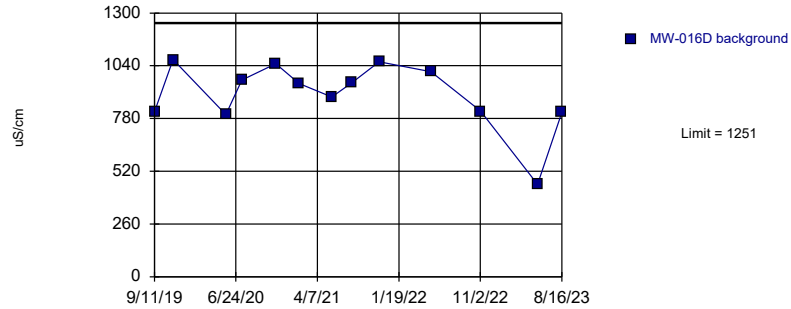
Intrawell Parametric, MW-015S



Background Data Summary: Mean=411.8, Std. Dev.=82.6, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9845, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

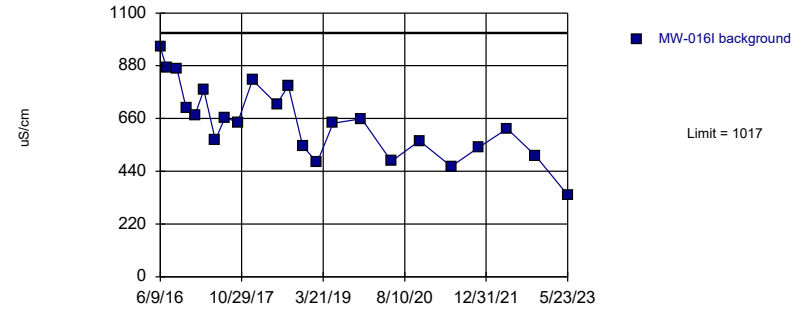
Prediction Limit
Intrawell Parametric, MW-016D



Background Data Summary (based on square transformation): Mean=828314, Std. Dev.=263257, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.908, critical = 0.866. Kappa = 2.796 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

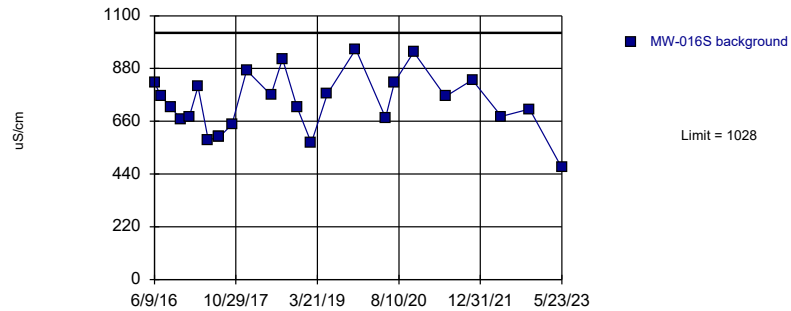
Prediction Limit
Intrawell Parametric, MW-016I



Background Data Summary: Mean=647.7, Std. Dev.=153, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9849, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

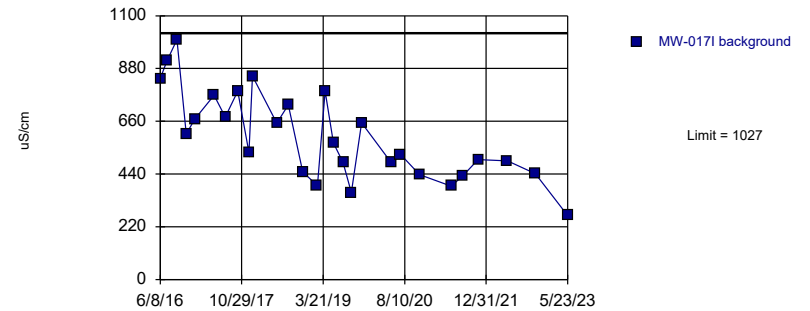
Prediction Limit
Intrawell Parametric, MW-016S



Background Data Summary: Mean=734.3, Std. Dev.=124, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9819, critical = 0.888. Kappa = 2.37 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

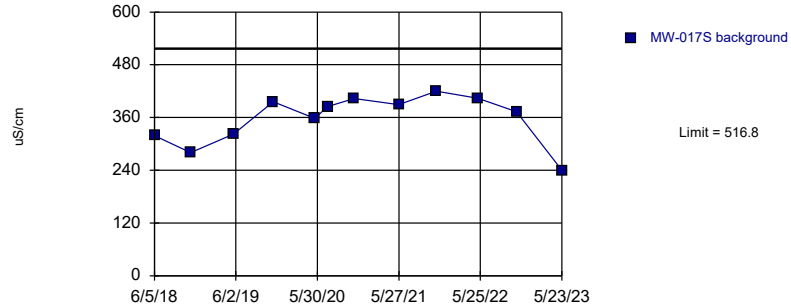
Prediction Limit
Intrawell Parametric, MW-017I



Background Data Summary: Mean=596.1, Std. Dev.=184.9, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9641, critical = 0.896. Kappa = 2.333 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

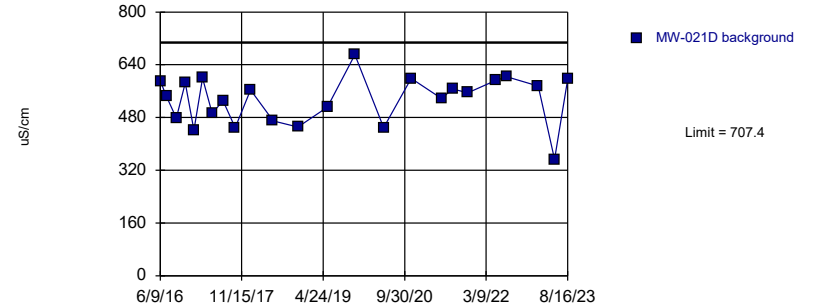
Prediction Limit Intrawell Parametric, MW-017S



Background Data Summary: Mean=357.4, Std. Dev.=55.73, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8908, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

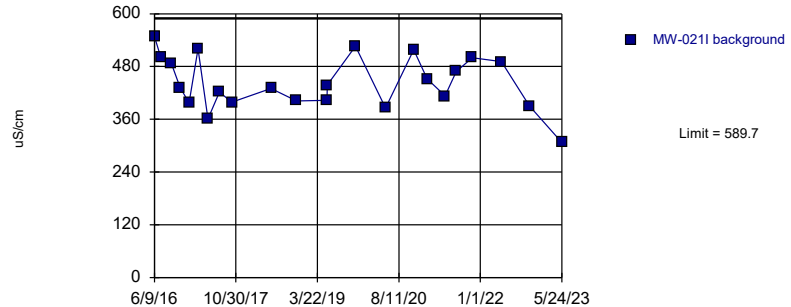
Prediction Limit Intrawell Parametric, MW-021D



Background Data Summary: Mean=533.6, Std. Dev.=72.7, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.948, critical = 0.884. Kappa = 2.39 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

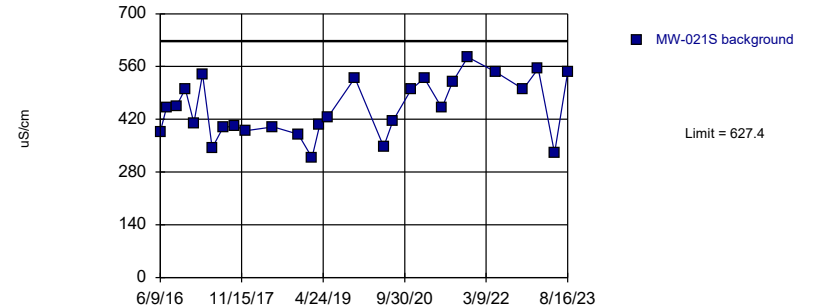
Prediction Limit Intrawell Parametric, MW-021I



Background Data Summary: Mean=443.1, Std. Dev.=60.8, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9659, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

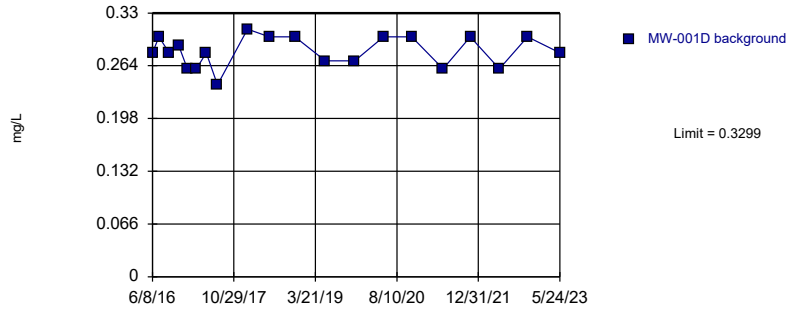
Prediction Limit Intrawell Parametric, MW-021S



Background Data Summary: Mean=448.3, Std. Dev.=76.79, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9424, critical = 0.896. Kappa = 2.333 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Conductivity Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

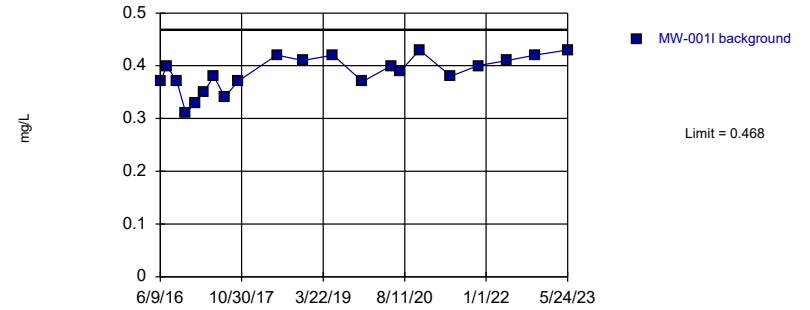
Prediction Limit Intrawell Parametric, MW-001D



Background Data Summary: Mean=0.282, Std. Dev.=0.01936, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9036, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:30 AM
Rockport Landfill Data: Rockport_LF

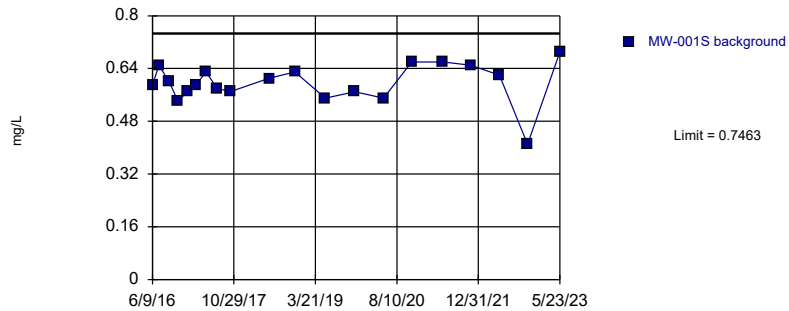
Prediction Limit Intrawell Parametric, MW-001I



Background Data Summary: Mean=0.3857, Std. Dev.=0.03355, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9424, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

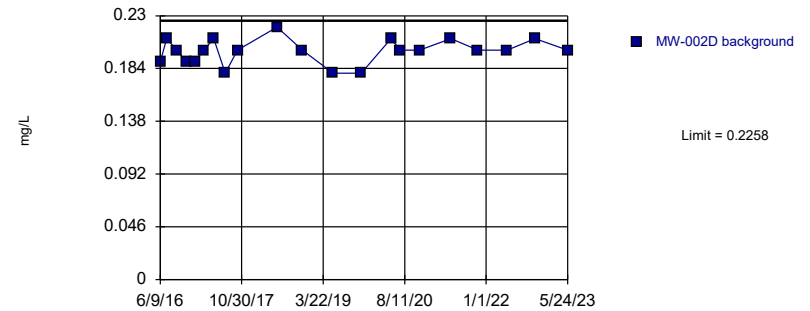
Prediction Limit Intrawell Parametric, MW-001S



Background Data Summary: Mean=0.596, Std. Dev.=0.06082, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9003, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit Intrawell Parametric, MW-002D

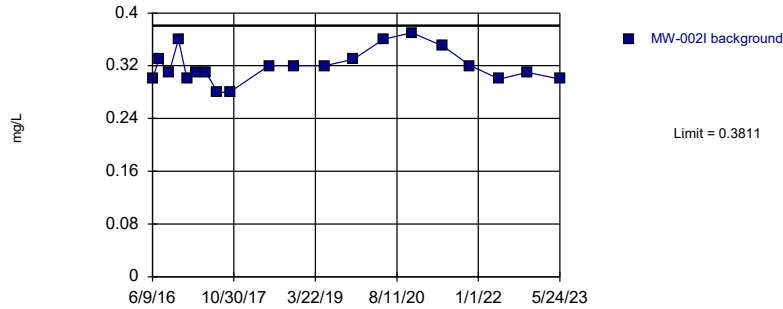


Background Data Summary: Mean=0.199, Std. Dev.=0.01091, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.903, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-002I

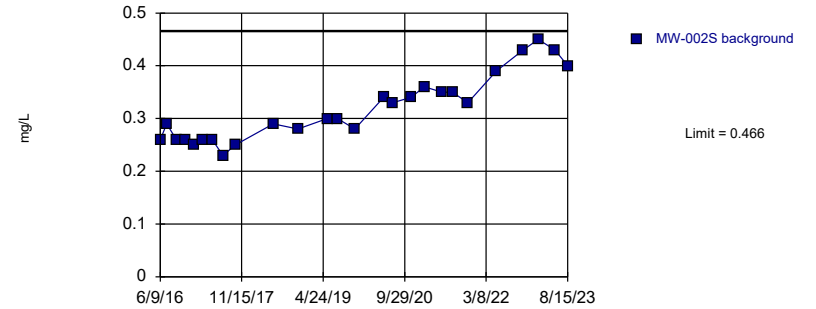


Background Data Summary: Mean=0.319, Std. Dev.=0.02511, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9283, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-002S

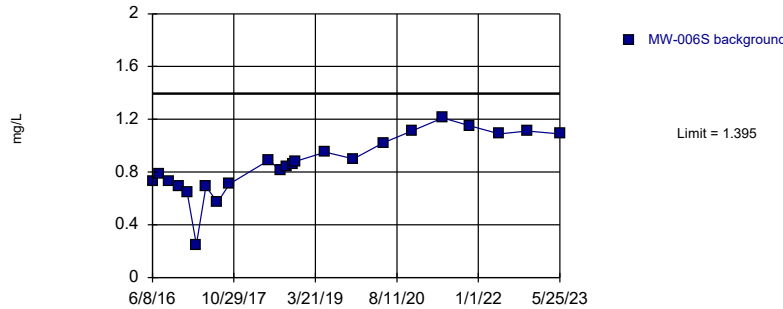


Background Data Summary: Mean=0.3181, Std. Dev.=0.06274, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9201, critical = 0.891. Kappa = 2.358 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-006S (bg)

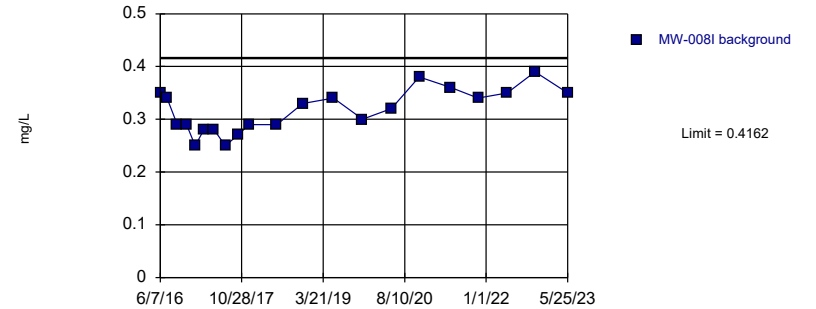


Background Data Summary: Mean=0.8574, Std. Dev.=0.2232, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9503, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

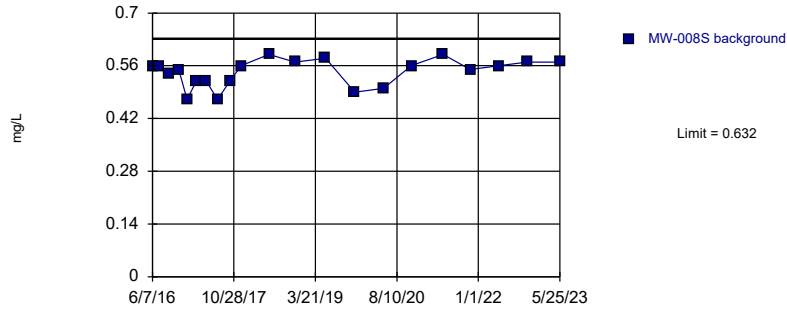
Intrawell Parametric, MW-008I (bg)



Background Data Summary: Mean=0.3162, Std. Dev.=0.0408, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9506, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

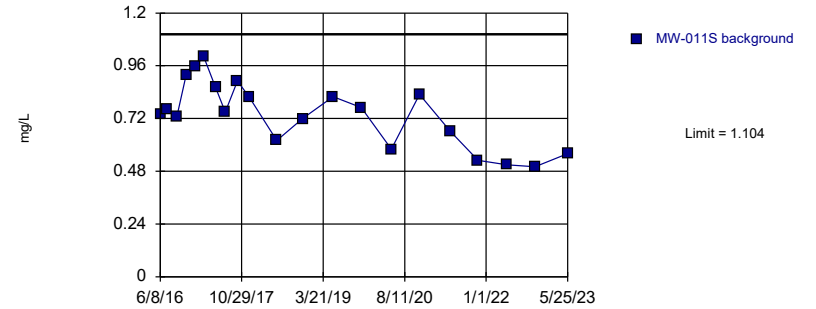
Prediction Limit
Intrawell Parametric, MW-008S (bg)



Background Data Summary: Mean=0.5429, Std. Dev.=0.03635, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9022, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

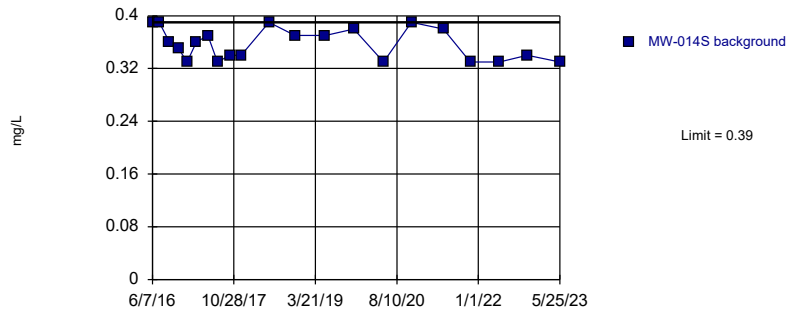
Prediction Limit
Intrawell Parametric, MW-011S (bg)



Background Data Summary: Mean=0.7395, Std. Dev.=0.1486, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9631, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

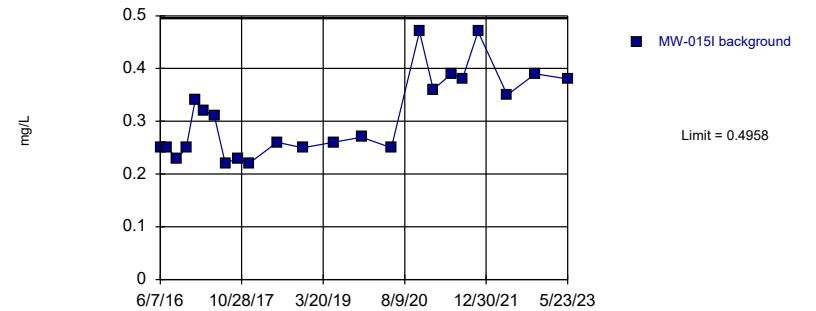
Prediction Limit
Intrawell Non-parametric, MW-014S (bg)



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 21 background values. Well-constituent pair annual alpha = 0.007982. Individual comparison alpha = 0.003999 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

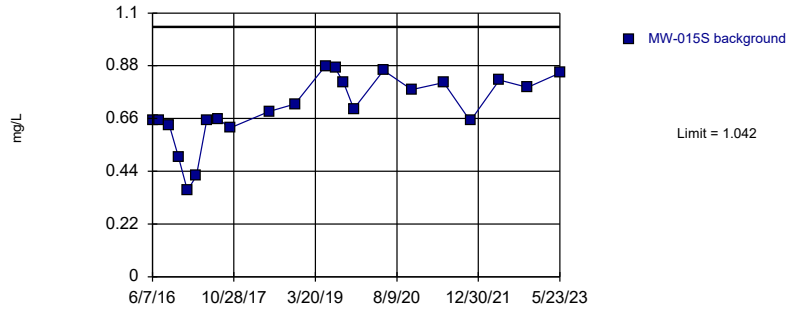
Prediction Limit
Intrawell Parametric, MW-015I



Background Data Summary: Mean=0.3087, Std. Dev.=0.07759, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8839, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

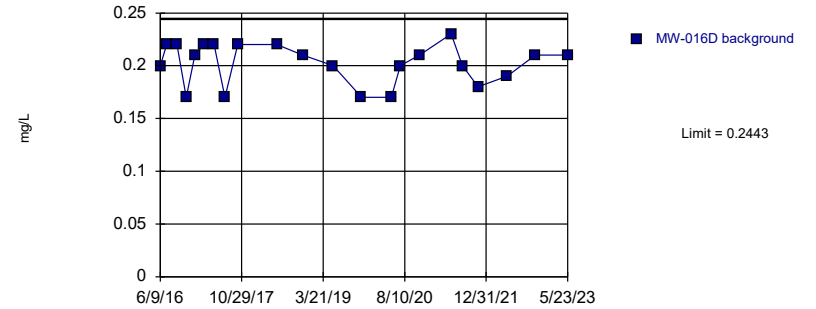
Prediction Limit
Intrawell Parametric, MW-015S



Background Data Summary: Mean=0.6986, Std. Dev.=0.1414, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9153, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

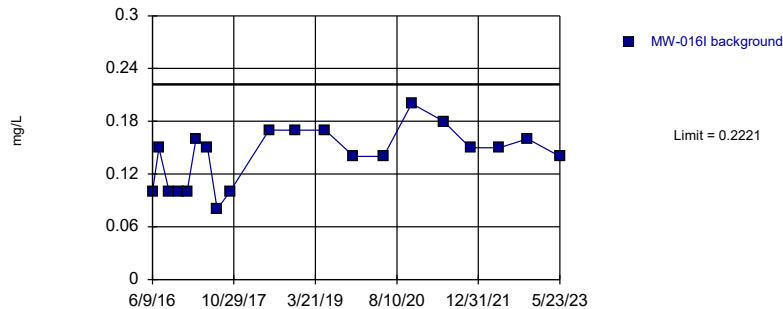
Prediction Limit
Intrawell Parametric, MW-016D



Background Data Summary (based on square transformation): Mean=0.04127, Std. Dev.=0.007573, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8861, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

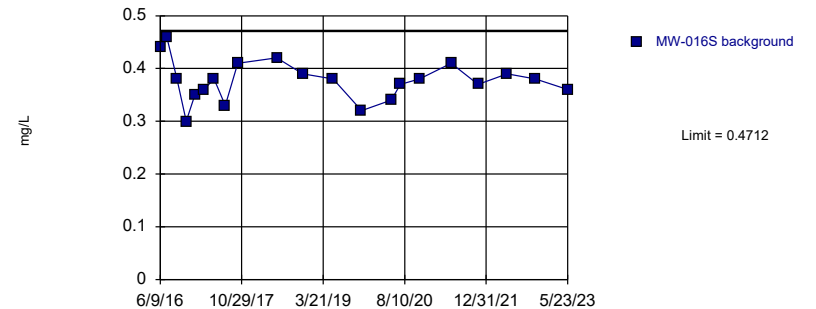
Prediction Limit
Intrawell Parametric, MW-016I



Background Data Summary: Mean=0.1405, Std. Dev.=0.033, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9204, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

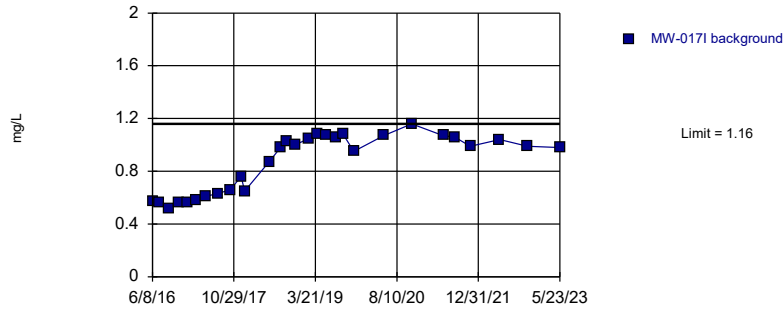
Prediction Limit
Intrawell Parametric, MW-016S



Background Data Summary: Mean=0.3771, Std. Dev.=0.03836, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9793, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

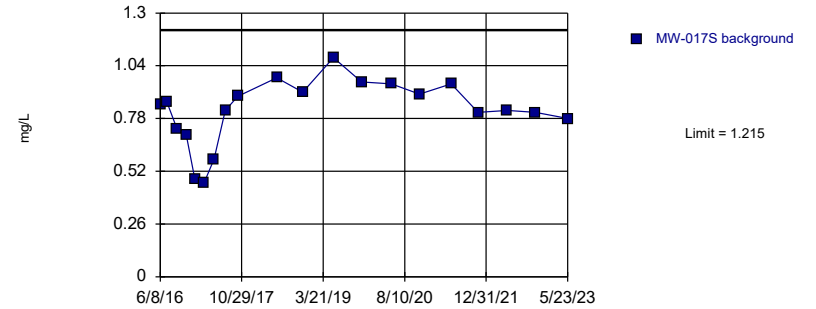
Prediction Limit
Intrawell Non-parametric, MW-017I



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 29 background values. Well-constituent pair annual alpha = 0.00434. Individual comparison alpha = 0.002172 (1 of 2). Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

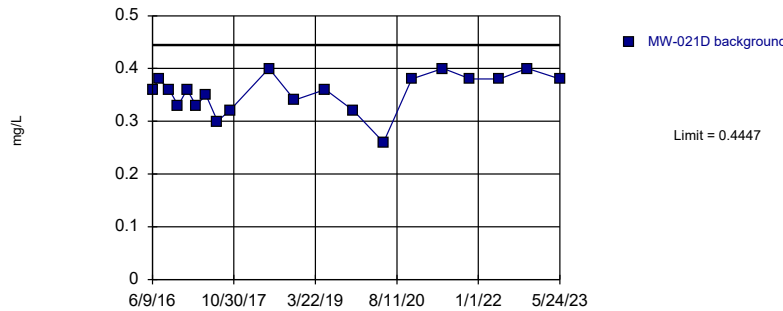
Prediction Limit
Intrawell Parametric, MW-017S



Background Data Summary: Mean=0.816, Std. Dev.=0.1615, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9199, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

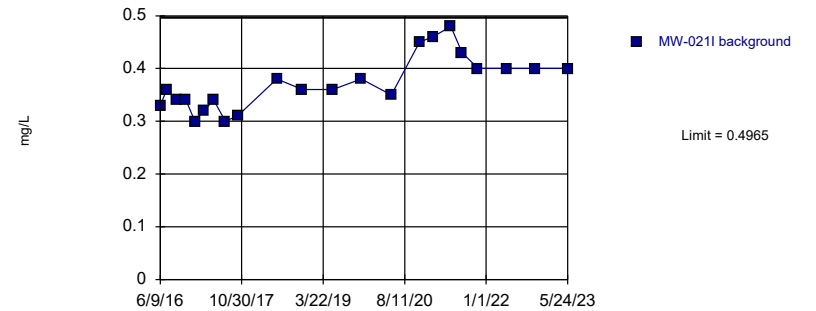
Prediction Limit
Intrawell Parametric, MW-021D



Background Data Summary: Mean=0.3545, Std. Dev.=0.03649, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9218, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

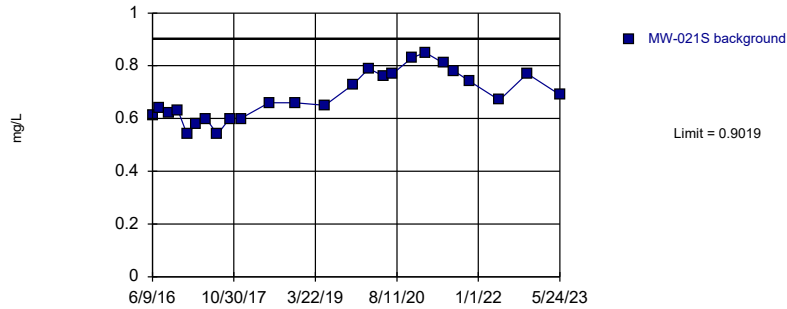
Prediction Limit
Intrawell Parametric, MW-021I



Background Data Summary: Mean=0.3723, Std. Dev.=0.05108, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9515, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

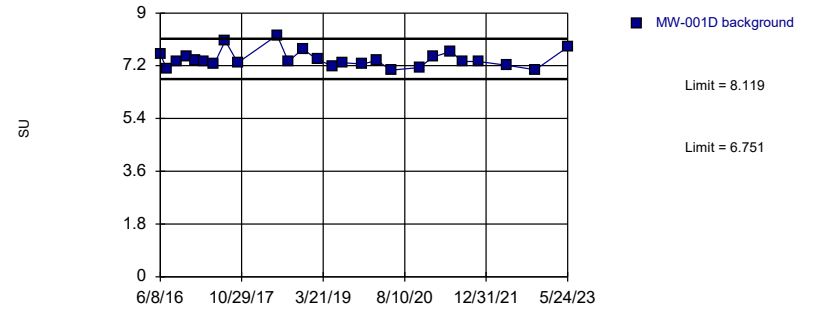
Prediction Limit
Intrawell Parametric, MW-021S



Background Data Summary: Mean=0.6848, Std. Dev.=0.09161, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.947, critical = 0.888. Kappa = 2.37 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Fluoride, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

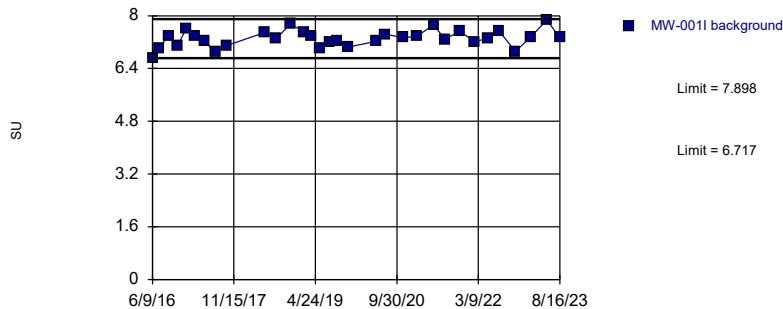
Prediction Limit
Intrawell Parametric, MW-001D



Background Data Summary (based on square root transformation): Mean=2.724, Std. Dev.=0.05329, n=26. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8933, critical = 0.891. Kappa = 2.358 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

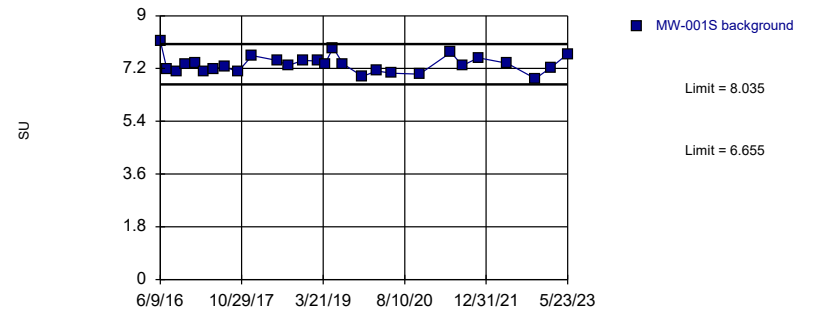
Prediction Limit
Intrawell Parametric, MW-001I



Background Data Summary: Mean=7.308, Std. Dev.=0.2578, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9882, critical = 0.904. Kappa = 2.292 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

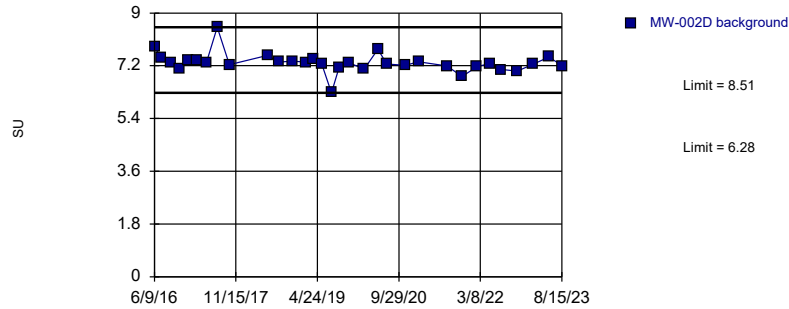
Prediction Limit
Intrawell Parametric, MW-001S



Background Data Summary: Mean=7.345, Std. Dev.=0.2959, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9621, critical = 0.896. Kappa = 2.333 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

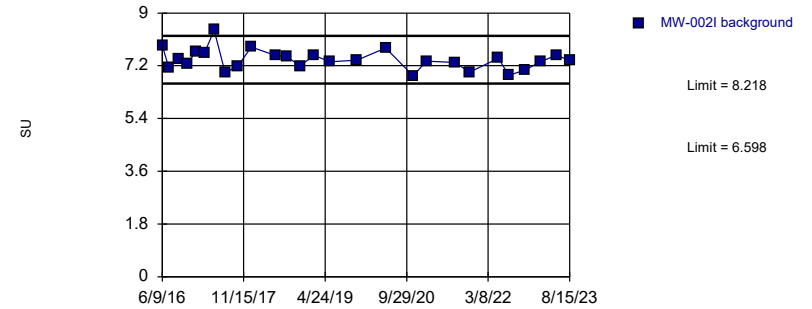
Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Non-parametric, MW-002D



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 32 background values. Well-constituent pair annual alpha = 0.007206. Individual comparison alpha = 0.003606 (1 of 2). Assumes 1 future value.

Prediction Limit
Intrawell Parametric, MW-002I

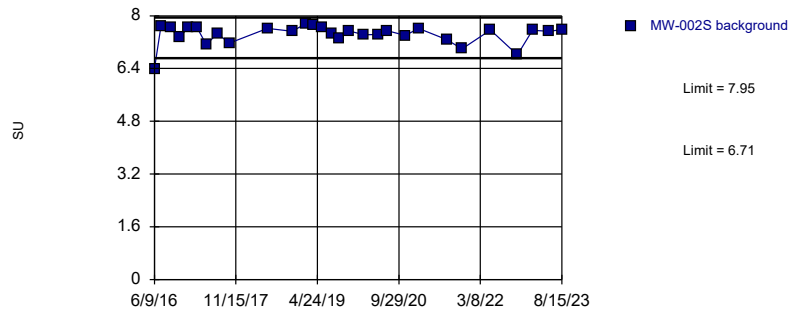


Background Data Summary: Mean=7.408, Std. Dev.=0.3455, n=27. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9565, critical = 0.894. Kappa = 2.345 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

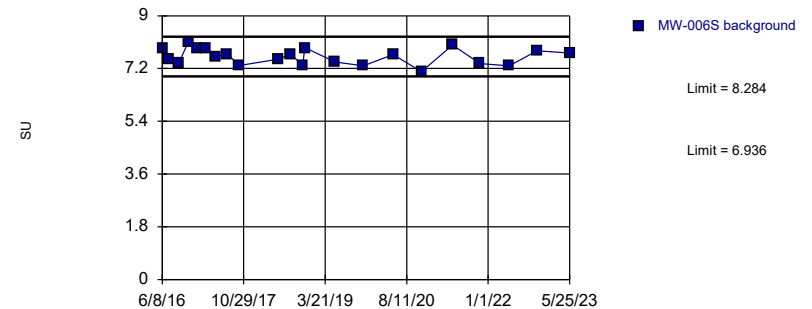
Prediction Limit
Intrawell Parametric, MW-002S



Background Data Summary (based on x^6 transformation): Mean=171849, Std. Dev.=34711, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8999, critical = 0.898. Kappa = 2.32 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

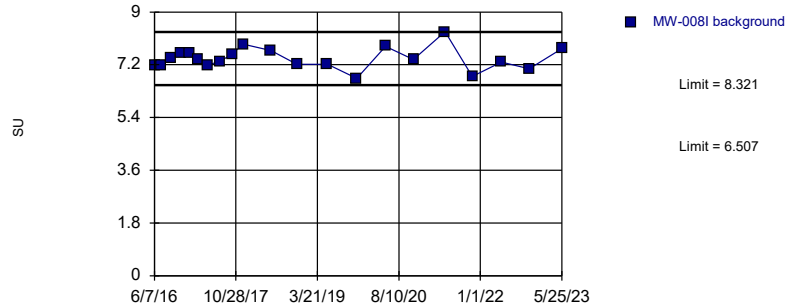
Prediction Limit
Intrawell Parametric, MW-006S (bg)



Background Data Summary: Mean=7.61, Std. Dev.=0.2772, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9588, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

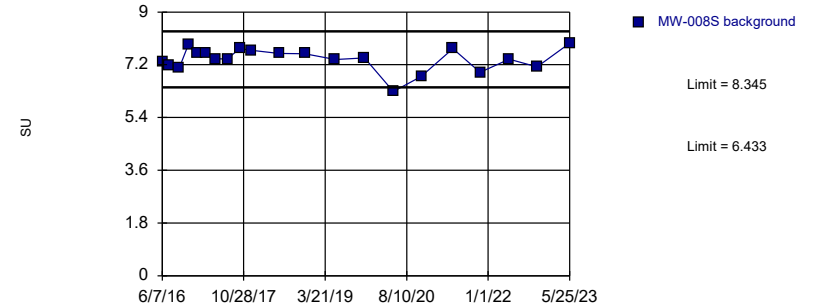
Prediction Limit
Intrawell Parametric, MW-008I (bg)



Background Data Summary: Mean=7.414, Std. Dev.=0.3698, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9676, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

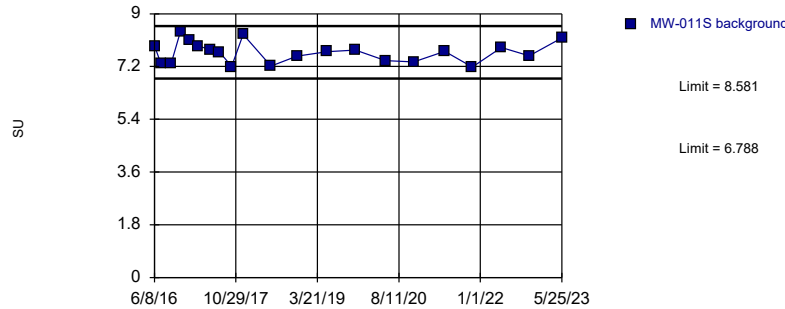
Prediction Limit
Intrawell Parametric, MW-008S (bg)



Background Data Summary: Mean=7.389, Std. Dev.=0.3899, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9265, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

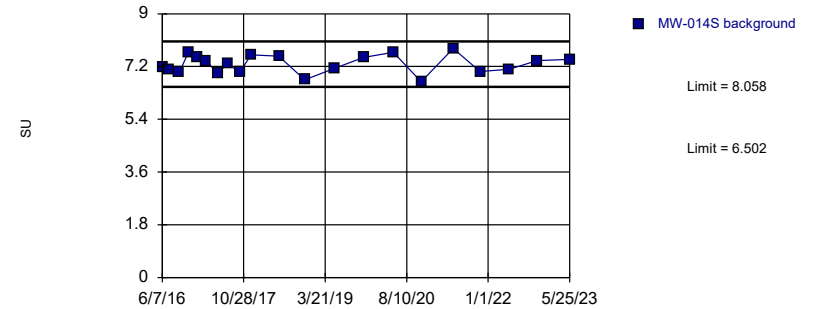
Prediction Limit
Intrawell Parametric, MW-011S (bg)



Background Data Summary: Mean=7.684, Std. Dev.=0.3656, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9507, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

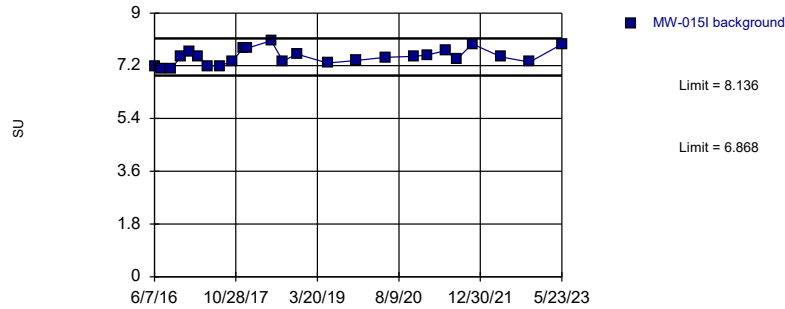
Prediction Limit
Intrawell Parametric, MW-014S (bg)



Background Data Summary: Mean=7.28, Std. Dev.=0.3175, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9712, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

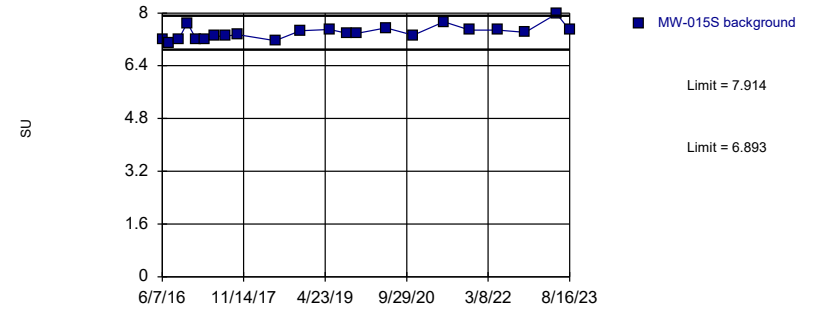
Prediction Limit Intrawell Parametric, MW-015I



Background Data Summary: Mean=7.502, Std. Dev.=0.2676, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9582, critical = 0.888. Kappa = 2.37 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

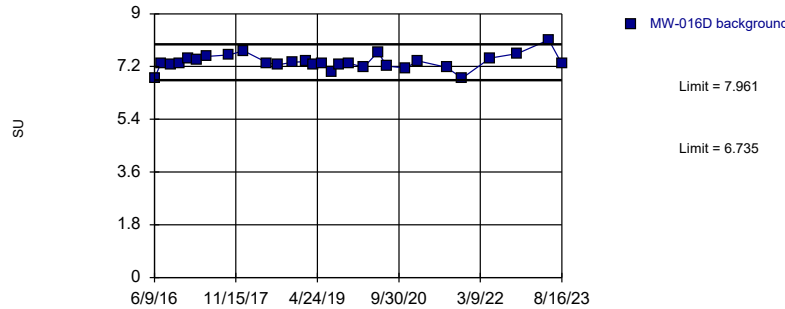
Prediction Limit Intrawell Parametric, MW-015S



Background Data Summary: Mean=7.403, Std. Dev.=0.21, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9278, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

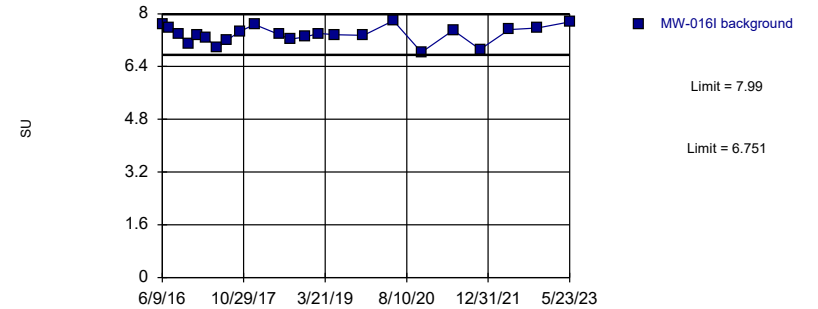
Prediction Limit Intrawell Parametric, MW-016D



Background Data Summary: Mean=7.348, Std. Dev.=0.2643, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9415, critical = 0.898. Kappa = 2.32 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

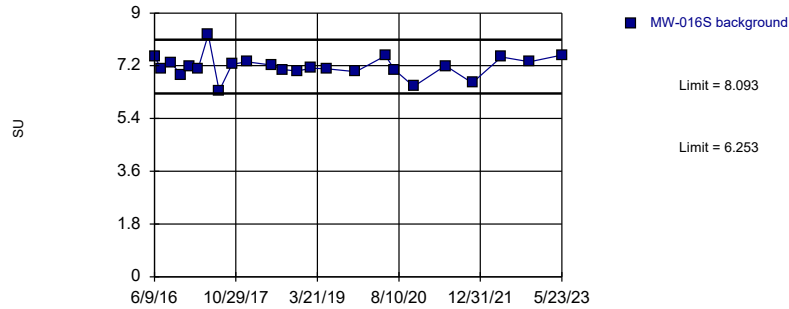
Prediction Limit Intrawell Parametric, MW-016I



Background Data Summary: Mean=7.371, Std. Dev.=0.2569, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9641, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

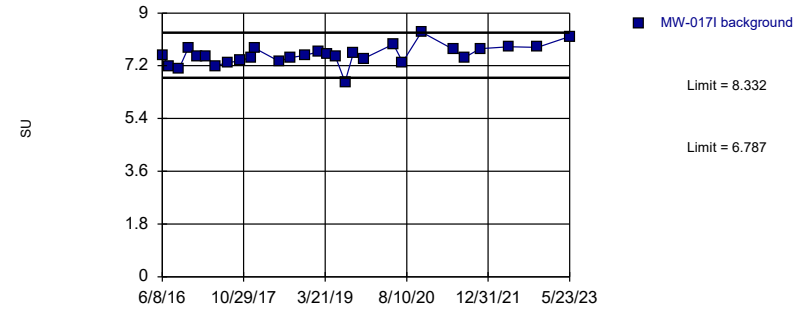
Prediction Limit
Intrawell Parametric, MW-016S



Background Data Summary: Mean=7.173, Std. Dev.=0.3849, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9306, critical = 0.884. Kappa = 2.39 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

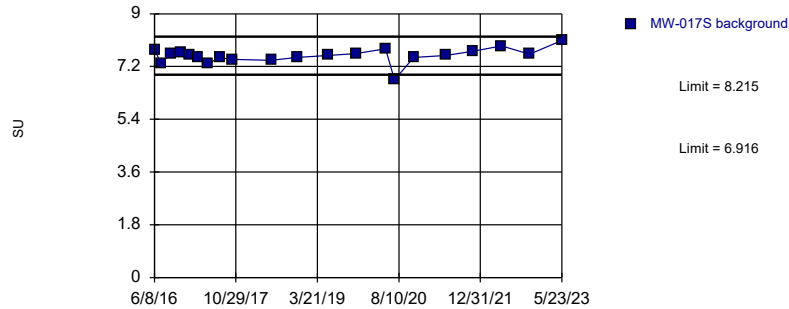
Prediction Limit
Intrawell Parametric, MW-017I



Background Data Summary: Mean=7.56, Std. Dev.=0.3329, n=29. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9687, critical = 0.898. Kappa = 2.32 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

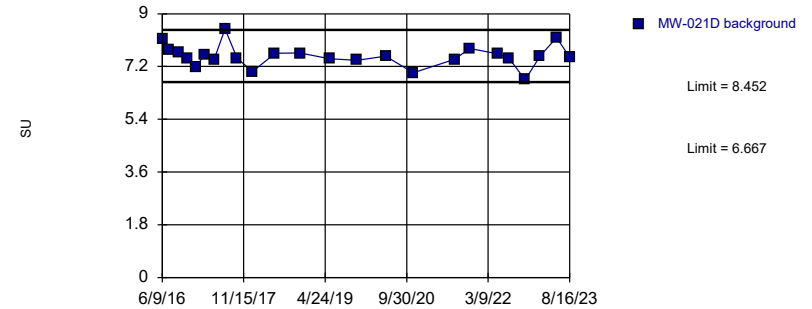
Prediction Limit
Intrawell Parametric, MW-017S



Background Data Summary: Mean=7.565, Std. Dev.=0.2649, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9068, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

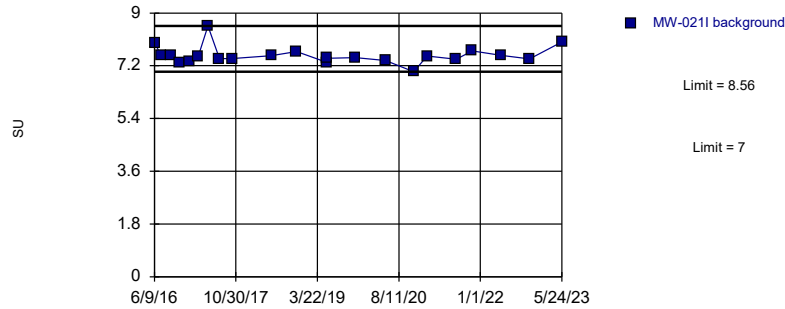
Prediction Limit
Intrawell Parametric, MW-021D



Background Data Summary: Mean=7.559, Std. Dev.=0.3733, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.938, critical = 0.884. Kappa = 2.39 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

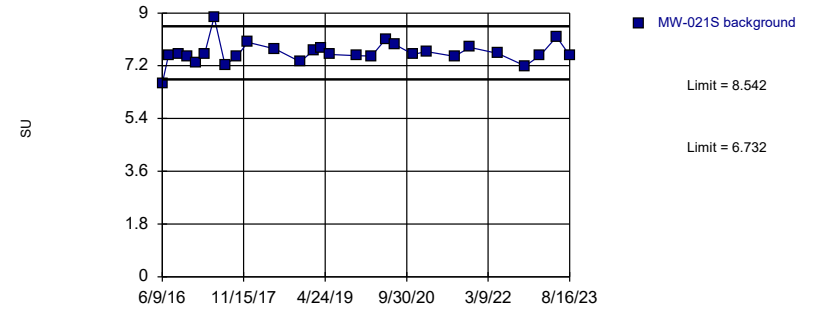
Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Non-parametric, MW-021I



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 22 background values. Well-constituent pair annual alpha = 0.0148. Individual comparison alpha = 0.007415 (1 of 2). Assumes 1 future value.

Prediction Limit
Intrawell Parametric, MW-021S

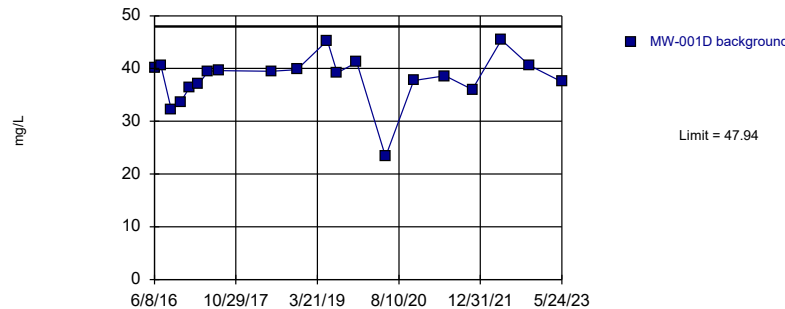


Background Data Summary: Mean=7.637, Std. Dev.=0.388, n=28. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8998, critical = 0.896. Kappa = 2.333 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Constituent: pH, field Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

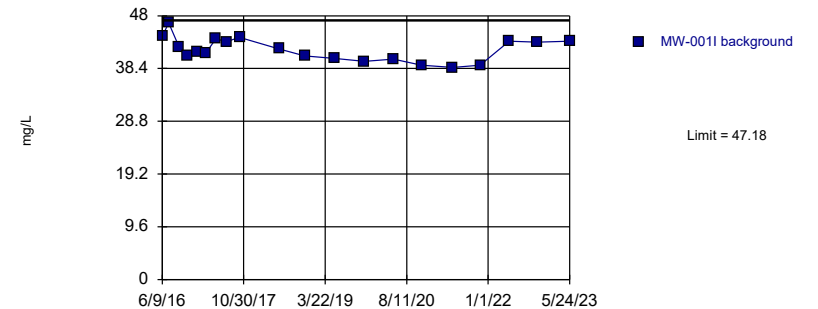
Prediction Limit
Intrawell Parametric, MW-001D



Background Data Summary (based on square transformation): Mean=1478, Std. Dev.=331.9, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9113, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

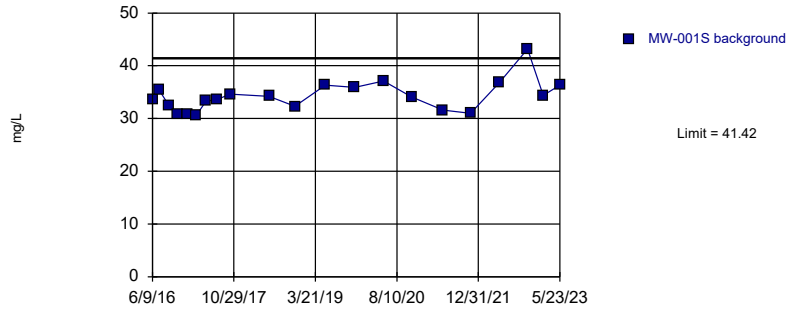
Prediction Limit
Intrawell Parametric, MW-001I



Background Data Summary: Mean=41.86, Std. Dev.=2.151, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.959, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

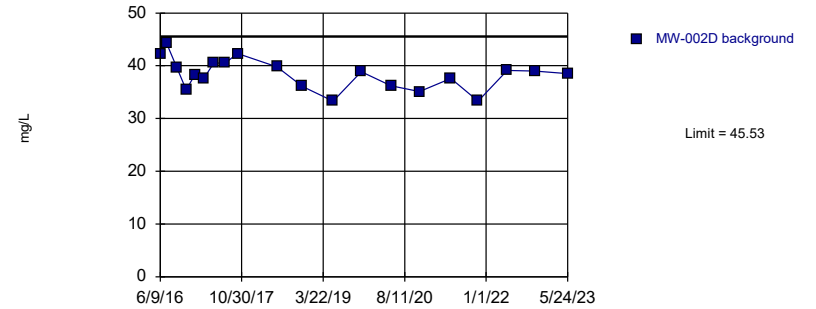
Prediction Limit
Intrawell Parametric, MW-001S



Background Data Summary: Mean=34.2, Std. Dev.=2.943, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8946, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

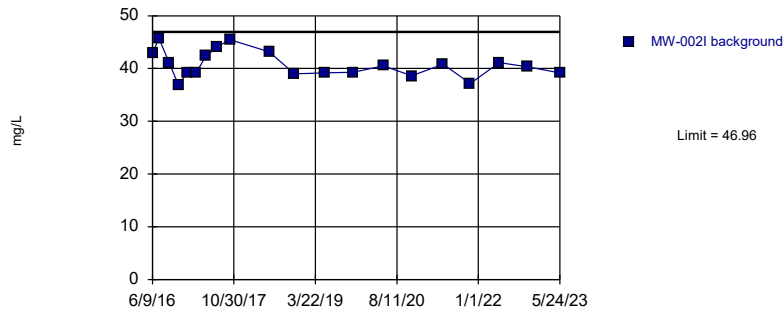
Prediction Limit
Intrawell Parametric, MW-002D



Background Data Summary: Mean=38.37, Std. Dev.=2.894, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9777, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

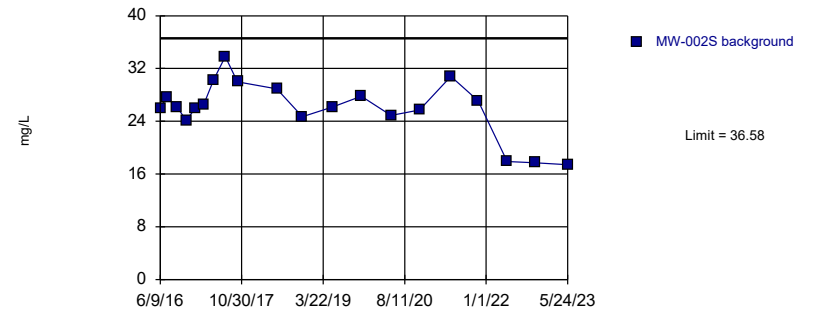
Prediction Limit
Intrawell Parametric, MW-002I



Background Data Summary: Mean=40.77, Std. Dev.=2.502, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9377, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

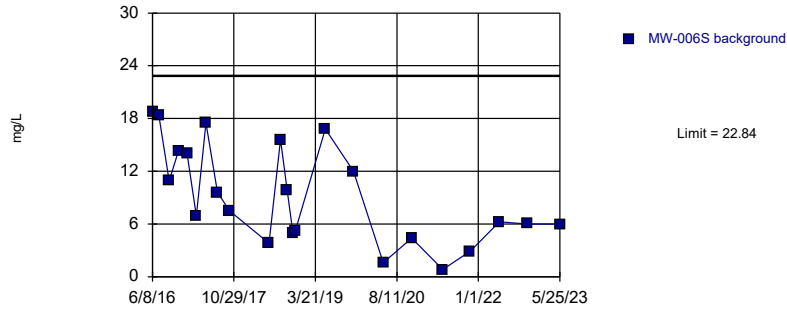
Prediction Limit
Intrawell Parametric, MW-002S



Background Data Summary: Mean=25.98, Std. Dev.=4.288, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.905, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

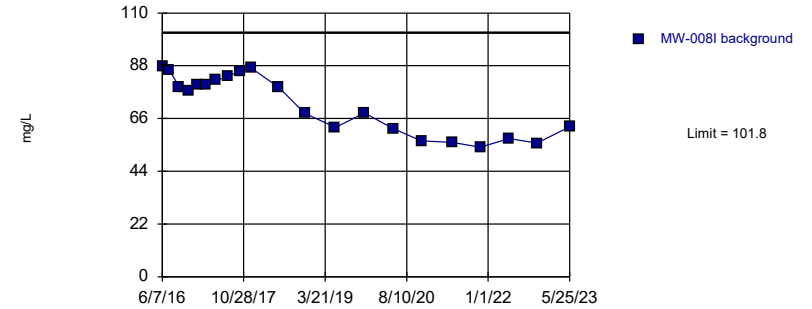
Prediction Limit
Intrawell Parametric, MW-006S (bg)



Background Data Summary: Mean=9.3, Std. Dev.=5.617, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

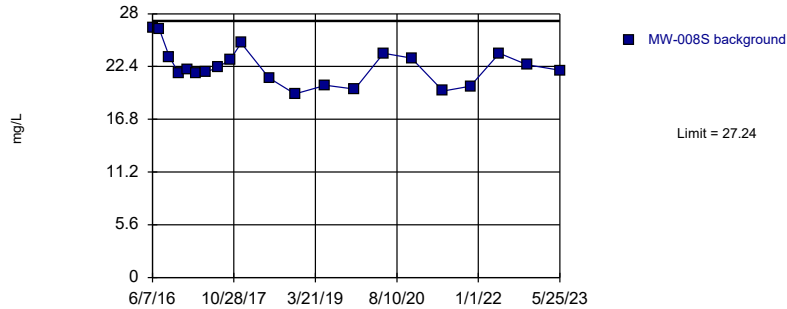
Prediction Limit
Intrawell Parametric, MW-008I (bg)



Background Data Summary: Mean=71.96, Std. Dev.=12.17, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8812, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

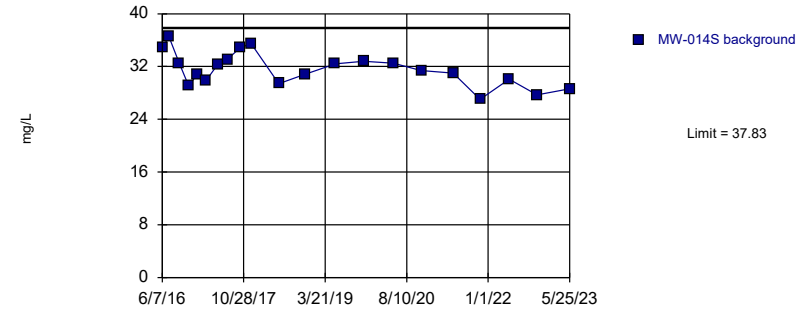
Prediction Limit
Intrawell Parametric, MW-008S (bg)



Background Data Summary: Mean=22.41, Std. Dev.=1.971, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9503, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

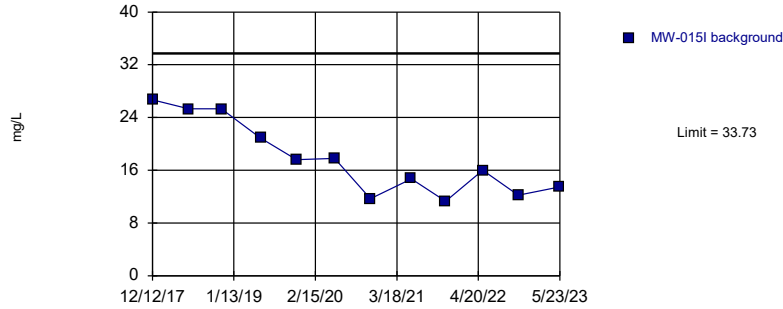
Prediction Limit
Intrawell Parametric, MW-014S (bg)



Background Data Summary: Mean=31.57, Std. Dev.=2.552, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9807, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

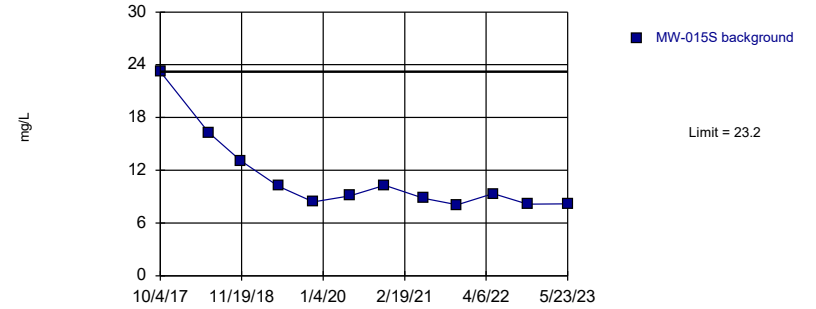
Prediction Limit Intrawell Parametric, MW-015I



Background Data Summary: Mean=17.75, Std. Dev.=5.588, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8953, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

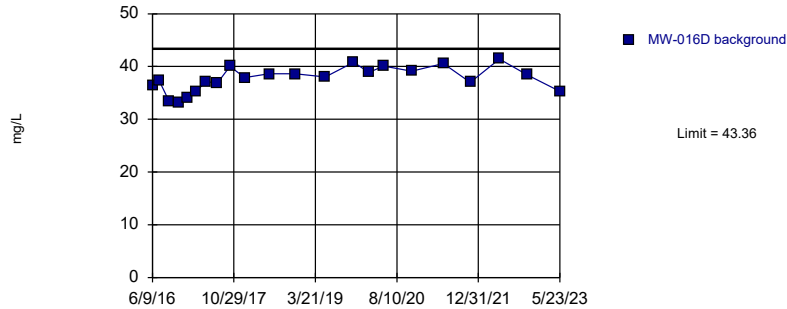
Prediction Limit Intrawell Non-parametric, MW-015S



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2). Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

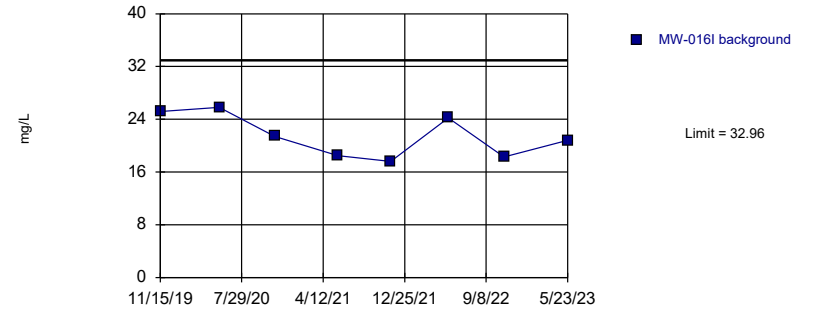
Prediction Limit Intrawell Parametric, MW-016D



Background Data Summary: Mean=37.65, Std. Dev.=2.347, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9615, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

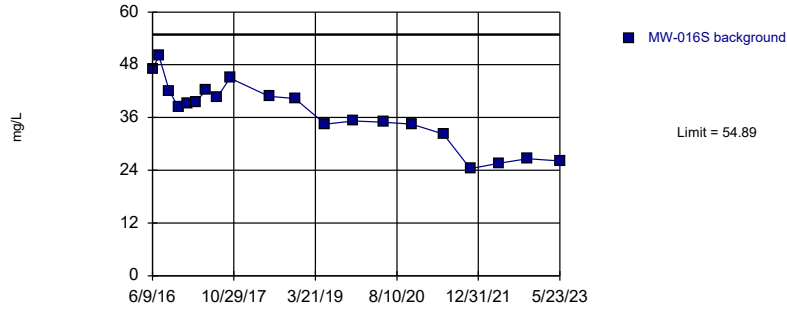
Prediction Limit Intrawell Parametric, MW-016I



Background Data Summary: Mean=21.48, Std. Dev.=3.26, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8976, critical = 0.851. Kappa = 3.524 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

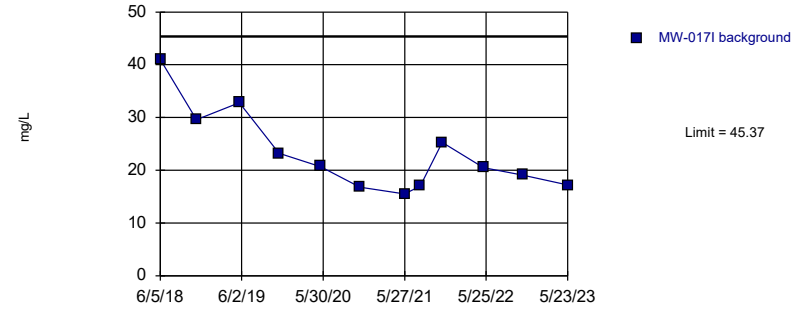
Prediction Limit
Intrawell Parametric, MW-016S



Background Data Summary: Mean=36.97, Std. Dev.=7.251, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9526, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

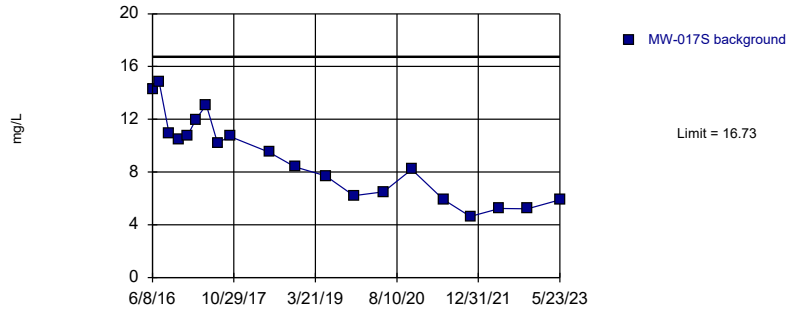
Prediction Limit
Intrawell Parametric, MW-017I



Background Data Summary: Mean=23.23, Std. Dev.=7.742, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8668, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

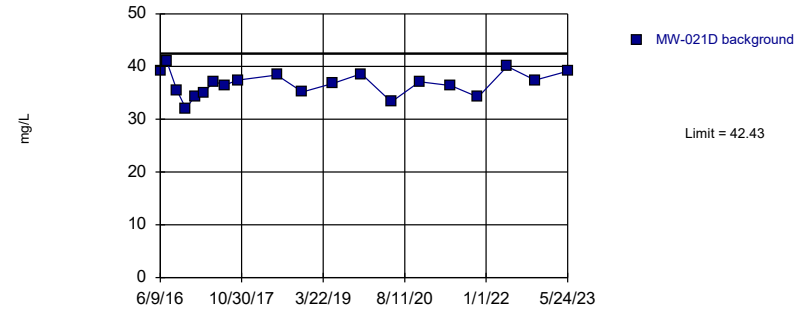
Prediction Limit
Intrawell Parametric, MW-017S



Background Data Summary: Mean=9.03, Std. Dev.=3.115, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9434, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit
Intrawell Parametric, MW-021D

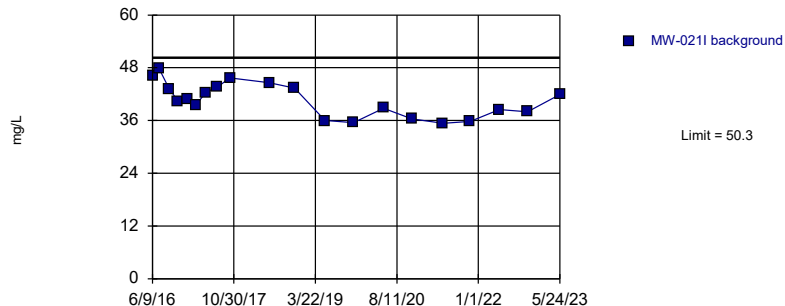


Background Data Summary: Mean=36.74, Std. Dev.=2.303, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9895, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-021I

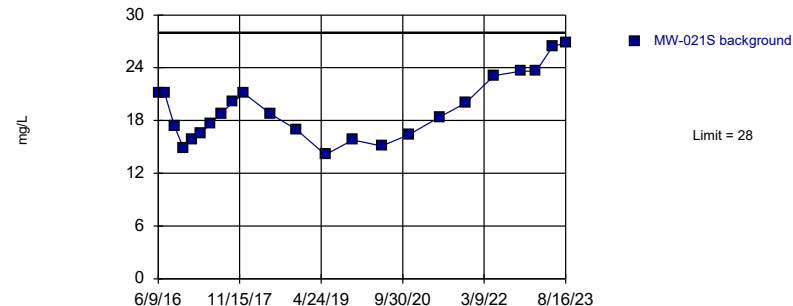


Background Data Summary: Mean=40.72, Std. Dev.=3.876, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9489, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-021S

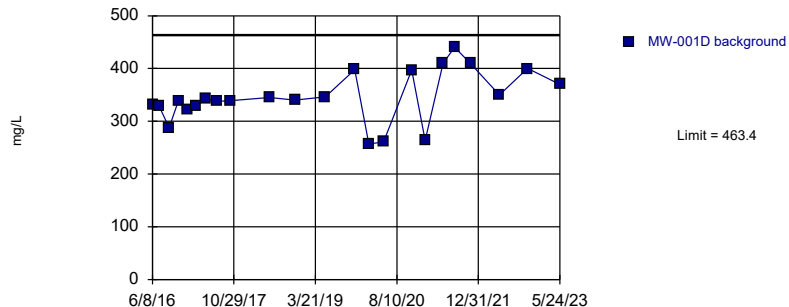


Background Data Summary: Mean=19.29, Std. Dev.=3.612, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9446, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-001D

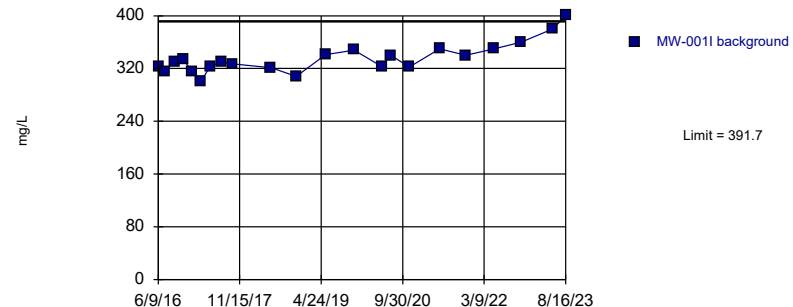


Background Data Summary: Mean=345.5, Std. Dev.=48.89, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9375, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-001I

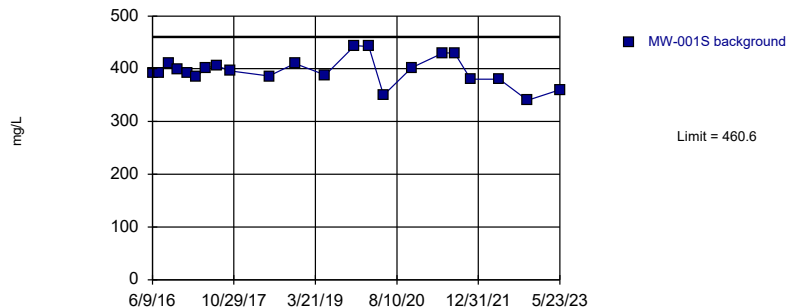


Background Data Summary: Mean=335.5, Std. Dev.=23.09, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9149, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:31 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-001S

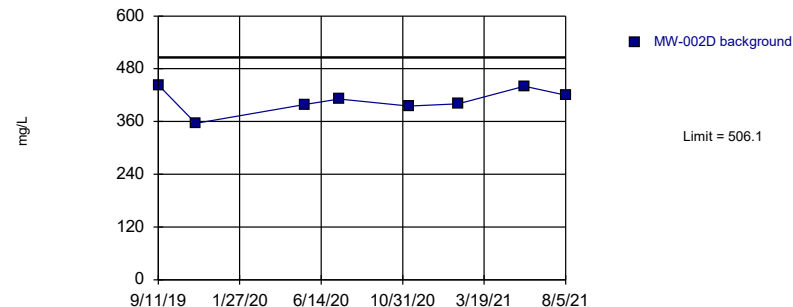


Background Data Summary: Mean=396.1, Std. Dev.=26.5, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9614, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
 Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-002D

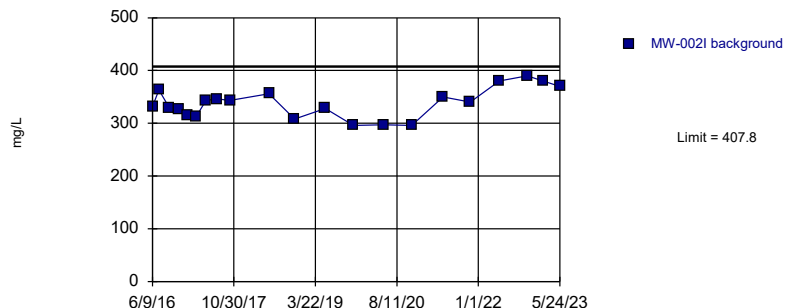


Background Data Summary: Mean=408, Std. Dev.=27.83, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9345, critical = 0.851. Kappa = 3.524 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
 Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-002I

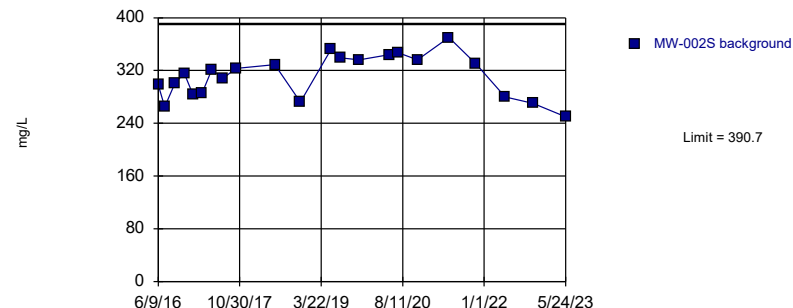


Background Data Summary: Mean=338.1, Std. Dev.=28.44, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9617, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
 Rockport Landfill Data: Rockport_LF

Prediction Limit

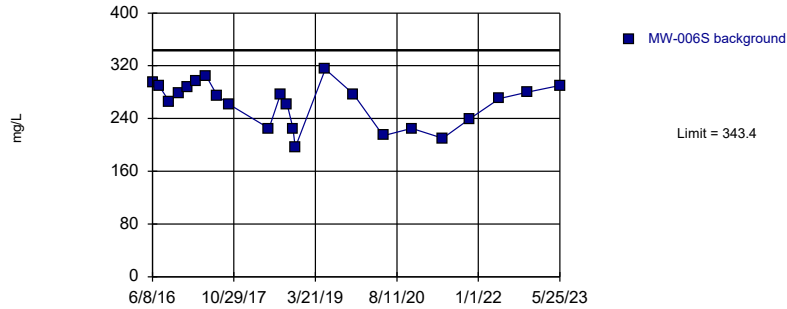
Intrawell Parametric, MW-002S



Background Data Summary: Mean=311.6, Std. Dev.=32.52, n=22. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9678, critical = 0.878. Kappa = 2.431 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
 Rockport Landfill Data: Rockport_LF

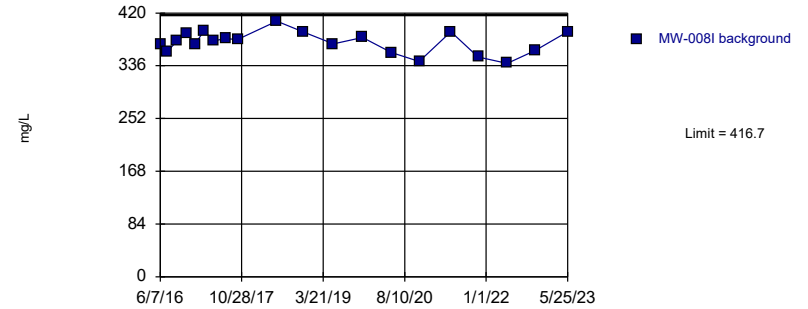
Prediction Limit
Intrawell Parametric, MW-006S (bg)



Background Data Summary: Mean=263.3, Std. Dev.=33.19, n=23. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9298, critical = 0.881. Kappa = 2.411 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

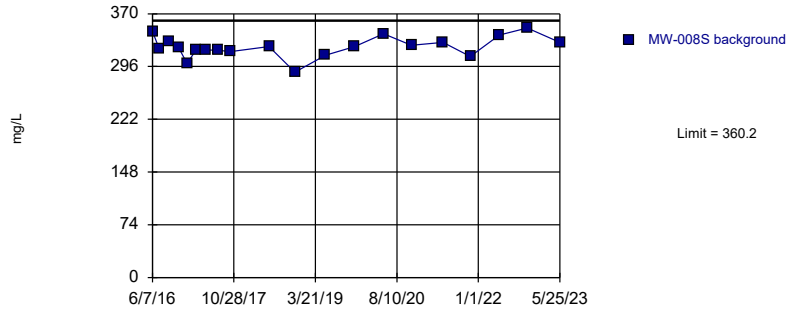
Prediction Limit
Intrawell Parametric, MW-008I (bg)



Background Data Summary: Mean=373.3, Std. Dev.=17.58, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9646, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

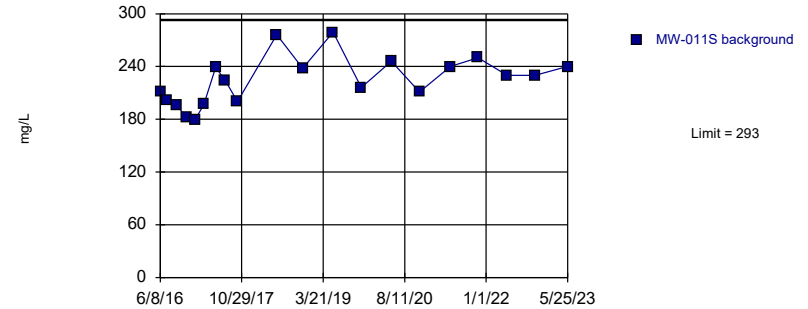
Prediction Limit
Intrawell Parametric, MW-008S (bg)



Background Data Summary: Mean=323.6, Std. Dev.=14.82, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9674, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

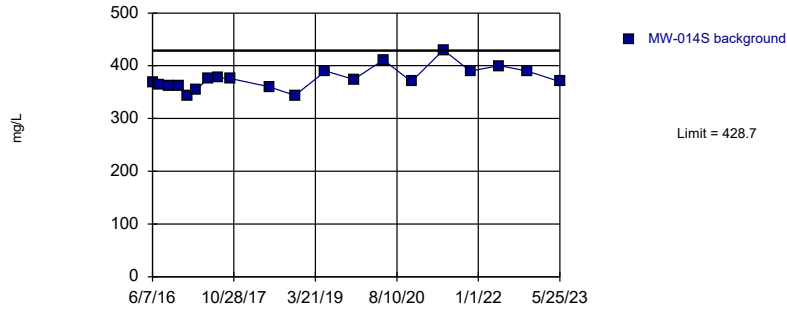
Prediction Limit
Intrawell Parametric, MW-011S (bg)



Background Data Summary: Mean=224.3, Std. Dev.=27.79, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9632, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

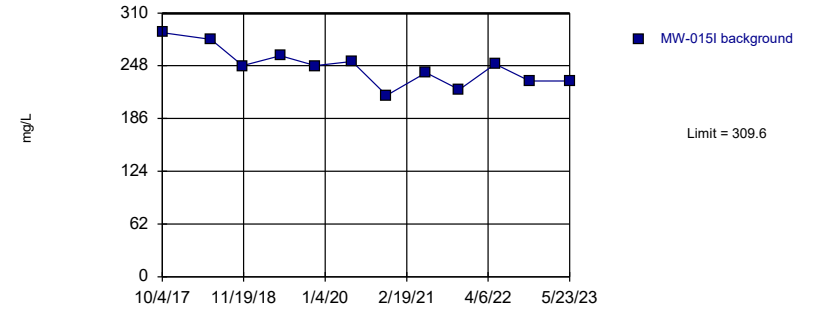
Prediction Limit
Intrawell Parametric, MW-014S (bg)



Background Data Summary: Mean=375.6, Std. Dev.=21.51, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9436, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

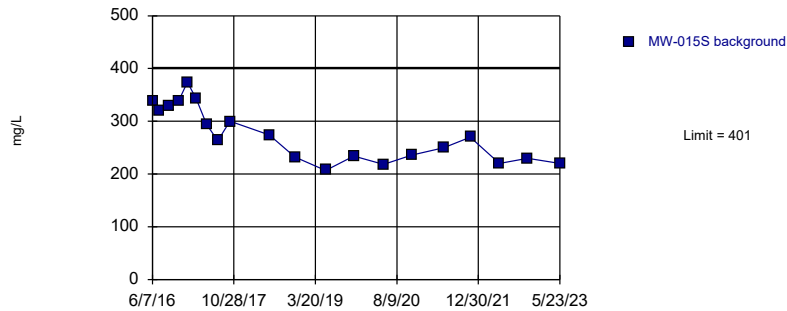
Prediction Limit
Intrawell Parametric, MW-015I



Background Data Summary: Mean=246.5, Std. Dev.=22.05, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9623, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

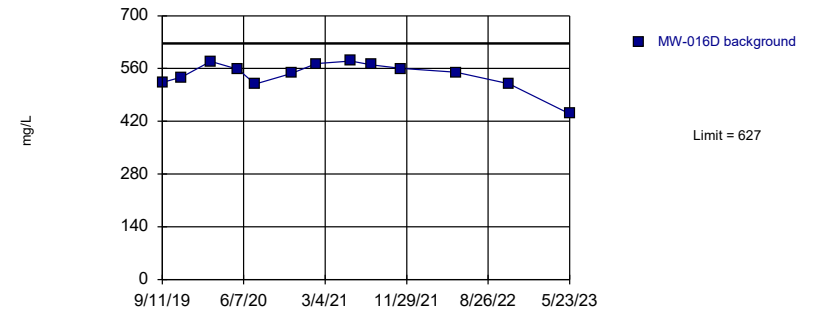
Prediction Limit
Intrawell Parametric, MW-015S



Background Data Summary: Mean=274.4, Std. Dev.=51.22, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9183, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

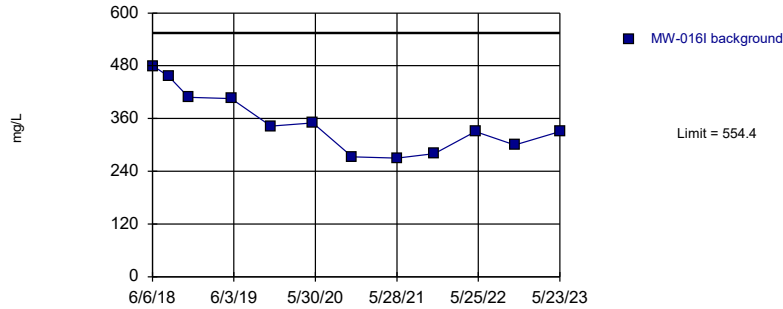
Prediction Limit
Intrawell Parametric, MW-016D



Background Data Summary (based on cube transformation): Mean=1.6e8, Std. Dev.=3.0e7, n=13. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8848, critical = 0.866. Kappa = 2.796 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

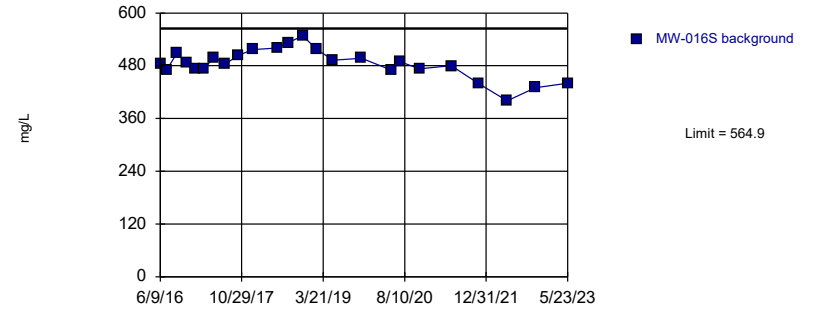
Prediction Limit Intrawell Parametric, MW-016I



Background Data Summary: Mean=352.1, Std. Dev.=70.74, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9176, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

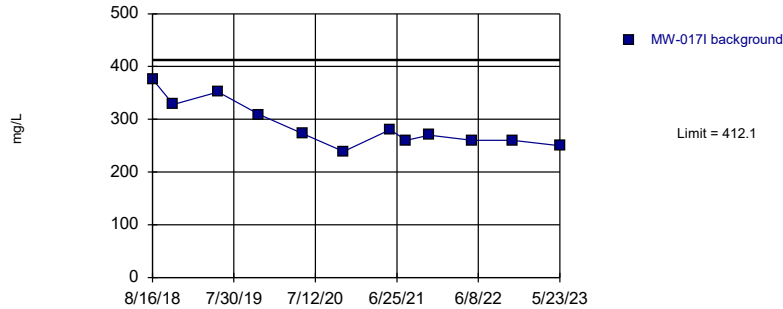
Prediction Limit Intrawell Parametric, MW-016S



Background Data Summary: Mean=484.5, Std. Dev.=33.64, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9665, critical = 0.884. Kappa = 2.39 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

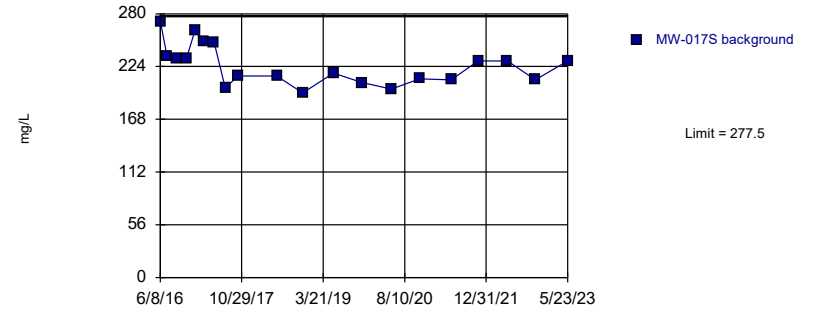
Prediction Limit Intrawell Parametric, MW-017I



Background Data Summary: Mean=288.1, Std. Dev.=43.37, n=12. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.8755, critical = 0.859. Kappa = 2.86 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

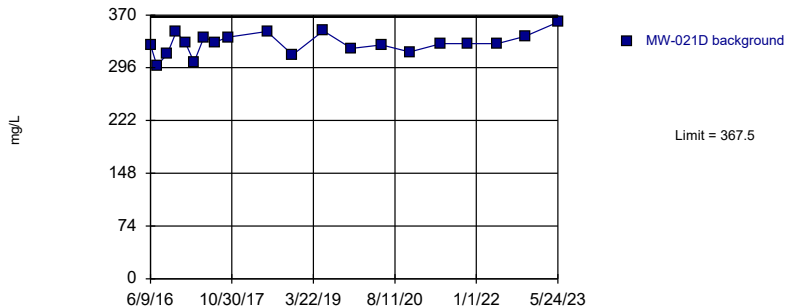
Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit Intrawell Parametric, MW-017S



Prediction Limit

Intrawell Parametric, MW-021D

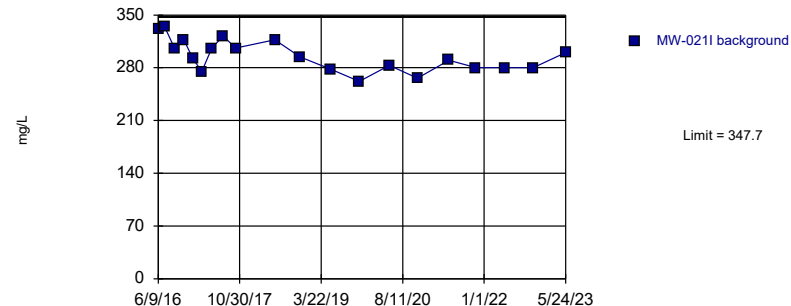


Background Data Summary: Mean=330.1, Std. Dev.=15.14, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9773, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-021I

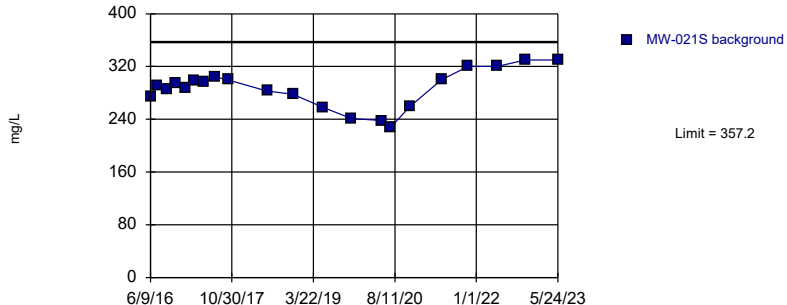


Background Data Summary: Mean=295.9, Std. Dev.=20.95, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9607, critical = 0.868. Kappa = 2.472 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-021S

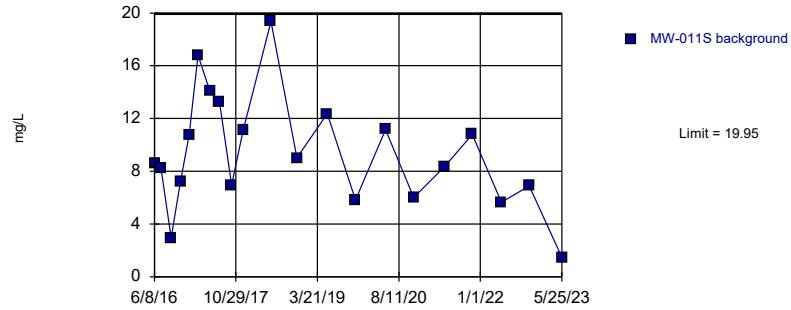


Background Data Summary: Mean=286.5, Std. Dev.=28.85, n=21. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9517, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Total Dissolved Solids [TDS] Analysis Run 1/16/2024 10:32 AM
Rockport Landfill Data: Rockport_LF

Prediction Limit

Intrawell Parametric, MW-011S (bg)



Background Data Summary: Mean=9.374, Std. Dev.=4.315, n=21. Data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9752, critical = 0.873. Kappa = 2.452 (c=8, w=16, 1 of 2, event alpha = 0.05132). Report alpha = 0.0004115. Assumes 1 future value.

Constituent: Sulfate, total Analysis Run 1/16/2024 10:34 AM View: Deseasonalized Prediction Limits
Rockport Landfill Data: Rockport_LF

Memorandum

Date: March 18, 2024
To: David Miller (AEP)
Copies to: Ben Kepchar (AEP)
From: Allison Kreinberg (Geosyntec)
Subject: Evaluation of Detection Monitoring Data at Rockport Plant's Landfill (LF)

In accordance with United States Environmental Protection Agency (USEPA) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR 257 Subpart D, "CCR rule") and solid waste permit (74-02) requirements through the Indiana Administrative Code (IAC) Title 329 Article 10 (329 IAC 10), the second semiannual detection monitoring event of 2023 at the Landfill, an existing CCR unit at the Rockport Power Plant located in Rockport, Indiana was completed on November 2, 2023. Based on the results, verification sampling was completed on December 20, 2023.

Background values for the Landfill were originally calculated in January 2018 and have been periodically updated as sufficient data becomes available. After a minimum of four additional detection monitoring events, the results of those events were compared to the existing background and the dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix III parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the most recent calculation of the revised background values are described in Geosyntec's *Statistical Analysis Summary* report, dated January 25, 2024.

To achieve an acceptably high statistical power while maintaining a site-wide false-positive rate (SWFPR) of 10% per year or less, prediction limits were calculated based on a one-of-two retesting procedure. With this procedure, a statistically significant increase (SSI) is concluded only if both samples in a series of two exceed the UPL (or are below the LPL for pH). In practice, if the initial result did not exceed the UPL, a second sample was not collected or analyzed.

Detection monitoring results and the relevant background values are compared in Table 1 and noted exceedances are described in the list below.

- Chloride concentrations exceeded the intrawell UPL of 15.4 milligrams per liter (mg/L) in both the initial (19.9 mg/L) and second (19.8 mg/L) samples collected at MW-017S. An SSI over background is concluded for chloride at MW-017S.

In response to the exceedances noted above, the Rockport Landfill CCR unit will either transition to assessment monitoring or an alternative source demonstration (ASD) for chloride will be conducted in accordance with 40 CFR 257.94(e)(2). If the ASD is successful, the Rockport Landfill will remain in detection monitoring.

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with 40 CFR 257.93(h)(2). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

**Table 1. Detection Monitoring Data Evaluation
Rockport - Landfill**

Analyte	Unit	Description	MW-001D	MW-001I	MW-001S	MW-002D	MW-002I	MW-002S	MW-015I	MW-015S
			11/2/2023	11/2/2023	11/2/2023	11/2/2023	11/2/2023	11/2/2023	11/2/2023	11/2/2023
Boron	mg/L	Intrawell Background Value (UPL)	0.111	0.104	0.0588	0.0794	0.0520	0.0936	0.0820	0.109
		Analytical Result	0.052	0.019	0.018	0.012	0.012	0.021	0.034	0.016
Calcium	mg/L	Intrawell Background Value (UPL)	83.2	73.2	77.8	123	82.3	69.7	54.0	66.4
		Analytical Result	67.2	64.3	59.0	78.8	70.1	38.8	46.8	40.5
Chloride	mg/L	Intrawell Background Value (UPL)	67.5	64.7	50.7	132	72.9	33.3	29.4	26.1
		Analytical Result	46.2	55.4	30.2	121	42.6	12.4	15.9	8.32
Conductivity	µS/cm	Intrawell Background Value (UPL)	864	730	892	1,150	792	775	593	614
		Analytical Result	701	709	699	988	676	433	457	448
Fluoride	mg/L	Intrawell Background Value (UPL)	0.330	0.468	0.746	0.226	0.381	0.466	0.496	1.04
		Analytical Result	0.32	0.45	0.72	0.21	0.32	0.45	0.43	0.82
pH	SU	Intrawell Background Value (UPL)	8.1	7.9	8.0	8.5	8.2	8.0	8.1	7.9
		Intrawell Background Value (LPL)	6.8	6.7	6.7	6.3	6.6	6.7	6.9	6.9
		Analytical Result	6.8	6.8	6.8	6.8	6.8	7.1	7.3	7.2
Sulfate	mg/L	Intrawell Background Value (UPL)	47.9	47.2	41.4	45.5	47.0	36.6	33.7	23.2
		Analytical Result	39.1	42.4	34.9	34.4	35.4	16.8	12.9	7.8
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	463	392	461	506	408	391	310	401
		Analytical Result	360	360	370	480	350	230	230	230

Analyte	Unit	Description	MW-016D	MW-016I	MW-016S	MW-017I	MW-017S		MW-021D	MW-021I	MW-021S
			11/2/2023	11/2/2023	11/2/2023	11/2/2023	11/2/2023	12/20/2023	11/2/2023	11/2/2023	11/2/2023
Boron	mg/L	Intrawell Background Value (UPL)	0.100	0.139	0.109	0.0899	0.0626		0.0956	0.0652	0.0552
		Analytical Result	0.033	0.020	0.020	0.045	0.025	--	0.014	0.014	0.013
Calcium	mg/L	Intrawell Background Value (UPL)	125	87.2	119	53.8	39.8		79.5	72.5	64.3
		Analytical Result	62.2	48.9	83.3	38.6	37.7	--	68.5	59.6	50.3
Chloride	mg/L	Intrawell Background Value (UPL)	171	79.1	28.1	73.4	15.4		22.9	22.7	21.4
		Analytical Result	63.3	19.3	12.1	25.4	19.9	19.8	21.2	20.2	19.5
Conductivity	µS/cm	Intrawell Background Value (UPL)	1,250	1,020	1,030	1,030	517		707	590	627
		Analytical Result	826	582	862	486	476	--	632	541	589
Fluoride	mg/L	Intrawell Background Value (UPL)	0.244	0.222	0.471	1.16	1.22		0.445	0.497	0.902
		Analytical Result	0.23	0.16	0.38	0.94	0.78	--	0.37	0.40	0.68
pH	SU	Intrawell Background Value (UPL)	8.0	8.0	8.1	8.3	8.2		8.5	8.6	8.5
		Intrawell Background Value (LPL)	6.7	6.8	6.3	6.8	6.9		6.7	7.0	6.7
		Analytical Result	7.2	7.1	6.8	7.0	7.0	--	7.1	7.0	7.1
Sulfate	mg/L	Intrawell Background Value (UPL)	43.4	33.0	54.9	45.4	16.7		42.4	50.3	28.0
		Analytical Result	31.7	15.1	27.2	15.9	7.9	--	36.9	41.0	23.5
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	627	554	565	412	278		368	348	357
		Analytical Result	430	300	440	240	240	--	330	290	320

Notes:

1. **Bold values exceed the background value.**

2. Background values are shaded gray.

LPL: lower prediction limit

mg/L: milligrams per liter

SU: standard units

UPL: upper prediction limit

µS/cm: microsiemens per centimeter

--: not sampled

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

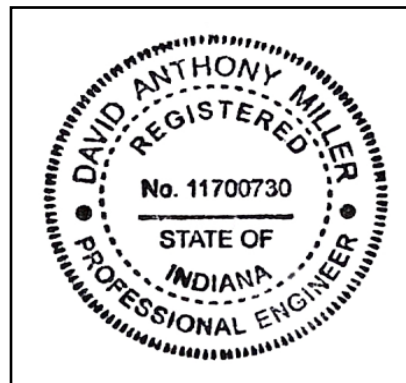
I certify that the selected statistical method, described above and in the January 25, 2024 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Rockport Landfill CCR management area and that the requirements of 40 CFR 257.93(f) and 329 IAC 10 have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature



11700730

License Number

Indiana

Licensing State

03.19.2024

Date

Memorandum

Date: September 20, 2024
To: David Miller (AEP)
Copies to: Ben Kepchar (AEP)
From: Allison Kreinberg (Geosyntec)
Subject: Evaluation of Detection Monitoring Data at Rockport Plant's Landfill (LF)

In accordance with United States Environmental Protection Agency (USEPA) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR 257 Subpart D, "CCR rule") and solid waste permit (74-02) requirements through the Indiana Administrative Code (IAC) Title 329 Article 10 (329 IAC 10), the first semiannual detection monitoring event of 2024 at the Landfill, an existing CCR unit at the Rockport Power Plant located in Rockport, Indiana was completed on May 14-16, 2024. Based on the results, verification sampling was completed on July 16, 2024.

Background values for the Landfill were originally calculated in January 2018 and have been periodically updated as sufficient data becomes available. After a minimum of four additional detection monitoring events, the results of those events were compared to the existing background and the dataset was updated as appropriate. Revised upper prediction limits (UPLs) were calculated for each Appendix III parameter to represent background values. Lower prediction limits (LPLs) were also calculated for pH. Details on the most recent calculation of the revised background values are described in Geosyntec's *Statistical Analysis Summary* report, dated January 25, 2024.

To achieve an acceptably high statistical power while maintaining a site-wide false-positive rate (SWFPR) of 10% per year or less, prediction limits were calculated based on a one-of-two retesting procedure. With this procedure, a statistically significant increase (SSI) is concluded only if both samples in a series of two exceed the UPL (or are below the LPL for pH). In practice, if the initial result did not exceed the UPL, a second sample was not collected or analyzed.

Detection monitoring results and the relevant background values are compared in Table 1 and noted exceedances are described in the list below.

- Calcium concentrations exceeded the intrawell UPL of 39.8 milligrams per liter (mg/L) in both the initial (44.3 mg/L) and second (42.8 mg/L) samples collected at MW-017S. An SSI over background is concluded for calcium at MW-017S.
- Chloride concentrations exceeded the intrawell UPL of 132 mg/L in both the initial (194 mg/L) and second (175 mg/L) samples collected at MW-002D. Chloride concentrations exceeded the intrawell UPL of 15.4 mg/L in both the initial (18.7 mg/L) and second (19.6 mg/L) samples collected at MW-017S. SSIs over background are concluded for chloride at MW-002D and MW-017S.

In response to the exceedances noted above, the Rockport Landfill CCR unit will either transition to assessment monitoring or an alternative source demonstration (ASD) for calcium and chloride will be conducted in accordance with 40 CFR 257.94(e)(2). If the ASD is successful, the Rockport Landfill will remain in detection monitoring.

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with 40 CFR 257.93(h)(2). A certification of these statistics by a qualified professional engineer is provided in Attachment A.

**Table 1: Detection Monitoring Data Evaluation
Rockport - Landfill**

Analyte	Unit	Description	MW-001D	MW-001I		MW-001S	MW-002D		MW-002I	MW-015I	MW-015S
			5/15/2024	5/15/2024	7/16/2024	5/15/2024	5/16/2024	7/16/2024	5/15/2024	5/14/2024	5/14/2024
Boron	mg/L	Intrawell Background Value (UPL)	0.111	0.104		0.0588	0.0794		0.0520	0.0820	0.109
		Analytical Result	0.051	0.017	--	0.017	0.012	--	0.011	0.063	0.039
Calcium	mg/L	Intrawell Background Value (UPL)	83.2	73.2		77.8	123		82.3	54.0	66.4
		Analytical Result	70.9	66.9	--	64.7	100	--	79.5	47.1	50.9
Chloride	mg/L	Intrawell Background Value (UPL)	67.5	64.7		50.7	132		72.9	29.4	26.1
		Analytical Result	54.9	54.7	--	30.2	194	175	62.6	13.7	8.43
Conductivity	µS/cm	Intrawell Background Value (UPL)	864	730		892	1,150		792	593	614
		Analytical Result	706	674	--	679	1,110	--	718	394	438
Fluoride	mg/L	Intrawell Background Value (UPL)	0.330	0.468		0.746	0.226		0.381	0.496	1.04
		Analytical Result	0.32	0.48	0.45	0.65	0.22	--	0.32	0.31	0.79
pH	SU	Intrawell Background Value (UPL)	8.1	7.9		8.0	8.5		8.2	8.1	7.9
		Intrawell Background Value (LPL)	6.8	6.7		6.7	6.3		6.6	6.9	6.9
		Analytical Result	6.9	6.9	--	7.2	6.9	--	7.0	7.0	7.5
Sulfate	mg/L	Intrawell Background Value (UPL)	47.9	47.2		41.4	45.5		47.0	33.7	23.2
		Analytical Result	41.9	44.8	--	39.2	38.0	--	41.2	12.0	8.3
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	463	392		461	506		408	310	401
		Analytical Result	380	370	--	370	600	390	390	210	240

Analyte	Unit	Description	MW-016D	MW-016I	MW-016S	MW-017I	MW-017S		MW-021D	MW-021I	MW-021S
			5/14/2024	5/15/2024	5/14/2024	5/14/2024	5/14/2024	7/16/2024	5/15/2024	5/15/2024	5/15/2024
Boron	mg/L	Intrawell Background Value (UPL)	0.100	0.139	0.109	0.0899	0.0626		0.0956	0.0652	0.0552
		Analytical Result	0.049	0.017	0.047	0.055	0.038	--	0.014	0.011	0.012
Calcium	mg/L	Intrawell Background Value (UPL)	125	87.2	119	53.8	39.8		79.5	72.5	64.3
		Analytical Result	82.2	44.5	95.0	45.1	44.3	42.8	67.3	58.5	55.6
Chloride	mg/L	Intrawell Background Value (UPL)	171	79.1	28.1	73.4	15.4		22.9	22.7	21.4
		Analytical Result	96.4	21.1	11.7	22.7	18.7	19.6	19.9	20.8	20.0
Conductivity	µS/cm	Intrawell Background Value (UPL)	1,250	1,020	1,030	1,030	517		707	590	627
		Analytical Result	851	509	789	0	471	--	620	538	602
Fluoride	mg/L	Intrawell Background Value (UPL)	0.244	0.222	0.471	1.16	1.22		0.445	0.497	0.902
		Analytical Result	0.20	0.18	0.38	0.85	0.69	--	0.37	0.41	0.67
pH	SU	Intrawell Background Value (UPL)	8.0	8.0	8.1	8.3	8.2		8.5	8.6	8.5
		Intrawell Background Value (LPL)	6.7	6.8	6.3	6.8	6.9		6.7	7.0	6.7
		Analytical Result	7.4	7.2	7.0	7.0	7.2	--	7.3	7.0	7.1
Sulfate	mg/L	Intrawell Background Value (UPL)	43.4	33.0	54.9	45.4	16.7		42.4	50.3	28.0
		Analytical Result	33.7	14.6	31.4	16.8	8.6	--	36.5	45.2	27.7
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	627	554	565	412	278		368	348	357
		Analytical Result	450	270	440	220	260	--	330	320	340

Notes:

1. **Bold values exceed the background value.**

2. Background values are shaded gray.

3. MW-002S was dry at the time of sampling and could not be collected during this event.

LPL: Lower prediction limit

mg/L: milligrams per liter

SU: standard units

UPL: Upper prediction limit

µS/cm: microsiemens per centimeter

ATTACHMENT A

Certification by a Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

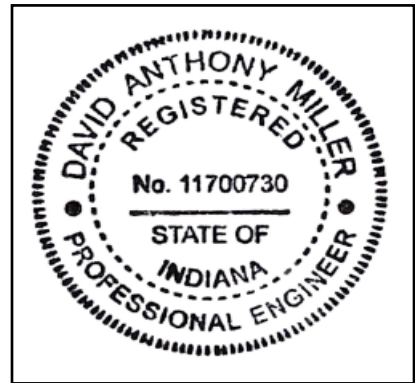
I certify that the selected statistical method, described above and in the January 25, 2024 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Rockport Landfill CCR management area and that the requirements of 40 CFR 257.93(f) and 329 IAC 10 have been met.

David Anthony Miller

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature



11700730

License Number

Indiana

Licensing State

09.26.2024

Date

APPENDIX 3 – Alternate Source Demonstrations

Alternate source demonstrations that have been completed as of January 31, 2025 follow.



Alternative Source Demonstration for Appendix III Constituents, CCR Landfill

American Electric Power Service Corporation
Rockport Generating Station, Rockport, Spencer County, Indiana
WSP USA Project # 7650202784



Prepared for:

American Electric Power Service Corporation

1 Riverside Plaza, Columbus, Ohio 43215

11 June 2024



11 June 2024

Mr. David Miller
Director, Land Environment & Remediation Services
American Electric Power Service Corporation
1 Riverside Plaza
Columbus, OH 43215
Email: damiller@aep.com

WSP USA Environment & Infrastructure Inc.
2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922
T: (865) 671-6774
www.wsp.com

Dear Mr. Miller:

WSP USA Environment & Infrastructure Inc. (WSP), has prepared this Alternative Source Demonstration (ASD) for the coal combustion residuals (CCR) Landfill located at the American Electric Power (AEP) Rockport Plant in Rockport, Spencer County, Indiana. As detailed in this report, the results of this ASD conclude that statistically significant increases (SSIs) identified in November 2023 samples and December 2023 verification samples from the waste boundary monitoring wells are not caused by releases from the CCR Landfill. We are available to discuss the details of this report at your convenience should you require additional information.

We very much appreciate working with AEP on this project. If you require additional information about this report, please feel free to contact Thomas Hensel at (865) 671-6774 or Konrad Quast at (865) 227-1994.

Sincerely,

WSP USA Environment & Infrastructure Inc.

A blue ink signature of Konrad W. Quast, written in a cursive style.

Konrad W. Quast, PhD
Senior Hydrogeologist

A blue ink signature of Thomas W. Hensel, written in a cursive style.

Thomas W. Hensel, PG
Lead Consultant, Geologist, PM

Attachments

cc: Benjamin E. Kepchar, PE, American Electric Power Service Corporation



Alternative Source Demonstration for Appendix III Constituents, CCR Landfill

American Electric Power Service Corporation
Rockport Generating Station, Rockport, Spencer County, Indiana
WSP USA Project # 7650202784

Prepared for:

American Electric Power Service Corporation
1 Riverside Plaza, Columbus, Ohio 43215

Prepared by:

WSP USA Environment & Infrastructure Inc.
2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922
T: (865) 671-6774

11 June 2024

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Figure 5	Potentiometric Surface Contours (October 30, 2023)

Appendices

Appendix A	Analytical Data Tables
Appendix B	Full Size Geochemical Exhibits

Executive Summary

American Electric Power (AEP) operates two units at the Rockport Plant for management of coal combustion residuals (CCR): the bottom ash ponds (BAP), and the CCR Landfill. Both are regulated under the federal CCR Rule (40 CFR Part 257) that became effective in October 2015 and modified in July 2018.

The CCR Landfill has been in the detection phase of groundwater monitoring as part of its compliance with the rule. Semi-annual groundwater samples were collected in November 2023 with verification samples collected in December 2023 for wells that exhibited statistically significant increases (SSIs) above background. The most recent statistical analysis of Appendix III constituents identified one SSI above background for chloride at waste boundary monitoring well MW-17S. This SSI is the first occurrence of chloride above background at MW-17S.

This alternative source demonstration (ASD) evaluates the occurrence of SSIs in terms of site geochemistry, hydrogeologic setting, and with respect to supplementary data collected to support the evaluation. Based on the analysis presented in this ASD and previous ASD reports, CCR Landfill leachate can be excluded as a source of Appendix III SSIs for the following reasons:

- Increased concentrations of chloride can be attributed to alternate sources including identified historical oil and gas operations and the use of unlined brine pits, and the infiltration of evaporated precipitation from the adjacent stormwater pond.
- Boron occurs naturally at low concentration in site groundwater, in similar concentrations in background and downgradient wells. Boron occurs at concentrations approximately three orders-of-magnitude greater in the CCR Landfill leachate as compared to site groundwater, and is a conservative ion, making it an excellent indicator for impacts from landfill leachate in groundwater. If landfill leachate were impacting groundwater, boron would be expected to be detected in multiple waste boundary wells and at statistically significant concentrations above background; no SSIs for boron have ever been detected at the site. Furthermore, the boron that is present in site wells has been shown to be isotopically different than the leachate and no increasing trends are identified.
- Sulfate is another common indicator for CCR leachate impacts and occurs naturally in site groundwater (at similar concentration ranges in background and downgradient wells) and is elevated in the CCR Landfill leachate at concentrations approximately three orders-of-magnitude above background monitoring wells. No SSIs for sulfate have been detected at the site until recently (Spring 2023) for a single well and sampling event that has not reoccurred. No SSIs for sulfate were identified in site groundwater monitoring wells during this current detection sampling event.
- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations approximately two orders-of-magnitude above groundwater concentrations. Spatial trends can be observed in **Exhibits 3-4** and **3-5** in Section 3.0 and indicate that chloride concentrations tend to increase in groundwater downgradient from recharge areas including the stormwater ponds north and east of the landfill. November 2023 data and December 2023 verification data indicated groundwater concentrations of chloride over background in one well (MW-17S). However, because the chloride SSI is not associated with an SSI for boron and sulfate, with no indication of increasing trends with respect to boron or sulfate at the same well location, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.

- The same conclusion can be drawn regarding total dissolved solids (TDS) and fluoride as for chloride, where an occasional SSI is not consistently associated with an SSI for boron or sulfate, nor associated with an increasing trend with respect to boron or sulfate. No SSIs for TDS nor fluoride were identified in site groundwater monitoring wells during this current detection sampling event.
- Ion ratio cross plots of indicator constituents; boron, chloride, and sulfate, show distinct and separate groupings for waste boundary and background groundwater and leachate samples. Background and waste boundary groundwater plots along a trend line associated with variability across the site while leachate plots in a distinct separate grouping away from the groundwater trend. The ground water trends over time for wells with SSIs show the water quality moving away from the leachate grouping indicating that the leachate is not impacting downgradient groundwater.
- The conclusions listed above are also supported by the analytical results for isotope ratios of boron and strontium in leachate and groundwater samples from a previous sampling event. While only a single set of leachate samples to date have been collected, the indication in downgradient wells, including wells that have shown SSIs, is that the leachate is distinctly different from that of background and downgradient groundwater, and does not support a release from the landfill to groundwater.

1.0 OBJECTIVE

American Electric Power (AEP) operates a coal combustion residual (CCR) Landfill that is used for the management of CCR materials. The landfill is regulated under the federal CCR Rule (40 CFR Part 257) that became effective in October 2015. During the initial phase of groundwater monitoring (detection monitoring), the CCR Rule requires the owners or operators of regulated units to collect at least eight independent samples from at least one background location and at least three waste boundary wells, analyzed for constituents listed in Appendix III and Appendix IV of the CCR rule. That sampling was completed in July 2017.

Historically, the Upper Prediction Limit (UPL) for each constituent was established for site monitoring wells. The results of the detection monitoring event were compared to the UPL; if these results exceed the UPL, a verification sampling event is conducted. If the UPL is exceeded in both events, it is assumed that a statistically significant increase (SSI) is confirmed for the constituent.

Eleven detection monitoring events have been conducted at the landfill. Each round consists of an initial sampling event, followed by one or two rounds of verification samples based on the results of the initial events. Following completion of the verification sampling for each event, a statistical analysis is conducted to assess whether SSIs above background are detected in the waste boundary monitoring wells for Appendix III constituents. For each semi-annual sampling event where SSIs are detected, an alternative source demonstration (ASD) has been performed to assess whether these SSIs were the result of a release of leachate from the CCR landfill.

Previous ASDs performed by Geosyntec and WSP Environment & Infrastructure Inc. (WSP) have indicated that the source of previously identified SSIs, result from natural variation in groundwater quality or potential impacts from historical oil and gas operations. The previous ASD was completed by WSP in November 2023 for the detection monitoring event of May 2023, with verification samples taken in August 2023.

The second semi-annual detection monitoring samples for 2023 were taken in November 2023, with verification samples taken in December 2023. Again, a statistical evaluation of monitoring results identified an SSI for an Appendix III constituent, chloride. The objective of this ASD is to review these results, and to assess whether the findings of the previous ASDs remain valid; that is, that the SSI detected in the waste boundary wells, from detection monitoring samples collected in November 2023 and verified in December 2023 samples, is not the result of a release from the landfill.

1.1 Scope

As stated in 40 CFR 257.94(e)(2), the CCR Rule allows 90 days after the initial identification of Appendix III SSIs for the owner or operator to demonstrate that a source other than the regulated unit is responsible for identified SSIs. The regulations allow the ASD to address several potential causes of SSIs other than a release from the regulated unit, including error[s] in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

The scope of this ASD is focused on evaluating the second 2023 semi-annual detection monitoring results (including verification samples) and assessing whether the current data are consistent with the assessment conducted in the most recent ASD report (WSP, November 2023). The ASD is undertaken to assess, through multiple lines of evidence, whether an alternative source for the SSIs can be supported, following the guidelines published in October 2017 by the Electric Research Power Institute (EPRI, *Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites*). This report does not include evaluations of potential errors in sampling and analysis, or the statistical approaches which were used to identify the SSIs.

1.2 Approach

The ASD presented in this document is based on a geochemical and hydrologic evaluation of groundwater quality at the CCR Landfill. The purpose of this ASD is to evaluate the identified SSIs within the larger geochemical context of the CCR Landfill groundwater flow system, to assess the likelihood that these SSIs are the result of releases from the CCR Landfill. In addition to the groundwater analytical data collected for compliance with the CCR rule, used to support the statistical evaluation, WSP relied on supplemental analytical data, including previous analyses of the CCR Landfill leachate and monitoring well groundwater analyses of the isotopes of boron and strontium.

1.3 Report Organization

This ASD has been prepared following the *Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites* (EPRI, 2017) to the extent applicable. A summary of the CCR Landfill setting, and of the results from the statistical evaluation of the Appendix III detection monitoring parameters are presented in **Section 2**. The primary and secondary lines of evidence developed from a geochemical evaluation of the site are presented in **Section 3**. The technical findings of the ASD and certification by an Indiana-licensed Professional Engineer (PE) are presented in **Section 4**. References are included in **Section 5**.

2.0 BACKGROUND

2.1 Site Description

The Rockport Generating Station is in southwest Indiana in Spencer County, on property extending into three Townships: Ohio, Hammond, and Grass (**Figure 1**). Two CCR-regulated units are located on the property, two adjacent bottom ash ponds (BAP) and the CCR Landfill. The general layout of the property and the locations of the CCR units are shown on **Figure 2**. The CCR Landfill, or Landfill, is located about 8,000 feet (1.5 miles) northeast of the generating plant. The general layout of the CCR Landfill and the monitoring well locations are shown in **Figure 3**.

2.1.1 Landfill Operation

The CCR Landfill is an active disposal unit that primarily contains fly ash, with materials generated by the emission control systems added beginning in 2007. These materials include sodium sulfate generated by the removal of sulfur dioxide by the dry sorbent injection (DSI) system, and granular brominated activated carbon used for mercury removal. To a lesser extent, some bottom ash has also been placed within the CCR Landfill. The active portion of the CCR Landfill directly adjoins a closed portion of the landfill to the northeast (**Figure 3**).

The CCR Landfill is currently permitted by the Indiana Department of Environmental Management (IDEM) Office of Land Quality, Solid Waste Permits Section, as a Restricted Waste Site (RWS) under Indiana Administrative Code (IAC) 329 Title 10 (Solid Waste CCR Landfill Disposal Facilities) Rule 9-4. The active CCR Landfill is permitted as a RWS Type I, which requires a liner and leachate collection system. The permit was most recently renewed on 25 August 2020.

Leachate from the CCR Landfill cells is collected in lined ponds located north and west of the active CCR Landfill area. These ponds also collect stormwater runoff from the CCR Landfill area. Prior to discharge, the leachate commingled with runoff is transferred to the Leachate Treatment Pond (north of the West Leachate Pond). Effluent from the Leachate Treatment Pond is discharged and monitored under National Pollution Discharge Elimination System (NPDES) Permit No. IN0051845 at Station 002.

2.1.2 Groundwater Flow

The principal groundwater flow zone underlying the CCR Landfill consists of the saturated section of the unconsolidated glaciofluvial sand and sand and gravel valley train sediments that fill the Ohio River valley in this area. The depth to water in this zone typically ranges from 20 to 35 feet (ft) below ground surface (BGS), and the saturated thickness (which generally increases to the southeast) ranges from less than 15 ft to more than 80 ft. Generalized cross-sections are presented in **Figure 4**.

Groundwater primarily occurs under unconfined conditions, or semi-confined conditions where the saturated zone is directly overlain by surficial silt and clay. Piezometric data collected from clustered monitoring wells indicate that vertical gradients within the saturated zone are minor, and groundwater flow is primarily horizontal. Groundwater flows into the plant and landfill areas from the north, northwest and/or west, and continues flowing under the property generally to the south and east, towards Honey Creek and/or the Ohio River. A potentiometric surface map from 30 October 2023 is presented on **Figure 5** and is consistent with historic data.

2.1.3 Existing Groundwater Monitoring System

In 2015, when the CCR Rule took effect, a monitoring well network was already present at the CCR Landfill for groundwater monitoring under an IDEM permit. While the valley train sediments are considered a single well-connected aquifer system, the saturated thickness of the sediments allowed for wells at the CCR Landfill to be installed in clusters, to monitor up to three levels (shallow – “S”, intermediate – “I”, and deep – “D”) within the principal flow zone. However, the valley train sediments that make up the flow zone thin to the north, leaving less saturated overburden upgradient of the CCR Landfill. As a result, only one or two levels could be monitored in some locations.

The official CCR groundwater monitoring network for the CCR Landfill includes five background or cross-gradient wells (MW-6S, MW-8S/I, MW-11S and MW-14S) and 16 waste boundary wells (MW-1S/I/D, MW-2S/I/D, MW-15S/I, MW-16S/I/D, MW-17S/I and MW-21S/I/D). At most locations, the saturated overburden was thick enough to allow installation of screens at three different levels, with the deepest wells being completed just above bedrock at depths of 88 to 100 ft BGS. Two clusters, MW-15 and MW-17 are located just east of the CCR Landfill in an area of relatively shallow bedrock. Therefore, the deeper wells at these locations (designated “I”) have completed depths just above bedrock at 66 to 67 ft BGS. A comprehensive summary of analytical data for the groundwater monitoring network since June 2016 is presented in **Table A-1** in **Appendix A**.

2.2 Summary of Previous SSIs and ASDs

Eight baseline monitoring events and one initial detection monitoring event for the CCR Landfill were completed prior to 17 October 2017. On behalf of AEP, Geosyntec submitted these results to Groundwater Stats Consulting, LLC for statistical analysis. Oversight on the use of statistical calculations was provided by Dr. Kirk Cameron of MacStat Consulting, Ltd. According to the report (*Statistical Analysis Summary, Landfill*, Geosyntec 2018), the initial eight baseline data events were used to calculate the UPLs for each of the Appendix III constituents to represent background values. Results from each detection monitoring event conducted to date have been compared to the UPLs established from the eight baseline events to identify SSIs compared to background.

Following completion of the first detection monitoring event, the initial statistical evaluation identified 13 SSIs for calcium (2), chloride (7), fluoride (1) and TDS (3). On 4 January 2019, Geosyntec prepared an ASD focusing on statistical methods. Geosyntec evaluated the new data and based on multiple lines of evidence, revised the statistical approach for some monitoring wells. Initially, the statistical evaluation included a mixture of interwell (between wells) and

intrawell (within one well) techniques. The interwell analysis compares data from waste boundary wells against a background data set composed of results from upgradient and cross-gradient well data. The intrawell approach compares each waste boundary well against a background composed of its own historical data and is used to detect statistically significant increases within samples from an individual well over time (Horsey, HR et. al., 2001). Spatial and temporal variability observed in samples from the background monitoring wells caused Geosyntec to select an intrawell approach for all Appendix III constituents in all waste boundary monitoring wells.

After using an intrawell approach, the number of SSIs was reduced to eight, distributed among seven waste boundary wells. In January 2019 Geosyntec published an ASD to document changes to the statistical methodologies and attributed the observed SSIs to impacts from historic oil and gas operations (Geosyntec, 2019). Since the statistical methods were revised, results from all subsequent detection monitoring events have been analyzed following the same approach. The most recent statistical analysis completed on March 18, 2024, identified one SSI, chloride, at monitoring well MW-17S, which was confirmed with verification sampling (Geosyntec, 2024).

• **Monitoring Well MW-17S:**

- **Chloride:** The UPL for chloride is 15.4 mg/L and the November 2023 result was 19.9 mg/L. The verification result from December 2023 was 19.8 mg/L.

A summary of historic SSIs identified in each of the detection monitoring events is presented below, in **Exhibit 2-1**.

Exhibit 2-1. Monitoring Wells and Appendix III Parameters with SSIs

Parameter	Monitoring Well (MW-)													
	1S	1I	1D	2S	2I	2D	15I	16S	16D	17S	17I	21S	21I	21D
Calcium		★				◆			◆◆ ◆●					
Chloride	◆◆	◆◆ ◆◆ ●■ ⊖Δ		◆◆ ◆	■⊖ Δ	◆◆ ◆◆ ◆◆ ●■ ⊖		◆	◆◆ ◆◆ ◆◆ ●	∞		◆		Δ
Fluoride				●⊖ Δ◆			●				◆◆ ◆	◆◆ ◆●	◆●	
Sulfate												⊖Δ		
TDS	◆●	Δ	●			◆◆ ■⊖ Δ		◆	◆◆ ◆◆ ◆◆ ●					

- ◆ 2018-2020 SSI, after verification
- May 2021 SSI, after verification
- ★ November 2021 SSI, after verification
- May 2022 SSI, after verification
- ⊖ November 2022 SSI, after verification
- Δ May 2023 SSI, after verification
- ∞ November 2023 SSI, after verification

As shown in **Exhibit 2-1**, only one SSI was identified, chloride at MW-17S. This is the first occurrence of chloride at MW-17S. WSP has reviewed its first semi-annual ASD report (November 2023) with respect to the statistical evaluation of the new semi-annual sampling event. The evaluation presented in the November 2023 ASD report remains valid. WSP has updated the geochemical analysis that forms the basis of the ASD and has included updated graphics to support the findings in this current ASD report.

3.0 ALTERNATIVE SOURCE DEMONSTRATION

The ASD presented below relies on multiple lines of evidence that the SSI identified in the statistical analysis is not caused by releases of landfill leachate into the groundwater flow system. When taken as a whole, these lines of evidence present a compelling case that the SSI is not a result of a release from the landfill, but a result of natural variation in groundwater quality, a result of historical oil and gas operations, and/or from the influence of stormwater ponds on groundwater quality. This ASD follows the approach of WSP's November 2023 report, updated with data collected from the second semi-annual sampling event (November 2023).

To assess the potential of a release from the CCR Landfill to groundwater, WSP evaluated groundwater quality data, including isotopes, in the context of the geochemical characteristics of CCR Landfill leachate. The results of this evaluation do not indicate that CCR Landfill leachate at the Rockport landfill is a source of SSIs identified in waste boundary monitoring wells, through primary and supporting lines of evidence, each of which are described in more detail within this section.

Primary lines of evidence focus on the relationship between source material that could be released into the subsurface (in this case, landfill leachate) and the type and distribution of the SSIs identified in groundwater. The lines of evidence supporting the conclusion of this ASD can be summarized as follows:

- SSIs are not identified for the site-specific primary indicator constituents of the Rockport CCR Landfill leachate.
- Geochemical evaluations of the CCR Landfill support that leachate has not affected water quality.
 - Conservative ion ratios and major ion chemistry do not indicate a release from the CCR Landfill.
 - Isotopes of boron and strontium do not indicate a release from the CCR Landfill.

Each of these lines of evidence are described in detail below.

3.1 SSI(s) Are Not Identified for Primary Indicator Constituents

The primary indicators for CCR leachate typically have much higher concentrations in leachate than in natural groundwater. They are mobile and relatively non-reactive in groundwater, so that groundwater impacted by a CCR leachate release should have elevated concentrations of the indicator constituents relative to background and with relatively similar contributions. The elevated concentrations would be expected to result in SSIs identified by statistical evaluation of the data from the downgradient waste boundary wells, and the SSIs would be expected to be generally consistent between downgradient wells. The primary lines of evidence presented below compare the occurrence of SSIs in groundwater to the composition of landfill leachate.

3.1.1 Site-Specific Leachate Analysis for Primary Indicator Constituents

The composition of landfill leachate is governed by the types of materials placed in the unit and identifying the leachate's primary constituents is key to assessing a potential release to groundwater. Since all Appendix III constituents are naturally occurring, the best indicators of CCR impacts are those constituents that are found at concentrations much higher in the source material than are seen in natural groundwater. AEP conducted sampling of its leachate collection system to identify relative concentrations of Appendix III and IV constituents in the Rockport CCR Landfill leachate.

The leachate collection system for the Landfill discharges into the North and West Leachate Collection Ponds, shown on **Figure 3**, which then discharge to the Leachate Treatment Pond, directly north of the West Leachate Pond. Five samples were collected from both the West and North Leachate Collection Ponds between 31 October 2018 and 20 March 2019 and results are detailed on **Table A-2** in **Appendix A**. A summary of the range of Appendix III constituent results for leachate pond samples, compared to background and waste boundary well samples, is provided below in **Exhibit 3-1**.

Exhibit 3-1. Summary of Landfill Leachate Pond and Groundwater Concentrations for Appendix III Constituents

Parameter (Units in mg/L, except pH)	Range for Leachate Ponds		Range for Upgradient (Background) Wells		Range for Downgradient Waste Boundary Wells	
	Min	Max	Min	Max	Min	Max
Boron	9.18	12.3	<0.002	0.115	<0.002	0.139
Calcium	166	368	35.6	82.0	28.7	122
Chloride	847	1,250	1.29	30.2	8.25	214
Fluoride	<1.50	<1.50	0.25	1.21	0.064	1.16
Sulfate	14,100	19,000	0.83	87.1	4.62	54.7
Total Dissolved Solids	22,100	30,900	179	430	196	650
pH (S.U.)	NA	NA	6.29	8.40	5.74	9.03

Because the CCR Landfill leachate ponds also receive some stormwater runoff, concentrations in at least some of these samples are likely to be diluted compared to concentrated leachate from landfilled materials (depending on the amount of recent rainfall). Nevertheless, pond samples serve as reliable indicators of the relative composition of leachate as discussed in this section. Leachate boron and sulfate occur at concentrations as much as three orders-of-magnitude above background groundwater levels (**Exhibit 3-1**). Leachate results for chloride and TDS are as much as two orders-of-magnitude above background concentrations. Calcium and fluoride leachate concentrations are within the same orders-of-magnitude as those detected in background groundwater. These results indicate that boron and sulfate are the best indicator constituents of CCR impacts, followed by TDS and chloride, based on their elevated occurrence in landfill leachate compared to natural groundwater.

3.1.2 Occurrence of Primary indicator Constituents in Waste Boundary Monitoring Well Samples

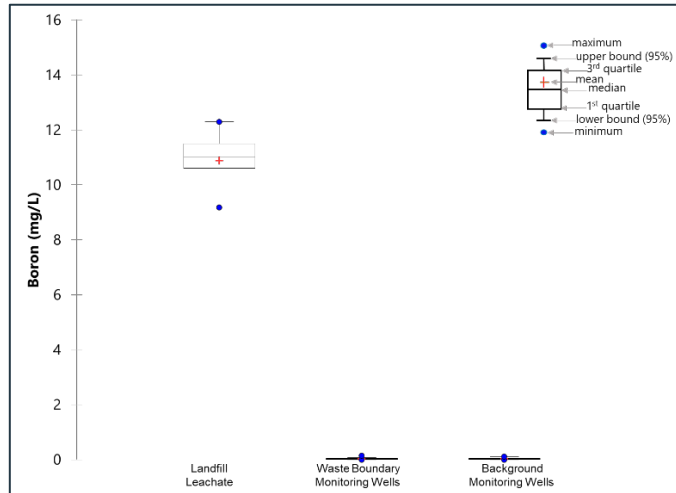
Four primary indicator constituents are identified for the Rockport CCR Landfill leachate: boron, sulfate, TDS, and chloride. In the November 2023 sampling round, only one SSI was identified: above background, chloride at MW-17S. However, no SSIs were identified in waste boundary wells for either boron or sulfate. Given the significantly elevated concentrations of boron and sulfate in the CCR Landfill leachate, and that neither of these constituents is elevated above

background, it is concluded that Landfill leachate is not the source of the observed SSI. This assumption is supported by a more in-depth review of the indicator constituents, presented below.

Boron

No SSIs have been identified for boron. Boron has been identified in background wells at concentrations ranging from <0.002 to 0.115 mg/L. Concentrations in waste boundary well samples range from <0.002 to 0.139 mg/L. Landfill leachate boron concentrations are much higher and range from 9.18 to 12.3 mg/L. The boron results are plotted graphically on **Exhibit 3-2**, which illustrates the range of results for leachate (at the left of the chart) compared to and background and waste boundary groundwater samples. It should be noted that the highest concentration of boron observed in waste boundary groundwater samples (0.139 mg/L) occurred in MW-16I and did not represent an SSI for that well.

Exhibit 3-2. CCR monitoring well and landfill leachate ponds boron concentrations

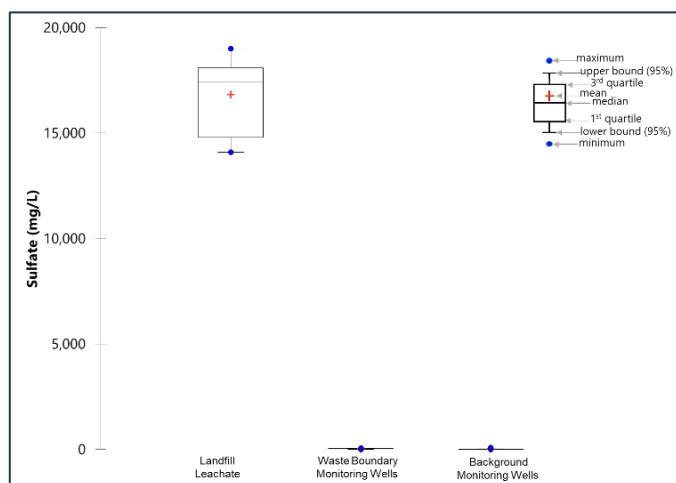


If a release of landfill leachate had occurred, boron concentrations in waste boundary well samples should be clearly higher than the range of background well results, and SSIs would likely be found in at least some of the monitoring wells with other identified SSIs.

Sulfate

No SSIs have been identified for sulfate. Sulfate has been identified in background wells at concentrations ranging from 0.83 to 87.1 mg/L. Concentrations in waste boundary well samples range from 4.62 to 54.7 mg/L. Landfill leachate sulfate concentrations are orders of magnitude higher and range from 14,100 to 19,000 mg/L. The sulfate results are plotted graphically on **Exhibit 3-3**, which clearly shows that leachate concentrations of sulfate are orders-of-magnitude higher than all groundwater samples, and that no discernable difference is present between the background and waste boundary samples. Furthermore, the highest monitoring well concentrations are seen in samples from background well MW-8I (54.0 to 87.1 mg/L).

Exhibit 3-3. CCR monitoring well and landfill leachate ponds sulfate concentrations



It is expected that a release of landfill leachate would elevate groundwater concentrations of all Appendix III constituents present in the leachate in relatively similar proportions. Even if all constituents were not exhibiting SSIs, a pattern of related SSIs would be observed if the increases were caused by landfill leachate. Since all SSIs occurred in absence of a boron or sulfate SSI, and the highest groundwater sulfate concentrations are associated with a background well, it is concluded that the reported SSIs are caused by the natural variation in groundwater quality, potentially impacted by historical oil and gas operations which are assumed to have high chloride and TDS and little to no sulfate, and not by releases from the CCR Landfill.

3.2 Geochemical Evaluations

While the CCR rule requires the use of statistical analyses of samples collected from groundwater monitoring wells to assess potential impacts from CCR units (SSIs), the approach does not consider the site specific hydrogeochemical interactions that can often be complex due to simultaneous operations and natural variation within the context of the local hydrogeologic setting. Since geochemical evaluations rely on interpretation of graphical data, the discussion includes reduced size exhibits imbedded in the text. Full size exhibits are included in **Appendix B**. The major observations and conclusions from the geochemical evaluation are summarized in the sections below.

3.2.1 Indicator Parameter Cross-Plots

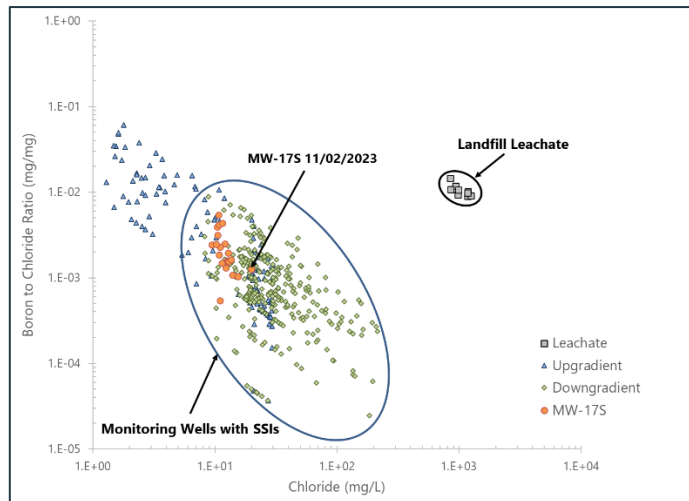
To aid in the interpretation of individual Appendix III and other potential indicator parameters for the assessment of potential releases from the CCR Landfill, ratios of selected Appendix III indicator parameters were calculated and plotted versus concentrations of the conservative ion chloride. The use of these plotting techniques typically provides groupings of end members (sources of water such as background groundwater or landfill leachate), and potential trends of mixing that are not readily identifiable by analysis of individual indicator parameters on their own.

Plots of the B/Cl and SO₄/Cl ratios versus chloride in waste boundary monitoring wells show distinct end member groupings from that of the landfill leachate and support the conclusion that there are no discernable impacts from the CCR Landfill on any of the waste boundary monitoring wells. The graphics presented here include data for all wells in the CCR Landfill system and show that chloride concentrations tend to increase in groundwater moving downgradient from recharge areas represented by upgradient monitoring wells.

Boron to Chloride ratio Versus Chloride Concentration

The plotting of B/Cl versus chloride groundwater data shows primarily a single large cluster that trends perpendicular to the composition of leachate samples and is hypothesized as background and natural variability (**Exhibit 3-4**). The data are plotted on log-log scales due to the large range of concentrations and ratios making the separation in groupings appear closer than they are. The Landfill leachate clearly plots as a separate grouping of water quality having greater B/Cl ratios, while the monitoring well data plots along a trend of what can be described as natural variability. Background monitoring well MW-11S plots as upgradient recharge having lower chloride concentration and a higher B/Cl ratio. Moving along the flow path to

Exhibit 3-4. Boron to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate

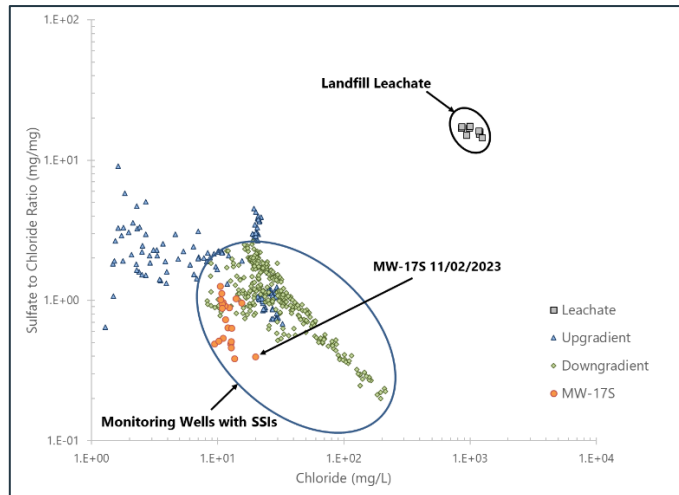


downgradient monitoring wells, this is followed by a trend of increasing chloride concentrations and salinity with decreasing B/Cl ratios due to geochemical evolution of groundwater and potential mixing with water associated with historic oil and gas operations and/or stormwater ponds located to the north and east of the landfill. The stormwater ponds north and east of the landfill are also upgradient of CCR compliance wells and groundwater flow paths indicating flow from those areas are potentially impacting CCR compliance monitoring well samples. While chloride increases, boron does not increase at the same rate, resulting in the decreasing trend of B/Cl ratios as chloride concentrations and residence time increases. Thus, it is hypothesized that MW-11S represents an extreme end member of recent recharge, or relatively fresh groundwater, and after flow through the shallow overburden groundwater evolves geochemically to a lower B/Cl ratio, as chloride increases, approaching the larger background cluster values that represent older more mineralized groundwater without a significant source of boron in the aquifer matrix. The extreme end of the groundwater dataset trend is represented by MW-17I, MW-16D, and MW-2D due to higher chloride concentrations, but with lower B/Cl ratios. This plot supports that these wells are not impacted by CCR Landfill leachate but could be influenced by infiltration from the stormwater holding ponds to the north and east of the landfill or flushing of salts from water holding ponds associated with historic oil and gas operations. If there were impacts from the landfill to groundwater, one would expect a trend of B/Cl ratios versus chloride moving from the groundwater trend toward the leachate values, but this does not occur, and instead the trend is away from the leachate grouping.

Sulfate to Chloride Ratio Versus Chloride Concentration

Plotting of the SO_4/Cl ratio versus chloride shows similar results to the B/Cl ratios versus chloride concentration plot supporting the conclusion that there are no discernable impacts from the CCR Landfill on groundwater (**Exhibit 3-5**). The SO_4/Cl ratios for leachate group separately and are much higher than groundwater values. The SO_4/Cl ratios for leachate are typically around 15 mg/mg or higher, while groundwater ratios are below a value of 6 mg/mg. Similar to B/Cl ratios, the SO_4/Cl ratios versus chloride plot along a trend line of decreasing ratios as chloride and residence time increases. The extreme end of the groundwater data set trend is represented by MW-17I, MW-16D, and MW-2D variability due to higher chloride concentrations that is clearly different from leachate. Additionally, there is no trend of mixing of even small quantities of leachate with groundwater which would be shown by a deviation from the groundwater trend toward leachate, and the separation is distinct between downgradient groundwater and leachate with a trend away from that of leachate.

Exhibit 3-5. Sulfate to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate



3.2.2 Isotope Analyses of CCR Related Water Quality and Materials

General Overview of Isotope Analyses

Water samples were collected from selected CCR Landfill monitoring wells and CCR Landfill leachate and submitted for isotope analyses of boron, strontium, and oxygen and hydrogen of water. The results of the isotope analyses serve as additional supporting lines of evidence for interpretations made using major ion and indicator parameter concentrations and reinforce the lack of leachate impacts to groundwater at the CCR Landfill.

Boron and its isotope ratio ($\delta^{11}B$) have been successfully used to identify groundwater pollution sources versus background or naturally occurring detections of constituents of concern (Davidson and Bassett 1993; Vengosh et al. 1994; Kendall et al., 1995; Buszka et al. 2007; Ruhl et al. 2014; Harkness et al. 2016). In particular, boron isotopes have been successfully used to assess CCR related impacts in groundwater. Similarly, strontium and its isotopes ($^{87}Sr/^{86}Sr$) have also been successfully used to identify different groundwater source end members, mixing, and to determine anthropogenic versus geogenic processes associated with constituents of concern and associated with CCR impacts to groundwater (Kendall and Bullen 1995; Ruhl et al. 2014; Meredith 2016; Harkness et al. 2016; Nigroa et al. 2017).

CCR Landfill Isotope Results

Stable isotope analyses are typically performed on a pair of isotopes (e.g., ^{11}B and ^{10}B , or ^{87}Sr and ^{86}Sr) and are reported as a ratio relative to internal standards, in per mil (‰) using Greek “delta” notation (δ). Deviations based on analysis of the standard are corrected for, to provide values that can be compared between different laboratories and equipment. Isotopes commonly reported

relative to a standard include boron (**eq. 1**), where the standard for boron is the National Institute of Standards and Technology (NIST) Standard Reference Material (SRM) 951:

$$\delta^{11}B(\text{‰}) = \frac{\left(\frac{^{11}B}{^{10}B}\right)_{\text{Sample}} - \left(\frac{^{11}B}{^{10}B}\right)_{\text{Standard}}}{\left(\frac{^{11}B}{^{10}B}\right)_{\text{Standard}}} \times 1000 \quad \text{eq. 1}$$

Isotope ratios of strontium can be reported relative to a standard value but are commonly reported as the actual ratio $^{87}\text{Sr}/^{86}\text{Sr}$. The values for strontium reported here are the actual ratios, but they have been corrected to the NIST SRM 987.

Background monitoring wells for the CCR Landfill show lower boron concentrations and higher $\delta^{11}\text{B}$ values compared to Landfill leachate samples (**Exhibit 3-6**). While only a limited number of background and waste boundary wells were tested (including MW-171 with a previous and current SSI, and MW-215 with a previously reported SSI), there is a clear distinction between all the CCR Landfill monitoring wells and the Landfill leachate which indicates that the wells represented are not impacted by the Landfill, and that boron in the monitoring wells is of a different source other than leachate.

In addition, while there is a variation in the leachate boron concentrations, the $\delta^{11}\text{B}$ values remain approximately equivalent. This supports the hypothesis that boron is $\delta^{11}\text{B}$ values in leachate are dominated by the CCR materials. The range of observed concentrations is related to the amount of water generating the leachate or potentially dilution by fresh water derived from stormwater runoff. The result is a range of boron concentrations having a similar $\delta^{11}\text{B}$ value distinctly different from groundwater in both background and downgradient monitoring wells.

Strontium isotope results also support the boron isotope, major ion, and indicator parameter interpretations that there are no identifiable impacts on groundwater from the landfill. There are noticeably lower strontium concentrations and ratios for all CCR Landfill monitoring wells sampled compared to Landfill leachate (**Exhibit 3-7**).

Exhibit 3-6. Boron isotope ratio ($\delta^{11}\text{B}$) versus boron concentration for CCR Landfill leachate and monitoring wells

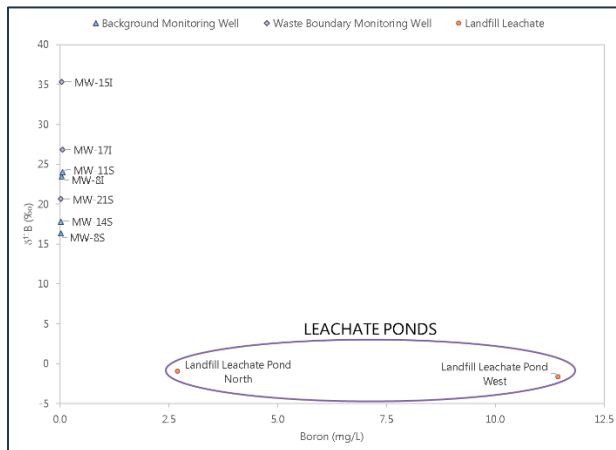
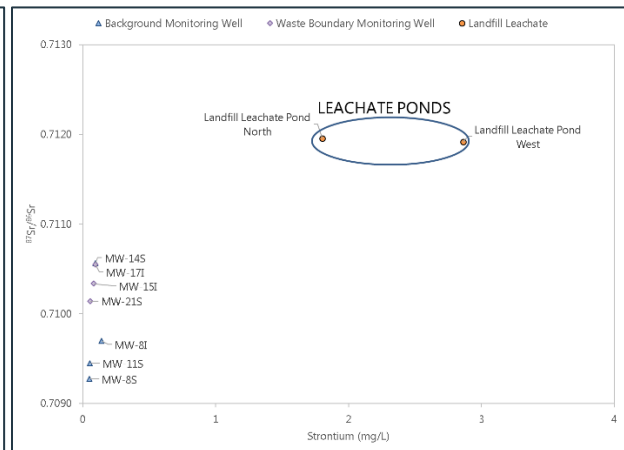


Exhibit 3-7. Strontium isotope ratio ($^{87}\text{Sr}/^{86}\text{Sr}$) versus strontium concentration for CCR Landfill leachate and monitoring wells



3.3 Hydraulic Connection to the Landfill

The groundwater monitoring network and the relationship of the wells to the regulated landfill are shown on **Figure 3**. Recent potentiometric flow data available for the site consistently indicate a local groundwater flow direction to the south and southeast as shown on **Figure 5**. As shown on this figure, several well clusters downgradient from the landfill are also downgradient of the borrow area stormwater ponds that are located to the north and east of the landfill. Groundwater monitored by the well clusters downgradient of the stormwater ponds are concluded to be unaffected by potential releases from the landfill unit but maybe impacted by the stormwater ponds which likely have water with higher salinity, TDS, and chloride.

4.0 SUMMARY

In the second semi-annual detection monitoring event of November 2023, one SSI was identified: chloride at MW-17S (**Exhibit 2-1**). The following statements summarize how the lines of evidence discussed above apply to each of the constituents with identified SSIs:

- An alternate source of chloride is identified immediately upgradient of MW-17S as being associated with historic oil and gas unlined brine pits and/or stormwater ponds. These sources can result in the observed slightly elevated chloride concentrations.
- Boron occurs naturally at low concentration in site groundwater, in similar concentrations in background and downgradient wells. Boron occurs at concentrations approximately three orders-of-magnitude greater in the CCR Landfill leachate as compared to site groundwater, and is a conservative ion, making it an excellent indicator for impacts from landfill leachate impacts in groundwater. If landfill leachate were impacting groundwater, boron would be expected to be detected in multiple waste boundary wells and at statistically significant concentrations above background; no SSIs for boron have ever been detected at the site. Furthermore, the boron that is present has been shown to be isotopically different.
- Sulfate is another common indicator for CCR leachate impacts and occurs naturally in site groundwater (at similar concentration ranges in background and downgradient wells) and is elevated in the CCR Landfill leachate at concentrations approximately three orders-of-magnitude above background monitoring wells. No SSIs for sulfate have ever been detected at the site until recently (Spring 2023). No SSIs for sulfate were identified the second semi-annual detection monitoring event (November 2023).
- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations approximately two orders-of-magnitude above groundwater concentrations. Spatial trends can be observed in **Exhibits 3-4** and **3-5** in Section 3.0 and indicate that chloride concentrations tend to increase in groundwater downgradient from recharge areas including the stormwater ponds north and east of the landfill. November 2023 data and December 2023 verification data indicated groundwater concentrations of chloride over background in one well (MW-17S). However, because the SSI indicated for chloride is not associated with an SSI for boron and sulfate, with no indication of increasing trends with respect to boron or sulfate at the same well location, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.
- Ion ratio cross plots of the indicator constituent's boron, chloride and sulfate show distinct and separate groupings for waste boundary and background groundwater and leachate samples. Background and waste boundary groundwater plots along a trend line associated with variability across the site while leachate plots in a distinct separate grouping away from the groundwater trend. The ground water trends over time for wells with SSIs show the water

quality moving away from the leachate grouping indicating that the leachate is not impacting downgradient groundwater.

- The conclusions listed above are also supported by the previous reported analytical results for isotope ratios of boron and strontium in leachate and groundwater samples from an earlier sampling event. While only a single set of leachate samples to date have been collected, the indication in downgradient wells, including wells that have shown SSIs, is that the leachate is distinctly different from that of background and downgradient groundwater, and does not support a release from the landfill to groundwater.

4.1 Conclusion

This ASD has demonstrated, through multiple lines of evidence and identification of alternate sources, that the single SSI identified in the statistical analysis of the second 2023 detection monitoring event data is not the result of a release of leachate from the CCR Landfill. Therefore, the unit should continue in detection monitoring.

4.2 Professional Engineer Certification

I certify that the above-described Alternative Source Demonstration is appropriate for evaluating the groundwater monitoring data for the Rockport Plant CCR Landfill and that the requirements of 40 CFR 257.95(g)(3)(ii) have been met.

K. Joe Deatherage

K. Joe Deatherage, PE
Indiana Registered Engineer (PE 10403612)

11 June 2024

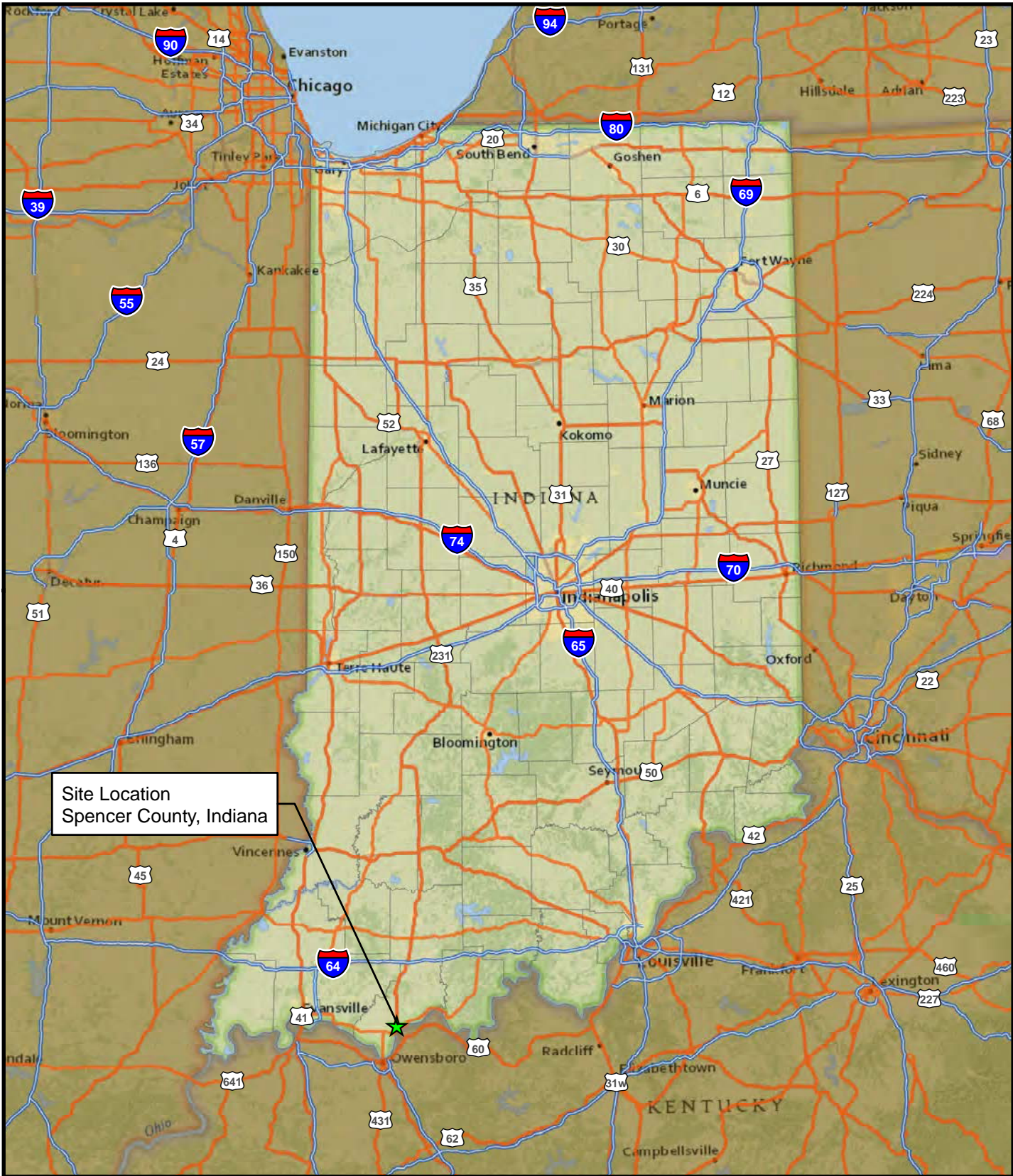
Date



5.0 REFERENCES

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FIGURES

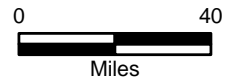


Site Location
Spencer County, Indiana



Legend
★ Site Location

Service Layer Credits: National Geographic, Esri,



2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922

SITE LOCATION MAP

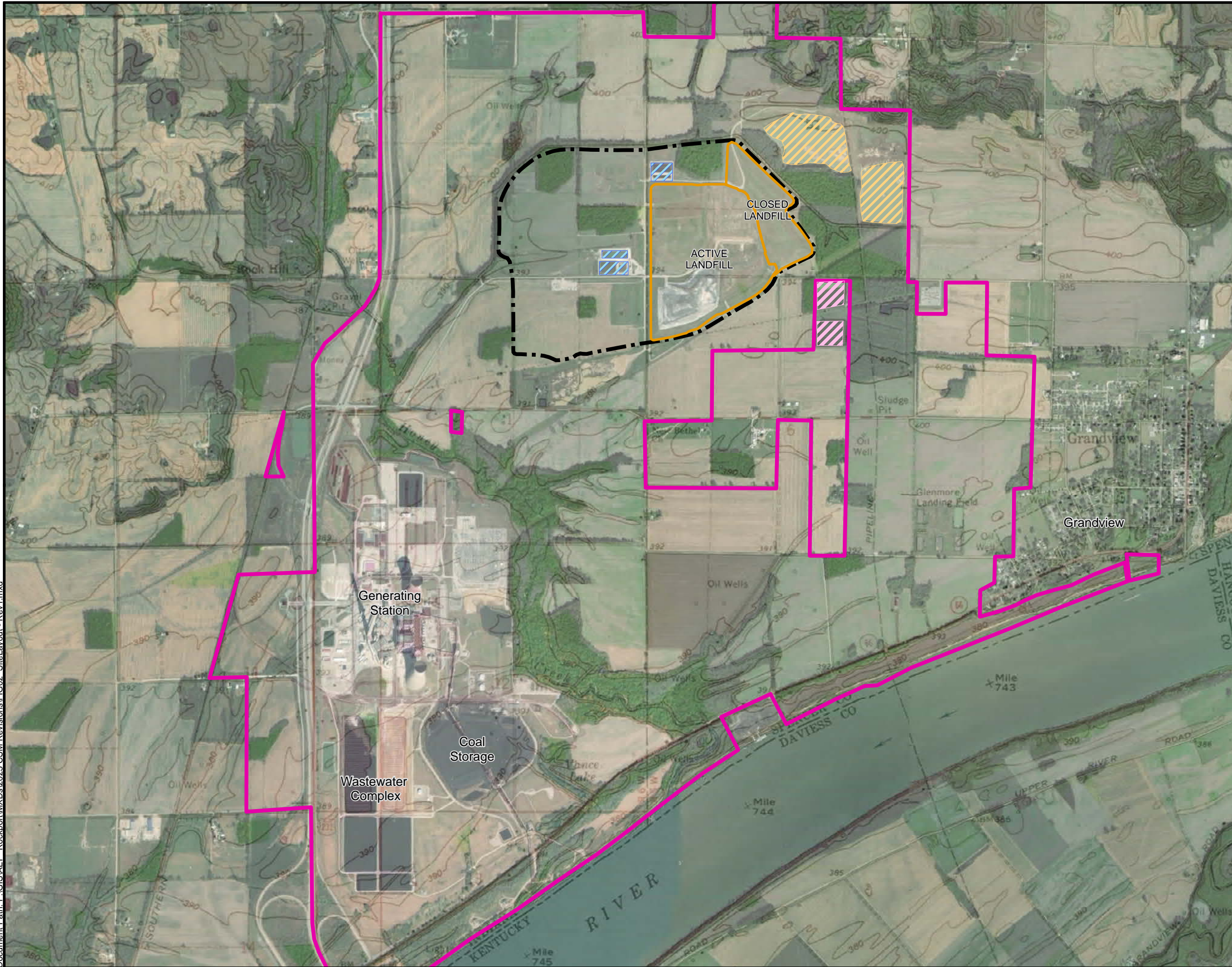
AEP - Rockport, IN

PROJECT NUMBER: 7650202784

SCALE	1" = 40 miles
DATE	04/10/2024
DRAWN BY	BIF
APPROVED BY	TWH

FIG.
1

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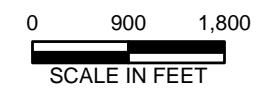
Legend

- Stormwater Ponds
- Landfill Leachate Ponds
- Grandview Wastewater Ponds
- Property Boundary
- Landfill Area 1A (Active and Closed)
- 1984 Landfill Permit Boundary (Area 1)

Data Sources

Source of Photography:
https://services.arcgis.com/ArcGIS/rest/services/World_Imagery/MapServer
 Item updated: Sep 6, 2023

USGS Rockport and Lewisport (IN/KY) Topographic
 Quadrangle Maps



SITE LAYOUT

AEP - ROCKPORT, IN

PROJECT NUMBER: 7650202784

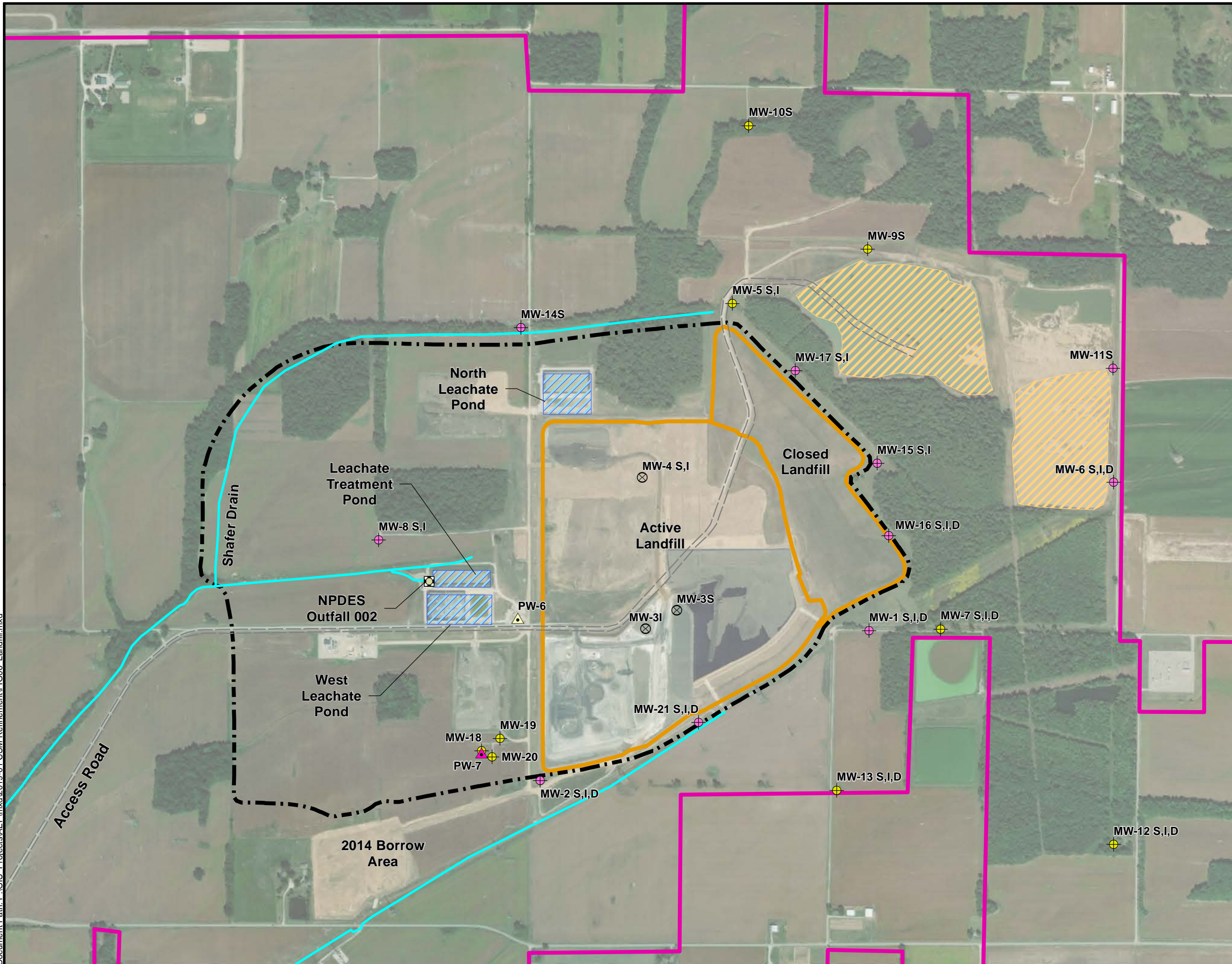
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DATE	04/10/2024
DRAWN BY	TMR
APPROVED BY	TWH

FIG. 2



2030 Falling Waters Rd, Suite 300
 Knoxville, TN 37922

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- Legend**
- Landfill - Monitoring Well
 - Landfill - CCR Monitoring Well
 - Landfill - Augmentation Water Supply Well
 - Landfill - Dust Control Water Supply Well
 - Abandoned Monitoring Well
 - NPDES Outfall 002
 - Access Road
 - Drains / Ditches
 - Stormwater Ponds
 - Landfill Leachate Ponds
 - Property Boundary
 - 1984 Landfill Permit Boundary (Area 1)
 - Landfill Area 1A (Active and Closed)

Data Sources
 Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



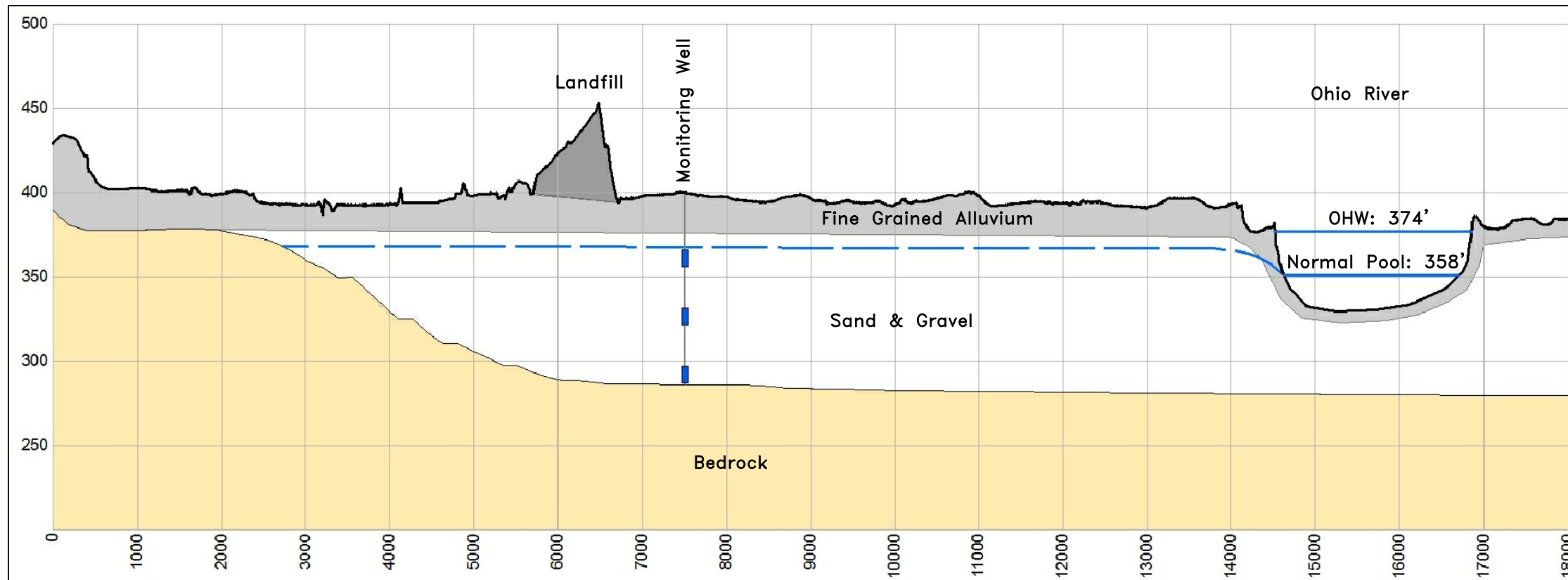
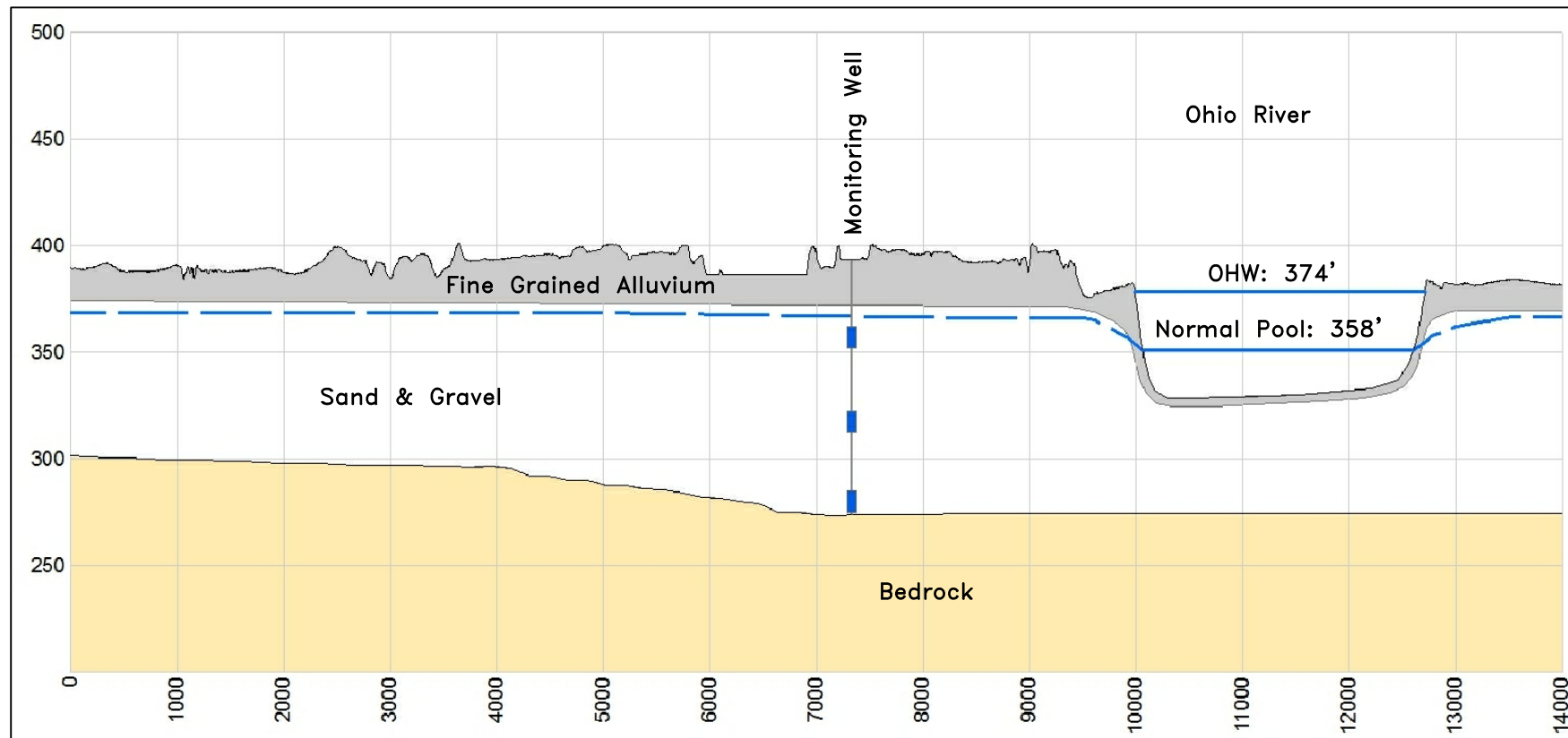
LANDFILL LAYOUT
 AEP - ROCKPORT, IN
 PROJECT NUMBER: 7650202784

SCALE	1" = 800'
DATE	04/10/2024
DRAWN BY	TMR
APPROVED BY	TWH

FIG.
3



2030 Falling Waters Rd, Suite 300
 Knoxville, TN 37922
 Phone: (865) 671-6774



SCALE: As Shown
VERTICAL EXAGGERATION: 4X



2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922
Phone (865) 671-6774

**BOTTOM ASH PONDS
AEP - ROCKPORT, INDIANA**

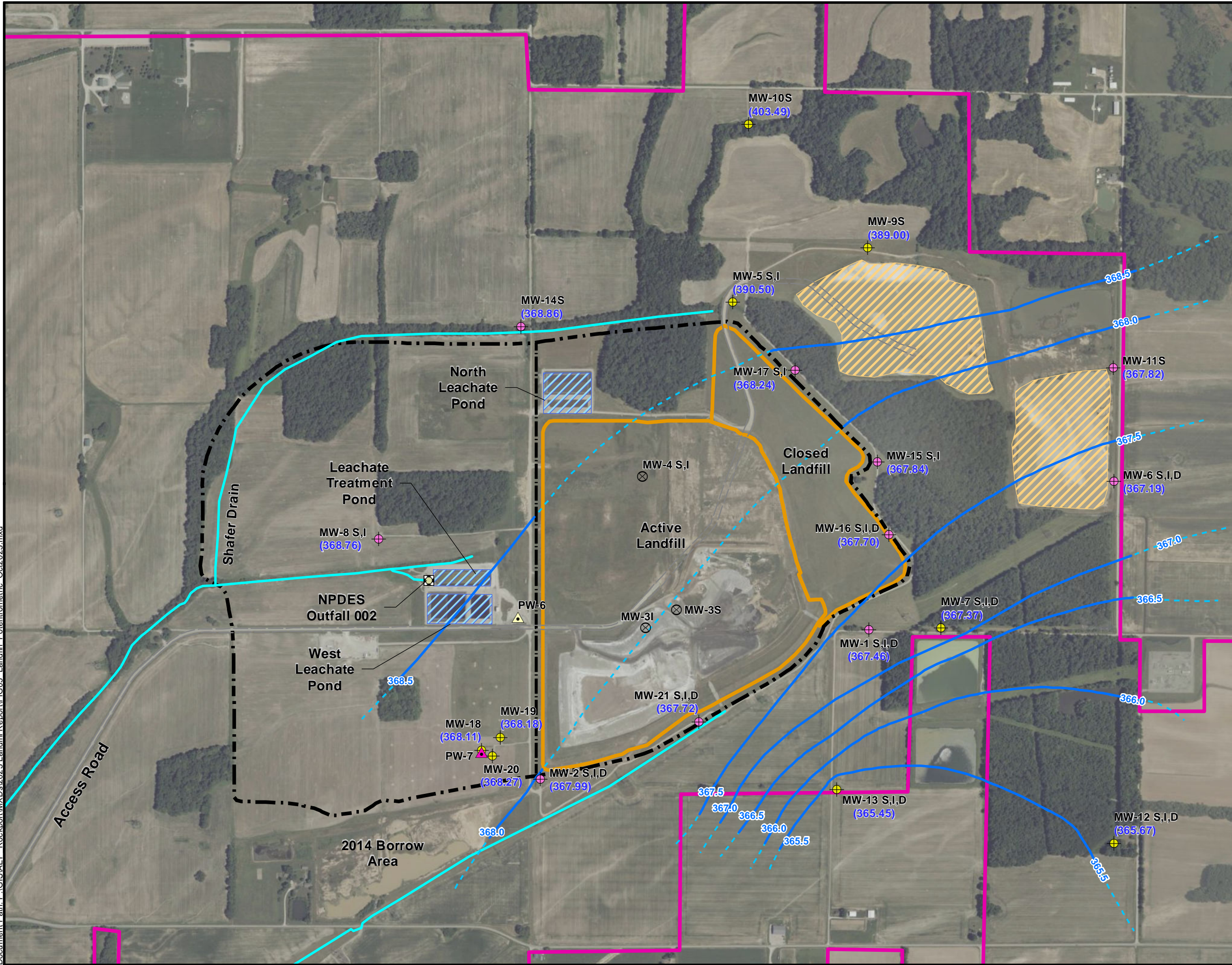
GENERALIZED CROSS-SECTIONS

PROJECT NUMBER: 7650202784

SCALE	As Shown
DATE	04/10/2024
DRAWN BY	TMR
APPROVED BY	ALD

**FIG
4**

Document Path: P:\GIS\AEP_Rockport\MapDocs\2023 Landfill Report\FIG-05 Landfill Potentiometric Oct2023.mxd



Legend

- Landfill - Monitoring Well
- Landfill - CCR Monitoring Well
- Landfill - Augmentation Water Supply Well
- Landfill - Dust Control Water Supply Well
- Abandoned Monitoring Well
- NPDES Outfall 002
- Groundwater Elevation Contour
Contour Interval 0.5-ft.
- Inferred Groundwater Contour
- Access Road
- Drains / Ditches
- Stormwater Ponds
- Landfill Leachate Ponds
- Property Boundary
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Data Sources
Service Layer Credits: Source: Esri, USDA FSA



**Potentiometric Surface Contours
October 30, 2023**

AEP - ROCKPORT, IN

PROJECT NUMBER: 7650202784

SCALE	1" = 800'
DATE	4/17/2024
DRAWN BY	LML
APPROVED BY	TWH

**FIG.
5**



2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922

APPENDICES

APPENDIX A

Analytical Data Tables

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-15

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/20/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/13/2019	4/1/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.45	369.29	368.81	368.29	367.61	367.69	367.66	368.33	368.01	366.11	369.43	369.91	368.71	369.68	370.56
pH	S.U.	--	7.09 - 8.14	8.14	7.2	7.09	7.34	7.4	7.1	7.19	7.26	7.08	7.64	7.48	7.3	7.48	7.46	7.35
Specific Conductance	µmhos/cm	--	--	687	612	703	657	470	300	567	536	635	686	590	658	535	530	892
Turbidity	NTU	--	--	0.23	1.5	0.34	0.65	1	2	0.63	0.78	0.4	1.31	1.12	0	0.56	0.8	1.15
Dissolved Oxygen	mg/L	--	--	3.37	4	2.82	3.46	5	4	2.48	2.72	3	3.06	0.61	4.59	2.3	1.1	1.09
Temperature	°C	--	--	15.04	18.9	19.09	15.17	14.8	15.7	16.81	15.81	15.63	12.81	16.23	15.38	14.7	14.9	14.6
ORP	mV	--	--	89.2	111	77.1	52.9	105	46	53.7	16.2	43.8	-20.8	-76.5	302	100.5	172	126.4
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.2	0.02	0.02	0.04	0.04	0.05	0.02	--	--	--	--	0.05	--	--
Arsenic	µg/L	10	--	0.43	0.69	0.38	0.38	0.43	0.76	0.5	0.39	--	--	--	--	0.34	--	--
Barium	µg/L	2000	--	18.5	21.9	17.2	17.9	17.7	36.5	22.3	17.3	--	--	--	--	17.8	--	--
Beryllium	µg/L	4	--	<0.01	0.16	<0.005	<0.005	<0.005	0.023	0.01	<0.004	--	--	--	--	0.03	--	--
Cadmium	µg/L	5	--	0.02	0.22	0.005	0.007	0.02	0.09	0.22	0.01	--	--	--	--	<0.01	--	--
Chromium	µg/L	100	--	0.3	0.7	0.3	0.207	0.72	1.38	0.552	0.255	--	--	--	--	0.25	--	--
Cobalt	µg/L	6	--	0.171	0.398	0.014	0.01	0.052	1.21	0.164	0.02	--	--	--	--	<0.02	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.15	0.74	--	0.09	--	1.3	--	--
Lead	µg/L	15	--	0.204	0.572	0.01	0.022	0.076	1.26	0.526	0.033	--	--	--	--	0.12	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	0.65	0.8	0.68	0.74	0.59	0.97	1.64	0.64	--	--	--	--	0.6	--	--
Selenium	µg/L	50	--	1.1	1.1	0.9	0.9	1	1.1	1.1	1.2	--	--	--	--	0.8	--	--
Thallium	µg/L	2	--	<0.02	0.168	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	--	--	--	--	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	4.5	--	0.7	--	2	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	19.5	19.7	22.4	--	--	19.5	--	19.7	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	5.55	4.29	--	3.8	--	1	--	--
Boron	mg/L	--	0.048	0.037	0.015	0.022	0.02	0.005	0.03	0.031	0.028	0.044	--	0.046	--	0.04	--	--
Calcium	mg/L	--	(79.5) 79	70.7	62.9	68	74.4	65	71.5	72.6	69.2	67.6	--	71.8	--	71.9	--	--
Lithium	mg/L	0.04	--	0.004	0.024	0.002	0.01	0.008	0.01	0.009	0.0007	--	--	--	--	0.03	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	27.3	26.9	26.9	25.6	--	26.8	--	26.8	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0015	--	--	0.0027	--	0.0022	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.32	1.24	1.16	1.15	--	1.19	--	1.16	--	--
Sodium	mg/L	--	--	--	--	--	--	--	40.6	35.2	39.6	36.1	--	31.2	--	35	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.11	0.12	0.105	0.104	--	0.11	--	0.108	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	278	273	271	269	--	250	--	273	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.086	0.108	0.104	0.109	--	0.106	--	0.1	--	--
Chloride	mg/L	--	(29.6) 33	29.6	31.1	31.4	31.9	32	30.7	31.3	30.4	33.1	39.9	34.9	37.3	38.1	40.4	38.5
Fluoride	mg/L	4	--	0.59	0.65	0.6	0.54	0.57	0.59	0.63	0.58	0.57	--	0.61	--	0.63	--	--
TDS	mg/L	--	(412.7) 419	392	392	411	398	392	384	402	406	396	--	386	--	410	--	--
Sulfate	mg/L	--	(36.95) 37	33.7	35.5	32.4	30.7	30.7	30.5	33.3	33.6	34.6	--	34.2	--	32.3	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	--
Radium-228	pCi/L	--	--	-0.185	0.445	0.244	-0.00464	0.447	-0.172	-0.122	0.133	--	--	--	--	-0.0731	--	--
Radium-226	pCi/L	--	--	0.0665	0.374	-0.00261	0.296	0.487	0.0407	0.0324	0.176	--	--	--	--	0.108	--	--
Radium-226/228	pCi/L	5	--	-0.1185	0.819	0.24139	0.29136	0.934	-0.1313	-0.0896	0.309	--	--	--	--	0.108	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	0.4	--	1.65	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	9	--	1	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	0.8	--	6.24	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.049	0.014	--	<0.002	--	0.035	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0001	0.0002	<0.0001	0.0002	--	<0.0002	--	0.0026	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-15

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/23/2019	7/23/2019	2/18/2020	5/19/2020	11/11/2020	5/26/2021	11/12/2021	5/12/2022	11/3/2022	2/8/2023	5/23/2023	11/2/2023	12/20/2023
Field Parameters																
Elevation	ft NGVD	--	--	371.82	372.42	370.36	370.78	369.85	369.23	368.43	369.33	369.23	367.89	368.83	367.46	366.77
pH	S.U.	--	7.09 - 8.14	7.91	7.36	7.12	7.04	7.01	7.75	7.56	7.38	6.85	7.24	7.7	6.84	7.22
Specific Conductance	µmhos/cm	--	--	593	618	1386	440	691	793	687	658	593	623	381	699	620
Turbidity	NTU	--	--	0.05	1.6	0.47	0	0.7	0	0.55	9.62	0	1.42	0	0	0.86
Dissolved Oxygen	mg/L	--	--	0.87	1.5	4.6	1.68	8.97	0	3.75	2.02	0.22	6.6	0	1.59	0.45
Temperature	°C	--	--	15.6	18.2	12.43	15.36	14.75	15.6	14.5	15.76	14.48	13.68	16.22	13.68	17.51
ORP	mV	--	--	-28.8	57	118.1	140	100	222	239	68	40	198	116	202	79
Laboratory Parameters																
Antimony	µg/L	6	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.29	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	17.6	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	<0.01	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.2	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.13	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	1	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.7	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	7.8	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	<0.06	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.048	<0.02	--	--	0.02	<0.02	0.019	0.02	<0.009	0.017	--	<0.050	0.018	--
Calcium	mg/L	--	(79.5) 79	73.7	--	--	72	67.8	66.2	65.8	65.9	66.3	--	60.9	59	--
Lithium	mg/L	0.04	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	26.7	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.001	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	1.24	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	25.8	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.106	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	303	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.1	--	--	--	--	0.1	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 33	33.7	30	--	34.7	33.3	35	66.2	35	50.7	32.6	33	30.2	--
Fluoride	mg/L	4	0.677	0.55	--	--	0.55	0.66	0.66	0.65	0.62	0.41	--	0.69	0.72	0.43
TDS	mg/L	--	(412.7) 419	388	--	442	350	402	430	380	380	340	--	360	370	--
Sulfate	mg/L	--	(36.95) 37	36.3	--	--	37.1	34.1	31.6	31	36.8	43.2	34.4	36.3	34.9	--
Sulfide	mg/L	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.173	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	1.09	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.263	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.26	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<1	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.003	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0004	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

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Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/20/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/18/2017	10/4/2017	6/6/2018	8/16/2018	11/14/2018	2/13/2019	4/1/2019	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.42	369.25	368.8	368.24	367.58	367.63	367.62	368.28	367.25	369.39	397.45	368.74	369.73	370.51	371.86
pH	S.U.	--	6.43 - 7.90	6.7	7	7.4	7.09	7.6	7.4	7.24	6.89	7.1	7.5	7.31	7.75	7.5	7.37	7.01
Specific Conductance	µmhos/cm	--	--	461	479	570	544	370	500	443	402	424	480	533	425	443	802	503
Turbidity	NTU	--	--	0.9	0.7	0.24	0.35	1	1	0.6	0.36	1	0.32	0	0.61	1	1.06	0.06
Dissolved Oxygen	mg/L	--	--	0.4	0.3	1.07	0	0.3	1	0.46	27.63	0.5	0.87	0.22	0.19	2	1.28	0.73
Temperature	°C	--	--	17.5	18.2	16.99	14.53	14.4	15.7	15.44	16.52	16.4	16.25	16.03	14.68	14.7	14.6	16.79
ORP	mV	--	--	-21	205	-2.1	4.4	10	36	-26.2	-118.8	-23	-102.2	253	62.9	155	134.2	5.2
Laboratory Parameters																		
Antimony	µg/L	6	--	0.04	0.04	0.01	0.02	0.02	0.01	0.04	0.02	--	--	--	<0.02	--	--	<0.02
Arsenic	µg/L	10	--	0.86	0.78	0.92	0.8	0.82	0.69	0.89	0.86	--	--	--	0.82	--	--	0.73
Barium	µg/L	2000	--	85.5	86.1	84.9	93.4	90.5	76.7	85	94.3	--	--	--	85.6	85	--	83.8
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.004	<0.004	--	--	--	<0.02	--	--	<0.02
Cadmium	µg/L	5	--	0.08	0.1	0.02	0.02	0.02	0.05	0.01	0.007	--	--	--	0.02	--	--	<0.01
Chromium	µg/L	100	--	0.2	1	0.2	0.051	0.39	0.686	0.155	0.112	--	--	--	<0.04	--	--	0.04
Cobalt	µg/L	6	--	0.341	0.364	0.401	0.381	0.424	0.054	0.558	0.569	--	--	--	0.48	--	--	0.368
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.12	0.2	0.48	--	0.22	--	--	0.08
Lead	µg/L	15	--	0.851	1.25	0.156	0.059	0.099	0.427	0.068	0.137	--	--	--	0.07	--	--	<0.02
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	2.47	2.85	2.89	3.27	3.33	1.82	2.87	2.85	--	--	--	2.96	--	--	2.38
Selenium	µg/L	50	--	<0.03	0.04	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	--	--	--	<0.03	--	--	<0.03
Thallium	µg/L	2	--	0.03	0.02	0.02	0.03	0.104	0.03	0.02	0.02	--	--	--	<0.1	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	1	4.2	--	1	--	--	0.9
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.5	18.9	20.7	17.8	--	18.2	--	--	18
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	1	2	2.96	--	3	--	--	<1
Boron	mg/L	--	0.093	0.075	0.014	0.018	0.015	0.004	0.045	0.049	0.047	0.018	0.11	0.056	0.05	--	--	0.02
Calcium	mg/L	--	(79.5) 71	67.4	60	64.5	63.9	60.9	66.9	65.7	64.8	68.1	66.4	--	65.5	--	--	67.7
Lithium	mg/L	0.04	--	0.005	0.022	0.007	0.005	0.005	0.006	0.008	0.0005	--	--	--	0.03	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	20.8	21.2	20.6	21.5	21	--	20.6	--	--	20.6
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.599	--	0.316	--	0.515	--	--	0.37
Potassium	mg/L	--	--	--	--	--	--	--	1.34	1.08	0.98	0.92	1.31	--	0.97	--	--	0.98
Sodium	mg/L	--	--	--	--	--	--	--	19.8	19.5	19.1	19.2	18.1	--	18.5	--	--	18.2
Strontium	mg/L	--	--	--	--	--	--	--	0.0934	0.0926	0.086	0.0911	0.093	--	0.0882	--	--	0.0912
Alkalinity	mg/L	--	--	--	--	--	--	--	222	225	226	222	230	--	227	--	--	243
Bromide	mg/L	--	--	--	--	--	--	--	0.061	0.087	0.081	0.072	0.081	--	0.08	--	--	0.09
Chloride	mg/L	--	42.1	24.9	24.8	24.3	24.1	24.4	24.1	26.5	26.5	27.5	28.6	--	28.8	30.1	34.1	33.1
Fluoride	mg/L	4	0.428	0.37	0.4	0.37	0.31	0.33	0.35	0.38	0.34	0.37	0.42	--	0.41	--	--	0.42
TDS	mg/L	--	(412.7) 349	323	315	331	334	316	300	323	330	327	321	--	308	--	--	341
Sulfate	mg/L	--	(47.8) 48	44.3	46.7	42.4	40.7	41.4	41.2	43.8	43.3	44.1	42	--	40.7	--	--	40.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--	<0.07	--	--	<0.1
Radium-228	pCi/L	--	--	0.0603	0.105	1.42	0.662	0.108	-0.0752	0.3	2.21	--	--	--	0.415	--	--	0.71
Radium-226	pCi/L	--	--	0.33	1.57	0.276	0.65	0.513	0.15	0.33	0.323	--	--	--	0.288	--	--	0.37
Radium-226/228	pCi/L	5	--	0.3903	1.675	1.696	1.312	0.621	0.0748	0.63	2.533	--	--	--	0.703	--	--	1.08
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.4	--	0.12	--	--	0.43
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	1	--	0.9	--	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.51	--	1	--	<1	--	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.03	<0.0004	0.035	0.048	0.011	--	0.053	--	--	0.034
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.583	0.1	0.455	0.445	0.303	--	0.508	--	--	0.397

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

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Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/23/2019	9/11/2019	11/22/2019	5/19/2020	7/16/2020	11/11/2020	2/3/2021	5/26/2021	11/12/2021	2/15/2022	5/12/2022	7/20/2022	11/3/2022	2/8/2023	5/24/2023
Field Parameters																		
Elevation	ft NGVD	--	--	372.45	--	370.95	370.40	370.81	369.90	368.07	369.25	368.50	--	369.34	369.88	369.25	367.92	368.85
pH	S.U.	--	6.43 - 7.90	7.21	7.25	7.05	7.22	7.44	7.34	7.37	7.72	7.53	--	7.33	7.54	6.92	7.35	7.87
Specific Conductance	µmhos/cm	--	--	493	481	491	566	575	590	549	648	598	--	623	650	568	612	378
Turbidity	NTU	--	--	2.1	0.58	1.7	0	2.96	1.38	2.8	0	1.9	--	2.41	0.11	0	0.42	0
Dissolved Oxygen	mg/L	--	--	0.57	0.26	2.1	0.28	1.64	0.18	0.2	0	0	--	0.31	0	0.03	1.42	0
Temperature	°C	--	--	16.4	17.5	14	15.23	17.24	15.42	14.4	18	14.66	--	15.65	17.38	16.09	13.98	15.92
ORP	mV	--	--	27	-35.8	-206	42	18	70	143	178	244	--	-27	-18	12	-26	29
Laboratory Parameters																		
Antimony	µg/L	6	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	0.71	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	11	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	0.838	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	0.291	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	3.1	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	<0.03	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	17.5	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.093	--	--	0.01	0.02	--	<0.02	--	0.017	0.016	--	<0.009	--	0.018	--	0.017
Calcium	mg/L	--	(79.5) 71	--	--	66.7	71.2	--	65.9	--	67.4	68.2	--	70.4	--	67.3	--	60.8
Lithium	mg/L	0.04	--	--	--	0.00355	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	20.7	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	0.784	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	18.1	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	0.0917	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	210	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	0.08	--	--	--	--	0.09	--	--	--	--	--	--	--
Chloride	mg/L	--	42.1	30.6	33.5	35	37.7	35.4	36.3	36.9	37.8	42.5	46.8	46.5	47.2	52.4	52.8	53.1
Fluoride	mg/L	4	0.428	--	--	0.37	0.4	0.39	0.43	--	0.38	0.4	--	0.41	--	0.42	--	0.43
TDS	mg/L	--	(412.7) 349	--	--	348	323	340	322	--	350	340	--	350	--	360	--	380
Sulfate	mg/L	--	(47.8) 48	--	--	39.7	40.1	--	39.0	--	38.6	39	--	43.4	--	43.2	--	43.4
Sulfide	mg/L	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	0.546	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	0.421	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	0.967	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	0.758	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-11

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	8/16/2023	11/2/2023	12/20/2023
Field Parameters						
Elevation	ft NGVD	--	--	368.5	367.53	366.84
pH	S.U.	--	6.43 - 7.90	7.34	6.84	7.23
Specific Conductance	µmhos/cm	--	--	654	709	621
Turbidity	NTU	--	--	0.7	0	0.79
Dissolved Oxygen	mg/L	--	--	0	0	3.64
Temperature	°C	--	--	16.1	14.5	18.09
ORP	mV	--	--	-54	-34	122
Laboratory Parameters						
Antimony	µg/L	6	--	--	--	--
Arsenic	µg/L	10	--	--	--	--
Barium	µg/L	2000	--	--	--	--
Beryllium	µg/L	4	--	--	--	--
Cadmium	µg/L	5	--	--	--	--
Chromium	µg/L	100	--	--	--	--
Cobalt	µg/L	6	--	--	--	--
Copper	µg/L	--	--	--	--	--
Lead	µg/L	15	--	--	--	--
Mercury	µg/L	2	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--
Selenium	µg/L	50	--	--	--	--
Thallium	µg/L	2	--	--	--	--
Zinc	µg/L	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--
Boron	mg/L	--	0.093	--	0.019	--
Calcium	mg/L	--	(79.5) 71	--	64.3	--
Lithium	mg/L	0.04	--	--	--	--
Magnesium	mg/L	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--
Chloride	mg/L	--	42.1	54.7	55.4	29.9
Fluoride	mg/L	4	0.428	--	0.45	--
TDS	mg/L	--	(412.7) 349	400	360	--
Sulfate	mg/L	--	(47.8) 48	--	42.4	--
Sulfide	mg/L	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-1D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/8/2016	7/19/2016	9/20/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/18/2017	10/4/2017	1/3/2018	6/7/2018	8/16/2018	11/14/2018	2/13/2019	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.6	369.43	368.97	368.42	367.75	367.81	367.81	368.34	367.44	366.27	369.56	369.94	368.73	369.71	371.84
pH	S.U.	--	6.74 - 8.16	7.6	7.1	7.36	7.5	7.4	7.33	7.25	8.06	7.3	7.68	8.24	7.35	7.77	7.41	7.18
Specific Conductance	µmhos/cm	--	--	496	471	464	842	400	558	394	525	448	539	508	568	457	317	0.504
Turbidity	NTU	--	--	8.8	2	6.27	4	5	1.93	2.15	2.47	2	3.89	1.71	0	1.03	2	0.3
Dissolved Oxygen	mg/L	--	--	0.5	0.2	0.55	0.8	2	0.25	0.53	0.81	0.4	1.83	0.25	0.26	0.2	10	3.68
Temperature	°C	--	--	19.4	16.7	15.77	14.8	14.7	15.14	15.84	21.46	16.5	6.7	15.85	16.71	14.06	14	17.02
ORP	mV	--	--	63	220	92.8	252	182	49.6	132.7	152.8	-14	-5.3	-112	200	53	188	55.9
Laboratory Parameters																		
Antimony	µg/L	6	--	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	--	--	--	--	0.03	--	0.05
Arsenic	µg/L	10	--	1.29	0.73	1.07	0.65	0.77	0.58	0.75	0.59	--	--	--	--	0.62	--	0.47
Barium	µg/L	2000	--	255	147	160	147	162	139	142	139	--	--	--	--	101	--	99.2
Beryllium	µg/L	4	--	0.01	<0.005	0.007	<0.005	<0.005	<0.005	0.006	<0.004	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.13	0.07	0.04	0.04	0.15	0.04	0.04	0.05	--	--	--	--	0.02	--	0.02
Chromium	µg/L	100	--	0.3	1.5	0.3	0.072	0.439	0.687	0.174	0.131	--	--	--	--	0.07	--	0.1
Cobalt	µg/L	6	--	3.64	0.373	0.836	0.329	0.577	0.173	0.44	0.212	--	--	--	--	0.04	--	0.058
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.93	1.02	--	0.55	--	0.75	--	0.83
Lead	µg/L	15	--	1.13	1.37	0.5	0.222	0.807	1.92	0.419	0.355	--	--	--	--	0.07	--	0.138
Mercury	µg/L	2	--	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	3.44	3.59	3.6	3.24	2.43	3.4	3.05	2.94	--	--	--	--	2	--	1
Selenium	µg/L	50	--	0.07	0.03	0.07	0.03	0.03	0.06	<0.03	--	--	--	--	--	0.04	--	0.09
Thallium	µg/L	2	--	0.04	0.02	0.056	0.02	0.05	0.03	0.04	0.03	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.5	4.5	--	2	--	1	--	65.9
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.9	19.4	21.3	--	17.9	--	19	--	17.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	8.08	14.6	--	16.1	--	<1	--	4
Boron	mg/L	--	0.066	0.017	0.015	0.016	0.018	0.006	0.055	0.046	0.019	0.002	--	0.103	0.02	0.1	<0.02	0.02
Calcium	mg/L	--	(79.5) 75	63.6	57.9	65.2	69.3	63.4	70	67.8	63.9	65.7	--	70.9	--	71.9	--	73.6
Lithium	mg/L	0.04	--	<0.0002	0.017	0.0005	0.004	0.007	0.007	0.009	0.002	--	--	--	--	0.01	--	0.01
Magnesium	mg/L	--	--	--	--	--	--	--	21.9	22.2	20.7	20.9	--	20.4	--	22.1	--	18.3
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.511	--	--	0.216	--	0.138	--	0.169
Potassium	mg/L	--	--	--	--	--	--	--	1.13	1.13	0.89	0.89	--	1.34	--	1.71	--	1.23
Sodium	mg/L	--	--	--	--	--	--	--	19.4	19.3	18.8	18	--	18.2	--	20.9	--	18.7
Strontium	mg/L	--	--	--	--	--	--	--	0.0985	0.101	0.0885	0.092	--	0.359	--	0.272	--	0.553
Alkalinity	mg/L	--	--	--	--	--	--	--	206	202	206	220	--	218	--	222	--	208
Bromide	mg/L	--	--	--	--	--	--	--	0.09	0.115	0.109	0.03	--	0.113	--	0.1	--	0.09
Chloride	mg/L	--	(29.6) 50	27.3	29.8	29.8	39.3	40.6	40.3	40.9	39.3	10.3	--	43.1	43.8	46.9	43.8	32.1
Fluoride	mg/L	4	0.321	0.28	0.3	0.28	0.29	0.26	0.26	0.28	0.24	0.85	0.31	0.3	--	0.3	--	0.27
TDS	mg/L	--	(412.7) 369	331	329	288	339	323	330	342	338	339	--	345	--	340	--	346
Sulfate	mg/L	--	(45.1) 45	40.2	40.6	32.3	33.6	36.4	37	39.5	39.6	10.4	--	39.5	--	39.8	--	45.3
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	0.558	0.06	0.525	0.566	0.315	0.0844	0.511	0.444	--	--	--	--	0.295	--	0.55
Radium-226	pCi/L	--	--	0.526	0.135	0.932	6.73	0.334	0.154	0.213	0.502	--	--	--	--	0.0679	--	0.652
Radium-226/228	pCi/L	5	--	1.084	0.195	1.457	7.296	0.649	0.2384	0.724	0.946	--	--	--	--	0.3629	--	1.202
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.58	--	--	0.98	--	0.78	--	0.8
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	4.2	--	--	11.8	--	2	--	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	2	--	5.05	--	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.052	0.012	--	<0.002	--	0.02	--	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.553	0.62	0.486	0.616	--	0.0605	--	0.144	--	0.148

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-1D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/23/2019	11/22/2019	2/17/2020	5/19/2020	11/11/2020	2/3/2021	5/26/2021	11/12/2021	5/12/2022	11/3/2022	5/24/2023	11/2/2023
Field Parameters															
Elevation	ft NGVD	--	--	372.45	367.22	369.34	370.40	369.91	376.09	368.95	368.22	369.35	369.05	368.75	367.55
pH	S.U.	--	6.74 - 8.16	7.3	7.26	7.38	7.05	7.14	7.5	7.68	7.35	7.21	7.06	7.84	6.76
Specific Conductance	µmhos/cm	--	--	510	609	817	454	664	467	747	735	624	673	368	701
Turbidity	NTU	--	--	1.5	2.53	0.98	0	0.43	2.9	0	1.44	2.83	0	0	0
Dissolved Oxygen	mg/L	--	--	2.1	3.57	6.09	9.13	0	4.8	0	0	2.47	0	0	0
Temperature	°C	--	--	16.7	14.31	13.25	15.71	15.84	13.2	15.9	14.75	15.51	16.26	16.79	14.77
ORP	mV	--	--	44	51.3	211.2	152	95	145	200	239	160	133	103	65
Laboratory Parameters															
Antimony	µg/L	6	--	--	0.04	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	0.57	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	101	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	<0.02	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	0.03	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	0.2	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	0.097	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	0.2	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	<0.002	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	1	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	0.08	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	<0.1	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	18.5	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.066	--	0.04	--	0.04	0.04	--	0.033	0.042	<0.009	0.043	0.034	0.052
Calcium	mg/L	--	(79.5) 75	--	72.5	--	59.9	80.3	56.8	77.2	73.7	68.6	70.2	59	67.2
Lithium	mg/L	0.04	--	--	0.0038	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	22.2	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	0.163	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	1.3	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	26	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	0.194	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	260	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.1	--	--	--	--	0.11	--	--	--	--	--
Chloride	mg/L	--	(29.6) 50	--	49.1	--	23.8	56.2	--	44	55.4	30.9	58.4	41.7	46.2
Fluoride	mg/L	4	0.321	--	0.27	--	0.3	0.30	--	0.26	0.3	0.26	0.3	0.28	0.32
TDS	mg/L	--	(412.7) 369	--	398	257	261	397	264	410	410	350	400	370	360
Sulfate	mg/L	--	(45.1) 45	39.2	41.2	--	23.3	37.7	--	38.6	36	45.4	40.6	37.5	39.1
Sulfide	mg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	0.197	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	0.307	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	2.19	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	3	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	0.131	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/9/2017	5/9/2017	7/19/2017	10/4/2017	6/6/2018	11/13/2018	2/13/2019	4/1/2019	5/22/2019	7/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.34	369.03	369.02	368.77	366.24	368.15	368.06	368.22	366.68	369.94	367.91	368.87	369.97	371.02	371.37
pH	S.U.	--	6.30 - 8.44	6.4	7.68	7.63	7.34	7.65	7.66	7.12	7.46	7.17	7.62	7.53	7.77	7.72	7.66	7.45
Specific Conductance	µmhos/cm	--	--	423	465	440	459	341	522	354	409	509	470	425	451	491	500	486
Turbidity	NTU	--	--	3.1	1.85	0.51	0.96	0.74	1.31	2.68	4.81	1.55	1.84	2.15	0.8	1.51	1.08	1.7
Dissolved Oxygen	mg/L	--	--	2.8	1.85	4.67	3.91	4.18	3.63	4.52	2.62	2.63	4.66	3.7	3.1	4.7	5.77	1.3
Temperature	°C	--	--	17.5	16.34	15.81	16.03	15.1	15.73	15.67	16.06	16.42	16.48	14.51	14.6	14.5	15.93	16.2
ORP	mV	--	--	34	64	90.4	-19	165	13.1	165.7	-5.9	26.6	59.1	23	71	-17.9	-3.2	55
Laboratory Parameters																		
Antimony	µg/L	6	--	<0.02	0.02	0.04	0.02	0.02	0.02	0.04	0.12	--	--	0.04	--	--	0.03	--
Arsenic	µg/L	10	--	0.97	1.09	0.94	0.94	0.92	0.95	0.95	0.96	--	--	0.82	--	--	0.78	--
Barium	µg/L	2000	--	16	14	12.4	12.4	11	12.3	12.3	13.6	--	--	16.5	--	--	18	--
Beryllium	µg/L	4	--	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.02	--	--	<0.02	--
Cadmium	µg/L	5	--	0.01	0.01	0.02	0.02	0.09	0.009	0.01	0.03	--	--	0.11	--	--	0.08	--
Chromium	µg/L	100	--	0.4	0.6	0.3	0.337	0.329	0.67	0.37	0.41	--	--	0.1	--	--	0.1	--
Cobalt	µg/L	6	--	0.177	0.09	0.017	0.019	0.014	0.051	0.064	0.121	--	--	<0.02	--	--	0.02	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.33	0.2	1.58	0.28	--	--	0.56	--
Lead	µg/L	15	--	0.158	0.105	0.101	0.022	0.063	0.042	0.047	0.243	--	--	0.04	--	--	0.133	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	<0.002	--
Molybdenum	µg/L	100	--	2.03	2.39	2.07	1.91	2.14	1.92	1.75	1.81	--	--	2	--	--	2	--
Selenium	µg/L	50	--	0.3	0.3	0.2	0.3	0.4	0.3	0.2	0.3	--	--	0.2	--	--	1	--
Thallium	µg/L	2	--	<0.02	<0.01	<0.01	<0.01	0.074	<0.01	<0.01	0.03	--	--	<0.1	--	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	3.3	5.3	89.4	--	--	7.5	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	28.6	28.8	31.9	26.7	26.8	--	--	25	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	36.6	14.7	15.3	7.27	--	--	6.68	--
Boron	mg/L	--	0.109	<0.002	0.015	0.014	0.018	0.004	0.069	0.084	0.052	0.045	0.073	0.06	--	--	<0.02	--
Calcium	mg/L	--	(79.5) 66	59.4	51.6	57.4	62.4	51.6	57.9	59	53.3	60.7	57	54.7	--	--	51.3	--
Lithium	mg/L	0.04	--	0.0004	0.018	0.005	0.008	0.009	0.0007	0.002	0.005	--	--	<0.009	--	--	<0.009	--
Magnesium	mg/L	--	--	--	--	--	--	--	21.2	21.9	19.5	22.8	21.3	20.9	--	--	19	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0124	--	0.0063	0.0025	--	--	0.0017	--
Potassium	mg/L	--	--	--	--	--	--	--	0.73	0.81	0.65	0.64	0.68	0.68	--	--	0.66	--
Sodium	mg/L	--	--	--	--	--	--	--	13.4	14	11.8	16.3	22.1	23.7	--	--	26	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0837	0.0855	0.0756	0.0888	0.0906	0.086	--	--	0.0803	--
Alkalinity	mg/L	--	--	--	--	--	--	--	174	191	188	207	215	207	--	--	220	--
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.071	0.116	0.06	0.063	<0.04	--	--	<0.04	--
Chloride	mg/L	--	(29.6) 24	21.5	21.8	23.8	21.8	21.2	21	20.8	19.6	21.2	25.3	24.8	26.5	26.1	26.4	26.8
Fluoride	mg/L	4	0.391	0.26	0.29	0.26	0.26	0.25	0.26	0.26	0.23	0.25	0.29	0.28	--	--	0.3	--
TDS	mg/L	--	(412.7) 343	298	265	301	316	284	285	321	308	323	329	272	--	--	352	339
Sulfate	mg/L	--	(35.08) 35	26	27.6	26.2	24.1	25.9	26.6	30.3	33.8	30	28.9	24.7	--	--	26.2	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	--	--	<0.1	--
Radium-228	pCi/L	--	--	-0.035	0.54	0	0.228	0.343	0.0555	-0.0726	0.631	--	--	0.146	--	--	0.54	--
Radium-226	pCi/L	--	--	0.12	0.172	0.143	0.311	0.465	0.434	0.0617	--	--	--	0.0173	--	--	0.0674	--
Radium-226/228	pCi/L	5	--	-0.035	0.66	0.172	0.371	0.654	0.5205	0.3614	0.6927	--	--	0.1633	--	--	0.6074	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	0.27	1.84	--	--	0.87	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	0.6	5	--	--	4	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	2	1	--	--	5.16	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.013	<0.002	0.003	--	--	0.003	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0001	<0.0001	<0.0001	0.0021	0.0003	0.0005	--	--	0.0009	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/11/2019	11/14/2019	5/18/2020	7/16/2020	11/11/2020	2/4/2021	5/27/2021	8/4/2021	11/11/2021	5/12/2022	11/2/2022	2/7/2023	5/24/2023	8/15/2023
Field Parameters																	
Elevation	ft NGVD	--	--	370.52	370.86	369.39	377.69	370.64	368.33	369.35	369.45	369.07	369.92	369.67	368.42	369.27	368.80
pH	S.U.	--	6.30 - 8.44	7.33	7.54	7.43	7.55	7.4	7.62	9.5	7.3	7	7.57	6.81	7.56	7.53	7.58
Specific Conductance	µmhos/cm	--	--	473	657	462	584	588	562	500	579	588	482	420	435	271	413
Turbidity	NTU	--	--	0.83	0.2	1.64	0.53	0.56	0.3	0	7.84	0	0.3	0	0.52	0	0.8
Dissolved Oxygen	mg/L	--	--	1.78	3.59	2.3	3.24	3.98	5.1	4.8		3.97	3.36	11.23	3.91	0	4.17
Temperature	°C	--	--	16.4	15.18	16.64	14.96	15.54	13.8	16.36	15.32	14.67	15.38	14.87	14.7	17.1	15.99
ORP	mV	--	--	7.7	4	27	48	85	72	73	150	218	124	146	185	270	55
Laboratory Parameters																	
Antimony	µg/L	6	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	0.76	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	19.3	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	<0.01	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	0.255	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	<0.05	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	1.1	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	<0.7	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	25.2	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.109	--	0.03	0.02	--	0.03	--	0.043	--	0.028	<0.009	0.021	--	0.018	--
Calcium	mg/L	--	(79.5) 66	--	59.2	53.7	--	58.4	--	59.8	--	55.2	42.8	43	--	41	--
Lithium	mg/L	0.04	--	--	0.00413	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	20.4	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	0.001	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	32.9	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	0.0909	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	221	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.08	--	--	--	--	0.09	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 24	26.6	27.3	28.9	28.7	27.0	--	24.8	--	23.0	16.8	13.8	--	12.6	--
Fluoride	mg/L	4	0.391	--	0.28	0.34	0.33	0.34	0.36	0.35	0.35	0.33	0.39	0.43	0.45	0.43	0.4
TDS	mg/L	--	(412.7) 343	--	336	344	347	336	--	370	--	330	280	270	--	250	--
Sulfate	mg/L	--	(35.08) 35	--	27.8	24.9	--	25.7	--	30.8	--	27.1	17.9	17.7	--	17.4	--
Sulfide	mg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	0.161	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	0.0407	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	0.2017	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	1.84	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/2/2023	12/20/2023
Field Parameters					
Elevation	ft NGVD	--	--	367.99	367.31
pH	S.U.	--	6.30 - 8.44	7.1	8.15
Specific Conductance	µmhos/cm	--	--	433	491
Turbidity	NTU	--	--	4	0.23
Dissolved Oxygen	mg/L	--	--	4.27	14.67
Temperature	°C	--	--	13.79	16.21
ORP	mV	--	--	146	172
Laboratory Parameters					
Antimony	µg/L	6	--	--	--
Arsenic	µg/L	10	--	--	--
Barium	µg/L	2000	--	--	--
Beryllium	µg/L	4	--	--	--
Cadmium	µg/L	5	--	--	--
Chromium	µg/L	100	--	--	--
Cobalt	µg/L	6	--	--	--
Copper	µg/L	--	--	--	--
Lead	µg/L	15	--	--	--
Mercury	µg/L	2	--	--	--
Molybdenum	µg/L	100	--	--	--
Selenium	µg/L	50	--	--	--
Thallium	µg/L	2	--	--	--
Zinc	µg/L	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--
Aluminum	µg/L	--	--	--	--
Boron	mg/L	--	0.109	0.021	--
Calcium	mg/L	--	(79.5) 66	38.8	--
Lithium	mg/L	0.04	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Alkalinity	mg/L	--	--	--	--
Bromide	mg/L	--	--	--	--
Chloride	mg/L	--	(29.6) 24	12.4	--
Fluoride	mg/L	4	0.391	0.45	0.39
TDS	mg/L	--	(412.7) 343	230	--
Sulfate	mg/L	--	(35.08) 35	16.8	--
Sulfide	mg/L	--	--	--	--
Radium-228	pCi/L	--	--	--	--
Radium-226	pCi/L	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/13/2018	2/13/2019	5/22/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.26	368.97	368.94	368.7	366.31	368.06	368.01	368.16	366.64	365.54	369.85	369.32	367.97	368.87	371.17
pH	S.U.	--	6.43 - 8.69	7.89	7.14	7.45	7.26	7.7	7.64	8.42	6.98	7.16	7.84	7.55	7.52	7.2	7.55	7.34
Specific Conductance	µmhos/cm	--	--	581	542	513	495	370	557	383	431	553	568	802	614	434	435	481
Turbidity	NTU	--	--	2.02	1.41	0.94	1.83	3.99	16	24.3	6.25	10.3	1.3	0.91	0	17.03	2.8	0
Dissolved Oxygen	mg/L	--	--	1.54	7.64	1.96	3.62	--	10.86	1.97	22.85	0.71	1.12	1.1	0.06	0.13	10	0.71
Temperature	°C	--	--	15.88	15.93	17.11	15.97	14.38	14.74	15.42	16.34	15.68	11.06	15.3	16.03	14.25	14.3	16.09
ORP	mV	--	--	65.9	29.8	-29.6	-11.6	161.9	-52.8	156.9	-180.6	-63.4	-51.8	-55.4	-46	36.8	-17	-83.8
Laboratory Parameters																		
Antimony	µg/L	6	--	0.06	0.06	0.07	0.13	0.1	0.1	0.15	0.11	--	--	--	--	0.02	--	0.03
Arsenic	µg/L	10	--	0.64	0.68	0.55	0.61	0.65	0.74	0.9	0.76	--	--	--	--	0.49	--	0.4
Barium	µg/L	2000	--	78.5	84	67.1	60.1	59.4	58.4	59.3	62.9	--	--	--	--	95	--	102
Beryllium	µg/L	4	--	<0.005	0.006	<0.005	<0.005	<0.005	0.01	0.022	0.02	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.03	0.05	0.05	0.07	0.16	0.22	0.09	0.05	--	--	--	--	0.04	--	0.003
Chromium	µg/L	100	--	0.2	0.6	0.1	0.143	0.154	1.01	0.829	0.567	--	--	--	--	0.327	--	0.06
Cobalt	µg/L	6	--	0.606	0.76	0.415	0.26	0.28	0.581	1.28	0.995	--	--	--	--	0.492	--	0.347
Copper	µg/L	--	--	--	--	--	--	--	--	--	2.21	1.82	--	0.2	--	1.52	--	0.24
Lead	µg/L	15	--	0.208	0.454	0.178	0.231	0.383	0.588	1.39	1.19	--	--	--	--	0.467	--	0.143
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	4.91	5	4.21	3.14	2.07	2.06	2.17	2.07	--	--	--	--	2	--	2.13
Selenium	µg/L	50	--	0.7	0.7	0.6	0.4	0.2	0.2	0.4	0.2	--	--	--	--	0.2	--	0.05
Thallium	µg/L	2	--	0.051	0.04	0.04	0.02	0.03	0.03	0.04	0.064	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.4	3.4	--	20.8	--	35.2	--	7.4
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	16.3	18.9	--	--	16.3	--	16.9	--	15.9
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	315	244	--	9.39	--	91.9	--	6.25
Boron	mg/L	--	0.043	0.019	0.009	0.025	0.013	<0.002	0.024	0.034	0.025	0.03	--	0.052	0.03	0.05	<0.02	<0.02
Calcium	mg/L	--	(79.5) 78	74	67.5	66.8	73.9	63.9	71.5	71	68.9	72.5	--	72.7	--	64.8	--	64.3
Lithium	mg/L	0.04	--	0.005	0.021	0.002	0.006	0.007	0.005	0.007	<0.0002	--	--	--	--	<0.009	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	22.8	23.6	22.8	23.7	--	23.7	--	21.2	--	20.4
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.463	--	--	0.564	--	0.576	--	0.699
Potassium	mg/L	--	--	--	--	--	--	--	1.09	1.2	1.01	1.05	--	1.14	--	0.89	--	0.92
Sodium	mg/L	--	--	--	--	--	--	--	14.7	15.3	15.8	16.8	--	16.9	--	15.3	--	13.5
Strontium	mg/L	--	--	--	--	--	--	--	0.0919	0.0977	0.0885	0.0946	--	0.0959	--	0.0864	--	0.083
Alkalinity	mg/L	--	--	--	--	--	--	--	223	218	236	252	--	254	--	247	--	241
Bromide	mg/L	--	--	--	--	--	--	--	0.05	0.071	0.072	0.075	--	0.077	--	0.06	--	0.05
Chloride	mg/L	--	34	28.6	29.7	28	25.8	27.1	25.8	28.6	29.7	29.8	28.8	31.8	31.5	27.9	31.5	25.4
Fluoride	mg/L	4	0.371	0.3	0.33	0.31	0.36	0.3	0.31	0.31	0.28	0.28	--	0.32	--	0.32	--	0.32
TDS	mg/L	--	(412.7) 375	332	363	330	326	314	312	343	346	343	--	356	--	308	--	328
Sulfate	mg/L	--	(48.53) 49	42.9	54.7	41.1	36.9	39.2	39.2	42.4	44.1	45.5	--	43.2	--	39	--	39.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.1	--	<0.1
Radium-228	pCi/L	--	--	-0.0463	0.62	0.241	0.137	0.648	0.146	0.163	0.195	--	--	--	--	0.291	--	0.451
Radium-226	pCi/L	--	--	0.398	0.342	0.267	0.288	0.197	0.289	0.328	0.341	--	--	--	--	0.258	--	0.194
Radium-226/228	pCi/L	5	--	0.3517	0.962	0.508	0.425	0.845	0.435	0.491	0.536	--	--	--	--	0.549	--	0.645
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	1.96	--	0.2	--	0.64
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	--	21.7	--	2	--	0.9
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	154	--	<1	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.053	0.016	0.03	0.054	--	0.238	--	0.037	--	0.02
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.258	0.331	0.333	0.323	--	0.563	--	0.565	--	0.643

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/14/2019	5/18/2020	11/11/2020	5/27/2021	11/11/2021	5/12/2022	7/19/2022	11/2/2022	2/7/2023	5/24/2023	8/15/2023	11/2/2023	12/20/2023
Field Parameters																
Elevation	ft NGVD	--	--	371.18	369.44	370.65	369.39	369.17	369.97	370.3	369.82	368.48	369.32	368.85	368.05	367.38
pH	S.U.	--	6.43 - 8.69	7.39	7.8	6.86	9.66	6.99	7.46	6.88	7.05	7.34	7.56	7.37	6.84	8.3
Specific Conductance	µmhos/cm	--	--	576	420	558	510	647	700	669	641	671	438	665	676	693
Turbidity	NTU	--	--	4.1	2.08	2.72	0	0	1.87	5.31	0	1.12	0	2.1	2.42	2
Dissolved Oxygen	mg/L	--	--	0.33	5.14	7.66	0	0.06	4.49	0	0.66	0.03	0	0.6	0	0.65
Temperature	°C	--	--	15.93	15.94	4.84	16.6	14.51	16.3	17.11	15.24	13.62	16.3	17.43	14.48	16.19
ORP	mV	--	--	-115	-58	25	-95	-43	-54	-71	-57	-88	-37	-46	-66	-28
Laboratory Parameters																
Antimony	µg/L	6	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.39	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	90.8	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.12	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.141	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2.14	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.9	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	15	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.043	0.01	<0.02	<0.02	0.013	0.013	<0.009	--	0.013	--	0.01	--	0.012	--
Calcium	mg/L	--	(79.5) 78	63.4	61.9	66.6	70.9	72.1	78	--	79.8	76.7	70.6	--	70.1	--
Lithium	mg/L	0.04	--	0.00402	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	19.4	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.272	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.9	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	13.2	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0803	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	208	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.04	--	--	0.06	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	34	23.3	24.4	24.3	29.2	31.7	51.3	58.8	57.2	55	57.7	49.1	42.6	40.5
Fluoride	mg/L	4	0.371	0.33	0.36	0.37	0.35	0.32	0.3	--	0.31	--	0.3	--	0.32	--
TDS	mg/L	--	(412.7) 375	296	297	296	350	340	380	--	390	380	370	--	350	--
Sulfate	mg/L	--	(48.53) 49	39.3	40.5	38.6	40.8	37.2	41.1	--	40.3	--	39.2	--	35.4	--
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.191	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0689	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.2599	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	1.08	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.251	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	6/7/2018	8/16/2018	11/12/2018	2/13/2019	5/22/2019	7/24/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.22	368.96	368.9	368.68	366.41	368.04	367.96	367.95	366.6	369.84	369.25	367.91	368.89	371.01	371.37
pH	S.U.	--	6.45 -8.63	7.86	7.47	7.29	7.1	7.4	7.39	7.3	8.51	7.24	7.55	7.33	7.36	7.32	7.25	6.28
Specific Conductance	µmhos/cm	--	--	586	524	551	516	386	568	388	516	428	460	830	464	391	803	834
Turbidity	NTU	--	--	2.31	3.15	3.5	0.79	3.45	2.67	2.32	1.72	1.82	5.05	0	5.4	2.1	1.25	3
Dissolved Oxygen	mg/L	--	--	0.45	0.31	1.77	0.31	5.47	0.79	0.87	0.45	0.84	6.83	0.74	0.86	0.37	2.29	0.9
Temperature	°C	--	--	15.8	15.79	19.32	15.58	14.22	14.45	15.65	16.06	15.71	15.35	17.83	14.61	13.7	15.57	15.8
ORP	mV	--	--	-2.7	-168.3	45	-0.7	206.9	-87.3	143.6	-24.8	-41	32.3	-24	-25.4	-164	-71.2	8
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.06	0.02	0.02	0.03	0.03	0.04	0.02	--	--	--	0.03	--	<0.02	--
Arsenic	µg/L	10	--	0.78	0.82	0.81	0.61	0.62	0.59	0.65	0.62	--	--	--	0.58	--	0.53	--
Barium	µg/L	2000	--	185	195	180	172	157	160	159	169	--	--	--	190	--	248	--
Beryllium	µg/L	4	--	<0.005	0.006	0.007	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	<0.02	--	<0.02	--
Cadmium	µg/L	5	--	0.12	0.12	0.07	0.1	0.26	0.09	0.08	0.08	--	--	--	0.17	--	0.3	--
Chromium	µg/L	100	--	0.2	0.4	0.3	0.05	0.277	0.562	0.188	0.162	--	--	--	0.2	--	<0.04	--
Cobalt	µg/L	6	--	0.473	0.439	0.425	0.212	0.327	0.252	0.335	0.353	--	--	--	0.5	--	0.488	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.16	1.96	2.09	--	0.22	--	0.18	--
Lead	µg/L	15	--	0.648	0.359	0.247	0.021	0.378	0.045	0.144	0.075	--	--	--	0.14	--	0.129	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	<0.002	--
Molybdenum	µg/L	100	--	2.11	2.16	1.97	2.09	1.8	2.13	1.9	1.89	--	--	--	2	--	2	--
Selenium	µg/L	50	--	<0.03	<0.03	0.05	0.09	0.08	0.03	0.06	0.04	--	--	--	<0.03	--	<0.03	--
Thallium	µg/L	2	--	0.02	0.02	0.03	0.01	0.02	0.02	0.02	0.02	--	--	--	<0.1	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	6	3.5	--	0.9	--	533	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.9	20.5	17.4	--	17.8	--	17.1	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	17.5	20.7	70.5	--	15.4	--	3	--
Boron	mg/L	--	0.074	<0.002	0.01	0.013	0.014	<0.002	0.03	0.027	0.073	0.041	0.076	0.038	0.07	--	<0.02	--
Calcium	mg/L	--	(79.5) 81	75.6	65.8	66.7	73.9	64.2	74.2	70.8	64.7	67.7	78.6	--	72.4	--	98.5	114
Lithium	mg/L	0.04	--	0.002	0.018	0.002	0.007	0.007	0.008	0.011	0.0006	--	--	--	<0.009	--	0.02	--
Magnesium	mg/L	--	--	--	--	--	--	--	24.3	23.9	21.9	22.6	26.4	--	24.5	--	32.2	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.657	--	0.943	--	0.717	--	0.941	--
Potassium	mg/L	--	--	--	--	--	--	--	1.17	1.21	1.32	1.1	1.28	--	0.99	--	1.2	--
Sodium	mg/L	--	--	--	--	--	--	--	17.3	16.9	16	15.8	16.4	--	14.8	--	20.7	--
Strontium	mg/L	--	--	--	--	--	--	--	0.104	0.104	0.0894	0.0952	0.111	--	0.102	--	0.138	--
Alkalinity	mg/L	--	--	--	--	--	--	--	249	248	261	248	263	--	247	--	261	--
Bromide	mg/L	--	--	--	--	--	--	--	0.06	0.079	0.156	0.083	0.073	--	<0.04	--	0.08	--
Chloride	mg/L	--	132	24.2	24.2	22.8	22.2	22.3	21.7	23.1	23	22.4	43.1	93.0 ?	51.3	40.9	135	156
Fluoride	mg/L	4	0.222	0.19	0.21	0.2	0.19	0.19	0.2	0.21	0.18	0.2	0.22	--	0.2	--	0.18	--
TDS	mg/L	--	506	341	339	338	327	318	318	343	340	332	361	--	348	--	531	540
Sulfate	mg/L	--	(46.44) 46	42.1	44.2	39.6	35.4	38.3	37.6	40.5	40.5	42.3	39.8	--	36.1	--	33.3	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--	<0.1	--	<0.1	--
Radium-228	pCi/L	--	--	0.0495	0.195	0.451	0.473	0.506	1.11	0.0264	0.257	--	--	--	0.0387	--	0.553	--
Radium-226	pCi/L	--	--	-0.0267	0.133	-0.00345	1.77	0.772	0.185	0.429	0.115	--	--	--	0.245	--	0.207	--
Radium-226/228	pCi/L	5	--	0.0228	0.328	0.44755	2.243	1.278	1.295	0.4554	0.372	--	--	--	0.2837	--	0.76	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.11	--	0.12	--	0.11	--	0.39	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.8	--	0.5	--	1	--	3	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.14	--	2.75	--	<1	--	1	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.055	0.017	0.005	--	0.007	--	0.009	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.565	0.602	0.662	0.619	0.621	--	0.702	--	0.948	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/11/2019	11/14/2019	2/18/2020	5/18/2020	7/15/2020	11/11/2020	2/3/2021	5/27/2021	8/5/2021	11/11/2021	2/15/2022	5/12/2022	7/20/2022	11/2/2022	2/8/2023
Field Parameters																		
Elevation	ft NGVD	--	--	----	371.11	----	369.47	370.67	370.61	368.29	369.31	369.43	369.03	368.45	369.81	370.2	369.72	368.38
pH	S.U.	--	6.45 -8.63	7.15	7.3	7.08	7.76	7.26	7.22	7.34	9.45	7.2	6.83	7.17	7.28	7.07	7.02	7.25
Specific Conductance	µmhos/cm	--	--	705	726	1377	617	781	725	674	664	734	943	951	1050	1050	989	980
Turbidity	NTU	--	--	1.9	9.2	2.13	2.92	0.88	1.35	1	0	6.94	0	0	0.2	2.33	0	0.4
Dissolved Oxygen	mg/L	--	--	0.58	0.3	0.57	0.07	0	0	0.2	5.72		0.26	--	0.11	0.76	0.49	0.36
Temperature	°C	--	--	16.5	14.94	12.75	15.06	15.56	14.25	13.8	16.69	15.82	15.73	14	16.7	19.42	15.34	13.53
ORP	mV	--	--	-109	-73	-76.4	-90	-40	-113	-145	-85	-133	-63	-100	-58	-36	-47	-109
Laboratory Parameters																		
Antimony	µg/L	6	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	0.62	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	193	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	0.334	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	0.537	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	0.416	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	2.28	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	16.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.074	--	0.02	--	<0.02	--	<0.02	--	0.012	--	0.011	--	<0.009	--	0.012	--
Calcium	mg/L	--	(79.5) 81	103	76.9	--	88.7	--	92.2	--	88.5	--	96.3	--	114	--	105	--
Lithium	mg/L	0.04	--	--	0.00298	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	24.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	0.855	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	16.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	0.108	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	252	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.06	--	--	--	--	--	0.07	--	--	--	--	--	--	--
Chloride	mg/L	--	132	110	56.5	76.3	93.6	96.2	92.2	74.2	82.9	94.2	135	159	184	175	196	162
Fluoride	mg/L	4	0.222	SSI 1	0.18	--	0.21	0.2	0.20	--	0.21	--	0.2	--	0.2	--	0.21	0.21
TDS	mg/L	--	506	443	356	--	399	411	395	400	440	420	470	--	580	650	630	550
Sulfate	mg/L	--	(46.44) 46	--	38.9	--	36.2	--	35.1	--	37.6	--	33.3	--	39.1	--	39	--
Sulfide	mg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	0.803	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	0.334	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	1.137	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	1.64	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/24/2023	8/15/2023	11/2/2023
Field Parameters						
Elevation	ft NGVD	--	--	369.22	368.77	367.93
pH	S.U.	--	6.45 -8.63	7.5	7.2	6.77
Specific Conductance	µmhos/cm	--	--	622	960	988
Turbidity	NTU	--	--	0	0	1.51
Dissolved Oxygen	mg/L	--	--	0	5.87	0.15
Temperature	°C	--	--	16.25	15.95	14.63
ORP	mV	--	--	-25	-70	13
Laboratory Parameters						
Antimony	µg/L	6	--	--	--	--
Arsenic	µg/L	10	--	--	--	--
Barium	µg/L	2000	--	--	--	--
Beryllium	µg/L	4	--	--	--	--
Cadmium	µg/L	5	--	--	--	--
Chromium	µg/L	100	--	--	--	--
Cobalt	µg/L	6	--	--	--	--
Copper	µg/L	--	--	--	--	--
Lead	µg/L	15	--	--	--	--
Mercury	µg/L	2	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--
Selenium	µg/L	50	--	--	--	--
Thallium	µg/L	2	--	--	--	--
Zinc	µg/L	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--
Boron	mg/L	--	0.074	0.01	--	0.012
Calcium	mg/L	--	(79.5) 81	88.6	--	78.8
Lithium	mg/L	0.04	--	--	--	--
Magnesium	mg/L	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--
Chloride	mg/L	--	132	140	130	121
Fluoride	mg/L	4	0.222	0.2	--	0.21
TDS	mg/L	--	506	530	520	480
Sulfate	mg/L	--	(46.44) 46	38.5	--	34.4
Sulfide	mg/L	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-5S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/13/2018	11/10/2020	5/27/2021	11/12/2021	5/12/2022	11/3/2022	5/25/2023	11/2/2023
Field Parameters											
Elevation	ft NGVD	--	--	392.55	391.70	393.08	391.14	393.96	391.21	394.23	390.50
pH	S.U.	--	7.56	7.56	6.77	7.59	6.64	7.33	--	7.91	6.77
Specific Conductance	µmhos/cm	--	--	1202	2050	826	1800	1419	--	741	1750
Turbidity	NTU	--	--	0.43	6.72	31.76	0	1.8	--	0	27.7
Dissolved Oxygen	mg/L	--	--	1.09	4	7.3	0.44	4.83	--	5.34	0
Temperature	°C	--	--	12.53	16.51	18.5	13.88	18.1	--	17.92	15.57
ORP	mV	--	--	71.3	11	-76	101	4.1	--	108	78
Laboratory Parameters											
Antimony	µg/L	6	--	0.1	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.85	--	--	--	--	--	--	--
Barium	µg/L	2000	--	158	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.08	--	--	--	--	--	--	--
Chromium	µg/L	100	--	<0.04	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	8.15	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.43	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.05	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	1	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.8	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--
Zinc	µg/L	--	--	5	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	21.5	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	2	--	--	--	--	--	--	--
Boron	mg/L	--	0.102	0.102	0.057	0.07	0.059	0.055	0.091	0.072	0.077
Calcium	mg/L	--	86.3	86.3	93.5	71.5	96.9	77.7	73.3	71.1	85.2
Lithium	mg/L	0.04	--	<0.009	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	22.2	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.522	--	--	--	--	--	--	--
Potassium	mg/L	--	--	1.78	--	--	--	--	--	--	--
Sodium	mg/L	--	--	188	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.3	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	229	--	--	--	--	--	--	--
Bromide	mg/L	--	--	1.05	--	0.38	--	--	--	--	--
Chloride	mg/L	--	364	364	451	147	420	355	131	273	373
Fluoride	mg/L	4	0.21	0.21	0.23	0.24	0.19	0.24	0.2	0.21	0.19
TDS	mg/L	--	840	840	1030	580	970	860	520	730	920
Sulfate	mg/L	--	41.2	41.2	47.1	52.6	46.4	38.2	64.4	49.6	56.9
Sulfide	mg/L	--	--	<0.1	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.915	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.799	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.714	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.11	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	6.1	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.01	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.555	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-6S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/18/2016	9/20/2016	11/16/2016	1/10/2017	3/8/2017	5/8/2017	7/18/2017	10/3/2017	6/5/2018	8/15/2018	9/26/2018	11/1/2018	11/14/2018	12/12/2018	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.59	368.99	368.14	367.39	367.54	367.81	368.48	367.6	369.94	370.04	368.35	368.89	368.72	368.4	372.52
pH	S.U.	--	7.9	7.5	7.4	8.1	7.9	7.9	7.6	7.7	7.3	7.52	7.7	7.9	7.31	7.91	7.46	7.42
Specific Conductance	µmhos/cm	--	--	401	430	741	360	300	441	292	347	330	483	321	430	221	464	473
Turbidity	NTU	--	--	1	0.5	1	2	1	1	1	1	0.47	0	8	0.51	0.4	0.53	1.4
Dissolved Oxygen	mg/L	--	--	7.1	5.7	1	6	5	5	7	7	5.82	8.1	5.1	7.53	5.5	4.42	6.4
Temperature	°C	--	--	16.8	19	15	14.8	14.7	15.5	15.2	16.4	16.28	16	15.5	15.04	14.4	14.71	16.6
ORP	mV	--	--	53	71	258	146	36	49	74	0.3	-9.3	155	133	115.3	126	196	70
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.03	0.03	0.03	0.03	0.03	0.02	--	--	0.03	0.03	0.02	0.03	0.03	0.03
Arsenic	µg/L	10	--	0.26	0.26	0.26	0.28	0.26	0.28	0.27	--	--	0.25	0.25	0.23	0.23	0.24	0.22
Barium	µg/L	2000	--	13.6	13.6	14.1	14.8	15.8	15.4	14.3	--	--	14.8	13.5	12.1	11.8	13.4	15.9
Beryllium	µg/L	4	--	0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.004	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	0.25	0.02	0.02	0.008	0.05	0.009	0.04	--	--	0.06	0.04	0.01	<0.01	<0.01	0.03
Chromium	µg/L	100	--	0.4	0.3	0.2	0.599	1.37	0.583	0.291	--	--	0.42	0.265	0.221	0.218	0.212	0.285
Cobalt	µg/L	6	--	0.052	0.019	0.027	0.045	0.049	0.061	0.026	--	--	0.039	<0.02	<0.02	<0.02	<0.02	<0.02
Copper	µg/L	--	--	--	--	--	--	--	--	0.37	0.31	0.46	0.42	0.29	0.17	0.18	0.26	0.51
Lead	µg/L	15	--	0.074	0.034	0.05	0.032	0.113	0.083	0.056	--	--	0.247	0.03	<0.02	0.02	<0.02	0.04
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	3.28	3.34	2.8	2.93	3.29	2.73	4.36	--	--	2.22	2.37	2.38	2.18	2.2	2
Selenium	µg/L	50	--	0.3	0.2	0.3	0.4	0.7	0.8	0.4	--	--	0.4	0.2	0.2	0.2	0.4	0.6
Thallium	µg/L	2	--	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	--	--	0.01	<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	1	0.5	2.5	1	0.7	<0.7	1	2	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.4	14.6	16.9	15.4	15.2	16.8	15.3	15.2	15.9	15.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	8.57	17.8	10.4	13.8	3	2	5.28	3	2
Boron	mg/L	--	0.012	0.014	0.012	0.028	0.006	0.032	0.051	0.078	0.094	0.09	0.101	0.08	0.04	0.04	0.102	0.02
Calcium	mg/L	--	46.1	46.3	44.4	50.8	47.8	53.2	50.3	47	44.8	45.2	52.8	44.1	42.3	38.8	46.8	52.5
Lithium	mg/L	0.04	--	0.015	0.004	0.006	0.014	0.009	0.011	<0.0002	--	--	0.005	0.02	<0.009	0.01	<0.009	0.02
Magnesium	mg/L	--	--	--	--	--	--	23.3	23.5	20.9	19.8	19.3	24	18.8	19.3	17.5	20.8	22.9
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0007	--	0.0024	0.0021	<0.0002	0.0007	0.0002	0.0003	0.0003
Potassium	mg/L	--	--	--	--	--	--	0.7	0.75	0.82	0.78	0.57	0.91	0.71	0.5	0.92	0.86	0.62
Sodium	mg/L	--	--	--	--	--	--	38.9	34.9	26.3	23.2	15.6	25.6	26.1	22	20.2	23.3	25.5
Strontium	mg/L	--	--	--	--	--	--	0.0661	0.067	0.0574	0.0548	0.0555	0.065	0.051	0.0519	0.0524	0.0595	0.691
Alkalinity	mg/L	--	--	--	--	--	--	260	272	241	249	237	267	241	230	242	247	264
Bromide	mg/L	--	--	--	--	--	--	<0.02	0.072	<0.05	0.04	0.03	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chloride	mg/L	--	8.44	8.35	6.04	7.04	7.03	3.32	8.68	4.88	3.28	2.38	11.9	6.83	3.52	3.91	6.48	9.64
Fluoride	mg/L	4	0.73	0.79	0.73	0.69	0.65	0.25	0.69	0.57	0.71	0.89	0.81	0.84	0.86	0.88	0.88	0.95
TDS	mg/L	--	294	290	266	279	287	296	305	274	261	225	277	261	225	196	240	315
Sulfate	mg/L	--	18.8	18.3	10.9	14.3	14	6.9	17.5	9.6	7.5	3.8	15.6	9.8	4.9	5.2	10	16.8
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.4	<0.1	<0.1	<0.7	<0.07	<0.1
Radium-228	pCi/L	--	--	0.101	0.798	-0.249	0.501	0.297	-0.337	0.954	--	--	0.328	0.367	0.354	0.387	-0.368	0.343
Radium-226	pCi/L	--	--	0	0.0671	0.202	0.0815	-0.00471	0.12	-0.0229	--	--	0.0553	0.089	0.0398	0.0239	0.0533	0.0431
Radium-226/228	pCi/L	5	--	0.101	0.8651	-0.047	0.5825	0.29229	-0.217	0.954	--	--	0.3833	0.456	0.3938	0.4109	0.0533	0.3861
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	1.85	--	0.4	2.17	1.86	0.14	0.53	0.17	1.22
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.2	--	0.9	3.1	3	0.7	<0.7	2	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	4.34	--	1	2.51	109	1	2	8.1	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.023	<0.002	0.003	0.163	<0.003	0.005	0.01	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	<0.0001	0.0002	0.0007	0.0015	<0.0002	0.0121	0.0003	<0.0002	0.0007	0.0002

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-6S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/14/2019	5/19/2020	11/12/2020	5/25/2021	5/13/2022	11/3/2022	5/25/2023	11/2/2023
Field Parameters											
Elevation	ft NGVD	--	--	370.42	370.70	369.42	368.82	369.24	368.64	368.57	367.19
pH	S.U.	--	7.9	7.29	7.67	7.1	8	7.29	7.8	7.73	7.52
Specific Conductance	µmhos/cm	--	--	452	373	366	354	506	411	302	716
Turbidity	NTU	--	--	0.21	5.46	1.72	2.9	3.16	11.6	0	3.2
Dissolved Oxygen	mg/L	--	--	5.85	7.17	8.47	3.5	8.19	7.3	4.71	8.4
Temperature	°C	--	--	14.4	15.47	17.96	16.8	16.31	16.94	16.71	14.85
ORP	mV	--	--	291.1	150	84	219	228	79	173	98
Laboratory Parameters											
Antimony	µg/L	6	--	0.03	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.23	--	--	--	--	--	--	--
Barium	µg/L	2000	--	15	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	<0.01	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.284	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	<0.02	--	--	--	--	--	--	--
Copper	µg/L	--	--	<0.2	--	--	--	--	--	--	--
Lead	µg/L	15	--	<0.05	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.4	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--
Zinc	µg/L	--	--	<0.7	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	15	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	<5	--	--	--	--	--	--	--
Boron	mg/L	--	0.012	0.01	<0.02	<0.02	0.017	<0.05	0.016	0.015	0.018
Calcium	mg/L	--	46.1	47.8	43.1	43.0	43.4	46.3	47.8	40.8	49.5
Lithium	mg/L	0.04	--	0.00645	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	20	--	--	--	--	--	--	--
Manganese	mg/L	--	--	<0.0005	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.4	--	--	--	--	--	--	--
Sodium	mg/L	--	--	29.6	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0627	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	262	--	--	--	--	--	--	--
Bromide	mg/L	--	--	<0.04	--	--	--	--	--	--	--
Chloride	mg/L	--	8.44	5.36	1.49	2.07	1.29	2.54	2.88	1.96	2.30
Fluoride	mg/L	4	0.73	0.9	1.02	1.11	1.21	1.09	1.11	1.09	0.99
TDS	mg/L	--	294	277	214	225	210	270	280	290	330
Sulfate	mg/L	--	18.8	12	1.6	4.4	0.83	6.24	6.01	6	7.5
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	-0.011	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0416	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.0416	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.4	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.9	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	<0.0005	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-61

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/25/2018	10/31/2018	11/15/2018	12/12/2018	5/23/2019	11/14/2019	5/20/2020	11/11/2020	5/25/2021	5/13/2022
Field Parameters													
Elevation	ft NGVD	--	--	369.18	368.75	368.62	368.48	372.32	370.28	370.42	369.32	368.71	369.23
pH	S.U.	--	7.6	7.8	7.25	7.35	7.44	7.66	7.32	7.49	7.58	8.03	7.55
Specific Conductance	µmhos/cm	--	--	332	467	344	458	453	374	431	310	385	372
Turbidity	NTU	--	--	6.5	0.76	0.74	0.25	0.36	0.46	0.4	2.3	9.9	2.32
Dissolved Oxygen	mg/L	--	--	1.7	0.27	2.78	0.79	1.02	2.15	2.34	10	0	9.12
Temperature	°C	--	--	16.4	15.9	14.2	14.71	16.5	14.4	14.57	15.1	17.2	19.69
ORP	mV	--	--	149	24.9	140.5	163	168.8	301.7	188	111	102	236
Laboratory Parameters													
Antimony	µg/L	6	--	0.25	0.25	0.25	0.23	0.23	0.2	--	--	--	--
Arsenic	µg/L	10	--	0.2	0.2	0.19	0.19	0.19	0.19	--	--	--	--
Barium	µg/L	2000	--	31.9	32.2	31.9	30.5	35.8	28.5	--	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--	--
Cadmium	µg/L	5	--	0.11	0.01	0.01	0.01	0.01	0.02	--	--	--	--
Chromium	µg/L	100	--	0.05	0.1	<0.04	0.05	0.07	0.222	--	--	--	--
Cobalt	µg/L	6	--	0.313	0.452	0.42	0.362	0.436	0.525	--	--	--	--
Copper	µg/L	--	--	2.36	0.78	0.92	1.21	0.6	0.7	--	--	--	--
Lead	µg/L	15	--	0.05	0.118	<0.02	<0.02	<0.02	<0.05	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	<0.002	--	--	--	--
Molybdenum	µg/L	100	--	5.31	4.7	4.46	4.17	4.4	4.43	--	--	--	--
Selenium	µg/L	50	--	0.6	0.7	0.8	0.6	0.6	0.4	--	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	--	--	--	--
Zinc	µg/L	--	--	3	<0.7	0.7	2	1	1	--	--	--	--
Silica (Dissolved)	mg/L	--	--	19.9	18.1	18.8	18.6	18.1	16.6	--	--	--	--
Aluminum	µg/L	--	--	6.57	5.88	5.54	3	4	<5	--	--	--	--
Boron	mg/L	--	0.06	0.06	0.04	0.03	0.06	<0.02	0.01	<0.02	<0.02	0.016	<0.05
Calcium	mg/L	--	42.2	43.1	42.4	43.1	47.2	47.4	44.7	50.8	46.3	43.5	42.7
Lithium	mg/L	0.04	--	0.01	<0.009	0.034	<0.009	0.01	0.0054	--	--	--	--
Magnesium	mg/L	--	--	13.9	15.1	14.6	16.1	15.7	14	--	--	--	--
Manganese	mg/L	--	--	0.185	0.24	0.247	0.249	0.272	0.276	--	--	--	--
Potassium	mg/L	--	--	0.93	0.76	0.78	0.88	1.13	0.8	--	--	--	--
Sodium	mg/L	--	--	35.7	35.9	32.9	32.7	29.9	26.6	--	--	--	--
Strontium	mg/L	--	--	0.0482	0.0528	0.0549	0.061	0.0622	0.0582	--	--	--	--
Alkalinity	mg/L	--	--	267	259	246	257	278	227	--	--	--	--
Bromide	mg/L	--	--	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	--	--	--	--
Chloride	mg/L	--	5.18	2.91	3.47	3.94	3.84	2.7	2.26	3.09	2.52	1.77	7.75
Fluoride	mg/L	4	0.89	0.88	0.86	0.86	0.86	0.85	0.89	0.94	1.04	1.05	1.00
TDS	mg/L	--	281	274	245	248	245	268	224	229	211	220	230
Sulfate	mg/L	--	9.9	5.4	4.9	6.3	7.3	4.1	4.1	7.1	5.6	3.38	15.5
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	<0.2	--	--	--	--
Radium-228	pCi/L	--	--	0.218	0.216	0.675	0.488	0.496	0.296	--	--	--	--
Radium-226	pCi/L	--	--	0.35	0.323	0.638	0.489	0.557	0.215	--	--	--	--
Radium-226/228	pCi/L	5	--	0.568	0.539	1.313	0.977	1.053	0.511	--	--	--	--
Copper (Dissolved)	µg/L	--	--	2.79	1.09	0.86	0.74	2.58	0.5	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	4	1	<0.7	<0.7	3	0.9	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	30.9	1	8.05	4	4	<5	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.064	<0.003	0.003	0.004	0.003	<0.02	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.254	0.232	0.246	0.231	0.256	0.238	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-6D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/25/2018	10/31/2018	11/14/2018	12/12/2018	5/23/2019	11/14/2019	5/18/2020	11/11/2020	5/25/2021	5/13/2022
Field Parameters													
Elevation	ft NGVD	--	--	369.15	368.72	369.6	368.44	372.31	370.23	370.6	369.29	368.74	369.21
pH	S.U.	--	7.5	7.7	7.21	7.54	7.4	7.55	7.73	7.34	7.49	7.95	7.38
Specific Conductance	µmhos/cm	--	--	369	521	365	513	681	730	539	416	536	556
Turbidity	NTU	--	--	9	0	8.4	0.25	1.2	1.2	0.44	1.5	1.9	1.66
Dissolved Oxygen	mg/L	--	--	0.4	0.34	0.42	0.15	0.9	2.19	9.55	6.4	0	3.2
Temperature	°C	--	--	16.2	16	13.5	15.07	18.6	14.1	14.64	15.2	19.4	17.58
ORP	mV	--	--	155	54.3	131	110	145	126.6	127	109	108	211
Laboratory Parameters													
Antimony	µg/L	6	--	0.02	0.03	0.03	0.02	<0.02	0.05	--	--	--	--
Arsenic	µg/L	10	--	0.89	1.3	1.05	0.93	0.94	1.08	--	--	--	--
Barium	µg/L	2000	--	77.1	75.7	73.6	76.5	112	76	--	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--	--
Cadmium	µg/L	5	--	0.03	0.01	0.02	0.01	0.01	0.01	--	--	--	--
Chromium	µg/L	100	--	0.04	0.346	0.2	0.05	0.08	0.09	--	--	--	--
Cobalt	µg/L	6	--	0.392	0.806	0.598	0.404	0.578	0.429	--	--	--	--
Copper	µg/L	--	--	0.45	1.18	1.6	1.64	0.17	0.5	--	--	--	--
Lead	µg/L	15	--	<0.02	0.205	0.167	<0.02	<0.02	<0.05	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	0.002	<0.002	--	--	--	--
Molybdenum	µg/L	100	--	3.23	2.79	2.83	3.02	2.81	3.13	--	--	--	--
Selenium	µg/L	50	--	7.3	8.5	8.2	4.3	0.09	9.3	--	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--	--
Zinc	µg/L	--	--	<0.7	2	73.1	2	<0.7	<0.7	--	--	--	--
Silica (Dissolved)	mg/L	--	--	19.5	17.5	17.6	18	18.2	16.5	--	--	--	--
Aluminum	µg/L	--	--	2	142	70.3	3	1	6	--	--	--	--
Boron	mg/L	--	0.094	0.05	0.03	0.05	0.115	0.03	0.02	<0.02	<0.02	0.019	<0.05
Calcium	mg/L	--	61.9	61.7	57.2	53.1	60.1	78.9	62	62.4	61.7	59.5	62.4
Lithium	mg/L	0.04	--	0.02	0.009	0.01	<0.009	0.01	0.00722	--	--	--	--
Magnesium	mg/L	--	--	16.8	16.9	15.2	17.1	22.1	17.4	--	--	--	--
Manganese	mg/L	--	--	0.147	0.145	0.156	0.144	0.278	0.12	--	--	--	--
Potassium	mg/L	--	--	1.2	1.04	1.43	1.47	1.29	1.05	--	--	--	--
Sodium	mg/L	--	--	29	27.8	26.5	29	35.5	30	--	--	--	--
Strontium	mg/L	--	--	0.0919	0.093	0.0927	0.102	0.14	0.0949	--	--	--	--
Alkalinity	mg/L	--	--	260	260	266	271	305	265	--	--	--	--
Bromide	mg/L	--	--	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	--	--	--	--
Chloride	mg/L	--	12.3	10.9	10.2	10	10.8	25.1	12.2	15.6	9.36	6.44	32.6
Fluoride	mg/L	4	0.39	0.41	0.41	0.42	0.42	0.36	0.41	0.43	0.46	0.47	0.42
TDS	mg/L	--	331	310	295	276	296	408	310	311	286	300	310
Sulfate	mg/L	--	27.3	24.1	23	22.2	23.6	39.5	25.4	29.8	20.1	15.6	22.2
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	<0.2	--	--	--	--
Radium-228	pCi/L	--	--	0.29	0.21	0.275	-0.0272	0.586	0.179	--	--	--	--
Radium-226	pCi/L	--	--	0.295	0.122	0.102	0.423	0.543	0.108	--	--	--	--
Radium-226/228	pCi/L	5	--	0.585	0.332	0.377	0.423	0.423	0.423	--	--	--	--
Copper (Dissolved)	µg/L	--	--	1.27	0.44	0.7	0.5	0.53	0.4	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	0.9	2	2	1	2	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	31.6	3	2	45.3	15.6	10	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.082	<0.003	0.004	0.117	0.007	<0.02	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.127	0.137	0.135	0.142	0.263	0.123	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-7S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/14/2018	12/12/2018	5/22/2019	11/12/2020	5/25/2021	5/12/2022
Field Parameters											
Elevation	ft NGVD	--	--	369.5	368.76	368.68	368.47	371.91	369.63	368.59	369.7
pH	S.U.	--	7.4	7.4	7.33	7.31	7.3	8.39	6.72	7.72	7.19
Specific Conductance	µmhos/cm	--	--	417	611	455	629	527	678	725	629
Turbidity	NTU	--	--	106	104	42.6	44	4.77	9.78	7.7	8.52
Dissolved Oxygen	mg/L	--	--	0.4	0.32	0.7	0.23	0.65	0.4	0	0.14
Temperature	°C	--	--	15.4	15.01	13.9	14.43	14.69	14.47	15.2	14.94
ORP	mV	--	--	106	85.4	48.2	92	0.1	135	227	180
Laboratory Parameters											
Antimony	µg/L	6	--	0.14	0.15	0.06	0.09	0.02	--	--	--
Arsenic	µg/L	10	--	1.48	2.01	0.7	1.06	0.11	--	--	--
Barium	µg/L	2000	--	18.7	24.3	12.9	15.4	8.42	--	--	--
Beryllium	µg/L	4	--	0.101	0.127	0.05	0.07	<0.02	--	--	--
Cadmium	µg/L	5	--	0.05	0.06	0.02	0.05	0.02	--	--	--
Chromium	µg/L	100	--	2.08	2.45	0.831	1.48	0.1	--	--	--
Cobalt	µg/L	6	--	6.48	9.82	3.47	4.98	0.255	--	--	--
Copper	µg/L	--	--	4.4	5.36	1.91	2.76	0.51	--	--	--
Lead	µg/L	15	--	4.69	6.69	2.38	3.56	0.205	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	<0.4	<0.4	<0.4	<0.4	<0.4	--	--	--
Selenium	µg/L	50	--	0.6	0.8	0.3	0.4	0.2	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	7.9	9.5	14	5	39.1	--	--	--
Silica (Dissolved)	mg/L	--	--	20.8	18.7	18.6	19.3	18.4	--	--	--
Aluminum	µg/L	--	--	1520	1850	681	1170	39.3	--	--	--
Boron	mg/L	--	0.079	0.04	0.07	0.135	0.08	0.03	<0.02	0.015	<0.009
Calcium	mg/L	--	70.2	73.7	68.3	66.2	67.1	62.4	68.5	78.2	71.4
Lithium	mg/L	0.04	--	0.02	0.01	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	25.4	25.7	24.3	24.6	21.7	--	--	--
Manganese	mg/L	--	--	0.334	0.49	0.182	0.248	0.0145	--	--	--
Potassium	mg/L	--	--	1.33	1.39	1.81	1.3	0.87	--	--	--
Sodium	mg/L	--	--	17.9	19.1	18.9	18.7	17	--	--	--
Strontium	mg/L	--	--	0.083	0.0857	0.0883	0.0874	0.0803	--	--	--
Alkalinity	mg/L	--	--	256	261	255	261	242	--	--	--
Bromide	mg/L	--	--	0.09	0.09	0.09	0.09	0.1	--	--	--
Chloride	mg/L	--	32.8	32.2	33.5	33.2	33.6	35.4	27.7	19.5	32.3
Fluoride	mg/L	4	0.52	0.54	0.53	0.54	0.55	0.55	0.60	0.59	0.57
TDS	mg/L	--	358	370	358	354	353	353	346	380	350
Sulfate	mg/L	--	32	32.2	33.1	33.1	33.7	34.1	36.1	34.8	39.3
Sulfide	mg/L	--	--	<0.1	<0.1	<0.007	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	0.48	0.601	0.254	0.191	0.27	--	--	--
Radium-226	pCi/L	--	--	0.271	0.245	0.211	0.507	0.0334	--	--	--
Radium-226/228	pCi/L	5	--	0.751	0.846	0.465	0.698	0.3034	--	--	--
Copper (Dissolved)	µg/L	--	--	1.01	0.07	1.62	0.2	0.17	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	<0.7	3	<0.7	<0.7	--	--	--
Aluminum (Dissolved)	µg/L	--	--	311	3	2	3	2	--	--	--
Iron (Dissolved)	mg/L	--	--	0.618	0.004	0.005	0.007	<0.003	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0797	0.0021	0.0012	0.0026	0.0009	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-71

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/15/2018	12/12/2018	5/22/2019	11/12/2020	5/26/2021	5/13/2022
Field Parameters											
Elevation	ft NGVD	--	--	369.01	368.51	368.5	368.27	371.73	369.44	368.59	369.29
pH	S.U.	--	7.4	7.5	7.3	7.03	7.27	8.4	6.72	7.71	7.18
Specific Conductance	µmhos/cm	--	--	419	613	460	645	573	712	744	715
Turbidity	NTU	--	--	19	14.4	7.05	19.9	1.6	1.43	6.3	28
Dissolved Oxygen	mg/L	--	--	0.3	0.36	0.95	0.21	0.7	0.29	0	0.55
Temperature	°C	--	--	15.5	15.17	13.78	14.46	15.1	15.02	14.9	15.1
ORP	mV	--	--	57	-19.2	68.4	44	-71.2	-57	-7	160.4
Laboratory Parameters											
Antimony	µg/L	6	--	0.02	0.03	<0.02	<0.02	0.02	--	--	--
Arsenic	µg/L	10	--	0.28	0.43	0.24	0.26	0.23	--	--	--
Barium	µg/L	2000	--	175	230	162	147	116	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	0.05	0.06	0.03	0.03	0.35	--	--	--
Chromium	µg/L	100	--	0.2	0.315	0.09	0.07	0.09	--	--	--
Cobalt	µg/L	6	--	3.07	8.34	1.11	1.67	1.1	--	--	--
Copper	µg/L	--	--	0.55	1.45	0.59	0.76	0.4	--	--	--
Lead	µg/L	15	--	0.45	0.6	0.05	0.145	0.228	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	4.2	4.31	<0.4	3.45	3.63	--	--	--
Selenium	µg/L	50	--	0.05	0.09	0.05	0.05	0.04	--	--	--
Thallium	µg/L	2	--	<0.1	0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	2	15.1	1	2	3	--	--	--
Silica (Dissolved)	mg/L	--	--	20.5	18.1	18.5	18.8	18.4	--	--	--
Aluminum	µg/L	--	--	74.1	304	69.9	39.5	27.7	--	--	--
Boron	mg/L	--	0.07	0.04	0.06	0.09	0.08	0.03	<0.02	0.017	<0.05
Calcium	mg/L	--	75.3	75.4	68.8	68.8	73.7	73.7	71.4	75	79.7
Lithium	mg/L	0.04	--	0.01	<0.009	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	21.9	21.7	21.4	22.8	21.5	--	--	--
Manganese	mg/L	--	--	2.76	4	1.08	2.89	0.821	--	--	--
Potassium	mg/L	--	--	1.22	0.97	1.57	1.19	1.08	--	--	--
Sodium	mg/L	--	--	19.8	20.1	21.5	21.3	18.1	--	--	--
Strontium	mg/L	--	--	0.0928	0.0932	0.1	0.103	0.11	--	--	--
Alkalinity	mg/L	--	--	236	237	233	229	232	--	--	--
Bromide	mg/L	--	--	0.1	0.1	0.1	0.1	0.1	--	0.16	--
Chloride	mg/L	--	45	45.8	48.2	47.6	48.8	49	53.3	56.6	65.2
Fluoride	mg/L	4	0.33	0.34	0.34	0.35	0.35	0.33	0.36	0.34	0.32
TDS	mg/L	--	312	348	338	354	347	376	357	380	410
Sulfate	mg/L	--	38.4	38.9	38.9	39	39.1	43.1	42.6	42	44
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	-0.0705	0.369	0.123	0.089	0.643	--	--	--
Radium-226	pCi/L	--	--	4.16	0.513	0.605	0.934	0.155	--	--	--
Radium-226/228	pCi/L	5	--	4.16	0.882	0.728	1.023	0.798	--	--	--
Copper (Dissolved)	µg/L	--	--	0.93	0.24	1.56	0.72	0.15	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	0.9	3	2	2	--	--	--
Aluminum (Dissolved)	µg/L	--	--	1	10.6	2	137	2	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.003	0.01	0.006	0.128	<0.003	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.172	0.51	0.243	3.9	0.121	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-7D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/12/2018	5/22/2019	11/12/2020	5/26/2021	5/12/2022
Field Parameters											
Elevation	ft NGVD	--	--	369.08	368.65	368.57	368.35	371.82	369.50	368.68	369.09
pH	S.U.	--	7.2	7.5	6.91	7.26	7.18	7.91	6.64	7.47	7.06
Specific Conductance	µmhos/cm	--	--	419	617	444	622	549	1760	1870	1810
Turbidity	NTU	--	--	10.8	1.02	5.96	0	0.01	0.07	0.4	3.5
Dissolved Oxygen	mg/L	--	--	0.7	3.72	11.3	0.52	2	0	0	0.32
Temperature	°C	--	--	15.2	14.79	13.32	15.23	16.25	15.17	14.9	16.09
ORP	mV	--	--	57	26.4	26.4	-5	-40.4	-11	86	23
Laboratory Parameters											
Antimony	µg/L	6	--	0.04	0.03	0.04	0.06	0.02	--	--	--
Arsenic	µg/L	10	--	0.91	0.8	0.87	0.85	0.72	--	--	--
Barium	µg/L	2000	--	286	283	268	320	284	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	0.02	0.02	0.04	<0.01	<0.01	--	--	--
Chromium	µg/L	100	--	0.2	0.334	0.1	0.1	0.07	--	--	--
Cobalt	µg/L	6	--	2.52	2.46	2.24	2.24	1.88	--	--	--
Copper	µg/L	--	--	0.34	0.44	0.57	1.59	0.08	--	--	--
Lead	µg/L	15	--	0.1	0.164	0.101	0.144	<0.02	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	4.09	9.76	7.38	5.43	3.49	--	--	--
Selenium	µg/L	50	--	0.05	0.05	0.03	<0.03	<0.03	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	2	4	3	5.1	--	--	--
Silica (Dissolved)	mg/L	--	--	216	19.2	19.9	19.8	19.2	--	--	--
Aluminum	µg/L	--	--	31.4	56.7	16.5	<1	1	--	--	--
Boron	mg/L	--	0.06	0.04	0.05	0.07	0.04	0.02	<0.02	0.019	<0.009
Calcium	mg/L	--	80.1	79.2	75	62.8	77.4	76.7	153	168	177
Lithium	mg/L	0.04	--	<0.009	0.01	0.02	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	25	25.8	21	25.7	24.3	--	--	--
Manganese	mg/L	--	--	1.89	1.66	1.34	1.51	1.49	--	--	--
Potassium	mg/L	--	--	1.22	1.07	1.39	1.25	0.94	--	--	--
Sodium	mg/L	--	--	14.2	15.4	12.9	15.3	13.9	--	--	--
Strontium	mg/L	--	--	0.137	0.141	0.125	0.146	0.138	--	--	--
Alkalinity	mg/L	--	--	273	293	296	300	296	--	--	--
Bromide	mg/L	--	--	0.09	0.08	0.08	0.08	0.009	--	1.16	--
Chloride	mg/L	--	17.3	17.5	17.2	16.9	17.2	19.1	360	420	436
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.27	0.26	0.25	0.23	0.2
TDS	mg/L	--	359	358	3.46	340	344	371	899	990	970
Sulfate	mg/L	--	36.9	36.3	36	35.4	35.5	35.2	33.8	33	33.5
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	0.36	0.202	0.548	0.159	0.89	--	--	--
Radium-226	pCi/L	--	--	0.983	0.107	0.45	0.717	0.265	--	--	--
Radium-226/228	pCi/L	5	--	1.343	0.309	0.998	0.876	1.155	--	--	--
Copper (Dissolved)	µg/L	--	--	0.55	0.17	2.01	0.18	0.77	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	2	4	1	3	--	--	--
Aluminum (Dissolved)	µg/L	--	--	6.36	6.44	2	3	2	--	--	--
Iron (Dissolved)	mg/L	--	--	0.103	0.081	0.08	0.093	0.072	--	--	--
Manganese (Dissolved)	mg/L	--	--	1.76	1.6	1.47	1.35	1.5	--	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-8S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/19/2016	9/21/2016	11/17/2016	1/9/2017	3/7/2017	5/9/2017	7/18/2017	10/4/2017	12/12/2017	6/5/2018	11/13/2018	5/23/2019	11/21/2019	5/19/2020	11/10/2020	
Field Parameters																			
Elevation	ft NGVD	--	--	369.78	369.44	369.25	368.53	368.39	368.39	368.81	367.5	366.59	369.59	368.9	371.48	371.51	370.01	370.96	
pH	S.U.	--	7.3	7.2	7.1	7.9	7.6	7.6	7.4	7.4	7.75	7.7	7.59	7.58	7.38	7.43	6.29	6.8	
Specific Conductance	µmhos/cm	--	--	516	540	811	450	260	444	410	395	460	400	354	440	495	567	633	
Turbidity	NTU	--	--	1.1	2	2	3	4	8	1	2.46	6	3.48	2.6	0.69	53.7	0	5.16	
Dissolved Oxygen	mg/L	--	--	3.2	3.6	1	2	4	2	3.2	3.12	0.8	2.1	3.8	6.54	6.51	4.63	3.21	
Temperature	°C	--	--	20.7	21.6	16.2	14	14.2	15.6	15.8	16.57	14.1	15.05	14.4	16.17	12.82	14.81	17.04	
ORP	mV	--	--	29	18	275	131	50	50	65	29.9	-17	-33.7	158	54.2	110.9	164	94	
Laboratory Parameters																			
Antimony	µg/L	6	--	0.3	0.02	0.03	0.02	0.04	0.03	0.02	--	--	--	0.05	<0.02	0.04	--	--	
Arsenic	µg/L	10	--	1.78	1.33	1.26	1.56	1.53	2.09	1.19	--	--	--	1.61	1.52	1.97	--	--	
Barium	µg/L	2000	--	13.1	12.2	10.9	13.8	14.5	16.9	10.9	--	--	--	10.4	9.22	16.6	--	--	
Beryllium	µg/L	4	--	0.232	<0.005	<0.005	0.006	0.009	0.01	<0.004	--	--	--	<0.02	<0.02	<0.02	--	--	
Cadmium	µg/L	5	--	0.31	0.02	0.05	0.01	0.26	0.09	0.13	--	--	--	0.03	<0.01	0.03	--	--	
Chromium	µg/L	100	--	0.6	0.4	0.156	1.04	0.881	0.423	0.277	--	--	--	0.578	0.235	0.378	--	--	
Cobalt	µg/L	6	--	0.453	0.125	0.113	0.447	0.433	0.981	0.052	--	--	--	0.207	0.058	0.669	--	--	
Copper	µg/L	--	--	--	--	--	--	--	--	0.18	0.12	--	0.25	1.7	0.13	0.5	--	--	
Lead	µg/L	15	--	0.364	0.066	0.065	0.19	0.278	0.389	0.038	--	--	--	0.152	0.03	0.33	--	--	
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.015	--	--	--	--	<0.002	<0.002	--	--	
Molybdenum	µg/L	100	--	1.1	0.8	0.71	0.77	1.56	0.75	0.83	--	--	--	0.9	0.9	0.5	--	--	
Selenium	µg/L	50	--	0.6	0.2	0.2	0.2	0.2	0.3	0.2	--	--	--	0.5	0.6	1	--	--	
Thallium	µg/L	2	--	0.276	0.03	<0.01	0.01	0.17	<0.01	<0.01	--	--	--	<0.1	<0.1	<0.1	--	--	
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.6	--	1	3	2	2	--	--	
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	21.5	21.2	24.7	--	21.7	21.4	<0.06	20.9	--	--	
Aluminum	µg/L	--	--	--	--	--	--	--	--	7.37	10.6	--	53	31	8.03	164	--	--	
Boron	mg/L	--	0.01	0.012	0.011	0.032	<0.002	0.043	0.028	0.022	0.016	--	0.058	0.04	<0.02	0.01	<0.02	<0.02	
Calcium	mg/L	--	42.7	41.5	42.7	42.9	45.8	44.8	42.9	44.4	39.8	--	42.3	35.6	35.9	39	42.2	43.5	
Lithium	mg/L	0.04	--	0.025	0.001	0.002	0.002	0.006	0.006	0.001	--	--	--	<0.009	0.02	0.00311	--	--	
Magnesium	mg/L	--	--	--	--	--	--	19.6	20	20	17.6	--	18.8	16	16.1	16.9	--	--	
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0021	--	--	0.0323	0.0154	0.0033	0.0413	--	--	
Potassium	mg/L	--	--	--	--	--	--	0.91	0.89	0.77	0.65	--	0.82	0.88	0.76	1	--	--	
Sodium	mg/L	--	--	--	--	--	--	41.2	40.5	42.1	43.2	--	40.1	34.6	37.4	39.7	--	--	
Strontium	mg/L	--	--	--	--	--	--	0.0562	0.0564	0.0543	0.0494	--	0.0555	0.0464	0.0458	0.0478	--	--	
Alkalinity	mg/L	--	--	--	--	--	--	162	181	167	171	--	181	159	150	173	--	--	
Bromide	mg/L	--	--	--	--	--	--	0.03	0.062	0.04	0.06	--	<0.02	<0.04	<0.04	0.1	--	--	
Chloride	mg/L	--	23.7	23.5	22.1	21.1	20.8	21.4	22.8	22.7	22.4	22.5	23.8	22.9	23.6	23.1	27.2	27.1	
Fluoride	mg/L	4	0.56	0.56	0.54	0.55	0.47	0.52	0.52	0.47	0.52	0.56	0.59	0.57	0.58	0.49	0.5	0.56	
TDS	mg/L	--	345	321	332	322	300	320	319	319	317	--	324	288	312	324	342	326	
Sulfate	mg/L	--	26.5	26.4	23.4	21.7	22.1	21.7	21.8	22.3	23.1	24.9	21.2	19.5	20.4	20	23.8	23.3	
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1	<0.1	<0.2	--	--	
Radium-228	pCi/L	--	--	0.455	1.16	0.343	0.394	0.26	-0.175	1.5	--	--	--	0.346	0.113	0.0252	--	--	
Radium-226	pCi/L	--	--	0.122	0.131	0.147	0.282	0.0561	0.127	0.153	--	--	--	0.137	0.0183	0.296	--	--	
Radium-226/228	pCi/L	5	--	0.577	1.291	0.49	0.676	0.3161	-0.048	1.653	--	--	--	0.483	0.1313	0.3212	--	--	
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.96	--	--	0.44	0.29	0.48	<0.2	--	--	
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.5	--	--	0.7	2	2	0.7	--	--	
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2	--	--	1	1	7.36	10	--	--	
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.004	<0.0004	<0.0004	0.014	--	0.002	0.003	0.007	<0.02	--	--	
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	0.0002	0.0004	0.0002	0.0004	--	0.0012	0.0006	0.0007	<0.0005	--	--	

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-8S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/27/2021	11/12/2021	5/12/2022	11/2/2022	5/25/2023	11/2/2023
Field Parameters									
Elevation	ft NGVD	--	--	369.67	369.46	370.26	370.21	369.59	368.76
pH	S.U.	--	7.3	7.75	6.94	7.39	7.13	7.94	7.50
Specific Conductance	µmhos/cm	--	--	513	559	572	572	369	673
Turbidity	NTU	--	--	3.62	0.08	9.67	0	0	17
Dissolved Oxygen	mg/L	--	--	0.86	3.78	4.57	3.14	0	3.48
Temperature	°C	--	--	17.54	13.25	17.2	17.69	15.69	14.18
ORP	mV	--	--	132	156	242.2	71	178	122
Laboratory Parameters									
Antimony	µg/L	6	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.01	0.014	0.015	<0.009	0.015	0.012	0.015
Calcium	mg/L	--	42.7	39.7	40	38.9	41.2	36	40.9
Lithium	mg/L	0.04	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.03	--	--	--	--	--
Chloride	mg/L	--	23.7	26.8	27.3	29.4	30.2	29.1	29.2
Fluoride	mg/L	4	0.56	0.59	0.55	0.56	0.57	0.57	0.55
TDS	mg/L	--	345	330	310	340	350	330	330
Sulfate	mg/L	--	26.5	19.8	20.3	23.8	22.6	22	21.6
Sulfide	mg/L	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-81

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/19/2016	9/21/2016	11/17/2016	1/9/2017	3/6/2017	5/9/2017	7/18/2017	10/4/2017	12/12/2017	6/4/2018	11/14/2018	5/23/2019	11/22/2019	5/19/2020	11/10/2020
Field Parameters																		
Elevation	ft NGVD	--	--	370.06	369.7	369.51	368.84	368.68	368.68	369.07	367.78	366.87	369.85	367.78	371.38	371.37	369.87	370.84
pH	S.U.	--	7.2	7.2	7.44	7.6	7.6	7.4	7.2	7.3	7.56	7.9	7.68	7.22	7.22	6.73	7.83	7.38
Specific Conductance	µmhos/cm	--	--	580	455	968	420	80	507	485	471	390	619	453	607	525	601	621
Turbidity	NTU	--	--	9	3.29	1	5	10	2	1	6.26	1	3.18	9	2.4	8	0	6.98
Dissolved Oxygen	mg/L	--	--	0.6	0.17	0.8	1	4.5	0.3	0.2	0.31	9.7	2.46	0.37	2.53	1.3	0	0.48
Temperature	°C	--	--	21	15.39	17.1	14	14.4	15	16.2	15.51	14.4	17.42	13.8	19.41	13.6	15.09	17.23
ORP	mV	--	--	-60	-63.9	-1	29	25	52	-15	-67.4	111	-75.3	190	-8.1	-185	21	-8
Laboratory Parameters																		
Antimony	µg/L	6	--	0.27	0.07	0.1	0.08	0.08	0.08	0.07	--	--	--	0.17	0.17	0.16	--	--
Arsenic	µg/L	10	--	11.5	2.08	1.39	2.58	2.78	2.09	1.31	--	--	--	3.41	1.07	1.6	--	--
Barium	µg/L	2000	--	70.1	57	58.4	54.9	56.9	57.8	60.4	--	--	--	57.9	63.8	58.5	--	--
Beryllium	µg/L	4	--	0.119	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	<0.02	<0.02	<0.02	--	--
Cadmium	µg/L	5	--	0.28	0.02	0.04	0.02	0.04	0.05	0.02	--	--	--	0.15	0.02	0.08	--	--
Chromium	µg/L	100	--	0.5	0.1	0.055	0.817	0.511	0.23	0.077	--	--	--	0.07	0.05	0.1	--	--
Cobalt	µg/L	6	--	0.961	0.643	0.646	0.671	0.656	0.77	0.672	--	--	--	1.01	0.55	0.741	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	0.11	0.13	--	0.42	1.45	0.2	0.5	--	--
Lead	µg/L	15	--	0.242	0.02	0.032	0.025	0.032	0.054	0.01	--	--	--	0.111	<0.02	<0.05	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002	<0.002	--	--
Molybdenum	µg/L	100	--	3	2.34	2.47	2.31	2.73	2.29	2.58	--	--	--	2.7	2.72	2.43	--	--
Selenium	µg/L	50	--	7.5	2.7	3	2.3	2.9	4.5	4.7	--	--	--	2.5	3.7	1.4	--	--
Thallium	µg/L	2	--	0.166	0.03	0.03	0.04	0.05	0.03	0.03	--	--	--	<0.1	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.9	--	3.2	9.2	21.9	3	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.6	14.7	17.1	--	16.4	14.1	<0.06	13.3	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	2	1	--	0.8	8.7	<1	<5	--	--
Boron	mg/L	--	0.017	0.016	0.017	0.028	0.006	0.083	0.045	0.026	0.096	--	0.044	0.06	0.03	0.02	0.02	<0.02
Calcium	mg/L	--	72	67.9	67.4	77.5	79.5	74.7	71.9	72.2	74.7	--	76.7	67.7	70.7	66.9	68.8	66.8
Lithium	mg/L	0.04	--	0.007	0.008	0.009	0.005	0.01	0.001	<0.0002	--	--	--	0.02	0.02	0.00419	--	--
Magnesium	mg/L	--	--	--	--	--	--	22.3	22.9	22.2	22.5	--	23.5	21.4	22.4	20.7	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	0.357	--	--	0.32	0.509	0.407	0.443	--	--
Potassium	mg/L	--	--	--	--	--	--	1.84	1.73	1.48	2.02	--	1.6	2.28	1.76	1.76	--	--
Sodium	mg/L	--	--	--	--	--	--	29.4	28.5	29.7	28.6	--	32.5	31.5	31.6	29.2	--	--
Strontium	mg/L	--	--	--	--	--	--	0.146	0.148	0.14	0.146	--	0.152	0.139	0.138	0.129	--	--
Alkalinity	mg/L	--	--	--	--	--	--	245	246	247	237	--	268	250	250	268	--	--
Bromide	mg/L	--	--	--	--	--	--	0.04	0.065	0.062	0.064	--	0.05	<0.04	<0.04	<0.04	--	--
Chloride	mg/L	--	21.7	22	21.5	21.3	20.9	20.7	21.2	20.9	20.1	19.3	20.9	20.6	21	19.7	20.4	19.3
Fluoride	mg/L	4	0.35	0.34	0.29	0.29	0.25	0.28	0.28	0.25	0.27	0.29	0.29	0.33	0.34	0.3	0.32	0.38
TDS	mg/L	--	370	358	376	387	371	391	376	379	378	--	407	390	371	381	357	343
Sulfate	mg/L	--	87.5	86.3	79.2	77.5	80	80.3	81.9	83.4	85.9	87.1	79	68.2	62.3	68.3	61.7	56.7
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1	<0.2	--	--
Radium-228	pCi/L	--	--	0.4275	0.157	0.42	1.1	0.372	0.45	0.616	--	--	--	0.354	0.43	0.479	--	--
Radium-226	pCi/L	--	--	0.824	0.521	0.746	0.725	0.643	0.561	0.463	--	--	--	0.676	0.663	0.723	--	--
Radium-226/228	pCi/L	5	--	1.2515	0.678	1.166	1.825	1.015	1.011	1.079	--	--	--	1.03	1.093	1.202	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.52	--	--	0.27	0.17	0.45	<0.2	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.4	--	--	16.8	<0.7	2	0.9	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.46	--	--	<0.8	<1	2	<5	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	0.36	0.405	0.35	0.515	--	1.08	0.213	0.334	0.333	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	0.349	0.39	0.324	0.363	--	0.31	0.358	0.368	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-8I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/27/2021	11/12/2021	5/12/2022	11/2/2022	5/25/2023	11/2/2023
Field Parameters									
Elevation	ft NGVD	--	--	369.5	369.37	370.18	370.07	369.37	368.64
pH	S.U.	--	7.2	8.33	6.8	7.29	7.06	7.75	7.35
Specific Conductance	µmhos/cm	--	--	530	643	619	571	406	750
Turbidity	NTU	--	--	33.42	0.08	5.7	0	0	1.8
Dissolved Oxygen	mg/L	--	--	5.35	0	0.37	0.58	0	0.22
Temperature	°C	--	--	20.33	13.61	16.7	16.66	16.06	14.01
ORP	mV	--	--	143	100	105	-4	-26	-65
Laboratory Parameters									
Antimony	µg/L	6	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.017	0.02	0.02	0.009	0.022	0.019	0.022
Calcium	mg/L	--	72	68.1	67.6	67	65.1	59.9	65.7
Lithium	mg/L	0.04	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.03	--	--	--	--	--
Chloride	mg/L	--	21.7	18.8	19.3	20	20.8	20.4	20.1
Fluoride	mg/L	4	0.35	0.36	0.34	0.35	0.39	0.35	0.34
TDS	mg/L	--	370	390	350	340	360	390	350
Sulfate	mg/L	--	87.5	56	54	57.6	55.7	62.6	61.2
Sulfide	mg/L	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
 AEP Rockport Generating Station - CCR Landfill
 Rockport, Indiana

MW-11S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/18/2016	9/20/2016	11/16/2016	1/9/2017	3/7/2017	5/19/2017	7/18/2017	10/3/2017	12/12/2017	6/5/2018	11/14/2018	5/23/2019	11/15/2019	5/20/2020
Field Parameters																	
Elevation	ft NGVD	--	--	369.93	369.4	368.47	367.7	367.51	367.92	368.57	367.86	366.6	369.69	369.27	373.25	371.21	
pH	S.U.	--	7.9	7.3	7.3	8.4	8.1	7.9	7.78	7.7	7.2	8.3	7.21	7.55	7.71	7.76	7.4
Specific Conductance	µmhos/cm	--	--	272	330	433	200	70	307	386	267	260	360	309	440	533	435
Turbidity	NTU	--	--	0.81	0.4	1	0.8	0.3	2.64	0.4	0.5	0.6	0.39	0.2	1	1.97	0.18
Dissolved Oxygen	mg/L	--	--	9.3	7.4	2	7	7	6.99	6.1	8	19.4	6.94	6.9	9	5.53	8.95
Temperature	°C	--	--	16.1	22.4	14.7	14.8	15	15.7	17.1	15.4	13.4	14.97	13.25	17.3	15.3	13.75
ORP	mV	--	--	24	167	227	126	47	75.6	73	-13	73	-2.7	152	240	114.7	216
Laboratory Parameters																	
Antimony	µg/L	6	--	0.04	0.04	0.05	0.04	0.04	0.04	<0.05	--	--	--	0.05	0.05	0.04	--
Arsenic	µg/L	10	--	0.53	0.42	0.45	0.52	0.52	0.48	0.5	--	--	--	0.38	0.36	0.43	--
Barium	µg/L	2000	--	9.79	11.3	7.91	6.52	7.09	7.73	8.16	--	--	--	12.5	13.7	10.8	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.02	--	--	--	<0.02	0.03	<0.02	--
Cadmium	µg/L	5	--	0.03	0.03	0.02	0.01	0.007	0.03	<0.02	--	--	--	0.03	0.02	<0.01	--
Chromium	µg/L	100	--	0.5	0.8	0.416	0.725	1.25	0.567	0.568	--	--	--	0.384	0.483	0.468	--
Cobalt	µg/L	6	--	0.043	0.029	0.027	0.022	0.027	0.03	0.02	--	--	--	<0.02	0.03	<0.02	--
Copper	µg/L	--	--	--	--	--	--	--	0.44	0.26	--	--	0.25	0.44	2.07	0.3	--
Lead	µg/L	15	--	0.02	0.046	0.027	0.02	0.02	0.023	0.06	--	--	--	0.03	<0.02	<0.05	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	0.002	0.002	<0.002	--	--	--	--	<0.002	<0.002	--
Molybdenum	µg/L	100	--	4.36	3.37	4.71	6.09	6.03	4.86	4.69	--	--	--	2.4	2.04	2.15	--
Selenium	µg/L	50	--	0.08	0.1	0.07	0.05	0.2	0.2	0.3	--	--	--	0.04	<0.03	0.06	--
Thallium	µg/L	2	--	0.01	0.01	0.02	0.01	0.01	0.01	0.2	--	--	--	<0.1	<0.1	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	7	<0.4	--	2	<0.7	<0.7	0.8	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	24.9	24.4	27.3	--	25.8	26.6	24.5	25	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	10	3.63	--	2	3	3	<5	--
Boron	mg/L	--	0.062	0.062	0.077	0.053	0.029	0.057	0.047	0.067	0.09	--	0.076	0.11	0.08	0.052	0.04
Calcium	mg/L	--	41.6	38.8	45.1	37.3	40.4	42.8	41.2	44.2	43.7	--	55.8	56.4	54.3	47.6	55.8
Lithium	mg/L	0.04	--	0.024	0.004	0.005	0.003	0.013	0.009	0.002	--	--	--	0.01	0.01	0.00669	--
Magnesium	mg/L	--	--	--	--	--	--	17.2	17.7	18.8	17.6	--	24.8	19.5	17.7	17	--
Manganese	mg/L	--	--	--	--	--	--	--	--	<0.0001	--	--	<0.0002	0.0004	<0.0002	0.0006	--
Potassium	mg/L	--	--	--	--	--	--	0.42	0.42	0.42	0.48	--	0.37	0.88	0.4	0.5	--
Sodium	mg/L	--	--	--	--	--	--	5.72	5.58	6.82	7.26	--	7.11	5.35	4.43	4.47	--
Strontium	mg/L	--	--	--	--	--	--	0.0508	0.0535	0.0532	0.0537	--	0.0706	0.0774	0.0707	0.0638	--
Alkalinity	mg/L	--	--	--	--	--	--	153	175	187	167	--	226	246	235	223	--
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	<0.02	<0.02	--	<0.02	<0.04	<0.4	<0.04	--
Chloride	mg/L	--	1.82	1.83	1.62	1.54	2.12	4.63	9.87	8.19	3.68	2.4	6.98	1.79	1.62	1.48	2.68
Fluoride	mg/L	4	0.74	0.76	0.73	0.92	0.96	1	0.86	0.75	0.89	0.82	0.62	0.72	0.82	0.77	0.58
TDS	mg/L	--	212	201	196	182	179	197	239	224	200	--	276	238	279	216	246
Sulfate	mg/L	--	10.9	10.6	5.3	4.1	7.6	13.7	16.4	15.6	9.3	8	21.7	5.9	14.7	2.7	13.5
Sulfide	mg/L	--	--	--	--	--	--	--	<0.4	--	--	--	<0.4	<0.07	<0.1	<0.2	--
Radium-228	pCi/L	--	--	0.231	0.741	0.179	1.96	0.0959	0.0337	0.771	--	--	--	0.419	0.805	1.72	--
Radium-226	pCi/L	--	--	0.584	-0.0127	0.109	0.141	0.0906	0.091	0.0225	--	--	--	0.217	0.0772	0.0737	--
Radium-226/228	pCi/L	5	--	0.815	0.7283	0.288	2.101	0.1865	0.1247	0.7935	--	--	--	0.636	0.8822	1.7937	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.82	--	--	0.63	0.71	0.26	0.3	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	9	--	--	2	1	<0.7	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	66.5	--	--	2.92	3	2	<5	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	--	0.008	0.04	0.004	<0.02	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0002	0.0001	<0.0002	--	<0.002	0.0005	<0.0002	<0.0005	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-11S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/11/2020	5/25/2021	5/13/2022	11/3/2022	5/25/2023	11/2/2023
Field Parameters									
Elevation	ft NGVD	--	--	370.17	369.24	369.72	369.31	369.07	367.82
pH	S.U.	--	7.9	7.36	7.72	7.85	7.57	8.18	7.52
Specific Conductance	µmhos/cm	--	--	302	413	244	318	211	494
Turbidity	NTU	--	--	1.7	2.5	15.11	1.46	0	0.8
Dissolved Oxygen	mg/L	--	--	8.2	4.4	5.9	11.6	5.57	9.03
Temperature	°C	--	--	14.4	15.3	20.64	15.07	14.93	14.49
ORP	mV	--	--	173	112	125	105	180	126
Laboratory Parameters									
Antimony	µg/L	6	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.062	0.04	0.038	<0.05	0.037	0.037	0.041
Calcium	mg/L	--	41.6	52.4	53.9	47.9	52.6	49.9	56.7
Lithium	mg/L	0.04	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--	--
Chloride	mg/L	--	1.82	1.52	2.28	2.7	2.29	2.5	1.72
Fluoride	mg/L	4	0.74	0.83	0.66	0.51	0.5	0.56	0.58
TDS	mg/L	--	212	211	240	230	230	240	250
Sulfate	mg/L	--	10.9	2.9	10.7	7.99	3.78	3.8	5
Sulfide	mg/L	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-12S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	11/1/2018	11/14/2008	12/11/2018	5/22/2019	11/21/2019	11/11/2020	5/28/2021	5/13/2022
Field Parameters												
Elevation	ft NGVD	--	--	367.81	367.96	367.93	368.21	372.14	368.42	367.68	368.12	367.88
pH	S.U.	--	7.2	5.9	7.6	6.83	7.12	7.31	7.52	7.19	7.65	7.1
Specific Conductance	µmhos/cm	--	--	522	551	517	816	757	728	712	806	754
Turbidity	NTU	--	--	9	1.14	2.14	23.7	13.8	5.1	3.13	0	5.4
Dissolved Oxygen	mg/L	--	--	0.2	3.13	0.36	0.29	0	10.83	1.93	0	0.12
Temperature	°C	--	--	14.5	14.05	13.16	13.36	14.8	12.81	13.23	15.3	16.8
ORP	mV	--	--	68	-34.8	184.2	-10	9	144.1	81	106	39.7
Laboratory Parameters												
Antimony	µg/L	6	--	0.06	0.03	0.17	0.06	0.07	0.19	--	--	--
Arsenic	µg/L	10	--	0.3	0.27	0.25	0.61	0.45	0.44	--	--	--
Barium	µg/L	2000	--	26.8	26.3	25.3	31	29.7	28.8	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	0.06	0.05	0.13	0.04	0.09	0.09	--	--	--
Chromium	µg/L	100	--	0.276	0.1	0.1	0.639	0.476	0.315	--	--	--
Cobalt	µg/L	6	--	0.642	0.4783	0.439	1.23	0.924	0.955	--	--	--
Copper	µg/L	--	--	0.5	0.36	0.55	1.08	1.59	1.2	--	--	--
Lead	µg/L	15	--	0.34	0.08	0.08	0.904	0.538	0.526	--	--	--
Mercury	µg/L	2	--	--	--	--	--	0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	2	2	2	2	1	1	--	--	--
Selenium	µg/L	50	--	0.2	0.07	0.1	0.2	0.09	0.3	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	0.8	2	2	19.3	8.2	--	--	--
Silica (Dissolved)	mg/L	--	--	21.5	20	20	20.3	19.3	18.8	--	--	--
Aluminum	µg/L	--	--	45.2	8.53	3	291	119	106	--	--	--
Boron	mg/L	--	0.067	0.04	0.07	0.03	0.12	0.02	0.03	<0.02	0.02	<0.05
Calcium	mg/L	--	86.3	87	86.4	80.2	89.3	84.9	88.7	83.4	91.9	82.4
Lithium	mg/L	0.04	--	0.01	0.01	0.01	<0.009	0.01	0.00591	--	--	--
Magnesium	mg/L	--	--	31.6	33.7	30.5	33	30.3	32.3	--	--	--
Manganese	mg/L	--	--	0.0864	0.0758	0.0811	0.106	0.163	0.116	--	--	--
Potassium	mg/L	--	--	1.18	1.26	1.57	1.87	1.19	1.49	--	--	--
Sodium	mg/L	--	--	30.2	33.9	32.1	32.4	30.5	29.6	--	--	--
Strontium	mg/L	--	--	0.103	0.111	0.114	0.119	0.114	0.114	--	--	--
Alkalinity	mg/L	--	--	392	358	374	361	354	348	--	--	--
Bromide	mg/L	--	--	0.1	0.1	0.1	0.1	0.1	0.2	--	--	--
Chloride	mg/L	--	30.1	30.1	29.9	29.4	29.5	29.7	28.7	27.4	26.8	26.6
Fluoride	mg/L	4	0.35	0.36	0.36	0.37	0.36	0.38	0.32	0.39	0.41	0.38
TDS	mg/L	--	445	446	434	422	437	455	456	420	430	420
Sulfate	mg/L	--	37.2	37.1	37.1	36.4	36.7	37.4	37.8	37.5	38.2	39.9
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.1	<0.1	<0.2	--	--	--
Radium-228	pCi/L	--	--	0.562	0.306	0.941	0.569	0.568	0.613	--	--	--
Radium-226	pCi/L	--	--	0.5	0.202	0.244	0.314	0.379	0.226	--	--	--
Radium-226/228	pCi/L	5	--	1.062	0.508	1.185	0.883	0.947	0.839	--	--	--
Copper (Dissolved)	µg/L	--	--	0.66	0.38	1.41	0.7	0.33	1.96	--	--	--
Zinc (Dissolved)	µg/L	--	--	3	2	3	4	7.5	5	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2	1	1	76.2	2	<5	--	--	--
Iron (Dissolved)	mg/L	--	--	0.025	0.01	0.006	0.238	0.05	<0.02	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0847	0.0797	0.0677	0.103	0.144	0.0388	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-12I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	11/1/2018	11/14/2018	12/11/2018	5/22/2019	11/14/2019	11/12/2020	5/28/2021	5/13/2022
Field Parameters												
Elevation	ft NGVD	--	--	369.85	367.84	367.81	368.16	371.95	368.3	367.52	368.06	368.91
pH	S.U.	--	0	7.15	7.74	7.01	7.12	7.27	7.33	7.05	7.6	7.1
Specific Conductance	µmhos/cm	--	--	662	622	579	901	882	811	870	921	864
Turbidity	NTU	--	--	1.48	8.76	2.54	2.3	39.5	3	0.97	0	2.08
Dissolved Oxygen	mg/L	--	--	1.2	2.68	9.27	1.99	0.2	2.59	0.27	0	1.17
Temperature	°C	--	--	15.21	13.94	12.9	12.92	14.8	13.7	12.29	14.8	15.1
ORP	mV	--	--	-35.1	-87.8	-54.9	-52	-57	-10.1	-59	4	-66.1
Laboratory Parameters												
Antimony	µg/L	6	--	<0.01	<0.02	<0.02	<0.02	0.12	0.03	--	--	--
Arsenic	µg/L	10	--	10.1	9.24	8.79	9.32	12.6	10.3	--	--	--
Barium	µg/L	2000	--	370	374	365	377	395	393	--	--	--
Beryllium	µg/L	4	--	0.006	<0.02	0.02	<0.02	0.04	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	0.02	<0.01	0.17	0.16	0.02	--	--	--
Chromium	µg/L	100	--	0.101	0.289	0.05	0.2	1.32	0.2	--	--	--
Cobalt	µg/L	6	--	1.5	1.67	1.42	1.58	2.7	1.54	--	--	--
Copper	µg/L	--	--	1.15	1.23	0.44	0.56	8.39	1	--	--	--
Lead	µg/L	15	--	0.063	0.21	0.03	0.07	1.47	0.07	--	--	--
Mercury	µg/L	2	--	--	--	--	--	0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	2.92	2.87	2.87	3.13	2.8	3.01	--	--	--
Selenium	µg/L	50	--	0.04	0.06	<0.003	<0.03	0.1	<0.03	--	--	--
Thallium	µg/L	2	--	0.01	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	2	1	3	6.3	17.5	--	--	--
Silica (Dissolved)	mg/L	--	--	20.9	18.8	19.2	12.6	19	17.8	--	--	--
Aluminum	µg/L	--	--	48.8	64.6	5.87	5.67	581	10	--	--	--
Boron	mg/L	--	0.115	0.062	0.115	0.03	0.05	0.03	0.02	<0.02	0.018	<0.05
Calcium	mg/L	--	94.1	100	94.8	90.9	95.6	99.2	93.9	93.2	111	95.8
Lithium	mg/L	0.04	--	0.009	<0.009	0.03	0.01	0.01	0.00469	--	--	--
Magnesium	mg/L	--	--	32.5	32.6	30.5	31	31.5	29.9	--	--	--
Manganese	mg/L	--	--	1.17	1.2	1.08	1.12	2.13	1.08	--	--	--
Potassium	mg/L	--	--	2.03	2.43	2.28	2.26	2.13	1.9	--	--	--
Sodium	mg/L	--	--	43.2	45	43.9	42	45.7	49.4	--	--	--
Strontium	mg/L	--	--	0.134	0.138	0.144	0.142	0.15	0.14	--	--	--
Alkalinity	mg/L	--	--	433	448	433	441	458	431	--	--	--
Bromide	mg/L	--	--	0.139	0.1	0.1	0.1	0.1	0.1	--	--	--
Chloride	mg/L	--	33	34	33.9	33.7	33.1	33.4	32.8	33.3	33.4	32.8
Fluoride	mg/L	4	0.24	0.25	0.25	0.25	0.23	0.25	0.22	0.27	0.29	0.25
TDS	mg/L	--	499	506	493	484	485	532	484	497	520	480
Sulfate	mg/L	--	31.5	30.9	31	30.7	31	32.5	32.3	32.3	31.8	34.8
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.1	<0.1	<0.2	--	--	--
Radium-228	pCi/L	--	--	-0.0683	0.788	1.19	1.04	1.17	0.863	--	--	--
Radium-226	pCi/L	--	--	0.463	0.516	0.51	0.83	0.565	0.578	--	--	--
Radium-226/228	pCi/L	5	--	0.463	1.304	1.7	1.87	1.735	1.441	--	--	--
Copper (Dissolved)	µg/L	--	--	0.19	0.35	0.42	1.08	0.64	1.68	--	--	--
Zinc (Dissolved)	µg/L	--	--	1	10.2	2	8.1	1	3	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2.36	5.95	2	3	16.6	<5	--	--	--
Iron (Dissolved)	mg/L	--	--	1.15	1.18	1.09	1.16	1.51	1.15	--	--	--
Manganese (Dissolved)	mg/L	--	--	1.12	1.16	1.06	1.16	1.11	1.14	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-12D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/14/2018	12/11/2018	5/22/2019	11/15/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters												
Elevation	ft NGVD	--	--	367.91	367.91	367.86	368.25	372.03	368.34	367.59	368.18	368.98
pH	S.U.	--	7.3	7.16	8.06	7.08	7.17	7.41	7.42	7.06	7.78	7.6
Specific Conductance	µmhos/cm	--	--	530	510	449	717	686	850	684	746	725
Turbidity	NTU	--	--	9.68	12.7	5.25	2.2	1.4	7.41	1.51	0	5.6
Dissolved Oxygen	mg/L	--	--	1.68	1.41	4.9	1.4	0.7	7.97	0.31	0	1.58
Temperature	°C	--	--	15.56	15.16	12	12.56	15.1	13.4	12.79	16.4	16.34
ORP	mV	--	--	-52.6	-90.9	-40.8	-69	-56	89.2	-77	-22	-32
Laboratory Parameters												
Antimony	µg/L	6	--	0.02	0.06	<0.02	<0.02	0.02	0.25	--	--	--
Arsenic	µg/L	10	--	11.9	9.78	9.95	9.64	13.3	7.64	--	--	--
Barium	µg/L	2000	--	282	268	272	271	282	273	--	--	--
Beryllium	µg/L	4	--	0.006	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	0.05	<0.01	0.01	0.04	0.08	--	--	--
Chromium	µg/L	100	--	0.108	0.266	0.1	0.2	0.06	0.453	--	--	--
Cobalt	µg/L	6	--	0.462	0.538	0.378	0.4	0.554	0.679	--	--	--
Copper	µg/L	--	--	0.51	41	0.64	0.24	0.46	2.74	--	--	--
Lead	µg/L	15	--	0.127	0.329	0.111	0.05	0.02	0.502	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	3.09	2.96	2.94	3.13	3.57	4.24	--	--	--
Selenium	µg/L	50	--	<0.03	0.07	<0.03	<0.03	<0.03	0.06	--	--	--
Thallium	µg/L	2	--	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	3	2	0.8	1	11.5	--	--	--
Silica (Dissolved)	mg/L	--	--	21.1	18.9	19.5	19.5	18.8	17.8	--	--	--
Aluminum	µg/L	--	--	14	53.9	26.1	5.83	3	105	--	--	--
Boron	mg/L	--	0.098	0.112	0.09	0.03	0.09	<0.02	<0.02	<0.02	0.016	<0.05
Calcium	mg/L	--	90.8	95.1	86.9	86.1	82.9	84.5	80.3	91.1	91.1	94.3
Lithium	mg/L	0.04	--	0.013	<0.009	<0.009	<0.009	0.02	0.00169	--	--	--
Magnesium	mg/L	--	--	30.3	29.6	28.5	26.7	26.5	27.2	--	--	--
Manganese	mg/L	--	--	0.989	0.902	0.878	0.743	0.979	0.933	--	--	--
Potassium	mg/L	--	--	1.16	0.89	1.34	1.45	0.76	0.8	--	--	--
Sodium	mg/L	--	--	10.5	11.3	11	10.2	9.06	9.66	--	--	--
Strontium	mg/L	--	--	0.161	0.161	0.171	0.158	0.147	0.142	--	--	--
Alkalinity	mg/L	--	--	373	353	371	384	368	347	--	--	--
Bromide	mg/L	--	--	0.081	0.08	0.07	0.07	0.07	0.1	--	0.08	--
Chloride	mg/L	--	16.1	17.2	17	16.6	16.7	15.9	16.1	17.9	18.2	20
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.26	0.26	0.23	0.30	0.28	0.25
TDS	mg/L	--	328	386	381	374	380	393	376	389	410	400
Sulfate	mg/L	--	15.6	14.2	14.2	13.8	13.9	14.8	15.9	16.4	14.8	17.1
Sulfide	mg/L	--	--	<0.04	<0.1	<0.07	<0.1	<0.1	<0.2	--	--	--
Radium-228	pCi/L	--	--	0.643	0.405	0.589	1.69	0.698	0.529	--	--	--
Radium-226	pCi/L	--	--	0.702	0.454	0.608	0.766	0.548	0.574	--	--	--
Radium-226/228	pCi/L	5	--	1.345	0.859	1.197	2.456	1.246	1.103	--	--	--
Copper (Dissolved)	µg/L	--	--	0.35	0.21	0.12	0.44	0.25	<0.2	--	--	--
Zinc (Dissolved)	µg/L	--	--	3.3	2	1	1	0.7	4	--	--	--
Aluminum (Dissolved)	µg/L	--	--	7.24	2	2	5.13	1	<5	--	--	--
Iron (Dissolved)	mg/L	--	--	1.29	0.965	0.996	1.12	1.62	0.616	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.994	0.88	0.801	0.832	1.03	0.906	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-13S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/24/2018	10/29/2018	11/12/2018	5/22/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters										
Elevation	ft NGVD	--	--	368.86	368.5	368.49	372.06	367.65	367.21	367.79
pH	S.U.	--	7.09 - 8.14					7.42	8.03	7.54
Specific Conductance	µmhos/cm	--	--					458	626	542
Turbidity	NTU	--	--					2.23	0	0
Dissolved Oxygen	mg/L	--	--					7.4	2.3	4.15
Temperature	°C	--	--					14.46	16.1	17.54
ORP	mV	--	--					129	184	205
Laboratory Parameters										
Antimony	µg/L	6	--					--	--	--
Arsenic	µg/L	10	--					--	--	--
Barium	µg/L	2000	--					--	--	--
Beryllium	µg/L	4	--					--	--	--
Cadmium	µg/L	5	--					--	--	--
Chromium	µg/L	100	--					--	--	--
Cobalt	µg/L	6	--					--	--	--
Copper	µg/L	--	--					--	--	--
Lead	µg/L	15	--					--	--	--
Mercury	µg/L	2	--					--	--	--
Molybdenum	µg/L	100	--					--	--	--
Selenium	µg/L	50	--					--	--	--
Thallium	µg/L	2	--					--	--	--
Zinc	µg/L	--	--					--	--	--
Silica (Dissolved)	mg/L	--	--					--	--	--
Aluminum	µg/L	--	--					--	--	--
Boron	mg/L	--	0.048					0.078	0.097	<0.05
Calcium	mg/L	--	(79.5) 79					54.7	63.5	62.7
Lithium	mg/L	0.04	--					--	--	--
Magnesium	mg/L	--	--					--	--	--
Manganese	mg/L	--	--					--	--	--
Potassium	mg/L	--	--					--	--	--
Sodium	mg/L	--	--					--	--	--
Strontium	mg/L	--	--					--	--	--
Alkalinity	mg/L	--	--					--	--	--
Bromide	mg/L	--	--					--	<0.02	--
Chloride	mg/L	--	(29.6) 33					8.44	14.4	15.5
Fluoride	mg/L	4	0.677					0.39	0.33	0.31
TDS	mg/L	--	(412.7) 419					271	330	310
Sulfate	mg/L	--	(36.95) 37					25.1	26	25.1
Sulfide	mg/L	--	--					--	--	--
Radium-228	pCi/L	--	--					--	--	--
Radium-226	pCi/L	--	--					--	--	--
Radium-226/228	pCi/L	5	--					--	--	--
Copper (Dissolved)	µg/L	--	--					--	--	--
Zinc (Dissolved)	µg/L	--	--					--	--	--
Aluminum (Dissolved)	µg/L	--	--					--	--	--
Iron (Dissolved)	mg/L	--	--					--	--	--
Manganese (Dissolved)	mg/L	--	--					--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-131

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/11/2018	5/21/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters											
Elevation	ft NGVD	--	--	368.83	368.45	368.41	368.31	371.99	369.21	368.73	369.33
pH	S.U.	--	7.5	7.36	8.12	7.21	7.36	7.54	7.33	8.05	7.51
Specific Conductance	µmhos/cm	--	--	411	397	451	555	522	494	549	544
Turbidity	NTU	--	--	2.14	0.93	0.31	0.45	1.4	2.53	0	0
Dissolved Oxygen	mg/L	--	--	0.37	1.15	8.64	0.57	0.4	3.21	0	0.76
Temperature	°C	--	--	15.71	15.25	13.17	14.13	16.5	13.4	17.9	17.81
ORP	mV	--	--	-15.8	-74.3	44.5	-72	-30	87	173	4
Laboratory Parameters											
Antimony	µg/L	6	--	0.02	<0.02	<0.02	0.04	<0.2	--	--	--
Arsenic	µg/L	10	--	1.74	1.66	1.6	1.84	2.41	--	--	--
Barium	µg/L	2000	--	149	139	141	144	151	--	--	--
Beryllium	µg/L	4	--	0.006	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	<0.01	<0.01	<0.01	<0.01	--	--	--
Chromium	µg/L	100	--	0.04	0.1	0.06	0.07	<0.04	--	--	--
Cobalt	µg/L	6	--	0.5	0.554	0.477	0.574	0.577	--	--	--
Copper	µg/L	--	--	0.39	0.62	0.1	0.58	0.09	--	--	--
Lead	µg/L	15	--	0.01	0.04	<0.02	<0.02	<0.02	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	4.49	4.23	4.09	4.29	4.11	--	--	--
Selenium	µg/L	50	--	<0.03	<0.03	<0.03	<0.03	<0.03	--	--	--
Thallium	µg/L	2	--	0.04	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	20.1	61.3	<0.7	2	<0.7	--	--	--
Silica (Dissolved)	mg/L	--	--	19.6	17.9	17.9	18.4	17.6	--	--	--
Aluminum	µg/L	--	--	2.54	10.6	2	<1	1	--	--	--
Boron	mg/L	--	0.042	0.09	0.05	<0.02	0.04	0.02	<0.02	0.011	<0.05
Calcium	mg/L	--	67.5	66	58.1	59.7	65.6	67.9	59.1	57.2	63.7
Lithium	mg/L	0.04	--	0.018	0.01	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	20.4	19.1	19.2	20.9	19.4	--	--	--
Manganese	mg/L	--	--	0.491	0.448	0.447	0.523	0.469	--	--	--
Potassium	mg/L	--	--	1.23	0.93	1.32	1.24	0.99	--	--	--
Sodium	mg/L	--	--	15.2	15.4	15.6	16.4	15.7	--	--	--
Strontium	mg/L	--	--	0.0781	0.0744	0.0834	0.0879	0.0831	--	--	--
Alkalinity	mg/L	--	--	231	228	231	241	235	--	--	--
Bromide	mg/L	--	--	0.04	<0.04	<0.04	<0.04	<0.04	--	0.02	--
Chloride	mg/L	--	20	20.6	20.5	20.3	20.4	20.1	19.1	18.7	20
Fluoride	mg/L	4	0.38	0.38	0.38	0.38	0.38	0.37	0.46	0.45	0.42
TDS	mg/L	--	297	319	305	310	310	318	292	300	300
Sulfate	mg/L	--	40.6	41.6	41.5	41.3	40.7	41.6	39.8	37.2	42.9
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	-0.268	0.658	0.682	0.3	0.76	--	--	--
Radium-226	pCi/L	--	--	0.456	0.509	0.669	0.589	0.646	--	--	--
Radium-226/228	pCi/L	5	--	0.456	1.167	1.351	0.889	1.406	--	--	--
Copper (Dissolved)	µg/L	--	--	0.11	0.39	0.2	0.2	0.15	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.7	6.3	<0.7	3	<0.7	--	--	--
Aluminum (Dissolved)	µg/L	--	--	1	1	1	5	<1	--	--	--
Iron (Dissolved)	mg/L	--	--	0.185	0.189	0.193	0.26	0.278	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.493	0.467	0.461	0.483	0.418	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-13D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/11/2018	5/21/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters											
Elevation	ft NGVD	--	--	368.79	368.43	368.39	368.29	371.95	369.16	368.71	369.31
pH	S.U.	--	7.4	7.03	8.11	7.17	7.29	7.45	7.29	7.73	7.35
Specific Conductance	µmhos/cm	--	--	406	382	427	540	524	521	586	550
Turbidity	NTU	--	--	5.34	10.6	4.66	3.22	2	31.2	21	11.9
Dissolved Oxygen	mg/L	--	--	1.34	1.4	5.45	0.51	1.7	1.34	0	2.05
Temperature	°C	--	--	16.29	14.99	12.18	14.06	18.7	15.2	17.6	17.82
ORP	mV	--	--	-71.4	-95.1	-48.5	-94	-48	-51	26	-53
Laboratory Parameters											
Antimony	µg/L	6	--	0.01	0.02	0.05	0.03	0.07	--	--	--
Arsenic	µg/L	10	--	6.44	5.62	7.55	5.3	20.8	--	--	--
Barium	µg/L	2000	--	206	204	198	219	265	--	--	--
Beryllium	µg/L	4	--	0.007	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	0.04	<0.01	<0.01	<0.01	--	--	--
Chromium	µg/L	100	--	0.071	0.353	0.209	0.06	0.2	--	--	--
Cobalt	µg/L	6	--	1.15	1.31	1.05	0.935	1.1	--	--	--
Copper	µg/L	--	--	0.26	1.02	0.55	0.28	1.11	--	--	--
Lead	µg/L	15	--	0.071	0.438	0.173	<0.02	0.07	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	2.88	2.59	2.77	3.23	3.21	--	--	--
Selenium	µg/L	50	--	<0.03	0.1	0.07	<0.03	0.04	--	--	--
Thallium	µg/L	2	--	0.02	<0.1	>0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	0.6	2	1	2	1	--	--	--
Silica (Dissolved)	mg/L	--	--	19.3	17.6	17.9	17.9	17.4	--	--	--
Aluminum	µg/L	--	--	21.8	162	58.8	2	12.4	--	--	--
Boron	mg/L	--	0.037	0.071	0.111	119	0.03	0.02	<0.02	0.012	<0.05
Calcium	mg/L	--	65.9	68.9	63.4	60.8	67.4	66.2	64.6	66.6	66.4
Lithium	mg/L	0.04	--	0.016	<0.009	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	21.8	21.7	20.1	22.5	19.7	--	--	--
Manganese	mg/L	--	--	0.762	0.669	0.648	0.677	0.997	--	--	--
Potassium	mg/L	--	--	1.06	1.14	1.45	1.16	0.82	--	--	--
Sodium	mg/L	--	--	11.2	11.6	11.4	11.2	9.25	--	--	--
Strontium	mg/L	--	--	0.0852	0.0867	0.0913	0.098	0.0882	--	--	--
Alkalinity	mg/L	--	--	231	243	223	252	237	--	--	--
Bromide	mg/L	--	--	0.05	<0.04	<0.04	<0.04	<0.04	--	0.03	--
Chloride	mg/L	--	16.3	17	16.9	16.6	16.5	15.9	18.2	18	17.8
Fluoride	mg/L	4	0.28	0.27	0.27	0.28	0.27	0.26	0.30	0.29	0.28
TDS	mg/L	--	287	296	299	296	305	303	311	320	300
Sulfate	mg/L	--	35.5	34.8	34.7	34.1	33.3	33.9	38.8	37.4	38.2
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	0.141	-0.293	-0.157	0.226	0.844	--	--	--
Radium-226	pCi/L	--	--	0.501	0.356	0.242	0.389	0.586	--	--	--
Radium-226/228	pCi/L	5	--	0.642	0.356	0.242	0.615	1.43	--	--	--
Copper (Dissolved)	µg/L	--	--	0.07	0.11	0.09	0.21	0.56	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.5	1	<0.7	1	<0.7	--	--	--
Aluminum (Dissolved)	µg/L	--	--	11	3	2	20.5	1	--	--	--
Iron (Dissolved)	mg/L	--	--	1.29	0.915	0.995	1.13	0.866	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.74	0.625	0.702	0.612	0.777	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-14S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/20/2016	9/21/2016	11/17/2016	1/9/2017	3/7/2017	5/19/2017	7/18/2017	10/4/2017	12/12/2017	6/5/2018	11/13/2018	5/23/2019	11/16/2019	5/19/2020
Field Parameters																	
Elevation	ft NGVD	--	--	370.07	369.7	369.34	368.92	368.49	368.63	369.88	368.43	368.41	368.94	369.27	371.36	371.63	369.98
pH	S.U.	--	7.2	7.1	7	7.7	7.5	7.4	6.95	7.3	7	7.6	7.55	7.55	7.15	7.51	7.68
Specific Conductance	µmhos/cm	--	--	576	640	955	530	80	441	496	488	490	450	309	604	655	550
Turbidity	NTU	--	--	3.9	6	1	2	0.7	2.07	1	0.5	1	0.6	0.2	0.61	9.8	0.52
Dissolved Oxygen	mg/L	--	--	3.8	3.3	1	3.4	3	3.82	3.7	4	10.2	5.42	6.9	2.57	0.455	3.22
Temperature	°C	--	--	18.7	22.6	15.2	14.4	13.9	14.54	15.9	15.3	13.5	14.98	13.25	17.01	12.4	15.74
ORP	mV	--	--	43	53	282	147	75	55.6	67	-23	133	-7.9	152	-203.7	-9	150
Laboratory Parameters																	
Antimony	µg/L	6	--	0.02	0.02	0.03	0.02	0.02	0.06	<0.05	--	--	--	<0.02	<0.02	0.03	--
Arsenic	µg/L	10	--	1.54	1.29	0.75	0.91	0.76	0.75	0.7	--	--	--	0.64	0.62	0.62	--
Barium	µg/L	2000	--	31	27.8	26.3	27	26.3	25	27	--	--	--	27	28.9	32.9	--
Beryllium	µg/L	4	--	0.008	0.005	<0.005	<0.005	<0.005	<0.004	<0.02	--	--	--	<0.02	<0.02	<0.02	--
Cadmium	µg/L	5	--	0.21	0.07	0.03	0.05	0.01	0.08	<0.02	--	--	--	0.05	0.01	<0.01	--
Chromium	µg/L	100	--	0.3	0.3	0.162	0.575	0.66	0.301	0.258	--	--	--	0.2	0.2	0.438	--
Cobalt	µg/L	6	--	0.573	0.333	0.088	0.187	0.083	0.065	0.03	--	--	--	0.03	0.03	0.04	--
Copper	µg/L	--	--	--	--	--	--	--	--	2.38	0.15	--	0.38	0.24	0.25	<0.2	--
Lead	µg/L	15	--	0.307	0.31	0.549	0.115	0.061	0.071	0.116	--	--	--	0.05	0.04	<0.05	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002	<0.002	--
Molybdenum	µg/L	100	--	1.51	1.43	1.26	1.62	1.84	1.35	1.67	--	--	--	1	1	1	--
Selenium	µg/L	50	--	1.4	1.2	1.2	1.1	1.1	1.2	1.3	--	--	--	1.1	0.9	0.9	--
Thallium	µg/L	2	--	<0.01	<0.01	0.02	0.054	0.055	0.01	0.07	--	--	--	<0.1	<0.1	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	9	0.8	--	1	1	<0.7	<0.7	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	20.3	20.2	23.3	--	20.4	20.2	<0.06	19.3	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	11.4	2	--	5.75	7.32	4	5	--
Boron	mg/L	--	0.011	0.008	0.01	0.008	<0.002	0.031	0.017	0.03	0.042	--	0.046	0.04	<0.02	0.01	<0.02
Calcium	mg/L	--	59.2	56.3	59.5	65.4	65.7	63.4	59.8	65.6	67	--	61.1	59.2	66.9	65.1	66.6
Lithium	mg/L	0.04	--	0.018	0.006	0.004	0.006	0.005	0.001	<0.0002	--	--	--	<0.009	0.01	0.00367	--
Magnesium	mg/L	--	--	--	--	--	--	27.6	28.1	29.3	29.9	--	27.4	26.4	30	29.8	--
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0006	--	--	0.0014	0.0015	0.0008	0.002	--
Potassium	mg/L	--	--	--	--	--	--	0.5	0.54	0.49	0.59	--	0.51	0.55	0.53	0.5	--
Sodium	mg/L	--	--	--	--	--	--	33	29.4	30.1	29.9	--	29.2	24.9	23.3	23.7	--
Strontium	mg/L	--	--	--	--	--	--	0.101	0.102	0.103	0.106	--	0.101	0.0954	0.109	0.111	--
Alkalinity	mg/L	--	--	--	--	--	--	232	258	257	249	--	260	259	275	252	--
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	0.03	0.04	--	<0.02	<0.04	<0.04	<0.04	--
Chloride	mg/L	--	28.6	29.4	28.1	27.8	27.2	26.8	29.4	29.6	29.9	30	27.1	29	28.6	28.9	28.6
Fluoride	mg/L	4	0.39	0.39	0.36	0.35	0.33	0.36	0.37	0.33	0.34	0.34	0.39	0.37	0.37	0.38	0.33
TDS	mg/L	--	368	364	361	362	344	354	376	377	376	--	360	344	390	374	411
Sulfate	mg/L	--	34.9	36.5	32.5	29.1	30.7	29.9	32.3	33.1	34.8	35.5	29.4	30.8	32.4	32.8	32.5
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1	<0.1	<0.2	--
Radium-228	pCi/L	--	--	-0.343	0.769	0.693	0.601	-0.193	-0.019	1.73	--	--	--	0.334	0.271	1.1	--
Radium-226	pCi/L	--	--	0.594	0.131	0.413	0.179	0.0525	0.0316	0.153	--	--	--	0.0534	0.0483	0.112	--
Radium-226/228	pCi/L	5	--	0.251	0.9	1.106	0.78	-0.1405	0.0126	1.883	--	--	--	0.3874	0.3193	1.212	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.94	--	--	0.43	0.64	0.31	0.6	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	7	--	--	5.7	3	<0.7	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	11.3	--	--	1	<1	1	<5	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.016	--	0.002	<0.003	<0.003	<0.02	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0021	0.0001	<0.0002	--	<0.0002	0.0005	<0.0002	<0.0005	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-14S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/10/2020	5/28/2021	5/12/2022	11/2/2022	5/25/2023	11/2/2023
Field Parameters									
Elevation	ft NGVD	--	--	370.99	369.36	369.9	370.27	369.39	368.86
pH	S.U.	--	7.2	6.68	7.82	7.11	7.4	7.45	7.15
Specific Conductance	µmhos/cm	--	--	742	706	583	658	412	776
Turbidity	NTU	--	--	3.29	1.1	1.86	0	0	1.4
Dissolved Oxygen	mg/L	--	--	2.77	2.61	4.35	2.84	7.06	2.14
Temperature	°C	--	--	15.64	15	16.9	15.08	16.62	13.74
ORP	mV	--	--	101	97	200	185	175	96
Laboratory Parameters									
Antimony	µg/L	6	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.011	<0.02	0.012	<0.05	0.01	0.01	0.011
Calcium	mg/L	--	59.2	66.4	82	68.2	61.7	57.2	60.9
Lithium	mg/L	0.04	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--	--
Chloride	mg/L	--	28.6	26.3	25.4	25.4	24.8	25	24.8
Fluoride	mg/L	4	0.39	0.39	0.38	0.33	0.34	0.33	0.33
TDS	mg/L	--	368	370	430	400	390	370	360
Sulfate	mg/L	--	34.9	31.4	31	30.1	27.7	28.6	28.7
Sulfide	mg/L	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-155

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/7/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/7/2017	5/10/2017	7/19/2017	10/4/2017	6/5/2018	11/13/2018	5/23/2019	7/23/2019	9/11/2019	11/15/2019
Field Parameters																		
Elevation	ft NGVD	--	--	370	369.87	369.49	368.87	367.92	367.84	367.86	368.75	367.84	396.63	368.96	371.96	372.79	372.26	371.11
pH	S.U.	--	7.1 - 7.7	7.2	7.1	7.2	7.7	7.2	7.2	7.3	7.3	7.35	7.16	7.46	7.5	5.74	7.38	7.38
Specific Conductance	µmhos/cm	--	--	512	512	510	904	470	60	419	368	393	416	317	348	362	269	467
Turbidity	NTU	--	--	7.6	2.2	1	1	1	0.5	2	2	2.34	0.33	0.41	1.51	8.3	3	10
Dissolved Oxygen	mg/L	--	--	0.5	0.5	1	1	1	6	0.4	0.3	0.07	1.9	0.77	0.4	1	0	0
Temperature	°C	--	--	16.5	17.7	19.1	15.5	13.8	13.9	14.6	15.7	14.7	14.96	12.94	15.21	15.8	16.55	13.4
ORP	mV	--	--	57	124	181	-10	179	64	65	24	18.1	-37.7	19.3	-218	47	63	64
Laboratory Parameters																		
Antimony	µg/L	6	--	0.04	0.04	0.02	0.04	0.04	0.03	0.04	0.02	--	--	<0.02	0.02	--	--	0.03
Arsenic	µg/L	10	--	0.32	0.24	0.21	0.18	0.26	0.21	0.21	0.23	--	--	0.13	0.12	--	--	0.16
Barium	µg/L	2000	--	4.71	5.85	3.21	3.27	6.05	4.98	3.54	--	--	--	2.46	2.54	--	--	3.17
Beryllium	µg/L	4	--	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.004	--	--	<0.02	<0.02	--	--	<0.02
Cadmium	µg/L	5	--	0.14	0.25	0.05	0.05	0.06	0.04	0.05	0.05	--	--	0.04	0.1	--	--	0.06
Chromium	µg/L	100	--	0.2	1.7	0.5	0.058	0.493	0.934	0.198	0.096	--	--	0.05	0.08	--	--	0.1
Cobalt	µg/L	6	--	3.03	1.17	1.09	0.794	1.75	1.26	1.2	1.25	--	--	0.74	0.775	--	--	2.15
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.4	0.26	0.24	0.37	0.32	--	--	0.2
Lead	µg/L	15	--	0.286	0.101	0.098	0.037	0.039	0.024	0.062	0.083	--	--	0.03	0.05	--	--	0.1
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	<0.002	--	--	<0.002
Molybdenum	µg/L	100	--	2.52	2.89	2.54	1.57	0.78	1.17	2.08	2.87	--	--	2.54	3.47	--	--	2.18
Selenium	µg/L	50	--	0.4	0.7	0.5	0.3	0.3	0.5	0.5	0.2	--	--	0.1	0.06	--	--	0.2
Thallium	µg/L	2	--	0.03	<0.01	0.02	0.02	0.03	0.04	0.02	0.02	--	--	<0.1	<0.1	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	3.5	1	21	2	2	--	--	2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	13.1	12.7	15.8	13.1	12.4	<0.06	--	--	11.9
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.9	6.68	4.42	6.41	11.7	--	--	10
Boron	mg/L	--	0.15	0.011	0.012	0.008	<0.002	<0.002	0.084	0.077	0.073	0.095	0.078	0.04	<0.02	--	--	0.01
Calcium	mg/L	--	(79.5) 71	46.9	43.6	46.6	52.3	63.6	62.9	45.7	44.4	48.3	44.7	41.8	41.3	--	--	40.2
Lithium	mg/L	0.04	--	0.007	0.022	0.005	0.005	0.008	0.008	0.003	0.0009	--	--	<0.009	<0.009	--	--	0.00357
Magnesium	mg/L	--	--	--	--	--	--	--	28.2	19.3	17.2	18.5	16.9	15.1	13.9	--	--	15.1
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.489	--	0.391	0.444	0.452	--	--	0.743
Potassium	mg/L	--	--	--	--	--	--	--	1.07	1.11	1.03	1.27	0.93	1.16	0.68	--	--	0.8
Sodium	mg/L	--	--	--	--	--	--	--	35.5	44.7	39.2	42.3	35.9	27.2	17.3	--	--	19.7
Strontium	mg/L	--	--	--	--	--	--	--	0.0903	0.0711	0.061	0.0662	0.0638	0.0574	0.0502	--	--	0.0522
Alkalinity	mg/L	--	--	--	--	--	--	--	294	257	235	267	239	226	197	--	--	209
Bromide	mg/L	--	--	--	--	--	--	--	0.04	0.062	0.05	0.074	0.03	<0.04	<0.04	--	--	<0.04
Chloride	mg/L	--	(29.6) 26	21.2	18.7	18.9	18.3	21.9	16.1	14.1	11.8	13.3	8.84	8.78	8.88	--	--	9.48
Fluoride	mg/L	4	0.86	0.65	0.65	0.63	0.5	0.36	0.42	0.65	0.66	0.62	0.69	0.72	0.88	0.87	0.81	0.7
TDS	mg/L	--	(412.7) 407	338	319	329	338	374	342	294	263	300	274	232	207	--	--	234
Sulfate	mg/L	--	(33.67) 34	30.3	27.7	25.1	23.2	28.3	23.4	21	20.3	23.2	16.3	13.1	10.2	--	--	8.4
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.07	<0.1	--	--	<0.2
Radium-228	pCi/L	--	--	0.0335	-0.092	0.302	1.11	-0.0122	-0.108	0.106	-0.0928	--	--	0.482	0.439	--	--	1.47
Radium-226	pCi/L	--	--	0.384	--	0.116	0.139	0.189	0.0973	0.135	0.0916	--	--	-0.0262	0.282	--	--	0.0996
Radium-226/228	pCi/L	5	--	0.4175	-0.092	0.418	1.249	0.1768	-0.0107	0.241	0.0916	--	--	0.482	0.721	--	--	1.5696
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.51	1.59	0.53	--	--	2.06
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.6	--	1	2	<0.7	--	--	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	3.7	--	2	3	2	--	--	<5
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	<0.002	0.004	<0.003	--	--	<0.02
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.448	0.361	0.284	0.379	0.349	0.332	0.289	--	--	0.257

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-155

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/19/2020	11/10/2020	5/28/2021	11/11/2021	5/12/2022	11/2/2022	5/23/2023	8/16/2023	11/2/2023
Field Parameters												
Elevation	ft NGVD	--	--	370.36	370.24	369.11	368.51	369.46	369.36	370.56	368.78	367.84
pH	S.U.	--	7.1 - 7.7	7.55	7.33	7.73	7.48	7.48	7.41	7.98	7.48	7.2
Specific Conductance	µmhos/cm	--	--	400	455	430	500	432	402	228	375	448
Turbidity	NTU	--	--	0	8.91	1.8	0	25.6	0	0	3.4	0.58
Dissolved Oxygen	mg/L	--	--	0	0.12	0	0	0.14	0	0	0.07	0
Temperature	°C	--	--	14.71	15.34	14.91	13.71	16.2	14.76	16.62	19.2	13.95
ORP	mV	--	--	135	22	110	182	130	54	50	59	86
Laboratory Parameters												
Antimony	µg/L	6	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.15	<0.02	<0.02	0.014	0.012	<0.009	0.014	<0.050	--	0.016
Calcium	mg/L	--	(79.5) 71	42.4	45.4	66.4	46.3	43.7	45.2	40.5	--	40.5
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 26	10.3	10.1	10.6	10.4	10.2	8.87	8.25	--	8.32
Fluoride	mg/L	4	0.86	0.86	0.78	0.81	0.65	0.82	0.79	0.85	--	0.82
TDS	mg/L	--	(412.7) 407	218	236	250	270	220	230	220	--	230
Sulfate	mg/L	--	(33.67) 34	9.1	10.3	8.82	8.07	9.34	8.13	8.2	--	7.8
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-15I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/7/2016	7/19/2016	9/21/2016	11/16/2016	1/10/2017	3/7/2017	5/10/2017	7/18/2017	10/4/2017	12/12/2017	1/3/2018	6/6/2018	8/16/2016	11/13/2018	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	370	369.88	369.51	368.86	368.12	368.07	368.27	368.74	367.82	366.73	366.49	369.64	370.28	369.01	372.01
pH	S.U.	--	6.77 - 7.86	7.2	7.1	7.1	7.5	7.7	7.5	7.2	7.2	7.34	7.8	7.79	8.06	7.36	7.6	7.29
Specific Conductance	µmhos/cm	--	--	555	574	530	874	420	60	457	400	368	350	474	420	527	412	414
Turbidity	NTU	--	--	0.9	0.6	0.7	0.2	1	2	1	1	1.09	1	1.12	0.88	0	0.18	0.95
Dissolved Oxygen	mg/L	--	--	0.2	0.4	0.4	1.3	0.2	2	0.3	0.3	0.49	0.9	0.41	1.89	0.25	0.31	1.61
Temperature	°C	--	--	15.1	18.2	17.6	15.6	13.9	13.6	14.8	16.3	14.68	12.8	12.38	14.9	17.77	12.52	18.94
ORP	mV	--	--	52.5	-86	-54	259	-87	-42	51	-50	-79.7	-52	-77.2	-94	-63	-63.7	-207.7
Laboratory Parameters																		
Antimony	µg/L	6	--	0.01	0.25	0.01	0.04	0.01	0.02	0.02	0.02	--	--	--	--	--	<0.02	<0.02
Arsenic	µg/L	10	--	25.2	27.9	21.1	23.6	20.2	20.4	20.2	23.6	--	--	--	--	--	23.8	25.8
Barium	µg/L	2000	--	118	132	119	107	91.2	88.9	86.1	94.8	--	--	--	--	--	93.3	95
Beryllium	µg/L	4	--	<0.005	0.165	<0.005	0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	--	<0.02	<0.02
Cadmium	µg/L	5	--	0.02	0.23	0.009	0.06	0.005	0.03	0.03	0.02	--	--	--	--	--	<0.01	0.01
Chromium	µg/L	100	--	0.2	0.5	0.1	0.132	0.35	0.7	0.134	0.089	--	--	--	--	--	<0.04	0.06
Cobalt	µg/L	6	--	1.24	1.66	1.32	1.03	1	0.903	1.02	1.25	--	--	--	--	--	1.12	1.12
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.26	0.1	--	--	0.15	--	0.12	0.1
Lead	µg/L	15	--	0.026	0.254	0.026	0.213	0.01	0.065	0.09	0.082	--	--	--	--	--	0.03	<0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	5.76	6.74	5.75	6.73	7.63	7.91	6.52	5.58	--	--	--	--	--	5.03	5.63
Selenium	µg/L	50	--	<0.03	0.2	<0.03	<0.03	<0.03	0.07	0.04	<0.03	--	--	--	--	--	0.04	<0.03
Thallium	µg/L	2	--	0.04	0.273	0.03	0.04	0.04	0.112	0.03	0.04	--	--	--	--	--	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	0.7	--	--	2.5	--	0.8	7.9
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	15	14	16.1	--	--	13.9	--	13.8	<0.06
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.25	6.63	--	--	4.24	--	7.01	3
Boron	mg/L	--	0.072	0.06	0.032	0.03	0.022	0.019	0.047	0.038	0.05	0.08	--	0.04	0.066	--	0.07	0.03
Calcium	mg/L	--	(79.5) 54	44.1	44.6	46.1	51.4	46.5	51.1	46.6	43.9	44.6	--	--	47	--	39.9	47.8
Lithium	mg/L	0.04	--	0.005	0.018	0.004	0.004	0.011	0.006	0.002	<0.0002	--	--	--	--	--	<0.009	0.01
Magnesium	mg/L	--	--	--	--	--	--	--	13.3	12.7	11.1	11.2	--	--	11.8	--	9.98	11.7
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.134	--	--	--	0.13	--	0.106	0.128
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.02	0.94	1.05	--	--	0.96	--	1.21	0.9
Sodium	mg/L	--	--	--	--	--	--	--	62.3	56.1	51.8	45.4	--	--	42	--	29.9	29.9
Strontium	mg/L	--	--	--	--	--	--	--	0.0865	0.088	0.0841	0.0871	--	--	0.0955	--	0.0827	0.0942
Alkalinity	mg/L	--	--	--	--	--	--	--	229	239	224	202	--	--	226	--	199	208
Bromide	mg/L	--	--	--	--	--	--	--	0.084	0.101	0.081	0.067	--	--	0.071	--	0.06	0.04
Chloride	mg/L	--	(29.6) 70	59.3	53.8	43.4	44.9	48.3	38.5	32.7	27.1	23.7	22.8	--	25.1	--	23.7	18
Fluoride	mg/L	4	--	0.382	0.25	0.23	0.25	0.34	0.32	0.31	0.22	0.23	0.22	--	0.26	--	0.25	0.26
TDS	mg/L	--	(412.7) 398	380	356	334	340	351	331	322	300	287	--	--	279	--	248	260
Sulfate	mg/L	--	(47.44) 47	42.5	41	34	33.6	35.4	31.1	29.7	26.6	27.3	26.7	--	25.3	--	25.3	20.9
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	<0.4	--	<0.07	<0.1
Radium-228	pCi/L	--	--	0.254	0.455	0.076	1.23	0.682	0.155	-0.367	1.49	--	--	--	--	--	0.283	0.423
Radium-226	pCi/L	--	--	0.609	0.636	0.428	0.517	0.187	0.71	0.189	0.153	--	--	--	--	--	0.0962	0.557
Radium-226/228	pCi/L	5	--	0.863	1.091	0.504	1.747	0.869	0.865	-0.178	1.643	--	--	--	--	--	0.3792	0.98
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	--	0.36	--	0.2	0.83
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.1	--	--	--	2	--	0.8	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.19	--	--	--	1	--	1	2
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.742	0.709	0.789	0.949	--	--	0.879	--	0.848	0.826
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.138	0.139	0.112	0.119	--	--	0.126	--	0.121	0.116

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-15I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/15/2019	5/19/2020	11/10/2020	2/3/2021	5/28/2021	11/11/2021	5/12/2022	11/2/2022	5/23/2023	11/2/2023
Field Parameters													
Elevation	ft NGVD	--	--	371.09	370.42	370.28	368.37	369.35	368.56	369.53	369.45	367.90	367.89
pH	S.U.	--	6.77 - 7.86	7.38	7.49	7.52	7.57	7.72	7.95	7.5	7.33	7.94	7.33
Specific Conductance	µmhos/cm	--	--	495	435	381	400	393	402	444	327	244	457
Turbidity	NTU	--	--	7	0	1.35	0.4	2.96	0	6.5	0.84	0	0.28
Dissolved Oxygen	mg/L	--	--	0	0	6.34	0.1	0	0	0.56	0	0	3.24
Temperature	°C	--	--	13.7	14.47	16.12	13.6	14.92	13.47	16.61	14.7	16.15	13.59
ORP	mV	--	--	-85	-39	-70	-84	-106	87	-45	-124	-79	-101
Laboratory Parameters													
Antimony	µg/L	6	--	0.04		--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	26.5		--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	88.9		--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02		--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.05		--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.1		--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	1.07		--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.6		--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.2		--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002		--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	5.95		--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.04		--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1		--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	2		--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	12.5		--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	21.2		--	--	--	--	--	--	--	--
Boron	mg/L	--	0.072	0.03	0.03	0.03	--	0.028	0.026	0.019	0.029	<0.050	0.034
Calcium	mg/L	--	(79.5) 54	45.2	49.2	44.2	--	53.3	44.4	44.2	43.8	43.2	46.8
Lithium	mg/L	0.04	--	0.00289		--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	11		--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.116		--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.9		--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	24.2		--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0887		--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	198		--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	<0.04		--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 70	16.9	19	12.8	--	16	14	19.8	16.4	17.1	15.9
Fluoride	mg/L	4	0.382	0.27	0.25	0.47	0.36	0.39	0.47	0.35	0.39	0.38	0.43
TDS	mg/L	--	(412.7) 398	248	253	213	--	240	220	250	230	230	230
Sulfate	mg/L	--	(47.44) 47	17.6	17.8	11.7	--	14.7	11.3	16	12.2	13.5	12.9
Sulfide	mg/L	--	--	<0.2		--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	1.63		--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.194		--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.824		--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	<0.2		--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	1		--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5		--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.623		--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.118		--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/10/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/11/2019	5/22/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.7	369.61	369.16	368.56	367.84	367.87	367.88	368.53	367.58	366.38	369.62	370.12	368.86	369.84	371.94
pH	S.U.	--	5.88 - 8.55	7.53	7.1	7.31	6.9	7.16	7.1	8.26	6.34	7.25	7.34	7.23	7.07	7.02	7.12	7.1
Specific Conductance	µmhos/cm	--	--	0.822	764	719	669	677	804	581	595	647	872	770	920	720	570	774
Turbidity	NTU	--	--	0.74	0.34	5.21	0.5	0.25	0.42	1.78	0.57	0.72	0.54	2.2	0	0.3	1.3	0.18
Dissolved Oxygen	mg/L	--	--	0.34	0.4	7.29	0.62	0.55	0.18	0.69	22.45	0.31	0.82	7.8	0	1.35	0.41	0.34
Temperature	°C	--	--	15.7	16.39	17.48	16.91	14.47	18.48	16.01	15.63	15.99	14.46	15.73	17.04	14.2	14.4	14.54
ORP	mV	--	--	112.4	56.2	153.4	233.5	83	56.1	177.3	-118.9	13.6	-12.2	-36.9	147	142	183	-211.4
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.03	0.25	0.02	0.02	0.02	0.02	0.02	--	--	--	--	0.05	--	0.03
Arsenic	µg/L	10	--	0.37	0.37	0.38	0.34	0.42	0.31	0.39	0.33	--	--	--	--	0.34	--	0.26
Barium	µg/L	2000	--	32.3	29.9	29.5	25.3	25.1	25.7	29.8	25.6	--	--	--	--	29.9	--	21.9
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.03	0.03	0.1	0.006	0.008	0.004	0.01	0.04	--	--	--	--	0.08	--	0.01
Chromium	µg/L	100	--	0.2	0.5	0.3	1.03	0.081	0.463	0.196	0.101	--	--	--	--	0.07	--	0.1
Cobalt	µg/L	6	--	0.073	0.025	0.07	0.028	0.014	0.012	0.063	0.01	--	--	--	--	<0.02	--	<0.02
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.1	0.19	--	1.19	--	1.46	--	0.66
Lead	µg/L	15	--	0.074	0.057	0.182	<0.004	0.039	0.006	0.027	0.01	--	--	--	--	0.112	--	<0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	1.15	1.21	1.11	1.19	1.21	1.32	1.14	0.98	--	--	--	--	0.9	--	0.9
Selenium	µg/L	50	--	0.6	0.6	0.8	0.4	0.4	0.4	0.3	0.4	--	--	--	--	3.2	--	0.6
Thallium	µg/L	2	--	0.01	<0.01	<0.01	<0.01	0.02	0.02	0.01	0.01	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	2	--	5	--	31.6	--	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	24	24.1	27.6	--	24.9	--	24.9	--	23.3
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	2.1	7.43	--	5.68	--	3	--	1
Boron	mg/L	--	0.088	0.028	0.025	0.024	0.025	0.017	0.038	0.082	0.037	0.061	--	0.109	0.034	0.107	0.02	0.03
Calcium	mg/L	--	(79.5) 114	96.2	83	93.5	96.4	94.6	106	105	91.8	108	109	108	109	104	--	99.2
Lithium	mg/L	0.04	--	0.007	0.031	0.005	0.018	0.013	0.013	0.008	0.01	--	--	--	--	0.02	--	0.01
Magnesium	mg/L	--	--	--	--	--	--	--	36.4	36.6	31.4	38.2	--	38.8	--	37.4	--	34.5
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0028	--	--	0.0062	--	0.004	--	0.0035
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.3	0.97	1.03	--	1.1	--	1.28	--	0.95
Sodium	mg/L	--	--	--	--	--	--	--	36.9	36.7	28.7	35.7	--	38	--	44.4	--	29.4
Strontium	mg/L	--	--	--	--	--	--	--	0.129	0.132	0.108	0.133	--	0.137	--	0.138	--	0.21
Alkalinity	mg/L	--	--	--	--	--	--	--	423	431	436	438	--	463	--	510	--	478
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.158	0.162	0.206	--	0.118	--	0.1	--	0.08
Chloride	mg/L	--	(29.6) 24	18.7	19	17.1	16.4	17.5	19.3	22.9	19.8	19.3	--	17.3	--	16.2	--	18
Fluoride	mg/L	4	0.506	0.44	0.46	0.38	0.3	0.35	0.36	0.38	0.33	0.41	--	0.42	--	0.39	--	0.38
TDS	mg/L	--	(412.7) 517	483	471	509	486	474	473	499	484	503	517	520	533	548	517	493
Sulfate	mg/L	--	(52.4) 52	46.9	50.1	42.1	38.3	39.2	39.6	42.3	40.7	45	--	40.8	--	40.3	--	34.5
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	-0.0274	0.34	-0.131	0.0963	1.8	0.169	-0.045	2.76	--	--	--	--	0.0697	--	0.299
Radium-226	pCi/L	--	--	0.163	0.707	0.0255	0.198	0.193	0.113	0.145	0.0933	--	--	--	--	0.0503	--	0.0904
Radium-226/228	pCi/L	5	--	0.1356	1.047	-0.1055	0.2943	1.993	0.282	0.1	2.8533	--	--	--	--	0.12	--	0.3894
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.1	--	--	1.21	--	2.59	--	0.38
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	5.2	--	4	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.9	--	--	1	--	1	--	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.015	--	0.004	--	<0.003	--	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0013	0.0145	0.0007	0.0127	--	0.0047	--	0.0023	--	<0.0027

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/15/2019	5/19/2020	7/15/2020	11/11/2020	5/28/2021	11/11/2021	5/12/2022	11/3/2022	5/23/2023	11/2/2023
Field Parameters													
Elevation	ft NGVD	--	--	370.84	370.40	370.95	392.06	369.06	368.36	369.43	369.15	368.75	367.70
pH	S.U.	--	5.88 - 8.55	7	7.54	7.06	6.5	7.2	6.62	7.5	7.34	7.56	6.82
Specific Conductance	µmhos/cm	--	--	961	675	823	948	763	832	680	711	466	862
Turbidity	NTU	--	--	4.2	1.54	2.35	2.28	12.87	0	1.7	0	0	0.24
Dissolved Oxygen	mg/L	--	--	0.39	0.48	1.63	0.11	0.56	0	2.22	0	0	0
Temperature	°C	--	--	12.05	15.03	18.03	14.73	15.35	13.88	20.43	15.92	16.5	13.43
ORP	mV	--	--	121	110	57	137	66	47	116	151	195	160
Laboratory Parameters													
Antimony	µg/L	6	--	0.03	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.3	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	27.2	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.05	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.09	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.059	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.3	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.07	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	0.8	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	1	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	0.8	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	22.3	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.088	0.02	0.03	--	0.02	0.021	0.019	<0.009	0.018	0.019	0.020
Calcium	mg/L	--	(79.5) 114	92.2	104	--	103	96.8	86.7	85.9	82.6	84.2	83.3
Lithium	mg/L	0.04	--	0.00639	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	35.5	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.0115	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.9	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	29.6	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.118	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	445	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.1	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 24	20.7	26.7	25.8	21.8	21.2	13.3	13	11.8	14.6	12.1
Fluoride	mg/L	4	0.506	0.32	0.34	0.37	0.38	0.41	0.37	0.39	0.38	0.36	0.38
TDS	mg/L	--	(412.7) 517	497	470	489	473	480	440	400	430	440	440
Sulfate	mg/L	--	(52.4) 52	35.2	34.9	--	34.5	32.2	24.4	25.6	26.6	26.1	27.2
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.179	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0453	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.2243	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	1.7	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0009	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/19/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/11/2019	5/22/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.79	369.62	369.18	368.57	367.84	367.87	367.87	368.58	367.58	366.39	369.62	370.06	368.78	369.77	371.86
pH	S.U.	--	6.73 - 7.90	7.69	7.56	7.37	7.08	7.36	7.28	6.96	7.2	7.46	7.68	7.37	7.23	7.3	7.4	7.31
Specific Conductance	µmhos/cm	--	--	957	870	867	702	674	779	569	665	644	821	720	797	545	476	641
Turbidity	NTU	--	--	0.42	0.46	1.37	1.4	0.18	1.41	2.27	3.15	0.7	1.9	0.89	0	0.41	0.8	0.2
Dissolved Oxygen	mg/L	--	--	0.29	8.08	0.68	0.53	0.46	0.34	0.21	0.29	0.28	0.38	0.46	0	0.95	0.36	0.25
Temperature	°C	--	--	16.2	16.86	15.43	15.64	14.71	15.19	15.48	15.99	15.71	13.08	15.93	15.56	14.42	14.5	14.58
ORP	mV	--	--	224.4	-158.9	54.7	242.3	86.1	53.5	49.8	-3.1	4.1	-25.6	-68.4	120	148	122	-21107
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	0.01	0.01	0.05	0.01	0.02	0.06	0.02	--	--	--	--	<0.02	--	<0.02
Arsenic	µg/L	10	--	0.71	0.75	0.75	0.67	0.72	0.68	0.7	0.73	--	--	--	--	0.66	--	0.64
Barium	µg/L	2000	--	267	267	262	234	220	221	206	238	--	--	--	--	153	--	151
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.06	0.03	0.03	0.05	0.04	0.03	0.08	0.03	--	--	--	--	0.02	--	0.02
Chromium	µg/L	100	--	0.1	0.2	0.1	0.082	0.085	0.422	0.204	0.118	--	--	--	--	0.05	--	<0.04
Cobalt	µg/L	6	--	0.602	0.627	0.576	0.546	0.514	0.58	0.56	0.599	--	--	--	--	0.336	--	0.346
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.56	0.46	--	0.62	--	0.45	--	0.46
Lead	µg/L	15	--	0.023	0.025	0.023	0.053	0.01	0.034	0.153	0.065	--	--	--	--	<0.02	--	0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	1.02	1.02	1.03	0.93	1	1.17	0.91	1.07	--	--	--	--	1	--	1
Selenium	µg/L	50	--	0.2	0.2	0.1	0.2	0.1	0.2	0.4	0.2	--	--	--	--	0.2	--	0.1
Thallium	µg/L	2	--	0.085	0.06	0.074	0.069	0.071	0.075	0.075	0.07	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2.7	0.8	--	0.6	--	0.8	--	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	19.9	20	22.8	--	--	19.8	--	18.5	--	18
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.5	14	--	10.2	--	5	--	4
Boron	mg/L	--	0.107	0.031	0.027	0.026	0.024	0.015	0.1	0.032	0.044	0.05	--	0.046	--	0.139	0.02	0.03
Calcium	mg/L	--	(79.5) 114	110	93.9	95.9	96.2	89.3	101	86.7	91.3	84	71.9	82.9	61.6	53.7	--	56
Lithium	mg/L	0.04	--	0.005	0.005	0.006	0.013	0.01	0.013	0.01	0.003	--	--	--	--	<0.009	--	0.02
Magnesium	mg/L	--	--	--	--	--	--	--	27.6	24.7	25.6	23	--	23.1	--	14.8	--	15.1
Manganese	mg/L	--	--	--	--	--	--	--	--	--	1.03	--	--	0.902	--	0.613	--	0.626
Potassium	mg/L	--	--	--	--	--	--	--	2.9	2.47	2.62	3.21	--	3.05	--	3.16	--	2.55
Sodium	mg/L	--	--	--	--	--	--	--	46.2	41.4	50	69.2	--	66	--	74.4	--	68.4
Strontium	mg/L	--	--	--	--	--	--	--	0.155	0.139	0.14	0.135	--	0.136	--	0.09	--	0.0898
Alkalinity	mg/L	--	--	--	--	--	--	--	368	376	369	359	--	359	--	300	--	261
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.152	0.154	0.206	--	0.168	--	0.1	--	0.1
Chloride	mg/L	--	(29.6) 114	80.4	86.8	90.2	59.1	44.1	39.3	37.9	50.2	70.8	71.2	58.6	61.1	47.8	--	45.5
Fluoride	mg/L	4	0.192	0.1	0.15	0.1	0.1	0.1	0.16	0.1	0.08	0.1	--	0.17	--	0.17	--	0.17
TDS	mg/L	--	(412.7) 589	539	532	544	508	481	460	461	465	495	487	480	456	408	--	405
Sulfate	mg/L	--	(43.51) 44	38.7	42.2	36.8	33	34	35.4	35.1	36.1	40.4	--	38.7	--	32.5	--	33.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	0.357	1	0.977	0.174	2.27	0.182	0.427	0.513	--	--	--	--	0.483	--	0.269
Radium-226	pCi/L	--	--	0.235	0.576	0.248	0.413	0.362	0.399	0.511	0.274	--	--	--	--	0.162	--	0.156
Radium-226/228	pCi/L	5	--	0.592	1.576	1.225	0.587	2.632	0.581	0.938	0.787	--	--	--	--	0.645	--	0.425
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.14	--	--	0.57	--	1.43	--	1.14
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	0.7	--	2	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	0.8	--	1	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.014	--	0.024	--	0.004	--	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	1.03	1.06	1.04	0.873	--	0.849	--	0.616	--	0.615

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/15/2019	5/19/2020	11/10/2020	5/28/2021	11/11/2021	5/12/2022	11/3/2022	5/23/2023	11/2/2023
Field Parameters												
Elevation	ft NGVD	--	--	370.76	370.89	370.03	368.99	368.31	369.35	369.16	368.69	367.62
pH	S.U.	--	6.73 - 7.90	7.35	7.79	6.83	7.5	6.92	7.52	7.57	7.75	7.09
Specific Conductance	µmhos/cm	--	--	659	481	567	460	538	618	505	341	582
Turbidity	NTU	--	--	1.1	1.22	2.56	5.86	0	7.5	0	0	0.99
Dissolved Oxygen	mg/L	--	--	0.01	0.12	0.2	1.95	0	0.14	0	0	0
Temperature	°C	--	--	12	14.85	16.03	15.32	14.09	16.31	15.07	18.26	13.28
ORP	mV	--	--	137	114	48	19	96	114	169	114	107
Laboratory Parameters												
Antimony	µg/L	6	--	0.03	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.72	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	126	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.04	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.1	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.58	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	1.34	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.1	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	1	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.4	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	1	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	17.2	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	10	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.107	0.02	0.02	0.02	0.019	0.019	<0.009	0.019	0.018	0.020
Calcium	mg/L	--	(79.5) 114	41	51.9	44.5	50.4	50	61.8	51.9	53.3	48.9
Lithium	mg/L	0.04	--	0.00427	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	11.4	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.685	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	2.2	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	58.9	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0688	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	252	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.1	--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 114	31.2	31.3	19.6	16.5	16.6	25.6	19.6	29.6	19.3
Fluoride	mg/L	4	--	0.14	0.14	0.20	0.18	0.15	0.15	0.16	0.14	0.16
TDS	mg/L	--	(412.7) 589	343	350	273	270	280	330	300	330	300
Sulfate	mg/L	--	(43.51) 44	25.2	25.8	21.4	18.5	17.6	24.2	18.3	20.8	15.1
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.482	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.212	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.694	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.3	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	1	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.447	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/20/2016	11/17/2016	1/11/2017	3/8/2017	5/10/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/11/2019	4/1/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.85	369.68	369.23	368.64	367.91	367.94	367.96	368.64	367.68	366.47	369.69	370.13	368.87	369.84	370.82
pH	S.U.	--	6.04 - 9.13	6.8	7.31	7.26	7.29	7.48	7.44	7.54	9.03	7.6	7.74	7.32	7.26	7.35	7.37	7.28
Specific Conductance	µmhos/cm	--	--	519	582	538	613	525	614	436	597	516	692	690	782	607	510	945
Turbidity	NTU	--	--	1.8	0.24	0.31	0.55	0.4	0.81	1.74	0.41	2.95	1.85	0.9	0	0.35	1.4	0.91
Dissolved Oxygen	mg/L	--	--	0.4	--	1.33	0.55	0.49	0.11	0.29	0.32	0.21	0.47	0.44	0	0.94	1.48	0.64
Temperature	°C	--	--	16.8	16.96	16.04	15.1	14.55	15.2	15.46	15.62	15.77	13.14	15.94	15.88	14.45	13.2	13.5
ORP	mV	--	--	-19	23.5	35.7	108	14.6	2.1	36.6	108.9	-26.4	-36.7	-70.7	-11	62.8	60	-16.7
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	0.02	0.02	0.02	0.01	0.02	0.03	0.03	--	--	--	--	<0.02	--	--
Arsenic	µg/L	10	--	0.48	0.4	0.31	0.32	0.34	0.31	0.33	0.39	--	--	--	--	0.32	--	--
Barium	µg/L	2000	--	240	246	221	217	210	224	212	247	--	--	--	--	270	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	<0.02	--	--
Cadmium	µg/L	5	--	0.08	0.08	0.02	0.05	0.02	0.01	0.07	0.1	--	--	--	--	0.04	--	--
Chromium	µg/L	100	--	0.3	0.4	0.1	1.21	0.112	0.188	0.151	0.141	--	--	--	--	0.05	--	--
Cobalt	µg/L	6	--	0.617	0.547	0.418	0.452	0.354	0.401	0.466	0.571	--	--	--	--	0.472	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	2.21	0.11	--	0.07	--	0.23	--	--
Lead	µg/L	15	--	0.078	0.04	0.021	0.066	0.008	0.022	0.07	0.103	--	--	--	--	0.03	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2.06	2.31	1.96	1.98	1.99	2.27	1.9	2.03	--	--	--	--	2	--	--
Selenium	µg/L	50	--	0.04	0.04	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	--	--	--	--	0.03	--	--
Thallium	µg/L	2	--	0.03	0.069	0.02	0.02	0.02	0.04	0.02	0.02	--	--	--	--	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	12.8	52.4	--	7.1	--	15.4	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.1	17.6	20.3	--	18.5	--	18.2	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	6.2	3.72	--	2.86	--	1	--	--
Boron	mg/L	--	0.113	0.033	0.013	0.012	0.014	0.004	0.023	0.102	0.017	0.059	--	0.033	--	0.07	--	--
Calcium	mg/L	--	(79.5) 88	84.3	68.7	70.5	77.9	72.4	79.2	75.8	71.7	80.4	80.1	90.2	83.8	84.1	--	--
Lithium	mg/L	0.04	--	0.001	0.013	0.003	0.006	0.013	0.007	0.008	0.0006	--	--	--	--	<0.009	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	22.4	22.2	21	23.3	--	27.1	--	24.3	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.975	--	--	1.2	--	1	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.12	1.54	0.97	1.33	--	1.22	--	1.27	--	--
Sodium	mg/L	--	--	--	--	--	--	--	22.3	21.6	22.1	24.7	--	26.7	--	30	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.142	0.143	0.128	0.146	--	0.18	--	0.166	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	202	210	215	195	--	235	--	238	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.15	0.204	<0.05	0.233	--	0.303	--	0.275	--	--
Chloride	mg/L	--	(29.6) 73	68.7	69.6	67.6	63.6	67.9	65.4	69.9	69.6	81.5	86	108	99.7	102	109	107
Fluoride	mg/L	4	--	0.2	0.22	0.22	0.17	0.21	0.22	0.22	0.17	0.22	--	0.22	--	0.21	--	--
TDS	mg/L	--	(412.7) 384	350	321	342	356	343	347	367	363	383	--	434	447	434	439	429
Sulfate	mg/L	--	(39.69) 40	36.4	37.4	33.4	33.2	34	35.3	37.2	36.8	40	37.9	38.6	--	38.6	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	--
Radium-228	pCi/L	--	--	-0.173	0.294	1.1	0.285	0.92	0.583	-0.121	0.222	--	--	--	--	0.138	--	--
Radium-226	pCi/L	--	--	0.0514	--	0.248	0.624	0.796	0.228	0.151	0.292	--	--	--	--	0.179	--	--
Radium-226/228	pCi/L	5	--	-0.1216	0.294	1.348	0.909	1.716	0.811	0.03	0.514	--	--	--	--	0.317	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.18	--	--	0.35	--	1.5	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	1	--	3	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	2	--	2	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.004	0.002	0.098	0.051	--	0.058	--	0.023	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.862	0.948	0.989	0.947	--	1.19	--	1	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/22/2019	7/23/2019	9/11/2019	11/15/2019	2/18/2020	5/19/2020	7/15/2020	11/11/2020	2/2/2021	5/28/2021	8/5/2021	11/11/2021	5/12/2022	11/2/2022	5/23/2023
Field Parameters																		
Elevation	ft NGVD	--	--	371.96	372.67	----	370.78	369.44	370.44	370.98	370.05	368.20	369.11	369.08	368.38	369.43	369.18	368.78
pH	S.U.	--	6.04 - 9.13	7.31	7.02	7.28	7.31	7.17	7.7	7.22	7.15	7.39	9.64	7.2	6.8	7.49	7.64	8.11
Specific Conductance	µmhos/cm	--	--	755	731	813	1070	1869	799	969	1050	953	886	956	1060	1010	816	456
Turbidity	NTU	--	--	0.3	1.9	0.43	0.3	0.2	0.39	0.41	0.35	0.7	0	2.9	0	3.13	0	0
Dissolved Oxygen	mg/L	--	--	0.26	0.5	0.36	0.01	0.42	0.18	0	0.29	3.5	0		0.07	0.36	0	0
Temperature	°C	--	--	14.43	15.9	17.5	14.4	11.76	14.81	17.56	14.67	13.2	15.97	16.5	14.4	17.56	16.41	20.37
ORP	mV	--	--	-216.5	50	-52.5	45	109.3	-22	-3	91	85	40	-36	15	46	-32	1
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.39	--	--	0.35	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	286	--	--	348	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	<0.01	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.25	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.64	--	--	0.632	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.17	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.02	--	--	<0.05	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2	--	--	2	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	<0.03	--	--	<0.03	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	1	--	--	2	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	17.9	--	--	17.1	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	2	--	--	<5	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.113	0.03	--	--	0.03	--	0.03	--	0.04	--	0.038	--	0.038	0.026	0.035	0.031
Calcium	mg/L	--	(79.5) 88	88.5	95.6	109	100	--	108	102	109	106	122	103	105	102	84.5	69.2
Lithium	mg/L	0.04	--	0.02	--	--	0.00427	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	25.4	--	--	28.3	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	1.17	--	--	1.04	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	1.27	--	--	1.57	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	30.8	--	--	44.6	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.176	--	--	0.203	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	249	--	--	304	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.344	--	--	0.425	--	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 73	104	106	125	127	133	135	133	130	117	110	110	98.3	101	81	75
Fluoride	mg/L	4	0.251	0.2	--	--	0.17	--	0.17	0.2	0.21	--	0.23	0.2	0.18	0.19	0.21	0.21
TDS	mg/L	--	(412.7) 384	460	457	523	537	579	558	519	547	573	580	570	560	550	520	440
Sulfate	mg/L	--	(39.69) 40	38	--	--	40.8	38.9	40.1	--	39.1	--	40.6	--	37	41.4	38.4	35.3
Sulfide	mg/L	--	--	<0.1	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.688	--	--	0.411	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.551	--	--	0.158	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.239	--	--	0.569	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.25	--	--	1.98	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	<0.7	--	--	3	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<1	--	--	<5	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.067	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	1.23	--	--	1.07	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	8/16/2023	11/2/2023
Field Parameters					
Elevation	ft NGVD	--	--	368.91	367.71
pH	S.U.	--	6.04 - 9.13	7.29	7.15
Specific Conductance	µmhos/cm	--	--	811	826
Turbidity	NTU	--	--	1.4	0.28
Dissolved Oxygen	mg/L	--	--	0.36	6.76
Temperature	°C	--	--	17.33	14.06
ORP	mV	--	--	-25	9
Laboratory Parameters					
Antimony	µg/L	6	--	--	--
Arsenic	µg/L	10	--	--	--
Barium	µg/L	2000	--	--	--
Beryllium	µg/L	4	--	--	--
Cadmium	µg/L	5	--	--	--
Chromium	µg/L	100	--	--	--
Cobalt	µg/L	6	--	--	--
Copper	µg/L	--	--	--	--
Lead	µg/L	15	--	--	--
Mercury	µg/L	2	--	--	--
Molybdenum	µg/L	100	--	--	--
Selenium	µg/L	50	--	--	--
Thallium	µg/L	2	--	--	--
Zinc	µg/L	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--
Aluminum	µg/L	--	--	--	--
Boron	mg/L	--	0.113	--	0.033
Calcium	mg/L	--	(79.5) 88	--	62.2
Lithium	mg/L	0.04	--	--	--
Magnesium	mg/L	--	--	--	--
Manganese	mg/L	--	--	--	--
Potassium	mg/L	--	--	--	--
Sodium	mg/L	--	--	--	--
Strontium	mg/L	--	--	--	--
Alkalinity	mg/L	--	--	--	--
Bromide	mg/L	--	--	--	--
Chloride	mg/L	--	(29.6) 73	--	63.3
Fluoride	mg/L	4	0.251	--	0.23
TDS	mg/L	--	(412.7) 384	--	430
Sulfate	mg/L	--	(39.69) 40	--	31.7
Sulfide	mg/L	--	--	--	--
Radium-228	pCi/L	--	--	--	--
Radium-226	pCi/L	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-17S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/8/2016	7/20/2016	9/20/2016	11/16/2016	1/10/2017	3/7/2017	5/9/2017	7/19/2017	10/4/2017	6/5/2018	11/13/2018	5/23/2019	11/15/2019	5/19/2020	11/10/2020
Field Parameters																		
Elevation	ft NGVD	--	--	370.14	370.11	369.81	369.37	368.47	368.21	368.24	368.89	373.03	369.48	368.74	371.85	371.44	370.99	370.67
pH	S.U.	--	7.11 - 7.97	7.77	7.3	7.65	7.7	7.6	7.5	7.3	7.5	7.44	7.41	7.51	7.58	7.64	7.8	7.51
Specific Conductance	µmhos/cm	--	--	350	373	344	146	310	60	357	287	351	319	280	322	396	358	403
Turbidity	NTU	--	--	0.6	0.7	0.79	1	1	1	3	1	0.47	0.4	0.89	0	4	0.7	0.95
Dissolved Oxygen	mg/L	--	--	0.6	1.2	0.37	0.1	0.2	1	0.2	0.2	0.38	10.12	1.07	1.56	1.3	0	8.47
Temperature	°C	--	--	14.7	17.9	14.55	14.7	13.8	13.5	14.9	14.3	16.82	14.39	13.45	15	13.4	14.43	16.15
ORP	mV	--	--	80	44	49.4	-40	62	47	45	30	-50.3	-84.3	121	-48.2	38	23	71
Laboratory Parameters																		
Antimony	µg/L	6	--	0.01	0.03	0.02	0.03	0.03	0.04	0.04	0.02	--	--	0.02	0.02	0.02	--	--
Arsenic	µg/L	10	--	0.24	0.26	0.22	0.2	0.21	0.2	0.22	0.22	--	--	0.17	0.18	0.24	--	--
Barium	µg/L	2000	--	2.12	2.74	2.24	2.4	3.45	3.94	4.37	2.25	--	--	2.11	2.3	2.2	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.02	<0.02	<0.02	--	--
Cadmium	µg/L	5	--	0.02	0.08	0.01	0.02	0.02	0.09	0.02	0.06	--	--	0.02	0.03	0.03	--	--
Chromium	µg/L	100	--	0.5	0.2	0.1	0.066	0.489	0.776	0.233	0.124	--	--	0.07	0.06	0.1	--	--
Cobalt	µg/L	6	--	0.047	0.105	0.034	0.029	0.04	0.076	0.138	0.053	--	--	0.05	0.04	0.157	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.38	0.69	0.23	0.21	0.39	0.5	--	--
Lead	µg/L	15	--	0.024	0.098	0.025	0.02	0.02	0.079	0.108	0.038	--	--	0.03	0.05	0.1	--	--
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	--	--	--	<0.002	<0.002	--	--
Molybdenum	µg/L	100	--	3.98	4.2	4.08	3.39	0.44	0.7	1.14	4.38	--	--	3.73	4.78	4.67	--	--
Selenium	µg/L	50	--	0.07	0.06	0.08	0.1	0.2	0.1	0.1	0.08	--	--	0.3	0.2	0.4	--	--
Thallium	µg/L	2	--	0.01	0.01	0.01	0.053	0.02	0.02	<0.01	0.03	--	--	<0.1	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	5.7	0.7	<0.7	14.4	1	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	14	13.7	15.8	13.5	13.2	<0.06	12.2	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.55	10.2	4.01	2	17.4	21.3	--	--
Boron	mg/L	--	0.065	0.015	0.016	0.016	0.017	0.006	0.058	0.041	0.02	0.033	0.045	0.05	0.03	0.02	0.02	0.02
Calcium	mg/L	--	(79.5) 41	36.9	34.8	34.8	35.9	32.3	40	35.5	34.4	34.1	32.4	33.1	32.7	28.7	32.8	33.9
Lithium	mg/L	0.04	--	<0.0002	0.02	0.003	0.004	0.003	0.008	0.003	<0.0002	--	--	<0.009	0.01	0.00355	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	19.2	17.5	13.7	12.9	13	13.7	12.9	11.2	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0428	--	0.0311	0.0418	0.0377	0.179	--	--
Potassium	mg/L	--	--	--	--	--	--	--	0.88	0.79	0.49	0.47	0.5	0.59	0.62	0.6	--	--
Sodium	mg/L	--	--	--	--	--	--	--	42.5	35.3	31.9	27.7	24.5	25.8	26.5	26.8	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0566	0.0529	0.0363	0.0345	0.0357	0.0374	0.0347	0.031	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	231	221	196	189	188	202	193	174	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.05	<0.02	<0.02	0.04	<0.04	<0.04	<0.04	--	--
Chloride	mg/L	--	(29.6) 16	13.9	15.4	12.3	11.4	11	10.7	10.4	10.8	10.5	10.8	11.5	12	12.6	12.7	12.9
Fluoride	mg/L	4	1.08	0.85	0.86	0.73	0.7	0.48	0.46	0.58	0.82	0.89	0.98	0.91	1.08	0.96	0.95	0.90
TDS	mg/L	--	(412.7) 269	272	235	233	232	262	251	250	201	214	214	196	217	207	200	211
Sulfate	mg/L	--	(16.46) 16.5	14.3	14.8	10.9	10.5	10.7	12	13.1	10.2	10.7	9.5	8.4	7.7	6.2	6.5	8.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	<0.1	<0.2	--	--
Radium-228	pCi/L	--	--	0.783	-0.0129	0.027	0.791	-0.155	0.36	0.315	1.07	--	--	-0.0735	0.34	1.03	--	--
Radium-226	pCi/L	--	--	0.253	0.0439	0.0489	0.803	0.17	0.11	0.118	0.678	--	--	0.0202	0.0449	0.0579	--	--
Radium-226/228	pCi/L	5	--	1.036	0.031	0.0759	1.594	0.015	0.47	0.433	1.748	--	--	0.0202	0.0202	1.0879	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.35	--	0.56	0.7	2.05	<0.2	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	1	1	<0.7	0.9	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.2	--	6.2	2	1	<5	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.026	0.004	0.004	0.01	<0.02	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0028	0.0013	0.0322	0.0881	0.0304	0.041	0.0332	0.0662	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-17S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/27/2021	11/11/2021	5/13/2022	11/2/2022	5/24/2023	11/2/2023	12/20/2023
Field Parameters										
Elevation	ft NGVD	--	--	369.24	368.89	369.54	369.84	369.08	368.24	367.47
pH	S.U.	--	7.11 - 7.97	7.58	7.72	7.9	7.62	8.09	7.02	7.22
Specific Conductance	µmhos/cm	--	--	389	420	404	373	240	476	480
Turbidity	NTU	--	--	24.31	0	5.4	0	0	0	0.65
Dissolved Oxygen	mg/L	--	--	0	3.44	8.7	0	0	0	0
Temperature	°C	--	--	20.2	13.24	15.5	14.47	15.09	13.92	17.32
ORP	mV	--	--	-53	88	173	-65	15	-9	3
Laboratory Parameters										
Antimony	µg/L	6	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.065	0.025	0.023	<0.05	0.022	<0.050	0.025	--
Calcium	mg/L	--	(79.5) 41	35.9	35.2	34.4	33.5	34.5	37.7	--
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.03	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 16	11	9.41	10.2	13.5	12.8	19.9	19.8
Fluoride	mg/L	4	1.08	0.95	0.81	0.82	0.81	0.78	0.78	--
TDS	mg/L	--	(412.7) 269	210	230	230	210	230	240	--
Sulfate	mg/L	--	(16.46) 16.5	5.92	4.62	5.24	5.22	5.9	7.9	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-171

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/8/2016	7/20/2016	9/20/2016	11/16/2016	1/10/2017	3/7/2017	5/9/2017	7/19/2017	10/4/2017	12/12/2017	1/3/2018	6/5/2018	8/16/2018	9/26/2018	11/13/2018
Field Parameters																		
Elevation	ft NGVD	--	--	370.09	370.13	369.82	369.12	368.47	368.23	368.25	368.89	368.07	367.23	366.84	369.46	370.64	370.06	369.35
pH	S.U.	--	6.82 - 7.96	7.55	7.2	7.1	7.8	7.5	7.5	7.2	7.3	7.37	7.49	7.8	7.36	7.48	7.48	7.55
Specific Conductance	µmhos/cm	--	--	839	914	1000	607	670	60	768	678	786	530	848	652	728	453	450
Turbidity	NTU	--	--	13.4	9.8	--	0.1	2	9	2	1	74.99	1.74	12	1.28	0	0.58	7.42
Dissolved Oxygen	mg/L	--	--	0.8	0.8	0.9	1.3	0.3	1	0.3	0.2	0.26	0.1	2.34	0.2	0.17	0.37	0.76
Temperature	°C	--	--	14.1	16.4	18.3	14.4	13.7	13.8	14.7	14.7	17.05	8.97	7.25	15.11	17.06	14.18	12.6
ORP	mV	--	--	116	-73	-40	204	-52	8	46	-59	-90.8	-54	-40.5	-99.8	-69	-77.9	-77.4
Laboratory Parameters																		
Antimony	µg/L	6	--	0.07	0.05	0.04	0.03	0.02	0.02	0.02	0.02	--	--	--	--	--	--	0.02
Arsenic	µg/L	10	--	7.14	7.41	6.45	3.38	3.94	4.61	3.61	3.76	--	--	--	--	--	--	3.65
Barium	µg/L	2000	--	168	190	198	149	148	159	133	140	--	--	--	--	--	--	86.8
Beryllium	µg/L	4	--	0.02	0.006	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	--	--	<0.02
Cadmium	µg/L	5	--	0.12	0.13	0.04	0.04	0.008	0.007	0.03	0.02	--	--	--	--	--	--	0.03
Chromium	µg/L	100	--	0.6	2.1	0.1	0.059	0.254	0.776	0.196	0.127	--	--	--	--	--	--	<0.04
Cobalt	µg/L	6	--	1.24	0.778	0.472	0.37	0.391	0.406	0.394	0.372	--	--	--	--	--	--	0.186
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.26	0.24	--	--	0.52	--	--	0.26
Lead	µg/L	15	--	1.19	0.284	0.133	0.049	0.02	0.026	0.115	0.02	--	--	--	--	--	--	0.03
Mercury	µg/L	2	--	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	3.6	3.66	3.08	3.37	3.2	3.62	3.26	3.42	--	--	--	--	--	--	4.09
Selenium	µg/L	50	--	0.1	0.05	0.05	<0.03	<0.03	0.05	0.03	<0.03	--	--	--	--	--	--	<0.03
Thallium	µg/L	2	--	0.03	0.02	0.02	0.056	0.02	0.02	0.01	0.05	--	--	--	--	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.3	30.8	--	--	2.4	--	--	2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.1	17	19.8	--	--	16.5	--	--	15.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	3.39	21.5	--	--	5.91	--	--	2
Boron	mg/L	--	0.098	0.058	0.056	0.051	0.041	0.034	0.079	0.083	0.052	0.061	--	--	0.081	--	--	0.07
Calcium	mg/L	--	(79.5) 96	73.7	83.1	88.9	80	72.3	81.4	69.6	64.4	63	--	--	51.2	--	--	36.5
Lithium	mg/L	0.04	--	<0.0002	0.004	0.005	0.006	0.009	0.008	0.005	<0.0002	--	--	--	--	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	21	19.6	17.4	16.5	--	--	13.4	--	--	9.44
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.155	--	--	--	0.122	--	--	0.0779
Potassium	mg/L	--	--	--	--	--	--	--	1.28	1.36	1.04	1.12	--	--	0.94	--	--	0.83
Sodium	mg/L	--	--	--	--	--	--	--	101	93.6	95.4	94.6	--	--	89.1	--	--	74.7
Strontium	mg/L	--	--	--	--	--	--	--	0.153	0.14	0.119	0.12	--	--	0.104	--	--	0.0796
Alkalinity	mg/L	--	--	--	--	--	--	--	221	226	229	245	--	--	238	--	--	231
Bromide	mg/L	--	--	--	--	--	--	--	0.347	0.396	0.372	0.283	--	--	0.213	--	--	0.1
Chloride	mg/L	--	(29.6) 241	195	209	214	164	159	158	151	145	115	86	110	80.2	61.1	--	50.1
Fluoride	mg/L	4	--	0.656	0.56	0.52	0.56	0.56	0.58	0.61	0.63	0.66	0.76	0.65	0.87	0.98	1.03	1.00
TDS	mg/L	--	(412.7) 657	609	569	620	540	513	549	528	509	486	--	471	418	376	--	328
Sulfate	mg/L	--	(50.8) 51	43.1	49.3	48.1	44.1	43.2	44.9	43.5	44.7	46.6	44.8	--	41	--	--	29.6
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	<0.4	--	--	<0.1
Radium-228	pCi/L	--	--	0.615	0.386	1	0.499	0.531	0.33	0.191	--	--	--	--	--	--	--	0.275
Radium-226	pCi/L	--	--	1.31	0.781	0.587	0.263	0.979	0.693	0.816	0.0231	--	--	--	--	--	--	0.351
Radium-226/228	pCi/L	5	--	1.925	1.167	1.587	0.762	1.51	1.023	1.007	0.8141	--	--	--	--	--	--	0.626
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.33	--	--	--	0.57	--	--	1.62
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.2	--	--	--	1	--	--	3
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	--	2.64	--	--	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.896	0.909	0.741	0.603	--	--	0.546	--	--	0.348
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.185	0.188	0.141	0.144	--	--	0.113	--	--	0.0765

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-171

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	2/11/2019	4/1/2019	5/23/2019	7/23/2019	9/11/2019	11/15/2019	5/19/2020	11/10/2020	5/27/2021	11/11/2021	5/13/2022	11/2/2022	5/24/2023	11/2/2023
Field Parameters																	
Elevation	ft NGVD	--	--	369.89	369.89	372.03	373.11	----	371.60	370.47	370.86	369.38	369.09	369.75	370.00	369.29	368.44
pH	S.U.	--	6.82 - 7.96	7.68	7.68	7.51	6.65	7.63	7.44	7.94	7.59	7.76	7.78	7.85	7.83	8.2	7.04
Specific Conductance	µmhos/cm	--	--	391	391	570	488	363	654	487	437	389	500	495	442	267	486
Turbidity	NTU	--	--	6.9	6.9	3.67	6.4	5	7	1.02	8.35	14.91	0	4.2	0	0	0
Dissolved Oxygen	mg/L	--	--	0.47	0.47	0.91	1.1	0	0	0	0.42	0	0	0.15	0	0	0
Temperature	°C	--	--	13.5	13.5	17.85	14.8	15.49	13	14.72	17.14	20.46	13.35	16.35	14.65	15.47	14.39
ORP	mV	--	--	-55	-55	-94.3	-5.3	-112	-87	-56	-70	-55	49	-60	-123	-94	-111
Laboratory Parameters																	
Antimony	µg/L	6	--	--	--	0.02	--	--	0.06	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	3.72	--	--	4.5	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	91.8	--	--	87.9	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	<0.02	--	--	<0.02	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	<0.01	--	--	0.05	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	<0.04	--	--	0.1	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	0.22	--	--	0.306	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	0.07	--	--	0.5	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	0.02	--	--	0.2	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	<0.002	--	--	<0.002	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	3.01	--	--	2.4	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	<0.03	--	--	0.03	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	<0.1	--	--	<0.1	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	15.1	--	--	2	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	<0.06	--	--	14	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	1	--	--	7	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.098	--	--	0.04	--	--	0.04	0.04	0.04	0.043	0.039	<0.05	0.037	<0.050	0.045
Calcium	mg/L	--	(79.5) 96	--	--	45.1	--	--	43.9	40.3	38.1	41	46.4	40.2	39.5	37.5	38.6
Lithium	mg/L	0.04	--	--	--	0.01	--	--	0.00504	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	11.8	--	--	12	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	0.112	--	--	0.121	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	0.84	--	--	0.9	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	60.5	--	--	49.7	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	0.098	--	--	0.103	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	201	--	--	205	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	0.2	--	--	2	--	--	0.08	--	--	--	--	--
Chloride	mg/L	--	(29.6) 241	--	--	60.2	--	--	41.2	32.8	25.5	30	40.08	36.6	33.4	29.5	25.4
Fluoride	mg/L	4	0.656	1.05	1.08	1.07	1.06	1.08	0.95	1.07	1.16	1.07	0.99	1.04	0.99	0.98	0.94
TDS	mg/L	--	(412.7) 657	--	--	352	--	--	309	273	239	280	270	260	260	250	240
Sulfate	mg/L	--	(50.8) 51	--	--	32.8	--	--	23.2	20.7	16.8	15.5	25.3	20.5	19.1	17.2	15.9
Sulfide	mg/L	--	--	--	--	<0.1	--	--	<0.02	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	-0.107	--	--	1.33	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	0.403	--	--	0.184	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	0.403	--	--	1.514	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	1.24	--	--	2.03	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	3	--	--	3	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	5.77	--	--	<5	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	0.418	--	--	0.364	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	0.106	--	--	0.114	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	12/12/2017	6/6/2018
Field Parameters														
Elevation	ft NGVD	--	--	369.38	369.28	368.85	368.52	367.76	366.84	367.86	368.72	367.13	366.24	369.54
pH	S.U.	--	5.99 - 9.07	6.6	7.54	7.59	7.5	7.32	7.6	8.86	7.23	7.53	8	7.77
Specific Conductance	µmhos/cm	--	--	387	450	454	501	410	540	344	398	402	390	400
Turbidity	NTU	--	--	2.5	0.91	0.78	0.46	1.03	2.6	0.71	2.28	3.31	6	2.1
Dissolved Oxygen	mg/L	--	--	2.3	4.37	5.67	4.46	6.66	4.2	3.36	32.59	4.01	6.2	3.36
Temperature	°C	--	--	16.4	17.49	18.53	18.78	15.15	14.9	16.27	18.01	16.21	14.9	16.2
ORP	mV	--	--	36	13.1	48.9	46.9	198.4	150	160.1	-167.7	76.7	56	43
Laboratory Parameters														
Antimony	µg/L	6	--	0.03	0.02	0.02	0.02	0.03	0.03	0.04	0.05	--	--	0.04
Arsenic	µg/L	10	--	0.53	0.47	0.46	0.43	0.47	0.49	0.47	0.42	--	--	0.45
Barium	µg/L	2000	--	18.5	19.6	19.4	19.1	19.3	21.9	17.7	21.9	--	--	18.5
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.004	<0.04	--	--	<0.004
Cadmium	µg/L	5	--	0.02	0.02	0.006	0.02	0.01	0.01	0.01	0.01	--	--	0.01
Chromium	µg/L	100	--	0.4	0.7	0.3	0.292	0.401	0.536	0.3	0.272	--	--	0.233
Cobalt	µg/L	6	--	0.104	0.033	0.03	0.023	0.022	0.053	0.027	0.006	--	--	0.02
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.27	0.35	--	0.52
Lead	µg/L	15	--	0.095	0.042	0.025	0.023	0.024	0.095	0.023	0.024	--	--	0.024
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	1.78	1.85	1.74	1.63	1.74	2	1.62	2.31	--	--	2.04
Selenium	µg/L	50	--	0.7	0.5	0.2	0.2	0.1	0.1	0.1	0.2	--	--	0.3
Thallium	µg/L	2	--	0.01	0.01	<0.01	<0.01	0.058	<0.01	<0.01	<0.01	--	--	<0.01
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	214	--	3.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	23.5	22.8	26.2	--	22.5
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	1	16.5	--	6.55
Boron	mg/L	--	0.046	0.002	0.011	0.007	0.015	0.002	0.018	0.033	0.034	0.027	--	0.039
Calcium	mg/L	--	(79.5) 62	55.1	52.8	52	60	54.4	59	56	55.9	59.8	--	52.8
Lithium	mg/L	0.04	--	0.003	0.013	0.003	0.009	0.007	0.002	0.005	<0.0002	--	--	0.005
Magnesium	mg/L	--	--	--	--	--	--	--	21.3	20.5	20.7	21.8	--	19.2
Manganese	mg/L	--	--	--	--	--	--	--	--	--	<0.0001	--	--	0.0008
Potassium	mg/L	--	--	--	--	--	--	--	0.6	0.69	0.57	0.61	--	0.58
Sodium	mg/L	--	--	--	--	--	--	--	18.9	16.6	20.6	19.3	--	15.5
Strontium	mg/L	--	--	--	--	--	--	--	0.0604	0.0601	0.58	0.061	--	0.0554
Alkalinity	mg/L	--	--	--	--	--	--	--	202	195	212	210	--	183
Bromide	mg/L	--	--	--	--	--	--	--	<0.02	0.03	0.061	<0.02	--	0.02
Chloride	mg/L	--	(29.6) 16	15	15.1	14.7	14.7	14.4	14.8	15.7	15.9	17.7	18	17.5
Fluoride	mg/L	4	0.689	0.61	0.064	0.62	0.63	0.54	0.58	0.6	0.54	0.6	0.6	0.66
TDS	mg/L	--	(412.7) 313	275	292	285	294	287	298	296	304	300	--	283
Sulfate	mg/L	23.5	23.6	21.2	21.1	17.4	14.9	15.9	16.5	17.6	18.8	20.1	21.1	18.7
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4
Radium-228	pCi/L	--	--	0.129	0.0598	0.213	0.14	1.71	-0.0315	0.0831	0.989	--	--	--
Radium-226	pCi/L	--	--	0.0309	0.513	0.239	0.344	0.357	0.0305	0.152	0.109	--	--	--
Radium-226/228	pCi/L	5	--	0.1599	0.5728	0.452	0.484	2.067	-0.001	0.2351	1.098	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.2	--	--	0.29
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	5.1	--	--	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	18.3	--	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.008	0.017	--	0.005
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0001	0.0001	0.0029	<0.0002	--	<0.0002

Table A-1
Summary of Analytical Data
 AEP Rockport Generating Station - CCR Landfill
 Rockport, Indiana

MW-21S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/14/2018	2/12/2019	4/1/2019	5/21/2019	11/14/2019	2/18/2020	5/19/2020	7/16/2020	11/11/2020	2/3/2021	5/28/2021	8/5/2021	11/11/2021	5/12/2022	11/2/2022
Field Parameters																		
Elevation	ft NGVD	--	--	368.42	370.37	371.3	371.43	370.65	369.05	369.92	400.27	370.10	367.97	369.07	369.07	368.47	369.54	369.12
pH	S.U.	--	5.99 - 9.07	7.34	7.74	7.8	7.59	7.54	7.53	8.11	7.93	7.59	7.68	10.28	7.5	7.83	7.62	7.19
Specific Conductance	µmhos/cm	--	--	380	318	404	424	530	856	347	416	499	529	450	519	585	545	500
Turbidity	NTU	--	--	1.67	2.8	2.45	0.29	2.8	8.71	0.65	0.46	1.9	1.3	0	5.95	0	0.5	0
Dissolved Oxygen	mg/L	--	--	9.55	7.1	3.89	5.26	7	6.64	5.6	7.8	6.95	6.5	5.78		5.6	0.65	3.87
Temperature	°C	--	--	14.14	15.2	14.3	15.98	15.5	11.8	12.23	15.6	15.76	13.4	17	16.49	14.7	19.14	17.95
ORP	mV	--	--	165.5	189	21.1	-194.8	121	132.4	136	141	148	178	86	111	178	43	120
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	--	--	<0.02	0.03	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.44	--	--	0.44	0.46	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	17.8	--	--	15.9	16.2	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	<0.02	<0.02	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.01	--	--	0.01	0.01	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.232	--	--	0.287	0.418	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.06	--	--	0.02	0.03	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.53	--	--	0.13	0.4	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.07	--	--	0.02	<0.05	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2	--	--	2	2	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.3	--	--	0.1	0.1	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	0.8	--	--	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	23.2	--	--	21.3	18.8	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	17	--	--	5.26	10	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.046	0.06	<0.02	--	<0.02	0.01	--	<0.02	--	<0.02	--	0.011	--	0.012	<0.009	0.013
Calcium	mg/L	--	(79.5) 62	55	--	--	52.5	50.4	--	49.1	--	50.9	--	62.6	--	57.1	55.6	54.9
Lithium	mg/L	0.04	--	0.03	--	--	<0.009	0.00321	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	19.6	--	--	17	17.3	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.0041	--	--	0.0009	0.002	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.88	--	--	0.55	0.3	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	17.1	--	--	13	15.3	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0553	--	--	0.0506	0.0508	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	193	--	--	167	171	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	<0.04	--	--	<0.04	<0.04	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 16	17.9	17.9	17.5	16	17.4	--	18	16.1	18.1	--	19.1	--	19.3	19.5	20.2
Fluoride	mg/L	4	0.689	0.66	--	--	0.65	0.73	0.79	0.76	0.77	0.83	0.85	0.81	0.78	0.74	0.67	0.77
TDS	mg/L	--	(412.7) 313	278	--	--	258	241	--	238	228	259	--	300	--	320	320	330
Sulfate	mg/L	23.5	23.6	17.0	--	--	14.1	15.8	--	15.1	--	16.4	--	18.4	--	20	23.1	23.6
Sulfide	mg/L	--	--	<0.07	--	--	<0.1	<0.2	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.0549	--	--	0.366	0.39	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0246	--	--	-0.0257	0.0413	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.0795	--	--	0.366	0.4313	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.13	--	--	0.27	<0.2	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	<0.7	--	--	<0.7	0.8	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2	--	--	5	<5	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.003	--	--	<0.003	<0.02	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	<0.0002	--	--	<0.0002	<0.0005	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	2/7/2023	5/24/2023	8/16/2023	11/2/2023
Field Parameters							
Elevation	ft NGVD	--	--	368.10	367.97	368.56	367.72
pH	S.U.	--	5.99 - 9.07	7.55	8.19	7.55	7.05
Specific Conductance	µmhos/cm	--	--	554	330	545	589
Turbidity	NTU	--	--	0.25	0	0.55	0.47
Dissolved Oxygen	mg/L	--	--	3.3	0	7.03	2.32
Temperature	°C	--	--	14.61	17.67	18.5	15.99
ORP	mV	--	--	199	95	107	108
Laboratory Parameters							
Antimony	µg/L	6	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--
Boron	mg/L	--	0.046	--	0.011	--	0.013
Calcium	mg/L	--	(79.5) 62	--	46.8	--	50.3
Lithium	mg/L	0.04	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 16	--	19.6	--	19.5
Fluoride	mg/L	4	0.689	--	0.69	--	0.68
TDS	mg/L	--	(412.7) 313	--	330	--	320
Sulfate	mg/L	23.5	23.6	23.6	26.4	26.8	23.5
Sulfide	mg/L	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
 AEP Rockport Generating Station - CCR Landfill
 Rockport, Indiana

MW-211

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	6/6/2018	11/13/2018	5/21/2019	11/14/2019	5/19/2020	11/11/2020
Field Parameters																		
Elevation	ft NGVD	--	--	369.3	369.19	368.77	368.43	367.68	367.8	368.03	368.24	367	369.44	368.39	371.41	370.62	369.92	370.10
pH	S.U.	--	6.63 - 8.69	7.99	7.56	7.56	7.3	7.35	7.5	8.56	7.44	7.44	7.54	7.69	7.31	7.48	7.38	7
Specific Conductance	µmhos/cm	--	--	548	500	488	432	397	520	361	422	399	430	402	403	526	386	518
Turbidity	NTU	--	--	0.73	0.65	1.04	0.97	2.82	2.5	1.34	1.02	3.21	1.71	1.18	0	4	1.08	3.55
Dissolved Oxygen	mg/L	--	--	0.5	1.63	1.49	1.88	1.53	0.3	0.55	0.76	0.2	0.17	0.22	0.36	0.4	2.47	0.02
Temperature	°C	--	--	16.88	17.39	16.17	16.95	13.68	15.1	16.39	17.11	15.47	15.55	14.87	16.34	15.6	14.95	15.73
ORP	mV	--	--	-9.2	-185.2	-16.7	105.2	21.1	-3	160.7	2.1	-10.3	-13.4	8.7	67.5	31	109	61
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	0.02	0.02	0.02	0.02	0.03	0.05	0.03	--	0.02	<0.02	<0.02	0.05	--	--
Arsenic	µg/L	10	--	1.55	1.67	1.55	1.41	1.39	1.08	1.19	1.38	--	0.98	1.63	0.65	1.12	--	--
Barium	µg/L	2000	--	127	136	121	126	126	123	116	123	--	121	120	106	110	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.01	<0.005	<0.004	<0.004	--	<0.004	<0.02	<0.02	<0.02	--	--
Cadmium	µg/L	5	--	0.02	0.02	0.02	0.04	0.02	0.01	0.01	0.01	--	0.03	0.01	0.07	--	--	
Chromium	µg/L	100	--	0.1	0.2	0.1	0.386	1.04	0.349	0.125	0.143	--	0.061	0.1	0.1	0.2	--	--
Cobalt	µg/L	6	--	0.514	0.558	0.422	0.524	0.437	0.437	0.412	0.517	--	0.398	0.685	0.275	0.664	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.07	0.09	0.11	0.51	0.77	0.3	--	--
Lead	µg/L	15	--	0.02	0.021	0.046	0.035	<0.004	0.01	0.022	0.033	--	0.026	0.181	0.02	0.08	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	<0.002	<0.002	--	--
Molybdenum	µg/L	100	--	4.92	5.25	4.46	4.4	4.63	4.31	4.06	4.18	--	4.69	5.13	5.01	4.85	--	--
Selenium	µg/L	50	--	<0.03	0.05	0.03	0.09	0.07	0.07	0.05	0.05	--	<0.03	<0.03	<0.03	0.1	--	--
Thallium	µg/L	2	--	0.03	0.03	0.02	0.02	0.04	0.02	0.03	0.03	--	0.03	<0.1	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	0.6	0.9	1	11.1	1	1	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.8	18.1	19.7	17.6	17.7	16.6	15.4	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	4.55	2.56	3.39	17.2	6.03	10	--	--
Boron	mg/L	--	0.092	0.007	0.012	0.011	0.012	<0.002	0.028	0.027	0.08	0.029	0.034	0.08	<0.02	0.01	<0.02	<0.02
Calcium	mg/L	--	(979.5) 73	69	64.7	65.1	68.4	59.5	66.5	62.9	60.1	63.9	66.5	61.5	62.4	56.5	58.5	58.6
Lithium	mg/L	0.04	--	<0.0002	0.019	0.004	0.006	0.005	0.007	0.008	0.004	--	0.007	<0.009	<0.009	0.00335	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	20.9	20.1	18.4	20	21.2	19.3	17.5	16.8	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.428	--	0.476	0.535	0.371	0.582	--	--
Potassium	mg/L	--	--	--	--	--	--	--	0.92	1.08	1.26	0.8	0.9	1.21	0.82	0.7	--	--
Sodium	mg/L	--	--	--	--	--	--	--	16	15.4	13	15	15.5	14.7	13.3	14.4	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0931	0.0922	0.0805	0.0889	0.096	0.0887	0.0829	0.0797	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	212	222	221	215	230	224	199	199	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.03	0.05	<0.02	0.04	0.04	<0.04	<0.04	<0.04	--	--
Chloride	mg/L	--	(79.5) 22	21.1	21.7	20.4	20	19.9	19.6	21	20.4	20.5	20.6	20.2	18.1	17.5	19.3	18.0
Fluoride	mg/L	4	0.38	0.33	0.36	0.34	0.34	0.3	0.32	0.34	0.3	0.31	0.38	0.36	0.36	0.38	0.35	0.45
TDS	mg/L	--	(412.7) 359	331	334	305	317	292	275	306	322	306	317	294	278	262	283	266
Sulfate	mg/L	--	50	46.2	47.9	43.2	40.4	41	39.6	42.4	43.6	45.7	44.6	43.4	36	35.5	38.8	36.4
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	<0.1	<0.2	--	--
Radium-228	pCi/L	--	--	0.126	0.036	0.676	0.0796	1.78	0.281	0.108	0.45	--	--	0.638	0.458	0.113	--	--
Radium-226	pCi/L	--	--	0.223	1.37	0.305	0.576	0.953	0.601	0.483	0.775	--	--	0.315	0.284	0.579	--	--
Radium-226/228	pCi/L	5	--	0.349	1.406	0.981	0.6556	2.733	0.882	0.591	1.225	--	--	0.953	0.742	0.692	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.09	--	0.11	0.23	0.21	<0.2	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.7	--	1	1	<0.7	1	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	<0.8	<1	4	<5	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.019	<0.0004	0.078	0.062	0.024	0.028	<0.003	<0.02	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.37	0.427	0.425	0.441	0.427	0.441	0.346	0.315	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-211

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	2/3/2021	5/27/2021	8/4/2021	11/11/2021	5/12/2022	11/3/2022	5/24/2023	11/2/2023
Field Parameters											
Elevation	ft NGVD	--	--	368.10	369.06	368.9	368.48	369.52	369.12	367.92	367.67
pH	S.U.	--	6.63 - 8.69	7.53	9.72	7.4	7.71	7.55	7.43	8.01	6.98
Specific Conductance	µmhos/cm	--	--	452	413	469	500	491	390	307	541
Turbidity	NTU	--	--	0.3	0	1.63	0	0.01	0.64	0	1.32
Dissolved Oxygen	mg/L	--	--	0.2	0		0	3	0	0	0
Temperature	°C	--	--	14.7	16.98	16.15	14.21	17.63	15.71	18.06	15.59
ORP	mV	--	--	75	-10	7	171	63	-31	16	-49
Laboratory Parameters											
Antimony	µg/L	6	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.092	--	0.011	--	0.011	<0.009	0.013	0.011	0.014
Calcium	mg/L	--	(979.5) 73	--	57.1	--	57.2	55.2	55.1	54.8	59.6
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	<0.02	--	--	--	--	--	--
Chloride	mg/L	--	(79.5) 22	--	17.9	--	18.2	19.1	19.7	21	20.2
Fluoride	mg/L	4	0.38	0.46	0.48	0.43	0.4	0.4	0.4	0.4	0.4
TDS	mg/L	--	(412.7) 359	--	290	--	280	280	280	300	290
Sulfate	mg/L	--	50	--	35.4	--	35.8	38.5	38	41.9	41
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	1/3-11/18	6/6/2018	11/13/2018	5/22/2019	11/14/2019	5/19/2020
Field Parameters																		
Elevation	ft NGVD	--	--	369.44	369.34	368.92	368.59	367.86	368.07	367.86	368.42	367.17	366.66	369.58	368.38	371.4	370.64	
pH	S.U.	--	6.71 - 8.73	8.14	7.76	7.69	7.47	7.19	7.6	7.44	8.48	7.48	7.03	7.65	7.66	7.47	7.41	7.55
Specific Conductance	µmhos/cm	--	--	591	544	478	585	441	60	493	531	449	564	470	451	511	670	449
Turbidity	NTU	--	--	2.82	0.48	1.93	0.33	3.09	1.9	1.42	0.55	1.01	1.11	2.43	1.87	0.87	11	1.18
Dissolved Oxygen	mg/L	--	--	0.53	0.17	0.49	0	1.82	0.2	0.22	0.47	0.31	18.7	0.18	0.33	1.88	0	0.66
Temperature	°C	--	--	15.24	16.81	15.93	15.25	12.99	15	16.7	17.58	16.26	14.93	15.45	14.15	15.44	16.2	14.87
ORP	mV	--	--	80.4	26.3	78.1	51.1	141.4	51	40	168.3	21.3	170.4	25.1	23.2	37.3	56	35
Laboratory Parameters																		
Antimony	µg/L	6	--	0.08	0.08	0.06	0.06	0.07	0.07	0.08	0.12	--	--	0.11	0.07	0.08	0.19	--
Arsenic	µg/L	10	--	1.07	1.06	0.95	0.86	0.99	0.92	0.97	1.04	--	--	0.84	0.89	1.04	1.08	--
Barium	µg/L	2000	--	241	240	226	206	220	220	216	226	--	--	218	201	202	203	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.01	<0.005	<0.004	<0.004	--	--	0.005	<0.02	<0.02	<0.02	--
Cadmium	µg/L	5	--	0.02	0.03	0.02	0.03	0.02	0.02	0.04	0.02	--	--	0.13	0.02	0.03	0.16	--
Chromium	µg/L	100	--	0.2	0.3	0.1	0.05	0.124	0.433	0.165	0.11	--	--	0.091	0.06	<0.04	0.759	--
Cobalt	µg/L	6	--	0.216	0.21	0.195	0.171	0.202	0.182	0.208	0.203	--	--	0.196	0.224	0.234	0.397	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.11	2.7	--	1.16	0.16	0.16	1.02	--
Lead	µg/L	15	--	0.107	0.075	0.066	0.056	0.091	0.092	0.118	0.089	--	--	0.229	0.1	0.09	0.776	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002	<0.002	--
Molybdenum	µg/L	100	--	6.31	6.66	6.13	5.33	6.09	5.68	5.07	5.29	--	--	5.17	4.76	5.37	5.29	--
Selenium	µg/L	50	--	0.2	0.2	0.3	0.3	0.2	0.5	0.6	0.5	--	--	0.2	0.05	0.04	0.08	--
Thallium	µg/L	2	--	0.03	0.02	0.03	0.02	0.04	0.02	0.02	0.03	--	--	0.03	<0.1	<0.1	0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	187	--	6.5	1	1	4	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.6	19.6	--	17.6	17	16.9	16	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	6.79	14.1	--	17.2	9.86	5	65.5	--
Boron	mg/L	--	0.071	0.022	0.015	0.015	0.013	0.004	0.024	0.107	0.015	0.092	0.088	0.03	0.04	<0.02	0.01	0.02
Calcium	mg/L	--	(79.5) 83	74.2	60.6	70.4	74.7	67.3	76.2	71.5	70.9	67.8	--	70.7	62.1	69.3	69.4	69.2
Lithium	mg/L	0.04	--	0.002	0.025	0.005	0.007	0.009	0.005	0.013	0.0005	--	--	0.006	0.01	<0.009	0.0044	--
Magnesium	mg/L	--	--	--	--	--	--	--	25	24.3	23.9	22.7	--	23.6	21.3	23.1	22.3	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.592	--	--	0.596	0.634	0.717	0.803	--
Potassium	mg/L	--	--	--	--	--	--	--	2.11	2.41	2.44	3.91	--	1.97	3.95	2.81	3.49	--
Sodium	mg/L	--	--	--	--	--	--	--	18.1	17.2	19.7	20.8	--	15.7	17.7	15.1	17.2	--
Strontium	mg/L	--	--	--	--	--	--	--	0.144	0.142	0.144	0.168	--	0.147	0.191	0.189	0.21	--
Alkalinity	mg/L	--	--	--	--	--	--	--	247	271	277	262	--	268	268	286	266	--
Bromide	mg/L	--	--	--	--	--	--	--	<0.05	0.08	0.07	<0.05	--	0.05	0.05	0.04	0.05	--
Chloride	mg/L	--	(29.6) 20	19.2	19.6	18.9	19.1	19.4	18.9	19.9	19.5	18.5	--	19.9	18.8	19.1	19.2	19.9
Fluoride	mg/L	4	0.407	0.36	0.38	0.36	0.33	0.36	0.33	0.35	0.3	0.32	--	0.4	0.34	0.36	0.32	0.26
TDS	mg/L	--	(412.7) 365	328	299	315	346	332	304	339	332	339	--	347	314	348	323	328
Sulfate	mg/L	--	43.22	39.2	41	35.5	32	34.4	35.1	37.1	36.5	37.4	--	38.4	35.2	36.8	38.6	33.3
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1	<0.2	--
Radium-228	pCi/L	--	--	0.441	0.77	0.604	0.688	0.722	0.518	0.0415	0.501	--	--	--	1.47	0.59	0.525	--
Radium-226	pCi/L	--	--	0.126	0.658	0.23	0.39	0.422	0.42	0.408	0.355	--	--	--	0.469	0.669	0.403	--
Radium-226/228	pCi/L	5	--	0.567	1.428	0.834	1.078	1.144	0.938	0.4495	0.856	--	--	--	1.939	1.259	0.928	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.39	--	--	0.08	1.33	0.85	<0.2	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.4	--	--	0.7	3	3	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.16	--	--	2	1	2	<5	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.016	--	<0.002	0.007	0.005	<0.02	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.616	0.625	0.62	0.646	--	0.567	0.657	0.684	0.611	--



Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/11/2020	5/27/2021	11/11/2021	5/12/2022	7/20/2022	11/2/2023	5/24/2023	8/16/2023	11/2/2023	12/20/2023
Field Parameters													
Elevation	ft NGVD	--	--	370.09	369.05	368.46	369.4	370.04	369.07	367.92	368.52	367.68	367.00
pH	S.U.	--	6.71 - 8.73	6.99	9.68	7.82	7.63	7.49	6.75	8.19	7.52	7.07	8.89
Specific Conductance	µmhos/cm	--	--	599	538	555	593	604	0	353	596	632	658
Turbidity	NTU	--	--	1.65	0	0	0.88	3.06	0	0	0.2	1.08	1.75
Dissolved Oxygen	mg/L	--	--	0.36	0	6.48	0.2	0.06	9.78	0	0.25	0	1.46
Temperature	°C	--	--	15.31	19.48	13.77	18.33	17.48	20.24	17.65	16.49	15.39	17.15
ORP	mV	--	--	120	-6	176	56	16	157	102	55	20	87
Laboratory Parameters													
Antimony	µg/L	6	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.071	<0.02	0.014	0.014	<0.009	--	0.013	0.012	--	0.014	--
Calcium	mg/L	--	(79.5) 83	70.9	69.8	69.7	72.1	--	67.8	61.3	--	68.5	--
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.04	--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 20	19.5	19.8	19.5	21	19.9	20.5	22.9	21.6	21.2	21.2
Fluoride	mg/L	4	0.407	0.38	0.4	0.38	0.38	--	0.4	0.38	--	0.37	--
TDS	mg/L	--	(412.7) 365	318	330	330	330	--	340	360	--	330	--
Sulfate	mg/L	--	43.22	37.1	36.4	34.2	40	--	37.4	39.1	--	36.9	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

Abbreviations and Notes:

GWPS - Groundwater Protection Standard

MCL - USEPA Maximum Contaminant Levels

RSL - USEPA Generic Tables for Residential Tapwater, May 2018, TR=1E-06, THQ=1.0

Field Parameter Units

ft NGVD - Feet, National Geodetic Vertical Datum of 1929 (also known as mean sea level (MSL))

°C - degrees Celcius

S.U. - Standard Units

µmhos/cm - micromhos per centimeter

mg/L - milligrams per liter

ORP - milliVolts (mV)

NTU - Nephelometric Turbidity Units

Laboratory Parameter Units

pCi/L picoCuries per Liter

Table A-2
Summary of Leachate Pond Data
 AEP Rockport Generating Station - Restricted Waste Landfill
 Rockport, Indiana

Source: American Electric Power

		Landfill Leachate Data									
Parameter	Unit	West Pond						North Pond			
		09/29/17	10/31/18	11/26/18	12/18/18	01/08/19	03/20/19	11/26/18	12/18/18	01/08/19	03/20/19
Boron	mg/L	11.44	12.2	10.6	11	11.4	11.5	9.18	12.3	10.6	9.23
Calcium	mg/L	-	284	214	166	240	231	277	277	368	283
Chloride	mg/L	-	1,190	1,180	937	1,250	1,170	982	847	993	854
Fluoride	mg/L	-	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50
Specific Conductivity	umhos/cm	-	48,510	50,655	36,465	48,840	50,985	42,240	40,095	46,860	38,940
Sulfate	mg/L	-	18,900	18,100	14,100	18,100	19,000	16,600	14,400	17,400	14,800
Total Dissolved Solids	mg/L	-	29,400	30,700	22,100	29,600	30,900	25,600	24,300	28,400	23,600

Notes & Abbreviations:

mg/L: milligrams per liter

umhos/cm - micromhos per centimeter

-: Not sampled

< less than

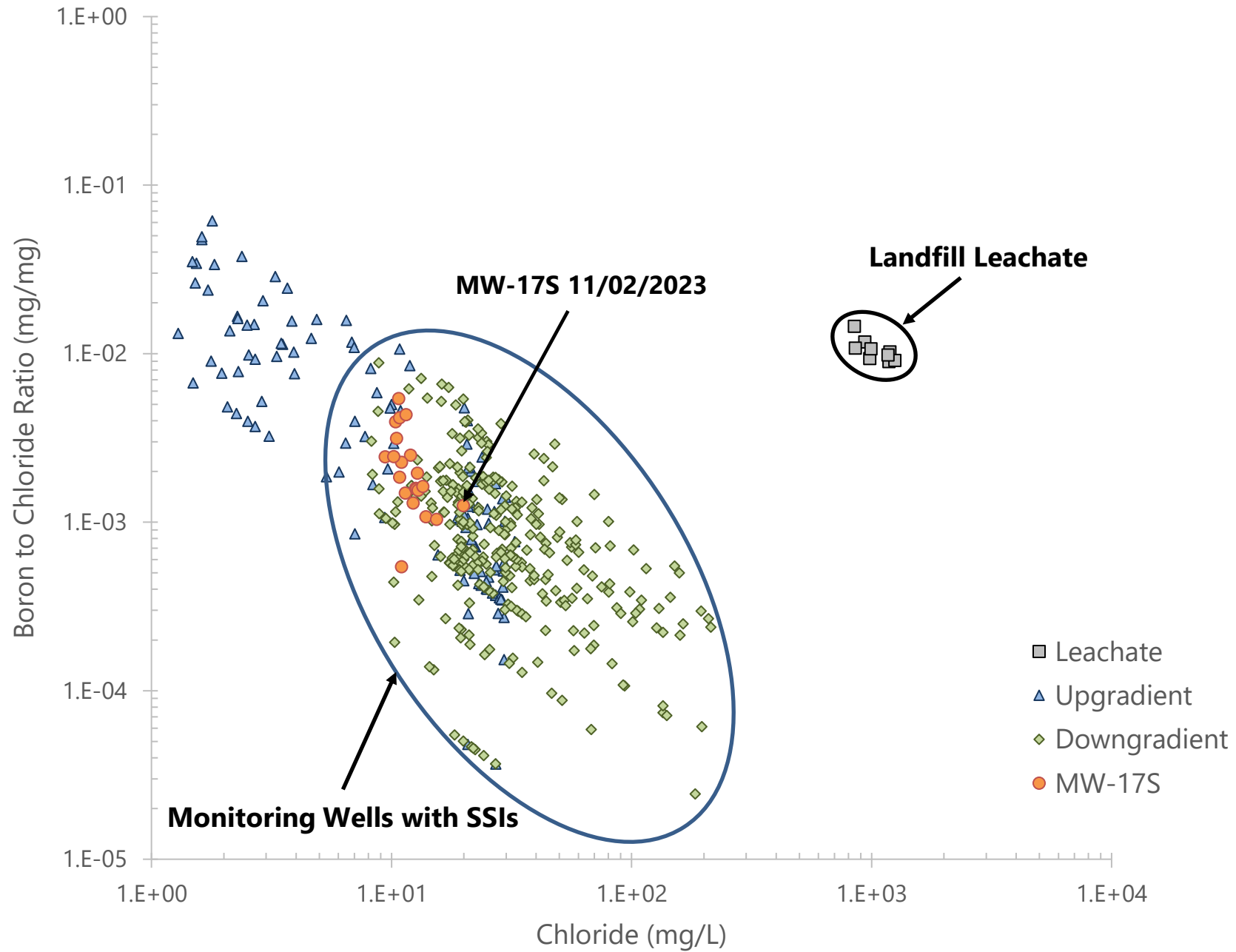
Table A-3
Summary of Isotope Data
AEP Rockport Generating Station - Restricted Waste Landfill
Rockport, Indiana

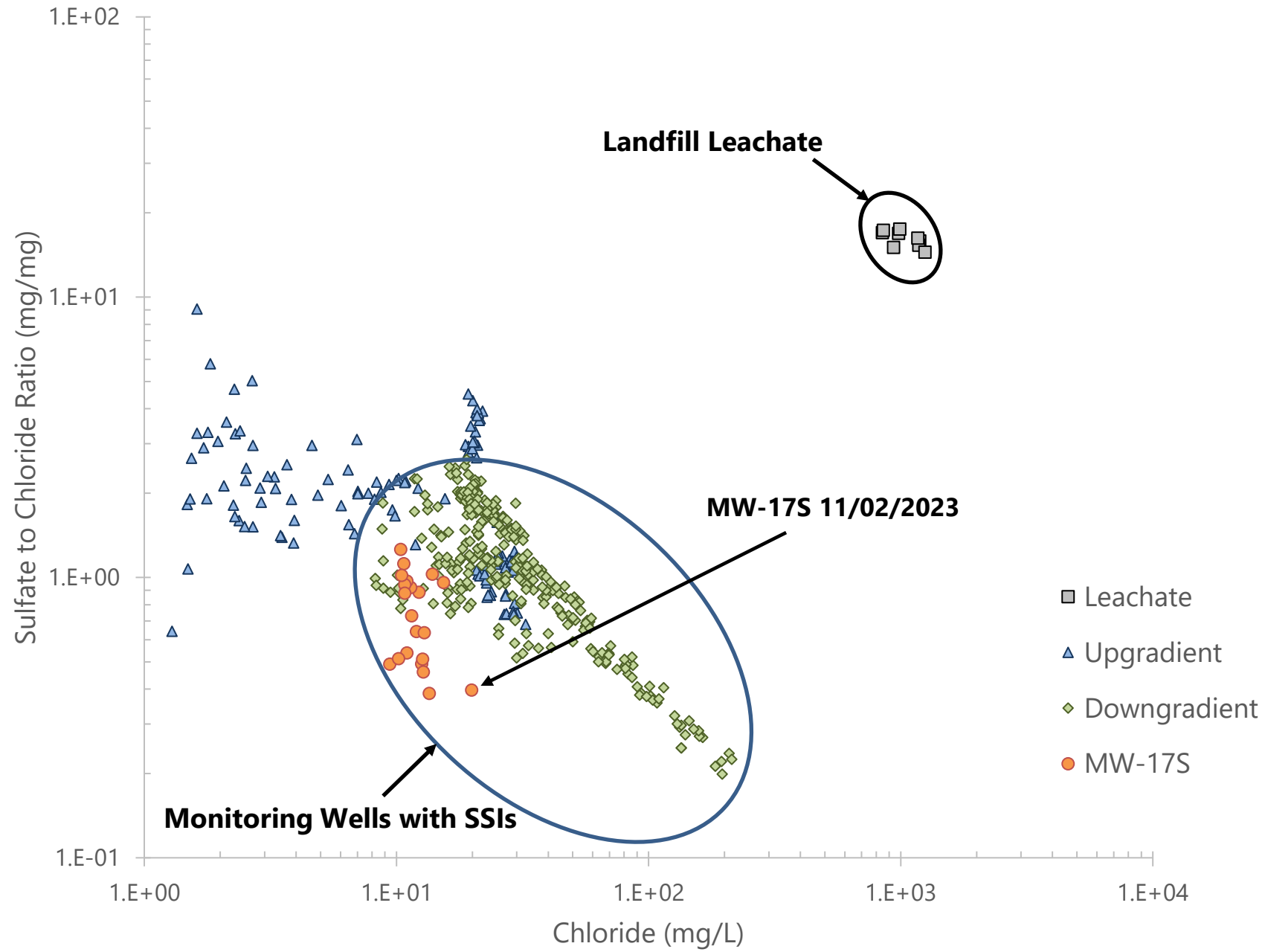
Sample Identifier	B (mg/L)	$\delta^{11}\text{B}$	Sr (mg/L)	$^{87}\text{Sr}/^{86}\text{Sr}$
Landfill Leachate Pond North	2.7	-0.93	1.80	0.711955
Landfill Leachate Pond West	11.4	-1.64	2.86	0.711919
MW-17I	0.058	26.86	0.093	0.710547
MW-8I	0.037	23.51	0.140	0.709697
MW-8S	0.020	16.33	0.048	0.709272
MW-11S	0.060	24.01	0.052	0.709447
MW-14S	0.017	17.78	0.094	0.710566
MW-15I	0.042	35.32	0.082	0.710333
MW-21S	0.016	20.66	0.055	0.710142

Note: Monitoring well boron concentrations are averages of first eight rounds of sampling.

APPENDIX B

Full Size Geochemical Exhibits







Alternative Source Demonstration for Appendix III Constituents, CCR Landfill

American Electric Power Service Corporation
Rockport Generating Station, Rockport, Spencer County, Indiana
WSP USA Project # 7650202784



Prepared for:

American Electric Power Service Corporation

1 Riverside Plaza, Columbus, Ohio 43215

18 October 2024



18 October 2024

Mr. David Miller
Director, Land Environment & Remediation Services
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Email: damiller@aep.com

WSP USA Environment & Infrastructure Inc.
2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922
T: (865) 671-6774
www.wsp.com

Dear Mr. Miller:

WSP USA Environment & Infrastructure Inc. (WSP), has prepared this Alternative Source Demonstration (ASD) for the coal combustion residuals (CCR) Landfill located at the American Electric Power (AEP) Rockport Plant in Rockport, Spencer County, Indiana. As detailed in this report, the results of this ASD conclude that statistically significant increases (SSIs) identified in initial May 2024 samples and July 2024 verification samples from the waste boundary monitoring wells are not caused by releases from the CCR Landfill. We are available to discuss the details of this report at your convenience should you require additional information.

We very much appreciate working with AEP on this project. If you require additional information about this report, please feel free to contact Thomas Hensel at (865) 671-6774 or Konrad Quast at (865) 227-1994.

Sincerely,

WSP USA Environment & Infrastructure Inc.

A black ink signature of Konrad W. Quast, appearing as a stylized, cursive 'K' followed by a horizontal line.

Konrad W. Quast, PhD
Senior Hydrogeologist

A blue ink signature of Thomas W. Hensel, written in a cursive style.

Thomas W. Hensel, PG
Lead Consultant, Geologist, PM

Attachments

cc: Benjamin E. Kepchar, PE, American Electric Power Service Corporation



Alternative Source Demonstration for Appendix III Constituents, CCR Landfill

American Electric Power Service Corporation
Rockport Generating Station, Rockport, Spencer County, Indiana
WSP USA Project # 7650202784

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18 October 2024

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APPENDICES

Appendix A	Analytical Data Tables
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Executive Summary

American Electric Power (AEP) operates two units at the Rockport Plant for management of coal combustion residuals (CCR): the bottom ash ponds (BAP), and the CCR Landfill. Both are regulated under the federal CCR Rule (40 CFR Part 257) that became effective in October 2015 and modified in July 2018.

The CCR Landfill has been in the detection phase of groundwater monitoring as part of its compliance with the rule. Semi-annual groundwater samples were collected in May 2024 with verification samples collected in July 2024 for wells that exhibited statistically significant increases (SSIs) above background. The most recent statistical analysis of Appendix III constituents identified SSIs above background for chloride at waste boundary monitoring well MW-2D and chloride and calcium for MW-17S.

This alternative source demonstration (ASD) evaluates the occurrence of SSIs in terms of site geochemistry, hydrogeologic setting, and with respect to supplementary data collected to support the evaluation. Based on the analysis presented in this ASD and previous ASD reports, CCR Landfill leachate can be excluded as a source of Appendix III SSIs for the following reasons:

- Increased concentrations of chloride can be attributed to alternate sources including identified historical oil and gas operations and the use of unlined brine pits, and the infiltration of evaporated precipitation from the adjacent stormwater ponds.
- Boron occurs naturally at low concentration in site groundwater, in similar concentrations in background and downgradient wells. Boron occurs at concentrations approximately three orders-of-magnitude greater in the CCR Landfill leachate as compared to site groundwater, and is a conservative ion, making it an excellent indicator for impacts from landfill leachate in groundwater. If landfill leachate were impacting groundwater, boron would be expected to be detected in multiple waste boundary wells and at statistically significant concentrations above background; no SSIs for boron have ever been detected at the site. Furthermore, the boron that is present in site wells has been shown to be isotopically different than the leachate and no increasing trends are identified.
- Sulfate is another common indicator for CCR leachate impacts and occurs naturally in site groundwater (at similar concentration ranges in background and downgradient wells) and is elevated in the CCR Landfill leachate at concentrations approximately three orders-of-magnitude above background monitoring wells. No SSIs for sulfate have been detected at the site until recently (Spring 2023) for a single well and sampling event that has not reoccurred. No SSIs for sulfate were identified in site groundwater monitoring wells during this current detection sampling event.
- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations approximately two orders-of-magnitude above groundwater concentrations. Spatial trends can be observed in **Exhibits 3-4** and **3-5** in Section 3.0 and indicate that chloride concentrations tend to increase in groundwater downgradient from recharge areas including the stormwater ponds north and east of the landfill. May 2024 data and July 2024 verification data indicated groundwater concentrations of chloride over background in two wells (MW-2D and MW-17S). However, because the chloride SSI is not associated with an SSI for boron and sulfate, with no indication of increasing trends with respect to boron or sulfate at the same well location, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.

- The same conclusion can be drawn regarding calcium, total dissolved solids (TDS), and fluoride as for chloride, where an occasional SSI for these parameters is not consistently associated with an SSI for boron or sulfate, nor associated with an increasing trend with respect to boron or sulfate. No SSIs for TDS nor fluoride were identified in site groundwater monitoring wells during this current detection monitoring event.
- The concentration of calcium in the May 2024 MW-17S groundwater sample, 44.3 milligrams per liter (mg/L), is also less than the maximum observed in groundwater from upgradient background wells, 82 mg/L, supporting that the observed SSI is within the range of natural variation for the Site.
- Ion ratio cross plots of indicator constituents; boron, chloride, and sulfate, show distinct and separate groupings for waste boundary and background groundwater and leachate samples. Background and waste boundary groundwater plots along a trend line associated with variability across the site while leachate plots in a distinct separate grouping away from the groundwater trend. The ground water trends over time for wells with SSIs show the water quality moving away from the leachate grouping indicating that the leachate is not impacting downgradient groundwater.
- The conclusions listed above are also supported by the analytical results for isotope ratios of boron and strontium in leachate and groundwater samples from a previous sampling event. While only a single set of leachate samples to date have been collected, the indication in downgradient wells, including wells that have shown SSIs, is that the leachate is distinctly different from that of background and downgradient groundwater, and does not support a release from the landfill to groundwater.

1.0 OBJECTIVE

American Electric Power (AEP) operates a coal combustion residual (CCR) Landfill that is used for the management of CCR materials. The landfill is regulated under the federal CCR Rule (40 CFR Part 257) that became effective in October 2015. During the initial phase of groundwater monitoring (detection monitoring), the CCR Rule requires the owners or operators of regulated units to collect at least eight independent samples from at least one background location and at least three waste boundary wells, analyzed for constituents listed in Appendix III and Appendix IV of the CCR rule. That sampling was completed in July 2017.

Historically, the Upper Prediction Limit (UPL) for each constituent was established for site monitoring wells. The results of the detection monitoring event were compared to the UPL; if these results exceed the UPL, a verification sampling event is conducted. If the UPL is exceeded in both events, it is assumed that a statistically significant increase (SSI) is confirmed for the constituent.

Twelve detection monitoring events have been conducted at the landfill. Each round consists of an initial sampling event, followed by one or two rounds of verification samples based on the results of the initial event. Following completion of the verification sampling for each event, a statistical analysis is conducted to assess whether SSIs above background are detected in the waste boundary monitoring wells for Appendix III constituents. For each semi-annual sampling event where SSIs are detected, an alternative source demonstration (ASD) has been performed to assess whether these SSIs were the result of a release of leachate from the CCR landfill.

Previous ASDs performed by Geosyntec and WSP USA Environment & Infrastructure Inc. (WSP) have indicated that the source of previously identified SSIs, result from natural variation in groundwater quality or potential impacts from historical oil and gas operations. The previous ASD was completed by WSP in June 2024 for the detection monitoring event of November 2023, with verification samples taken in December 2023 (WSP, 2023).

The first semi-annual detection monitoring samples for 2024 were taken in May 2024, with verification samples taken in July 2024. A statistical evaluation of monitoring results identified an SSI for an Appendix III constituents; chloride at MW-2D, and calcium and chloride at MW-17S. The objective of this ASD is to review these results, and to assess whether the findings of the previous ASDs remain valid; that is, that the SSI detected in the waste boundary wells, from detection monitoring samples collected in May 2024 and verified in July 2024 samples, is not the result of a release from the landfill.

1.1 Scope

As stated in 40 CFR 257.94(e)(2), the CCR Rule allows 90 days after the initial identification of Appendix III SSIs for the owner or operator to demonstrate that a source other than the regulated unit is responsible for identified SSIs. The regulations allow the ASD to address several potential causes of SSIs other than a release from the regulated unit, including error[s] in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

The scope of this ASD is focused on evaluating the first 2024 semi-annual detection monitoring results (including verification samples) and assessing whether the current data are consistent with the assessment conducted in the most recent ASD report (WSP, 2024). The ASD is undertaken to assess, through multiple lines of evidence, whether an alternative source for the SSIs can be supported, following the guidelines published in October 2017 by the Electric Research Power Institute (EPRI, *Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites*). This report does not include evaluations of potential errors in sampling and analysis, or the statistical approaches which were used to identify the SSIs.

1.2 Approach

The ASD presented in this document is based on a geochemical and hydrologic evaluation of groundwater quality at the CCR Landfill. The purpose of this ASD is to evaluate the identified SSIs within the larger geochemical context of the CCR Landfill groundwater flow system, to assess the likelihood that these SSIs are the result of releases from the CCR Landfill. In addition to the groundwater analytical data collected for compliance with the CCR rule, used to support the statistical evaluation, WSP relied on supplemental analytical data, including previous analyses of the CCR Landfill leachate and monitoring well groundwater analyses of the isotopes of boron and strontium.

1.3 Report Organization

This ASD has been prepared following the *Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites* (EPRI, 2017) to the extent applicable. A summary of the CCR Landfill setting, and of the results from the statistical evaluation of the Appendix III detection monitoring parameters are presented in **Section 2**. The primary and secondary lines of evidence developed from a geochemical evaluation of the site are presented in **Section 3**. The technical findings of the ASD and certification by an Indiana-licensed Professional Engineer (PE) are presented in **Section 4**. References are included in **Section 5**.

2.0 BACKGROUND

2.1 Site Description

The Rockport Generating Station is in southwest Indiana in Spencer County, on property extending into three Townships: Ohio, Hammond, and Grass (**Figure 1**). Two CCR-regulated units are located on the property, two adjacent bottom ash ponds (BAP) and the CCR Landfill. The general layout of the property and the locations of the CCR units are shown on **Figure 2**. The CCR Landfill, or Landfill, is located about 8,000 feet (1.5 miles) northeast of the generating plant. The general layout of the CCR Landfill and the monitoring well locations are shown in **Figure 3**.

2.1.1 Landfill Operation

The CCR Landfill is an active disposal unit that primarily contains fly ash, with materials generated by the emission control systems added beginning in 2007. These materials include sodium sulfate generated by the removal of sulfur dioxide by the dry sorbent injection (DSI) system, and granular brominated activated carbon used for mercury removal. To a lesser extent, some bottom ash has also been placed within the CCR Landfill. The active portion of the CCR Landfill directly adjoins a closed portion of the landfill to the northeast (**Figure 3**).

The CCR Landfill is currently permitted by the Indiana Department of Environmental Management (IDEM) Office of Land Quality, Solid Waste Permits Section, as a Restricted Waste Site (RWS) under Indiana Administrative Code (IAC) 329 Title 10 (Solid Waste CCR Landfill Disposal Facilities) Rule 9-4. The active CCR Landfill is permitted as a RWS Type I, which requires a liner and leachate collection system. The permit was most recently renewed on August 25, 2020.

Leachate from the CCR Landfill cells is collected in lined ponds located north and west of the active CCR Landfill area. These ponds also collect stormwater runoff from the CCR Landfill area. Prior to discharge, the leachate commingled with runoff is transferred to the Leachate Treatment Pond (north of the West Leachate Pond). Effluent from the Leachate Treatment Pond is discharged and monitored under National Pollution Discharge Elimination System (NPDES) Permit No. IN0051845 at Station 002.

2.1.2 Groundwater Flow

The principal groundwater flow zone underlying the CCR Landfill consists of the saturated section of the unconsolidated glaciofluvial sand and sand and gravel valley train sediments that fill the Ohio River valley in this area. The depth to water in this zone typically ranges from 20 to 35 feet (ft) below ground surface (BGS), and the saturated thickness (which generally increases to the southeast) ranges from less than 15 ft to more than 80 ft. Generalized cross-sections are presented in **Figure 4**.

Groundwater primarily occurs under unconfined conditions, or semi-confined conditions where the saturated zone is directly overlain by surficial silt and clay. Piezometric data collected from clustered monitoring wells indicate that vertical gradients within the saturated zone are minor, and groundwater flow is primarily horizontal. Groundwater flows into the plant and landfill areas from the north, northwest and/or west, and continues flowing under the property generally to the south and east, towards Honey Creek and/or the Ohio River. A potentiometric surface map from May 13, 2024 is presented on **Figure 5** and is consistent with historic data.

2.1.3 Existing Groundwater Monitoring System

In 2015, when the CCR Rule took effect, a monitoring well network was already present at the CCR Landfill for groundwater monitoring under an IDEM permit. While the valley train sediments are considered a single well-connected aquifer system, the saturated thickness of the sediments allowed for wells at the CCR Landfill to be installed in clusters, to monitor up to three levels (shallow – “S”, intermediate – “I”, and deep – “D”) within the principal flow zone. However, the valley train sediments that make up the flow zone thin to the north, leaving less saturated overburden upgradient of the CCR Landfill. As a result, only one or two levels could be monitored in some locations.

The official CCR groundwater monitoring network for the CCR Landfill includes five background or cross-gradient wells (MW-6S, MW-8S/I, MW-11S and MW-14S) and 16 waste boundary wells (MW-1S/I/D, MW-2S/I/D, MW-15S/I, MW-16S/I/D, MW-17S/I and MW-21S/I/D). At most locations, the saturated overburden was thick enough to allow installation of screens at three different levels, with the deepest wells being completed just above bedrock at depths of 88 to 100 ft BGS. Two clusters, MW-15 and MW-17 are located just east of the CCR Landfill in an area of relatively shallow bedrock. Therefore, the deeper wells at these locations (designated “I”) have completed depths just above bedrock at 66 to 67 ft BGS. A comprehensive summary of analytical data for the groundwater monitoring network since June 2016 is presented in **Table A-1** in **Appendix A**.

2.2 Summary of Previous SSIs and ASDs

Eight baseline monitoring events and one initial detection monitoring event for the CCR Landfill were completed prior to October 17, 2017. On behalf of AEP, Geosyntec submitted these results to Groundwater Stats Consulting, LLC for statistical analysis. Oversight on the use of statistical calculations was provided by Dr. Kirk Cameron of MacStat Consulting, Ltd. According to the report (*Statistical Analysis Summary, Landfill*, Geosyntec 2018), the initial eight baseline data events were used to calculate the UPLs for each of the Appendix III constituents to represent background values. Results from each detection monitoring event conducted to date have been compared to the UPLs established from the eight baseline events to identify SSIs compared to background.

Following completion of the first detection monitoring event, the initial statistical evaluation identified 13 SSIs for calcium (2), chloride (7), fluoride (1) and TDS (3). On January 4, 2019, Geosyntec prepared an ASD focusing on statistical methods. Geosyntec evaluated the new data and based on multiple lines of evidence, revised the statistical approach for some monitoring

wells. Initially, the statistical evaluation included a mixture of interwell (between wells) and intrawell (within one well) techniques. The interwell analysis compares data from waste boundary wells against a background data set composed of results from upgradient and cross-gradient well data. The intrawell approach compares each waste boundary well against a background composed of its own historical data and is used to detect statistically significant increases within samples from an individual well over time (Horsey, HR et. al., 2001). Spatial and temporal variability observed in samples from the background monitoring wells caused Geosyntec to select an intrawell approach for all Appendix III constituents in all waste boundary monitoring wells.

After using an intrawell approach, the number of SSIs was reduced to eight, distributed among seven waste boundary wells. In January 2019 Geosyntec published an ASD to document changes to the statistical methodologies and attributed the observed SSIs to impacts from historic oil and gas operations (Geosyntec, 2019). Since the statistical methods were revised, results from all subsequent detection monitoring events have been analyzed following the same approach. The most recent statistical analysis completed on September 20, 2024, identified three SSIs, chloride, at monitoring wells MW-2D and MW-17S, and calcium at MW-17S, which was confirmed with verification sampling (Geosyntec, 2024).

- **Monitoring Well MW-17S:**

- **Calcium:** The UPL for calcium is 39.8 mg/L and the May 2024 result was 44.3 mg/L. The verification result from July 2024 was 42.8 mg/L.
- **Chloride:** The UPL for chloride is 15.4 milligrams per liter (mg/L) and the May 2024 result was 18.7 mg/L. The verification result from July 2024 was 19.6 mg/L.

- **Monitoring Well MW-2D:**

- **Chloride:** The UPL for chloride is 132 milligrams per liter (mg/L) and the May 2024 result was 194 mg/L. The verification result from July 2024 was 175 mg/L.

A summary of historic SSIs identified in each of the detection monitoring events is presented below, in **Exhibit 2-1**.

Exhibit 2-1. Monitoring Wells and Appendix III Parameters with SSIs

Parameter	Monitoring Well (MW-)													
	1S	1I	1D	2S	2I	2D	15I	16S	16D	17S	17I	21S	21I	21D
Calcium		★				◆			◆◆ ◆●	Ω				
Chloride	◆◆	◆◆ ◆◆ ●■ ΘΔ		◆◆ ◆	■Θ Δ	◆◆ ◆◆ ◆◆ ●■ ΘΩ		◆	◆◆ ◆◆ ◆◆ ●	∞ Ω		◆		Δ
Fluoride				●Θ Δ◆			●				◆◆ ◆	◆◆ ◆●	◆●	
Sulfate												ΘΔ		

Parameter	Monitoring Well (MW-)													
	1S	1I	1D	2S	2I	2D	15I	16S	16D	17S	17I	21S	21I	21D
TDS	◆●	▲	●			◆◆ ■⊖ ▲		◆	◆◆ ◆◆ ◆◆ ●					

- ◆ 2018-2020 SSI, after verification
- May 2021 SSI, after verification
- ★ November 2021 SSI, after verification
- May 2022 SSI, after verification
- ⊖ November 2022 SSI, after verification
- ▲ May 2023 SSI, after verification
- ∞ November 2023 SSI, after verification
- Ω May 2024 SSI, after verification

As shown in **Exhibit 2-1**, SSIs were identified in two downgradient monitoring wells; MW-2D (chloride) and MW-17S (calcium and chloride). WSP has reviewed its second 2023 semi-annual ASD report (WSP, 2024) with respect to the statistical evaluation of the first 2024 semi-annual sampling event. The evaluation presented in the June 2024 ASD report remains valid. WSP has updated the geochemical analysis that forms the basis of the ASD and has included updated graphics to support the findings in this current ASD report.

3.0 ALTERNATIVE SOURCE DEMONSTRATION

The ASD presented below relies on multiple lines of evidence that the SSIs identified in the statistical analysis are not caused by releases of landfill leachate into the groundwater flow system. When taken as a whole, these lines of evidence present a compelling case that the SSIs are not a result of a release from the landfill, but a result of natural variation in groundwater quality, a result of historical oil and gas operations, and/or from the influence of stormwater ponds on groundwater quality. This ASD follows the approach of WSP's June 2024 report, updated with data collected from the first 2024 semi-annual sampling event (May 2024).

To assess the potential of a release from the CCR Landfill to groundwater, WSP evaluated groundwater quality data, including isotopes, in the context of the geochemical characteristics of CCR Landfill leachate. The results of this evaluation do not indicate that CCR Landfill leachate at the Rockport landfill is a source of SSIs identified in waste boundary monitoring wells, through primary and supporting lines of evidence, each of which are described in more detail within this section.

Primary lines of evidence focus on the relationship between source material that could be released into the subsurface (in this case, landfill leachate) and the type and distribution of the SSIs identified in groundwater. The lines of evidence supporting the conclusion of this ASD can be summarized as follows:

- SSIs are not identified for the site-specific primary indicator constituents of the Rockport CCR Landfill leachate.
- Geochemical evaluations of the CCR Landfill support that leachate has not affected water quality.
 - Conservative ion ratios and major ion chemistry do not indicate a release from the CCR Landfill.
 - Isotopes of boron and strontium do not indicate a release from the CCR Landfill.

Each of these lines of evidence are described in detail below.

3.1 SSI(s) Are Not Identified for Primary Indicator Constituents

The primary indicators for CCR leachate typically have much higher concentrations in leachate than in natural groundwater. They are mobile and relatively non-reactive in groundwater, so that groundwater impacted by a CCR leachate release should have elevated concentrations of the indicator constituents relative to background and with relatively similar contributions. The elevated concentrations would be expected to result in SSIs identified by statistical evaluation of the data from the downgradient waste boundary wells, and the SSIs would be expected to be generally consistent between downgradient wells. The primary lines of evidence presented below compare the occurrence of SSIs in groundwater to the composition of landfill leachate.

3.1.1 Site-Specific Leachate Analysis for Primary Indicator Constituents

The composition of landfill leachate is governed by the types of materials placed in the unit and identifying the leachate's primary constituents is key to assessing a potential release to groundwater. Since all Appendix III constituents are naturally occurring, the best indicators of CCR impacts are those constituents that are found at concentrations much higher in the source material than are seen in natural groundwater. AEP conducted sampling of its leachate collection system to identify relative concentrations of Appendix III and IV constituents in the Rockport CCR Landfill leachate.

The leachate collection system for the Landfill discharges into the North and West Leachate Collection Ponds, shown on **Figure 3**, which then discharge to the Leachate Treatment Pond, directly north of the West Leachate Pond. Five samples were collected from both the West and North Leachate Collection Ponds between October 31, 2018 and March 20, 2019 and results are detailed on **Table A-2** in **Appendix A**. A summary of the range of Appendix III constituent results for leachate pond samples, compared to background and waste boundary well samples, is provided below in **Exhibit 3-1**.

Exhibit 3-1. Summary of Landfill Leachate Pond and Groundwater Concentrations for Appendix III Constituents

Parameter (Units in mg/L, except pH)	Range for Leachate Ponds		Range for Upgradient (Background) Wells		Range for Downgradient Waste Boundary Wells	
	Min	Max	Min	Max	Min	Max
Boron	9.18	12.3	<0.002	0.115	<0.002	0.139
Calcium	166	368	35.6	82.0	28.7	122
Chloride	847	1,250	1.29	32.6	8.25	214
Fluoride	<1.50	<1.50	0.25	1.21	0.064	1.16
Sulfate	14,100	19,000	0.83	87.1	4.62	54.7
Total Dissolved Solids	22,100	30,900	179	430	196	650
pH (S.U.)	NA	NA	6.29	8.40	5.74	9.03

Because the CCR Landfill leachate ponds also receive some stormwater runoff, concentrations in at least some of these samples are likely to be diluted compared to concentrated leachate from landfilled materials (depending on the amount of recent rainfall). Nevertheless, pond samples serve as reliable indicators of the relative composition of leachate as discussed in this section. Leachate boron and sulfate occur at concentrations as much as three orders-of-magnitude above background groundwater levels (**Exhibit 3-1**). Leachate results for chloride and TDS are as much as two orders-of-magnitude above background concentrations. Calcium and fluoride leachate concentrations are within the same orders-of-magnitude as those detected in

background groundwater. These results indicate that boron and sulfate are the best indicator constituents of CCR impacts, followed by TDS and chloride, based on their elevated occurrence in landfill leachate compared to natural groundwater.

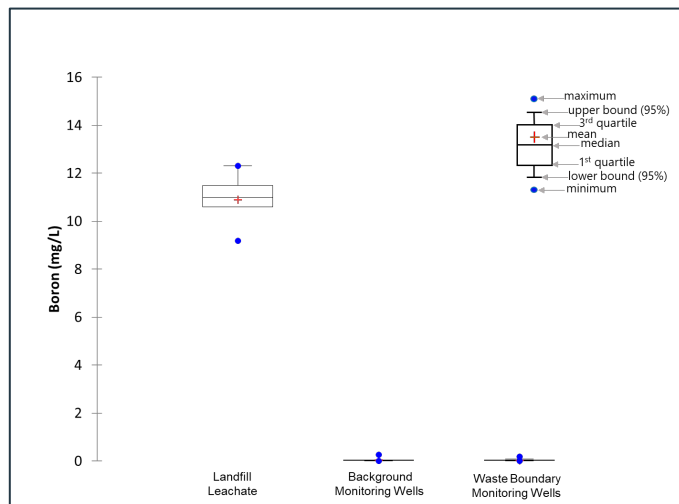
3.1.2 Occurrence of Primary Indicator Constituents in Waste Boundary Monitoring Well Samples

Four primary indicator constituents are identified for the Rockport CCR Landfill leachate: boron, sulfate, TDS, and chloride. In the May 2024 sampling round, two SSIs were identified for chloride (MW-2D and MW-17S) and one SSI was identified for calcium at MW-17S. However, no SSIs were identified in waste boundary wells for either boron or sulfate. Given the significantly elevated concentrations of boron and sulfate in the CCR Landfill leachate, and that neither of these constituents is elevated above background, it is concluded that Landfill leachate is not the source of the observed SSIs. This assumption is supported by a more in-depth review of the indicator constituents, presented below. Additionally, the concentration of calcium in the May 2024 MW-17S groundwater sample, 44.3 mg/L, is less than the maximum observed in groundwater from upgradient background wells, 82 mg/L (**Exhibit 3-1**).

Boron

No SSIs have been identified for boron. Boron has been identified in background wells at concentrations ranging from <0.002 to 0.115 mg/L. Concentrations in waste boundary well samples range from <0.002 to 0.139 mg/L. Landfill leachate boron concentrations are orders of magnitude higher and range from 9.18 to 12.3 mg/L. The boron results are plotted graphically on **Exhibit 3-2**, which illustrates the range of results for leachate (at the left of the chart) compared to and background and waste boundary groundwater samples. It should be noted that the highest concentration of boron observed in waste boundary groundwater samples (0.139 mg/L) occurred in MW-161 and did not represent an SSI for that well.

Exhibit 3-2. CCR monitoring well and landfill leachate ponds boron concentrations

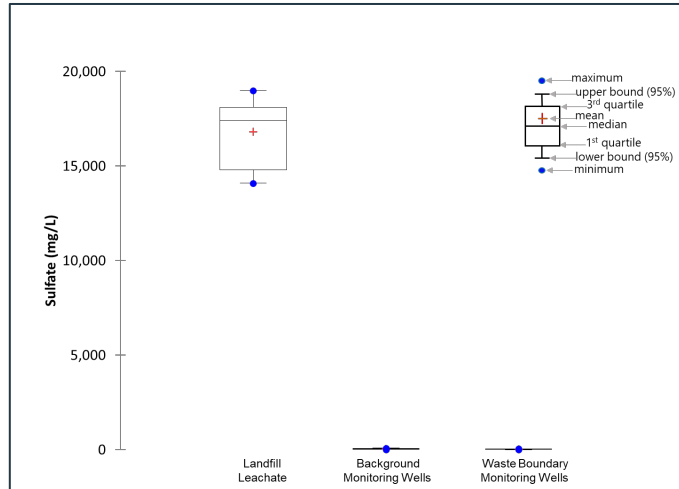


If a release of landfill leachate had occurred, boron concentrations in waste boundary well samples should be clearly higher than the range of background well results, and SSIs would likely be found in at least some of the monitoring wells with other identified SSIs.

Sulfate

No SSIs have been identified for sulfate. Sulfate has been identified in background wells at concentrations ranging from 0.83 to 87.1 mg/L. Concentrations in waste boundary well samples range from 4.62 to 54.7 mg/L. Landfill leachate sulfate concentrations are orders of magnitude higher and range from 14,100 to 19,000 mg/L. The sulfate results are plotted graphically on **Exhibit 3-3**, which clearly shows that leachate concentrations of sulfate are orders-of-magnitude higher than all groundwater samples, and that no discernable difference is present between the background and waste boundary samples. Furthermore, the highest monitoring well concentrations are seen in samples from background well MW-8I (54.0 to 87.1 mg/L).

Exhibit 3-3. CCR monitoring well and landfill leachate ponds sulfate concentrations



It is expected that a release of landfill leachate would elevate groundwater concentrations of all Appendix III constituents present in the leachate in relatively similar proportions. Even if all constituents were not exhibiting SSIs, a pattern of related SSIs would be observed if the increases were caused by landfill leachate. Since all SSIs occurred in absence of a boron or sulfate SSI, and the highest groundwater sulfate concentrations are associated with a background well, it is concluded that the reported SSIs are caused by the natural variation in groundwater quality, potentially impacted by historical oil and gas operations which are assumed to have high chloride and TDS and little to no sulfate, and not by releases from the CCR Landfill.

3.2 Geochemical Evaluations

While the CCR rule requires the use of statistical analyses of samples collected from groundwater monitoring wells to assess potential impacts from CCR units (SSIs), the approach does not consider the site specific hydrogeochemical interactions that can often be complex due to simultaneous operations and natural variation within the context of the local hydrogeologic setting. Since geochemical evaluations rely on interpretation of graphical data, the discussion includes reduced size exhibits imbedded in the text. Full size exhibits are included in **Appendix B**. The major observations and conclusions from the geochemical evaluation are summarized in the sections below.

3.2.1 Indicator Parameter Cross-Plots

To aid in the interpretation of individual Appendix III and other potential indicator parameters for the assessment of potential releases from the CCR Landfill, ratios of selected Appendix III indicator parameters were calculated and plotted versus concentrations of the conservative ion chloride. The use of these plotting techniques typically provides groupings of end members (sources of water such as background groundwater or landfill leachate), and potential trends of mixing that are not readily identifiable by analysis of individual indicator parameters on their own.

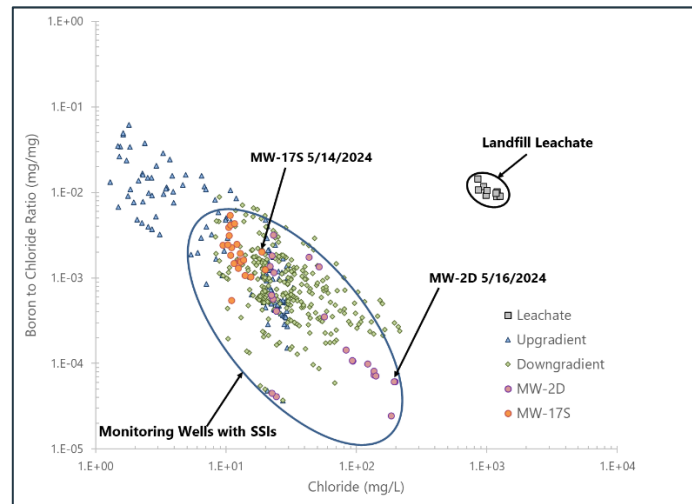
Plots of the B/Cl and SO₄/Cl ratios versus chloride in waste boundary monitoring wells show distinct end member groupings from that of the landfill leachate and support the conclusion

that there are no discernable impacts from the CCR Landfill on any of the waste boundary monitoring wells. The graphics presented here include data for all wells in the CCR Landfill system and show that chloride concentrations tend to increase in groundwater moving downgradient from recharge areas represented by upgradient monitoring wells.

Boron to Chloride ratio Versus Chloride Concentration

The plotting of B/Cl versus chloride groundwater data shows primarily a single large cluster that trends perpendicular to the composition of leachate samples and is hypothesized as background and natural variability (**Exhibit 3-4**). The data are plotted on log-log scales due to the large range of concentrations and ratios making the separation in groupings appear closer than they are. The Landfill leachate clearly plots as a separate grouping of water quality having greater B/Cl ratios, while the monitoring well data plots along a trend of what can be described as natural variability. Background monitoring well MW-11S plots as upgradient recharge having lower chloride concentration and a higher B/Cl ratio. Moving along the flow path to

Exhibit 3-4. Boron to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate

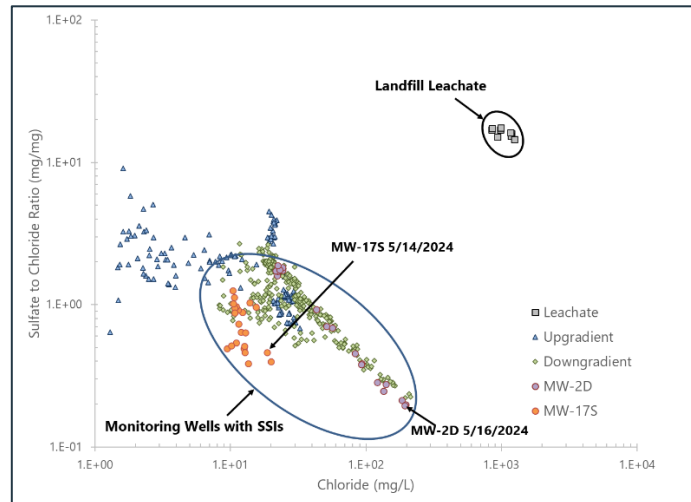


downgradient monitoring wells, this is followed by a trend of increasing chloride concentrations and salinity with decreasing B/Cl ratios due to geochemical evolution of groundwater and potential mixing with water associated with historic oil and gas operations and/or stormwater ponds located to the north and east of the landfill. The stormwater ponds north and east of the landfill are also upgradient of CCR compliance wells and groundwater flow paths indicating flow from those areas are potentially impacting CCR compliance monitoring well samples. While chloride increases, boron does not increase at the same rate, resulting in the decreasing trend of B/Cl ratios as chloride concentrations and residence time increases. Thus, it is hypothesized that MW-11S represents an extreme end member of recent recharge, or relatively fresh groundwater, and after flow through the shallow overburden groundwater evolves geochemically to a lower B/Cl ratio, as chloride increases, approaching the larger background cluster values that represent older more mineralized groundwater without a significant source of boron in the aquifer matrix. The extreme end of the groundwater dataset trend is represented by MW-17I, MW-16D, and MW-2D due to higher chloride concentrations, but with lower B/Cl ratios. This plot supports that these wells are not impacted by CCR Landfill leachate but could be influenced by infiltration from the stormwater holding ponds to the north and east of the landfill or flushing of salts from water holding ponds associated with historic oil and gas operations. If there were impacts from the landfill to groundwater, one would expect a trend of B/Cl ratios versus chloride moving from the groundwater trend toward the leachate values, but this does not occur, and instead the trend is away from the leachate grouping.

Sulfate to Chloride Ratio Versus Chloride Concentration

Plotting of the SO_4/Cl ratio versus chloride shows similar results to the B/Cl ratios versus chloride concentration plot supporting the conclusion that there are no discernable impacts from the CCR Landfill on groundwater (**Exhibit 3-5**). The SO_4/Cl ratios for leachate group separately and are much higher than groundwater values. The SO_4/Cl ratios for leachate are typically around 15 mg/mg or higher, while groundwater ratios are below a value of 6 mg/mg. Similar to B/Cl ratios, the SO_4/Cl ratios versus chloride plot along a trend line of decreasing ratios as chloride and residence time increases. The extreme end of the groundwater data set trend is represented by MW-17I, MW-16D, and MW-2D variability due to higher chloride concentrations that is clearly different from leachate. Additionally, there is no trend of mixing of even small quantities of leachate with groundwater which would be shown by a deviation from the groundwater trend toward leachate, and the separation is distinct between downgradient groundwater and leachate with a trend away from that of leachate.

Exhibit 3-5. Sulfate to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate



3.2.2 Isotope Analyses of CCR Related Water Quality and Materials

General Overview of Isotope Analyses

Water samples were collected from selected CCR Landfill monitoring wells and CCR Landfill leachate and submitted for isotope analyses of boron, strontium, and oxygen and hydrogen of water. The results of the isotope analyses serve as additional supporting lines of evidence for interpretations made using major ion and indicator parameter concentrations and reinforce the lack of leachate impacts to groundwater at the CCR Landfill.

Boron and its isotope ratio ($\delta^{11}\text{B}$) have been successfully used to identify groundwater pollution sources versus background or naturally occurring detections of constituents of concern (Davidson and Bassett 1993; Vengosh et al. 1994; Kendall et al., 1995; Buszka et al. 2007; Ruhl et al. 2014; Harkness et al. 2016). In particular, boron isotopes have been successfully used to assess CCR related impacts in groundwater. Similarly, strontium and its isotopes ($^{87}\text{Sr}/^{86}\text{Sr}$) have also been successfully used to identify different groundwater source end members, mixing, and to determine anthropogenic versus geogenic processes associated with constituents of concern and associated with CCR impacts to groundwater (Kendall and Bullen 1995; Ruhl et al. 2014; Meredith 2016; Harkness et al. 2016; Nigroa et al. 2017).

CCR Landfill Isotope Results

Stable isotope analyses are typically performed on a pair of isotopes (e.g., ^{11}B and ^{10}B , or ^{87}Sr and ^{86}Sr) and are reported as a ratio relative to internal standards, in per mil (‰) using Greek “delta” notation (δ). Deviations based on analysis of the standard are corrected for, to provide values that can be compared between different laboratories and equipment. Isotopes commonly reported

relative to a standard include boron (**eq. 1**), where the standard for boron is the National Institute of Standards and Technology (NIST) Standard Reference Material (SRM) 951:

$$\delta^{11}B(\text{‰}) = \frac{\left(\frac{{}^{11}B}{{}^{10}B}\right)_{\text{Sample}} - \left(\frac{{}^{11}B}{{}^{10}B}\right)_{\text{Standard}}}{\left(\frac{{}^{11}B}{{}^{10}B}\right)_{\text{Standard}}} \times 1000 \quad \text{eq. 1}$$

Isotope ratios of strontium can be reported relative to a standard value but are commonly reported as the actual ratio $^{87}\text{Sr}/^{86}\text{Sr}$. The values for strontium reported here are the actual ratios, but they have been corrected to the NIST SRM 987.

Background monitoring wells for the CCR Landfill show lower boron concentrations and higher $\delta^{11}\text{B}$ values compared to Landfill leachate samples (**Exhibit 3-6**). While only a limited number of background and waste boundary wells were tested (including MW-171 with a previous and current SSI, and MW-215 with a previously reported SSI), there is a clear distinction between all the CCR Landfill monitoring wells and the Landfill leachate which indicates that the wells represented are not impacted by the Landfill, and that boron in the monitoring wells is of a different source other than leachate.

In addition, while there is a variation in the leachate boron concentrations, the $\delta^{11}\text{B}$ values remain approximately equivalent. This supports the hypothesis that boron in $\delta^{11}\text{B}$ values in leachate are dominated by the CCR materials. The range of observed concentrations is related to the amount of water generating the leachate or potentially dilution by fresh water derived from stormwater runoff. The result is a range of boron concentrations having a similar $\delta^{11}\text{B}$ value distinctly different from groundwater in both background and downgradient monitoring wells.

Strontium isotope results also support the boron isotope, major ion, and indicator parameter interpretations that there are no identifiable impacts on groundwater from the landfill. There are noticeably lower strontium concentrations and ratios for all CCR Landfill monitoring wells sampled compared to Landfill leachate (**Exhibit 3-7**).

Exhibit 3-6. Boron isotope ratio ($\delta^{11}\text{B}$) versus boron concentration for CCR Landfill leachate and monitoring wells

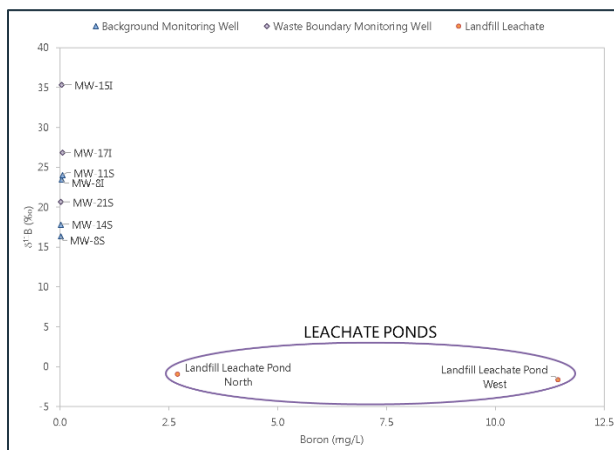
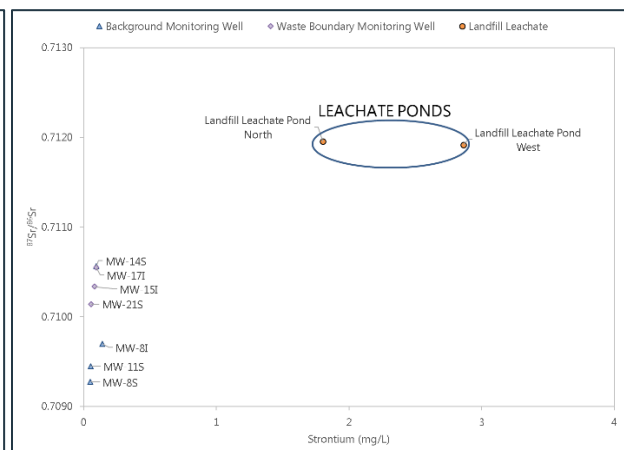


Exhibit 3-7. Strontium isotope ratio ($^{87}\text{Sr}/^{86}\text{Sr}$) versus strontium concentration for CCR Landfill leachate and monitoring wells



3.3 Hydraulic Connection to the Landfill

The groundwater monitoring network and the relationship of the wells to the regulated landfill are shown on **Figure 3**. Recent potentiometric flow data available for the site consistently indicate a local groundwater flow direction to the south and southeast as shown on **Figure 5**. As shown on this figure, several well clusters downgradient from the landfill are also downgradient of the borrow area stormwater ponds that are located to the north and east of the landfill. Groundwater monitored by the well clusters downgradient of the stormwater ponds are concluded to be unaffected by potential releases from the landfill unit but maybe impacted by the stormwater ponds which likely have water with higher salinity, TDS, and chloride.

4.0 SUMMARY

In the first 2024 semi-annual detection monitoring event of May 2024, three SSIs were identified: chloride at MW-2D and MW-17S, and calcium at MW-17S (**Exhibit 2-1**). The following statements summarize how the lines of evidence discussed above apply to each of the constituents with identified SSIs:

- An alternate source of chloride is identified immediately upgradient of MW-17S as being associated with historic oil and gas unlined brine pits and/or stormwater ponds. These sources can result in the observed slightly elevated chloride concentrations.
- Boron occurs naturally at low concentration in site groundwater, in similar concentrations in background and downgradient wells. Boron occurs at concentrations approximately three orders-of-magnitude greater in the CCR Landfill leachate as compared to site groundwater, and is a conservative ion, making it an excellent indicator for impacts from landfill leachate impacts in groundwater. If landfill leachate were impacting groundwater, boron would be expected to be detected in multiple waste boundary wells and at statistically significant concentrations above background; no SSIs for boron have ever been detected at the site. Furthermore, the boron that is present has been shown to be isotopically different.
- Sulfate is another common indicator for CCR leachate impacts and occurs naturally in site groundwater (at similar concentration ranges in background and downgradient wells) and is elevated in the CCR Landfill leachate at concentrations approximately three orders-of-magnitude above background monitoring wells. No SSIs for sulfate have ever been detected at the site until recently (Spring 2023). No SSIs for sulfate were identified during the last two semi-annual detection monitoring event (November 2023, and May 2024).
- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations approximately two orders-of-magnitude above groundwater concentrations. Spatial trends can be observed in **Exhibits 3-4** and **3-5** in Section 3.0 and indicate that chloride concentrations tend to increase in groundwater downgradient from recharge areas including the stormwater ponds north and east of the landfill. May 2024 initial data and July 2024 verification data indicated groundwater concentrations of chloride over background at MW-2D and MW-17S. However, because the SSIs indicated for chloride are not associated with an SSI for boron and sulfate, with no indication of increasing trends with respect to boron or sulfate at the same well location, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.
- Ion ratio cross plots of the indicator constituent's boron, chloride and sulfate show distinct and separate groupings for waste boundary and background groundwater and leachate samples. Background and waste boundary groundwater plots along a trend line associated

with variability across the site while leachate plots in a distinct separate grouping away from the groundwater trend. The ground water trends over time for wells with SSIs show the water quality moving away from the leachate grouping indicating that the leachate is not impacting downgradient groundwater.

- The concentration of calcium in the May 2024 MW-17S groundwater sample, 44.3 mg/L, is also less than the maximum observed in groundwater from upgradient background wells, 82 mg/L supporting that the observed SSI is within the range of natural variation for the Site.
- The conclusions listed above are also supported by the previous reported analytical results for isotope ratios of boron and strontium in leachate and groundwater samples from an earlier sampling event. While only a single set of leachate samples to date have been collected, the indication in downgradient wells, including wells that have shown SSIs, is that the leachate is distinctly different from that of background and downgradient groundwater, and does not support a release from the landfill to groundwater.

4.1 Conclusion

This ASD has demonstrated, through multiple lines of evidence and identification of alternate sources, that the SSIs identified in the statistical analysis of the first 2024 detection monitoring event data are not the result of a release of leachate from the CCR Landfill. Therefore, the unit should continue in detection monitoring.

4.2 Professional Engineer Certification

I certify that the above-described Alternative Source Demonstration is appropriate for evaluating the groundwater monitoring data for the Rockport Plant CCR Landfill and that the requirements of 40 CFR 257.95(g)(3)(ii) have been met.

K. Joe Deatherage

K. Joe Deatherage, PE
Indiana Registered Engineer (PE 10403612)

18 October 2024

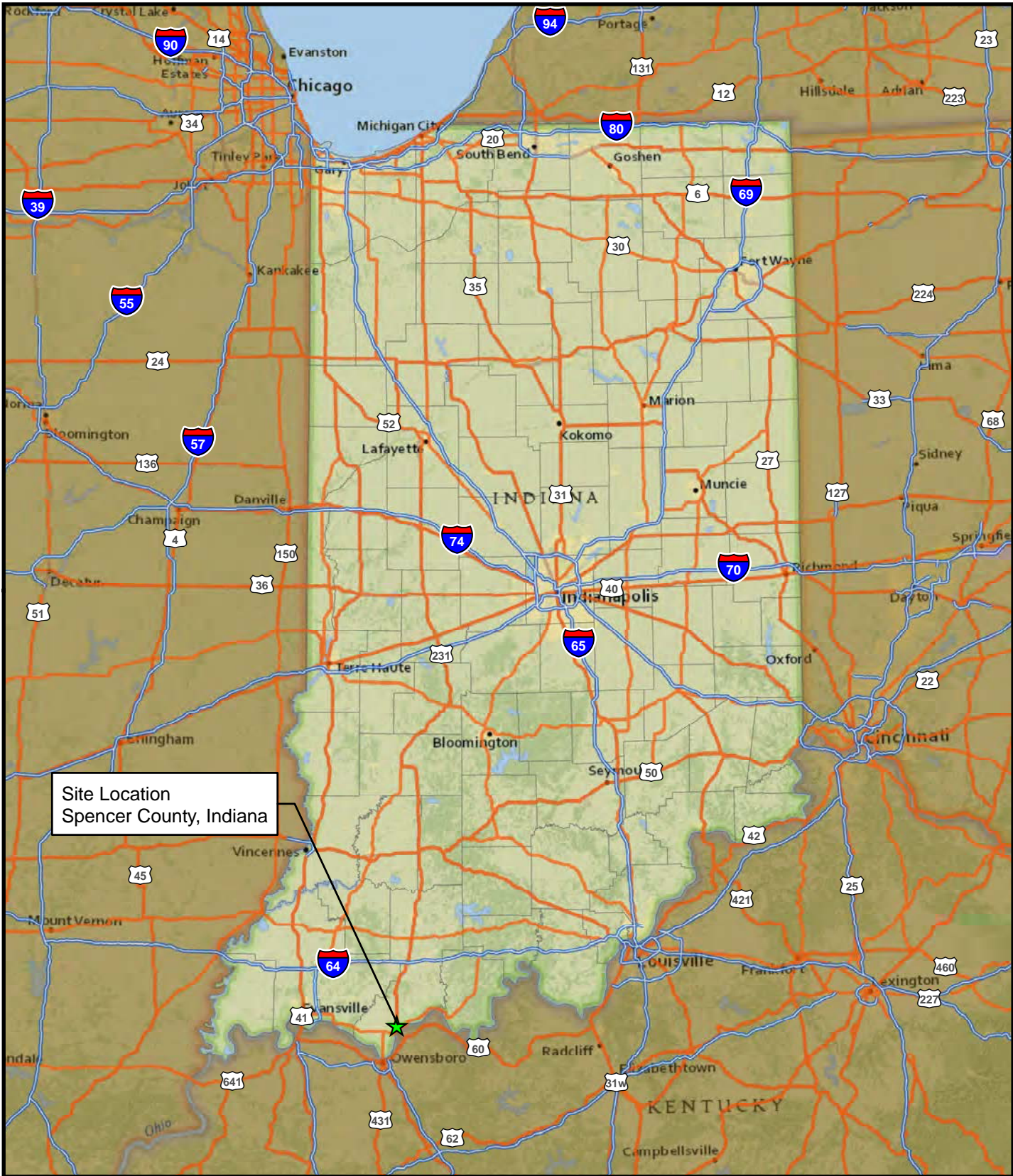
Date



5.0 REFERENCES

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FIGURES

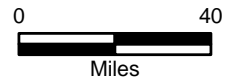


Site Location
Spencer County, Indiana



Legend
★ Site Location

Service Layer Credits: National Geographic, Esri,



2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922

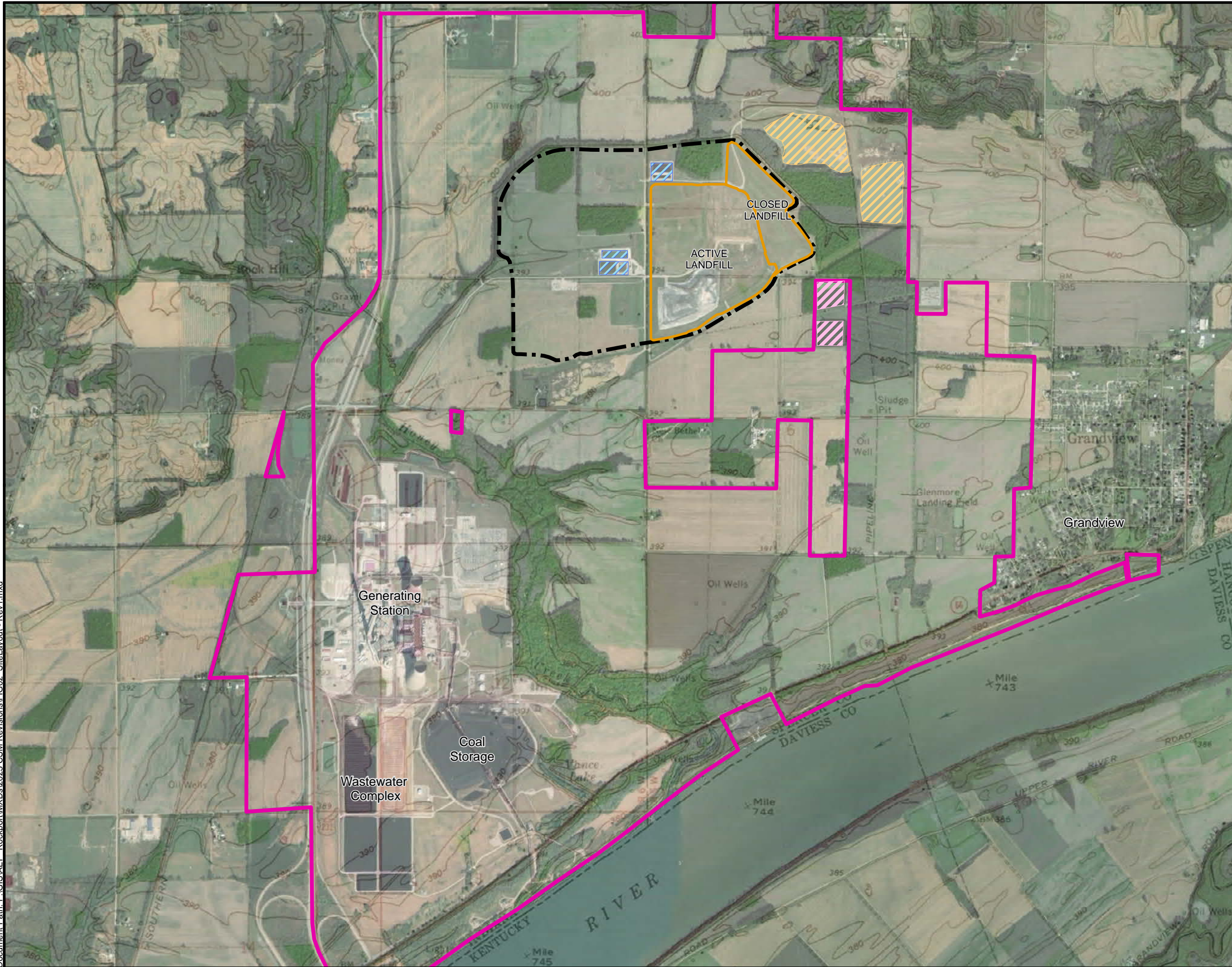
SITE LOCATION MAP

AEP - Rockport, IN






PROJECT NUMBER: 7650202784

SCALE	1" = 40 miles
DATE	04/10/2024
DRAWN BY	BIF
APPROVED BY	TWH

FIG. 1



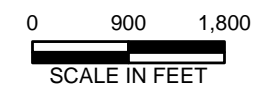
Legend

-  Stormwater Ponds
-  Landfill Leachate Ponds
-  Grandview Wastewater Ponds
-  Property Boundary
-  Landfill Area 1A (Active and Closed)
-  1984 Landfill Permit Boundary (Area 1)

Data Sources

Source of Photography:
https://services.arcgis.com/ArcGIS/rest/services/World_Imagery/MapServer
 Item updated: Sep 6, 2023

USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps



SITE LAYOUT

AEP - ROCKPORT, IN

PROJECT NUMBER: 7650202784

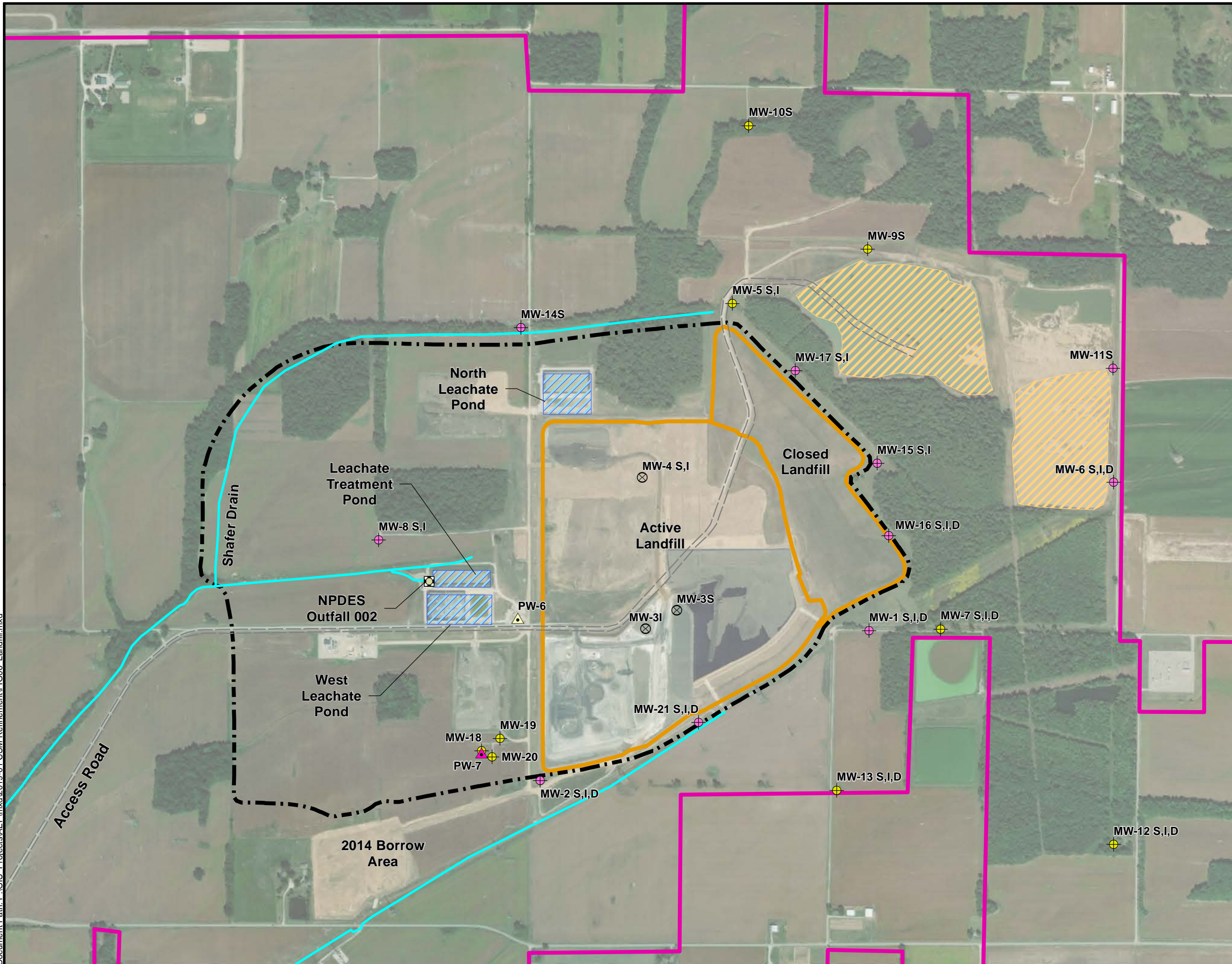
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DATE	04/10/2024
DRAWN BY	TMR
APPROVED BY	TWH

FIG. 2



2030 Falling Waters Rd, Suite 300
 Knoxville, TN 37922

Document Path: P:\GIS Projects\AEP\mxd\2019-01 CSM Refinement\FIG06 Landfill.mxd



- Legend**
- Landfill - Monitoring Well
 - Landfill - CCR Monitoring Well
 - Landfill - Augmentation Water Supply Well
 - Landfill - Dust Control Water Supply Well
 - Abandoned Monitoring Well
 - NPDES Outfall 002
 - Access Road
 - Drains / Ditches
 - Stormwater Ponds
 - Landfill Leachate Ponds
 - Property Boundary
 - 1984 Landfill Permit Boundary (Area 1)
 - Landfill Area 1A (Active and Closed)

Data Sources
 Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



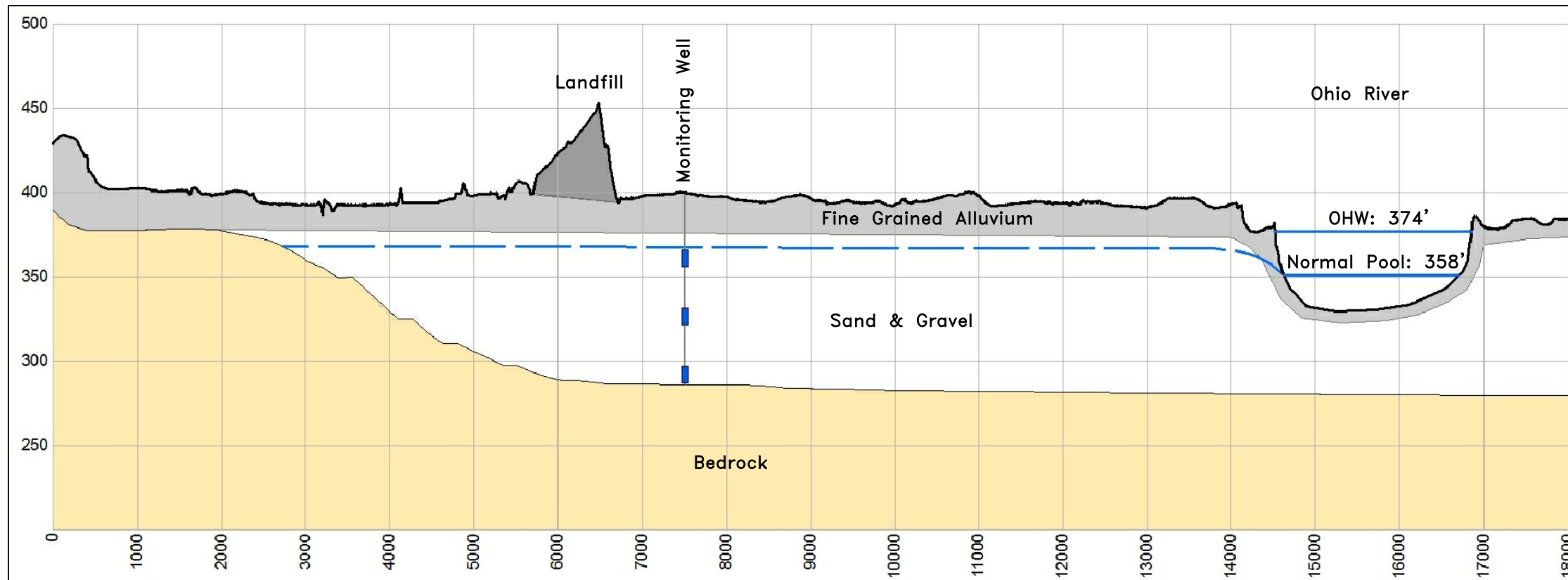
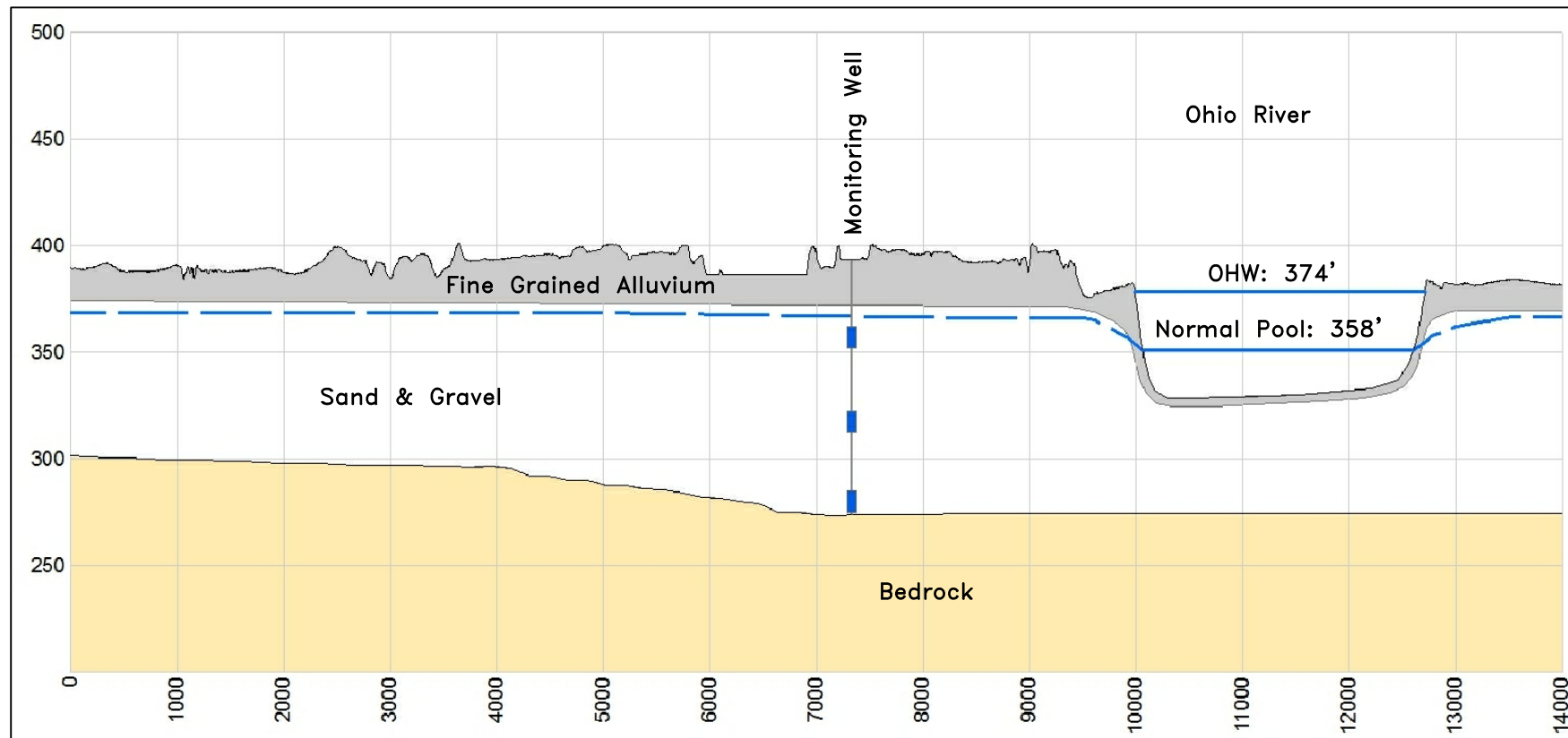
LANDFILL LAYOUT
 AEP - ROCKPORT, IN
 PROJECT NUMBER: 7650202784

SCALE	1" = 800'
DATE	04/10/2024
DRAWN BY	TMR
APPROVED BY	TWH

FIG.
3



2030 Falling Waters Rd, Suite 300
 Knoxville, TN 37922
 Phone: (865) 671-6774



SCALE: As Shown
VERTICAL EXAGGERATION: 4X



2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922
Phone (865) 671-6774

**BOTTOM ASH PONDS
AEP - ROCKPORT, INDIANA**

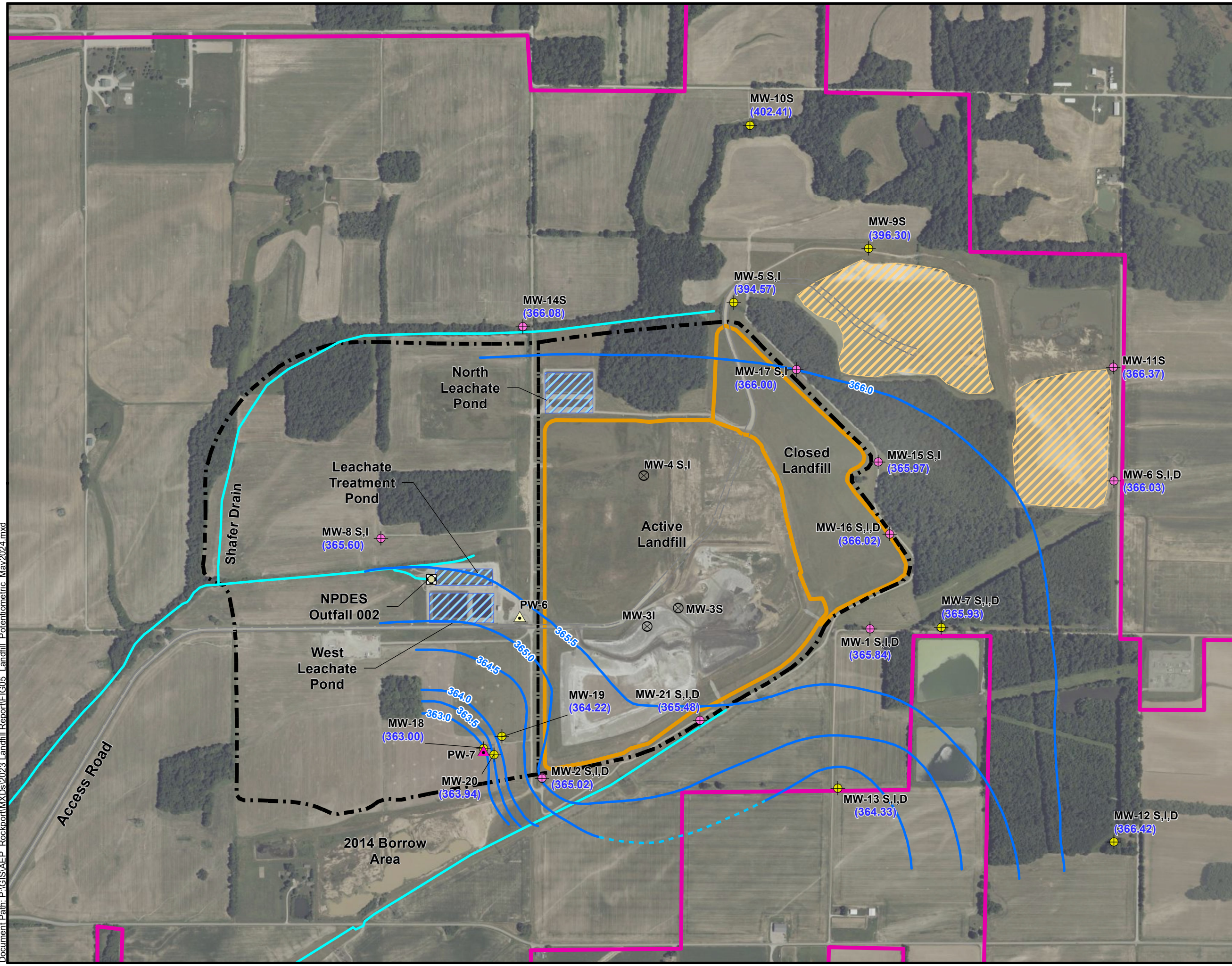
GENERALIZED CROSS-SECTIONS

PROJECT NUMBER: 7650202784

SCALE	As Shown
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DRAWN BY	TMR
APPROVED BY	ALD

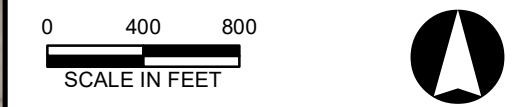
**FIG
4**

Document Path: P:\GIS\AEP_Rockport\2023 Landfill Report\FIG05 Landfill Potentiometric May2024.mxd



- Legend**
- Landfill - Monitoring Well
 - Landfill - CCR Monitoring Well
 - Landfill - Augmentation Water Supply Well
 - Landfill - Dust Control Water Supply Well
 - Abandoned Monitoring Well
 - NPDES Outfall 002
 - Groundwater Elevation Contour
Contour Interval 0.5ft
 - Inferred Groundwater Contour
 - Access Road
 - Drains / Ditches
 - Stormwater Ponds
 - Landfill Leachate Ponds
 - Property Boundary
 - 1984 Landfill Permit Boundary (Area 1)
 - Landfill Area 1A (Active and Closed)

Data Sources
Service Layer Credits: Source: Esri, USDA FSA



Potentiometric Surface Contours
May 13, 2024
AEP - ROCKPORT, IN
PROJECT NUMBER: 7650202784

SCALE	1" = 800'	FIG. 5
DATE	8/21/2024	
DRAWN BY	LML	
APPROVED BY	TWH	

2030 Falling Waters Rd, Suite 300
Knoxville, TN 37922

APPENDICES

APPENDIX A

Analytical Data Tables

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-1S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/20/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/13/2019	4/1/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.45	369.29	368.81	368.29	367.61	367.69	367.66	368.33	368.01	366.11	369.43	369.91	368.71	369.68	370.56
pH	S.U.	--	6.7 - 8.0	8.14	7.2	7.09	7.34	7.4	7.1	7.19	7.26	7.08	7.64	7.48	7.3	7.48	7.46	7.35
Specific Conductance	µmhos/cm	--	892	687	612	703	657	470	300	567	536	635	686	590	658	535	530	892
Turbidity	NTU	--	--	0.23	1.5	0.34	0.65	1	2	0.63	0.78	0.4	1.31	1.12	0	0.56	0.8	1.15
Dissolved Oxygen	mg/L	--	--	3.37	4	2.82	3.46	5	4	2.48	2.72	3	3.06	0.61	4.59	2.3	1.1	1.09
Temperature	°C	--	--	15.04	18.9	19.09	15.17	14.8	15.7	16.81	15.81	15.63	12.81	16.23	15.38	14.7	14.9	14.6
ORP	mV	--	--	89.2	111	77.1	52.9	105	46	53.7	16.2	43.8	-20.8	-76.5	302	100.5	172	126.4
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.2	0.02	0.02	0.04	0.04	0.05	0.02	--	--	--	--	0.05	--	--
Arsenic	µg/L	10	--	0.43	0.69	0.38	0.38	0.43	0.76	0.5	0.39	--	--	--	--	0.34	--	--
Barium	µg/L	2000	--	18.5	21.9	17.2	17.9	17.7	36.5	22.3	17.3	--	--	--	--	17.8	--	--
Beryllium	µg/L	4	--	<0.01	0.16	<0.005	<0.005	<0.005	0.023	0.01	<0.004	--	--	--	--	0.03	--	--
Cadmium	µg/L	5	--	0.02	0.22	0.005	0.007	0.02	0.09	0.22	0.01	--	--	--	--	<0.01	--	--
Chromium	µg/L	100	--	0.3	0.7	0.3	0.207	0.72	1.38	0.552	0.255	--	--	--	--	0.25	--	--
Cobalt	µg/L	6	--	0.171	0.398	0.014	0.01	0.052	1.21	0.164	0.02	--	--	--	--	<0.02	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.15	0.74	--	0.09	--	1.3	--	--
Lead	µg/L	15	--	0.204	0.572	0.01	0.022	0.076	1.26	0.526	0.033	--	--	--	--	0.12	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	0.65	0.8	0.68	0.74	0.59	0.97	1.64	0.64	--	--	--	--	0.6	--	--
Selenium	µg/L	50	--	1.1	1.1	0.9	0.9	1	1.1	1.1	1.2	--	--	--	--	0.8	--	--
Thallium	µg/L	2	--	<0.02	0.168	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	--	--	--	--	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	4.5	--	0.7	--	2	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	19.5	19.7	22.4	--	--	19.5	--	19.7	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	5.55	4.29	--	3.8	--	1	--	--
Boron	mg/L	--	0.0588	0.037	0.015	0.022	0.02	0.005	0.03	0.031	0.028	0.044	--	0.046	--	0.04	--	--
Calcium	mg/L	--	77.8	70.7	62.9	68	74.4	65	71.5	72.6	69.2	67.6	--	71.8	--	71.9	--	--
Lithium	mg/L	0.04	--	0.004	0.024	0.002	0.01	0.008	0.01	0.009	0.0007	--	--	--	--	0.03	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	27.3	26.9	26.9	25.6	--	26.8	--	26.8	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0015	--	--	0.0027	--	0.0022	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.32	1.24	1.16	1.15	--	1.19	--	1.16	--	--
Sodium	mg/L	--	--	--	--	--	--	--	40.6	35.2	39.6	36.1	--	31.2	--	35	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.11	0.12	0.105	0.104	--	0.11	--	0.108	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	278	273	271	269	--	250	--	273	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.086	0.108	0.104	0.109	--	0.106	--	0.1	--	--
Chloride	mg/L	--	50.7	29.6	31.1	31.4	31.9	32	30.7	31.3	30.4	33.1	39.9	34.9	37.3	38.1	40.4	38.5
Fluoride	mg/L	4	0.746	0.59	0.65	0.6	0.54	0.57	0.59	0.63	0.58	0.57	--	0.61	--	0.63	--	--
TDS	mg/L	--	461	392	392	411	398	392	384	402	406	396	--	386	--	410	--	--
Sulfate	mg/L	--	41.4	33.7	35.5	32.4	30.7	30.7	30.5	33.3	33.6	34.6	--	34.2	--	32.3	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	--
Radium-228	pCi/L	--	--	-0.185	0.445	0.244	-0.00464	0.447	-0.172	-0.122	0.133	--	--	--	--	-0.0731	--	--
Radium-226	pCi/L	--	--	0.0665	0.374	-0.00261	0.296	0.487	0.0407	0.0324	0.176	--	--	--	--	0.108	--	--
Radium-226/228	pCi/L	5	--	-0.1185	0.819	0.24139	0.29136	0.934	-0.1313	-0.0896	0.309	--	--	--	--	0.108	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	0.4	--	1.65	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	9	--	1	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	0.8	--	6.24	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.049	0.014	--	<0.002	--	0.035	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0001	0.0002	<0.0001	0.0002	--	<0.0002	--	0.0026	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-1S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/23/2019	7/23/2019	2/18/2020	5/19/2020	11/11/2020	5/26/2021	11/12/2021	5/12/2022	11/3/2022	2/8/2023	5/23/2023	11/2/2023	12/20/2023	5/15/2024
Field Parameters																	
Elevation	ft NGVD	--	--	371.82	372.42	370.36	370.78	369.85	369.23	368.43	369.33	369.23	367.89	368.83	367.46	366.77	365.84
pH	S.U.	--	6.7 - 8.0	7.91	7.36	7.12	7.04	7.01	7.75	7.56	7.38	6.85	7.24	7.7	6.84	7.22	7.23
Specific Conductance	µmhos/cm	--	892	593	618	1386	440	691	793	687	658	593	623	381	699	620	679
Turbidity	NTU	--	--	0.05	1.6	0.47	0	0.7	0	0.55	9.62	0	1.42	0	0	0.86	0.84
Dissolved Oxygen	mg/L	--	--	0.87	1.5	4.6	1.68	8.97	0	3.75	2.02	0.22	6.6	0	1.59	0.45	0.39
Temperature	°C	--	--	15.6	18.2	12.43	15.36	14.75	15.6	14.5	15.76	14.48	13.68	16.22	13.68	17.51	19.06
ORP	mV	--	--	-28.8	57	118.1	140	100	222	239	68	40	198	116	202	79	160
Laboratory Parameters																	
Antimony	µg/L	6	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	17.6	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	<0.01	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	7.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	<0.06	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.0588	<0.02	--	--	0.02	<0.02	0.019	0.02	<0.009	0.017	--	<0.050	0.018	--	0.017
Calcium	mg/L	--	77.8	73.7	--	--	72	67.8	66.2	65.8	65.9	66.3	--	60.9	59	--	64.7
Lithium	mg/L	0.04	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	26.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.001	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	1.24	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	25.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.106	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	303	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.1	--	--	--	--	0.1	--	--	--	--	--	--	--	--
Chloride	mg/L	--	50.7	33.7	30	--	34.7	33.3	35	66.2	35	50.7	32.6	33	30.2	--	30.2
Fluoride	mg/L	4	0.746	0.55	--	--	0.55	0.66	0.66	0.65	0.62	0.41	--	0.69	0.72	0.43	0.65
TDS	mg/L	--	461	388	--	442	350	402	430	380	380	340	--	360	370	--	370
Sulfate	mg/L	--	41.4	36.3	--	--	37.1	34.1	31.6	31	36.8	43.2	34.4	36.3	34.9	--	39.2
Sulfide	mg/L	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.173	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	1.09	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.263	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.26	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<1	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.003	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0004	--	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-11

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/20/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/18/2017	10/4/2017	6/6/2018	8/16/2018	11/14/2018	2/13/2019	4/1/2019	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.42	369.25	368.8	368.24	367.58	367.63	367.62	368.28	367.25	369.39	397.45	368.74	369.73	370.51	371.86
pH	S.U.	--	6.7 - 7.90	6.7	7	7.4	7.09	7.6	7.4	7.24	6.89	7.1	7.5	7.31	7.75	7.5	7.37	7.01
Specific Conductance	µmhos/cm	--	--	461	479	570	544	370	500	443	402	424	480	533	425	443	802	503
Turbidity	NTU	--	--	0.9	0.7	0.24	0.35	1	1	0.6	0.36	1	0.32	0	0.61	1	1.06	0.06
Dissolved Oxygen	mg/L	--	--	0.4	0.3	1.07	0	0.3	1	0.46	27.63	0.5	0.87	0.22	0.19	2	1.28	0.73
Temperature	°C	--	--	17.5	18.2	16.99	14.53	14.4	15.7	15.44	16.52	16.4	16.25	16.03	14.68	14.7	14.6	16.79
ORP	mV	--	--	-21	205	-2.1	4.4	10	36	-26.2	-118.8	-23	-102.2	253	62.9	155	134.2	5.2
Laboratory Parameters																		
Antimony	µg/L	6	--	0.04	0.04	0.01	0.02	0.02	0.01	0.04	0.02	--	--	--	<0.02	--	--	<0.02
Arsenic	µg/L	10	--	0.86	0.78	0.92	0.8	0.82	0.69	0.89	0.86	--	--	--	0.82	--	--	0.73
Barium	µg/L	2000	--	85.5	86.1	84.9	93.4	90.5	76.7	85	94.3	--	--	--	85.6	85	--	83.8
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.004	<0.004	--	--	--	<0.02	--	--	<0.02
Cadmium	µg/L	5	--	0.08	0.1	0.02	0.02	0.02	0.05	0.01	0.007	--	--	--	0.02	--	--	<0.01
Chromium	µg/L	100	--	0.2	1	0.2	0.051	0.39	0.686	0.155	0.112	--	--	--	<0.04	--	--	0.04
Cobalt	µg/L	6	--	0.341	0.364	0.401	0.381	0.424	0.054	0.558	0.569	--	--	--	0.48	--	--	0.368
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.12	0.2	0.48	--	0.22	--	--	0.08
Lead	µg/L	15	--	0.851	1.25	0.156	0.059	0.099	0.427	0.068	0.137	--	--	--	0.07	--	--	<0.02
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	2.47	2.85	2.89	3.27	3.33	1.82	2.87	2.85	--	--	--	2.96	--	--	2.38
Selenium	µg/L	50	--	<0.03	0.04	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	--	--	--	<0.03	--	--	<0.03
Thallium	µg/L	2	--	0.03	0.02	0.02	0.03	0.104	0.03	0.02	0.02	--	--	--	<0.1	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	1	4.2	--	1	--	--	0.9
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.5	18.9	20.7	17.8	--	18.2	--	--	18
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	1	2	2.96	--	3	--	--	<1
Boron	mg/L	--	0.104	0.075	0.014	0.018	0.015	0.004	0.045	0.049	0.047	0.018	0.11	0.056	0.05	--	--	0.02
Calcium	mg/L	--	73.2	67.4	60	64.5	63.9	60.9	66.9	65.7	64.8	68.1	66.4	--	65.5	--	--	67.7
Lithium	mg/L	0.04	--	0.005	0.022	0.007	0.005	0.005	0.006	0.008	0.0005	--	--	--	0.03	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	20.8	21.2	20.6	21.5	21	--	20.6	--	--	20.6
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.599	--	0.316	--	0.515	--	--	0.37
Potassium	mg/L	--	--	--	--	--	--	--	1.34	1.08	0.98	0.92	1.31	--	0.97	--	--	0.98
Sodium	mg/L	--	--	--	--	--	--	--	19.8	19.5	19.1	19.2	18.1	--	18.5	--	--	18.2
Strontium	mg/L	--	--	--	--	--	--	--	0.0934	0.0926	0.086	0.0911	0.093	--	0.0882	--	--	0.0912
Alkalinity	mg/L	--	--	--	--	--	--	--	222	225	226	222	230	--	227	--	--	243
Bromide	mg/L	--	--	--	--	--	--	--	0.061	0.087	0.081	0.072	0.081	--	0.08	--	--	0.09
Chloride	mg/L	--	64.7	24.9	24.8	24.3	24.1	24.4	24.1	26.5	26.5	27.5	28.6	--	28.8	30.1	34.1	33.1
Fluoride	mg/L	4	0.468	0.37	0.4	0.37	0.31	0.33	0.35	0.38	0.34	0.37	0.42	--	0.41	--	--	0.42
TDS	mg/L	--	392	323	315	331	334	316	300	323	330	327	321	--	308	--	--	341
Sulfate	mg/L	--	47.2	44.3	46.7	42.4	40.7	41.4	41.2	43.8	43.3	44.1	42	--	40.7	--	--	40.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--	<0.07	--	--	<0.1
Radium-228	pCi/L	--	--	0.0603	0.105	1.42	0.662	0.108	-0.0752	0.3	2.21	--	--	--	0.415	--	--	0.71
Radium-226	pCi/L	--	--	0.33	1.57	0.276	0.65	0.513	0.15	0.33	0.323	--	--	--	0.288	--	--	0.37
Radium-226/228	pCi/L	5	--	0.3903	1.675	1.696	1.312	0.621	0.0748	0.63	2.533	--	--	--	0.703	--	--	1.08
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.4	--	0.12	--	--	0.43
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	1	--	0.9	--	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.51	--	1	--	<1	--	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.03	<0.0004	0.035	0.048	0.011	--	0.053	--	--	0.034
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.583	0.1	0.455	0.445	0.303	--	0.508	--	--	0.397



Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-11

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/23/2019	9/11/2019	11/22/2019	5/19/2020	7/16/2020	11/11/2020	2/3/2021	5/26/2021	11/12/2021	2/15/2022	5/12/2022	7/20/2022	11/3/2022	2/8/2023	5/24/2023
Field Parameters																		
Elevation	ft NGVD	--	--	372.45	--	370.95	370.40	370.81	369.90	368.07	369.25	368.50	--	369.34	369.88	369.25	367.92	368.85
pH	S.U.	--	6.7 - 7.90	7.21	7.25	7.05	7.22	7.44	7.34	7.37	7.72	7.53	--	7.33	7.54	6.92	7.35	7.87
Specific Conductance	µmhos/cm	--	--	493	481	491	566	575	590	549	648	598	--	623	650	568	612	378
Turbidity	NTU	--	--	2.1	0.58	1.7	0	2.96	1.38	2.8	0	1.9	--	2.41	0.11	0	0.42	0
Dissolved Oxygen	mg/L	--	--	0.57	0.26	2.1	0.28	1.64	0.18	0.2	0	0	--	0.31	0	0.03	1.42	0
Temperature	°C	--	--	16.4	17.5	14	15.23	17.24	15.42	14.4	18	14.66	--	15.65	17.38	16.09	13.98	15.92
ORP	mV	--	--	27	-35.8	-206	42	18	70	143	178	244	--	-27	-18	12	-26	29
Laboratory Parameters																		
Antimony	µg/L	6	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	0.71	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	11	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	0.838	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	0.291	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	3.1	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	<0.03	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	17.5	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.104	--	--	0.01	0.02	--	<0.02	--	0.017	0.016	--	<0.009	--	0.018	--	0.017
Calcium	mg/L	--	73.2	--	--	66.7	71.2	--	65.9	--	67.4	68.2	--	70.4	--	67.3	--	60.8
Lithium	mg/L	0.04	--	--	--	0.00355	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	20.7	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	0.784	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	18.1	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	0.0917	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	210	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	0.08	--	--	--	--	0.09	--	--	--	--	--	--	--
Chloride	mg/L	--	64.7	30.6	33.5	35	37.7	35.4	36.3	36.9	37.8	42.5	46.8	46.5	47.2	52.4	52.8	53.1
Fluoride	mg/L	4	0.468	--	--	0.37	0.4	0.39	0.43	--	0.38	0.4	--	0.41	--	0.42	--	0.43
TDS	mg/L	--	392	--	--	348	323	340	322	--	350	340	--	350	--	360	--	380
Sulfate	mg/L	--	47.2	--	--	39.7	40.1	--	39.0	--	38.6	39	--	43.4	--	43.2	--	43.4
Sulfide	mg/L	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	0.546	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	0.421	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	0.967	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	0.758	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-11

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	8/16/2023	11/2/2023	12/20/2023	5/15/2024	7/16/2024
Field Parameters								
Elevation	ft NGVD	--	--	368.5	367.53	366.84	365.59	366.74
pH	S.U.	--	6.7 - 7.90	7.34	6.84	7.23	6.86	7.23
Specific Conductance	µmhos/cm	--	--	654	709	621	674	549
Turbidity	NTU	--	--	0.7	0	0.79	0.39	1.05
Dissolved Oxygen	mg/L	--	--	0	0	3.64	4.68	0.91
Temperature	°C	--	--	16.1	14.5	18.09	16.1	16.4
ORP	mV	--	--	-54	-34	122	-5	-23.8
Laboratory Parameters								
Antimony	µg/L	6	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--
Boron	mg/L	--	0.104	--	0.019	--	0.017	--
Calcium	mg/L	--	73.2	--	64.3	--	66.9	--
Lithium	mg/L	0.04	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--
Chloride	mg/L	--	64.7	54.7	55.4	29.9	54.7	--
Fluoride	mg/L	4	0.468	--	0.45	--	0.48	0.45
TDS	mg/L	--	392	400	360	--	370	--
Sulfate	mg/L	--	47.2	--	42.4	--	44.8	--
Sulfide	mg/L	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-1D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/8/2016	7/19/2016	9/20/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/18/2017	10/4/2017	1/3/2018	6/7/2018	8/16/2018	11/14/2018	2/13/2019	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.6	369.43	368.97	368.42	367.75	367.81	367.81	368.34	367.44	366.27	369.56	369.94	368.73	369.71	371.84
pH	S.U.	--	6.8 - 8.1	7.6	7.1	7.36	7.5	7.4	7.33	7.25	8.06	7.3	7.68	8.24	7.35	7.77	7.41	7.18
Specific Conductance	µmhos/cm	--	--	496	471	464	842	400	558	394	525	448	539	508	568	457	317	0.504
Turbidity	NTU	--	--	8.8	2	6.27	4	5	1.93	2.15	2.47	2	3.89	1.71	0	1.03	2	0.3
Dissolved Oxygen	mg/L	--	--	0.5	0.2	0.55	0.8	2	0.25	0.53	0.81	0.4	1.83	0.25	0.26	0.2	10	3.68
Temperature	°C	--	--	19.4	16.7	15.77	14.8	14.7	15.14	15.84	21.46	16.5	6.7	15.85	16.71	14.06	14	17.02
ORP	mV	--	--	63	220	92.8	252	182	49.6	132.7	152.8	-14	-5.3	-112	200	53	188	55.9
Laboratory Parameters																		
Antimony	µg/L	6	--	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	--	--	--	--	0.03	--	0.05
Arsenic	µg/L	10	--	1.29	0.73	1.07	0.65	0.77	0.58	0.75	0.59	--	--	--	--	0.62	--	0.47
Barium	µg/L	2000	--	255	147	160	147	162	139	142	139	--	--	--	--	101	--	99.2
Beryllium	µg/L	4	--	0.01	<0.005	0.007	<0.005	<0.005	<0.005	0.006	<0.004	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.13	0.07	0.04	0.04	0.15	0.04	0.04	0.05	--	--	--	--	0.02	--	0.02
Chromium	µg/L	100	--	0.3	1.5	0.3	0.072	0.439	0.687	0.174	0.131	--	--	--	--	0.07	--	0.1
Cobalt	µg/L	6	--	3.64	0.373	0.836	0.329	0.577	0.173	0.44	0.212	--	--	--	--	0.04	--	0.058
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.93	1.02	--	0.55	--	0.75	--	0.83
Lead	µg/L	15	--	1.13	1.37	0.5	0.222	0.807	1.92	0.419	0.355	--	--	--	--	0.07	--	0.138
Mercury	µg/L	2	--	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	3.44	3.59	3.6	3.24	2.43	3.4	3.05	2.94	--	--	--	--	2	--	1
Selenium	µg/L	50	--	0.07	0.03	0.07	0.03	0.03	0.06	<0.03	--	--	--	--	--	0.04	--	0.09
Thallium	µg/L	2	--	0.04	0.02	0.056	0.02	0.05	0.03	0.04	0.03	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.5	4.5	--	2	--	1	--	65.9
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.9	19.4	21.3	--	17.9	--	19	--	17.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	8.08	14.6	--	16.1	--	<1	--	4
Boron	mg/L	--	0.111	0.017	0.015	0.016	0.018	0.006	0.055	0.046	0.019	0.002	--	0.103	0.02	0.1	<0.02	0.02
Calcium	mg/L	--	83.2	63.6	57.9	65.2	69.3	63.4	70	67.8	63.9	65.7	--	70.9	--	71.9	--	73.6
Lithium	mg/L	0.04	--	<0.0002	0.017	0.0005	0.004	0.007	0.007	0.009	0.002	--	--	--	--	0.01	--	0.01
Magnesium	mg/L	--	--	--	--	--	--	--	21.9	22.2	20.7	20.9	--	20.4	--	22.1	--	18.3
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.511	--	--	0.216	--	0.138	--	0.169
Potassium	mg/L	--	--	--	--	--	--	--	1.13	1.13	0.89	0.89	--	1.34	--	1.71	--	1.23
Sodium	mg/L	--	--	--	--	--	--	--	19.4	19.3	18.8	18	--	18.2	--	20.9	--	18.7
Strontium	mg/L	--	--	--	--	--	--	--	0.0985	0.101	0.0885	0.092	--	0.359	--	0.272	--	0.553
Alkalinity	mg/L	--	--	--	--	--	--	--	206	202	206	220	--	218	--	222	--	208
Bromide	mg/L	--	--	--	--	--	--	--	0.09	0.115	0.109	0.03	--	0.113	--	0.1	--	0.09
Chloride	mg/L	--	67.5	27.3	29.8	29.8	39.3	40.6	40.3	40.9	39.3	10.3	--	43.1	43.8	46.9	43.8	32.1
Fluoride	mg/L	4	0.33	0.28	0.3	0.28	0.29	0.26	0.26	0.28	0.24	0.85	0.31	0.3	--	0.3	--	0.27
TDS	mg/L	--	463	331	329	288	339	323	330	342	338	339	--	345	--	340	--	346
Sulfate	mg/L	--	47.9	40.2	40.6	32.3	33.6	36.4	37	39.5	39.6	10.4	--	39.5	--	39.8	--	45.3
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	0.558	0.06	0.525	0.566	0.315	0.0844	0.511	0.444	--	--	--	--	0.295	--	0.55
Radium-226	pCi/L	--	--	0.526	0.135	0.932	6.73	0.334	0.154	0.213	0.502	--	--	--	--	0.0679	--	0.652
Radium-226/228	pCi/L	5	--	1.084	0.195	1.457	7.296	0.649	0.2384	0.724	0.946	--	--	--	--	0.3629	--	1.202
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.58	--	--	0.98	--	0.78	--	0.8
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	4.2	--	--	11.8	--	2	--	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	2	--	5.05	--	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.052	0.012	--	<0.002	--	0.02	--	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.553	0.62	0.486	0.616	--	0.0605	--	0.144	--	0.148

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-1D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/23/2019	11/22/2019	2/17/2020	5/19/2020	11/11/2020	2/3/2021	5/26/2021	11/12/2021	5/12/2022	11/3/2022	5/24/2023	11/2/2023	5/15/2024
Field Parameters																
Elevation	ft NGVD	--	--	372.45	367.22	369.34	370.40	369.91	376.09	368.95	368.22	369.35	369.05	368.75	367.55	365.90
pH	S.U.	--	6.8 - 8.1	7.3	7.26	7.38	7.05	7.14	7.5	7.68	7.35	7.21	7.06	7.84	6.76	6.87
Specific Conductance	µmhos/cm	--	--	510	609	817	454	664	467	747	735	624	673	368	701	706
Turbidity	NTU	--	--	1.5	2.53	0.98	0	0.43	2.9	0	1.44	2.83	0	0	0	0
Dissolved Oxygen	mg/L	--	--	2.1	3.57	6.09	9.13	0	4.8	0	0	2.47	0	0	0	0.1
Temperature	°C	--	--	16.7	14.31	13.25	15.71	15.84	13.2	15.9	14.75	15.51	16.26	16.79	14.77	16.19
ORP	mV	--	--	44	51.3	211.2	152	95	145	200	239	160	133	103	65	120
Laboratory Parameters																
Antimony	µg/L	6	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	0.57	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	101	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	0.097	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	1	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	18.5	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.111	--	0.04	--	0.04	0.04	--	0.033	0.042	<0.009	0.043	0.034	0.052	0.051
Calcium	mg/L	--	83.2	--	72.5	--	59.9	80.3	56.8	77.2	73.7	68.6	70.2	59	67.2	70.9
Lithium	mg/L	0.04	--	--	0.0038	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	22.2	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	0.163	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	26	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	0.194	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	260	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.1	--	--	--	--	0.11	--	--	--	--	--	--
Chloride	mg/L	--	67.5	--	49.1	--	23.8	56.2	--	44	55.4	30.9	58.4	41.7	46.2	54.9
Fluoride	mg/L	4	0.33	--	0.27	--	0.3	0.30	--	0.26	0.3	0.26	0.3	0.28	0.32	0.32
TDS	mg/L	--	463	--	398	257	261	397	264	410	410	350	400	370	360	380
Sulfate	mg/L	--	47.9	39.2	41.2	--	23.3	37.7	--	38.6	36	45.4	40.6	37.5	39.1	41.9
Sulfide	mg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	0.197	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	0.307	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	2.19	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	0.131	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/9/2017	5/9/2017	7/19/2017	10/4/2017	6/6/2018	11/13/2018	2/13/2019	4/1/2019	5/22/2019	7/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.34	369.03	369.02	368.77	366.24	368.15	368.06	368.22	366.68	369.94	367.91	368.87	369.97	371.02	371.37
pH	S.U.	--	6.30 - 8.44	6.4	7.68	7.63	7.34	7.65	7.66	7.12	7.46	7.17	7.62	7.53	7.77	7.72	7.66	7.45
Specific Conductance	µmhos/cm	--	--	423	465	440	459	341	522	354	409	509	470	425	451	491	500	486
Turbidity	NTU	--	--	3.1	1.85	0.51	0.96	0.74	1.31	2.68	4.81	1.55	1.84	2.15	0.8	1.51	1.08	1.7
Dissolved Oxygen	mg/L	--	--	2.8	1.85	4.67	3.91	4.18	3.63	4.52	2.62	2.63	4.66	3.7	3.1	4.7	5.77	1.3
Temperature	°C	--	--	17.5	16.34	15.81	16.03	15.1	15.73	15.67	16.06	16.42	16.48	14.51	14.6	14.5	15.93	16.2
ORP	mV	--	--	34	64	90.4	-19	165	13.1	165.7	-5.9	26.6	59.1	23	71	-17.9	-3.2	55
Laboratory Parameters																		
Antimony	µg/L	6	--	<0.02	0.02	0.04	0.02	0.02	0.02	0.04	0.12	--	--	0.04	--	--	0.03	--
Arsenic	µg/L	10	--	0.97	1.09	0.94	0.94	0.92	0.95	0.95	0.96	--	--	0.82	--	--	0.78	--
Barium	µg/L	2000	--	16	14	12.4	12.4	11	12.3	12.3	13.6	--	--	16.5	--	--	18	--
Beryllium	µg/L	4	--	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.02	--	--	<0.02	--
Cadmium	µg/L	5	--	0.01	0.01	0.02	0.02	0.09	0.009	0.01	0.03	--	--	0.11	--	--	0.08	--
Chromium	µg/L	100	--	0.4	0.6	0.3	0.337	0.329	0.67	0.37	0.41	--	--	0.1	--	--	0.1	--
Cobalt	µg/L	6	--	0.177	0.09	0.017	0.019	0.014	0.051	0.064	0.121	--	--	<0.02	--	--	0.02	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.33	0.2	1.58	0.28	--	--	0.56	--
Lead	µg/L	15	--	0.158	0.105	0.101	0.022	0.063	0.042	0.047	0.243	--	--	0.04	--	--	0.133	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	<0.002	--
Molybdenum	µg/L	100	--	2.03	2.39	2.07	1.91	2.14	1.92	1.75	1.81	--	--	2	--	--	2	--
Selenium	µg/L	50	--	0.3	0.3	0.2	0.3	0.4	0.3	0.2	0.3	--	--	0.2	--	--	1	--
Thallium	µg/L	2	--	<0.02	<0.01	<0.01	<0.01	0.074	<0.01	<0.01	0.03	--	--	<0.1	--	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	3.3	5.3	89.4	--	--	7.5	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	28.6	28.8	31.9	26.7	26.8	--	--	25	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	36.6	14.7	15.3	7.27	--	--	6.68	--
Boron	mg/L	--	0.109	<0.002	0.015	0.014	0.018	0.004	0.069	0.084	0.052	0.045	0.073	0.06	--	--	<0.02	--
Calcium	mg/L	--	(79.5) 66	59.4	51.6	57.4	62.4	51.6	57.9	59	53.3	60.7	57	54.7	--	--	51.3	--
Lithium	mg/L	0.04	--	0.0004	0.018	0.005	0.008	0.009	0.0007	0.002	0.005	--	--	<0.009	--	--	<0.009	--
Magnesium	mg/L	--	--	--	--	--	--	--	21.2	21.9	19.5	22.8	21.3	20.9	--	--	19	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0124	--	0.0063	0.0025	--	--	0.0017	--
Potassium	mg/L	--	--	--	--	--	--	--	0.73	0.81	0.65	0.64	0.68	0.68	--	--	0.66	--
Sodium	mg/L	--	--	--	--	--	--	--	13.4	14	11.8	16.3	22.1	23.7	--	--	26	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0837	0.0855	0.0756	0.0888	0.0906	0.086	--	--	0.0803	--
Alkalinity	mg/L	--	--	--	--	--	--	--	174	191	188	207	215	207	--	--	220	--
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.071	0.116	0.06	0.063	<0.04	--	--	<0.04	--
Chloride	mg/L	--	(29.6) 24	21.5	21.8	23.8	21.8	21.2	21	20.8	19.6	21.2	25.3	24.8	26.5	26.1	26.4	26.8
Fluoride	mg/L	4	0.391	0.26	0.29	0.26	0.26	0.25	0.26	0.26	0.23	0.25	0.29	0.28	--	--	0.3	--
TDS	mg/L	--	(412.7) 343	298	265	301	316	284	285	321	308	323	329	272	--	--	352	339
Sulfate	mg/L	--	(35.08) 35	26	27.6	26.2	24.1	25.9	26.6	30.3	33.8	30	28.9	24.7	--	--	26.2	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	--	--	<0.1	--
Radium-228	pCi/L	--	--	-0.035	0.54	0	0.228	0.343	0.0555	-0.0726	0.631	--	--	0.146	--	--	0.54	--
Radium-226	pCi/L	--	--	0.12	0.172	0.143	0.311	0.465	0.434	0.0617	--	--	--	0.0173	--	--	0.0674	--
Radium-226/228	pCi/L	5	--	-0.035	0.66	0.172	0.371	0.654	0.5205	0.3614	0.6927	--	--	0.1633	--	--	0.6074	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	0.27	1.84	--	--	0.87	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	0.6	5	--	--	4	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	2	1	--	--	5.16	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.013	<0.002	0.003	--	--	0.003	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0001	<0.0001	<0.0001	0.0021	0.0003	0.0005	--	--	0.0009	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/11/2019	11/14/2019	5/18/2020	7/16/2020	11/11/2020	2/4/2021	5/27/2021	8/4/2021	11/11/2021	5/12/2022	11/2/2022	2/7/2023	5/24/2023	8/15/2023
Field Parameters																	
Elevation	ft NGVD	--	--	370.52	370.86	369.39	377.69	370.64	368.33	369.35	369.45	369.07	369.92	369.67	368.42	369.27	368.80
pH	S.U.	--	6.30 - 8.44	7.33	7.54	7.43	7.55	7.4	7.62	9.5	7.3	7	7.57	6.81	7.56	7.53	7.58
Specific Conductance	µmhos/cm	--	--	473	657	462	584	588	562	500	579	588	482	420	435	271	413
Turbidity	NTU	--	--	0.83	0.2	1.64	0.53	0.56	0.3	0	7.84	0	0.3	0	0.52	0	0.8
Dissolved Oxygen	mg/L	--	--	1.78	3.59	2.3	3.24	3.98	5.1	4.8		3.97	3.36	11.23	3.91	0	4.17
Temperature	°C	--	--	16.4	15.18	16.64	14.96	15.54	13.8	16.36	15.32	14.67	15.38	14.87	14.7	17.1	15.99
ORP	mV	--	--	7.7	4	27	48	85	72	73	150	218	124	146	185	270	55
Laboratory Parameters																	
Antimony	µg/L	6	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	0.76	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	19.3	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	<0.01	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	0.255	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	<0.05	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	1.1	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	<0.7	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	25.2	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.109	--	0.03	0.02	--	0.03	--	0.043	--	0.028	<0.009	0.021	--	0.018	--
Calcium	mg/L	--	(79.5) 66	--	59.2	53.7	--	58.4	--	59.8	--	55.2	42.8	43	--	41	--
Lithium	mg/L	0.04	--	--	0.00413	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	20.4	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	0.001	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	32.9	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	0.0909	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	221	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.08	--	--	--	--	0.09	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.6) 24	26.6	27.3	28.9	28.7	27.0	--	24.8	--	23.0	16.8	13.8	--	12.6	--
Fluoride	mg/L	4	0.391	--	0.28	0.34	0.33	0.34	0.36	0.35	0.35	0.33	0.39	0.43	0.45	0.43	0.4
TDS	mg/L	--	(412.7) 343	--	336	344	347	336	--	370	--	330	280	270	--	250	--
Sulfate	mg/L	--	(35.08) 35	--	27.8	24.9	--	25.7	--	30.8	--	27.1	17.9	17.7	--	17.4	--
Sulfide	mg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	0.161	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	0.0407	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	0.2017	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	1.84	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	<0.0005	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/2/2023	12/20/2023	5/15/2024
Field Parameters						
Elevation	ft NGVD	--	--	367.99	367.31	DRY
pH	S.U.	--	6.30 - 8.44	7.1	8.15	
Specific Conductance	µmhos/cm	--	--	433	491	
Turbidity	NTU	--	--	4	0.23	
Dissolved Oxygen	mg/L	--	--	4.27	14.67	
Temperature	°C	--	--	13.79	16.21	
ORP	mV	--	--	146	172	
Laboratory Parameters						
Antimony	µg/L	6	--	--	--	--
Arsenic	µg/L	10	--	--	--	--
Barium	µg/L	2000	--	--	--	--
Beryllium	µg/L	4	--	--	--	--
Cadmium	µg/L	5	--	--	--	--
Chromium	µg/L	100	--	--	--	--
Cobalt	µg/L	6	--	--	--	--
Copper	µg/L	--	--	--	--	--
Lead	µg/L	15	--	--	--	--
Mercury	µg/L	2	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--
Selenium	µg/L	50	--	--	--	--
Thallium	µg/L	2	--	--	--	--
Zinc	µg/L	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--
Boron	mg/L	--	0.109	0.021	--	--
Calcium	mg/L	--	(79.5) 66	38.8	--	--
Lithium	mg/L	0.04	--	--	--	--
Magnesium	mg/L	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--
Chloride	mg/L	--	(29.6) 24	12.4	--	--
Fluoride	mg/L	4	0.391	0.45	0.39	--
TDS	mg/L	--	(412.7) 343	230	--	--
Sulfate	mg/L	--	(35.08) 35	16.8	--	--
Sulfide	mg/L	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/13/2018	2/13/2019	5/22/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.26	368.97	368.94	368.7	366.31	368.06	368.01	368.16	366.64	365.54	369.85	369.32	367.97	368.87	371.17
pH	S.U.	--	6.6 - 8.2	7.89	7.14	7.45	7.26	7.7	7.64	8.42	6.98	7.16	7.84	7.55	7.52	7.2	7.55	7.34
Specific Conductance	µmhos/cm	--	--	581	542	513	495	370	557	383	431	553	568	802	614	434	435	481
Turbidity	NTU	--	--	2.02	1.41	0.94	1.83	3.99	16	24.3	6.25	10.3	1.3	0.91	0	17.03	2.8	0
Dissolved Oxygen	mg/L	--	--	1.54	7.64	1.96	3.62	--	10.86	1.97	22.85	0.71	1.12	1.1	0.06	0.13	10	0.71
Temperature	°C	--	--	15.88	15.93	17.11	15.97	14.38	14.74	15.42	16.34	15.68	11.06	15.3	16.03	14.25	14.3	16.09
ORP	mV	--	--	65.9	29.8	-29.6	-11.6	161.9	-52.8	156.9	-180.6	-63.4	-51.8	-55.4	-46	36.8	-17	-83.8
Laboratory Parameters																		
Antimony	µg/L	6	--	0.06	0.06	0.07	0.13	0.1	0.1	0.15	0.11	--	--	--	--	0.02	--	0.03
Arsenic	µg/L	10	--	0.64	0.68	0.55	0.61	0.65	0.74	0.9	0.76	--	--	--	--	0.49	--	0.4
Barium	µg/L	2000	--	78.5	84	67.1	60.1	59.4	58.4	59.3	62.9	--	--	--	--	95	--	102
Beryllium	µg/L	4	--	<0.005	0.006	<0.005	<0.005	<0.005	0.01	0.022	0.02	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.03	0.05	0.05	0.07	0.16	0.22	0.09	0.05	--	--	--	--	0.04	--	0.003
Chromium	µg/L	100	--	0.2	0.6	0.1	0.143	0.154	1.01	0.829	0.567	--	--	--	--	0.327	--	0.06
Cobalt	µg/L	6	--	0.606	0.76	0.415	0.26	0.28	0.581	1.28	0.995	--	--	--	--	0.492	--	0.347
Copper	µg/L	--	--	--	--	--	--	--	--	--	2.21	1.82	--	0.2	--	1.52	--	0.24
Lead	µg/L	15	--	0.208	0.454	0.178	0.231	0.383	0.588	1.39	1.19	--	--	--	--	0.467	--	0.143
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	4.91	5	4.21	3.14	2.07	2.06	2.17	2.07	--	--	--	--	2	--	2.13
Selenium	µg/L	50	--	0.7	0.7	0.6	0.4	0.2	0.2	0.4	0.2	--	--	--	--	0.2	--	0.05
Thallium	µg/L	2	--	0.051	0.04	0.04	0.02	0.03	0.03	0.04	0.064	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.4	3.4	--	20.8	--	35.2	--	7.4
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	16.3	16.8	18.9	--	16.3	--	16.9	--	15.9
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	315	244	--	9.39	--	91.9	--	6.25
Boron	mg/L	--	0.052	0.019	0.009	0.025	0.013	<0.002	0.024	0.034	0.025	0.03	--	0.052	0.03	0.05	<0.02	<0.02
Calcium	mg/L	--	82.3	74	67.5	66.8	73.9	63.9	71.5	71	68.9	72.5	--	72.7	--	64.8	--	64.3
Lithium	mg/L	0.04	--	0.005	0.021	0.002	0.006	0.007	0.005	0.007	<0.0002	--	--	--	--	<0.009	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	22.8	23.6	22.8	23.7	--	23.7	--	21.2	--	20.4
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.463	--	--	0.564	--	0.576	--	0.699
Potassium	mg/L	--	--	--	--	--	--	--	1.09	1.2	1.01	1.05	--	1.14	--	0.89	--	0.92
Sodium	mg/L	--	--	--	--	--	--	--	14.7	15.3	15.8	16.8	--	16.9	--	15.3	--	13.5
Strontium	mg/L	--	--	--	--	--	--	--	0.0919	0.0977	0.0885	0.0946	--	0.0959	--	0.0864	--	0.083
Alkalinity	mg/L	--	--	--	--	--	--	--	223	218	236	252	--	254	--	247	--	241
Bromide	mg/L	--	--	--	--	--	--	--	0.05	0.071	0.072	0.075	--	0.077	--	0.06	--	0.05
Chloride	mg/L	--	72.9	28.6	29.7	28	25.8	27.1	25.8	28.6	29.7	29.8	28.8	31.8	31.5	27.9	31.5	25.4
Fluoride	mg/L	4	0.381	0.3	0.33	0.31	0.36	0.3	0.31	0.31	0.28	0.28	--	0.32	--	0.32	--	0.32
TDS	mg/L	--	408	332	363	330	326	314	312	343	346	343	--	356	--	308	--	328
Sulfate	mg/L	--	47	42.9	54.7	41.1	36.9	39.2	39.2	42.4	44.1	45.5	--	43.2	--	39	--	39.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.1	--	<0.1
Radium-228	pCi/L	--	--	-0.0463	0.62	0.241	0.137	0.648	0.146	0.163	0.195	--	--	--	--	0.291	--	0.451
Radium-226	pCi/L	--	--	0.398	0.342	0.267	0.288	0.197	0.289	0.328	0.341	--	--	--	--	0.258	--	0.194
Radium-226/228	pCi/L	5	--	0.3517	0.962	0.508	0.425	0.845	0.435	0.491	0.536	--	--	--	--	0.549	--	0.645
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	1.96	--	0.2	--	0.64
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	--	21.7	--	2	--	0.9
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	154	--	<1	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.053	0.016	0.03	0.054	--	0.238	--	0.037	--	0.02
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.258	0.331	0.333	0.323	--	0.563	--	0.565	--	0.643

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/14/2019	5/18/2020	11/11/2020	5/27/2021	11/11/2021	5/12/2022	7/19/2022	11/2/2022	2/7/2023	5/24/2023	8/15/2023	11/2/2023	12/20/2023	5/15/2024
Field Parameters																	
Elevation	ft NGVD	--	--	371.18	369.44	370.65	369.39	369.17	369.97	370.3	369.82	368.48	369.32	368.85	368.05	367.38	365.02
pH	S.U.	--	6.6 - 8.2	7.39	7.8	6.86	9.66	6.99	7.46	6.88	7.05	7.34	7.56	7.37	6.84	8.3	6.95
Specific Conductance	µmhos/cm	--	--	576	420	558	510	647	700	669	641	671	438	665	676	693	718
Turbidity	NTU	--	--	4.1	2.08	2.72	0	0	1.87	5.31	0	1.12	0	2.1	2.42	2	4.35
Dissolved Oxygen	mg/L	--	--	0.33	5.14	7.66	0	0.06	4.49	0	0.66	0.03	0	0.6	0	0.65	0
Temperature	°C	--	--	15.93	15.94	4.84	16.6	14.51	16.3	17.11	15.24	13.62	16.3	17.43	14.48	16.19	15.88
ORP	mV	--	--	-115	-58	25	-95	-43	-54	-71	-57	-88	-37	-46	-66	-28	-75
Laboratory Parameters																	
Antimony	µg/L	6	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.39	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	90.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.141	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2.14	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	15	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.052	0.01	<0.02	<0.02	0.013	0.013	<0.009	--	0.013	--	0.01	--	0.012	--	0.011
Calcium	mg/L	--	82.3	63.4	61.9	66.6	70.9	72.1	78	--	79.8	76.7	70.6	--	70.1	--	79.5
Lithium	mg/L	0.04	--	0.00402	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	19.4	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.272	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	13.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0803	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	208	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.04	--	--	0.06	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	72.9	23.3	24.4	24.3	29.2	31.7	51.3	58.8	57.2	55	57.7	49.1	42.6	40.5	62.6
Fluoride	mg/L	4	0.381	0.33	0.36	0.37	0.35	0.32	0.3	--	0.31	--	0.3	--	0.32	--	0.32
TDS	mg/L	--	408	296	297	296	350	340	380	--	390	380	370	--	350	--	390
Sulfate	mg/L	--	47	39.3	40.5	38.6	40.8	37.2	41.1	--	40.3	--	39.2	--	35.4	--	41.2
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.191	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0689	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.2599	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	1.08	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.251	--	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
 AEP Rockport Generating Station - CCR Landfill
 Rockport, Indiana

MW-2D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	6/7/2018	8/16/2018	11/12/2018	2/13/2019	5/22/2019	7/24/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.22	368.96	368.9	368.68	366.41	368.04	367.96	367.95	366.6	369.84	369.25	367.91	368.89	371.01	371.37
pH	S.U.	--	6.3-8.5	7.86	7.47	7.29	7.1	7.4	7.39	7.3	8.51	7.24	7.55	7.33	7.36	7.32	7.25	6.28
Specific Conductance	µmhos/cm	--	--	586	524	551	516	386	568	388	516	428	460	830	464	391	803	834
Turbidity	NTU	--	--	2.31	3.15	3.5	0.79	3.45	2.67	2.32	1.72	1.82	5.05	0	5.4	2.1	1.25	3
Dissolved Oxygen	mg/L	--	--	0.45	0.31	1.77	0.31	5.47	0.79	0.87	0.45	0.84	6.83	0.74	0.86	0.37	2.29	0.9
Temperature	°C	--	--	15.8	15.79	19.32	15.58	14.22	14.45	15.65	16.06	15.71	15.35	17.83	14.61	13.7	15.57	15.8
ORP	mV	--	--	-2.7	-168.3	45	-0.7	206.9	-87.3	143.6	-24.8	-41	32.3	-24	-25.4	-164	-71.2	8
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.06	0.02	0.02	0.03	0.03	0.04	0.02	--	--	--	0.03	--	<0.02	--
Arsenic	µg/L	10	--	0.78	0.82	0.81	0.61	0.62	0.59	0.65	0.62	--	--	--	0.58	--	0.53	--
Barium	µg/L	2000	--	185	195	180	172	157	160	159	169	--	--	--	190	--	248	--
Beryllium	µg/L	4	--	<0.005	0.006	0.007	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	<0.02	--	<0.02	--
Cadmium	µg/L	5	--	0.12	0.12	0.07	0.1	0.26	0.09	0.08	0.08	--	--	--	0.17	--	0.3	--
Chromium	µg/L	100	--	0.2	0.4	0.3	0.05	0.277	0.562	0.188	0.162	--	--	--	0.2	--	<0.04	--
Cobalt	µg/L	6	--	0.473	0.439	0.425	0.212	0.327	0.252	0.335	0.353	--	--	--	0.5	--	0.488	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.16	1.96	2.09	--	0.22	--	0.18	--
Lead	µg/L	15	--	0.648	0.359	0.247	0.021	0.378	0.045	0.144	0.075	--	--	--	0.14	--	0.129	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	<0.002	--
Molybdenum	µg/L	100	--	2.11	2.16	1.97	2.09	1.8	2.13	1.9	1.89	--	--	--	2	--	2	--
Selenium	µg/L	50	--	<0.03	<0.03	0.05	0.09	0.08	0.03	0.06	0.04	--	--	--	<0.03	--	<0.03	--
Thallium	µg/L	2	--	0.02	0.02	0.03	0.01	0.02	0.02	0.02	0.02	--	--	--	<0.1	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	6	3.5	--	0.9	--	533	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.9	20.5	17.4	--	17.8	--	17.1	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	17.5	20.7	70.5	--	15.4	--	3	--
Boron	mg/L	--	0.0794	<0.002	0.01	0.013	0.014	<0.002	0.03	0.027	0.073	0.041	0.076	0.038	0.07	--	<0.02	--
Calcium	mg/L	--	123	75.6	65.8	66.7	73.9	64.2	74.2	70.8	64.7	67.7	78.6	--	72.4	--	98.5	114
Lithium	mg/L	0.04	--	0.002	0.018	0.002	0.007	0.007	0.008	0.011	0.0006	--	--	--	<0.009	--	0.02	--
Magnesium	mg/L	--	--	--	--	--	--	--	24.3	23.9	21.9	22.6	26.4	--	24.5	--	32.2	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.657	--	0.943	--	0.717	--	0.941	--
Potassium	mg/L	--	--	--	--	--	--	--	1.17	1.21	1.32	1.1	1.28	--	0.99	--	1.2	--
Sodium	mg/L	--	--	--	--	--	--	--	17.3	16.9	16	15.8	16.4	--	14.8	--	20.7	--
Strontium	mg/L	--	--	--	--	--	--	--	0.104	0.104	0.0894	0.0952	0.111	--	0.102	--	0.138	--
Alkalinity	mg/L	--	--	--	--	--	--	--	249	248	261	248	263	--	247	--	261	--
Bromide	mg/L	--	--	--	--	--	--	--	0.06	0.079	0.156	0.083	0.073	--	<0.04	--	0.08	--
Chloride	mg/L	--	132	24.2	24.2	22.8	22.2	22.3	21.7	23.1	23	22.4	43.1	93.0 ?	51.3	40.9	135	156
Fluoride	mg/L	4	0.226	0.19	0.21	0.2	0.19	0.19	0.2	0.21	0.18	0.2	0.22	--	0.2	--	0.18	--
TDS	mg/L	--	506	341	339	338	327	318	318	343	340	332	361	--	348	--	531	540
Sulfate	mg/L	--	45.5	42.1	44.2	39.6	35.4	38.3	37.6	40.5	40.5	42.3	39.8	--	36.1	--	33.3	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--	<0.1	--	<0.1	--
Radium-228	pCi/L	--	--	0.0495	0.195	0.451	0.473	0.506	1.11	0.0264	0.257	--	--	--	0.0387	--	0.553	--
Radium-226	pCi/L	--	--	-0.0267	0.133	-0.00345	1.77	0.772	0.185	0.429	0.115	--	--	--	0.245	--	0.207	--
Radium-226/228	pCi/L	5	--	0.0228	0.328	0.44755	2.243	1.278	1.295	0.4554	0.372	--	--	--	0.2837	--	0.76	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.11	--	0.12	--	0.11	--	0.39	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.8	--	0.5	--	1	--	3	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.14	--	2.75	--	<1	--	1	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.055	0.017	0.005	--	0.007	--	0.009	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.565	0.602	0.662	0.619	0.621	--	0.702	--	0.948	--

Table A-1
Summary of Analytical Data
 AEP Rockport Generating Station - CCR Landfill
 Rockport, Indiana

MW-2D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/11/2019	11/14/2019	2/18/2020	5/18/2020	7/15/2020	11/11/2020	2/3/2021	5/27/2021	8/5/2021	11/11/2021	2/15/2022	5/12/2022	7/20/2022	11/2/2022	2/8/2023
Field Parameters																		
Elevation	ft NGVD	--	--	----	371.11	----	369.47	370.67	370.61	368.29	369.31	369.43	369.03	368.45	369.81	370.2	369.72	368.38
pH	S.U.	--	6.3-8.5	7.15	7.3	7.08	7.76	7.26	7.22	7.34	9.45	7.2	6.83	7.17	7.28	7.07	7.02	7.25
Specific Conductance	µmhos/cm	--	--	705	726	1377	617	781	725	674	664	734	943	951	1050	1050	989	980
Turbidity	NTU	--	--	1.9	9.2	2.13	2.92	0.88	1.35	1	0	6.94	0	0	0.2	2.33	0	0.4
Dissolved Oxygen	mg/L	--	--	0.58	0.3	0.57	0.07	0	0	0.2	5.72		0.26	--	0.11	0.76	0.49	0.36
Temperature	°C	--	--	16.5	14.94	12.75	15.06	15.56	14.25	13.8	16.69	15.82	15.73	14	16.7	19.42	15.34	13.53
ORP	mV	--	--	-109	-73	-76.4	-90	-40	-113	-145	-85	-133	-63	-100	-58	-36	-47	-109
Laboratory Parameters																		
Antimony	µg/L	6	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	0.62	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	193	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	0.334	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	0.537	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	0.416	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	2.28	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	16.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.0794	--	0.02	--	<0.02	--	<0.02	--	0.012	--	0.011	--	<0.009	--	0.012	--
Calcium	mg/L	--	123	103	76.9	--	88.7	--	92.2	--	88.5	--	96.3	--	114	--	105	--
Lithium	mg/L	0.04	--	--	0.00298	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	24.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	0.855	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	16.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	0.108	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	252	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.06	--	--	--	--	--	0.07	--	--	--	--	--	--	--
Chloride	mg/L	--	132	110	56.5	76.3	93.6	96.2	92.2	74.2	82.9	94.2	135	159	184	175	196	162
Fluoride	mg/L	4	0.226	SSI I	0.18	--	0.21	0.2	0.20	--	0.21	--	0.2	--	0.2	--	0.21	0.21
TDS	mg/L	--	506	443	356	--	399	411	395	400	440	420	470	--	580	650	630	550
Sulfate	mg/L	--	45.5	--	38.9	--	36.2	--	35.1	--	37.6	--	33.3	--	39.1	--	39	--
Sulfide	mg/L	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	0.803	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	0.334	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	1.137	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	1.64	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-2D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/24/2023	8/15/2023	11/2/2023	5/16/2024	7/16/2024
Field Parameters								
Elevation	ft NGVD	--	--	369.22	368.77	367.93	364.93	366.87
pH	S.U.	--	6.3 - 8.5	7.5	7.2	6.77	6.87	7.2
Specific Conductance	µmhos/cm	--	--	622	960	988	1110	950
Turbidity	NTU	--	--	0	0	1.51	4.5	1.61
Dissolved Oxygen	mg/L	--	--	0	5.87	0.15	0.05	0.29
Temperature	°C	--	--	16.25	15.95	14.63	19	16.1
ORP	mV	--	--	-25	-70	13	-35	-108.4
Laboratory Parameters								
Antimony	µg/L	6	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--
Boron	mg/L	--	0.0794	0.01	--	0.012	0.012	--
Calcium	mg/L	--	123	88.6	--	78.8	100	--
Lithium	mg/L	0.04	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--
Chloride	mg/L	--	132	140	130	121	194	175
Fluoride	mg/L	4	0.226	0.2	--	0.21	0.22	--
TDS	mg/L	--	506	530	520	480	600	390
Sulfate	mg/L	--	45.5	38.5	--	34.4	38	--
Sulfide	mg/L	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-5S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/13/2018	11/10/2020	5/27/2021	11/12/2021	5/12/2022	11/3/2022	5/25/2023	11/2/2023	5/14/2024
Field Parameters												
Elevation	ft NGVD	--	--	392.55	391.70	393.08	391.14	393.96	391.21	394.23	390.50	394.57
pH	S.U.	--	7.56	7.56	6.77	7.59	6.64	7.33	--	7.91	6.77	7.18
Specific Conductance	µmhos/cm	--	--	1202	2050	826	1800	1419	--	741	1750	1810
Turbidity	NTU	--	--	0.43	6.72	31.76	0	1.8	--	0	27.7	7.82
Dissolved Oxygen	mg/L	--	--	1.09	4	7.3	0.44	4.83	--	5.34	0	4.16
Temperature	°C	--	--	12.53	16.51	18.5	13.88	18.1	--	17.92	15.57	18.85
ORP	mV	--	--	71.3	11	-76	101	4.1	--	108	78	86
Laboratory Parameters												
Antimony	µg/L	6	--	0.1	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.85	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	158	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.08	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	<0.04	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	8.15	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.43	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.05	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	1	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.8	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	5	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	21.5	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	2	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.102	0.102	0.057	0.07	0.059	0.055	0.091	0.072	0.077	0.134
Calcium	mg/L	--	86.3	86.3	93.5	71.5	96.9	77.7	73.3	71.1	85.2	93.4
Lithium	mg/L	0.04	--	<0.009	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	22.2	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.522	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	1.78	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	188	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.3	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	229	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	1.05	--	0.38	--	--	--	--	--	--
Chloride	mg/L	--	364	364	451	147	420	355	131	273	373	488
Fluoride	mg/L	4	0.21	0.21	0.23	0.24	0.19	0.24	0.2	0.21	0.19	0.2
TDS	mg/L	--	840	840	1030	580	970	860	520	730	920	1030
Sulfate	mg/L	--	41.2	41.2	47.1	52.6	46.4	38.2	64.4	49.6	56.9	43.1
Sulfide	mg/L	--	--	<0.1	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.915	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.799	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.714	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.11	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	6.1	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.01	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.555	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-6S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/18/2016	9/20/2016	11/16/2016	1/10/2017	3/8/2017	5/8/2017	7/18/2017	10/3/2017	6/5/2018	8/15/2018	9/26/2018	11/1/2018	11/14/2018	12/12/2018	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.59	368.99	368.14	367.39	367.54	367.81	368.48	367.6	369.94	370.04	368.35	368.89	368.72	368.4	372.52
pH	S.U.	--	7.9	7.5	7.4	8.1	7.9	7.9	7.6	7.7	7.3	7.52	7.7	7.9	7.31	7.91	7.46	7.42
Specific Conductance	µmhos/cm	--	--	401	430	741	360	300	441	292	347	330	483	321	430	221	464	473
Turbidity	NTU	--	--	1	0.5	1	2	1	1	1	1	0.47	0	8	0.51	0.4	0.53	1.4
Dissolved Oxygen	mg/L	--	--	7.1	5.7	1	6	5	5	7	7	5.82	8.1	5.1	7.53	5.5	4.42	6.4
Temperature	°C	--	--	16.8	19	15	14.8	14.7	15.5	15.2	16.4	16.28	16	15.5	15.04	14.4	14.71	16.6
ORP	mV	--	--	53	71	258	146	36	49	74	0.3	-9.3	155	133	115.3	126	196	70
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.03	0.03	0.03	0.03	0.03	0.02	--	--	0.03	0.03	0.02	0.03	0.03	0.03
Arsenic	µg/L	10	--	0.26	0.26	0.26	0.28	0.26	0.28	0.27	--	--	0.25	0.25	0.23	0.23	0.24	0.22
Barium	µg/L	2000	--	13.6	13.6	14.1	14.8	15.8	15.4	14.3	--	--	14.8	13.5	12.1	11.8	13.4	15.9
Beryllium	µg/L	4	--	0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.004	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	0.25	0.02	0.02	0.008	0.05	0.009	0.04	--	--	0.06	0.04	0.01	<0.01	<0.01	0.03
Chromium	µg/L	100	--	0.4	0.3	0.2	0.599	1.37	0.583	0.291	--	--	0.42	0.265	0.221	0.218	0.212	0.285
Cobalt	µg/L	6	--	0.052	0.019	0.027	0.045	0.049	0.061	0.026	--	--	0.039	<0.02	<0.02	<0.02	<0.02	<0.02
Copper	µg/L	--	--	--	--	--	--	--	--	0.37	0.31	0.46	0.42	0.29	0.17	0.18	0.26	0.51
Lead	µg/L	15	--	0.074	0.034	0.05	0.032	0.113	0.083	0.056	--	--	0.247	0.03	<0.02	0.02	<0.02	0.04
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	3.28	3.34	2.8	2.93	3.29	2.73	4.36	--	--	2.22	2.37	2.38	2.18	2.2	2
Selenium	µg/L	50	--	0.3	0.2	0.3	0.4	0.7	0.8	0.4	--	--	0.4	0.2	0.2	0.2	0.4	0.6
Thallium	µg/L	2	--	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	--	--	0.01	<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	1	0.5	2.5	1	0.7	<0.7	1	2	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.4	14.6	16.9	15.4	15.2	16.8	15.3	15.2	15.9	15.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	8.57	17.8	10.4	13.8	3	2	5.28	3	2
Boron	mg/L	--	0.012	0.014	0.012	0.028	0.006	0.032	0.051	0.078	0.094	0.09	0.101	0.08	0.04	0.04	0.102	0.02
Calcium	mg/L	--	46.1	46.3	44.4	50.8	47.8	53.2	50.3	47	44.8	45.2	52.8	44.1	42.3	38.8	46.8	52.5
Lithium	mg/L	0.04	--	0.015	0.004	0.006	0.014	0.009	0.011	<0.0002	--	--	0.005	0.02	<0.009	0.01	<0.009	0.02
Magnesium	mg/L	--	--	--	--	--	--	23.3	23.5	20.9	19.8	19.3	24	18.8	19.3	17.5	20.8	22.9
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0007	--	0.0024	0.0021	<0.0002	0.0007	0.0002	0.0003	0.0003
Potassium	mg/L	--	--	--	--	--	--	0.7	0.75	0.82	0.78	0.57	0.91	0.71	0.5	0.92	0.86	0.62
Sodium	mg/L	--	--	--	--	--	--	38.9	34.9	26.3	23.2	15.6	25.6	26.1	22	20.2	23.3	25.5
Strontium	mg/L	--	--	--	--	--	--	0.0661	0.067	0.0574	0.0548	0.0555	0.065	0.051	0.0519	0.0524	0.0595	0.691
Alkalinity	mg/L	--	--	--	--	--	--	260	272	241	249	237	267	241	230	242	247	264
Bromide	mg/L	--	--	--	--	--	--	<0.02	0.072	<0.05	0.04	0.03	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chloride	mg/L	--	8.44	8.35	6.04	7.04	7.03	3.32	8.68	4.88	3.28	2.38	11.9	6.83	3.52	3.91	6.48	9.64
Fluoride	mg/L	4	0.73	0.79	0.73	0.69	0.65	0.25	0.69	0.57	0.71	0.89	0.81	0.84	0.86	0.88	0.88	0.95
TDS	mg/L	--	294	290	266	279	287	296	305	274	261	225	277	261	225	196	240	315
Sulfate	mg/L	--	18.8	18.3	10.9	14.3	14	6.9	17.5	9.6	7.5	3.8	15.6	9.8	4.9	5.2	10	16.8
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.4	<0.1	<0.1	<0.7	<0.07	<0.1
Radium-228	pCi/L	--	--	0.101	0.798	-0.249	0.501	0.297	-0.337	0.954	--	--	0.328	0.367	0.354	0.387	-0.368	0.343
Radium-226	pCi/L	--	--	0	0.0671	0.202	0.0815	-0.00471	0.12	-0.0229	--	--	0.0553	0.089	0.0398	0.0239	0.0533	0.0431
Radium-226/228	pCi/L	5	--	0.101	0.8651	-0.047	0.5825	0.29229	-0.217	0.954	--	--	0.3833	0.456	0.3938	0.4109	0.0533	0.3861
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	1.85	--	0.4	2.17	1.86	0.14	0.53	0.17	1.22
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.2	--	0.9	3.1	3	0.7	<0.7	2	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	4.34	--	1	2.51	109	1	2	8.1	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.023	<0.002	0.003	0.163	<0.003	0.005	0.01	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	<0.0001	0.0002	0.0007	0.0015	<0.0002	0.0121	0.0003	<0.0002	0.0007	0.0002



Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-6S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/14/2019	5/19/2020	11/12/2020	5/25/2021	5/13/2022	11/3/2022	5/25/2023	11/2/2023	5/16/2024
Field Parameters												
Elevation	ft NGVD	--	--	370.42	370.70	369.42	368.82	369.24	368.64	368.57	367.19	366.03
pH	S.U.	--	7.9	7.29	7.67	7.1	8	7.29	7.8	7.73	7.52	7.21
Specific Conductance	µmhos/cm	--	--	452	373	366	354	506	411	302	716	542
Turbidity	NTU	--	--	0.21	5.46	1.72	2.9	3.16	11.6	0	3.2	1.53
Dissolved Oxygen	mg/L	--	--	5.85	7.17	8.47	3.5	8.19	7.3	4.71	8.4	8.77
Temperature	°C	--	--	14.4	15.47	17.96	16.8	16.31	16.94	16.71	14.85	20.1
ORP	mV	--	--	291.1	150	84	219	228	79	173	98	193
Laboratory Parameters												
Antimony	µg/L	6	--	0.03	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.23	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	15	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	<0.01	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.284	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	<0.02	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	<0.2	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	<0.05	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.4	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	<0.7	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	15	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	<5	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.012	0.01	<0.02	<0.02	0.017	<0.05	0.016	0.015	0.018	0.02
Calcium	mg/L	--	46.1	47.8	43.1	43.0	43.4	46.3	47.8	40.8	49.5	45.4
Lithium	mg/L	0.04	--	0.00645	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	20	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	<0.0005	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.4	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	29.6	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0627	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	262	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	<0.04	--	--	--	--	--	--	--	--
Chloride	mg/L	--	8.44	5.36	1.49	2.07	1.29	2.54	2.88	1.96	2.30	1.84
Fluoride	mg/L	4	0.73	0.9	1.02	1.11	1.21	1.09	1.11	1.09	0.99	1.08
TDS	mg/L	--	294	277	214	225	210	270	280	290	330	270
Sulfate	mg/L	--	18.8	12	1.6	4.4	0.83	6.24	6.01	6	7.5	5.6
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	-0.011	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0416	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.0416	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.4	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.9	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	<0.0005	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-61

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/25/2018	10/31/2018	11/15/2018	12/12/2018	5/23/2019	11/14/2019	5/20/2020	11/11/2020	5/25/2021	5/13/2022
Field Parameters													
Elevation	ft NGVD	--	--	369.18	368.75	368.62	368.48	372.32	370.28	370.42	369.32	368.71	369.23
pH	S.U.	--	7.6	7.8	7.25	7.35	7.44	7.66	7.32	7.49	7.58	8.03	7.55
Specific Conductance	µmhos/cm	--	--	332	467	344	458	453	374	431	310	385	372
Turbidity	NTU	--	--	6.5	0.76	0.74	0.25	0.36	0.46	0.4	2.3	9.9	2.32
Dissolved Oxygen	mg/L	--	--	1.7	0.27	2.78	0.79	1.02	2.15	2.34	10	0	9.12
Temperature	°C	--	--	16.4	15.9	14.2	14.71	16.5	14.4	14.57	15.1	17.2	19.69
ORP	mV	--	--	149	24.9	140.5	163	168.8	301.7	188	111	102	236
Laboratory Parameters													
Antimony	µg/L	6	--	0.25	0.25	0.25	0.23	0.23	0.2	--	--	--	--
Arsenic	µg/L	10	--	0.2	0.2	0.19	0.19	0.19	0.19	--	--	--	--
Barium	µg/L	2000	--	31.9	32.2	31.9	30.5	35.8	28.5	--	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--	--
Cadmium	µg/L	5	--	0.11	0.01	0.01	0.01	0.01	0.02	--	--	--	--
Chromium	µg/L	100	--	0.05	0.1	<0.04	0.05	0.07	0.222	--	--	--	--
Cobalt	µg/L	6	--	0.313	0.452	0.42	0.362	0.436	0.525	--	--	--	--
Copper	µg/L	--	--	2.36	0.78	0.92	1.21	0.6	0.7	--	--	--	--
Lead	µg/L	15	--	0.05	0.118	<0.02	<0.02	<0.02	<0.05	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	<0.002	--	--	--	--
Molybdenum	µg/L	100	--	5.31	4.7	4.46	4.17	4.4	4.43	--	--	--	--
Selenium	µg/L	50	--	0.6	0.7	0.8	0.6	0.6	0.4	--	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	--	--	--	--
Zinc	µg/L	--	--	3	<0.7	0.7	2	1	1	--	--	--	--
Silica (Dissolved)	mg/L	--	--	19.9	18.1	18.8	18.6	18.1	16.6	--	--	--	--
Aluminum	µg/L	--	--	6.57	5.88	5.54	3	4	<5	--	--	--	--
Boron	mg/L	--	0.06	0.06	0.04	0.03	0.06	<0.02	0.01	<0.02	<0.02	0.016	<0.05
Calcium	mg/L	--	42.2	43.1	42.4	43.1	47.2	47.4	44.7	50.8	46.3	43.5	42.7
Lithium	mg/L	0.04	--	0.01	<0.009	0.034	<0.009	0.01	0.0054	--	--	--	--
Magnesium	mg/L	--	--	13.9	15.1	14.6	16.1	15.7	14	--	--	--	--
Manganese	mg/L	--	--	0.185	0.24	0.247	0.249	0.272	0.276	--	--	--	--
Potassium	mg/L	--	--	0.93	0.76	0.78	0.88	1.13	0.8	--	--	--	--
Sodium	mg/L	--	--	35.7	35.9	32.9	32.7	29.9	26.6	--	--	--	--
Strontium	mg/L	--	--	0.0482	0.0528	0.0549	0.061	0.0622	0.0582	--	--	--	--
Alkalinity	mg/L	--	--	267	259	246	257	278	227	--	--	--	--
Bromide	mg/L	--	--	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	--	--	--	--
Chloride	mg/L	--	5.18	2.91	3.47	3.94	3.84	2.7	2.26	3.09	2.52	1.77	7.75
Fluoride	mg/L	4	0.89	0.88	0.86	0.86	0.86	0.85	0.89	0.94	1.04	1.05	1.00
TDS	mg/L	--	281	274	245	248	245	268	224	229	211	220	230
Sulfate	mg/L	--	9.9	5.4	4.9	6.3	7.3	4.1	4.1	7.1	5.6	3.38	15.5
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	<0.2	--	--	--	--
Radium-228	pCi/L	--	--	0.218	0.216	0.675	0.488	0.496	0.296	--	--	--	--
Radium-226	pCi/L	--	--	0.35	0.323	0.638	0.489	0.557	0.215	--	--	--	--
Radium-226/228	pCi/L	5	--	0.568	0.539	1.313	0.977	1.053	0.511	--	--	--	--
Copper (Dissolved)	µg/L	--	--	2.79	1.09	0.86	0.74	2.58	0.5	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	4	1	<0.7	<0.7	3	0.9	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	30.9	1	8.05	4	4	<5	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.064	<0.003	0.003	0.004	0.003	<0.02	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.254	0.232	0.246	0.231	0.256	0.238	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-6D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/25/2018	10/31/2018	11/14/2018	12/12/2018	5/23/2019	11/14/2019	5/18/2020	11/11/2020	5/25/2021	5/13/2022
Field Parameters													
Elevation	ft NGVD	--	--	369.15	368.72	369.6	368.44	372.31	370.23	370.6	369.29	368.74	369.21
pH	S.U.	--	7.5	7.7	7.21	7.54	7.4	7.55	7.73	7.34	7.49	7.95	7.38
Specific Conductance	µmhos/cm	--	--	369	521	365	513	681	730	539	416	536	556
Turbidity	NTU	--	--	9	0	8.4	0.25	1.2	1.2	0.44	1.5	1.9	1.66
Dissolved Oxygen	mg/L	--	--	0.4	0.34	0.42	0.15	0.9	2.19	9.55	6.4	0	3.2
Temperature	°C	--	--	16.2	16	13.5	15.07	18.6	14.1	14.64	15.2	19.4	17.58
ORP	mV	--	--	155	54.3	131	110	145	126.6	127	109	108	211
Laboratory Parameters													
Antimony	µg/L	6	--	0.02	0.03	0.03	0.02	<0.02	0.05	--	--	--	--
Arsenic	µg/L	10	--	0.89	1.3	1.05	0.93	0.94	1.08	--	--	--	--
Barium	µg/L	2000	--	77.1	75.7	73.6	76.5	112	76	--	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--	--
Cadmium	µg/L	5	--	0.03	0.01	0.02	0.01	0.01	0.01	--	--	--	--
Chromium	µg/L	100	--	0.04	0.346	0.2	0.05	0.08	0.09	--	--	--	--
Cobalt	µg/L	6	--	0.392	0.806	0.598	0.404	0.578	0.429	--	--	--	--
Copper	µg/L	--	--	0.45	1.18	1.6	1.64	0.17	0.5	--	--	--	--
Lead	µg/L	15	--	<0.02	0.205	0.167	<0.02	<0.02	<0.05	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	0.002	<0.002	--	--	--	--
Molybdenum	µg/L	100	--	3.23	2.79	2.83	3.02	2.81	3.13	--	--	--	--
Selenium	µg/L	50	--	7.3	8.5	8.2	4.3	0.09	9.3	--	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--	--
Zinc	µg/L	--	--	<0.7	2	73.1	2	<0.7	<0.7	--	--	--	--
Silica (Dissolved)	mg/L	--	--	19.5	17.5	17.6	18	18.2	16.5	--	--	--	--
Aluminum	µg/L	--	--	2	142	70.3	3	1	6	--	--	--	--
Boron	mg/L	--	0.094	0.05	0.03	0.05	0.115	0.03	0.02	<0.02	<0.02	0.019	<0.05
Calcium	mg/L	--	61.9	61.7	57.2	53.1	60.1	78.9	62	62.4	61.7	59.5	62.4
Lithium	mg/L	0.04	--	0.02	0.009	0.01	<0.009	0.01	0.00722	--	--	--	--
Magnesium	mg/L	--	--	16.8	16.9	15.2	17.1	22.1	17.4	--	--	--	--
Manganese	mg/L	--	--	0.147	0.145	0.156	0.144	0.278	0.12	--	--	--	--
Potassium	mg/L	--	--	1.2	1.04	1.43	1.47	1.29	1.05	--	--	--	--
Sodium	mg/L	--	--	29	27.8	26.5	29	35.5	30	--	--	--	--
Strontium	mg/L	--	--	0.0919	0.093	0.0927	0.102	0.14	0.0949	--	--	--	--
Alkalinity	mg/L	--	--	260	260	266	271	305	265	--	--	--	--
Bromide	mg/L	--	--	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	--	--	--	--
Chloride	mg/L	--	12.3	10.9	10.2	10	10.8	25.1	12.2	15.6	9.36	6.44	32.6
Fluoride	mg/L	4	0.39	0.41	0.41	0.42	0.42	0.36	0.41	0.43	0.46	0.47	0.42
TDS	mg/L	--	331	310	295	276	296	408	310	311	286	300	310
Sulfate	mg/L	--	27.3	24.1	23	22.2	23.6	39.5	25.4	29.8	20.1	15.6	22.2
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	<0.2	--	--	--	--
Radium-228	pCi/L	--	--	0.29	0.21	0.275	-0.0272	0.586	0.179	--	--	--	--
Radium-226	pCi/L	--	--	0.295	0.122	0.102	0.423	0.543	0.108	--	--	--	--
Radium-226/228	pCi/L	5	--	0.585	0.332	0.377	0.423	0.423	0.423	--	--	--	--
Copper (Dissolved)	µg/L	--	--	1.27	0.44	0.7	0.5	0.53	0.4	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	0.9	2	2	1	2	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	31.6	3	2	45.3	15.6	10	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.082	<0.003	0.004	0.117	0.007	<0.02	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.127	0.137	0.135	0.142	0.263	0.123	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-7S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/14/2018	12/12/2018	5/22/2019	11/12/2020	5/25/2021	5/12/2022
Field Parameters											
Elevation	ft NGVD	--	--	369.5	368.76	368.68	368.47	371.91	369.63	368.59	369.7
pH	S.U.	--	7.4	7.4	7.33	7.31	7.3	8.39	6.72	7.72	7.19
Specific Conductance	µmhos/cm	--	--	417	611	455	629	527	678	725	629
Turbidity	NTU	--	--	106	104	42.6	44	4.77	9.78	7.7	8.52
Dissolved Oxygen	mg/L	--	--	0.4	0.32	0.7	0.23	0.65	0.4	0	0.14
Temperature	°C	--	--	15.4	15.01	13.9	14.43	14.69	14.47	15.2	14.94
ORP	mV	--	--	106	85.4	48.2	92	0.1	135	227	180
Laboratory Parameters											
Antimony	µg/L	6	--	0.14	0.15	0.06	0.09	0.02	--	--	--
Arsenic	µg/L	10	--	1.48	2.01	0.7	1.06	0.11	--	--	--
Barium	µg/L	2000	--	18.7	24.3	12.9	15.4	8.42	--	--	--
Beryllium	µg/L	4	--	0.101	0.127	0.05	0.07	<0.02	--	--	--
Cadmium	µg/L	5	--	0.05	0.06	0.02	0.05	0.02	--	--	--
Chromium	µg/L	100	--	2.08	2.45	0.831	1.48	0.1	--	--	--
Cobalt	µg/L	6	--	6.48	9.82	3.47	4.98	0.255	--	--	--
Copper	µg/L	--	--	4.4	5.36	1.91	2.76	0.51	--	--	--
Lead	µg/L	15	--	4.69	6.69	2.38	3.56	0.205	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	<0.4	<0.4	<0.4	<0.4	<0.4	--	--	--
Selenium	µg/L	50	--	0.6	0.8	0.3	0.4	0.2	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	7.9	9.5	14	5	39.1	--	--	--
Silica (Dissolved)	mg/L	--	--	20.8	18.7	18.6	19.3	18.4	--	--	--
Aluminum	µg/L	--	--	1520	1850	681	1170	39.3	--	--	--
Boron	mg/L	--	0.079	0.04	0.07	0.135	0.08	0.03	<0.02	0.015	<0.009
Calcium	mg/L	--	70.2	73.7	68.3	66.2	67.1	62.4	68.5	78.2	71.4
Lithium	mg/L	0.04	--	0.02	0.01	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	25.4	25.7	24.3	24.6	21.7	--	--	--
Manganese	mg/L	--	--	0.334	0.49	0.182	0.248	0.0145	--	--	--
Potassium	mg/L	--	--	1.33	1.39	1.81	1.3	0.87	--	--	--
Sodium	mg/L	--	--	17.9	19.1	18.9	18.7	17	--	--	--
Strontium	mg/L	--	--	0.083	0.0857	0.0883	0.0874	0.0803	--	--	--
Alkalinity	mg/L	--	--	256	261	255	261	242	--	--	--
Bromide	mg/L	--	--	0.09	0.09	0.09	0.09	0.1	--	--	--
Chloride	mg/L	--	32.8	32.2	33.5	33.2	33.6	35.4	27.7	19.5	32.3
Fluoride	mg/L	4	0.52	0.54	0.53	0.54	0.55	0.55	0.60	0.59	0.57
TDS	mg/L	--	358	370	358	354	353	353	346	380	350
Sulfate	mg/L	--	32	32.2	33.1	33.1	33.7	34.1	36.1	34.8	39.3
Sulfide	mg/L	--	--	<0.1	<0.1	<0.007	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	0.48	0.601	0.254	0.191	0.27	--	--	--
Radium-226	pCi/L	--	--	0.271	0.245	0.211	0.507	0.0334	--	--	--
Radium-226/228	pCi/L	5	--	0.751	0.846	0.465	0.698	0.3034	--	--	--
Copper (Dissolved)	µg/L	--	--	1.01	0.07	1.62	0.2	0.17	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	<0.7	3	<0.7	<0.7	--	--	--
Aluminum (Dissolved)	µg/L	--	--	311	3	2	3	2	--	--	--
Iron (Dissolved)	mg/L	--	--	0.618	0.004	0.005	0.007	<0.003	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0797	0.0021	0.0012	0.0026	0.0009	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-71

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/15/2018	12/12/2018	5/22/2019	11/12/2020	5/26/2021	5/13/2022
Field Parameters											
Elevation	ft NGVD	--	--	369.01	368.51	368.5	368.27	371.73	369.44	368.59	369.29
pH	S.U.	--	7.4	7.5	7.3	7.03	7.27	8.4	6.72	7.71	7.18
Specific Conductance	µmhos/cm	--	--	419	613	460	645	573	712	744	715
Turbidity	NTU	--	--	19	14.4	7.05	19.9	1.6	1.43	6.3	28
Dissolved Oxygen	mg/L	--	--	0.3	0.36	0.95	0.21	0.7	0.29	0	0.55
Temperature	°C	--	--	15.5	15.17	13.78	14.46	15.1	15.02	14.9	15.1
ORP	mV	--	--	57	-19.2	68.4	44	-71.2	-57	-7	160.4
Laboratory Parameters											
Antimony	µg/L	6	--	0.02	0.03	<0.02	<0.02	0.02	--	--	--
Arsenic	µg/L	10	--	0.28	0.43	0.24	0.26	0.23	--	--	--
Barium	µg/L	2000	--	175	230	162	147	116	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	0.05	0.06	0.03	0.03	0.35	--	--	--
Chromium	µg/L	100	--	0.2	0.315	0.09	0.07	0.09	--	--	--
Cobalt	µg/L	6	--	3.07	8.34	1.11	1.67	1.1	--	--	--
Copper	µg/L	--	--	0.55	1.45	0.59	0.76	0.4	--	--	--
Lead	µg/L	15	--	0.45	0.6	0.05	0.145	0.228	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	4.2	4.31	<0.4	3.45	3.63	--	--	--
Selenium	µg/L	50	--	0.05	0.09	0.05	0.05	0.04	--	--	--
Thallium	µg/L	2	--	<0.1	0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	2	15.1	1	2	3	--	--	--
Silica (Dissolved)	mg/L	--	--	20.5	18.1	18.5	18.8	18.4	--	--	--
Aluminum	µg/L	--	--	74.1	304	69.9	39.5	27.7	--	--	--
Boron	mg/L	--	0.07	0.04	0.06	0.09	0.08	0.03	<0.02	0.017	<0.05
Calcium	mg/L	--	75.3	75.4	68.8	68.8	73.7	73.7	71.4	75	79.7
Lithium	mg/L	0.04	--	0.01	<0.009	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	21.9	21.7	21.4	22.8	21.5	--	--	--
Manganese	mg/L	--	--	2.76	4	1.08	2.89	0.821	--	--	--
Potassium	mg/L	--	--	1.22	0.97	1.57	1.19	1.08	--	--	--
Sodium	mg/L	--	--	19.8	20.1	21.5	21.3	18.1	--	--	--
Strontium	mg/L	--	--	0.0928	0.0932	0.1	0.103	0.11	--	--	--
Alkalinity	mg/L	--	--	236	237	233	229	232	--	--	--
Bromide	mg/L	--	--	0.1	0.1	0.1	0.1	0.1	--	0.16	--
Chloride	mg/L	--	45	45.8	48.2	47.6	48.8	49	53.3	56.6	65.2
Fluoride	mg/L	4	0.33	0.34	0.34	0.35	0.35	0.33	0.36	0.34	0.32
TDS	mg/L	--	312	348	338	354	347	376	357	380	410
Sulfate	mg/L	--	38.4	38.9	38.9	39	39.1	43.1	42.6	42	44
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	-0.0705	0.369	0.123	0.089	0.643	--	--	--
Radium-226	pCi/L	--	--	4.16	0.513	0.605	0.934	0.155	--	--	--
Radium-226/228	pCi/L	5	--	4.16	0.882	0.728	1.023	0.798	--	--	--
Copper (Dissolved)	µg/L	--	--	0.93	0.24	1.56	0.72	0.15	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	0.9	3	2	2	--	--	--
Aluminum (Dissolved)	µg/L	--	--	1	10.6	2	137	2	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.003	0.01	0.006	0.128	<0.003	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.172	0.51	0.243	3.9	0.121	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-7D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/12/2018	5/22/2019	11/12/2020	5/26/2021	5/12/2022
Field Parameters											
Elevation	ft NGVD	--	--	369.08	368.65	368.57	368.35	371.82	369.50	368.68	369.09
pH	S.U.	--	7.2	7.5	6.91	7.26	7.18	7.91	6.64	7.47	7.06
Specific Conductance	µmhos/cm	--	--	419	617	444	622	549	1760	1870	1810
Turbidity	NTU	--	--	10.8	1.02	5.96	0	0.01	0.07	0.4	3.5
Dissolved Oxygen	mg/L	--	--	0.7	3.72	11.3	0.52	2	0	0	0.32
Temperature	°C	--	--	15.2	14.79	13.32	15.23	16.25	15.17	14.9	16.09
ORP	mV	--	--	57	26.4	26.4	-5	-40.4	-11	86	23
Laboratory Parameters											
Antimony	µg/L	6	--	0.04	0.03	0.04	0.06	0.02	--	--	--
Arsenic	µg/L	10	--	0.91	0.8	0.87	0.85	0.72	--	--	--
Barium	µg/L	2000	--	286	283	268	320	284	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	0.02	0.02	0.04	<0.01	<0.01	--	--	--
Chromium	µg/L	100	--	0.2	0.334	0.1	0.1	0.07	--	--	--
Cobalt	µg/L	6	--	2.52	2.46	2.24	2.24	1.88	--	--	--
Copper	µg/L	--	--	0.34	0.44	0.57	1.59	0.08	--	--	--
Lead	µg/L	15	--	0.1	0.164	0.101	0.144	<0.02	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	4.09	9.76	7.38	5.43	3.49	--	--	--
Selenium	µg/L	50	--	0.05	0.05	0.03	<0.03	<0.03	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	2	4	3	5.1	--	--	--
Silica (Dissolved)	mg/L	--	--	216	19.2	19.9	19.8	19.2	--	--	--
Aluminum	µg/L	--	--	31.4	56.7	16.5	<1	1	--	--	--
Boron	mg/L	--	0.06	0.04	0.05	0.07	0.04	0.02	<0.02	0.019	<0.009
Calcium	mg/L	--	80.1	79.2	75	62.8	77.4	76.7	153	168	177
Lithium	mg/L	0.04	--	<0.009	0.01	0.02	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	25	25.8	21	25.7	24.3	--	--	--
Manganese	mg/L	--	--	1.89	1.66	1.34	1.51	1.49	--	--	--
Potassium	mg/L	--	--	1.22	1.07	1.39	1.25	0.94	--	--	--
Sodium	mg/L	--	--	14.2	15.4	12.9	15.3	13.9	--	--	--
Strontium	mg/L	--	--	0.137	0.141	0.125	0.146	0.138	--	--	--
Alkalinity	mg/L	--	--	273	293	296	300	296	--	--	--
Bromide	mg/L	--	--	0.09	0.08	0.08	0.08	0.009	--	1.16	--
Chloride	mg/L	--	17.3	17.5	17.2	16.9	17.2	19.1	360	420	436
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.27	0.26	0.25	0.23	0.2
TDS	mg/L	--	359	358	3.46	340	344	371	899	990	970
Sulfate	mg/L	--	36.9	36.3	36	35.4	35.5	35.2	33.8	33	33.5
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	0.36	0.202	0.548	0.159	0.89	--	--	--
Radium-226	pCi/L	--	--	0.983	0.107	0.45	0.717	0.265	--	--	--
Radium-226/228	pCi/L	5	--	1.343	0.309	0.998	0.876	1.155	--	--	--
Copper (Dissolved)	µg/L	--	--	0.55	0.17	2.01	0.18	0.77	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	2	4	1	3	--	--	--
Aluminum (Dissolved)	µg/L	--	--	6.36	6.44	2	3	2	--	--	--
Iron (Dissolved)	mg/L	--	--	0.103	0.081	0.08	0.093	0.072	--	--	--
Manganese (Dissolved)	mg/L	--	--	1.76	1.6	1.47	1.35	1.5	--	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-8S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/19/2016	9/21/2016	11/17/2016	1/9/2017	3/7/2017	5/9/2017	7/18/2017	10/4/2017	12/12/2017	6/5/2018	11/13/2018	5/23/2019	11/21/2019	5/19/2020	11/10/2020
Field Parameters																		
Elevation	ft NGVD	--	--	369.78	369.44	369.25	368.53	368.39	368.39	368.81	367.5	366.59	369.59	368.9	371.48	371.51	370.01	370.96
pH	S.U.	--	7.3	7.2	7.1	7.9	7.6	7.6	7.4	7.4	7.75	7.7	7.59	7.58	7.38	7.43	6.29	6.8
Specific Conductance	µmhos/cm	--	--	516	540	811	450	260	444	410	395	460	400	354	440	495	567	633
Turbidity	NTU	--	--	1.1	2	2	3	4	8	1	2.46	6	3.48	2.6	0.69	53.7	0	5.16
Dissolved Oxygen	mg/L	--	--	3.2	3.6	1	2	4	2	3.2	3.12	0.8	2.1	3.8	6.54	6.51	4.63	3.21
Temperature	°C	--	--	20.7	21.6	16.2	14	14.2	15.6	15.8	16.57	14.1	15.05	14.4	16.17	12.82	14.81	17.04
ORP	mV	--	--	29	18	275	131	50	50	65	29.9	-17	-33.7	158	54.2	110.9	164	94
Laboratory Parameters																		
Antimony	µg/L	6	--	0.3	0.02	0.03	0.02	0.04	0.03	0.02	--	--	--	0.05	<0.02	0.04	--	--
Arsenic	µg/L	10	--	1.78	1.33	1.26	1.56	1.53	2.09	1.19	--	--	--	1.61	1.52	1.97	--	--
Barium	µg/L	2000	--	13.1	12.2	10.9	13.8	14.5	16.9	10.9	--	--	--	10.4	9.22	16.6	--	--
Beryllium	µg/L	4	--	0.232	<0.005	<0.005	0.006	0.009	0.01	<0.004	--	--	--	<0.02	<0.02	<0.02	--	--
Cadmium	µg/L	5	--	0.31	0.02	0.05	0.01	0.26	0.09	0.13	--	--	--	0.03	<0.01	0.03	--	--
Chromium	µg/L	100	--	0.6	0.4	0.156	1.04	0.881	0.423	0.277	--	--	--	0.578	0.235	0.378	--	--
Cobalt	µg/L	6	--	0.453	0.125	0.113	0.447	0.433	0.981	0.052	--	--	--	0.207	0.058	0.669	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	0.18	0.12	--	0.25	1.7	0.13	0.5	--	--
Lead	µg/L	15	--	0.364	0.066	0.065	0.19	0.278	0.389	0.038	--	--	--	0.152	0.03	0.33	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.015	--	--	--	--	<0.002	<0.002	--	--
Molybdenum	µg/L	100	--	1.1	0.8	0.71	0.77	1.56	0.75	0.83	--	--	--	0.9	0.9	0.5	--	--
Selenium	µg/L	50	--	0.6	0.2	0.2	0.2	0.2	0.3	0.2	--	--	--	0.5	0.6	1	--	--
Thallium	µg/L	2	--	0.276	0.03	<0.01	0.01	0.17	<0.01	<0.01	--	--	--	<0.1	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.6	--	1	3	2	2	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	21.5	21.2	24.7	--	21.7	21.4	<0.06	20.9	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	7.37	10.6	--	53	31	8.03	164	--	--
Boron	mg/L	--	0.01	0.012	0.011	0.032	<0.002	0.043	0.028	0.022	0.016	--	0.058	0.04	<0.02	0.01	<0.02	<0.02
Calcium	mg/L	--	42.7	41.5	42.7	42.9	45.8	44.8	42.9	44.4	39.8	--	42.3	35.6	35.9	39	42.2	43.5
Lithium	mg/L	0.04	--	0.025	0.001	0.002	0.002	0.006	0.006	0.001	--	--	--	<0.009	0.02	0.00311	--	--
Magnesium	mg/L	--	--	--	--	--	--	19.6	20	20	17.6	--	18.8	16	16.1	16.9	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0021	--	--	0.0323	0.0154	0.0033	0.0413	--	--
Potassium	mg/L	--	--	--	--	--	--	0.91	0.89	0.77	0.65	--	0.82	0.88	0.76	1	--	--
Sodium	mg/L	--	--	--	--	--	--	41.2	40.5	42.1	43.2	--	40.1	34.6	37.4	39.7	--	--
Strontium	mg/L	--	--	--	--	--	--	0.0562	0.0564	0.0543	0.0494	--	0.0555	0.0464	0.0458	0.0478	--	--
Alkalinity	mg/L	--	--	--	--	--	--	162	181	167	171	--	181	159	150	173	--	--
Bromide	mg/L	--	--	--	--	--	--	0.03	0.062	0.04	0.06	--	<0.02	<0.04	<0.04	0.1	--	--
Chloride	mg/L	--	23.7	23.5	22.1	21.1	20.8	21.4	22.8	22.7	22.4	22.5	23.8	22.9	23.6	23.1	27.2	27.1
Fluoride	mg/L	4	0.56	0.56	0.54	0.55	0.47	0.52	0.52	0.47	0.52	0.56	0.59	0.57	0.58	0.49	0.5	0.56
TDS	mg/L	--	345	321	332	322	300	320	319	319	317	--	324	288	312	324	342	326
Sulfate	mg/L	--	26.5	26.4	23.4	21.7	22.1	21.7	21.8	22.3	23.1	24.9	21.2	19.5	20.4	20	23.8	23.3
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1	<0.1	<0.2	--	--
Radium-228	pCi/L	--	--	0.455	1.16	0.343	0.394	0.26	-0.175	1.5	--	--	--	0.346	0.113	0.0252	--	--
Radium-226	pCi/L	--	--	0.122	0.131	0.147	0.282	0.0561	0.127	0.153	--	--	--	0.137	0.0183	0.296	--	--
Radium-226/228	pCi/L	5	--	0.577	1.291	0.49	0.676	0.3161	-0.048	1.653	--	--	--	0.483	0.1313	0.3212	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.96	--	--	0.44	0.29	0.48	<0.2	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.5	--	--	0.7	2	2	0.7	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2	--	--	1	1	7.36	10	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.004	<0.0004	<0.0004	0.014	--	0.002	0.003	0.007	<0.02	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	0.0002	0.0004	0.0002	0.0004	--	0.0012	0.0006	0.0007	<0.0005	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-8S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/27/2021	11/12/2021	5/12/2022	11/2/2022	5/25/2023	11/2/2023	5/16/2024
Field Parameters										
Elevation	ft NGVD	--	--	369.67	369.46	370.26	370.21	369.59	368.76	365.60
pH	S.U.	--	7.3	7.75	6.94	7.39	7.13	7.94	7.50	7.17
Specific Conductance	µmhos/cm	--	--	513	559	572	572	369	673	523
Turbidity	NTU	--	--	3.62	0.08	9.67	0	0	17	2.84
Dissolved Oxygen	mg/L	--	--	0.86	3.78	4.57	3.14	0	3.48	2.86
Temperature	°C	--	--	17.54	13.25	17.2	17.69	15.69	14.18	17.28
ORP	mV	--	--	132	156	242.2	71	178	122	199
Laboratory Parameters										
Antimony	µg/L	6	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.01	0.014	0.015	<0.009	0.015	0.012	0.015	0.014
Calcium	mg/L	--	42.7	39.7	40	38.9	41.2	36	40.9	36.1
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.03	--	--	--	--	--	--
Chloride	mg/L	--	23.7	26.8	27.3	29.4	30.2	29.1	29.2	26.1
Fluoride	mg/L	4	0.56	0.59	0.55	0.56	0.57	0.57	0.55	0.64
TDS	mg/L	--	345	330	310	340	350	330	330	280
Sulfate	mg/L	--	26.5	19.8	20.3	23.8	22.6	22	21.6	19.6
Sulfide	mg/L	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-81

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/19/2016	9/21/2016	11/17/2016	1/9/2017	3/6/2017	5/9/2017	7/18/2017	10/4/2017	12/12/2017	6/4/2018	11/14/2018	5/23/2019	11/22/2019	5/19/2020	11/10/2020
Field Parameters																		
Elevation	ft NGVD	--	--	370.06	369.7	369.51	368.84	368.68	368.68	369.07	367.78	366.87	369.85	367.78	371.38	371.37	369.87	370.84
pH	S.U.	--	7.2	7.2	7.44	7.6	7.6	7.4	7.2	7.3	7.56	7.9	7.68	7.22	7.22	6.73	7.83	7.38
Specific Conductance	µmhos/cm	--	--	580	455	968	420	80	507	485	471	390	619	453	607	525	601	621
Turbidity	NTU	--	--	9	3.29	1	5	10	2	1	6.26	1	3.18	9	2.4	8	0	6.98
Dissolved Oxygen	mg/L	--	--	0.6	0.17	0.8	1	4.5	0.3	0.2	0.31	9.7	2.46	0.37	2.53	1.3	0	0.48
Temperature	°C	--	--	21	15.39	17.1	14	14.4	15	16.2	15.51	14.4	17.42	13.8	19.41	13.6	15.09	17.23
ORP	mV	--	--	-60	-63.9	-1	29	25	52	-15	-67.4	111	-75.3	190	-8.1	-185	21	-8
Laboratory Parameters																		
Antimony	µg/L	6	--	0.27	0.07	0.1	0.08	0.08	0.08	0.07	--	--	--	0.17	0.17	0.16	--	--
Arsenic	µg/L	10	--	11.5	2.08	1.39	2.58	2.78	2.09	1.31	--	--	--	3.41	1.07	1.6	--	--
Barium	µg/L	2000	--	70.1	57	58.4	54.9	56.9	57.8	60.4	--	--	--	57.9	63.8	58.5	--	--
Beryllium	µg/L	4	--	0.119	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	<0.02	<0.02	<0.02	--	--
Cadmium	µg/L	5	--	0.28	0.02	0.04	0.02	0.04	0.05	0.02	--	--	--	0.15	0.02	0.08	--	--
Chromium	µg/L	100	--	0.5	0.1	0.055	0.817	0.511	0.23	0.077	--	--	--	0.07	0.05	0.1	--	--
Cobalt	µg/L	6	--	0.961	0.643	0.646	0.671	0.656	0.77	0.672	--	--	--	1.01	0.55	0.741	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	0.11	0.13	--	0.42	1.45	0.2	0.5	--	--
Lead	µg/L	15	--	0.242	0.02	0.032	0.025	0.032	0.054	0.01	--	--	--	0.111	<0.02	<0.05	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002	<0.002	--	--
Molybdenum	µg/L	100	--	3	2.34	2.47	2.31	2.73	2.29	2.58	--	--	--	2.7	2.72	2.43	--	--
Selenium	µg/L	50	--	7.5	2.7	3	2.3	2.9	4.5	4.7	--	--	--	2.5	3.7	1.4	--	--
Thallium	µg/L	2	--	0.166	0.03	0.03	0.04	0.05	0.03	0.03	--	--	--	<0.1	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.9	--	3.2	9.2	21.9	3	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.6	14.7	17.1	--	16.4	14.1	<0.06	13.3	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	2	1	--	0.8	8.7	<1	<5	--	--
Boron	mg/L	--	0.017	0.016	0.017	0.028	0.006	0.083	0.045	0.026	0.096	--	0.044	0.06	0.03	0.02	0.02	<0.02
Calcium	mg/L	--	72	67.9	67.4	77.5	79.5	74.7	71.9	72.2	74.7	--	76.7	67.7	70.7	66.9	68.8	66.8
Lithium	mg/L	0.04	--	0.007	0.008	0.009	0.005	0.01	0.001	<0.0002	--	--	--	0.02	0.02	0.00419	--	--
Magnesium	mg/L	--	--	--	--	--	--	22.3	22.9	22.2	22.5	--	23.5	21.4	22.4	20.7	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	0.357	--	--	0.32	0.509	0.407	0.443	--	--
Potassium	mg/L	--	--	--	--	--	--	1.84	1.73	1.48	2.02	--	1.6	2.28	1.76	1.76	--	--
Sodium	mg/L	--	--	--	--	--	--	29.4	28.5	29.7	28.6	--	32.5	31.5	31.6	29.2	--	--
Strontium	mg/L	--	--	--	--	--	--	0.146	0.148	0.14	0.146	--	0.152	0.139	0.138	0.129	--	--
Alkalinity	mg/L	--	--	--	--	--	--	245	246	247	237	--	268	250	250	268	--	--
Bromide	mg/L	--	--	--	--	--	--	0.04	0.065	0.062	0.064	--	0.05	<0.04	<0.04	<0.04	--	--
Chloride	mg/L	--	21.7	22	21.5	21.3	20.9	20.7	21.2	20.9	20.1	19.3	20.9	20.6	21	19.7	20.4	19.3
Fluoride	mg/L	4	0.35	0.34	0.29	0.29	0.25	0.28	0.28	0.25	0.27	0.29	0.29	0.33	0.34	0.3	0.32	0.38
TDS	mg/L	--	370	358	376	387	371	391	376	379	378	--	407	390	371	381	357	343
Sulfate	mg/L	--	87.5	86.3	79.2	77.5	80	80.3	81.9	83.4	85.9	87.1	79	68.2	62.3	68.3	61.7	56.7
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1	<0.2	--	--
Radium-228	pCi/L	--	--	0.4275	0.157	0.42	1.1	0.372	0.45	0.616	--	--	--	0.354	0.43	0.479	--	--
Radium-226	pCi/L	--	--	0.824	0.521	0.746	0.725	0.643	0.561	0.463	--	--	--	0.676	0.663	0.723	--	--
Radium-226/228	pCi/L	5	--	1.2515	0.678	1.166	1.825	1.015	1.011	1.079	--	--	--	1.03	1.093	1.202	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.52	--	--	0.27	0.17	0.45	<0.2	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.4	--	--	16.8	<0.7	2	0.9	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.46	--	--	<0.8	<1	2	<5	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	0.36	0.405	0.35	0.515	--	1.08	0.213	0.334	0.333	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	0.349	0.39	0.324	0.363	--	0.31	0.358	0.368	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-81

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/27/2021	11/12/2021	5/12/2022	11/2/2022	5/25/2023	11/2/2023	5/16/2024
Field Parameters										
Elevation	ft NGVD	--	--	369.5	369.37	370.18	370.07	369.37	368.64	365.52
pH	S.U.	--	7.2	8.33	6.8	7.29	7.06	7.75	7.35	7.09
Specific Conductance	µmhos/cm	--	--	530	643	619	571	406	750	639
Turbidity	NTU	--	--	33.42	0.08	5.7	0	0	1.8	1.21
Dissolved Oxygen	mg/L	--	--	5.35	0	0.37	0.58	0	0.22	0.01
Temperature	°C	--	--	20.33	13.61	16.7	16.66	16.06	14.01	16.46
ORP	mV	--	--	143	100	105	-4	-26	-65	-23
Laboratory Parameters										
Antimony	µg/L	6	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.017	0.02	0.02	0.009	0.022	0.019	0.022	0.021
Calcium	mg/L	--	72	68.1	67.6	67	65.1	59.9	65.7	62.2
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.03	--	--	--	--	--	--
Chloride	mg/L	--	21.7	18.8	19.3	20	20.8	20.4	20.1	21.3
Fluoride	mg/L	4	0.35	0.36	0.34	0.35	0.39	0.35	0.34	0.4
TDS	mg/L	--	370	390	350	340	360	390	350	360
Sulfate	mg/L	--	87.5	56	54	57.6	55.7	62.6	61.2	64.1
Sulfide	mg/L	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-11S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/18/2016	9/20/2016	11/16/2016	1/9/2017	3/7/2017	5/19/2017	7/18/2017	10/3/2017	12/12/2017	6/5/2018	11/14/2018	5/23/2019	11/15/2019	5/20/2020
Field Parameters																	
Elevation	ft NGVD	--	--	369.93	369.4	368.47	367.7	367.51	367.92	368.57	367.86	366.6	369.69	369.27	373.25	371.21	
pH	S.U.	--	7.9	7.3	7.3	8.4	8.1	7.9	7.78	7.7	7.2	8.3	7.21	7.55	7.71	7.76	7.4
Specific Conductance	µmhos/cm	--	--	272	330	433	200	70	307	386	267	260	360	309	440	533	435
Turbidity	NTU	--	--	0.81	0.4	1	0.8	0.3	2.64	0.4	0.5	0.6	0.39	0.2	1	1.97	0.18
Dissolved Oxygen	mg/L	--	--	9.3	7.4	2	7	7	6.99	6.1	8	19.4	6.94	6.9	9	5.53	8.95
Temperature	°C	--	--	16.1	22.4	14.7	14.8	15	15.7	17.1	15.4	13.4	14.97	13.25	17.3	15.3	13.75
ORP	mV	--	--	24	167	227	126	47	75.6	73	-13	73	-2.7	152	240	114.7	216
Laboratory Parameters																	
Antimony	µg/L	6	--	0.04	0.04	0.05	0.04	0.04	0.04	<0.05	--	--	--	0.05	0.05	0.04	--
Arsenic	µg/L	10	--	0.53	0.42	0.45	0.52	0.52	0.48	0.5	--	--	--	0.38	0.36	0.43	--
Barium	µg/L	2000	--	9.79	11.3	7.91	6.52	7.09	7.73	8.16	--	--	--	12.5	13.7	10.8	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.02	--	--	--	<0.02	0.03	<0.02	--
Cadmium	µg/L	5	--	0.03	0.03	0.02	0.01	0.007	0.03	<0.02	--	--	--	0.03	0.02	<0.01	--
Chromium	µg/L	100	--	0.5	0.8	0.416	0.725	1.25	0.567	0.568	--	--	--	0.384	0.483	0.468	--
Cobalt	µg/L	6	--	0.043	0.029	0.027	0.022	0.027	0.03	0.02	--	--	--	<0.02	0.03	<0.02	--
Copper	µg/L	--	--	--	--	--	--	--	0.44	0.26	--	--	0.25	0.44	2.07	0.3	--
Lead	µg/L	15	--	0.02	0.046	0.027	0.02	0.02	0.023	0.06	--	--	--	0.03	<0.02	<0.05	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	0.002	0.002	<0.002	--	--	--	--	<0.002	<0.002	--
Molybdenum	µg/L	100	--	4.36	3.37	4.71	6.09	6.03	4.86	4.69	--	--	--	2.4	2.04	2.15	--
Selenium	µg/L	50	--	0.08	0.1	0.07	0.05	0.2	0.2	0.3	--	--	--	0.04	<0.03	0.06	--
Thallium	µg/L	2	--	0.01	0.01	0.02	0.01	0.01	0.01	0.2	--	--	--	<0.1	<0.1	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	7	<0.4	--	2	<0.7	<0.7	0.8	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	24.9	24.4	27.3	--	25.8	26.6	24.5	25	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	10	3.63	--	2	3	3	<5	--
Boron	mg/L	--	0.062	0.062	0.077	0.053	0.029	0.057	0.047	0.067	0.09	--	0.076	0.11	0.08	0.052	0.04
Calcium	mg/L	--	41.6	38.8	45.1	37.3	40.4	42.8	41.2	44.2	43.7	--	55.8	56.4	54.3	47.6	55.8
Lithium	mg/L	0.04	--	0.024	0.004	0.005	0.003	0.013	0.009	0.002	--	--	--	0.01	0.01	0.00669	--
Magnesium	mg/L	--	--	--	--	--	--	17.2	17.7	18.8	17.6	--	24.8	19.5	17.7	17	--
Manganese	mg/L	--	--	--	--	--	--	--	--	<0.0001	--	--	<0.0002	0.0004	<0.0002	0.0006	--
Potassium	mg/L	--	--	--	--	--	--	0.42	0.42	0.42	0.48	--	0.37	0.88	0.4	0.5	--
Sodium	mg/L	--	--	--	--	--	--	5.72	5.58	6.82	7.26	--	7.11	5.35	4.43	4.47	--
Strontium	mg/L	--	--	--	--	--	--	0.0508	0.0535	0.0532	0.0537	--	0.0706	0.0774	0.0707	0.0638	--
Alkalinity	mg/L	--	--	--	--	--	--	153	175	187	167	--	226	246	235	223	--
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	<0.02	<0.02	--	<0.02	<0.04	<0.4	<0.04	--
Chloride	mg/L	--	1.82	1.83	1.62	1.54	2.12	4.63	9.87	8.19	3.68	2.4	6.98	1.79	1.62	1.48	2.68
Fluoride	mg/L	4	0.74	0.76	0.73	0.92	0.96	1	0.86	0.75	0.89	0.82	0.62	0.72	0.82	0.77	0.58
TDS	mg/L	--	212	201	196	182	179	197	239	224	200	--	276	238	279	216	246
Sulfate	mg/L	--	10.9	10.6	5.3	4.1	7.6	13.7	16.4	15.6	9.3	8	21.7	5.9	14.7	2.7	13.5
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1	<0.2	--
Radium-228	pCi/L	--	--	0.231	0.741	0.179	1.96	0.0959	0.0337	0.771	--	--	--	0.419	0.805	1.72	--
Radium-226	pCi/L	--	--	0.584	-0.0127	0.109	0.141	0.0906	0.091	0.0225	--	--	--	0.217	0.0772	0.0737	--
Radium-226/228	pCi/L	5	--	0.815	0.7283	0.288	2.101	0.1865	0.1247	0.7935	--	--	--	0.636	0.8822	1.7937	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.82	--	--	0.63	0.71	0.26	0.3	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	9	--	--	2	1	<0.7	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	66.5	--	--	2.92	3	2	<5	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	--	0.008	0.04	0.004	<0.02	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0002	0.0001	<0.0002	--	<0.002	0.0005	<0.0002	<0.0005	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-11S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/11/2020	5/25/2021	5/13/2022	11/3/2022	5/25/2023	11/2/2023	5/16/2024
Field Parameters										
Elevation	ft NGVD	--	--	370.17	369.24	369.72	369.31	369.07	367.82	366.37
pH	S.U.	--	7.9	7.36	7.72	7.85	7.57	8.18	7.52	7.04
Specific Conductance	µmhos/cm	--	--	302	413	244	318	211	494	406
Turbidity	NTU	--	--	1.7	2.5	15.11	1.46	0	0.8	0.82
Dissolved Oxygen	mg/L	--	--	8.2	4.4	5.9	11.6	5.57	9.03	5.34
Temperature	°C	--	--	14.4	15.3	20.64	15.07	14.93	14.49	15.64
ORP	mV	--	--	173	112	125	105	180	126	150
Laboratory Parameters										
Antimony	µg/L	6	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.062	0.04	0.038	<0.05	0.037	0.037	0.041	0.038
Calcium	mg/L	--	41.6	52.4	53.9	47.9	52.6	49.9	56.7	48.5
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	1.82	1.52	2.28	2.7	2.29	2.5	1.72	3.44
Fluoride	mg/L	4	0.74	0.83	0.66	0.51	0.5	0.56	0.58	0.52
TDS	mg/L	--	212	211	240	230	230	240	250	230
Sulfate	mg/L	--	10.9	2.9	10.7	7.99	3.78	3.8	5	7.1
Sulfide	mg/L	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-12S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	11/1/2018	11/14/2008	12/11/2018	5/22/2019	11/21/2019	11/11/2020	5/28/2021	5/13/2022
Field Parameters												
Elevation	ft NGVD	--	--	367.81	367.96	367.93	368.21	372.14	368.42	367.68	368.12	367.88
pH	S.U.	--	7.2	5.9	7.6	6.83	7.12	7.31	7.52	7.19	7.65	7.1
Specific Conductance	µmhos/cm	--	--	522	551	517	816	757	728	712	806	754
Turbidity	NTU	--	--	9	1.14	2.14	23.7	13.8	5.1	3.13	0	5.4
Dissolved Oxygen	mg/L	--	--	0.2	3.13	0.36	0.29	0	10.83	1.93	0	0.12
Temperature	°C	--	--	14.5	14.05	13.16	13.36	14.8	12.81	13.23	15.3	16.8
ORP	mV	--	--	68	-34.8	184.2	-10	9	144.1	81	106	39.7
Laboratory Parameters												
Antimony	µg/L	6	--	0.06	0.03	0.17	0.06	0.07	0.19	--	--	--
Arsenic	µg/L	10	--	0.3	0.27	0.25	0.61	0.45	0.44	--	--	--
Barium	µg/L	2000	--	26.8	26.3	25.3	31	29.7	28.8	--	--	--
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	0.06	0.05	0.13	0.04	0.09	0.09	--	--	--
Chromium	µg/L	100	--	0.276	0.1	0.1	0.639	0.476	0.315	--	--	--
Cobalt	µg/L	6	--	0.642	0.4783	0.439	1.23	0.924	0.955	--	--	--
Copper	µg/L	--	--	0.5	0.36	0.55	1.08	1.59	1.2	--	--	--
Lead	µg/L	15	--	0.34	0.08	0.08	0.904	0.538	0.526	--	--	--
Mercury	µg/L	2	--	--	--	--	--	0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	2	2	2	2	1	1	--	--	--
Selenium	µg/L	50	--	0.2	0.07	0.1	0.2	0.09	0.3	--	--	--
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	0.8	2	2	19.3	8.2	--	--	--
Silica (Dissolved)	mg/L	--	--	21.5	20	20	20.3	19.3	18.8	--	--	--
Aluminum	µg/L	--	--	45.2	8.53	3	291	119	106	--	--	--
Boron	mg/L	--	0.067	0.04	0.07	0.03	0.12	0.02	0.03	<0.02	0.02	<0.05
Calcium	mg/L	--	86.3	87	86.4	80.2	89.3	84.9	88.7	83.4	91.9	82.4
Lithium	mg/L	0.04	--	0.01	0.01	0.01	<0.009	0.01	0.00591	--	--	--
Magnesium	mg/L	--	--	31.6	33.7	30.5	33	30.3	32.3	--	--	--
Manganese	mg/L	--	--	0.0864	0.0758	0.0811	0.106	0.163	0.116	--	--	--
Potassium	mg/L	--	--	1.18	1.26	1.57	1.87	1.19	1.49	--	--	--
Sodium	mg/L	--	--	30.2	33.9	32.1	32.4	30.5	29.6	--	--	--
Strontium	mg/L	--	--	0.103	0.111	0.114	0.119	0.114	0.114	--	--	--
Alkalinity	mg/L	--	--	392	358	374	361	354	348	--	--	--
Bromide	mg/L	--	--	0.1	0.1	0.1	0.1	0.1	0.2	--	--	--
Chloride	mg/L	--	30.1	30.1	29.9	29.4	29.5	29.7	28.7	27.4	26.8	26.6
Fluoride	mg/L	4	0.35	0.36	0.36	0.37	0.36	0.38	0.32	0.39	0.41	0.38
TDS	mg/L	--	445	446	434	422	437	455	456	420	430	420
Sulfate	mg/L	--	37.2	37.1	37.1	36.4	36.7	37.4	37.8	37.5	38.2	39.9
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.1	<0.1	<0.2	--	--	--
Radium-228	pCi/L	--	--	0.562	0.306	0.941	0.569	0.568	0.613	--	--	--
Radium-226	pCi/L	--	--	0.5	0.202	0.244	0.314	0.379	0.226	--	--	--
Radium-226/228	pCi/L	5	--	1.062	0.508	1.185	0.883	0.947	0.839	--	--	--
Copper (Dissolved)	µg/L	--	--	0.66	0.38	1.41	0.7	0.33	1.96	--	--	--
Zinc (Dissolved)	µg/L	--	--	3	2	3	4	7.5	5	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2	1	1	76.2	2	<5	--	--	--
Iron (Dissolved)	mg/L	--	--	0.025	0.01	0.006	0.238	0.05	<0.02	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0847	0.0797	0.0677	0.103	0.144	0.0388	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-12I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	11/1/2018	11/14/2018	12/11/2018	5/22/2019	11/14/2019	11/12/2020	5/28/2021	5/13/2022
Field Parameters												
Elevation	ft NGVD	--	--	369.85	367.84	367.81	368.16	371.95	368.3	367.52	368.06	368.91
pH	S.U.	--	0	7.15	7.74	7.01	7.12	7.27	7.33	7.05	7.6	7.1
Specific Conductance	µmhos/cm	--	--	662	622	579	901	882	811	870	921	864
Turbidity	NTU	--	--	1.48	8.76	2.54	2.3	39.5	3	0.97	0	2.08
Dissolved Oxygen	mg/L	--	--	1.2	2.68	9.27	1.99	0.2	2.59	0.27	0	1.17
Temperature	°C	--	--	15.21	13.94	12.9	12.92	14.8	13.7	12.29	14.8	15.1
ORP	mV	--	--	-35.1	-87.8	-54.9	-52	-57	-10.1	-59	4	-66.1
Laboratory Parameters												
Antimony	µg/L	6	--	<0.01	<0.02	<0.02	<0.02	0.12	0.03	--	--	--
Arsenic	µg/L	10	--	10.1	9.24	8.79	9.32	12.6	10.3	--	--	--
Barium	µg/L	2000	--	370	374	365	377	395	393	--	--	--
Beryllium	µg/L	4	--	0.006	<0.02	0.02	<0.02	0.04	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	0.02	<0.01	0.17	0.16	0.02	--	--	--
Chromium	µg/L	100	--	0.101	0.289	0.05	0.2	1.32	0.2	--	--	--
Cobalt	µg/L	6	--	1.5	1.67	1.42	1.58	2.7	1.54	--	--	--
Copper	µg/L	--	--	1.15	1.23	0.44	0.56	8.39	1	--	--	--
Lead	µg/L	15	--	0.063	0.21	0.03	0.07	1.47	0.07	--	--	--
Mercury	µg/L	2	--	--	--	--	--	0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	2.92	2.87	2.87	3.13	2.8	3.01	--	--	--
Selenium	µg/L	50	--	0.04	0.06	<0.003	<0.03	0.1	<0.03	--	--	--
Thallium	µg/L	2	--	0.01	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	2	1	3	6.3	17.5	--	--	--
Silica (Dissolved)	mg/L	--	--	20.9	18.8	19.2	12.6	19	17.8	--	--	--
Aluminum	µg/L	--	--	48.8	64.6	5.87	5.67	581	10	--	--	--
Boron	mg/L	--	0.115	0.062	0.115	0.03	0.05	0.03	0.02	<0.02	0.018	<0.05
Calcium	mg/L	--	94.1	100	94.8	90.9	95.6	99.2	93.9	93.2	111	95.8
Lithium	mg/L	0.04	--	0.009	<0.009	0.03	0.01	0.01	0.00469	--	--	--
Magnesium	mg/L	--	--	32.5	32.6	30.5	31	31.5	29.9	--	--	--
Manganese	mg/L	--	--	1.17	1.2	1.08	1.12	2.13	1.08	--	--	--
Potassium	mg/L	--	--	2.03	2.43	2.28	2.26	2.13	1.9	--	--	--
Sodium	mg/L	--	--	43.2	45	43.9	42	45.7	49.4	--	--	--
Strontium	mg/L	--	--	0.134	0.138	0.144	0.142	0.15	0.14	--	--	--
Alkalinity	mg/L	--	--	433	448	433	441	458	431	--	--	--
Bromide	mg/L	--	--	0.139	0.1	0.1	0.1	0.1	0.1	--	--	--
Chloride	mg/L	--	33	34	33.9	33.7	33.1	33.4	32.8	33.3	33.4	32.8
Fluoride	mg/L	4	0.24	0.25	0.25	0.25	0.23	0.25	0.22	0.27	0.29	0.25
TDS	mg/L	--	499	506	493	484	485	532	484	497	520	480
Sulfate	mg/L	--	31.5	30.9	31	30.7	31	32.5	32.3	32.3	31.8	34.8
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.1	<0.1	<0.2	--	--	--
Radium-228	pCi/L	--	--	-0.0683	0.788	1.19	1.04	1.17	0.863	--	--	--
Radium-226	pCi/L	--	--	0.463	0.516	0.51	0.83	0.565	0.578	--	--	--
Radium-226/228	pCi/L	5	--	0.463	1.304	1.7	1.87	1.735	1.441	--	--	--
Copper (Dissolved)	µg/L	--	--	0.19	0.35	0.42	1.08	0.64	1.68	--	--	--
Zinc (Dissolved)	µg/L	--	--	1	10.2	2	8.1	1	3	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2.36	5.95	2	3	16.6	<5	--	--	--
Iron (Dissolved)	mg/L	--	--	1.15	1.18	1.09	1.16	1.51	1.15	--	--	--
Manganese (Dissolved)	mg/L	--	--	1.12	1.16	1.06	1.16	1.11	1.14	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-12D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/14/2018	12/11/2018	5/22/2019	11/15/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters												
Elevation	ft NGVD	--	--	367.91	367.91	367.86	368.25	372.03	368.34	367.59	368.18	368.98
pH	S.U.	--	7.3	7.16	8.06	7.08	7.17	7.41	7.42	7.06	7.78	7.6
Specific Conductance	µmhos/cm	--	--	530	510	449	717	686	850	684	746	725
Turbidity	NTU	--	--	9.68	12.7	5.25	2.2	1.4	7.41	1.51	0	5.6
Dissolved Oxygen	mg/L	--	--	1.68	1.41	4.9	1.4	0.7	7.97	0.31	0	1.58
Temperature	°C	--	--	15.56	15.16	12	12.56	15.1	13.4	12.79	16.4	16.34
ORP	mV	--	--	-52.6	-90.9	-40.8	-69	-56	89.2	-77	-22	-32
Laboratory Parameters												
Antimony	µg/L	6	--	0.02	0.06	<0.02	<0.02	0.02	0.25	--	--	--
Arsenic	µg/L	10	--	11.9	9.78	9.95	9.64	13.3	7.64	--	--	--
Barium	µg/L	2000	--	282	268	272	271	282	273	--	--	--
Beryllium	µg/L	4	--	0.006	<0.02	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	0.05	<0.01	0.01	0.04	0.08	--	--	--
Chromium	µg/L	100	--	0.108	0.266	0.1	0.2	0.06	0.453	--	--	--
Cobalt	µg/L	6	--	0.462	0.538	0.378	0.4	0.554	0.679	--	--	--
Copper	µg/L	--	--	0.51	41	0.64	0.24	0.46	2.74	--	--	--
Lead	µg/L	15	--	0.127	0.329	0.111	0.05	0.02	0.502	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	3.09	2.96	2.94	3.13	3.57	4.24	--	--	--
Selenium	µg/L	50	--	<0.03	0.07	<0.03	<0.03	<0.03	0.06	--	--	--
Thallium	µg/L	2	--	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	1	3	2	0.8	1	11.5	--	--	--
Silica (Dissolved)	mg/L	--	--	21.1	18.9	19.5	19.5	18.8	17.8	--	--	--
Aluminum	µg/L	--	--	14	53.9	26.1	5.83	3	105	--	--	--
Boron	mg/L	--	0.098	0.112	0.09	0.03	0.09	<0.02	<0.02	<0.02	0.016	<0.05
Calcium	mg/L	--	90.8	95.1	86.9	86.1	82.9	84.5	80.3	91.1	91.1	94.3
Lithium	mg/L	0.04	--	0.013	<0.009	<0.009	<0.009	0.02	0.00169	--	--	--
Magnesium	mg/L	--	--	30.3	29.6	28.5	26.7	26.5	27.2	--	--	--
Manganese	mg/L	--	--	0.989	0.902	0.878	0.743	0.979	0.933	--	--	--
Potassium	mg/L	--	--	1.16	0.89	1.34	1.45	0.76	0.8	--	--	--
Sodium	mg/L	--	--	10.5	11.3	11	10.2	9.06	9.66	--	--	--
Strontium	mg/L	--	--	0.161	0.161	0.171	0.158	0.147	0.142	--	--	--
Alkalinity	mg/L	--	--	373	353	371	384	368	347	--	--	--
Bromide	mg/L	--	--	0.081	0.08	0.07	0.07	0.07	0.1	--	0.08	--
Chloride	mg/L	--	16.1	17.2	17	16.6	16.7	15.9	16.1	17.9	18.2	20
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.26	0.26	0.23	0.30	0.28	0.25
TDS	mg/L	--	328	386	381	374	380	393	376	389	410	400
Sulfate	mg/L	--	15.6	14.2	14.2	13.8	13.9	14.8	15.9	16.4	14.8	17.1
Sulfide	mg/L	--	--	<0.04	<0.1	<0.07	<0.1	<0.1	<0.2	--	--	--
Radium-228	pCi/L	--	--	0.643	0.405	0.589	1.69	0.698	0.529	--	--	--
Radium-226	pCi/L	--	--	0.702	0.454	0.608	0.766	0.548	0.574	--	--	--
Radium-226/228	pCi/L	5	--	1.345	0.859	1.197	2.456	1.246	1.103	--	--	--
Copper (Dissolved)	µg/L	--	--	0.35	0.21	0.12	0.44	0.25	<0.2	--	--	--
Zinc (Dissolved)	µg/L	--	--	3.3	2	1	1	0.7	4	--	--	--
Aluminum (Dissolved)	µg/L	--	--	7.24	2	2	5.13	1	<5	--	--	--
Iron (Dissolved)	mg/L	--	--	1.29	0.965	0.996	1.12	1.62	0.616	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.994	0.88	0.801	0.832	1.03	0.906	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-13S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/24/2018	10/29/2018	11/12/2018	5/22/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters										
Elevation	ft NGVD	--	--	368.86	368.5	368.49	372.06	367.65	367.21	367.79
pH	S.U.	--	7.09 - 8.14					7.42	8.03	7.54
Specific Conductance	µmhos/cm	--	--					458	626	542
Turbidity	NTU	--	--					2.23	0	0
Dissolved Oxygen	mg/L	--	--					7.4	2.3	4.15
Temperature	°C	--	--					14.46	16.1	17.54
ORP	mV	--	--					129	184	205
Laboratory Parameters										
Antimony	µg/L	6	--					--	--	--
Arsenic	µg/L	10	--					--	--	--
Barium	µg/L	2000	--					--	--	--
Beryllium	µg/L	4	--					--	--	--
Cadmium	µg/L	5	--					--	--	--
Chromium	µg/L	100	--					--	--	--
Cobalt	µg/L	6	--					--	--	--
Copper	µg/L	--	--					--	--	--
Lead	µg/L	15	--					--	--	--
Mercury	µg/L	2	--					--	--	--
Molybdenum	µg/L	100	--					--	--	--
Selenium	µg/L	50	--					--	--	--
Thallium	µg/L	2	--					--	--	--
Zinc	µg/L	--	--					--	--	--
Silica (Dissolved)	mg/L	--	--					--	--	--
Aluminum	µg/L	--	--					--	--	--
Boron	mg/L	--	0.048					0.078	0.097	<0.05
Calcium	mg/L	--	(79.5) 79					54.7	63.5	62.7
Lithium	mg/L	0.04	--					--	--	--
Magnesium	mg/L	--	--					--	--	--
Manganese	mg/L	--	--					--	--	--
Potassium	mg/L	--	--					--	--	--
Sodium	mg/L	--	--					--	--	--
Strontium	mg/L	--	--					--	--	--
Alkalinity	mg/L	--	--					--	--	--
Bromide	mg/L	--	--					--	<0.02	--
Chloride	mg/L	--	(29.6) 33					8.44	14.4	15.5
Fluoride	mg/L	4	0.677					0.39	0.33	0.31
TDS	mg/L	--	(412.7) 419					271	330	310
Sulfate	mg/L	--	(36.95) 37					25.1	26	25.1
Sulfide	mg/L	--	--					--	--	--
Radium-228	pCi/L	--	--					--	--	--
Radium-226	pCi/L	--	--					--	--	--
Radium-226/228	pCi/L	5	--					--	--	--
Copper (Dissolved)	µg/L	--	--					--	--	--
Zinc (Dissolved)	µg/L	--	--					--	--	--
Aluminum (Dissolved)	µg/L	--	--					--	--	--
Iron (Dissolved)	mg/L	--	--					--	--	--
Manganese (Dissolved)	mg/L	--	--					--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-131

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/11/2018	5/21/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters											
Elevation	ft NGVD	--	--	368.83	368.45	368.41	368.31	371.99	369.21	368.73	369.33
pH	S.U.	--	7.5	7.36	8.12	7.21	7.36	7.54	7.33	8.05	7.51
Specific Conductance	µmhos/cm	--	--	411	397	451	555	522	494	549	544
Turbidity	NTU	--	--	2.14	0.93	0.31	0.45	1.4	2.53	0	0
Dissolved Oxygen	mg/L	--	--	0.37	1.15	8.64	0.57	0.4	3.21	0	0.76
Temperature	°C	--	--	15.71	15.25	13.17	14.13	16.5	13.4	17.9	17.81
ORP	mV	--	--	-15.8	-74.3	44.5	-72	-30	87	173	4
Laboratory Parameters											
Antimony	µg/L	6	--	0.02	<0.02	<0.02	0.04	<0.2	--	--	--
Arsenic	µg/L	10	--	1.74	1.66	1.6	1.84	2.41	--	--	--
Barium	µg/L	2000	--	149	139	141	144	151	--	--	--
Beryllium	µg/L	4	--	0.006	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	<0.01	<0.01	<0.01	<0.01	--	--	--
Chromium	µg/L	100	--	0.04	0.1	0.06	0.07	<0.04	--	--	--
Cobalt	µg/L	6	--	0.5	0.554	0.477	0.574	0.577	--	--	--
Copper	µg/L	--	--	0.39	0.62	0.1	0.58	0.09	--	--	--
Lead	µg/L	15	--	0.01	0.04	<0.02	<0.02	<0.02	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	4.49	4.23	4.09	4.29	4.11	--	--	--
Selenium	µg/L	50	--	<0.03	<0.03	<0.03	<0.03	<0.03	--	--	--
Thallium	µg/L	2	--	0.04	<0.1	<0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	20.1	61.3	<0.7	2	<0.7	--	--	--
Silica (Dissolved)	mg/L	--	--	19.6	17.9	17.9	18.4	17.6	--	--	--
Aluminum	µg/L	--	--	2.54	10.6	2	<1	1	--	--	--
Boron	mg/L	--	0.042	0.09	0.05	<0.02	0.04	0.02	<0.02	0.011	<0.05
Calcium	mg/L	--	67.5	66	58.1	59.7	65.6	67.9	59.1	57.2	63.7
Lithium	mg/L	0.04	--	0.018	0.01	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	20.4	19.1	19.2	20.9	19.4	--	--	--
Manganese	mg/L	--	--	0.491	0.448	0.447	0.523	0.469	--	--	--
Potassium	mg/L	--	--	1.23	0.93	1.32	1.24	0.99	--	--	--
Sodium	mg/L	--	--	15.2	15.4	15.6	16.4	15.7	--	--	--
Strontium	mg/L	--	--	0.0781	0.0744	0.0834	0.0879	0.0831	--	--	--
Alkalinity	mg/L	--	--	231	228	231	241	235	--	--	--
Bromide	mg/L	--	--	0.04	<0.04	<0.04	<0.04	<0.04	--	0.02	--
Chloride	mg/L	--	20	20.6	20.5	20.3	20.4	20.1	19.1	18.7	20
Fluoride	mg/L	4	0.38	0.38	0.38	0.38	0.38	0.37	0.46	0.45	0.42
TDS	mg/L	--	297	319	305	310	310	318	292	300	300
Sulfate	mg/L	--	40.6	41.6	41.5	41.3	40.7	41.6	39.8	37.2	42.9
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	-0.268	0.658	0.682	0.3	0.76	--	--	--
Radium-226	pCi/L	--	--	0.456	0.509	0.669	0.589	0.646	--	--	--
Radium-226/228	pCi/L	5	--	0.456	1.167	1.351	0.889	1.406	--	--	--
Copper (Dissolved)	µg/L	--	--	0.11	0.39	0.2	0.2	0.15	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.7	6.3	<0.7	3	<0.7	--	--	--
Aluminum (Dissolved)	µg/L	--	--	1	1	1	5	<1	--	--	--
Iron (Dissolved)	mg/L	--	--	0.185	0.189	0.193	0.26	0.278	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.493	0.467	0.461	0.483	0.418	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-13D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/11/2018	5/21/2019	11/12/2020	5/27/2021	5/13/2022
Field Parameters											
Elevation	ft NGVD	--	--	368.79	368.43	368.39	368.29	371.95	369.16	368.71	369.31
pH	S.U.	--	7.4	7.03	8.11	7.17	7.29	7.45	7.29	7.73	7.35
Specific Conductance	µmhos/cm	--	--	406	382	427	540	524	521	586	550
Turbidity	NTU	--	--	5.34	10.6	4.66	3.22	2	31.2	21	11.9
Dissolved Oxygen	mg/L	--	--	1.34	1.4	5.45	0.51	1.7	1.34	0	2.05
Temperature	°C	--	--	16.29	14.99	12.18	14.06	18.7	15.2	17.6	17.82
ORP	mV	--	--	-71.4	-95.1	-48.5	-94	-48	-51	26	-53
Laboratory Parameters											
Antimony	µg/L	6	--	0.01	0.02	0.05	0.03	0.07	--	--	--
Arsenic	µg/L	10	--	6.44	5.62	7.55	5.3	20.8	--	--	--
Barium	µg/L	2000	--	206	204	198	219	265	--	--	--
Beryllium	µg/L	4	--	0.007	<0.02	<0.02	<0.02	<0.02	--	--	--
Cadmium	µg/L	5	--	<0.005	0.04	<0.01	<0.01	<0.01	--	--	--
Chromium	µg/L	100	--	0.071	0.353	0.209	0.06	0.2	--	--	--
Cobalt	µg/L	6	--	1.15	1.31	1.05	0.935	1.1	--	--	--
Copper	µg/L	--	--	0.26	1.02	0.55	0.28	1.11	--	--	--
Lead	µg/L	15	--	0.071	0.438	0.173	<0.02	0.07	--	--	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--	--	--
Molybdenum	µg/L	100	--	2.88	2.59	2.77	3.23	3.21	--	--	--
Selenium	µg/L	50	--	<0.03	0.1	0.07	<0.03	0.04	--	--	--
Thallium	µg/L	2	--	0.02	<0.1	>0.1	<0.1	<0.1	--	--	--
Zinc	µg/L	--	--	0.6	2	1	2	1	--	--	--
Silica (Dissolved)	mg/L	--	--	19.3	17.6	17.9	17.9	17.4	--	--	--
Aluminum	µg/L	--	--	21.8	162	58.8	2	12.4	--	--	--
Boron	mg/L	--	0.037	0.071	0.111	119	0.03	0.02	<0.02	0.012	<0.05
Calcium	mg/L	--	65.9	68.9	63.4	60.8	67.4	66.2	64.6	66.6	66.4
Lithium	mg/L	0.04	--	0.016	<0.009	<0.009	<0.009	<0.009	--	--	--
Magnesium	mg/L	--	--	21.8	21.7	20.1	22.5	19.7	--	--	--
Manganese	mg/L	--	--	0.762	0.669	0.648	0.677	0.997	--	--	--
Potassium	mg/L	--	--	1.06	1.14	1.45	1.16	0.82	--	--	--
Sodium	mg/L	--	--	11.2	11.6	11.4	11.2	9.25	--	--	--
Strontium	mg/L	--	--	0.0852	0.0867	0.0913	0.098	0.0882	--	--	--
Alkalinity	mg/L	--	--	231	243	223	252	237	--	--	--
Bromide	mg/L	--	--	0.05	<0.04	<0.04	<0.04	<0.04	--	0.03	--
Chloride	mg/L	--	16.3	17	16.9	16.6	16.5	15.9	18.2	18	17.8
Fluoride	mg/L	4	0.28	0.27	0.27	0.28	0.27	0.26	0.30	0.29	0.28
TDS	mg/L	--	287	296	299	296	305	303	311	320	300
Sulfate	mg/L	--	35.5	34.8	34.7	34.1	33.3	33.9	38.8	37.4	38.2
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.07	<0.1	--	--	--
Radium-228	pCi/L	--	--	0.141	-0.293	-0.157	0.226	0.844	--	--	--
Radium-226	pCi/L	--	--	0.501	0.356	0.242	0.389	0.586	--	--	--
Radium-226/228	pCi/L	5	--	0.642	0.356	0.242	0.615	1.43	--	--	--
Copper (Dissolved)	µg/L	--	--	0.07	0.11	0.09	0.21	0.56	--	--	--
Zinc (Dissolved)	µg/L	--	--	0.5	1	<0.7	1	<0.7	--	--	--
Aluminum (Dissolved)	µg/L	--	--	11	3	2	20.5	1	--	--	--
Iron (Dissolved)	mg/L	--	--	1.29	0.915	0.995	1.13	0.866	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.74	0.625	0.702	0.612	0.777	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-14S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	7/20/2016	9/21/2016	11/17/2016	1/9/2017	3/7/2017	5/19/2017	7/18/2017	10/4/2017	12/12/2017	6/5/2018	11/13/2018	5/23/2019	11/16/2019	5/19/2020
Field Parameters																	
Elevation	ft NGVD	--	--	370.07	369.7	369.34	368.92	368.49	368.63	369.88	368.43	368.41	368.94	369.27	371.36	371.63	369.98
pH	S.U.	--	7.2	7.1	7	7.7	7.5	7.4	6.95	7.3	7	7.6	7.55	7.55	7.15	7.51	7.68
Specific Conductance	µmhos/cm	--	--	576	640	955	530	80	441	496	488	490	450	309	604	655	550
Turbidity	NTU	--	--	3.9	6	1	2	0.7	2.07	1	0.5	1	0.6	0.2	0.61	9.8	0.52
Dissolved Oxygen	mg/L	--	--	3.8	3.3	1	3.4	3	3.82	3.7	4	10.2	5.42	6.9	2.57	0.455	3.22
Temperature	°C	--	--	18.7	22.6	15.2	14.4	13.9	14.54	15.9	15.3	13.5	14.98	13.25	17.01	12.4	15.74
ORP	mV	--	--	43	53	282	147	75	55.6	67	-23	133	-7.9	152	-203.7	-9	150
Laboratory Parameters																	
Antimony	µg/L	6	--	0.02	0.02	0.03	0.02	0.02	0.06	<0.05	--	--	--	<0.02	<0.02	0.03	--
Arsenic	µg/L	10	--	1.54	1.29	0.75	0.91	0.76	0.75	0.7	--	--	--	0.64	0.62	0.62	--
Barium	µg/L	2000	--	31	27.8	26.3	27	26.3	25	27	--	--	--	27	28.9	32.9	--
Beryllium	µg/L	4	--	0.008	0.005	<0.005	<0.005	<0.005	<0.004	<0.02	--	--	--	<0.02	<0.02	<0.02	--
Cadmium	µg/L	5	--	0.21	0.07	0.03	0.05	0.01	0.08	<0.02	--	--	--	0.05	0.01	<0.01	--
Chromium	µg/L	100	--	0.3	0.3	0.162	0.575	0.66	0.301	0.258	--	--	--	0.2	0.2	0.438	--
Cobalt	µg/L	6	--	0.573	0.333	0.088	0.187	0.083	0.065	0.03	--	--	--	0.03	0.03	0.04	--
Copper	µg/L	--	--	--	--	--	--	--	--	2.38	0.15	--	0.38	0.24	0.25	<0.2	--
Lead	µg/L	15	--	0.307	0.31	0.549	0.115	0.061	0.071	0.116	--	--	--	0.05	0.04	<0.05	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002	<0.002	--
Molybdenum	µg/L	100	--	1.51	1.43	1.26	1.62	1.84	1.35	1.67	--	--	--	1	1	1	--
Selenium	µg/L	50	--	1.4	1.2	1.2	1.1	1.1	1.2	1.3	--	--	--	1.1	0.9	0.9	--
Thallium	µg/L	2	--	<0.01	<0.01	0.02	0.054	0.055	0.01	0.07	--	--	--	<0.1	<0.1	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	9	0.8	--	1	1	<0.7	<0.7	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	20.3	20.2	23.3	--	20.4	20.2	<0.06	19.3	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	11.4	2	--	5.75	7.32	4	5	--
Boron	mg/L	--	0.011	0.008	0.01	0.008	<0.002	0.031	0.017	0.03	0.042	--	0.046	0.04	<0.02	0.01	<0.02
Calcium	mg/L	--	59.2	56.3	59.5	65.4	65.7	63.4	59.8	65.6	67	--	61.1	59.2	66.9	65.1	66.6
Lithium	mg/L	0.04	--	0.018	0.006	0.004	0.006	0.005	0.001	<0.0002	--	--	--	<0.009	0.01	0.00367	--
Magnesium	mg/L	--	--	--	--	--	--	27.6	28.1	29.3	29.9	--	27.4	26.4	30	29.8	--
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0006	--	--	0.0014	0.0015	0.0008	0.002	--
Potassium	mg/L	--	--	--	--	--	--	0.5	0.54	0.49	0.59	--	0.51	0.55	0.53	0.5	--
Sodium	mg/L	--	--	--	--	--	--	33	29.4	30.1	29.9	--	29.2	24.9	23.3	23.7	--
Strontium	mg/L	--	--	--	--	--	--	0.101	0.102	0.103	0.106	--	0.101	0.0954	0.109	0.111	--
Alkalinity	mg/L	--	--	--	--	--	--	232	258	257	249	--	260	259	275	252	--
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	0.03	0.04	--	<0.02	<0.04	<0.04	<0.04	--
Chloride	mg/L	--	28.6	29.4	28.1	27.8	27.2	26.8	29.4	29.6	29.9	30	27.1	29	28.6	28.9	28.6
Fluoride	mg/L	4	0.39	0.39	0.36	0.35	0.33	0.36	0.37	0.33	0.34	0.34	0.39	0.37	0.37	0.38	0.33
TDS	mg/L	--	368	364	361	362	344	354	376	377	376	--	360	344	390	374	411
Sulfate	mg/L	--	34.9	36.5	32.5	29.1	30.7	29.9	32.3	33.1	34.8	35.5	29.4	30.8	32.4	32.8	32.5
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1	<0.1	<0.2	--
Radium-228	pCi/L	--	--	-0.343	0.769	0.693	0.601	-0.193	-0.019	1.73	--	--	--	0.334	0.271	1.1	--
Radium-226	pCi/L	--	--	0.594	0.131	0.413	0.179	0.0525	0.0316	0.153	--	--	--	0.0534	0.0483	0.112	--
Radium-226/228	pCi/L	5	--	0.251	0.9	1.106	0.78	-0.1405	0.0126	1.883	--	--	--	0.3874	0.3193	1.212	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.94	--	--	0.43	0.64	0.31	0.6	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	7	--	--	5.7	3	<0.7	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	11.3	--	--	1	<1	1	<5	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.016	--	0.002	<0.003	<0.003	<0.02	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0021	0.0001	<0.0002	--	<0.0002	0.0005	<0.0002	<0.0005	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-14S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/10/2020	5/28/2021	5/12/2022	11/2/2022	5/25/2023	11/2/2023	5/16/2024
Field Parameters										
Elevation	ft NGVD	--	--	370.99	369.36	369.9	370.27	369.39	368.86	366.08
pH	S.U.	--	7.2	6.68	7.82	7.11	7.4	7.45	7.15	6.85
Specific Conductance	µmhos/cm	--	--	742	706	583	658	412	776	700
Turbidity	NTU	--	--	3.29	1.1	1.86	0	0	1.4	1.16
Dissolved Oxygen	mg/L	--	--	2.77	2.61	4.35	2.84	7.06	2.14	8.14
Temperature	°C	--	--	15.64	15	16.9	15.08	16.62	13.74	20.59
ORP	mV	--	--	101	97	200	185	175	96	141
Laboratory Parameters										
Antimony	µg/L	6	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.011	<0.02	0.012	<0.05	0.01	0.01	0.011	0.012
Calcium	mg/L	--	59.2	66.4	82	68.2	61.7	57.2	60.9	63.3
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	28.6	26.3	25.4	25.4	24.8	25	24.8	24.7
Fluoride	mg/L	4	0.39	0.39	0.38	0.33	0.34	0.33	0.33	0.36
TDS	mg/L	--	368	370	430	400	390	370	360	390
Sulfate	mg/L	--	34.9	31.4	31	30.1	27.7	28.6	28.7	31.4
Sulfide	mg/L	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-155

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/7/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/7/2017	5/10/2017	7/19/2017	10/4/2017	6/5/2018	11/13/2018	5/23/2019	7/23/2019	9/11/2019	11/15/2019
Field Parameters																		
Elevation	ft NGVD	--	--	370	369.87	369.49	368.87	367.92	367.84	367.86	368.75	367.84	396.63	368.96	371.96	372.79	372.26	371.11
pH	S.U.	--	6.9 - 7.9	7.2	7.1	7.2	7.7	7.2	7.2	7.3	7.3	7.35	7.16	7.46	7.5	5.74	7.38	7.38
Specific Conductance	µmhos/cm	--	--	512	512	510	904	470	60	419	368	393	416	317	348	362	269	467
Turbidity	NTU	--	--	7.6	2.2	1	1	1	0.5	2	2	2.34	0.33	0.41	1.51	8.3	3	10
Dissolved Oxygen	mg/L	--	--	0.5	0.5	1	1	1	6	0.4	0.3	0.07	1.9	0.77	0.4	1	0	0
Temperature	°C	--	--	16.5	17.7	19.1	15.5	13.8	13.9	14.6	15.7	14.7	14.96	12.94	15.21	15.8	16.55	13.4
ORP	mV	--	--	57	124	181	-10	179	64	65	24	18.1	-37.7	19.3	-218	47	63	64
Laboratory Parameters																		
Antimony	µg/L	6	--	0.04	0.04	0.02	0.04	0.04	0.03	0.04	0.02	--	--	<0.02	0.02	--	--	0.03
Arsenic	µg/L	10	--	0.32	0.24	0.21	0.18	0.26	0.21	0.21	0.23	--	--	0.13	0.12	--	--	0.16
Barium	µg/L	2000	--	4.71	5.85	3.21	3.27	6.05	4.98	3.54	--	--	--	2.46	2.54	--	--	3.17
Beryllium	µg/L	4	--	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.004	--	--	<0.02	<0.02	--	--	<0.02
Cadmium	µg/L	5	--	0.14	0.25	0.05	0.05	0.06	0.04	0.05	0.05	--	--	0.04	0.1	--	--	0.06
Chromium	µg/L	100	--	0.2	1.7	0.5	0.058	0.493	0.934	0.198	0.096	--	--	0.05	0.08	--	--	0.1
Cobalt	µg/L	6	--	3.03	1.17	1.09	0.794	1.75	1.26	1.2	1.25	--	--	0.74	0.775	--	--	2.15
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.4	0.26	0.24	0.37	0.32	--	--	0.2
Lead	µg/L	15	--	0.286	0.101	0.098	0.037	0.039	0.024	0.062	0.083	--	--	0.03	0.05	--	--	0.1
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	<0.002	--	--	<0.002
Molybdenum	µg/L	100	--	2.52	2.89	2.54	1.57	0.78	1.17	2.08	2.87	--	--	2.54	3.47	--	--	2.18
Selenium	µg/L	50	--	0.4	0.7	0.5	0.3	0.3	0.5	0.5	0.2	--	--	0.1	0.06	--	--	0.2
Thallium	µg/L	2	--	0.03	<0.01	0.02	0.02	0.03	0.04	0.02	0.02	--	--	<0.1	<0.1	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	3.5	1	21	2	2	--	--	2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	13.1	12.7	15.8	13.1	12.4	<0.06	--	--	11.9
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.9	6.68	4.42	6.41	11.7	--	--	10
Boron	mg/L	--	0.109	0.011	0.012	0.008	<0.002	<0.002	0.084	0.077	0.073	0.095	0.078	0.04	<0.02	--	--	0.01
Calcium	mg/L	--	66.4	46.9	43.6	46.6	52.3	63.6	62.9	45.7	44.4	48.3	44.7	41.8	41.3	--	--	40.2
Lithium	mg/L	0.04	--	0.007	0.022	0.005	0.005	0.008	0.008	0.003	0.0009	--	--	<0.009	<0.009	--	--	0.00357
Magnesium	mg/L	--	--	--	--	--	--	--	28.2	19.3	17.2	18.5	16.9	15.1	13.9	--	--	15.1
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.489	--	0.391	0.444	0.452	--	--	0.743
Potassium	mg/L	--	--	--	--	--	--	--	1.07	1.11	1.03	1.27	0.93	1.16	0.68	--	--	0.8
Sodium	mg/L	--	--	--	--	--	--	--	35.5	44.7	39.2	42.3	35.9	27.2	17.3	--	--	19.7
Strontium	mg/L	--	--	--	--	--	--	--	0.0903	0.0711	0.061	0.0662	0.0638	0.0574	0.0502	--	--	0.0522
Alkalinity	mg/L	--	--	--	--	--	--	--	294	257	235	267	239	226	197	--	--	209
Bromide	mg/L	--	--	--	--	--	--	--	0.04	0.062	0.05	0.074	0.03	<0.04	<0.04	--	--	<0.04
Chloride	mg/L	--	26.1	21.2	18.7	18.9	18.3	21.9	16.1	14.1	11.8	13.3	8.84	8.78	8.88	--	--	9.48
Fluoride	mg/L	4	1.04	0.65	0.65	0.63	0.5	0.36	0.42	0.65	0.66	0.62	0.69	0.72	0.88	0.87	0.81	0.7
TDS	mg/L	--	401	338	319	329	338	374	342	294	263	300	274	232	207	--	--	234
Sulfate	mg/L	--	23.2	30.3	27.7	25.1	23.2	28.3	23.4	21	20.3	23.2	16.3	13.1	10.2	--	--	8.4
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.07	<0.1	--	--	<0.2
Radium-228	pCi/L	--	--	0.0335	-0.092	0.302	1.11	-0.0122	-0.108	0.106	-0.0928	--	--	0.482	0.439	--	--	1.47
Radium-226	pCi/L	--	--	0.384	--	0.116	0.139	0.189	0.0973	0.135	0.0916	--	--	-0.0262	0.282	--	--	0.0996
Radium-226/228	pCi/L	5	--	0.4175	-0.092	0.418	1.249	0.1768	-0.0107	0.241	0.0916	--	--	0.482	0.721	--	--	1.5696
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.51	1.59	0.53	--	--	2.06
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.6	--	1	2	<0.7	--	--	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	3.7	--	2	3	2	--	--	<5
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	<0.002	0.004	<0.003	--	--	<0.02
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.448	0.361	0.284	0.379	0.349	0.332	0.289	--	--	0.257

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-155

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/19/2020	11/10/2020	5/28/2021	11/11/2021	5/12/2022	11/2/2022	5/23/2023	8/16/2023	11/2/2023	5/14/2024
Field Parameters													
Elevation	ft NGVD	--	--	370.36	370.24	369.11	368.51	369.46	369.36	370.56	368.78	367.84	365.97
pH	S.U.	--	6.9 - 7.9	7.55	7.33	7.73	7.48	7.48	7.41	7.98	7.48	7.2	7.47
Specific Conductance	µmhos/cm	--	--	400	455	430	500	432	402	228	375	448	438
Turbidity	NTU	--	--	0	8.91	1.8	0	25.6	0	0	3.4	0.58	0.65
Dissolved Oxygen	mg/L	--	--	0	0.12	0	0	0.14	0	0	0.07	0	9.41
Temperature	°C	--	--	14.71	15.34	14.91	13.71	16.2	14.76	16.62	19.2	13.95	18.33
ORP	mV	--	--	135	22	110	182	130	54	50	59	86	51
Laboratory Parameters													
Antimony	µg/L	6	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.109	<0.02	<0.02	0.014	0.012	<0.009	0.014	<0.050	--	0.016	0.039
Calcium	mg/L	--	66.4	42.4	45.4	66.4	46.3	43.7	45.2	40.5	--	40.5	50.9
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	26.1	10.3	10.1	10.6	10.4	10.2	8.87	8.25	--	8.32	8.43
Fluoride	mg/L	4	1.04	0.86	0.78	0.81	0.65	0.82	0.79	0.85	--	0.82	0.79
TDS	mg/L	--	401	218	236	250	270	220	230	220	--	230	240
Sulfate	mg/L	--	23.2	9.1	10.3	8.82	8.07	9.34	8.13	8.2	--	7.8	8.3
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
 AEP Rockport Generating Station - CCR Landfill
 Rockport, Indiana

MW-15I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/7/2016	7/19/2016	9/21/2016	11/16/2016	1/10/2017	3/7/2017	5/10/2017	7/18/2017	10/4/2017	12/12/2017	1/3/2018	6/6/2018	8/16/2016	11/13/2018	5/23/2019
Field Parameters																		
Elevation	ft NGVD	--	--	370	369.88	369.51	368.86	368.12	368.07	368.27	368.74	367.82	366.73	366.49	369.64	370.28	369.01	372.01
pH	S.U.	--	6.9 - 8.1	7.2	7.1	7.1	7.5	7.7	7.5	7.2	7.2	7.34	7.8	7.79	8.06	7.36	7.6	7.29
Specific Conductance	µmhos/cm	--	--	555	574	530	874	420	60	457	400	368	350	474	420	527	412	414
Turbidity	NTU	--	--	0.9	0.6	0.7	0.2	1	2	1	1	1.09	1	1.12	0.88	0	0.18	0.95
Dissolved Oxygen	mg/L	--	--	0.2	0.4	0.4	1.3	0.2	2	0.3	0.3	0.49	0.9	0.41	1.89	0.25	0.31	1.61
Temperature	°C	--	--	15.1	18.2	17.6	15.6	13.9	13.6	14.8	16.3	14.68	12.8	12.38	14.9	17.77	12.52	18.94
ORP	mV	--	--	52.5	-86	-54	259	-87	-42	51	-50	-79.7	-52	-77.2	-94	-63	-63.7	-207.7
Laboratory Parameters																		
Antimony	µg/L	6	--	0.01	0.25	0.01	0.04	0.01	0.02	0.02	0.02	--	--	--	--	--	<0.02	<0.02
Arsenic	µg/L	10	--	25.2	27.9	21.1	23.6	20.2	20.4	20.2	23.6	--	--	--	--	--	23.8	25.8
Barium	µg/L	2000	--	118	132	119	107	91.2	88.9	86.1	94.8	--	--	--	--	--	93.3	95
Beryllium	µg/L	4	--	<0.005	0.165	<0.005	0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	--	<0.02	<0.02
Cadmium	µg/L	5	--	0.02	0.23	0.009	0.06	0.005	0.03	0.03	0.02	--	--	--	--	--	<0.01	0.01
Chromium	µg/L	100	--	0.2	0.5	0.1	0.132	0.35	0.7	0.134	0.089	--	--	--	--	--	<0.04	0.06
Cobalt	µg/L	6	--	1.24	1.66	1.32	1.03	1	0.903	1.02	1.25	--	--	--	--	--	1.12	1.12
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.26	0.1	--	--	0.15	--	0.12	0.1
Lead	µg/L	15	--	0.026	0.254	0.026	0.213	0.01	0.065	0.09	0.082	--	--	--	--	--	0.03	<0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	5.76	6.74	5.75	6.73	7.63	7.91	6.52	5.58	--	--	--	--	--	5.03	5.63
Selenium	µg/L	50	--	<0.03	0.2	<0.03	<0.03	<0.03	0.07	0.04	<0.03	--	--	--	--	--	0.04	<0.03
Thallium	µg/L	2	--	0.04	0.273	0.03	0.04	0.04	0.112	0.03	0.04	--	--	--	--	--	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	0.7	--	--	2.5	--	0.8	7.9
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	15	14	16.1	--	--	13.9	--	13.8	<0.06
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.25	6.63	--	--	4.24	--	7.01	3
Boron	mg/L	--	0.082	0.06	0.032	0.03	0.022	0.019	0.047	0.038	0.05	0.08	--	0.04	0.066	--	0.07	0.03
Calcium	mg/L	--	54	44.1	44.6	46.1	51.4	46.5	51.1	46.6	43.9	44.6	--	--	47	--	39.9	47.8
Lithium	mg/L	0.04	--	0.005	0.018	0.004	0.004	0.011	0.006	0.002	<0.0002	--	--	--	--	--	<0.009	0.01
Magnesium	mg/L	--	--	--	--	--	--	--	13.3	12.7	11.1	11.2	--	--	11.8	--	9.98	11.7
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.134	--	--	--	0.13	--	0.106	0.128
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.02	0.94	1.05	--	--	0.96	--	1.21	0.9
Sodium	mg/L	--	--	--	--	--	--	--	62.3	56.1	51.8	45.4	--	--	42	--	29.9	29.9
Strontium	mg/L	--	--	--	--	--	--	--	0.0865	0.088	0.0841	0.0871	--	--	0.0955	--	0.0827	0.0942
Alkalinity	mg/L	--	--	--	--	--	--	--	229	239	224	202	--	--	226	--	199	208
Bromide	mg/L	--	--	--	--	--	--	--	0.084	0.101	0.081	0.067	--	--	0.071	--	0.06	0.04
Chloride	mg/L	--	(29.4) 70	59.3	53.8	43.4	44.9	48.3	38.5	32.7	27.1	23.7	22.8	--	25.1	--	23.7	18
Fluoride	mg/L	4	0.496	0.25	0.25	0.23	0.25	0.34	0.32	0.31	0.22	0.23	0.22	--	0.26	--	0.25	0.26
TDS	mg/L	--	(412.7) 310	380	356	334	340	351	331	322	300	287	--	--	279	--	248	260
Sulfate	mg/L	--	(47.44) 33.7	42.5	41	34	33.6	35.4	31.1	29.7	26.6	27.3	26.7	--	25.3	--	25.3	20.9
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	<0.4	--	<0.07	<0.1
Radium-228	pCi/L	--	--	0.254	0.455	0.076	1.23	0.682	0.155	-0.367	1.49	--	--	--	--	--	0.283	0.423
Radium-226	pCi/L	--	--	0.609	0.636	0.428	0.517	0.187	0.71	0.189	0.153	--	--	--	--	--	0.0962	0.557
Radium-226/228	pCi/L	5	--	0.863	1.091	0.504	1.747	0.869	0.865	-0.178	1.643	--	--	--	--	--	0.3792	0.98
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	--	0.36	--	0.2	0.83
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.1	--	--	--	2	--	0.8	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.19	--	--	--	1	--	1	2
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.742	0.709	0.789	0.949	--	--	0.879	--	0.848	0.826
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.138	0.139	0.112	0.119	--	--	0.126	--	0.121	0.116

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-15I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/15/2019	5/19/2020	11/10/2020	2/3/2021	5/28/2021	11/11/2021	5/12/2022	11/2/2022	5/23/2023	11/2/2023	5/14/2024
Field Parameters														
Elevation	ft NGVD	--	--	371.09	370.42	370.28	368.37	369.35	368.56	369.53	369.45	367.90	367.89	366.03
pH	S.U.	--	6.9 - 8.1	7.38	7.49	7.52	7.57	7.72	7.95	7.5	7.33	7.94	7.33	7
Specific Conductance	µmhos/cm	--	--	495	435	381	400	393	402	444	327	244	457	394
Turbidity	NTU	--	--	7	0	1.35	0.4	2.96	0	6.5	0.84	0	0.28	0.86
Dissolved Oxygen	mg/L	--	--	0	0	6.34	0.1	0	0	0.56	0	0	3.24	7.76
Temperature	°C	--	--	13.7	14.47	16.12	13.6	14.92	13.47	16.61	14.7	16.15	13.59	18.23
ORP	mV	--	--	-85	-39	-70	-84	-106	87	-45	-124	-79	-101	-90
Laboratory Parameters														
Antimony	µg/L	6	--	0.04		--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	26.5		--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	88.9		--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02		--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.05		--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.1		--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	1.07		--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.6		--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.2		--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002		--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	5.95		--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.04		--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1		--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	2		--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	12.5		--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	21.2		--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.082	0.03	0.03	0.03	--	0.028	0.026	0.019	0.029	<0.050	0.034	0.063
Calcium	mg/L	--	54	45.2	49.2	44.2	--	53.3	44.4	44.2	43.8	43.2	46.8	47.1
Lithium	mg/L	0.04	--	0.00289		--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	11		--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.116		--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.9		--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	24.2		--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0887		--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	198		--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	<0.04		--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	(29.4) 70	16.9	19	12.8	--	16	14	19.8	16.4	17.1	15.9	13.7
Fluoride	mg/L	4	0.496	0.27	0.25	0.47	0.36	0.39	0.47	0.35	0.39	0.38	0.43	0.31
TDS	mg/L	--	(412.7) 310	248	253	213	--	240	220	250	230	230	230	210
Sulfate	mg/L	--	(47.44) 33.7	17.6	17.8	11.7	--	14.7	11.3	16	12.2	13.5	12.9	12
Sulfide	mg/L	--	--	<0.2		--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	1.63		--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.194		--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.824		--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	<0.2		--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	1		--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5		--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.623		--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.118		--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/10/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/11/2019	5/22/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.7	369.61	369.16	368.56	367.84	367.87	367.88	368.53	367.58	366.38	369.62	370.12	368.86	369.84	371.94
pH	S.U.	--	6.3 - 8.1	7.53	7.1	7.31	6.9	7.16	7.1	8.26	6.34	7.25	7.34	7.23	7.07	7.02	7.12	7.1
Specific Conductance	µmhos/cm	--	--	0.822	764	719	669	677	804	581	595	647	872	770	920	720	570	774
Turbidity	NTU	--	--	0.74	0.34	5.21	0.5	0.25	0.42	1.78	0.57	0.72	0.54	2.2	0	0.3	1.3	0.18
Dissolved Oxygen	mg/L	--	--	0.34	0.4	7.29	0.62	0.55	0.18	0.69	22.45	0.31	0.82	7.8	0	1.35	0.41	0.34
Temperature	°C	--	--	15.7	16.39	17.48	16.91	14.47	18.48	16.01	15.63	15.99	14.46	15.73	17.04	14.2	14.4	14.54
ORP	mV	--	--	112.4	56.2	153.4	233.5	83	56.1	177.3	-118.9	13.6	-12.2	-36.9	147	142	183	-211.4
Laboratory Parameters																		
Antimony	µg/L	6	--	0.03	0.03	0.25	0.02	0.02	0.02	0.02	0.02	--	--	--	--	0.05	--	0.03
Arsenic	µg/L	10	--	0.37	0.37	0.38	0.34	0.42	0.31	0.39	0.33	--	--	--	--	0.34	--	0.26
Barium	µg/L	2000	--	32.3	29.9	29.5	25.3	25.1	25.7	29.8	25.6	--	--	--	--	29.9	--	21.9
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.03	0.03	0.1	0.006	0.008	0.004	0.01	0.04	--	--	--	--	0.08	--	0.01
Chromium	µg/L	100	--	0.2	0.5	0.3	1.03	0.081	0.463	0.196	0.101	--	--	--	--	0.07	--	0.1
Cobalt	µg/L	6	--	0.073	0.025	0.07	0.028	0.014	0.012	0.063	0.01	--	--	--	--	<0.02	--	<0.02
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.1	0.19	--	1.19	--	1.46	--	0.66
Lead	µg/L	15	--	0.074	0.057	0.182	<0.004	0.039	0.006	0.027	0.01	--	--	--	--	0.112	--	<0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	1.15	1.21	1.11	1.19	1.21	1.32	1.14	0.98	--	--	--	--	0.9	--	0.9
Selenium	µg/L	50	--	0.6	0.6	0.8	0.4	0.4	0.4	0.3	0.4	--	--	--	--	3.2	--	0.6
Thallium	µg/L	2	--	0.01	<0.01	<0.01	<0.01	0.02	0.02	0.01	0.01	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	2	--	5	--	31.6	--	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	24	24.1	27.6	--	24.9	--	24.9	--	23.3
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	2.1	7.43	--	5.68	--	3	--	1
Boron	mg/L	--	0.109	0.028	0.025	0.024	0.025	0.017	0.038	0.082	0.037	0.061	--	0.109	0.034	0.107	0.02	0.03
Calcium	mg/L	--	119	96.2	83	93.5	96.4	94.6	106	105	91.8	108	109	108	109	104	--	99.2
Lithium	mg/L	0.04	--	0.007	0.031	0.005	0.018	0.013	0.013	0.008	0.01	--	--	--	--	0.02	--	0.01
Magnesium	mg/L	--	--	--	--	--	--	--	36.4	36.6	31.4	38.2	--	38.8	--	37.4	--	34.5
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0028	--	--	0.0062	--	0.004	--	0.0035
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.3	0.97	1.03	--	1.1	--	1.28	--	0.95
Sodium	mg/L	--	--	--	--	--	--	--	36.9	36.7	28.7	35.7	--	38	--	44.4	--	29.4
Strontium	mg/L	--	--	--	--	--	--	--	0.129	0.132	0.108	0.133	--	0.137	--	0.138	--	0.21
Alkalinity	mg/L	--	--	--	--	--	--	--	423	431	436	438	--	463	--	510	--	478
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.158	0.162	0.206	--	0.118	--	0.1	--	0.08
Chloride	mg/L	--	28.1	18.7	19	17.1	16.4	17.5	19.3	22.9	19.8	19.3	--	17.3	--	16.2	--	18
Fluoride	mg/L	4	0.471	0.44	0.46	0.38	0.3	0.35	0.36	0.38	0.33	0.41	--	0.42	--	0.39	--	0.38
TDS	mg/L	--	565	483	471	509	486	474	473	499	484	503	517	520	533	548	517	493
Sulfate	mg/L	--	54.9	46.9	50.1	42.1	38.3	39.2	39.6	42.3	40.7	45	--	40.8	--	40.3	--	34.5
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	-0.0274	0.34	-0.131	0.0963	1.8	0.169	-0.045	2.76	--	--	--	--	0.0697	--	0.299
Radium-226	pCi/L	--	--	0.163	0.707	0.0255	0.198	0.193	0.113	0.145	0.0933	--	--	--	--	0.0503	--	0.0904
Radium-226/228	pCi/L	5	--	0.1356	1.047	-0.1055	0.2943	1.993	0.282	0.1	2.8533	--	--	--	--	0.12	--	0.3894
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.1	--	--	1.21	--	2.59	--	0.38
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	5.2	--	4	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.9	--	--	1	--	1	--	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.015	--	0.004	--	<0.003	--	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0013	0.0145	0.0007	0.0127	--	0.0047	--	0.0023	--	<0.0027

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/15/2019	5/19/2020	7/15/2020	11/11/2020	5/28/2021	11/11/2021	5/12/2022	11/3/2022	5/23/2023	11/2/2023	5/14/2024
Field Parameters														
Elevation	ft NGVD	--	--	370.84	370.40	370.95	392.06	369.06	368.36	369.43	369.15	368.75	367.70	366.02
pH	S.U.	--	6.3 - 8.1	7	7.54	7.06	6.5	7.2	6.62	7.5	7.34	7.56	6.82	6.95
Specific Conductance	µmhos/cm	--	--	961	675	823	948	763	832	680	711	466	862	789
Turbidity	NTU	--	--	4.2	1.54	2.35	2.28	12.87	0	1.7	0	0	0.24	0.78
Dissolved Oxygen	mg/L	--	--	0.39	0.48	1.63	0.11	0.56	0	2.22	0	0	0	6.48
Temperature	°C	--	--	12.05	15.03	18.03	14.73	15.35	13.88	20.43	15.92	16.5	13.43	18.86
ORP	mV	--	--	121	110	57	137	66	47	116	151	195	160	126
Laboratory Parameters														
Antimony	µg/L	6	--	0.03	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.3	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	27.2	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.05	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.09	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.059	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.3	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.07	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	0.8	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	1	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	0.8	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	22.3	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.109	0.02	0.03	--	0.02	0.021	0.019	<0.009	0.018	0.019	0.020	0.047
Calcium	mg/L	--	119	92.2	104	--	103	96.8	86.7	85.9	82.6	84.2	83.3	95
Lithium	mg/L	0.04	--	0.00639	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	35.5	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.0115	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.9	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	29.6	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.118	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	445	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.1	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	28.1	20.7	26.7	25.8	21.8	21.2	13.3	13	11.8	14.6	12.1	11.7
Fluoride	mg/L	4	0.471	0.32	0.34	0.37	0.38	0.41	0.37	0.39	0.38	0.36	0.38	0.38
TDS	mg/L	--	565	497	470	489	473	480	440	400	430	440	440	440
Sulfate	mg/L	--	54.9	35.2	34.9	--	34.5	32.2	24.4	25.6	26.6	26.1	27.2	31.4
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.179	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0453	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.2243	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	1.7	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	2	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.0009	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/20/2016	9/21/2016	11/17/2016	1/11/2017	3/8/2017	5/19/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/11/2019	5/22/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.79	369.62	369.18	368.57	367.84	367.87	367.87	368.58	367.58	366.39	369.62	370.06	368.78	369.77	371.86
pH	S.U.	--	6.8 - 8.0	7.69	7.56	7.37	7.08	7.36	7.28	6.96	7.2	7.46	7.68	7.37	7.23	7.3	7.4	7.31
Specific Conductance	µmhos/cm	--	--	957	870	867	702	674	779	569	665	644	821	720	797	545	476	641
Turbidity	NTU	--	--	0.42	0.46	1.37	1.4	0.18	1.41	2.27	3.15	0.7	1.9	0.89	0	0.41	0.8	0.2
Dissolved Oxygen	mg/L	--	--	0.29	8.08	0.68	0.53	0.46	0.34	0.21	0.29	0.28	0.38	0.46	0	0.95	0.36	0.25
Temperature	°C	--	--	16.2	16.86	15.43	15.64	14.71	15.19	15.48	15.99	15.71	13.08	15.93	15.56	14.42	14.5	14.58
ORP	mV	--	--	224.4	-158.9	54.7	242.3	86.1	53.5	49.8	-3.1	4.1	-25.6	-68.4	120	148	122	-21107
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	0.01	0.01	0.05	0.01	0.02	0.06	0.02	--	--	--	--	<0.02	--	<0.02
Arsenic	µg/L	10	--	0.71	0.75	0.75	0.67	0.72	0.68	0.7	0.73	--	--	--	--	0.66	--	0.64
Barium	µg/L	2000	--	267	267	262	234	220	221	206	238	--	--	--	--	153	--	151
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.06	0.03	0.03	0.05	0.04	0.03	0.08	0.03	--	--	--	--	0.02	--	0.02
Chromium	µg/L	100	--	0.1	0.2	0.1	0.082	0.085	0.422	0.204	0.118	--	--	--	--	0.05	--	<0.04
Cobalt	µg/L	6	--	0.602	0.627	0.576	0.546	0.514	0.58	0.56	0.599	--	--	--	--	0.336	--	0.346
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.56	0.46	--	0.62	--	0.45	--	0.46
Lead	µg/L	15	--	0.023	0.025	0.023	0.053	0.01	0.034	0.153	0.065	--	--	--	--	<0.02	--	0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	<0.002
Molybdenum	µg/L	100	--	1.02	1.02	1.03	0.93	1	1.17	0.91	1.07	--	--	--	--	1	--	1
Selenium	µg/L	50	--	0.2	0.2	0.1	0.2	0.1	0.2	0.4	0.2	--	--	--	--	0.2	--	0.1
Thallium	µg/L	2	--	0.085	0.06	0.074	0.069	0.071	0.075	0.075	0.07	--	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2.7	0.8	--	0.6	--	0.8	--	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	19.9	20	22.8	--	19.8	--	18.5	--	18
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.5	14	--	10.2	--	5	--	4
Boron	mg/L	--	0.139	0.031	0.027	0.026	0.024	0.015	0.1	0.032	0.044	0.05	--	0.046	--	0.139	0.02	0.03
Calcium	mg/L	--	87.2	110	93.9	95.9	96.2	89.3	101	86.7	91.3	84	71.9	82.9	61.6	53.7	--	56
Lithium	mg/L	0.04	--	0.005	0.005	0.006	0.013	0.01	0.013	0.01	0.003	--	--	--	--	<0.009	--	0.02
Magnesium	mg/L	--	--	--	--	--	--	--	27.6	24.7	25.6	23	--	23.1	--	14.8	--	15.1
Manganese	mg/L	--	--	--	--	--	--	--	--	--	1.03	--	--	0.902	--	0.613	--	0.626
Potassium	mg/L	--	--	--	--	--	--	--	2.9	2.47	2.62	3.21	--	3.05	--	3.16	--	2.55
Sodium	mg/L	--	--	--	--	--	--	--	46.2	41.4	50	69.2	--	66	--	74.4	--	68.4
Strontium	mg/L	--	--	--	--	--	--	--	0.155	0.139	0.14	0.135	--	0.136	--	0.09	--	0.0898
Alkalinity	mg/L	--	--	--	--	--	--	--	368	376	369	359	--	359	--	300	--	261
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.152	0.154	0.206	--	0.168	--	0.1	--	0.1
Chloride	mg/L	--	79.1	80.4	86.8	90.2	59.1	44.1	39.3	37.9	50.2	70.8	71.2	58.6	61.1	47.8	--	45.5
Fluoride	mg/L	4	0.222	0.1	0.15	0.1	0.1	0.1	0.16	0.1	0.08	0.1	--	0.17	--	0.17	--	0.17
TDS	mg/L	--	554	539	532	544	508	481	460	461	465	495	487	480	456	408	--	405
Sulfate	mg/L	--	33	38.7	42.2	36.8	33	34	35.4	35.1	36.1	40.4	--	38.7	--	32.5	--	33.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	0.357	1	0.977	0.174	2.27	0.182	0.427	0.513	--	--	--	--	0.483	--	0.269
Radium-226	pCi/L	--	--	0.235	0.576	0.248	0.413	0.362	0.399	0.511	0.274	--	--	--	--	0.162	--	0.156
Radium-226/228	pCi/L	5	--	0.592	1.576	1.225	0.587	2.632	0.581	0.938	0.787	--	--	--	--	0.645	--	0.425
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.14	--	--	0.57	--	1.43	--	1.14
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	0.7	--	2	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	0.8	--	1	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.014	--	0.024	--	0.004	--	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	1.03	1.06	1.04	0.873	--	0.849	--	0.616	--	0.615

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/15/2019	5/19/2020	11/10/2020	5/28/2021	11/11/2021	5/12/2022	11/3/2022	5/23/2023	11/2/2023	5/15/2024
Field Parameters													
Elevation	ft NGVD	--	--	370.76	370.89	370.03	368.99	368.31	369.35	369.16	368.69	367.62	365.97
pH	S.U.	--	6.8 - 8.0	7.35	7.79	6.83	7.5	6.92	7.52	7.57	7.75	7.09	7.18
Specific Conductance	µmhos/cm	--	--	659	481	567	460	538	618	505	341	582	509
Turbidity	NTU	--	--	1.1	1.22	2.56	5.86	0	7.5	0	0	0.99	0.41
Dissolved Oxygen	mg/L	--	--	0.01	0.12	0.2	1.95	0	0.14	0	0	0	0
Temperature	°C	--	--	12	14.85	16.03	15.32	14.09	16.31	15.07	18.26	13.28	18.49
ORP	mV	--	--	137	114	48	19	96	114	169	114	107	212
Laboratory Parameters													
Antimony	µg/L	6	--	0.03	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.72	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	126	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.04	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.1	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.58	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	1.34	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.1	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	1	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.4	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	1	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	17.2	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	10	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.139	0.02	0.02	0.02	0.019	0.019	<0.009	0.019	0.018	0.020	0.017
Calcium	mg/L	--	87.2	41	51.9	44.5	50.4	50	61.8	51.9	53.3	48.9	44.5
Lithium	mg/L	0.04	--	0.00427	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	11.4	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.685	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	2.2	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	58.9	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0688	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	252	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.1	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	79.1	31.2	31.3	19.6	16.5	16.6	25.6	19.6	29.6	19.3	21.1
Fluoride	mg/L	4	0.222	0.14	0.14	0.20	0.18	0.15	0.15	0.16	0.14	0.16	0.18
TDS	mg/L	--	554	343	350	273	270	280	330	300	330	300	270
Sulfate	mg/L	--	33	25.2	25.8	21.4	18.5	17.6	24.2	18.3	20.8	15.1	14.6
Sulfide	mg/L	--	--	<0.2	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.482	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.212	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.694	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.3	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	1	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<5	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.02	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	0.447	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
 AEP Rockport Generating Station - CCR Landfill
 Rockport, Indiana

MW-16D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/20/2016	11/17/2016	1/11/2017	3/8/2017	5/10/2017	7/18/2017	10/4/2017	1/3/2018	6/6/2018	8/16/2018	11/14/2018	2/11/2019	4/1/2019
Field Parameters																		
Elevation	ft NGVD	--	--	369.85	369.68	369.23	368.64	367.91	367.94	367.96	368.64	367.68	366.47	369.69	370.13	368.87	369.84	370.82
pH	S.U.	--	6.7 - 8.0	6.8	7.31	7.26	7.29	7.48	7.44	7.54	9.03	7.6	7.74	7.32	7.26	7.35	7.37	7.28
Specific Conductance	µmhos/cm	--	--	519	582	538	613	525	614	436	597	516	692	690	782	607	510	945
Turbidity	NTU	--	--	1.8	0.24	0.31	0.55	0.4	0.81	1.74	0.41	2.95	1.85	0.9	0	0.35	1.4	0.91
Dissolved Oxygen	mg/L	--	--	0.4	--	1.33	0.55	0.49	0.11	0.29	0.32	0.21	0.47	0.44	0	0.94	1.48	0.64
Temperature	°C	--	--	16.8	16.96	16.04	15.1	14.55	15.2	15.46	15.62	15.77	13.14	15.94	15.88	14.45	13.2	13.5
ORP	mV	--	--	-19	23.5	35.7	108	14.6	2.1	36.6	108.9	-26.4	-36.7	-70.7	-11	62.8	60	-16.7
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	0.02	0.02	0.02	0.01	0.02	0.03	0.03	--	--	--	--	<0.02	--	--
Arsenic	µg/L	10	--	0.48	0.4	0.31	0.32	0.34	0.31	0.33	0.39	--	--	--	--	0.32	--	--
Barium	µg/L	2000	--	240	246	221	217	210	224	212	247	--	--	--	--	270	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	<0.02	--	--
Cadmium	µg/L	5	--	0.08	0.08	0.02	0.05	0.02	0.01	0.07	0.1	--	--	--	--	0.04	--	--
Chromium	µg/L	100	--	0.3	0.4	0.1	1.21	0.112	0.188	0.151	0.141	--	--	--	--	0.05	--	--
Cobalt	µg/L	6	--	0.617	0.547	0.418	0.452	0.354	0.401	0.466	0.571	--	--	--	--	0.472	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	2.21	0.11	--	0.07	--	0.23	--	--
Lead	µg/L	15	--	0.078	0.04	0.021	0.066	0.008	0.022	0.07	0.103	--	--	--	--	0.03	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2.06	2.31	1.96	1.98	1.99	2.27	1.9	2.03	--	--	--	--	2	--	--
Selenium	µg/L	50	--	0.04	0.04	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	--	--	--	--	0.03	--	--
Thallium	µg/L	2	--	0.03	0.069	0.02	0.02	0.02	0.04	0.02	0.02	--	--	--	--	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	12.8	52.4	--	7.1	--	15.4	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.1	17.6	20.3	--	18.5	--	18.2	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	6.2	3.72	--	2.86	--	1	--	--
Boron	mg/L	--	0.1	0.033	0.013	0.012	0.014	0.004	0.023	0.102	0.017	0.059	--	0.033	--	0.07	--	--
Calcium	mg/L	--	125	84.3	68.7	70.5	77.9	72.4	79.2	75.8	71.7	80.4	80.1	90.2	83.8	84.1	--	--
Lithium	mg/L	0.04	--	0.001	0.013	0.003	0.006	0.013	0.007	0.008	0.0006	--	--	--	--	<0.009	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	22.4	22.2	21	23.3	--	27.1	--	24.3	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.975	--	--	1.2	--	1	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.12	1.54	0.97	1.33	--	1.22	--	1.27	--	--
Sodium	mg/L	--	--	--	--	--	--	--	22.3	21.6	22.1	24.7	--	26.7	--	30	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.142	0.143	0.128	0.146	--	0.18	--	0.166	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	202	210	215	195	--	235	--	238	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.15	0.204	<0.05	0.233	--	0.303	--	0.275	--	--
Chloride	mg/L	--	171	68.7	69.6	67.6	63.6	67.9	65.4	69.9	69.6	81.5	86	108	99.7	102	109	107
Fluoride	mg/L	4	0.244	0.2	0.22	0.22	0.17	0.21	0.22	0.22	0.17	0.22	--	0.22	--	0.21	--	--
TDS	mg/L	--	627	350	321	342	356	343	347	367	363	383	--	434	447	434	439	429
Sulfate	mg/L	--	43.4	36.4	37.4	33.4	33.2	34	35.3	37.2	36.8	40	37.9	38.6	--	38.6	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--	--
Radium-228	pCi/L	--	--	-0.173	0.294	1.1	0.285	0.92	0.583	-0.121	0.222	--	--	--	--	0.138	--	--
Radium-226	pCi/L	--	--	0.0514	--	0.248	0.624	0.796	0.228	0.151	0.292	--	--	--	--	0.179	--	--
Radium-226/228	pCi/L	5	--	-0.1216	0.294	1.348	0.909	1.716	0.811	0.03	0.514	--	--	--	--	0.317	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.18	--	--	0.35	--	1.5	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	1	--	3	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	2	--	2	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.004	0.002	0.098	0.051	--	0.058	--	0.023	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.862	0.948	0.989	0.947	--	1.19	--	1	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/22/2019	7/23/2019	9/11/2019	11/15/2019	2/18/2020	5/19/2020	7/15/2020	11/11/2020	2/2/2021	5/28/2021	8/5/2021	11/11/2021	5/12/2022	11/2/2022	5/23/2023
Field Parameters																		
Elevation	ft NGVD	--	--	371.96	372.67	----	370.78	369.44	370.44	370.98	370.05	368.20	369.11	369.08	368.38	369.43	369.18	368.78
pH	S.U.	--	6.7 - 8.0	7.31	7.02	7.28	7.31	7.17	7.7	7.22	7.15	7.39	9.64	7.2	6.8	7.49	7.64	8.11
Specific Conductance	µmhos/cm	--	--	755	731	813	1070	1869	799	969	1050	953	886	956	1060	1010	816	456
Turbidity	NTU	--	--	0.3	1.9	0.43	0.3	0.2	0.39	0.41	0.35	0.7	0	2.9	0	3.13	0	0
Dissolved Oxygen	mg/L	--	--	0.26	0.5	0.36	0.01	0.42	0.18	0	0.29	3.5	0		0.07	0.36	0	0
Temperature	°C	--	--	14.43	15.9	17.5	14.4	11.76	14.81	17.56	14.67	13.2	15.97	16.5	14.4	17.56	16.41	20.37
ORP	mV	--	--	-216.5	50	-52.5	45	109.3	-22	-3	91	85	40	-36	15	46	-32	1
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.39	--	--	0.35	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	286	--	--	348	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	<0.01	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.25	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.64	--	--	0.632	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.17	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.02	--	--	<0.05	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	<0.002	--	--	<0.002	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2	--	--	2	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	<0.03	--	--	<0.03	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	<0.1	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	1	--	--	2	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	17.9	--	--	17.1	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	2	--	--	<5	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.1	0.03	--	--	0.03	--	0.03	--	0.04	--	0.038	--	0.038	0.026	0.035	0.031
Calcium	mg/L	--	125	88.5	95.6	109	100	--	108	102	109	106	122	103	105	102	84.5	69.2
Lithium	mg/L	0.04	--	0.02	--	--	0.00427	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	25.4	--	--	28.3	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	1.17	--	--	1.04	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	1.27	--	--	1.57	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	30.8	--	--	44.6	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.176	--	--	0.203	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	249	--	--	304	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.344	--	--	0.425	--	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	171	104	106	125	127	133	135	133	130	117	110	110	98.3	101	81	75
Fluoride	mg/L	4	0.244	0.2	--	--	0.17	--	0.17	0.2	0.21	--	0.23	0.2	0.18	0.19	0.21	0.21
TDS	mg/L	--	627	460	457	523	537	579	558	519	547	573	580	570	560	550	520	440
Sulfate	mg/L	--	43.4	38	--	--	40.8	38.9	40.1	--	39.1	--	40.6	--	37	41.4	38.4	35.3
Sulfide	mg/L	--	--	<0.1	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.688	--	--	0.411	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.551	--	--	0.158	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.239	--	--	0.569	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.25	--	--	1.98	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	<0.7	--	--	3	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	<1	--	--	<5	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	0.067	--	--	<0.02	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	1.23	--	--	1.07	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-16D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	8/16/2023	11/2/2023	5/14/2024
Field Parameters						
Elevation	ft NGVD	--	--	368.91	367.71	366.04
pH	S.U.	--	6.7 - 8.0	7.29	7.15	7.38
Specific Conductance	µmhos/cm	--	--	811	826	851
Turbidity	NTU	--	--	1.4	0.28	0.88
Dissolved Oxygen	mg/L	--	--	0.36	6.76	0
Temperature	°C	--	--	17.33	14.06	19.22
ORP	mV	--	--	-25	9	-23
Laboratory Parameters						
Antimony	µg/L	6	--	--	--	--
Arsenic	µg/L	10	--	--	--	--
Barium	µg/L	2000	--	--	--	--
Beryllium	µg/L	4	--	--	--	--
Cadmium	µg/L	5	--	--	--	--
Chromium	µg/L	100	--	--	--	--
Cobalt	µg/L	6	--	--	--	--
Copper	µg/L	--	--	--	--	--
Lead	µg/L	15	--	--	--	--
Mercury	µg/L	2	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--
Selenium	µg/L	50	--	--	--	--
Thallium	µg/L	2	--	--	--	--
Zinc	µg/L	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--
Boron	mg/L	--	0.1	--	0.033	0.049
Calcium	mg/L	--	125	--	62.2	82.2
Lithium	mg/L	0.04	--	--	--	--
Magnesium	mg/L	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--
Chloride	mg/L	--	171	--	63.3	96.4
Fluoride	mg/L	4	0.244	--	0.23	0.2
TDS	mg/L	--	627	--	430	450
Sulfate	mg/L	--	43.4	--	31.7	33.7
Sulfide	mg/L	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-17S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/8/2016	7/20/2016	9/20/2016	11/16/2016	1/10/2017	3/7/2017	5/9/2017	7/19/2017	10/4/2017	6/5/2018	11/13/2018	5/23/2019	11/15/2019	5/19/2020	11/10/2020
Field Parameters																		
Elevation	ft NGVD	--	--	370.14	370.11	369.81	369.37	368.47	368.21	368.24	368.89	373.03	369.48	368.74	371.85	371.44	370.99	370.67
pH	S.U.	--	6.9 - 8.2	7.77	7.3	7.65	7.7	7.6	7.5	7.3	7.5	7.44	7.41	7.51	7.58	7.64	7.8	7.51
Specific Conductance	µmhos/cm	--	--	350	373	344	146	310	60	357	287	351	319	280	322	396	358	403
Turbidity	NTU	--	--	0.6	0.7	0.79	1	1	1	3	1	0.47	0.4	0.89	0	4	0.7	0.95
Dissolved Oxygen	mg/L	--	--	0.6	1.2	0.37	0.1	0.2	1	0.2	0.2	0.38	10.12	1.07	1.56	1.3	0	8.47
Temperature	°C	--	--	14.7	17.9	14.55	14.7	13.8	13.5	14.9	14.3	16.82	14.39	13.45	15	13.4	14.43	16.15
ORP	mV	--	--	80	44	49.4	-40	62	47	45	30	-50.3	-84.3	121	-48.2	38	23	71
Laboratory Parameters																		
Antimony	µg/L	6	--	0.01	0.03	0.02	0.03	0.03	0.04	0.04	0.02	--	--	0.02	0.02	0.02	--	--
Arsenic	µg/L	10	--	0.24	0.26	0.22	0.2	0.21	0.2	0.22	0.22	--	--	0.17	0.18	0.24	--	--
Barium	µg/L	2000	--	2.12	2.74	2.24	2.4	3.45	3.94	4.37	2.25	--	--	2.11	2.3	2.2	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.02	<0.02	<0.02	--	--
Cadmium	µg/L	5	--	0.02	0.08	0.01	0.02	0.02	0.09	0.02	0.06	--	--	0.02	0.03	0.03	--	--
Chromium	µg/L	100	--	0.5	0.2	0.1	0.066	0.489	0.776	0.233	0.124	--	--	0.07	0.06	0.1	--	--
Cobalt	µg/L	6	--	0.047	0.105	0.034	0.029	0.04	0.076	0.138	0.053	--	--	0.05	0.04	0.157	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.38	0.69	0.23	0.21	0.39	0.5	--	--
Lead	µg/L	15	--	0.024	0.098	0.025	0.02	0.02	0.079	0.108	0.038	--	--	0.03	0.05	0.1	--	--
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	--	--	--	<0.002	<0.002	--	--
Molybdenum	µg/L	100	--	3.98	4.2	4.08	3.39	0.44	0.7	1.14	4.38	--	--	3.73	4.78	4.67	--	--
Selenium	µg/L	50	--	0.07	0.06	0.08	0.1	0.2	0.1	0.1	0.08	--	--	0.3	0.2	0.4	--	--
Thallium	µg/L	2	--	0.01	0.01	0.01	0.053	0.02	0.02	<0.01	0.03	--	--	<0.1	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	5.7	0.7	<0.7	14.4	1	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	14	13.7	15.8	13.5	13.2	<0.06	12.2	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.55	10.2	4.01	2	17.4	21.3	--	--
Boron	mg/L	--	0.0626	0.015	0.016	0.016	0.017	0.006	0.058	0.041	0.02	0.033	0.045	0.05	0.03	0.02	0.02	0.02
Calcium	mg/L	--	(79.5) 39.8	36.9	34.8	34.8	35.9	32.3	40	35.5	34.4	34.1	32.4	33.1	32.7	28.7	32.8	33.9
Lithium	mg/L	0.04	--	<0.0002	0.02	0.003	0.004	0.003	0.008	0.003	<0.0002	--	--	<0.009	0.01	0.00355	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	19.2	17.5	13.7	12.9	13	13.7	12.9	11.2	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0428	--	0.0311	0.0418	0.0377	0.179	--	--
Potassium	mg/L	--	--	--	--	--	--	--	0.88	0.79	0.49	0.47	0.5	0.59	0.62	0.6	--	--
Sodium	mg/L	--	--	--	--	--	--	--	42.5	35.3	31.9	27.7	24.5	25.8	26.5	26.8	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0566	0.0529	0.0363	0.0345	0.0357	0.0374	0.0347	0.031	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	231	221	196	189	188	202	193	174	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.05	<0.02	<0.02	0.04	<0.04	<0.04	<0.04	--	--
Chloride	mg/L	--	15.4	13.9	15.4	12.3	11.4	11	10.7	10.4	10.8	10.5	10.8	11.5	12	12.6	12.7	12.9
Fluoride	mg/L	4	1.22	0.85	0.86	0.73	0.7	0.48	0.46	0.58	0.82	0.89	0.98	0.91	1.08	0.96	0.95	0.90
TDS	mg/L	--	(412.7) 278	272	235	233	232	262	251	250	201	214	214	196	217	207	200	211
Sulfate	mg/L	--	16.7	14.3	14.8	10.9	10.5	10.7	12	13.1	10.2	10.7	9.5	8.4	7.7	6.2	6.5	8.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	<0.1	<0.2	--	--
Radium-228	pCi/L	--	--	0.783	-0.0129	0.027	0.791	-0.155	0.36	0.315	1.07	--	--	-0.0735	0.34	1.03	--	--
Radium-226	pCi/L	--	--	0.253	0.0439	0.0489	0.803	0.17	0.11	0.118	0.678	--	--	0.0202	0.0449	0.0579	--	--
Radium-226/228	pCi/L	5	--	1.036	0.031	0.0759	1.594	0.015	0.47	0.433	1.748	--	--	0.0202	0.0202	1.0879	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.35	--	0.56	0.7	2.05	<0.2	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	1	1	<0.7	0.9	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.2	--	6.2	2	1	<5	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.026	0.004	0.004	0.01	<0.02	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0028	0.0013	0.0322	0.0881	0.0304	0.041	0.0332	0.0662	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-17S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/27/2021	11/11/2021	5/13/2022	11/2/2022	5/24/2023	11/2/2023	12/20/2023	5/14/2024	7/16/2024
Field Parameters												
Elevation	ft NGVD	--	--	369.24	368.89	369.54	369.84	369.08	368.24	367.47	366.00	366.85
pH	S.U.	--	6.9 - 8.2	7.58	7.72	7.9	7.62	8.09	7.02	7.22	7.17	7.45
Specific Conductance	µmhos/cm	--	--	389	420	404	373	240	476	480	471	390
Turbidity	NTU	--	--	24.31	0	5.4	0	0	0	0.65	0	0.32
Dissolved Oxygen	mg/L	--	--	0	3.44	8.7	0	0	0	0	0.7	0.73
Temperature	°C	--	--	20.2	13.24	15.5	14.47	15.09	13.92	17.32	15.33	14.7
ORP	mV	--	--	-53	88	173	-65	15	-9	3	124	78.6
Laboratory Parameters												
Antimony	µg/L	6	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.0626	0.025	0.023	<0.05	0.022	<0.050	0.025	--	0.038	--
Calcium	mg/L	--	(79.5) 39.8	35.9	35.2	34.4	33.5	34.5	37.7	--	44.3	42.8
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	0.03	--	--	--	--	--	--	--	--
Chloride	mg/L	--	15.4	11	9.41	10.2	13.5	12.8	19.9	19.8	18.7	19.6
Fluoride	mg/L	4	1.22	0.95	0.81	0.82	0.81	0.78	0.78	--	0.69	--
TDS	mg/L	--	(412.7) 278	210	230	230	210	230	240	--	260	--
Sulfate	mg/L	--	16.7	5.92	4.62	5.24	5.22	5.9	7.9	--	8.6	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-171

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/8/2016	7/20/2016	9/20/2016	11/16/2016	1/10/2017	3/7/2017	5/9/2017	7/19/2017	10/4/2017	12/12/2017	1/3/2018	6/5/2018	8/16/2018	9/26/2018	11/13/2018
Field Parameters																		
Elevation	ft NGVD	--	--	370.09	370.13	369.82	369.12	368.47	368.23	368.25	368.89	368.07	367.23	366.84	369.46	370.64	370.06	369.35
pH	S.U.	--	6.8 - 8.3	7.55	7.2	7.1	7.8	7.5	7.5	7.2	7.3	7.37	7.49	7.8	7.36	7.48	7.48	7.55
Specific Conductance	µmhos/cm	--	--	839	914	1000	607	670	60	768	678	786	530	848	652	728	453	450
Turbidity	NTU	--	--	13.4	9.8	--	0.1	2	9	2	1	74.99	1.74	12	1.28	0	0.58	7.42
Dissolved Oxygen	mg/L	--	--	0.8	0.8	0.9	1.3	0.3	1	0.3	0.2	0.26	0.1	2.34	0.2	0.17	0.37	0.76
Temperature	°C	--	--	14.1	16.4	18.3	14.4	13.7	13.8	14.7	14.7	17.05	8.97	7.25	15.11	17.06	14.18	12.6
ORP	mV	--	--	116	-73	-40	204	-52	8	46	-59	-90.8	-54	-40.5	-99.8	-69	-77.9	-77.4
Laboratory Parameters																		
Antimony	µg/L	6	--	0.07	0.05	0.04	0.03	0.02	0.02	0.02	0.02	--	--	--	--	--	--	0.02
Arsenic	µg/L	10	--	7.14	7.41	6.45	3.38	3.94	4.61	3.61	3.76	--	--	--	--	--	--	3.65
Barium	µg/L	2000	--	168	190	198	149	148	159	133	140	--	--	--	--	--	--	86.8
Beryllium	µg/L	4	--	0.02	0.006	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	--	--	<0.02
Cadmium	µg/L	5	--	0.12	0.13	0.04	0.04	0.008	0.007	0.03	0.02	--	--	--	--	--	--	0.03
Chromium	µg/L	100	--	0.6	2.1	0.1	0.059	0.254	0.776	0.196	0.127	--	--	--	--	--	--	<0.04
Cobalt	µg/L	6	--	1.24	0.778	0.472	0.37	0.391	0.406	0.394	0.372	--	--	--	--	--	--	0.186
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.26	0.24	--	--	0.52	--	--	0.26
Lead	µg/L	15	--	1.19	0.284	0.133	0.049	0.02	0.026	0.115	0.02	--	--	--	--	--	--	0.03
Mercury	µg/L	2	--	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	3.6	3.66	3.08	3.37	3.2	3.62	3.26	3.42	--	--	--	--	--	--	4.09
Selenium	µg/L	50	--	0.1	0.05	0.05	<0.03	<0.03	0.05	0.03	<0.03	--	--	--	--	--	--	<0.03
Thallium	µg/L	2	--	0.03	0.02	0.02	0.056	0.02	0.02	0.01	0.05	--	--	--	--	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.3	30.8	--	--	2.4	--	--	2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.1	17	19.8	--	--	16.5	--	--	15.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	3.39	21.5	--	--	5.91	--	--	2
Boron	mg/L	--	0.0899	0.058	0.056	0.051	0.041	0.034	0.079	0.083	0.052	0.061	--	--	0.081	--	--	0.07
Calcium	mg/L	--	53.8	73.7	83.1	88.9	80	72.3	81.4	69.6	64.4	63	--	--	51.2	--	--	36.5
Lithium	mg/L	0.04	--	<0.0002	0.004	0.005	0.006	0.009	0.008	0.005	<0.0002	--	--	--	--	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	21	19.6	17.4	16.5	--	--	13.4	--	--	9.44
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.155	--	--	--	0.122	--	--	0.0779
Potassium	mg/L	--	--	--	--	--	--	--	1.28	1.36	1.04	1.12	--	--	0.94	--	--	0.83
Sodium	mg/L	--	--	--	--	--	--	--	101	93.6	95.4	94.6	--	--	89.1	--	--	74.7
Strontium	mg/L	--	--	--	--	--	--	--	0.153	0.14	0.119	0.12	--	--	0.104	--	--	0.0796
Alkalinity	mg/L	--	--	--	--	--	--	--	221	226	229	245	--	--	238	--	--	231
Bromide	mg/L	--	--	--	--	--	--	--	0.347	0.396	0.372	0.283	--	--	0.213	--	--	0.1
Chloride	mg/L	--	73.4	195	209	214	164	159	158	151	145	115	86	110	80.2	61.1	--	50.1
Fluoride	mg/L	4	1.16	0.57	0.56	0.52	0.56	0.56	0.58	0.61	0.63	0.66	0.76	0.65	0.87	0.98	1.03	1.00
TDS	mg/L	--	412	609	569	620	540	513	549	528	509	486	--	471	418	376	--	328
Sulfate	mg/L	--	45.4	43.1	49.3	48.1	44.1	43.2	44.9	43.5	44.7	46.6	44.8	--	41	--	--	29.6
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	<0.4	--	--	<0.1
Radium-228	pCi/L	--	--	0.615	0.386	1	0.499	0.531	0.33	0.191	--	--	--	--	--	--	--	0.275
Radium-226	pCi/L	--	--	1.31	0.781	0.587	0.263	0.979	0.693	0.816	0.0231	--	--	--	--	--	--	0.351
Radium-226/228	pCi/L	5	--	1.925	1.167	1.587	0.762	1.51	1.023	1.007	0.8141	--	--	--	--	--	--	0.626
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.33	--	--	--	0.57	--	--	1.62
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.2	--	--	--	1	--	--	3
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	--	2.64	--	--	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.896	0.909	0.741	0.603	--	--	0.546	--	--	0.348
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.185	0.188	0.141	0.144	--	--	0.113	--	--	0.0765

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-171

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	2/11/2019	4/1/2019	5/23/2019	7/23/2019	9/11/2019	11/15/2019	5/19/2020	11/10/2020	5/27/2021	11/11/2021	5/13/2022	11/2/2022	5/24/2023	11/2/2023	5/14/2024
Field Parameters																		
Elevation	ft NGVD	--	--	369.89	369.89	372.03	373.11	----	371.60	370.47	370.86	369.38	369.09	369.75	370.00	369.29	368.44	366.21
pH	S.U.	--	6.8 - 8.3	7.68	7.68	7.51	6.65	7.63	7.44	7.94	7.59	7.76	7.78	7.85	7.83	8.2	7.04	7.04
Specific Conductance	µmhos/cm	--	--	391	391	570	488	363	654	487	437	389	500	495	442	267	486	0
Turbidity	NTU	--	--	6.9	6.9	3.67	6.4	5	7	1.02	8.35	14.91	0	4.2	0	0	0	3.92
Dissolved Oxygen	mg/L	--	--	0.47	0.47	0.91	1.1	0	0	0	0.42	0	0	0.15	0	0	0	8.87
Temperature	°C	--	--	13.5	13.5	17.85	14.8	15.49	13	14.72	17.14	20.46	13.35	16.35	14.65	15.47	14.39	15.33
ORP	mV	--	--	-55	-55	-94.3	-5.3	-112	-87	-56	-70	-55	49	-60	-123	-94	-111	5
Laboratory Parameters																		
Antimony	µg/L	6	--	--	--	0.02	--	--	0.06	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	3.72	--	--	4.5	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	91.8	--	--	87.9	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	<0.02	--	--	<0.02	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	<0.01	--	--	0.05	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	<0.04	--	--	0.1	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	0.22	--	--	0.306	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	0.07	--	--	0.5	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	0.02	--	--	0.2	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	<0.002	--	--	<0.002	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	3.01	--	--	2.4	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	<0.03	--	--	0.03	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	<0.1	--	--	<0.1	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	15.1	--	--	2	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	<0.06	--	--	14	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	1	--	--	7	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.0899	--	--	0.04	--	--	0.04	0.04	0.04	0.043	0.039	<0.05	0.037	<0.050	0.045	0.055
Calcium	mg/L	--	53.8	--	--	45.1	--	--	43.9	40.3	38.1	41	46.4	40.2	39.5	37.5	38.6	45.1
Lithium	mg/L	0.04	--	--	--	0.01	--	--	0.00504	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	11.8	--	--	12	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	0.112	--	--	0.121	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	0.84	--	--	0.9	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	60.5	--	--	49.7	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	0.098	--	--	0.103	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	201	--	--	205	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	0.2	--	--	2	--	--	0.08	--	--	--	--	--	--
Chloride	mg/L	--	73.4	--	--	60.2	--	--	41.2	32.8	25.5	30	40.08	36.6	33.4	29.5	25.4	22.7
Fluoride	mg/L	4	1.16	1.05	1.08	1.07	1.06	1.08	0.95	1.07	1.16	1.07	0.99	1.04	0.99	0.98	0.94	0.85
TDS	mg/L	--	412	--	--	352	--	--	309	273	239	280	270	260	260	250	240	220
Sulfate	mg/L	--	45.4	--	--	32.8	--	--	23.2	20.7	16.8	15.5	25.3	20.5	19.1	17.2	15.9	16.8
Sulfide	mg/L	--	--	--	--	<0.1	--	--	<0.02	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	-0.107	--	--	1.33	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	0.403	--	--	0.184	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	0.403	--	--	1.514	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	1.24	--	--	2.03	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	3	--	--	3	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	5.77	--	--	<5	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	0.418	--	--	0.364	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	0.106	--	--	0.114	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	12/12/2017	6/6/2018
Field Parameters														
Elevation	ft NGVD	--	--	369.38	369.28	368.85	368.52	367.76	366.84	367.86	368.72	367.13	366.24	369.54
pH	S.U.	--	6.7 - 8.5	6.6	7.54	7.59	7.5	7.32	7.6	8.86	7.23	7.53	8	7.77
Specific Conductance	µmhos/cm	--	--	387	450	454	501	410	540	344	398	402	390	400
Turbidity	NTU	--	--	2.5	0.91	0.78	0.46	1.03	2.6	0.71	2.28	3.31	6	2.1
Dissolved Oxygen	mg/L	--	--	2.3	4.37	5.67	4.46	6.66	4.2	3.36	32.59	4.01	6.2	3.36
Temperature	°C	--	--	16.4	17.49	18.53	18.78	15.15	14.9	16.27	18.01	16.21	14.9	16.2
ORP	mV	--	--	36	13.1	48.9	46.9	198.4	150	160.1	-167.7	76.7	56	43
Laboratory Parameters														
Antimony	µg/L	6	--	0.03	0.02	0.02	0.02	0.03	0.03	0.04	0.05	--	--	0.04
Arsenic	µg/L	10	--	0.53	0.47	0.46	0.43	0.47	0.49	0.47	0.42	--	--	0.45
Barium	µg/L	2000	--	18.5	19.6	19.4	19.1	19.3	21.9	17.7	21.9	--	--	18.5
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.004	<0.04	--	--	<0.004
Cadmium	µg/L	5	--	0.02	0.02	0.006	0.02	0.01	0.01	0.01	0.01	--	--	0.01
Chromium	µg/L	100	--	0.4	0.7	0.3	0.292	0.401	0.536	0.3	0.272	--	--	0.233
Cobalt	µg/L	6	--	0.104	0.033	0.03	0.023	0.022	0.053	0.027	0.006	--	--	0.02
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.27	0.35	--	0.52
Lead	µg/L	15	--	0.095	0.042	0.025	0.023	0.024	0.095	0.023	0.024	--	--	0.024
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Molybdenum	µg/L	100	--	1.78	1.85	1.74	1.63	1.74	2	1.62	2.31	--	--	2.04
Selenium	µg/L	50	--	0.7	0.5	0.2	0.2	0.1	0.1	0.1	0.2	--	--	0.3
Thallium	µg/L	2	--	0.01	0.01	<0.01	<0.01	0.058	<0.01	<0.01	<0.01	--	--	<0.01
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	214	--	3.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	23.5	22.8	26.2	--	22.5
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	1	16.5	--	6.55
Boron	mg/L	--	0.0552	0.002	0.011	0.007	0.015	0.002	0.018	0.033	0.034	0.027	--	0.039
Calcium	mg/L	--	64.3	55.1	52.8	52	60	54.4	59	56	55.9	59.8	--	52.8
Lithium	mg/L	--	--	0.003	0.013	0.003	0.009	0.007	0.002	0.005	<0.0002	--	--	0.005
Magnesium	mg/L	--	--	--	--	--	--	--	21.3	20.5	20.7	21.8	--	19.2
Manganese	mg/L	--	--	--	--	--	--	--	--	--	<0.0001	--	--	0.0008
Potassium	mg/L	--	--	--	--	--	--	--	0.6	0.69	0.57	0.61	--	0.58
Sodium	mg/L	--	--	--	--	--	--	--	18.9	16.6	20.6	19.3	--	15.5
Strontium	mg/L	--	--	--	--	--	--	--	0.0604	0.0601	0.58	0.061	--	0.0554
Alkalinity	mg/L	--	--	--	--	--	--	--	202	195	212	210	--	183
Bromide	mg/L	--	--	--	--	--	--	--	<0.02	0.03	0.061	<0.02	--	0.02
Chloride	mg/L	--	21.4	15	15.1	14.7	14.7	14.4	14.8	15.7	15.9	17.7	18	17.5
Fluoride	mg/L	4	0.902	0.61	0.064	0.62	0.63	0.54	0.58	0.6	0.54	0.6	0.6	0.66
TDS	mg/L	--	357	275	292	285	294	287	298	296	304	300	--	283
Sulfate	mg/L	23.5	28	21.2	21.1	17.4	14.9	15.9	16.5	17.6	18.8	20.1	21.1	18.7
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4
Radium-228	pCi/L	--	--	0.129	0.0598	0.213	0.14	1.71	-0.0315	0.0831	0.989	--	--	--
Radium-226	pCi/L	--	--	0.0309	0.513	0.239	0.344	0.357	0.0305	0.152	0.109	--	--	--
Radium-226/228	pCi/L	5	--	0.1599	0.5728	0.452	0.484	2.067	-0.001	0.2351	1.098	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.2	--	--	0.29
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	5.1	--	--	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	18.3	--	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.008	0.017	--	0.005
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0001	0.0001	0.0029	<0.0002	--	<0.0002

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/14/2018	2/12/2019	4/1/2019	5/21/2019	11/14/2019	2/18/2020	5/19/2020	7/16/2020	11/11/2020	2/3/2021	5/28/2021	8/5/2021	11/11/2021	5/12/2022	11/2/2022
Field Parameters																		
Elevation	ft NGVD	--	--	368.42	370.37	371.3	371.43	370.65	369.05	369.92	400.27	370.10	367.97	369.07	369.07	368.47	369.54	369.12
pH	S.U.	--	6.7 - 8.5	7.34	7.74	7.8	7.59	7.54	7.53	8.11	7.93	7.59	7.68	10.28	7.5	7.83	7.62	7.19
Specific Conductance	µmhos/cm	--	--	380	318	404	424	530	856	347	416	499	529	450	519	585	545	500
Turbidity	NTU	--	--	1.67	2.8	2.45	0.29	2.8	8.71	0.65	0.46	1.9	1.3	0	5.95	0	0.5	0
Dissolved Oxygen	mg/L	--	--	9.55	7.1	3.89	5.26	7	6.64	5.6	7.8	6.95	6.5	5.78		5.6	0.65	3.87
Temperature	°C	--	--	14.14	15.2	14.3	15.98	15.5	11.8	12.23	15.6	15.76	13.4	17	16.49	14.7	19.14	17.95
ORP	mV	--	--	165.5	189	21.1	-194.8	121	132.4	136	141	148	178	86	111	178	43	120
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	--	--	<0.02	0.03	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	0.44	--	--	0.44	0.46	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	17.8	--	--	15.9	16.2	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	<0.02	--	--	<0.02	<0.02	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.01	--	--	0.01	0.01	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	0.232	--	--	0.287	0.418	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	0.06	--	--	0.02	0.03	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	0.53	--	--	0.13	0.4	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	0.07	--	--	0.02	<0.05	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	<0.002	<0.002	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	2	--	--	2	2	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	0.3	--	--	0.1	0.1	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	<0.1	--	--	<0.1	<0.1	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	0.8	--	--	<0.7	<0.7	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	23.2	--	--	21.3	18.8	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	17	--	--	5.26	10	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.0552	0.06	<0.02	--	<0.02	0.01	--	<0.02	--	<0.02	--	0.011	--	0.012	<0.009	0.013
Calcium	mg/L	--	64.3	55	--	--	52.5	50.4	--	49.1	--	50.9	--	62.6	--	57.1	55.6	54.9
Lithium	mg/L	--	--	0.03	--	--	<0.009	0.00321	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	19.6	--	--	17	17.3	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	0.0041	--	--	0.0009	0.002	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	0.88	--	--	0.55	0.3	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	17.1	--	--	13	15.3	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	0.0553	--	--	0.0506	0.0508	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	193	--	--	167	171	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	<0.04	--	--	<0.04	<0.04	--	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	21.4	17.9	17.9	17.5	16	17.4	--	18	16.1	18.1	--	19.1	--	19.3	19.5	20.2
Fluoride	mg/L	4	0.902	0.66	--	--	0.65	0.73	0.79	0.76	0.77	0.83	0.85	0.81	0.78	0.74	0.67	0.77
TDS	mg/L	--	357	278	--	--	258	241	--	238	228	259	--	300	--	320	320	330
Sulfate	mg/L	23.5	28	17.0	--	--	14.1	15.8	--	15.1	--	16.4	--	18.4	--	20	23.1	23.6
Sulfide	mg/L	--	--	<0.07	--	--	<0.1	<0.2	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	0.0549	--	--	0.366	0.39	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	0.0246	--	--	-0.0257	0.0413	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	0.0795	--	--	0.366	0.4313	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	0.13	--	--	0.27	<0.2	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	<0.7	--	--	<0.7	0.8	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	2	--	--	5	<5	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	<0.003	--	--	<0.003	<0.02	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	<0.0002	--	--	<0.0002	<0.0005	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	2/7/2023	5/24/2023	8/16/2023	11/2/2023	5/15/2024
Field Parameters								
Elevation	ft NGVD	--	--	368.10	367.97	368.56	367.72	365.48
pH	S.U.	--	6.7 - 8.5	7.55	8.19	7.55	7.05	7.05
Specific Conductance	µmhos/cm	--	--	554	330	545	589	602
Turbidity	NTU	--	--	0.25	0	0.55	0.47	0.31
Dissolved Oxygen	mg/L	--	--	3.3	0	7.03	2.32	1.24
Temperature	°C	--	--	14.61	17.67	18.5	15.99	19.98
ORP	mV	--	--	199	95	107	108	236
Laboratory Parameters								
Antimony	µg/L	6	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--
Boron	mg/L	--	0.0552	--	0.011	--	0.013	0.012
Calcium	mg/L	--	64.3	--	46.8	--	50.3	55.6
Lithium	mg/L	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	--	--	--	--
Chloride	mg/L	--	21.4	--	19.6	--	19.5	20
Fluoride	mg/L	4	0.902	--	0.69	--	0.68	0.67
TDS	mg/L	--	357	--	330	--	320	340
Sulfate	mg/L	23.5	28	23.6	26.4	26.8	23.5	27.7
Sulfide	mg/L	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-211

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	6/6/2018	11/13/2018	5/21/2019	11/14/2019	5/19/2020	11/11/2020
Field Parameters																		
Elevation	ft NGVD	--	--	369.3	369.19	368.77	368.43	367.68	367.8	368.03	368.24	367	369.44	368.39	371.41	370.62	369.92	370.10
pH	S.U.	--	7.0 - 8.6	7.99	7.56	7.56	7.3	7.35	7.5	8.56	7.44	7.44	7.54	7.69	7.31	7.48	7.38	7
Specific Conductance	µmhos/cm	--	--	548	500	488	432	397	520	361	422	399	430	402	403	526	386	518
Turbidity	NTU	--	--	0.73	0.65	1.04	0.97	2.82	2.5	1.34	1.02	3.21	1.71	1.18	0	4	1.08	3.55
Dissolved Oxygen	mg/L	--	--	0.5	1.63	1.49	1.88	1.53	0.3	0.55	0.76	0.2	0.17	0.22	0.36	0.4	2.47	0.02
Temperature	°C	--	--	16.88	17.39	16.17	16.95	13.68	15.1	16.39	17.11	15.47	15.55	14.87	16.34	15.6	14.95	15.73
ORP	mV	--	--	-9.2	-185.2	-16.7	105.2	21.1	-3	160.7	2.1	-10.3	-13.4	8.7	67.5	31	109	61
Laboratory Parameters																		
Antimony	µg/L	6	--	0.02	0.02	0.02	0.02	0.02	0.03	0.05	0.03	--	0.02	<0.02	<0.02	0.05	--	--
Arsenic	µg/L	10	--	1.55	1.67	1.55	1.41	1.39	1.08	1.19	1.38	--	0.98	1.63	0.65	1.12	--	--
Barium	µg/L	2000	--	127	136	121	126	126	123	116	123	--	121	120	106	110	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.01	<0.005	<0.004	<0.004	--	<0.004	<0.02	<0.02	<0.02	--	--
Cadmium	µg/L	5	--	0.02	0.02	0.02	0.04	0.02	0.01	0.01	0.01	--	--	0.03	0.01	0.07	--	--
Chromium	µg/L	100	--	0.1	0.2	0.1	0.386	1.04	0.349	0.125	0.143	--	0.061	0.1	0.1	0.2	--	--
Cobalt	µg/L	6	--	0.514	0.558	0.422	0.524	0.437	0.437	0.412	0.517	--	0.398	0.685	0.275	0.664	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.07	0.09	0.11	0.51	0.77	0.3	--	--
Lead	µg/L	15	--	0.02	0.021	0.046	0.035	<0.004	0.01	0.022	0.033	--	0.026	0.181	0.02	0.08	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	<0.002	<0.002	--	--
Molybdenum	µg/L	100	--	4.92	5.25	4.46	4.4	4.63	4.31	4.06	4.18	--	4.69	5.13	5.01	4.85	--	--
Selenium	µg/L	50	--	<0.03	0.05	0.03	0.09	0.07	0.07	0.05	0.05	--	<0.03	<0.03	<0.03	0.1	--	--
Thallium	µg/L	2	--	0.03	0.03	0.02	0.02	0.04	0.02	0.03	0.03	--	0.03	<0.1	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	0.6	0.9	1	11.1	1	1	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.8	18.1	19.7	17.6	17.7	16.6	15.4	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	4.55	2.56	3.39	17.2	6.03	10	--	--
Boron	mg/L	--	0.0652	0.007	0.012	0.011	0.012	<0.002	0.028	0.027	0.08	0.029	0.034	0.08	<0.02	0.01	<0.02	<0.02
Calcium	mg/L	--	72.5	69	64.7	65.1	68.4	59.5	66.5	62.9	60.1	63.9	66.5	61.5	62.4	56.5	58.5	58.6
Lithium	mg/L	0.04	--	<0.0002	0.019	0.004	0.006	0.005	0.007	0.008	0.004	--	0.007	<0.009	<0.009	0.00335	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	20.9	20.1	18.4	20	21.2	19.3	17.5	16.8	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.428	--	0.476	0.535	0.371	0.582	--	--
Potassium	mg/L	--	--	--	--	--	--	--	0.92	1.08	1.26	0.8	0.9	1.21	0.82	0.7	--	--
Sodium	mg/L	--	--	--	--	--	--	--	16	15.4	13	15	15.5	14.7	13.3	14.4	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0931	0.0922	0.0805	0.0889	0.096	0.0887	0.0829	0.0797	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	212	222	221	215	230	224	199	199	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.03	0.05	<0.02	0.04	0.04	<0.04	<0.04	<0.04	--	--
Chloride	mg/L	--	22.7	21.1	21.7	20.4	20	19.9	19.6	21	20.4	20.5	20.6	20.2	18.1	17.5	19.3	18.0
Fluoride	mg/L	4	0.497	0.33	0.36	0.34	0.34	0.3	0.32	0.34	0.3	0.31	0.38	0.36	0.36	0.38	0.35	0.45
TDS	mg/L	--	348	331	334	305	317	292	275	306	322	306	317	294	278	262	283	266
Sulfate	mg/L	--	50.3	46.2	47.9	43.2	40.4	41	39.6	42.4	43.6	45.7	44.6	43.4	36	35.5	38.8	36.4
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	<0.1	<0.2	--	--
Radium-228	pCi/L	--	--	0.126	0.036	0.676	0.0796	1.78	0.281	0.108	0.45	--	--	0.638	0.458	0.113	--	--
Radium-226	pCi/L	--	--	0.223	1.37	0.305	0.576	0.953	0.601	0.483	0.775	--	--	0.315	0.284	0.579	--	--
Radium-226/228	pCi/L	5	--	0.349	1.406	0.981	0.6556	2.733	0.882	0.591	1.225	--	--	0.953	0.742	0.692	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.09	--	0.11	0.23	0.21	<0.2	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.7	--	1	1	<0.7	1	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	<0.8	<1	4	<5	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.019	<0.0004	0.078	0.062	0.024	0.028	<0.003	<0.02	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.37	0.427	0.425	0.441	0.427	0.441	0.346	0.315	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-211

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	2/3/2021	5/27/2021	8/4/2021	11/11/2021	5/12/2022	11/3/2022	5/24/2023	11/2/2023	5/15/2024
Field Parameters												
Elevation	ft NGVD	--	--	368.10	369.06	368.9	368.48	369.52	369.12	367.92	367.67	365.49
pH	S.U.	--	7.0 - 8.6	7.53	9.72	7.4	7.71	7.55	7.43	8.01	6.98	6.98
Specific Conductance	µmhos/cm	--	--	452	413	469	500	491	390	307	541	538
Turbidity	NTU	--	--	0.3	0	1.63	0	0.01	0.64	0	1.32	1.1
Dissolved Oxygen	mg/L	--	--	0.2	0		0	3	0	0	0	0.05
Temperature	°C	--	--	14.7	16.98	16.15	14.21	17.63	15.71	18.06	15.59	17.56
ORP	mV	--	--	75	-10	7	171	63	-31	16	-49	-4
Laboratory Parameters												
Antimony	µg/L	6	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.0652	--	0.011	--	0.011	<0.009	0.013	0.011	0.014	0.011
Calcium	mg/L	--	72.5	--	57.1	--	57.2	55.2	55.1	54.8	59.6	58.5
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	<0.02	--	--	--	--	--	--	--
Chloride	mg/L	--	22.7	--	17.9	--	18.2	19.1	19.7	21	20.2	20.8
Fluoride	mg/L	4	0.497	0.46	0.48	0.43	0.4	0.4	0.4	0.4	0.4	0.41
TDS	mg/L	--	348	--	290	--	280	280	280	300	290	320
Sulfate	mg/L	--	50.3	--	35.4	--	35.8	38.5	38	41.9	41	45.2
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/9/2016	7/19/2016	9/21/2016	11/16/2016	1/11/2017	3/8/2017	5/9/2017	7/19/2017	10/4/2017	1/3-11/18	6/6/2018	11/13/2018	5/22/2019	11/14/2019	5/19/2020
Field Parameters																		
Elevation	ft NGVD	--	--	369.44	369.34	368.92	368.59	367.86	368.07	367.86	368.42	367.17	366.66	369.58	368.38	371.4	370.64	
pH	S.U.	--	6.7 - 8.5	8.14	7.76	7.69	7.47	7.19	7.6	7.44	8.48	7.48	7.03	7.65	7.66	7.47	7.41	7.55
Specific Conductance	µmhos/cm	--	--	591	544	478	585	441	60	493	531	449	564	470	451	511	670	449
Turbidity	NTU	--	--	2.82	0.48	1.93	0.33	3.09	1.9	1.42	0.55	1.01	1.11	2.43	1.87	0.87	11	1.18
Dissolved Oxygen	mg/L	--	--	0.53	0.17	0.49	0	1.82	0.2	0.22	0.47	0.31	18.7	0.18	0.33	1.88	0	0.66
Temperature	°C	--	--	15.24	16.81	15.93	15.25	12.99	15	16.7	17.58	16.26	14.93	15.45	14.15	15.44	16.2	14.87
ORP	mV	--	--	80.4	26.3	78.1	51.1	141.4	51	40	168.3	21.3	170.4	25.1	23.2	37.3	56	35
Laboratory Parameters																		
Antimony	µg/L	6	--	0.08	0.08	0.06	0.06	0.07	0.07	0.08	0.12	--	--	0.11	0.07	0.08	0.19	--
Arsenic	µg/L	10	--	1.07	1.06	0.95	0.86	0.99	0.92	0.97	1.04	--	--	0.84	0.89	1.04	1.08	--
Barium	µg/L	2000	--	241	240	226	206	220	220	216	226	--	--	218	201	202	203	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.01	<0.005	<0.004	<0.004	--	--	0.005	<0.02	<0.02	<0.02	--
Cadmium	µg/L	5	--	0.02	0.03	0.02	0.03	0.02	0.02	0.04	0.02	--	--	0.13	0.02	0.03	0.16	--
Chromium	µg/L	100	--	0.2	0.3	0.1	0.05	0.124	0.433	0.165	0.11	--	--	0.091	0.06	<0.04	0.759	--
Cobalt	µg/L	6	--	0.216	0.21	0.195	0.171	0.202	0.182	0.208	0.203	--	--	0.196	0.224	0.234	0.397	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.11	2.7	--	1.16	0.16	0.16	1.02	--
Lead	µg/L	15	--	0.107	0.075	0.066	0.056	0.091	0.092	0.118	0.089	--	--	0.229	0.1	0.09	0.776	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002	<0.002	--
Molybdenum	µg/L	100	--	6.31	6.66	6.13	5.33	6.09	5.68	5.07	5.29	--	--	5.17	4.76	5.37	5.29	--
Selenium	µg/L	50	--	0.2	0.2	0.3	0.3	0.2	0.5	0.6	0.5	--	--	0.2	0.05	0.04	0.08	--
Thallium	µg/L	2	--	0.03	0.02	0.03	0.02	0.04	0.02	0.02	0.03	--	--	0.03	<0.1	<0.1	0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	187	--	6.5	1	1	4	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.6	19.6	--	17.6	17	16.9	16	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	6.79	14.1	--	17.2	9.86	5	65.5	--
Boron	mg/L	--	0.0956	0.022	0.015	0.015	0.013	0.004	0.024	0.107	0.015	0.092	0.088	0.03	0.04	<0.02	0.01	0.02
Calcium	mg/L	--	79.5	74.2	60.6	70.4	74.7	67.3	76.2	71.5	70.9	67.8	--	70.7	62.1	69.3	69.4	69.2
Lithium	mg/L	0.04	--	0.002	0.025	0.005	0.007	0.009	0.005	0.013	0.0005	--	--	0.006	0.01	<0.009	0.0044	--
Magnesium	mg/L	--	--	--	--	--	--	--	25	24.3	23.9	22.7	--	23.6	21.3	23.1	22.3	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.592	--	--	0.596	0.634	0.717	0.803	--
Potassium	mg/L	--	--	--	--	--	--	--	2.11	2.41	2.44	3.91	--	1.97	3.95	2.81	3.49	--
Sodium	mg/L	--	--	--	--	--	--	--	18.1	17.2	19.7	20.8	--	15.7	17.7	15.1	17.2	--
Strontium	mg/L	--	--	--	--	--	--	--	0.144	0.142	0.144	0.168	--	0.147	0.191	0.189	0.21	--
Alkalinity	mg/L	--	--	--	--	--	--	--	247	271	277	262	--	268	268	286	266	--
Bromide	mg/L	--	--	--	--	--	--	--	<0.05	0.08	0.07	<0.05	--	0.05	0.05	0.04	0.05	--
Chloride	mg/L	--	22.9	19.2	19.6	18.9	19.1	19.4	18.9	19.9	19.5	18.5	--	19.9	18.8	19.1	19.2	19.9
Fluoride	mg/L	4	0.445	0.36	0.38	0.36	0.33	0.36	0.33	0.35	0.3	0.32	--	0.4	0.34	0.36	0.32	0.26
TDS	mg/L	--	368	328	299	315	346	332	304	339	332	339	--	347	314	348	323	328
Sulfate	mg/L	--	42.4	39.2	41	35.5	32	34.4	35.1	37.1	36.5	37.4	--	38.4	35.2	36.8	38.6	33.3
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1	<0.2	--
Radium-228	pCi/L	--	--	0.441	0.77	0.604	0.688	0.722	0.518	0.0415	0.501	--	--	--	1.47	0.59	0.525	--
Radium-226	pCi/L	--	--	0.126	0.658	0.23	0.39	0.422	0.42	0.408	0.355	--	--	--	0.469	0.669	0.403	--
Radium-226/228	pCi/L	5	--	0.567	1.428	0.834	1.078	1.144	0.938	0.4495	0.856	--	--	--	1.939	1.259	0.928	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.39	--	--	0.08	1.33	0.85	<0.2	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.4	--	--	0.7	3	3	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.16	--	--	2	1	2	<5	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.016	--	<0.002	0.007	0.005	<0.02	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.616	0.625	0.62	0.646	--	0.567	0.657	0.684	0.611	--

Table A-1
Summary of Analytical Data
AEP Rockport Generating Station - CCR Landfill
Rockport, Indiana

MW-21D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/11/2020	5/27/2021	11/11/2021	5/12/2022	7/20/2022	11/2/2023	5/24/2023	8/16/2023	11/2/2023	12/20/2023	5/15/2024
Field Parameters														
Elevation	ft NGVD	--	--	370.09	369.05	368.46	369.4	370.04	369.07	367.92	368.52	367.68	367.00	365.47
pH	S.U.	--	6.7 - 8.5	6.99	9.68	7.82	7.63	7.49	6.75	8.19	7.52	7.07	8.89	7.34
Specific Conductance	µmhos/cm	--	--	599	538	555	593	604	0	353	596	632	658	620
Turbidity	NTU	--	--	1.65	0	0	0.88	3.06	0	0	0.2	1.08	1.75	7.5
Dissolved Oxygen	mg/L	--	--	0.36	0	6.48	0.2	0.06	9.78	0	0.25	0	1.46	1
Temperature	°C	--	--	15.31	19.48	13.77	18.33	17.48	20.24	17.65	16.49	15.39	17.15	20.29
ORP	mV	--	--	120	-6	176	56	16	157	102	55	20	87	198
Laboratory Parameters														
Antimony	µg/L	6	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	µg/L	10	--	--	--	--	--	--	--	--	--	--	--	--
Barium	µg/L	2000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	µg/L	4	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	µg/L	5	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	µg/L	100	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	µg/L	6	--	--	--	--	--	--	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	µg/L	15	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	µg/L	2	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	µg/L	100	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	µg/L	50	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	µg/L	2	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Boron	mg/L	--	0.0956	<0.02	0.014	0.014	<0.009	--	0.013	0.012	--	0.014	--	0.014
Calcium	mg/L	--	79.5	70.9	69.8	69.7	72.1	--	67.8	61.3	--	68.5	--	67.3
Lithium	mg/L	0.04	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Strontium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Bromide	mg/L	--	--	--	0.04	--	--	--	--	--	--	--	--	--
Chloride	mg/L	--	22.9	19.5	19.8	19.5	21	19.9	20.5	22.9	21.6	21.2	21.2	19.9
Fluoride	mg/L	4	0.445	0.38	0.4	0.38	0.38	--	0.4	0.38	--	0.37	--	0.37
TDS	mg/L	--	368	318	330	330	330	--	340	360	--	330	--	330
Sulfate	mg/L	--	42.4	37.1	36.4	34.2	40	--	37.4	39.1	--	36.9	--	36.5
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

Abbreviations and Notes:

GWPS - Groundwater Protection Standard

MCL - USEPA Maximum Contaminant Levels

RSL - USEPA Generic Tables for Residential Tapwater, May 2018, TR=1E-06, THQ=1.0

Field Parameter Units

ft NGVD - Feet, National Geodetic Vertical Datum of 1929 (also known as mean sea level (MSL))

°C - degrees Celcius

S.U. - Standard Units

µmhos/cm - micromhos per centimeter

mg/L - milligrams per liter

ORP - millivolts (mV)

NTU - Nephelometric Turbidity Units

Laboratory Parameter Units

pCi/L picoCuries per Liter

Table A-2
Summary of Leachate Pond Data

AEP Rockport Generating Station - Restricted Waste Landfill
Rockport, Indiana

Source: American Electric Power

		Landfill Leachate Data									
Parameter	Unit	West Pond						North Pond			
		09/29/17	10/31/18	11/26/18	12/18/18	01/08/19	03/20/19	11/26/18	12/18/18	01/08/19	03/20/19
Boron	mg/L	11.44	12.2	10.6	11	11.4	11.5	9.18	12.3	10.6	9.23
Calcium	mg/L	-	284	214	166	240	231	277	277	368	283
Chloride	mg/L	-	1,190	1,180	937	1,250	1,170	982	847	993	854
Fluoride	mg/L	-	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50
Specific Conductivity	umhos/cm	-	48,510	50,655	36,465	48,840	50,985	42,240	40,095	46,860	38,940
Sulfate	mg/L	-	18,900	18,100	14,100	18,100	19,000	16,600	14,400	17,400	14,800
Total Dissolved Solids	mg/L	-	29,400	30,700	22,100	29,600	30,900	25,600	24,300	28,400	23,600

Notes & Abbreviations:

- mg/L: milligrams per liter
- umhos/cm - micromhos per centimeter
- : Not sampled
- < less than

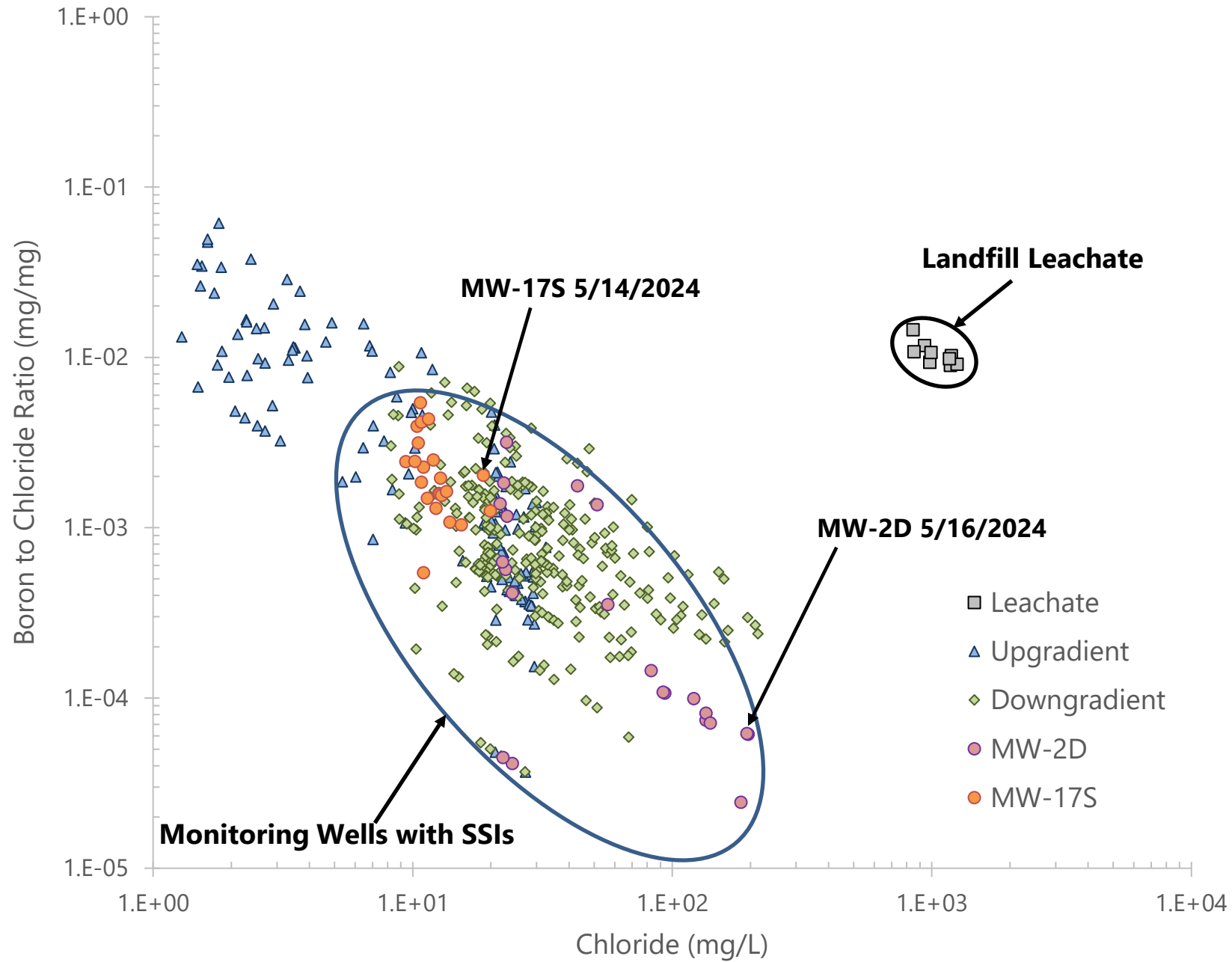
Table A-3
Summary of Isotope Data
AEP Rockport Generating Station - Restricted Waste Landfill
Rockport, Indiana

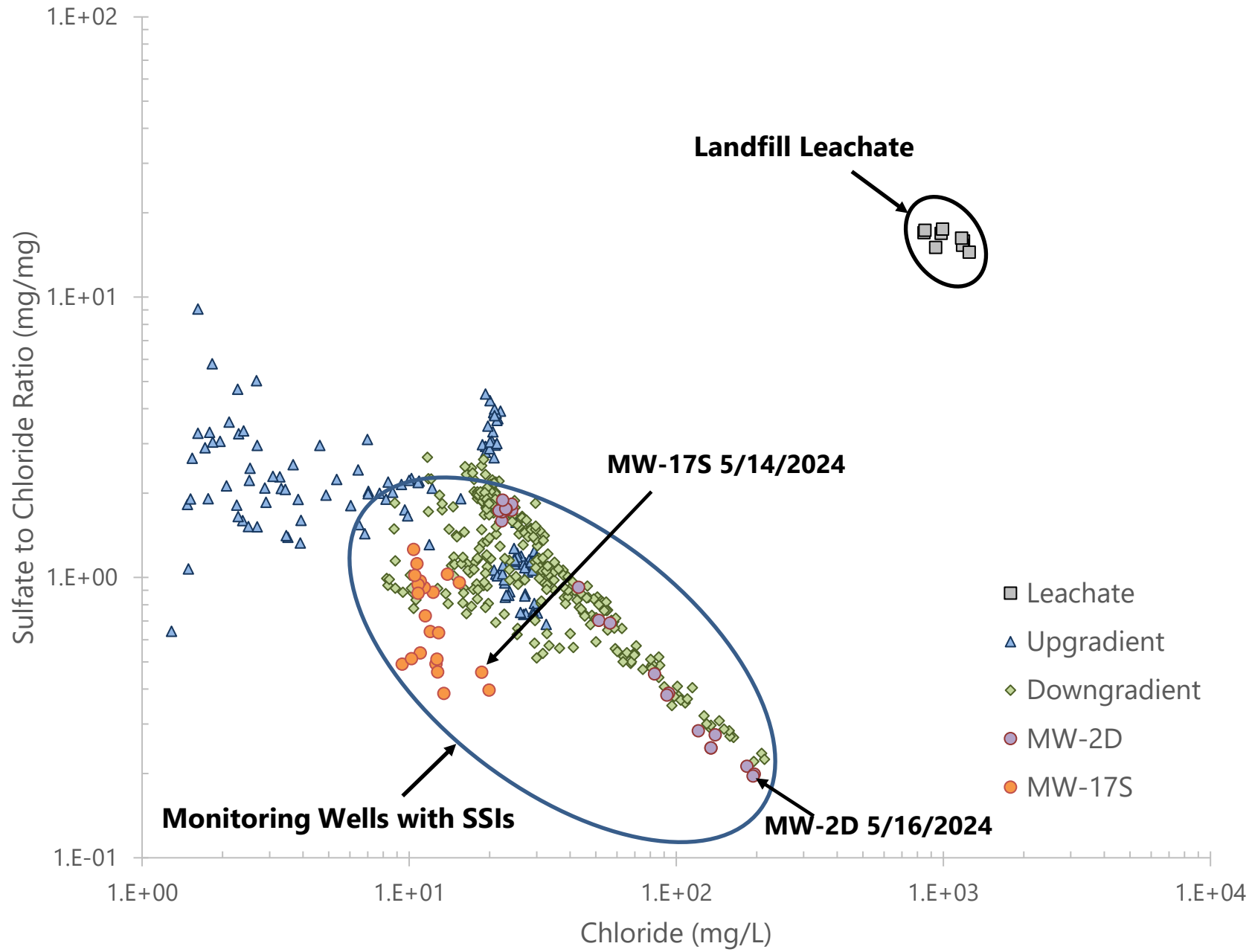
Sample Identifier	B (mg/L)	$\delta^{11}\text{B}$	Sr (mg/L)	$^{87}\text{Sr}/^{86}\text{Sr}$
Landfill Leachate Pond North	2.7	-0.93	1.80	0.711955
Landfill Leachate Pond West	11.4	-1.64	2.86	0.711919
MW-17I	0.058	26.86	0.093	0.710547
MW-8I	0.037	23.51	0.140	0.709697
MW-8S	0.020	16.33	0.048	0.709272
MW-11S	0.060	24.01	0.052	0.709447
MW-14S	0.017	17.78	0.094	0.710566
MW-15I	0.042	35.32	0.082	0.710333
MW-21S	0.016	20.66	0.055	0.710142

Note: Monitoring well boron concentrations are averages of first eight rounds of sampling.

APPENDIX B

Full Size Geochemical Exhibits





APPENDIX 4 – Notices for Monitoring Program Transitions

No monitoring program transitions have been necessary at this time.

APPENDIX 5 – Well Installation/Decommissioning Logs

There were no wells installed or decommissioned during the reporting year.