Annual Groundwater Monitoring Report

Indiana Michigan Power Company

Rockport Plant

Landfill CCR Management Unit

Rockport, Indiana

January 31, 2020

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I. Overview

This *Annual Groundwater Monitoring and Corrective Action Report* (Report) has been prepared to report the status of activities for the year 2019 for 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 2019 groundwater monitoring activities be posted to the operating record no later than January 31, 2020.

In general, the following 2019 activities were completed:

- Semiannual detection monitoring samples were obtained in November of 2018 and May and November of 2019. Data for the November 2018 sampling was expanded to include results of verification sampling which were not available for the 2018 annual report because analysis of the samples was completed after the January 31, 2019 annual report deadline.
- Groundwater data underwent various validation tests, including tests for completeness, valid values, transcription errors, and consistent units;
- Statistical analysis of Appendix III indicator parameters was performed on the results of the November 2018 and the May 2019 detection monitoring samples. Statistical analysis of the November 2019 samples was not performed because the analytical data necessary to complete the statistical analysis is not yet available.
- Alternative source demonstrations were investigated and completed.

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 CCR landfill unit, all groundwater monitoring wells and monitoring well identification numbers.
- Identification of any monitoring wells that were installed as part of the CCR groundwater monitoring system or decommissioned during the preceding year, along with a statement as to why that happened.
- 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 detection monitoring or assessment monitoring programs (Attached as Appendix 1).
- Statistical analyses of Appendix III parameters. (Attached as Appendix 2 and 3).
- Alternate source demonstrations (ASDs) for Appendix III parameters (Attached as Appendix 4 and 5).

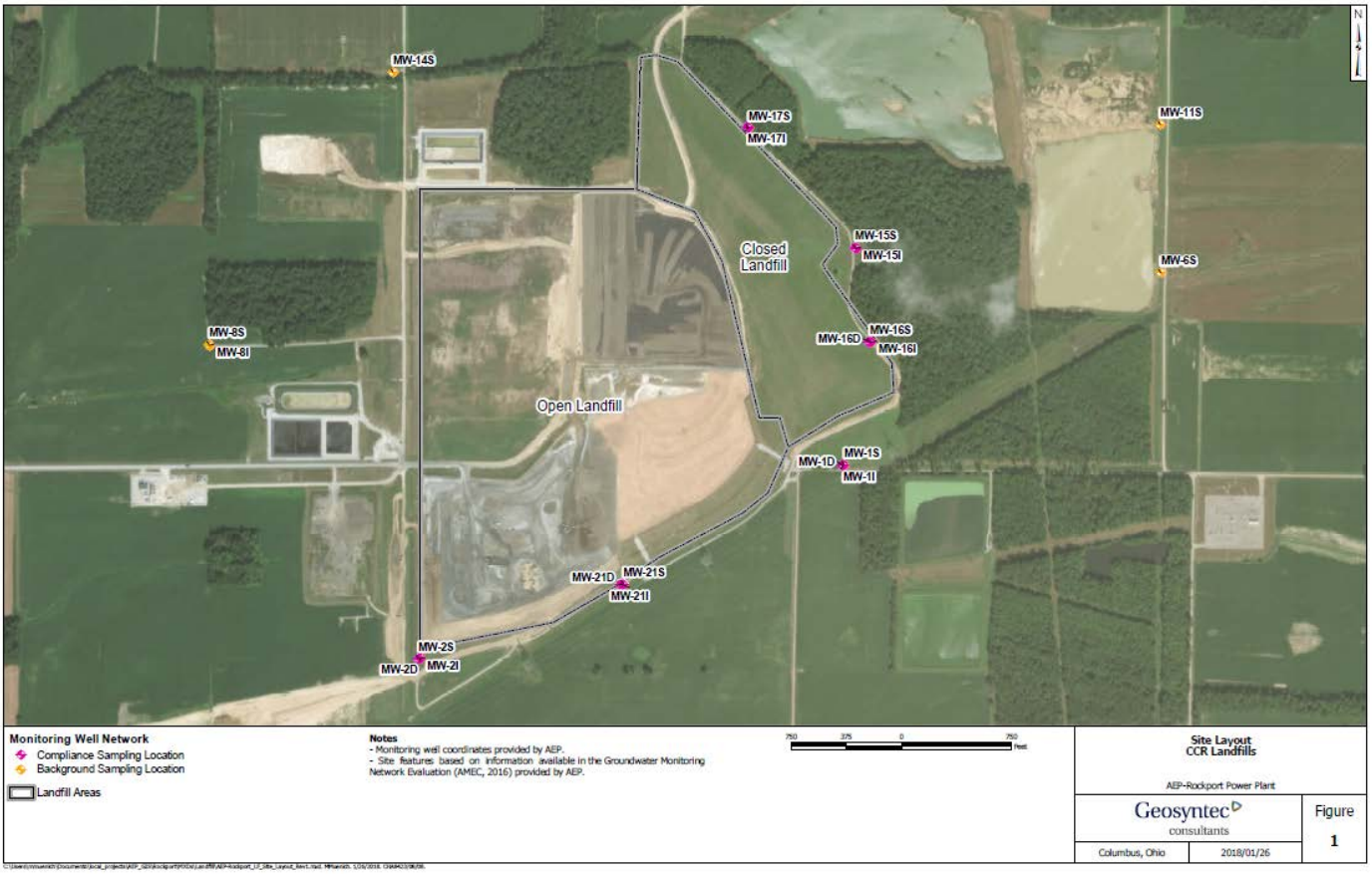
- A summary of any transition between monitoring programs or an alternate monitoring frequency, for example the date and circumstances for transitioning from detection monitoring to assessment monitoring, in addition to identifying the constituents detected at a statistically significant increase over background concentrations.
- Other information required to be included in the annual report such as 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 figure that follows depicts the PE-certified CCR landfill groundwater monitoring network, the monitoring well locations, and their corresponding 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.



III. Monitoring Wells Installed or Decommissioned

There were no CCR monitoring wells installed or decommissioned in 2019. 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, 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. The web site is located at *AEP.com/Required Internet Postings/CCR Rule Compliance Data and Information/Rockport Plant/Landfill*.

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

Appendix 1 contains Table 1 that shows the groundwater quality data collected during the second detection monitoring event of 2018 consisting of monitoring results from samples taken in November 2018 and verification samples taken in February and April 2019. Also included are results from the first semiannual sampling event in May 2019 and subsequent verification samples taken in July and September.

Static water elevation data from each monitoring event are shown in Appendix 1, along with the groundwater flow rates (Table 2) and flow directions developed after each sampling event.

Note that the second semiannual sampling event of 2019 occurred in November and the lab results were not complete in 2019. Therefore, the November 2019 sample results will be included and discussed in the 2020 annual groundwater report due January 31, 2021.

V. Groundwater Quality Data Statistical Analysis

November 2018 Samples.

Statistical analysis of the detection monitoring samples taken in November 2018 with verification samples taken in February and April 2019 was completed. Statistically significant increases (SSIs) in the Appendix III parameters of chloride, fluoride, and TDS were documented in the May 1, 2019 statistical analysis report contained in Appendix 2.

May 2019 Samples

Statistical analysis of the first 2019 semiannual detection monitoring samples taken in May with verification samples taken in July and September was completed. Statistically significant increases (SSIs) in the Appendix III parameters of calcium, chloride, fluoride, and TDS were documented in the October 3, 2019 statistical analysis report as shown in Appendix 3.

VI. Alternate Source Demonstrations

November 2018 Samples.

An alternate source demonstration (ASD) by Wood Environment & Infrastructure Solutions Inc. relative to the Appendix III SSIs resulting from the November 2018 sampling was undertaken and completed by report dated June 28, 2019. 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 4.

Because the ASD for the November 2018 samples was successful, the landfill remained in detection monitoring for the first semiannual samples of 2019 taken in May.

May 2019 Samples

The first semiannual detection monitoring samples of 2019 were taken in May with verification samples taken in July and September. As discussed above, there were SSIs for Appendix III parameters. An ASD by Wood Environment & Infrastructure Solutions Inc. relative to the Appendix III SSIs was undertaken and completed by report dated December 10, 2019. 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 5.

Because the ASD for the May 2019 samples was successful, the BAP remained in detection monitoring for the second semiannual samples of 2019 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 2018 and May 2019 sampling events, the landfill remained in detection monitoring for the November 2019 sampling event. Completion of verification sampling and statistical analyses of results for the November 2019 sampling event will be completed in early 2020.

If there are no SSIs of Appendix III parameters resulting from statistical analyses of the November 2019 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. All required information has been included in this annual groundwater monitoring report.

IX. Description of Any Problems Encountered in 2018 and Actions Taken

No significant problems were encountered. The low flow sampling effort went smoothly and the schedule was met to support 2019 annual groundwater report preparation covering the 2019 groundwater monitoring activities.

X. A Projection of Key Activities for the Upcoming Year

Key activities for 2020 include:

- Completion of verification sampling (if needed) and statistical analyses of results from the November 2019 sampling event.
- Detection monitoring on a twice per year schedule (May and November) for 2020.
- 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 fourth annual groundwater report.

APPENDIX 1

ROCKPORT PLANT CCR LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT COVERING 2019 ACTIVITIES

GW QUALITY DATA, GW FLOW DIRECTIONS, GW FLOW RATES

Table 1 - Groundwater Data Summary: MW-001D
Rockport - LF
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.017	63.6	27.3	0.28	7.6	331	40.2
7/19/2016	Background	0.015	57.9	29.8	0.3	7.1	329	40.6
9/20/2016	Background	0.016	65.2	29.8	0.28	7.4	288	32.3
11/16/2016	Background	0.018	69.3	39.3	0.29	7.5	339	33.6
1/11/2017	Background	0.006	63.4	40.6	0.26	7.4	323	36.4
3/8/2017	Background	0.055	70.0	40.3	0.26	7.3	330	37.0
5/9/2017	Background	0.046	67.8	40.9	0.28	7.3	342	39.5
7/18/2017	Background	0.019	63.9	39.3	0.24	8.1	338	39.6
10/4/2017	Detection	0.002 J	65.7	10.3	0.85	7.3	339	10.4
1/22/2018	Detection	- -	- -	- -	0.31	- -	- -	- -
6/7/2018	Detection	0.103	70.9	43.1	0.30	8.2	345	39.5
8/16/2018	Detection	0.020	- -	43.8	- -	7.4	- -	- -
11/14/2018	Detection	0.100	71.9	46.9	0.30	7.8	340	39.8
2/13/2019	Detection	<0.02 U	- -	- -	- -	7.4	- -	- -
5/23/2019	Detection	0.02 J	73.6	32.1	0.27	7.2	346	45.3
7/23/2019	Detection	- -	- -	- -	- -	7.3	- -	39.2

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-001D
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.05	1.29	255	0.01 J	0.13	0.3	3.64	1.084	0.28	1.13	<0.0002 U	0.002 J	3.44	0.07 J	0.04 J
7/19/2016	Background	0.03 J	0.73	147	<0.005 U	0.07	1.5	0.373	0.195	0.30	1.37	0.017	<0.002 U	3.59	0.03 J	0.02 J
9/20/2016	Background	0.03 J	1.07	160	0.007 J	0.04	0.3	0.836	1.457	0.28	0.500	0.0005 J	<0.002 U	3.60	0.07 J	0.056
11/16/2016	Background	0.03 J	0.65	147	<0.005 U	0.04	0.072	0.329	7.296	0.29	0.222	0.004	<0.002 U	3.24	0.03 J	0.02 J
1/11/2017	Background	0.03 J	0.77	162	<0.005 U	0.15	0.439	0.577	0.649	0.26	0.807	0.007	<0.002 U	2.43	0.03 J	0.05 J
3/8/2017	Background	0.02 J	0.58	139	<0.005 U	0.04	0.687	0.173	0.2384	0.26	1.92	0.007	<0.002 U	3.40	0.03 J	0.03 J
5/9/2017	Background	0.02 J	0.75	142	0.006 J	0.04	0.174	0.440	0.724	0.28	0.419	0.009	<0.002 U	3.05	0.06 J	0.04 J
7/18/2017	Background	0.02 J	0.59	139	<0.004 U	0.05	0.131	0.212	0.946	0.24	0.355	0.002	<0.002 U	2.94	<0.03 U	0.03 J

Notes:
µg/L: micrograms per liter
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<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-001I
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.075	67.4	24.9	0.37	6.7	323	44.3
7/19/2016	Background	0.014	60.0	24.8	0.40	7.0	315	46.7
9/20/2016	Background	0.018	64.5	24.3	0.37	7.4	331	42.4
11/16/2016	Background	0.015	63.9	24.1	0.31	7.1	334	40.7
1/11/2017	Background	0.004 J	60.9	24.4	0.33	7.6	316	41.4
3/8/2017	Background	0.045	66.9	24.1	0.35	7.4	300	41.2
5/9/2017	Background	0.049	65.7	26.5	0.38	7.2	323	43.8
7/18/2017	Background	0.047	64.8	26.5	0.34	6.9	330	43.3
10/4/2017	Detection	0.018	68.1	27.5	0.37	7.1	327	44.1
6/6/2018	Detection	0.110	66.4	28.6	0.42	7.5	321	42.0
8/16/2018	Detection	0.056	- -	- -	- -	7.3	- -	- -
11/14/2018	Detection	0.05 J	65.5	28.8	0.41	7.8	308	40.7
2/13/2019	Detection	- -	- -	30.1	- -	7.5	- -	- -
4/1/2019	Detection	- -	- -	34.1	- -	7.4	- -	- -
5/23/2019	Detection	0.02 J	67.7	33.1	0.42	7.0	341	40.2
7/23/2019	Detection	- -	- -	30.6	- -	7.2	- -	- -
9/11/2019	Detection	- -	- -	33.5	- -	7.3	- -	- -

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-001I
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.04 J	0.86	85.5	<0.005 U	0.08	0.2	0.341	0.3903	0.37	0.851	0.005	<0.002 U	2.47	<0.03 U	0.03 J
7/19/2016	Background	0.04 J	0.78	86.1	<0.005 U	0.10	1.0	0.364	1.675	0.40	1.25	0.022	0.002 J	2.85	0.04 J	0.02 J
9/20/2016	Background	0.01 J	0.92	84.9	<0.005 U	0.02	0.2	0.401	1.696	0.37	0.156	0.007	<0.002 U	2.89	<0.03 U	0.02 J
11/16/2016	Background	0.02 J	0.80	93.4	<0.005 U	0.02 J	0.051	0.381	1.312	0.31	0.059	0.005	<0.002 U	3.27	<0.03 U	0.03 J
1/11/2017	Background	0.02 J	0.82	90.5	0.005 J	0.02 J	0.390	0.424	0.621	0.33	0.099	0.005	<0.002 U	3.33	<0.03 U	0.104
3/8/2017	Background	0.03 J	0.69	76.7	<0.005 U	0.05	0.686	0.054	0.15	0.35	0.427	0.006	<0.002 U	1.82	0.04 J	0.03 J
5/9/2017	Background	0.04 J	0.89	85.0	<0.004 U	0.01 J	0.155	0.558	0.63	0.38	0.068	0.008	<0.002 U	2.87	<0.03 U	0.02 J
7/18/2017	Background	0.02 J	0.86	94.3	<0.004 U	0.007 J	0.112	0.569	2.533	0.34	0.137	0.0005 J	<0.002 U	2.85	<0.03 U	0.02 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-001S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.037	70.7	29.6	0.59	8.1	392	33.7
7/19/2016	Background	0.015	62.9	31.1	0.65	7.2	392	35.5
9/20/2016	Background	0.022	68.0	31.4	0.60	7.1	411	32.4
11/16/2016	Background	0.020	74.4	31.9	0.54	7.3	398	30.7
1/11/2017	Background	0.005 J	65.0	32.0	0.57	7.4	392	30.7
3/8/2017	Background	0.030	71.5	30.7	0.59	7.1	384	30.5
5/9/2017	Background	0.031	72.6	31.3	0.63	7.2	402	33.3
7/18/2017	Background	0.028	69.2	30.4	0.58	7.3	406	33.6
10/4/2017	Detection	0.044	67.6	33.1	0.57	7.1	396	34.6
1/3/2018	Detection	- -	- -	39.9	- -	7.6	- -	- -
6/6/2018	Detection	0.046	71.8	34.9	0.61	7.5	386	34.2
8/16/2018	Detection	- -	- -	37.3	- -	7.3	- -	- -
11/14/2018	Detection	0.04 J	71.9	38.1	0.63	7.5	410	32.3
2/13/2019	Detection	- -	- -	40.4	- -	7.5	- -	- -
4/1/2019	Detection	- -	- -	38.5	- -	7.4	- -	- -
5/23/2019	Detection	<0.02 U	73.7	33.7	0.55	7.9	388	36.3
7/23/2019	Detection	- -	- -	30.0	- -	7.4	- -	- -

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-001S
Rockport - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J	0.43	18.5	<0.01 U	0.02 J	0.3	0.171	0.0665	0.59	0.204	0.004	<0.002 U	0.65	1.1	<0.02 U
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 U	0.80	1.1	0.168
9/20/2016	Background	0.02 J	0.38	17.2	<0.005 U	0.005 J	0.3	0.014	0.244	0.60	0.01 J	0.002	<0.002 U	0.68	0.9	<0.01 U
11/16/2016	Background	0.02 J	0.38	17.9	<0.005 U	0.007 J	0.207	0.01 J	0.296	0.54	0.022	0.010	<0.002 U	0.74	0.9	<0.01 U
1/11/2017	Background	0.04 J	0.43	17.7	<0.005 U	0.02	0.720	0.052	0.934	0.57	0.076	0.008	<0.002 U	0.59	1.0	<0.01 U
3/8/2017	Background	0.04 J	0.76	36.5	0.023	0.09	1.38	1.21	0.0407	0.59	1.26	0.010	<0.002 U	0.97	1.1	0.03 J
5/9/2017	Background	0.05 J	0.50	22.3	0.01 J	0.22	0.552	0.164	0.0324	0.63	0.526	0.009	<0.002 U	1.64	1.1	<0.01 U
7/18/2017	Background	0.02 J	0.39	17.3	<0.004 U	0.01 J	0.255	0.02 J	0.309	0.58	0.033	0.0007 J	<0.002 U	0.64	1.2	<0.01 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-002D
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	<0.002 U	75.6	24.2	0.19	7.9	341	42.1
7/20/2016	Background	0.010	65.8	24.2	0.21	7.5	339	44.2
9/21/2016	Background	0.013	66.7	22.8	0.20	7.3	338	39.6
11/17/2016	Background	0.014	73.9	22.2	0.19	7.1	327	35.4
1/11/2017	Background	<0.002 U	64.2	22.3	0.19	7.4	318	38.3
3/8/2017	Background	0.030	74.2	21.7	0.20	7.4	318	37.6
5/9/2017	Background	0.027	70.8	23.1	0.21	7.3	343	40.5
7/19/2017	Background	0.073	64.7	23.0	0.18	8.5	340	40.5
10/4/2017	Detection	0.041	67.7	22.4	0.20	7.2	332	42.3
6/7/2018	Detection	0.076	78.6	43.1	0.22	7.6	361	39.8
8/16/2018	Detection	0.038	- -	93.0	- -	7.3	- -	- -
11/12/2018	Detection	0.07 J	72.4	51.3	0.20	7.4	348	36.1
2/13/2019	Detection	- -	- -	40.9	- -	7.3	- -	- -
4/1/2019	Detection	- -	- -	69.4	- -	7.5	- -	- -
5/22/2019	Detection	<0.02 U	98.5	135	0.18	7.3	531	33.3
7/24/2019	Detection	- -	114	156	- -	6.3	540	- -
9/11/2019	Detection	- -	103	110	- -	7.2	443	- -

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-002D
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J	0.78	185	<0.005 U	0.12	0.2	0.473	0.0495	0.19	0.648	0.002	<0.002 U	2.11	<0.03 U	0.02 J
7/20/2016	Background	0.06	0.82	195	0.006 J	0.12	0.4	0.439	0.328	0.21	0.359	0.018	<0.002 U	2.16	<0.03 U	0.02 J
9/21/2016	Background	0.02 J	0.81	180	0.007 J	0.07	0.3	0.425	0.451	0.20	0.247	0.002	<0.002 U	1.97	0.05 J	0.03 J
11/17/2016	Background	0.02 J	0.61	172	<0.005 U	0.10	0.05 J	0.212	2.243	0.19	0.021	0.007	<0.002 U	2.09	0.09 J	0.01 J
1/11/2017	Background	0.03 J	0.62	157	<0.005 U	0.26	0.277	0.327	1.278	0.19	0.378	0.007	<0.002 U	1.80	0.08 J	0.02 J
3/8/2017	Background	0.03 J	0.59	160	<0.005 U	0.09	0.562	0.252	1.295	0.20	0.045	0.008	<0.002 U	2.13	0.03 J	0.02 J
5/9/2017	Background	0.04 J	0.65	159	<0.004 U	0.08	0.188	0.335	0.4554	0.21	0.144	0.011	<0.002 U	1.90	0.06 J	0.02 J
7/19/2017	Background	0.02 J	0.62	169	<0.004 U	0.08	0.162	0.353	0.372	0.18	0.075	0.0006 J	<0.002 U	1.89	0.04 J	0.02 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-002I
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.019	74.0	28.6	0.30	7.9	332	42.9
7/20/2016	Background	0.009	67.5	29.7	0.33	7.1	363	45.7
9/21/2016	Background	0.025	66.8	28.0	0.31	7.5	330	41.1
11/17/2016	Background	0.013	73.9	25.8	0.36	7.3	326	36.9
1/11/2017	Background	<0.002 U	63.9	27.1	0.30	7.7	314	39.2
3/8/2017	Background	0.024	71.5	25.8	0.31	7.6	312	39.2
5/9/2017	Background	0.034	71.0	28.6	0.31	8.4	343	42.4
7/19/2017	Background	0.025	68.9	29.7	0.28	7.0	346	44.1
10/4/2017	Detection	0.03	72.5	29.8	0.28	7.2	343	45.5
1/4/2018	Detection	- -	- -	28.8	- -	7.8	- -	- -
6/6/2018	Detection	0.052	72.7	31.8	0.32	7.6	356	43.2
8/16/2018	Detection	0.03	- -	31.5	- -	7.5	- -	- -
11/13/2018	Detection	0.05 J	64.8	27.9	0.32	7.2	308	39.0
2/13/2019	Detection	<0.02 U	- -	- -	- -	7.6	- -	- -
5/22/2019	Detection	<0.02 U	64.3	25.4	0.32	7.3	328	39.2

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-002I
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.06	0.64	78.5	<0.005 U	0.03	0.2	0.606	0.398	0.30	0.208	0.005	<0.002 U	4.91	0.7	0.051
7/20/2016	Background	0.06	0.68	84.0	0.006 J	0.05	0.6	0.760	0.962	0.33	0.454	0.021	<0.002 U	5.00	0.7	0.04 J
9/21/2016	Background	0.07	0.55	67.1	<0.005 U	0.05	0.1	0.415	0.508	0.31	0.178	0.002	<0.002 U	4.21	0.6	0.04 J
11/17/2016	Background	0.13	0.61	60.1	<0.005 U	0.07	0.143	0.260	0.425	0.36	0.231	0.006	<0.002 U	3.14	0.4	0.02 J
1/11/2017	Background	0.10	0.65	59.4	<0.005 U	0.16	0.154	0.280	0.845	0.30	0.383	0.007	<0.002 U	2.07	0.2	0.03 J
3/8/2017	Background	0.10	0.74	58.4	0.01 J	0.22	1.01	0.581	0.435	0.31	0.588	0.005	<0.002 U	2.06	0.2	0.03 J
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 U	2.17	0.4	<0.01 U
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 U	<0.002 U	2.07	0.2	0.064

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-002S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	<0.002 U	59.4	21.5	0.26	6.4	298	26.0
7/20/2016	Background	0.015	51.6	21.8	0.29	7.7	265	27.6
9/21/2016	Background	0.014	57.4	23.8	0.26	7.6	301	26.2
11/17/2016	Background	0.018	62.4	21.8	0.26	7.3	316	24.1
1/11/2017	Background	0.004 J	51.6	21.2	0.25	7.7	284	25.9
3/8/2017	Background	0.069	57.9	21.0	0.26	7.7	285	26.6
5/9/2017	Background	0.084	59.0	20.8	0.26	7.1	321	30.3
7/19/2017	Background	0.052	53.3	19.6	0.23	7.5	308	33.8
10/4/2017	Detection	0.045	60.7	21.2	0.25	7.2	323	30.0
6/6/2018	Detection	0.073	57.0	25.3	0.29	7.6	329	28.9
11/13/2018	Detection	0.06 J	54.7	24.8	0.28	7.5	272	24.7
2/13/2019	Detection	- -	- -	26.5	- -	7.8	- -	- -
4/1/2019	Detection	- -	- -	26.1	- -	7.7	- -	- -
5/22/2019	Detection	<0.02 U	51.3	26.4	0.3	7.7	352	26.2
7/23/2019	Detection	- -	- -	26.8	0.3	7.5	339	- -
9/11/2019	Detection	- -	- -	26.6	- -	7.3	- -	- -

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-002S
Rockport - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	<0.02 U	0.97	16.0	<0.01 U	0.01 J	0.4	0.177	0	0.26	0.158	0.0004 J	<0.002 U	2.03	0.3	<0.02 U
7/20/2016	Background	0.02 J	1.09	14.0	<0.005 U	0.01 J	0.6	0.090	0.66	0.29	0.105	0.018	<0.002 U	2.39	0.3	<0.01 U
9/21/2016	Background	0.04 J	0.94	12.4	<0.005 U	0.02 J	0.3	0.017	0.172	0.26	0.101	0.005	<0.002 U	2.07	0.2	<0.01 U
11/17/2016	Background	0.02 J	0.94	12.4	<0.005 U	0.02	0.337	0.019	0.371	0.26	0.022	0.008	<0.002 U	1.91	0.3	<0.01 U
1/11/2017	Background	0.02 J	0.92	11.0	<0.005 U	0.09	0.329	0.014	0.654	0.25	0.063	0.009	<0.002 U	2.14	0.4	0.074
3/8/2017	Background	0.02 J	0.95	12.3	<0.005 U	0.009 J	0.670	0.051	0.5205	0.26	0.042	0.0007 J	<0.002 U	1.92	0.3	<0.01 U
5/9/2017	Background	0.04 J	0.95	12.3	<0.004 U	0.01 J	0.370	0.064	0.434	0.26	0.047	0.002	<0.002 U	1.75	0.2	<0.01 U
7/19/2017	Background	0.12	0.96	13.6	<0.004 U	0.03	0.410	0.121	0.6927	0.23	0.243	0.005	<0.002 U	1.81	0.3	0.03 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-6S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.012	46.1	8.44	0.73	7.9	294	18.8
7/18/2016	Background	0.014	46.3	8.35	0.79	7.5	290	18.3
9/20/2016	Background	0.012	44.4	6.04	0.73	7.4	266	10.9
11/16/2016	Background	0.028	50.8	7.04	0.69	8.1	279	14.3
1/10/2017	Background	0.006	47.8	7.03	0.65	7.9	287	14.0
3/8/2017	Background	0.032	53.2	3.32	0.25	7.9	296	6.9
5/8/2017	Background	0.051	50.3	8.68	0.69	7.6	305	17.5
7/18/2017	Background	0.078	47.0	4.88	0.57	7.7	274	9.6
10/3/2017	Detection	0.094	44.8	3.28	0.71	7.3	261	7.5
6/5/2018	Detection	0.090	45.2	2.38	0.89	7.5	225	3.8
8/15/2018	Detection	0.101	52.8	11.9	0.81	7.7	277	15.6
9/26/2018	Detection	0.08 J	44.1	6.83	0.84	- -	261	9.8
11/1/2018	Detection	0.04 J	42.3	3.52	0.86	7.3	225	4.9
11/15/2018	Detection	0.04 J	38.8	3.91	0.88	7.9	196	5.2
5/23/2019	Detection	0.02 J	52.5	9.64	0.95	7.4	315	16.8

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-6S
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.02 J	0.28	13.9	<0.005 U	0.006 J	0.4	0.097	0.156	0.73	0.396	<0.0002 U	0.002 J	5.99	0.4	<0.01 U
7/18/2016	Background	0.03 J	0.26	13.6	0.005 J	0.25	0.4	0.052	0.101	0.79	0.074	0.015	<0.002 U	3.28	0.3	0.01 J
9/20/2016	Background	0.03 J	0.26	13.6	<0.005 U	0.02	0.3	0.019	0.8651	0.73	0.034	0.004	<0.002 U	3.34	0.2	<0.01 U
11/16/2016	Background	0.03 J	0.26	14.1	<0.005 U	0.02 J	0.200	0.027	0.202	0.69	0.050	0.006	<0.002 U	2.80	0.3	<0.01 U
1/10/2017	Background	0.03 J	0.28	14.8	<0.005 U	0.008 J	0.599	0.045	0.5825	0.65	0.032	0.014	<0.002 U	2.93	0.4	0.01 J
3/8/2017	Background	0.03 J	0.26	15.8	<0.005 U	0.05	1.37	0.049	0.297	0.25	0.113	0.009	<0.002 U	3.29	0.7	<0.01 U
5/8/2017	Background	0.03 J	0.28	15.4	<0.004 U	0.009 J	0.583	0.061	0.12	0.69	0.083	0.011	<0.002 U	2.73	0.8	<0.01 U
7/18/2017	Background	0.02 J	0.27	14.3	<0.004 U	0.04	0.291	0.026	0.954	0.57	0.056	<0.0002 U	<0.002 U	4.36	0.4	<0.01 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-008I
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.017	72.0	21.7	0.35	7.2	370	87.5
7/19/2016	Background	0.016	67.9	22.0	0.34	7.2	358	86.3
9/21/2016	Background	0.017	67.4	21.5	0.29	7.4	376	79.2
11/17/2016	Background	0.028	77.5	21.3	0.29	7.6	387	77.5
1/10/2017	Background	0.006	79.5	20.9	0.25	7.6	371	80.0
3/6/2017	Background	0.083	74.7	20.7	0.28	7.4	391	80.3
5/9/2017	Background	0.045	71.9	21.2	0.28	7.2	376	81.9
7/18/2017	Background	0.026	72.2	20.9	0.25	7.3	379	83.4
10/4/2017	Detection	0.096	74.7	20.1	0.27	7.6	378	85.9
12/12/2017	Detection	- -	- -	19.3	0.29	7.9	- -	87.1
6/4/2018	Detection	0.044	76.7	20.9	0.29	7.7	407	79.0
11/14/2018	Detection	0.06 J	67.7	20.6	0.33	7.2	390	68.2
5/23/2019	Detection	0.03 J	70.7	21.0	0.34	7.2	371	62.3

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-008I
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.12	5.86	61.4	<0.005 U	0.04	0.1	0.800	0.538	0.35	0.083	0.006	<0.002 U	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 U	3.00	7.5	0.166
9/21/2016	Background	0.07	2.08	57.0	<0.005 U	0.02 J	0.1	0.643	0.678	0.29	0.02 J	0.008	<0.002 U	2.34	2.7	0.03 J
11/17/2016	Background	0.10	1.39	58.4	<0.005 U	0.04	0.055	0.646	1.166	0.29	0.032	0.009	<0.002 U	2.47	3.0	0.03 J
1/10/2017	Background	0.08	2.58	54.9	<0.005 U	0.02 J	0.817	0.671	1.825	0.25	0.025	0.005	<0.002 U	2.31	2.3	0.04 J
3/6/2017	Background	0.08	2.78	56.9	<0.005 U	0.04	0.511	0.656	1.015	0.28	0.032	0.010	<0.002 U	2.73	2.9	0.05 J
5/9/2017	Background	0.08	2.09	57.8	<0.004 U	0.05	0.230	0.770	1.011	0.28	0.054	0.001	<0.002 U	2.29	4.5	0.03 J
7/18/2017	Background	0.07	1.31	60.4	<0.004 U	0.02 J	0.077	0.672	1.079	0.25	0.01 J	<0.0002 U	<0.002 U	2.58	4.7	0.03 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-008S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.010	42.7	23.7	0.56	7.3	345	26.5
7/19/2016	Background	0.012	41.5	23.5	0.56	7.2	321	26.4
9/21/2016	Background	0.011	42.7	22.1	0.54	7.1	332	23.4
11/17/2016	Background	0.032	42.9	21.1	0.55	7.9	322	21.7
1/9/2017	Background	<0.002 U	45.8	20.8	0.47	7.6	300	22.1
3/7/2017	Background	0.043	44.8	21.4	0.52	7.6	320	21.7
5/9/2017	Background	0.028	42.9	22.8	0.52	7.4	319	21.8
7/18/2017	Background	0.022	44.4	22.7	0.47	7.4	319	22.3
10/4/2017	Detection	0.016	39.8	22.4	0.52	7.8	317	23.1
12/12/2017	Detection	- -	- -	22.5	0.56	7.7	- -	24.9
6/5/2018	Detection	0.058	42.3	23.8	0.59	7.6	324	21.2
11/13/2018	Detection	0.04 J	35.6	22.9	0.57	7.6	288	19.5
5/23/2019	Detection	<0.02 U	35.9	23.6	0.58	7.4	312	20.4

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-008S
Rockport - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.02 J	1.61	15.4	<0.005 U	0.07	0.3	0.400	0.204	0.56	0.207	0.004	<0.002 U	0.81	0.4	<0.01 U
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 U	1.10	0.6	0.276
9/21/2016	Background	0.02 J	1.33	12.2	<0.005 U	0.02 J	0.4	0.125	1.291	0.54	0.066	0.001	<0.002 U	0.80	0.2	0.03 J
11/17/2016	Background	0.03 J	1.26	10.9	<0.005 U	0.05	0.156	0.113	0.49	0.55	0.065	0.002	<0.002 U	0.71	0.2	<0.01 U
1/9/2017	Background	0.02 J	1.56	13.8	0.006 J	0.01 J	1.04	0.447	0.676	0.47	0.190	0.002	<0.002 U	0.77	0.2	0.01 J
3/7/2017	Background	0.04 J	1.53	14.5	0.009 J	0.26	0.881	0.433	0.3161	0.52	0.278	0.006	<0.002 U	1.56	0.2	0.170
5/9/2017	Background	0.03 J	2.09	16.9	0.01 J	0.09	0.423	0.981	0.127	0.52	0.389	0.006	<0.002 U	0.75	0.3	<0.01 U
7/18/2017	Background	0.02 J	1.19	10.9	<0.004 U	0.13	0.277	0.052	1.653	0.47	0.038	0.001	0.015	0.83	0.2	<0.01 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-11S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.062	41.6	1.82	0.74	7.9	212	10.9
7/18/2016	Background	0.062	38.8	1.83	0.76	7.3	201	10.6
9/20/2016	Background	0.077	45.1	1.62	0.73	7.3	196	5.3
11/16/2016	Background	0.053	37.3	1.54	0.92	8.4	182	4.1
1/10/2017	Background	0.029	40.4	2.12	0.96	8.1	179	7.6
3/7/2017	Background	0.057	42.8	4.63	1.00	7.9	197	13.7
5/9/2017	Background	0.047	41.2	9.87	0.86	7.8	239	16.4
7/18/2017	Background	0.067	44.2	8.19	0.75	7.7	224	15.6
10/3/2017	Detection	0.090	43.7	3.68	0.89	7.2	200	9.3
12/13/2017	Detection	- -	- -	2.40	0.82	8.3	- -	8.0
6/5/2018	Detection	0.076	55.8	6.98	0.62	7.2	276	21.7
11/14/2018	Detection	0.110	56.4	1.79	0.72	7.6	238	5.9
5/23/2019	Detection	0.08 J	54.3	1.62	0.82	7.7	279	14.7

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-11S
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.05 J	0.47	10.4	<0.005 U	0.006 J	0.4	0.113	0.422	0.74	0.046	<0.0002 U	<0.002 U	4.70	0.07 J	<0.01 U
7/18/2016	Background	0.04 J	0.53	9.79	<0.005 U	0.03	0.5	0.043	0.815	0.76	0.02 J	0.024	<0.002 U	4.36	0.08 J	0.01 J
9/20/2016	Background	0.04 J	0.42	11.3	<0.005 U	0.03	0.8	0.029	0.741	0.73	0.046	0.004	<0.002 U	3.37	0.1	0.01 J
11/16/2016	Background	0.05 J	0.45	7.91	<0.005 U	0.02	0.416	0.027	0.288	0.92	0.027	0.005	<0.002 U	4.71	0.07 J	0.02 J
1/10/2017	Background	0.04 J	0.52	6.52	<0.005 U	0.01 J	0.725	0.022	2.101	0.96	0.02 J	0.003	<0.002 U	6.09	0.05 J	0.01 J
3/7/2017	Background	0.04 J	0.52	7.09	<0.005 U	0.007 J	1.25	0.027	0.1865	1.00	0.02 J	0.013	0.002 J	6.03	0.2	0.01 J
5/9/2017	Background	0.04 J	0.48	7.73	<0.004 U	0.03	0.567	0.030	0.1247	0.86	0.023	0.009	0.002 J	4.86	0.2	0.01 J
7/18/2017	Background	<0.05 U	0.50	8.16	<0.02 U	<0.02 U	0.568	0.02 J	0.7935	0.75	0.06 J	0.002	<0.002 U	4.69	0.3 J	0.2 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-014S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.011	59.2	28.6	0.39	7.2	368	34.9
7/20/2016	Background	0.008	56.3	29.4	0.39	7.1	364	36.5
9/21/2016	Background	0.010	59.5	28.1	0.36	7.0	361	32.5
11/17/2016	Background	0.008	65.4	27.8	0.35	7.7	362	29.1
1/9/2017	Background	<0.002 U	65.7	27.2	0.33	7.5	344	30.7
3/7/2017	Background	0.031	63.4	26.8	0.36	7.4	354	29.9
5/9/2017	Background	0.017	59.8	29.4	0.37	7.0	376	32.3
7/18/2017	Background	0.03	65.6	29.6	0.33	7.3	377	33.1
10/4/2017	Detection	0.042	67.0	29.9	0.34	7.0	376	34.8
12/12/2017	Detection	- -	- -	30.0	0.34	7.6	- -	35.5
6/5/2018	Detection	0.046	61.1	27.1	0.39	7.6	360	29.4
11/13/2018	Detection	0.04 J	59.2	29.0	0.37	6.8	344	30.8
5/23/2019	Detection	<0.02 U	66.9	28.6	0.37	7.2	390	32.4

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-014S
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.06	2.33	29.7	0.02 J	0.32	1.0	1.49	0.512	0.39	1.02	<0.0002 U	0.002 J	12.7	1.4	0.01 J
7/20/2016	Background	0.02 J	1.54	31.0	0.008 J	0.21	0.3	0.573	0.594	0.39	0.307	0.018	<0.002 U	1.51	1.4	<0.01 U
9/21/2016	Background	0.02 J	1.29	27.8	0.005 J	0.07	0.3	0.333	0.9	0.36	0.310	0.006	<0.002 U	1.43	1.2	<0.01 U
11/17/2016	Background	0.03 J	0.75	26.3	<0.005 U	0.03	0.162	0.088	1.106	0.35	0.549	0.004	<0.002 U	1.26	1.2	0.02 J
1/9/2017	Background	0.02 J	0.91	27.0	<0.005 U	0.05	0.575	0.187	0.78	0.33	0.115	0.006	<0.002 U	1.62	1.1	0.054
3/7/2017	Background	0.02 J	0.76	26.3	<0.005 U	0.01 J	0.660	0.083	0.0525	0.36	0.061	0.005	<0.002 U	1.84	1.1	0.055
5/9/2017	Background	0.06	0.75	25.0	<0.004 U	0.08	0.301	0.065	0.0316	0.37	0.071	0.001	<0.002 U	1.35	1.2	0.01 J
7/18/2017	Background	<0.05 U	0.70	27.0	<0.02 U	<0.02 U	0.258	0.03 J	1.883	0.33	0.116	<0.0002 U	<0.002 U	1.67	1.3	0.07 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-015I
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.060	44.1	59.3	0.25	7.2	380	42.5
7/19/2016	Background	0.032	44.6	53.8	0.25	7.1	356	41.0
9/21/2016	Background	0.030	46.1	43.4	0.23	7.1	334	34.0
11/16/2016	Background	0.022	51.4	44.9	0.25	7.5	340	33.6
1/10/2017	Background	0.019	46.5	48.3	0.34	7.7	351	35.4
3/7/2017	Background	0.047	51.1	38.5	0.32	7.5	331	31.1
5/10/2017	Background	0.038	46.6	32.7	0.31	7.2	322	29.7
7/18/2017	Background	0.050	43.9	27.1	0.22	7.2	300	26.6
10/4/2017	Detection	0.080	44.6	23.7	0.23	7.3	287	27.3
12/12/2017	Detection	- -	- -	22.8	0.22	7.8	- -	26.7
1/4/2018	Detection	0.040	- -	- -	- -	7.8	- -	- -
6/6/2018	Detection	0.066	47.0	25.1	0.26	8.1	279	25.3
8/16/2018	Detection	- -	- -	- -	- -	7.4	- -	- -
11/13/2018	Detection	0.07 J	39.9	23.7	0.25	7.6	248	25.3
5/23/2019	Detection	0.03 J	47.8	18.0	0.26	7.3	260	20.9

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-015I
Rockport - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.01 J	25.2	118	<0.005 U	0.02 J	0.2	1.24	0.863	0.25	0.026	0.005	<0.002 U	5.76	<0.03 U	0.04 J
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 U	6.74	0.2	0.273
9/21/2016	Background	0.01 J	21.1	119	<0.005 U	0.009 J	0.1	1.32	0.504	0.23	0.026	0.004	<0.002 U	5.75	<0.03 U	0.03 J
11/16/2016	Background	0.04 J	23.6	107	0.005 J	0.06	0.132	1.03	1.747	0.25	0.213	0.004	<0.002 U	6.73	<0.03 U	0.04 J
1/10/2017	Background	0.01 J	20.2	91.2	<0.005 U	0.005 J	0.350	1.00	0.869	0.34	0.01 J	0.011	<0.002 U	7.63	<0.03 U	0.04 J
3/7/2017	Background	0.02 J	20.4	88.9	<0.005 U	0.03	0.700	0.903	0.865	0.32	0.065	0.006	<0.002 U	7.91	0.07 J	0.112
5/10/2017	Background	0.02 J	20.2	86.1	<0.004 U	0.03	0.134	1.02	0.189	0.31	0.090	0.002	<0.002 U	6.52	0.04 J	0.03 J
7/18/2017	Background	0.02 J	23.6	94.8	<0.004 U	0.02	0.089	1.25	1.643	0.22	0.082	<0.0002 U	<0.002 U	5.58	<0.03 U	0.04 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-015S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/7/2016	Background	0.011	46.9	21.2	0.65	7.2	338	30.3
7/19/2016	Background	0.012	43.6	18.7	0.65	7.1	319	27.7
9/21/2016	Background	0.008	46.6	18.9	0.63	7.2	329	25.1
11/16/2016	Background	<0.002 U	52.3	18.3	0.50	7.7	338	23.2
1/11/2017	Background	<0.002 U	63.6	21.9	0.36	7.2	374	28.3
3/7/2017	Background	0.084	62.9	16.1	0.42	7.2	342	23.4
5/10/2017	Background	0.077	45.7	14.1	0.65	7.3	294	21.0
7/19/2017	Background	0.073	44.4	11.8	0.66	7.3	263	20.3
10/4/2017	Detection	0.095	48.3	13.3	0.62	7.4	300	23.2
6/5/2018	Detection	0.078	44.7	8.84	0.69	7.2	274	16.3
11/13/2018	Detection	0.04 J	41.8	8.78	0.72	7.5	232	13.1
5/23/2019	Detection	<0.02 U	41.3	8.88	0.88	7.5	207	10.2
7/23/2019	Detection	- -	- -	- -	0.87	5.7	- -	- -
9/11/2019	Detection	- -	- -	- -	0.81	7.4	- -	- -

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-015S
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/7/2016	Background	0.04 J	0.32	4.71	0.007 J	0.14	0.2	3.03	0.4175	0.65	0.286	0.007	<0.002 U	2.52	0.4	0.03 J
7/19/2016	Background	0.04 J	0.24	5.85	<0.005 U	0.25	1.7	1.17	0	0.65	0.101	0.022	0.002 J	2.89	0.7	<0.01 U
9/21/2016	Background	0.02 J	0.21	3.21	<0.005 U	0.05	0.5	1.09	0.418	0.63	0.098	0.005	<0.002 U	2.54	0.5	0.02 J
11/16/2016	Background	0.04 J	0.18	3.27	<0.005 U	0.05	0.058	0.794	1.249	0.50	0.037	0.005	<0.002 U	1.57	0.3	0.02 J
1/11/2017	Background	0.04 J	0.26	6.05	<0.005 U	0.06	0.493	1.75	0.189	0.36	0.039	0.008	<0.002 U	0.78	0.3	0.03 J
3/7/2017	Background	0.03 J	0.21	4.98	<0.005 U	0.04	0.934	1.26	0.0973	0.42	0.024	0.008	<0.002 U	1.17	0.5	0.04 J
5/10/2017	Background	0.04 J	0.21	3.54	0.005 J	0.05	0.198	1.20	0.241	0.65	0.062	0.003	<0.002 U	2.08	0.5	0.02 J
7/19/2017	Background	0.02 J	0.23	3.11	<0.004 U	0.05	0.096	1.25	0.0916	0.66	0.083	0.0009 J	<0.002 U	2.87	0.2	0.02 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-016D
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.033	84.3	68.7	0.20	6.8	350	36.4
7/19/2016	Background	0.013	68.7	69.6	0.22	7.3	321	37.4
9/20/2016	Background	0.012	70.5	67.6	0.22	7.3	342	33.4
11/17/2016	Background	0.014	77.9	63.6	0.17	7.3	356	33.2
1/11/2017	Background	0.004 J	72.4	67.9	0.21	7.5	343	34.0
3/8/2017	Background	0.023	79.2	65.4	0.22	7.4	347	35.3
5/10/2017	Background	0.102	75.8	69.9	0.22	7.5	367	37.2
7/18/2017	Background	0.017	71.7	69.6	0.17	9.0	363	36.8
10/4/2017	Detection	0.059	80.4	81.5	0.22	7.6	383	40.0
1/4/2018	Detection	- -	80.1	86.0	- -	7.7	- -	37.9
6/6/2018	Detection	0.033	90.2	108	0.22	7.3	434	38.6
8/16/2018	Detection	- -	83.8	99.7	- -	7.3	447	- -
11/14/2018	Detection	0.07 J	84.1	102	0.21	7.4	434	38.6
2/11/2019	Detection	- -	- -	109	- -	7.4	439	- -
4/1/2019	Detection	- -	- -	107	- -	7.3	429	- -
5/22/2019	Detection	0.03 J	88.5	104	0.20	7.3	460	38.0
7/24/2019	Detection	- -	95.6	106	- -	7.0	457	- -
9/11/2019	Detection	- -	109	125	- -	7.3	523	- -

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-016D
Rockport - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

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

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-016I
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.031	110	80.4	0.1 J	7.7	539	38.7
7/20/2016	Background	0.027	93.9	86.8	0.15	7.6	532	42.2
9/21/2016	Background	0.026	95.9	90.2	0.1 J	7.4	544	36.8
11/17/2016	Background	0.024	96.2	59.1	0.1 J	7.1	508	33.0
1/11/2017	Background	0.015	89.3	44.1	0.1 J	7.4	481	34.0
3/8/2017	Background	0.100	101	39.3	0.16	7.3	460	35.4
5/19/2017	Background	0.032	86.7	39.4	0.15	7.0	455	35.4
7/18/2017	Background	0.044	91.3	50.2	0.08 J	7.2	465	36.1
10/4/2017	Detection	0.050	84.0	70.8	0.1 J	7.5	495	40.4
1/4/2018	Detection	- -	71.9	71.2	- -	7.7	487	- -
6/6/2018	Detection	0.046	82.9	58.6	0.17	7.4	480	38.7
8/16/2018	Detection	- -	61.6	61.1	- -	7.2	456	- -
11/14/2018	Detection	0.139	53.7	47.8	0.17	7.3	408	32.5
2/11/2019	Detection	0.02 J	- -	- -	- -	7.4	- -	- -
5/22/2019	Detection	0.03 J	56.0	45.5	0.17	7.4	405	33.2

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-016I
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.02 J	0.71	267	<0.005 U	0.06	0.1	0.602	0.592	0.1 J	0.023	0.005	<0.002 U	1.02	0.2	0.085
7/20/2016	Background	0.01 J	0.75	267	<0.005 U	0.03	0.2	0.627	1.576	0.15	0.025	0.005	<0.002 U	1.02	0.2	0.060
9/21/2016	Background	0.01 J	0.75	262	<0.005 U	0.03	0.1	0.576	1.225	0.1 J	0.023	0.006	<0.002 U	1.03	0.1	0.074
11/17/2016	Background	0.05	0.67	234	<0.005 U	0.05	0.082	0.546	0.587	0.1 J	0.053	0.013	<0.002 U	0.93	0.2	0.069
1/11/2017	Background	0.01 J	0.72	220	<0.005 U	0.04	0.085	0.514	2.632	0.1 J	0.01 J	0.010	<0.002 U	1.00	0.1	0.071
3/8/2017	Background	0.02 J	0.68	221	<0.005 U	0.03	0.422	0.580	0.581	0.16	0.034	0.013	<0.002 U	1.17	0.2	0.075
5/19/2017	Background	0.06	0.70	206	<0.004 U	0.08	0.204	0.707	0.938	0.15	0.153	0.010	<0.002 U	0.91	0.4	0.075
7/18/2017	Background	0.02 J	0.73	238	<0.004 U	0.03	0.118	0.599	0.787	0.08 J	0.065	0.003	<0.002 U	1.07	0.2	0.070

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-016S
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.028	96.2	18.7	0.44	7.5	483	46.9
7/20/2016	Background	0.025	83.0	19.0	0.46	7.1	471	50.1
9/21/2016	Background	0.024	93.5	17.1	0.38	7.3	509	42.1
11/17/2016	Background	0.025	96.4	16.4	0.30	6.9	486	38.3
1/11/2017	Background	0.017	94.6	17.5	0.35	7.2	474	39.2
3/8/2017	Background	0.038	106	19.3	0.36	7.1	473	39.6
5/10/2017	Background	0.082	105	22.9	0.38	8.3	499	42.3
7/19/2017	Background	0.037	91.8	19.8	0.33	6.3	484	40.7
10/4/2017	Detection	0.061	108	19.3	0.41	7.3	503	45.0
1/4/2018	Detection	- -	109	- -	- -	7.3	517	- -
6/6/2018	Detection	0.109	108	17.3	0.42	7.2	520	40.8
8/16/2018	Detection	0.034	109	- -	- -	7.1	533	- -
11/14/2018	Detection	0.107	104	16.2	0.39	7.0	548	40.3
2/11/2019	Detection	0.02 J	- -	- -	- -	7.1	517	- -
5/22/2019	Detection	0.03 J	99.2	18.0	0.38	7.1	493	34.5

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-016S
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J	0.37	32.3	<0.005 U	0.03	0.2	0.073	0.163	0.44	0.074	0.007	<0.002 U	1.15	0.6	0.01 J
7/20/2016	Background	0.03 J	0.37	29.9	<0.005 U	0.03	0.5	0.025	1.047	0.46	0.057	0.031	<0.002 U	1.21	0.6	<0.01 U
9/21/2016	Background	0.25	0.38	29.5	<0.005 U	0.10	0.3	0.070	0.0255	0.38	0.182	0.005	<0.002 U	1.11	0.8	<0.01 U
11/17/2016	Background	0.02 J	0.34	25.3	<0.005 U	0.006 J	1.03	0.028	0.2943	0.30	<0.004 U	0.018	<0.002 U	1.19	0.4	<0.01 U
1/11/2017	Background	0.02 J	0.42	25.1	<0.005 U	0.008 J	0.081	0.014	1.993	0.35	0.039	0.013	<0.002 U	1.21	0.4	0.02 J
3/8/2017	Background	0.02 J	0.31	25.7	<0.005 U	0.004 J	0.463	0.012	0.282	0.36	0.006 J	0.013	<0.002 U	1.32	0.4	0.02 J
5/10/2017	Background	0.02 J	0.39	29.8	<0.004 U	0.01 J	0.196	0.063	0.145	0.38	0.027	0.008	<0.002 U	1.14	0.3	0.01 J
7/19/2017	Background	0.02 J	0.33	25.6	<0.004 U	0.04	0.101	0.01 J	2.8533	0.33	0.01 J	0.01	<0.002 U	0.98	0.4	0.01 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-17I
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.058	73.7	195	0.57	7.6	609	43.1
7/20/2016	Background	0.056	83.1	209	0.56	7.2	569	49.3
9/20/2016	Background	0.051	88.9	214	0.52	7.1	620	48.1
11/16/2016	Background	0.041	80.0	164	0.56	7.8	540	44.1
1/10/2017	Background	0.034	72.3	159	0.56	7.5	513	43.2
3/7/2017	Background	0.079	81.4	158	0.58	7.5	549	44.9
5/9/2017	Background	0.083	69.6	151	0.61	7.2	528	43.5
7/19/2017	Background	0.052	64.4	145	0.63	7.3	509	44.7
10/4/2017	Detection	0.061	63.0	115	0.66	7.4	486	46.6
12/13/2017	Detection	- -	- -	86.0	0.76	7.5	- -	44.8
1/4/2018	Detection	- -	- -	110	0.65	7.8	471	- -
6/5/2018	Detection	0.081	51.2	80.2	0.87	7.4	418	41.0
8/16/2018	Detection	- -	- -	61.1	0.98	7.5	376	- -
9/26/2018	Detection	- -	- -	- -	1.03	- -	- -	- -
11/13/2018	Detection	0.07 J	36.5	50.1	1.00	7.6	328	29.6
2/11/2019	Detection	- -	- -	- -	1.05	7.7	- -	- -
4/1/2019	Detection	- -	- -	- -	1.08	7.6	- -	- -
5/23/2019	Detection	0.04 J	45.1	60.2	1.07	7.5	352	32.8
7/23/2019	Detection	- -	- -	- -	1.06	6.7	- -	- -
9/11/2019	Detection	- -	- -	- -	1.08	7.6	- -	- -

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-17I
Rockport - LF
Appendix IV Constituents

Geosyntec Consultants, Inc.

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	pCi/L	mg/L	µg/L	mg/L	µg/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 U	0.003 J	3.60	0.1	0.03 J
7/20/2016	Background	0.05 J	7.41	190	0.006 J	0.13	2.1	0.778	1.167	0.56	0.284	0.004	<0.002 U	3.66	0.05 J	0.02 J
9/20/2016	Background	0.04 J	6.45	198	<0.005 U	0.04	0.1	0.472	1.587	0.52	0.133	0.005	<0.002 U	3.08	0.05 J	0.02 J
11/16/2016	Background	0.03 J	3.38	149	<0.005 U	0.04	0.059	0.370	0.762	0.56	0.049	0.006	<0.002 U	3.37	<0.03 U	0.056
1/10/2017	Background	0.02 J	3.94	148	<0.005 U	0.008 J	0.254	0.391	1.51	0.56	0.02 J	0.009	<0.002 U	3.20	<0.03 U	0.02 J
3/7/2017	Background	0.02 J	4.61	159	<0.005 U	0.007 J	0.776	0.406	1.023	0.58	0.026	0.008	<0.002 U	3.62	0.05 J	0.02 J
5/9/2017	Background	0.02 J	3.61	133	<0.004 U	0.03	0.196	0.394	1.007	0.61	0.115	0.005	<0.002 U	3.26	0.03 J	0.01 J
7/19/2017	Background	0.02 J	3.76	140	<0.004 U	0.02 J	0.127	0.372	0.8141	0.63	0.02 J	<0.0002 U	<0.002 U	3.42	<0.03 U	0.05 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-17S
Rockport - LF
Appendix III Constituents

Geosyntec Consultants, Inc.

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/8/2016	Background	0.015	36.9	13.9	0.85	7.8	272	14.3
7/20/2016	Background	0.016	34.8	15.4	0.86	7.3	235	14.8
9/20/2016	Background	0.016	34.8	12.3	0.73	7.7	233	10.9
11/16/2016	Background	0.017	35.9	11.4	0.70	7.7	232	10.5
1/10/2017	Background	0.006	32.3	11.0	0.48	7.6	262	10.7
3/7/2017	Background	0.058	40.0	10.7	0.46	7.5	251	12.0
5/9/2017	Background	0.041	35.5	10.4	0.58	7.3	250	13.1
7/19/2017	Background	0.020	34.4	10.8	0.82	7.5	201	10.2
10/4/2017	Detection	0.033	34.1	10.5	0.89	7.4	214	10.7
6/5/2018	Detection	0.045	32.4	10.8	0.98	7.4	214	9.5
11/13/2018	Detection	0.05 J	33.1	11.5	0.91	7.5	196	8.4
5/23/2019	Detection	0.03 J	32.7	12.0	1.08	7.6	217	7.7

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-17S
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/8/2016	Background	0.01 J	0.24	2.12	<0.005 U	0.02	0.5	0.047	1.036	0.85	0.024	<0.0002 U	<0.002 U	3.98	0.07 J	0.01 J
7/20/2016	Background	0.03 J	0.26	2.74	<0.005 U	0.08	0.2	0.105	0.0439	0.86	0.098	0.020	0.002 J	4.20	0.06 J	0.01 J
9/20/2016	Background	0.02 J	0.22	2.24	<0.005 U	0.01 J	0.1	0.034	0.0759	0.73	0.025	0.003	<0.002 U	4.08	0.08 J	0.01 J
11/16/2016	Background	0.03 J	0.20	2.40	<0.005 U	0.02	0.066	0.029	1.594	0.70	0.020	0.004	<0.002 U	3.39	0.1	0.053
1/10/2017	Background	0.03 J	0.21	3.45	<0.005 U	0.02 J	0.489	0.04	0.17	0.48	0.02 J	0.003	<0.002 U	0.44	0.2	0.02 J
3/7/2017	Background	0.04 J	0.20	3.94	<0.005 U	0.09	0.776	0.076	0.47	0.46	0.079	0.008	0.002 J	0.70	0.1	0.02 J
5/9/2017	Background	0.04 J	0.22	4.37	<0.004 U	0.02 J	0.233	0.138	0.433	0.58	0.108	0.003	<0.002 U	1.14	0.1	<0.01 U
7/19/2017	Background	0.02 J	0.22	2.25	<0.004 U	0.06	0.124	0.053	1.748	0.82	0.038	<0.0002 U	<0.002 U	4.38	0.08 J	0.03 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-021D
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.022	74.2	19.2	0.36	8.1	328	39.2
7/19/2016	Background	0.015	60.6	19.6	0.38	7.8	299	41.0
9/21/2016	Background	0.015	70.4	18.9	0.36	7.7	315	35.5
11/16/2016	Background	0.013	74.7	19.1	0.33	7.5	346	32.0
1/11/2017	Background	0.004 J	67.3	19.4	0.36	7.2	332	34.4
3/8/2017	Background	0.024	76.2	18.9	0.33	7.6	304	35.1
5/9/2017	Background	0.062	71.5	19.9	0.35	7.4	339	37.1
7/19/2017	Background	0.015	70.9	19.5	0.30	8.5	332	36.5
10/4/2017	Detection	0.092	67.8	18.5	0.32	7.5	339	37.4
1/11/2018	Detection	0.088	- -	- -	- -	7.0	- -	- -
6/6/2018	Detection	0.030	70.7	19.9	0.40	7.7	347	38.4
11/13/2018	Detection	0.04 J	62.1	18.8	0.34	7.7	314	35.2
5/22/2019	Detection	<0.02 U	69.3	19.1	0.36	7.5	348	36.8

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-021D
Rockport - LF
Appendix IV Constituents

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

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-021I
Rockport - LF
Appendix III Constituents

Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.007	69.0	21.1	0.33	8.0	331	46.2
7/19/2016	Background	0.012	64.7	21.7	0.36	7.6	334	47.9
9/21/2016	Background	0.011	65.1	20.4	0.34	7.6	305	43.2
11/16/2016	Background	0.012	68.4	20.0	0.34	7.3	317	40.4
1/11/2017	Background	<0.002 U	59.5	19.9	0.30	7.4	292	41.0
3/8/2017	Background	0.028	66.5	19.6	0.32	7.5	275	39.6
5/9/2017	Background	0.027	62.9	21.0	0.34	8.6	306	42.4
7/19/2017	Background	0.080	60.1	20.4	0.30	7.4	322	43.6
10/4/2017	Detection	0.029	63.9	20.5	0.31	7.4	306	45.7
6/6/2018	Detection	0.034	66.5	20.6	0.38	7.5	317	44.6
11/13/2018	Detection	0.08 J	61.5	20.2	0.36	7.7	294	43.4
5/21/2019	Detection	<0.02 U	62.4	18.1	0.36	7.3	278	36.0

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-021I
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.02 J	1.55	127	<0.005 U	0.02	0.1	0.514	0.349	0.33	0.02 J	<0.0002 U	<0.002 U	4.92	<0.03 U	0.03 J
7/19/2016	Background	0.02 J	1.67	136	<0.005 U	0.02	0.2	0.558	1.406	0.36	0.021	0.019	<0.002 U	5.25	0.05 J	0.03 J
9/21/2016	Background	0.02 J	1.55	121	<0.005 U	0.02	0.1	0.422	0.981	0.34	0.046	0.004	<0.002 U	4.46	0.03 J	0.02 J
11/16/2016	Background	0.02 J	1.41	126	<0.005 U	0.04	0.386	0.524	0.6556	0.34	0.035	0.006	<0.002 U	4.40	0.09 J	0.02 J
1/11/2017	Background	0.02 J	1.39	126	0.01 J	0.02 J	1.04	0.437	2.733	0.30	<0.004 U	0.005	<0.002 U	4.63	0.07 J	0.04 J
3/8/2017	Background	0.03 J	1.08	123	<0.005 U	0.01 J	0.349	0.437	0.882	0.32	0.01 J	0.007	<0.002 U	4.31	0.07 J	0.02 J
5/9/2017	Background	0.05	1.19	116	<0.004 U	0.01 J	0.125	0.412	0.591	0.34	0.022	0.008	<0.002 U	4.06	0.05 J	0.03 J
7/19/2017	Background	0.03 J	1.38	123	<0.004 U	0.01 J	0.143	0.517	1.225	0.3	0.033	0.004	<0.002 U	4.18	0.05 J	0.03 J

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter

Table 1 - Groundwater Data Summary: MW-021S
Rockport - LF
Appendix III Constituents

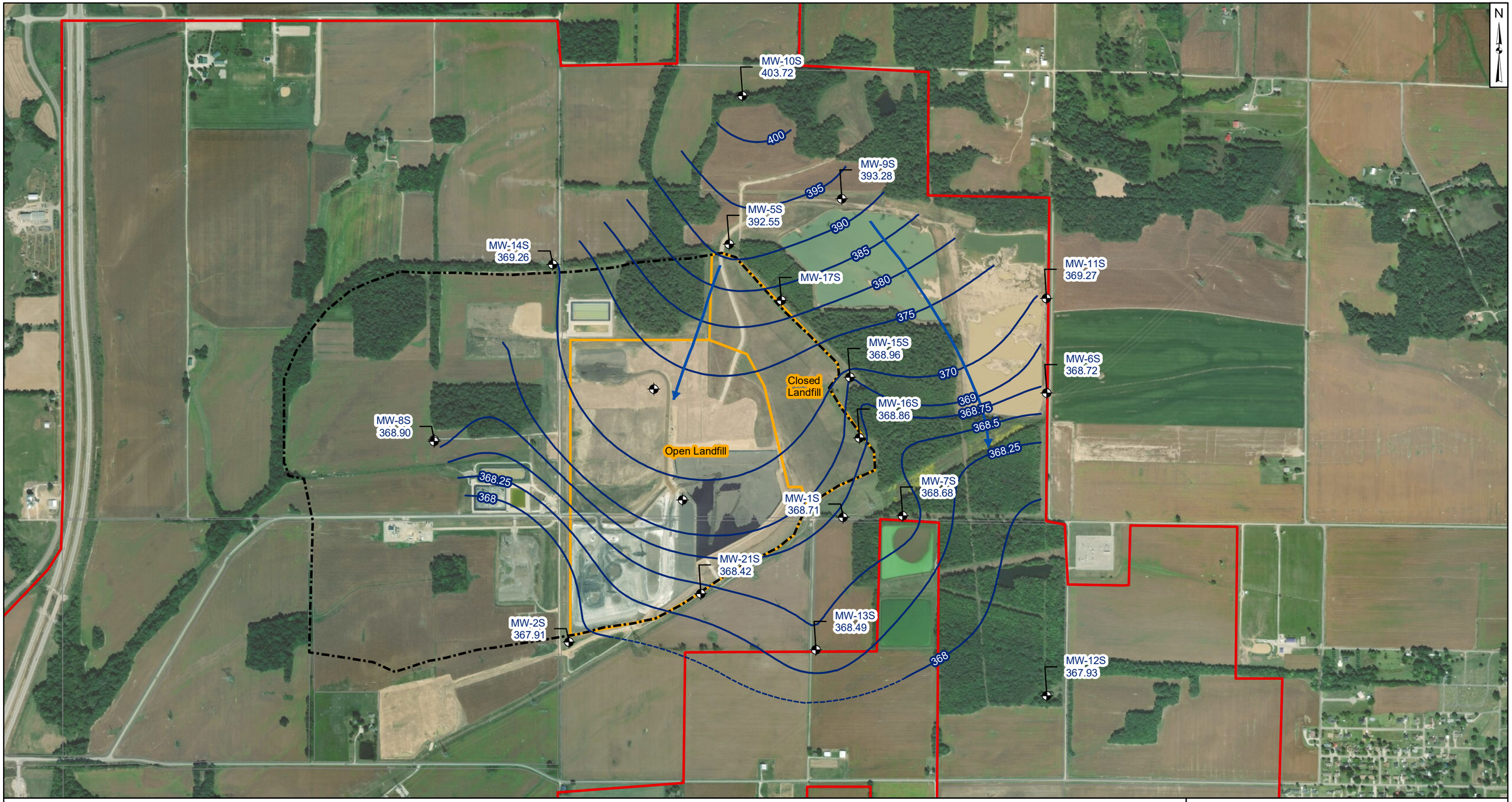
Collection Date	Monitoring Program	Boron	Calcium	Chloride	Fluoride	pH	Total Dissolved Solids	Sulfate
		mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
6/9/2016	Background	0.002 J	55.1	15.0	0.61	6.6	275	21.2
7/19/2016	Background	0.011	52.8	15.1	0.64	7.5	292	21.2
9/21/2016	Background	0.007	52.0	14.7	0.62	7.6	285	17.4
11/16/2016	Background	0.015	60.0	14.7	0.63	7.5	294	14.9
1/11/2017	Background	0.002 J	54.4	14.4	0.54	7.3	287	15.9
3/8/2017	Background	0.018	59.0	14.8	0.58	7.6	298	16.5
5/9/2017	Background	0.033	56.0	15.7	0.60	8.9	296	17.6
7/19/2017	Background	0.034	55.9	15.9	0.54	7.2	304	18.8
10/4/2017	Detection	0.027	59.8	17.7	0.60	7.5	300	20.1
12/12/2017	Detection	- -	- -	18.0	0.60	8.0	- -	21.1
6/6/2018	Detection	0.039	52.8	17.5	0.66	7.8	283	18.7
11/14/2018	Detection	0.06 J	55.0	17.9	0.66	7.3	278	17.0
2/11/2019	Detection	<0.02 U	- -	17.9	- -	7.7	- -	- -
4/1/2019	Detection	- -	- -	17.5	- -	7.8	- -	- -
5/21/2019	Detection	<0.02 U	52.5	16.0	0.65	7.6	258	14.1

Notes:
mg/L: milligrams per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed

Table 1 - Groundwater Data Summary: MW-021S
Rockport - LF
Appendix IV 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	pCi/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
6/9/2016	Background	0.03 J	0.53	18.5	<0.005 U	0.02	0.4	0.104	0.1599	0.61	0.095	0.003	<0.002 U	1.78	0.7	0.01 J
7/19/2016	Background	0.02 J	0.47	19.6	<0.005 U	0.02 J	0.7	0.033	0.5728	0.64	0.042	0.013	<0.002 U	1.85	0.5	0.01 J
9/21/2016	Background	0.02 J	0.46	19.4	<0.005 U	0.006 J	0.3	0.030	0.452	0.62	0.025	0.003	<0.002 U	1.74	0.2	<0.01 U
11/16/2016	Background	0.02 J	0.43	19.1	<0.005 U	0.02	0.292	0.023	0.484	0.63	0.023	0.009	<0.002 U	1.63	0.2	<0.01 U
1/11/2017	Background	0.03 J	0.47	19.3	0.006 J	0.01 J	0.401	0.022	2.067	0.54	0.024	0.007	<0.002 U	1.74	0.1	0.058
3/8/2017	Background	0.03 J	0.49	21.9	<0.005 U	0.01 J	0.536	0.053	0.0305	0.58	0.095	0.002	<0.002 U	2.00	0.1	<0.01 U
5/9/2017	Background	0.04 J	0.47	17.7	<0.004 U	0.01 J	0.300	0.027	0.2351	0.60	0.023	0.005	<0.002 U	1.62	0.1	<0.01 U
7/19/2017	Background	0.05 J	0.42	21.9	<0.004 U	0.01 J	0.272	0.006 J	1.098	0.54	0.024	<0.0002 U	<0.002 U	2.31	0.2	<0.01 U

Notes:
µg/L: micrograms per liter
SU: standard unit
<: Non-detect value. Parameters which were not detected are shown as less than the method detection limit (MDL) followed by a 'U' flag.
J: Estimated value. Parameter was detected at concentration below the reporting limit
- -: Not analyzed
pCi/L: picocuries per liter



Legend

- Groundwater Monitoring Well
- Approximate Groundwater Flow Direction
- Groundwater Elevation Contour
- Groundwater Elevation Contour (Inferred)
- Property Boundary
- Parcel Boundaries
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Notes

- Monitoring well coordinates and water level data (collected on November 12, 2018) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (AMEC, 2016) provided by AEP.
- Property and parcel boundaries taken from Spencer County Assessor.
- The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
- Groundwater elevation units are feet above mean sea level.
- MW-17S was not used in contouring due to unusual/anomalous reading (groundwater elevation of 368.74 feet).

Potentiometric Surface Contours - Uppermost Aquifer
November 2018

AEP-Rockport Power Plant - CCR Landfill
Rockport, Indiana

Geosyntec consultants

Columbus, Ohio | 2019/01/23

Figure **3**

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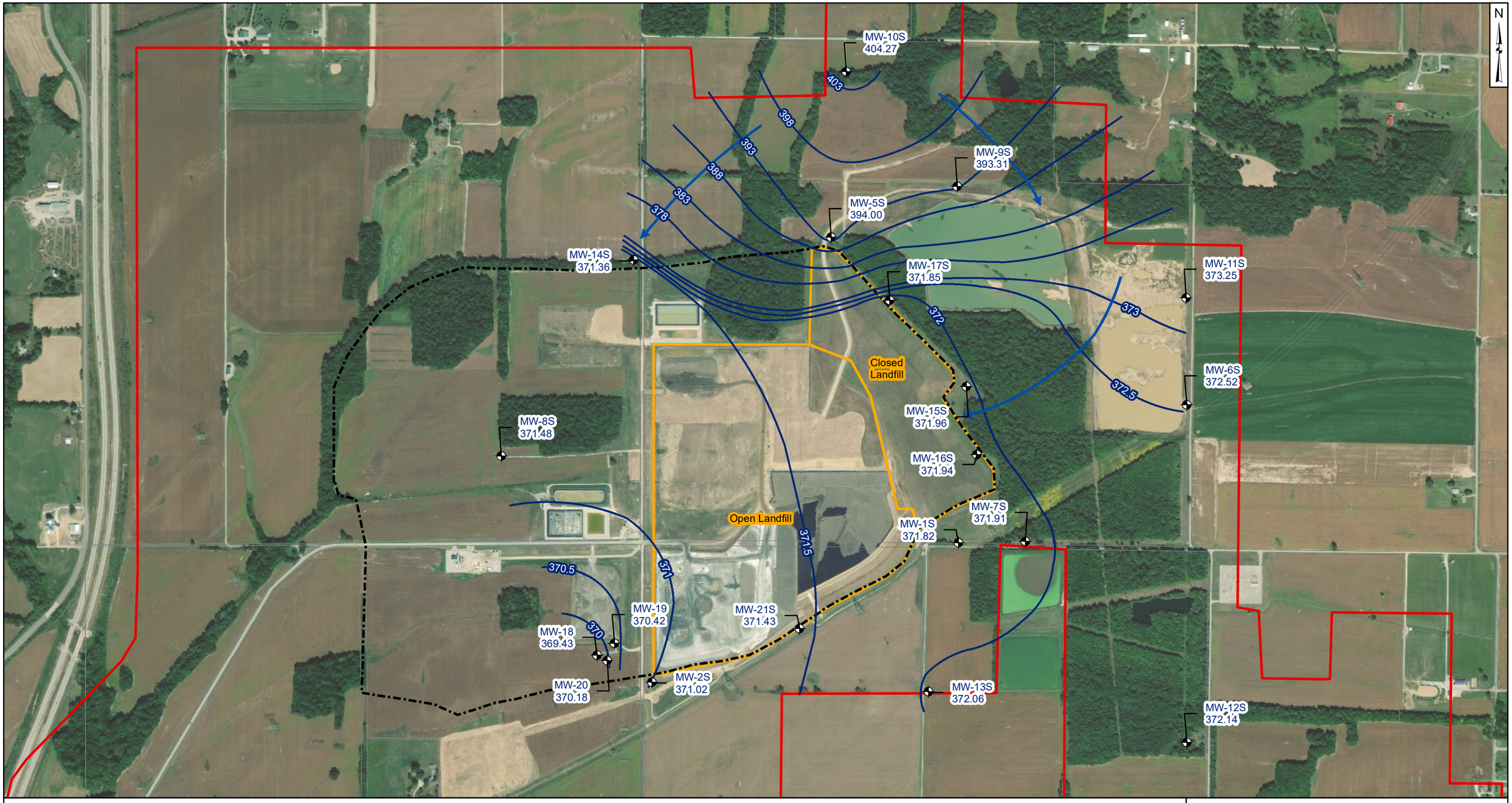

Legend

- 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

- Monitoring well coordinates and water level data (collected on May 20, 2019) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (AMEC, 2016) provided by AEP.
- Property and parcel boundaries taken from Spencer County Assessor.
- The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
- Groundwater elevation units are feet above mean sea level.

Potentiometric Surface Contours - Uppermost Aquifer
May 2019

AEP-Rockport Power Plant - CCR Landfill
Rockport, Indiana

Geosyntec consultants

Columbus, Ohio | 2020/01/07

Figure **X**

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Table 2: Residence Time Calculation Summary
Rockport - Landfill

Geosyntec Consultants, Inc.

			2018-06		2018-08		2018-11	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	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	5,799	0.010	5,419	0.011	5,125	0.012
	MW-14S [1]	2.0	10,043	0.006	9,336	0.007	9,942	0.006
	MW-15I [2]	2.0	9,193	0.007	2,097	0.029	528	0.12
	MW-15S [2]	2.0	9,211	0.007	1,873	0.032	426	0.14
	MW-16D [2]	2.0	689	0.088	1,432	0.042	901	0.068
	MW-16I [2]	2.0	844	0.072	661	0.092	225	0.270
	MW-16S [2]	2.0	844	0.072	1,322	0.046	826	0.074
	MW-17I [2]	2.0	23,838	0.003	17,221	0.004	NC	NC
	MW-17S [2]	2.0	23,793	0.003	18,011	0.003	NC	NC
	MW-1D [2]	2.0	516	0.12	54	1.12	151	0.402
	MW-1I [2]	2.0	715	0.085	63	0.96	76	0.80
	MW-1S [2]	2.0	669	0.091	91	0.67	303	0.20
	MW-21D [2]	2.0	502	0.12	124	0.49	303	0.20
	MW-21I [2]	2.0	670	0.091	124	0.49	326	0.19
	MW-21S [2]	2.0	550	0.11	113	0.54	396	0.15
	MW-2D [2]	2.0	89	0.68	199	0.31	241	0.25
	MW-2I [2]	2.0	84	0.73	180	0.34	80	0.76
	MW-2S [2]	2.0	33	1.82	199	0.31	241	0.25
	MW-6S [1]	2.0	99	0.62	371	0.16	207	0.29
	MW-8I [1]	2.0	82	0.74	202	0.30	6,214	0.010
	MW-8S [1]	2.0	224	0.27	806	0.075	961	0.063

Notes:
[1] - Upgradient Well
[2] - Downgradient Well
NC - No groundwater residence time calculated due to an anomalous water level reading

Table 1: Residence Time Calculation Summary
Rockport - Landfill

Geosyntec Consultants, Inc.

			2019-05	
CCR Management Unit	Monitoring Well	Well Diameter (inches)	Groundwater Velocity (ft/year)	Groundwater Residence Time (days)
Landfill	MW-11S [1]	2.0	514	0.12
	MW-14S [1]	2.0	8,562	0.007
	MW-15I [2]	2.0	89	0.69
	MW-15S [2]	2.0	354	0.17
	MW-16D [2]	2.0	120	0.51
	MW-16I [2]	2.0	419	0.15
	MW-16S [2]	2.0	180	0.34
	MW-17I [2]	2.0	11,847	0.005
	MW-17S [2]	2.0	12,205	0.005
	MW-1D [2]	2.0	125	0.49
	MW-1I [2]	2.0	110	0.55
	MW-1S [2]	2.0	141	0.43
	MW-21D [2]	2.0	444	0.14
	MW-21I [2]	2.0	400	0.15
	MW-21S [2]	2.0	311	0.20
	MW-2D [2]	2.0	229	0.27
	MW-2I [2]	2.0	154	0.39
	MW-2S [2]	2.0	224	0.27
	MW-6S [1]	2.0	182	0.33
	MW-8I [1]	2.0	526	0.12
	MW-8S [1]	2.0	665	0.092

Notes:
[1] - Upgradient Well
[2] - Downgradient Well

APPENDIX 2

ROCKPORT PLANT CCR LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT COVERING 2019 ACTIVITIES

STATISTICAL ANALYSES OF THE NOVEMBER 2018 SAMPLING EVENT

Geosyntec consultants

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Memorandum

Date:	May 1, 2019
To:	David Miller (AEP)
Copies to:	Dana Sheets (AEP)
From:	Allison Kreinberg and Bruce Sass, Ph.D. (Geosyntec)
Subject:	Evaluation of Detection Monitoring Data at Rockport Plant's Landfill (LF)

In accordance with the United States Environmental Protection Agency's (USEPA's) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR Subpart D, "CCR rule"), semiannual detection monitoring events were completed at the Landfill (LF), an existing CCR unit at the Rockport Power Plant located in Rockport, Indiana. Sampling for the second semi-annual detection monitoring event occurred on November 14, 2018, February 11-13, 2019, and April 1, 2019.

Eight background monitoring events were conducted at the Rockport LF prior to this detection monitoring event, and 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 calculation of these background values are described in Geosyntec's *Statistical Analysis Summary* report, dated January 15, 2018. An alternative source demonstration (ASD) was certified on January 7, 2019 which resulted in a revision to the calculated prediction limits for calcium, chloride, and total dissolved solids (TDS).

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 intrawell analysis with a one-of-three retesting procedure for all Appendix III parameters. With this procedure, a statistically significant increase (SSI) is only concluded if all three samples exceed the UPL. 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 for the second semiannual detection monitoring event are compared in Table 1 and noted exceedances are described in the list below.

- Chloride concentrations exceeded the intrawell UPL of 33.0 mg/L in the initial (38.1 mg/L), second (40.4 mg/L), and third (38.5 mg/L) samples collected at MW-001S; the intrawell UPL of 27.4 mg/L in the initial (28.8 mg/L), second (30.1 mg/L), and third (34.1 mg/L) samples collected at MW-001I; the intrawell UPL of 24.3 mg/L in the initial (24.8 mg/L), second (26.4 mg/L), and third (26.1 mg/L) samples collected at MW-002S; the intrawell UPL of 25.0 mg/L in the initial (51.3 mg/L), second (40.9 mg/L), and third (69.4 mg/L) samples collected at MW-002D; the intrawell UPL of 73.3 mg/L in the initial (102 mg/L), second (109 mg/L), and third (107 mg/L) samples collected at MW-016D; and the intrawell UPL of 16.3 mg/L in the initial (17.9 mg/L), second (17.9 mg/L), and third (17.5 mg/L) samples collected at MW-021S. Therefore, SSIs over background are concluded for chloride at MW-001S, MW-001I, MW-002S, MW-002D, MW-016D, and MW-021S.

- Fluoride concentrations exceeded the intrawell UPL of 0.656 mg/L in the initial (1.00 mg/L), second (1.05 mg/L), and third (1.08 mg/L) samples collected at MW-17I, Therefore, an SSI over background is concluded for fluoride at MW-17I.

- TDS concentrations exceeded the intrawell UPL of 384 mg/L in the initial (434 mg/L), second (439 mg/L), and third (429 mg/L) samples collected at MW-016D. Therefore, an SSI over background is concluded for TDS at MW-016D.

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with 40 CFR 257.93(h)(2). Within 90 days of identification of the above-listed SSIs, a written demonstration that a source other than the Rockport LF caused the increases will be completed in accordance with 40 CFR 257.94(e)(2). If the ASD is successful, the Rockport LF will remain in detection monitoring.

A certification of these statistics by a qualified professional engineer is provided in Attachment A

Table 1: Detection Monitoring Data Evaluation
Rockport Plant - Landfill

Geosyntec Consultants, Inc.

Parameter	Units	Description	MW-001S			MW-001I			MW-001D		MW-002S			MW-002I		MW-002D			MW-015S	MW-015I
			11/14/2018	2/13/2019	4/1/2019	11/14/2018	2/13/2019	4/1/2019	11/14/2018	2/13/2019	11/13/2018	2/13/2019	4/1/2019	11/13/2018	2/13/2019	11/12/2018	2/13/2019	4/1/2019	11/13/2018	11/13/2018
Boron	mg/L	Intrawell Background Value (UPL)	0.048			0.093			0.066		0.109			0.0428		0.074			0.150	0.072
		Detection Monitoring Result	0.04	--	--	0.05	--	--	**0.1**	0.02	0.06	--	--	**0.05**	0.02	0.07	--	--	0.04	0.07
Calcium	mg/L	Intrawell Background Value (UPL)	78.7			70.7			74.7		66.3			78.4		80.9			70.6	54.0
		Detection Monitoring Result	71.9	--	--	66	--	--	72	--	55	--	--	65	--	72	--	--	42	40
Chloride	mg/L	Intrawell Background Value (UPL)	33.0			27.4			50.2		24.3			31.7		25.1			26.0	69.5
		Detection Monitoring Result	**38.1**	**40.4**	**38.5**	**28.8**	**30.1**	**34.1**	47	--	**24.8**	**26.5**	**26.1**	27.9	--	**51.3**	**40.9**	**69.4**	8.78	23.7
Fluoride	mg/L	Intrawell Background Value (UPL)	0.677			0.428			0.321		0.299			0.371		0.222			0.860	0.382
		Detection Monitoring Result	0.63	--	--	0.41	--	--	0.30	--	0.28	--	--	0.32	--	0.20	--	--	0.72	0.25
pH	SU	Intrawell Background Value (UPL)	8.14			7.90			8.16		8.44			8.69		8.63			7.70	7.86
		Intrawell Background Value (LPL)	7.09			6.43			6.74		6.30			6.43		6.45			7.10	6.77
		Detection Monitoring Result	7.48	--	--	7.75	--	--	7.77	--	7.53	--	--	7.20	--	7.36	--	--	7.46	7.60
Sulfate	mg/L	Intrawell Background Value (UPL)	37.0			47.8			45.1		35.1			48.5		46.4			33.7	47.4
		Detection Monitoring Result	32.3	--	--	40.7	--	--	39.8	--	24.7	--	--	39	--	36.1	--	--	13.1	25.3
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	419			348.5			369.3		343			375		358			407	398
		Detection Monitoring Result	410	--	--	308	--	--	340	--	272	--	--	308	--	348	--	--	232	248

Parameter	Units	Description	MW-016S		MW-016I		MW-016D			MW-17S	MW-17I			MW-021S			MW-021I	MW-021D
			11/14/2018	2/11/2019	11/14/2018	2/11/2019	11/14/2018	2/11/2019	4/1/2019	11/13/2018	11/13/2018	2/11/2019	4/1/2019	11/14/2018	2/11/2019	4/1/2019	11/13/2018	11/13/2018
Boron	mg/L	Intrawell Background Value (UPL)	0.088		0.107		0.113			0.0653	0.0981			0.0460			0.092	0.071
		Detection Monitoring Result	**0.107**	0.02	**0.139**	0.02	0.07	--	--	0.05	0.07	--	--	**0.06**	0.02	--	0.08	0.04
Calcium	mg/L	Intrawell Background Value (UPL)	114		114		87.8			41.0	96.3			62.4			73.1	82.9
		Detection Monitoring Result	104	--	54	--	84.1	--	--	33	37	--	--	55	--	--	62	62
Chloride	mg/L	Intrawell Background Value (UPL)	23.8		114		73.3			16.4	241			16.3			22.2	20.2
		Detection Monitoring Result	16.2	--	48	--	**102**	**109**	**107**	11.5	50	--	--	**17.9**	**17.9**	**17.5**	20.2	18.8
Fluoride	mg/L	Intrawell Background Value (UPL)	0.506		0.152		0.251			1.08	0.656			0.689			0.380	0.407
		Detection Monitoring Result	0.39	--	0.17	--	0.21	--	--	0.91	**1.00**	**1.05**	**1.08**	0.66	--	--	0.36	0.34
pH	SU	Intrawell Background Value (UPL)	8.55		7.90		9.13			7.97	7.96			9.07			8.69	8.73
		Intrawell Background Value (LPL)	5.88		6.73		6.04			7.11	6.82			5.99			6.63	6.71
		Detection Monitoring Result	7.02	--	7.30	--	7.35	--	--	7.51	7.55	--	--	7.34	--	--	7.69	7.66
Sulfate	mg/L	Intrawell Background Value (UPL)	52		43.51		39.7			16.5	50.8			23.6			50	43
		Detection Monitoring Result	40.3	--	32.5	--	38.6	--	--	8.4	29.6	--	--	17.0	--	--	43.4	35.2
Total Dissolved Solids	mg/L	Intrawell Background Value (UPL)	517		589		384			269	657			313			359	365
		Detection Monitoring Result	**548**	517	408	--	**434**	**439**	**429**	196	328	--	--	278	--	--	294	314

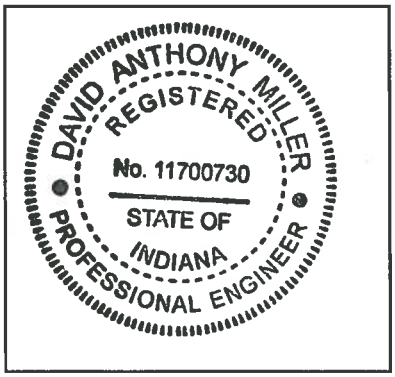
Notes
UPL Upper prediction limit
LPL Lower prediction limit
Bold values exceed the background value.
Background values are shaded gray.
A 1-of-3 sampling regime was used for all parameters.

ATTACHMENT A

Certification by Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the January 15, 2018 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Rockport LF CCR management area and that the requirements of 40 CFR 257.93(f) have been met.



DAVID ANTHONY MILLER

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

11700730	INDIANA	05.15.19
License Number	Licensing State	Date

APPENDIX 3

ROCKPORT PLANT CCR LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT COVERING 2019 ACTIVITIES

STATISTICAL ANALYSES OF THE MAY 2019 SAMPLING EVENT

Geosyntec consultants

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Memorandum

Date:	October 3, 2019
To:	David Miller (AEP)
Copies to:	Dana Sheets (AEP)
From:	Allison Kreinberg and Bruce Sass, Ph.D. (Geosyntec)
Subject:	Evaluation of Detection Monitoring Data at Rockport Plant's Landfill (LF)

In accordance with the United States Environmental Protection Agency's (USEPA's) regulations regarding the disposal of coal combustion residuals (CCR) in landfills and surface impoundments (40 CFR Subpart D, "CCR rule"), semiannual detection monitoring events were completed at the Landfill (LF), an existing CCR unit at the Rockport Power Plant located in Rockport, Indiana. Sampling for the first semi-annual detection monitoring event occurred on May 21-23, 2019, July 23-24, 2019, and September 11-12, 2019.

Eight background monitoring events were conducted at the Rockport LF prior to this detection monitoring event, and 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 calculation of these background values are described in Geosyntec's *Statistical Analysis Summary* report, dated January 15, 2018. An alternative source demonstration (ASD) was certified on January 7, 2019 which resulted in a revision to the calculated prediction limits for calcium, chloride, and total dissolved solids (TDS).

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 intrawell analysis with a one-of-three retesting procedure for all Appendix III parameters. With this procedure, a statistically significant increase (SSI) is only concluded if all three samples exceed the UPL. 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 for the first semiannual detection monitoring event are compared in Table 1 and noted exceedances are described in the list below.

- Calcium concentrations exceeded the intrawell UPL of 80.9 mg/L in the initial (98.5 mg/L), the second (114 mg/L), and the third (103 mg/L) samples at MW-002D, and the intrawell UPL of 87.8 mg/L in the initial (88.5 mg/L), second (95.6 mg/L) and third (109 mg/L) samples at MW-016D. Therefore, SSIs over background are concluded for calcium at MW-MW-002D and MW-016D.

- Chloride concentrations exceeded the intrawell UPL of 27.4 mg/L in the initial (33.1 mg/L), second (30.6 mg/L), and third (33.5 mg/L) samples at MW-001I; the intrawell UPL of 25.1 mg/L in the initial (135 mg/L), second (156 mg/L), and third (110 mg/L) samples at MW-002D; the intrawell UPL of 24.3 mg/L in the initial (26.4 mg/L), second (28.6 mg/L), and third (26.6 mg/L) samples at MW-002S; and the intrawell UPL of 73.3 mg/L in the first (104 mg/L), the second (95.6 mg/L), and the third (125 mg/L) samples at MW-016D. Therefore, SSIs over background are concluded for chloride at MW-001I, MW-002D, MW-002S, and MW-016D.

- Fluoride concentrations exceeded the intrawell UPL of 0.656 mg/L in the first (1.07 mg/L), the second (1.06 mg/L) and the third (1.08 mg/L) samples at MW-017I. Therefore, an SSI over background is concluded for fluoride at MW-017I.

- TDS concentrations exceeded the intrawell UPL of 358 mg/L in the first (531 mg/L), the second (540 mg/L), and the third (443 mg/L) samples at MW-002D, and the intrawell UPL of 384 mg/L in the first (460 mg/L), the second (457 mg/L), and the third (523 mg/L) samples at MW-016D. Therefore, SSIs over background are concluded for TDS at MW-002D and MW-016D.

The statistical analysis was conducted within 90 days of completion of sampling and analysis in accordance with 40 CFR 257.93(h)(2). Within 90 days of identification of the above-listed SSIs, a written demonstration that a source other than the Rockport LF caused the increases will be completed in accordance with 40 CFR 257.94(e)(2). If the ASD is successful, the Rockport LF will remain in detection monitoring.

A certification of these statistics by a qualified professional engineer is provided in Attachment A

Table 1: Detection Monitoring Data Evaluation
Rockport - Landfill

Geosyntec Consultants, Inc.

Parameter	Units	Description	MW-001D		MW-001I			MW-001S		MW-002D			MW-002I	MW-002S		
			5/23/2019	7/23/2019	5/23/2019	7/23/2019	9/11/2019	5/23/2019	7/23/2019	5/22/2019	7/24/2019	9/11/2019	5/22/2019	5/22/2019	7/23/2019	9/11/2019
Boron	mg/L	Intrawell Background Value (UPL)	0.0655		0.0926			0.0484		0.0736			0.0428	0.109		
		Detection Monitoring Data	0.0200	--	0.0200	--	--	0.0200	--	0.0200	--	--	0.0200	0.0200	--	--
Calcium	mg/L	Intrawell Background Value (UPL)	74.7		70.7			78.7		80.9			78.4	66.3		
		Detection Monitoring Data	73.6	--	67.7	--	--	73.7	--	**98.5**	**114**	**103**	64.3	51.3	--	--
Chloride	mg/L	Intrawell Background Value (UPL)	50.2		27.4			33.0		25.1			31.7	24.3		
		Detection Monitoring Data	32.1	--	**33.1**	**30.6**	**33.5**	**33.7**	30.0	**135**	**156**	**110**	25.4	**26.4**	**26.8**	**26.6**
Fluoride	mg/L	Intrawell Background Value (UPL)	0.32		0.43			0.68		0.22			0.37	0.30		
		Detection Monitoring Data	0.27	--	0.42	--	--	0.55	--	0.18	--	--	0.32	0.30	--	--
pH	SU	Intrawell Background Value (UPL)	8.2		7.9			8.1		8.6			8.7	8.4		
		Intrawell Background Value (LPL)	6.7		6.4			7.1		6.4			6.4	6.3		
		Detection Monitoring Data	7.2	--	7.0	--	--	7.9	--	7.3	--	--	7.3	7.7	--	--
Sulfate	mg/L	Intrawell Background Value (UPL)	45.1		47.8			37.0		46.4			48.5	35.1		
		Detection Monitoring Data	**45.3**	39.2	40.2	--	--	36.3	--	33.3	--	--	39.2	26.2	--	--
TDS	mg/L	Intrawell Background Value (UPL)	369		349			419		358			375	343		
		Detection Monitoring Data	346	--	341	--	--	388	--	**531**	**540**	**443**	328	**352**	339	--

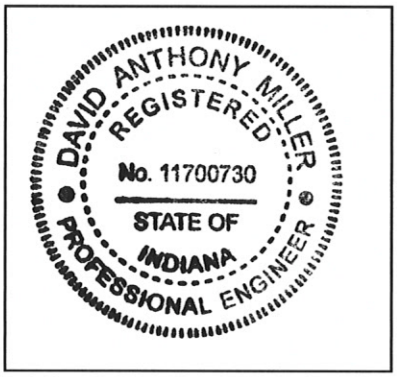
Parameter	Units	Description	MW-015I	MW-015S			MW-016D			MW-016I	MW-016S	MW-017I			MW-017S	MW-021D	MW-021I	MW-021S
			5/23/2019	5/23/2019	7/23/2019	9/11/2019	5/22/2019	7/24/2019	9/11/2019	5/22/2019	5/22/2019	5/23/2019	7/23/2019	9/11/2019	5/23/2019	5/22/2019	5/21/2019	5/21/2019
Boron	mg/L	Intrawell Background Value (UPL)	0.0721		0.150			0.113		0.107	0.0880		0.0981		0.0653	0.0709	0.0921	0.0460
		Detection Monitoring Data	0.0300	0.0200	--	--	0.0300	--	--	0.0300	0.0300	0.0400	--	--	0.0300	0.0200	0.0200	0.0200
Calcium	mg/L	Intrawell Background Value (UPL)	54.0		70.6			87.8		113.5	113.7		96.3		41.0	82.9	73.1	62.4
		Detection Monitoring Data	47.8	41.3	--	--	**88.5**	**95.6**	**109**	56.0	99.2	45.1	--	--	32.7	69.3	62.4	52.5
Chloride	mg/L	Intrawell Background Value (UPL)	69.5		26.0			73.3		113.7	23.8		241.0		16.4	20.2	22.2	16.3
		Detection Monitoring Data	18.0	8.88	--	--	**104**	**106**	**125**	45.5	18.0	60.2	--	--	12.0	19.1	18.1	16.0
Fluoride	mg/L	Intrawell Background Value (UPL)	0.38		0.86			0.251		0.192	0.506		0.656		1.08	0.407	0.380	0.689
		Detection Monitoring Data	0.26	**0.88**	**0.87**	0.81	0.200	--	--	0.170	0.380	**1.07**	**1.06**	**1.08**	1.08	0.360	0.360	0.650
pH	SU	Intrawell Background Value (UPL)	7.9		7.7			9.1		7.9	8.5		8.0		8.0	8.7	8.7	9.1
		Intrawell Background Value (LPL)	6.8		7.1			6.0		6.7	5.9		6.8		7.1	6.7	6.6	6.0
		Detection Monitoring Data	7.3	7.5	--	--	7.3	--	--	7.4	7.1	7.5	--	--	7.6	7.5	7.5	7.6
Sulfate	mg/L	Intrawell Background Value (UPL)	47.4		33.7			39.7		43.5	52.4		50.8		16.5	43.2	50.0	23.6
		Detection Monitoring Data	20.9	10.2	--	--	38.0	--	--	33.2	34.5	32.8	--	--	7.70	36.8	36.0	14.1
TDS	mg/L	Intrawell Background Value (UPL)	398		407			384		589	517		657		296	365	359	313
		Detection Monitoring Data	260	207	--	--	**460**	**457**	**523**	405	493	352	--	--	217	348	278	258

Notes
UPL: Upper prediction limit
LPL: Lower prediction limit
TDS: Total dissolved solids
Bold values exceed the background value.
Background values are shaded gray.

ATTACHMENT A
Certification by Qualified Professional Engineer

CERTIFICATION BY QUALIFIED PROFESSIONAL ENGINEER

I certify that the selected statistical method, described above and in the January 15, 2018 *Statistical Analysis Summary* report, is appropriate for evaluating the groundwater monitoring data for the Rockport LF CCR management area and that the requirements of 40 CFR 257.93(f) have been met.



DAVID ANTHONY MILLER

Printed Name of Licensed Professional Engineer

David Anthony Miller

Signature

11700730	INDIANA	10.07.19
License Number	Licensing State	Date

APPENDIX 4

ROCKPORT PLANT CCR LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT COVERING 2019 ACTIVITIES

ALTERNATE SOURCE DEMONSTRATION

JUNE 28, 2019

Alternative Source Demonstration for Appendix III Constituents, CCR Landfill

American Electric Power Service Corporation
Rockport Generating Station, Rockport, Spencer County, Indiana
Project # 7362192684

Prepared for:

American Electric Power Service Corporation
1 Riverside Plaza, Columbus, Ohio 43215

28 June 2019

28 June 2019

Mr. David Miller
Director, Land Environment & Remediation Services
American Electric Power Service Corporation
1 Riverside Plaza
Columbus, OH 43215
Email: damiller@aep.com

Wood Environment & Infrastructure Solutions, Inc.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
USA
T: 859-255-3308
www.woodplc.com

Dear Mr. Miller:

Wood Environment & Infrastructure Solutions, Inc. (Wood) has prepared this Alternative Source Demonstration (ASD) for the CCR Landfill located at the AEP Rockport Plant in Rockport, Indiana. As detailed in this report, the results of this ASD conclude that statistically significant increases (SSIs) identified in 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 Kathleen Regan at (859) 566-3724.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Konrad W. Quast, PhD
Senior Hydrogeologist

Kathleen D. Regan, PE
Senior Associate Engineer
Project Manager

Attachments

/kdr

cc: Dana Sheets, 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
Project # 7362192684

Prepared for:

American Electric Power Service Corporation
1 Riverside Plaza, Columbus, Ohio 43215

Prepared by:

Wood Environment & Infrastructure Solutions, Inc.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
USA
T: 859-255-3308

28 June 2019

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Appendices

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. The most recent statistical analysis of Appendix III constituents identified eight statistically significant increases (SSIs) above background, distributed among seven waste boundary monitoring wells. Six waste boundary monitoring wells exhibited SSIs for chloride (MW-1S, MW-1I, MW-2S, MW-2D, MW-16D and MW-21S). One of the six wells, MW-16D, also exhibited a SSI for total dissolved solids (TDS). The remaining SSI was observed for fluoride in monitoring well MW-17I, which did not exhibit any other SSI.

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, CCR Landfill leachate can be excluded as a source of Appendix III SSLs for the following reasons:

- 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 in the 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 occurring in multiple waste boundary wells and at statistically significant concentrations above background. It does not.

- Sulfate is another typical indicator for CCR leachate impacts, which also 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 were determined in any of the waste boundary well samples.

- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations about two orders-of-magnitude above groundwater concentrations. Spatial trends can be observed in **Exhibits 3-5** and **3-6**, and indicate that chloride concentrations tend to increase in groundwater moving downgradient from recharge areas. However, because the SSIs indicated for chloride are not associated with SSIs for boron and sulfate, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.

- The same conclusion can be drawn in regard to total dissolved solids (TDS) and fluoride, for which occasional SSIs are not consistently associated with boron, sulfate, or each other. The SSIs indicated for these constituents appear to be related to the natural variation in groundwater quality, along with a spatial trend of increasing TDS with distance from recharge area.

- Monitoring well MW-17I is associated with an SSI for fluoride. This well, along with MW-17S and the well cluster MW-15S/I are located cross-gradient of potential source materials. Groundwater monitored by these wells is not hydraulically influenced by the CCR Landfill.

1.0 Objective

American Electric Power (AEP) operates a CCR Landfill that is used for the management of coal combustion residuals (CCR). 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.

The first detection monitoring event was conducted in October 2017. A statistical analysis was conducted for Appendix III constituents by Geosyntec Consultants, Inc. (Geosyntec) in conjunction with Groundwater Stats Consulting, LLC and MacStat Consulting, LTD. The results were documented in a report by Geosyntec dated January 15, 2018. The statistical evaluation identified 10 statistically significant increases (SSIs) above background distributed among 7 waste boundary monitoring wells.

An alternate source demonstration (ASD) for the October 2017 sample results was prepared by Wood Environmental & Infrastructure , Inc. (Wood) that focused on the site geochemistry. The ASD showed, through multiple lines of evidence, that the SSIs identified in the October 2017 detection monitoring event were not the result of a release of leachate from the CCR landfill. The ASD was placed on the Rockport Plant CCR website. As a result, the landfill remained in detection monitoring.

The next semiannual detection monitoring event occurred in June 2018. A statistical analysis of the resulting groundwater data by Geosyntec and Groundwater Stats Consulting identified 13 verified statistically significant exceedances above background of Appendix III parameters at 8 waste boundary wells.

An ASD for the June 2018 sample results was investigated by Geosyntec and completed by report dated January 4, 2019. The report concluded that the groundwater quality and the 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 ASD was placed on the Rockport Plant CCR website as part of the Annual Groundwater Monitoring Report for 2018 dated January 31, 2019. Because the ASD was successful, the landfill remained in detection monitoring for the second semiannual samples for 2018 taken in November.

Sampling for the second semiannual detection monitoring event in 2018 occurred during the week of November 14. A statistical analysis of the resulting groundwater data by Geosyntec and Groundwater Stats Consulting identified 8 verified statistically significant exceedances above background of Appendix III parameters at 7 waste boundary wells.

The objective of this ASD is to investigate whether the verified SSIs of Appendix III indicator parameters resulting from the statistical analyses of the November 14, 2018 samples were the result of a release from the landfill or due to an alternate source.

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 a number of 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.

AEP has retained Wood Environment & Infrastructure Solutions, Inc. (Wood) to reevaluate the ASDs for the CCR Landfill in light of the change in statistical methodology. The scope of this ASD is focused on evaluating whether leachate from the CCR Landfill is a likely source of the SSIs identified in the statistical analysis, or whether these SSIs result from natural variation in groundwater quality. 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, in order 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, Wood relied on supplemental analytical data, including 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. **Section 2** presents a summary the CCR Landfill setting, and a summary of the results from the statistical evaluation of the Appendix III detection monitoring parameters. **Section 3** presents the primary and secondary lines of evidence developed from a geochemical evaluation of the site. Section 4 presents the technical findings of the ASD and includes certification by an Indiana-licensed Professional Engineer (PE). References are included in **Section 4**.

2.0 Background

2.1 Site Description

The Rockport Power Plant is located in southwest Indiana in Spencer County, on property extending into three Townships: Ohio, Hammond and Grass. 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 1**. The CCR Landfill, or Landfill, is located about 8,000 feet (1.5 miles) northeast of the generating plant. **Figure 2** shows the general layout of the CCR Landfill and the monitoring well locations.

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. As shown on Figure 2, the active portion of the CCR Landfill directly adjoins a closed portion of the landfill to the northeast.

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 10 February 2015.

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 storm water 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. A generalized cross-section is presented in **Figure 3**.

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 area from the north, northwest and west, continues flowing under the property generally to the south and east, towards Honey Creek and/or the Ohio River. Potentiometric contour maps illustrating typical groundwater flow conditions are presented in **Figures 4 through 7**.

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 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 unsaturated 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 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 on **Table A-1** in **Appendix A**.

2.2 Summary of SSIs

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 rounds of baseline data were used to calculate the upper prediction limits (UPLs) for each of the Appendix III constituents to represent background values. Results from the initial detection monitoring event were then compared to the UPLs established from the eight baseline rounds in order identify SSIs compared to background. The initial statistical evaluation identified 11 SSIs for calcium (2), chloride (6), fluoride (1) and TDS (3). An initial ASD was prepared by Wood focusing on site geochemistry. The ASD demonstrated, through multiple lines of evidence, that the SSIs identified in the statistical analysis of the initial detection monitoring event data are not the result of a release of leachate from the CCR Landfill.

The first semiannual detection monitoring event of 2018 was conducted in June, with verification sampling conducted in August and September 2018. 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 off-site oil and gas operations. Sampling for the second semi-annual detection monitoring event occurred on November 2018, with verification sampling conducted in February and April 2019. Geosyntec evaluated the second round of detection monitoring results which identified nine previously-identified SSIs, indicated by black diamonds in the **Exhibit 2-1** summary table below:

Exhibit 2-1. Summary of SSIs, Second Semiannual Sampling Events of 2018

Parameter	MW-1S	MW-1I	MW-2S	MW-2D	MW-16S	MW-16D	MW-17I	MW-21S
Chloride	◆	◆	◆	◆		◆		◆
Fluoride							◆	
TDS					◆	◆		

A table of all groundwater monitoring results for the CCR Landfill since June 2016 is presented on **Table A-1** in **Appendix A**. The Wood ASD (2018) concluded that the SSIs are due to natural variation in groundwater quality and the Geosyntec ASD identified impacts from historic off-site oil and gas operations as a potential source of impacts. Since both ASDs identified multiple lines of evidence and supporting data that indicate a release from the CCR unit has not occurred, the unit continues in detection monitoring under the federal CCR Rule, and a statistical evaluation of Appendix IV constituents has not been required.

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 the result of natural variation in groundwater quality.

In order to evaluate the potential of a release from the CCR Landfill to groundwater, Wood evaluated groundwater quality data, including isotopes, in the context of the geochemical characteristics of CCR Landfill leachate. The results of this evaluation support that CCR Landfill leachate at the Rockport site can be ruled out as a source of the 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 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.
- Recent potentiometric data indicate the MW-17 cluster (where an SSI for fluoride has been identified) is located downgradient from the borrow area stormwater ponds and is cross-gradient of the CCR Landfill.

Each of these lines of evidence are described in detail below.

3.1 SSIs 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 to the other constituents analyzed. These elevated concentrations 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 2**, 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	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	<0.004	0.115	0.002	0.139
Calcium	166	368	35.6	79.5	32.3	110
Chloride	847	1,250	1.54	30.0	1.54	214
Fluoride	<1.50	<1.50	0.25	1.0	0.08	1.08
Total Dissolved Solids (TDS)	22,100	30,900	179	407	196	620
Sulfate	14,100	19,000	3.8	87.5	8.4	54.7

Because the CCR Landfill leachate ponds also receive some storm water 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 seen in **Exhibit 3-1**, boron and sulfate occur at concentrations as much as three orders-of-magnitude above background groundwater levels. Results for chloride and TDS are as much as two orders-of-magnitude above background concentrations. Calcium and fluoride 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 natural groundwater.

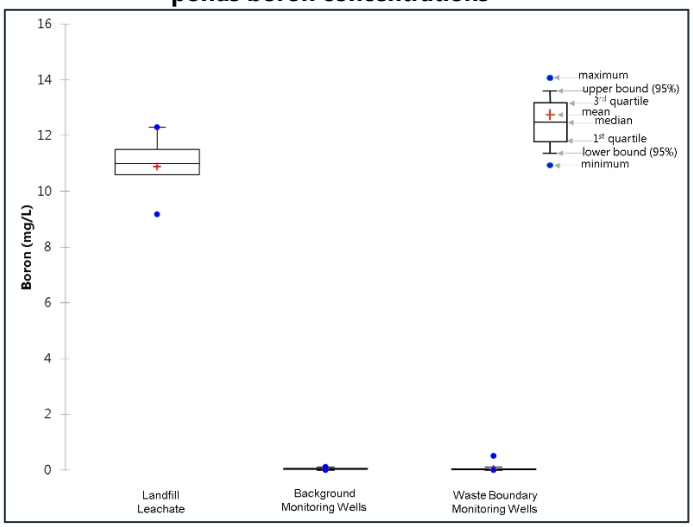
3.1.2 Occurrence of Primary indicator Constituents in Waste Boundary Monitoring Well Samples

Four primary indicator compounds are identified for the Rockport CCR Landfill leachate: boron, sulfate, TDS and chloride. Six SSIs have been identified for chloride, one for TDS and one for fluoride. However, no SSIs were identified in waste boundary wells for either boron or sulfate. Given the predominance of boron and sulfate in the CCR Landfill leachate, and that neither of these constituents are elevated above background, it is unlikely that Landfill leachate is the source of the observed SSIs. 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 <0.004 to 0.115 mg/L. Concentrations in waste boundary well samples range from 0.002 to 0.52 mg/L, with a landfill leachate from 9.18 to 12.3 mg/L. These 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 (0.52 mg/L) occurred in MW-16D and did not represent an SSI for that well.

Exhibit 3-2. CCR monitoring well and landfill leachate ponds boron concentrations

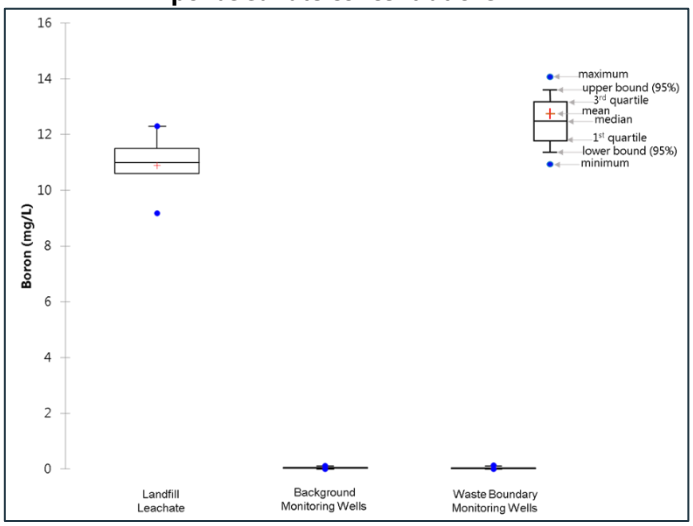


If a release of landfill leachate had occurred, boron concentrations in waste boundary well samples should be clearly higher than the range of background well results, and SSIs would likely be found in at least some of the monitoring wells with other identified SSIs.

Sulfate

No SSIs have been identified for sulfate. Sulfate has been identified in background wells at concentrations ranging from 3.8 to 87.5 mg/L. Concentrations in waste boundary well samples range from 8.4 to 54.7 mg/L, with landfill leachate concentrations ranging from 14,100 to 19,000 mg/L. These 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 (68.2 to 87.1 mg/L).

Exhibit 3-3. CCR monitoring well and landfill leachate ponds sulfate concentrations



In conclusion, 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 statistically significant increases, 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, it is concluded that these SSIs are caused by the natural variation in groundwater quality 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.

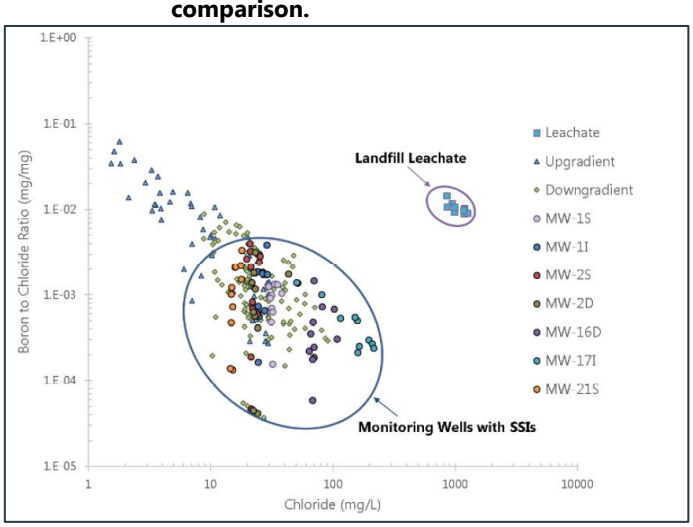
3.2.1 Indicator Parameter Cross-Plots and Major Ion Chemistry

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, and major ion chemistry was assessed as a whole system using Piper trilinear diagrams. 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

Exhibit 3-4. Boron to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.



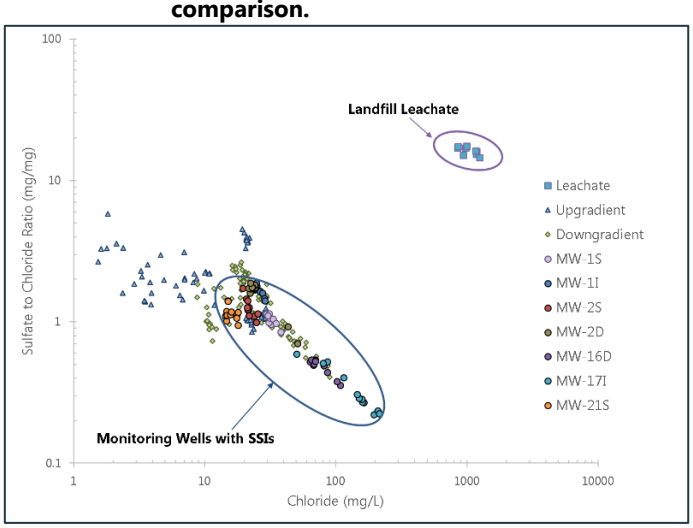
The plotting of B/Cl versus chloride groundwater data shows primarily a single cluster that is similar to what is hypothesized as background based on the composition of leachate samples (**Exhibit 3-4**). The landfill data are plotted on log-log scales due to the large range of concentrations and ratios making the separation in groupings appear closer than they are. The Landfill leachate clearly plots as a separate trend 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 with increasing chloride concentrations and salinity along the flow path represented by downgradient monitoring wells due to geochemical evolution of groundwater. 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 is represented by MW-17I due to its higher chloride concentration, but with a low B/Cl ratio. This plot supports that these wells are not impacted by CCR Landfill leachate but could be influenced by infiltration from the storm water holding ponds.

Sulfate to Chloride Ratio Versus Chloride Concentration

Plotting of the SO_4/Cl ratio versus chloride also 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 are much higher than groundwater values, typically around 15 mg/mg or higher, while groundwater ratios are below a value of 6. The extreme end of the groundwater data set is represented by MW-17I variability due to its high chloride concentration that is clearly different from leachate.

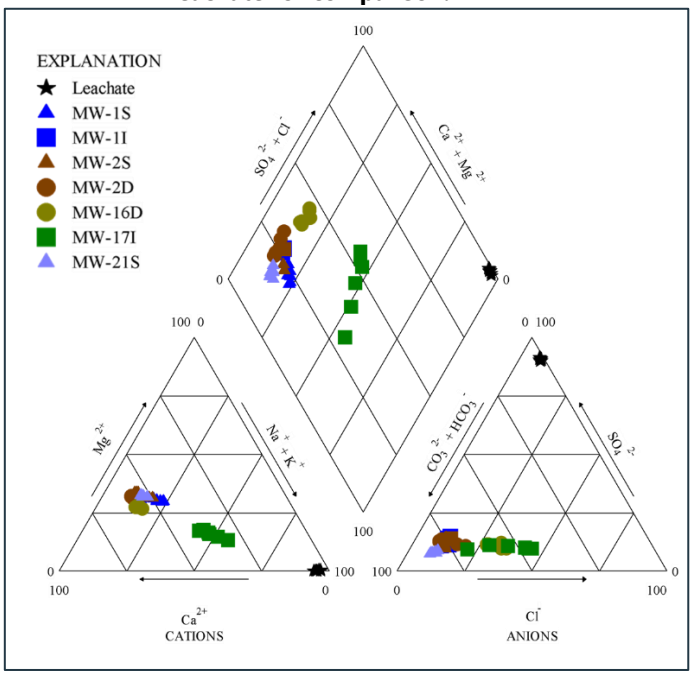
Exhibit 3-5. Sulfate to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.



CCR Landfill Major Ion Water Quality

During the sixth round of sampling, additional analytes were included in the analyses making it possible to create major ion Piper trilinear diagrams for graphical comparison of water types for the CCR Landfill monitoring wells and leachate samples. Inferences of different groundwater source end members are supported by the Piper diagram shown on **Exhibit 3-6**. All of the major ion chemistry are plotted on a single diagram and results are supportive of the observations found when reviewing the cross-plots of ion ratios versus chloride concentrations. Leachate plots as a sodium sulfate water type while the majority of monitoring wells, including those identified with SSIs in this ASD, are associated with a calcium bicarbonate water type with the exception of MW-17I. Monitoring well MW-17I shows a different major ion water type that is influenced by greater contributions of sodium and chloride, but not sulfate.

Exhibit 3-6. Piper diagram of major ion water quality for CCR Landfill monitoring wells with SSIs and leachate for comparison.



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; Ruhl et al. 2014; Harkness et al. 2017). 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. 2017; Nigro 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) NIST SRM 951:

$$\delta^{11}B(‰) = \frac{\left(\frac{^{11}B}{^{10}B}\right)_{Sample} - \left(\frac{^{11}B}{^{10}B}\right)_{Standard}}{\left(\frac{^{11}B}{^{10}B}\right)_{Standard}} \times 1000 \qquad \text{eq. 1}$$

Isotope ratios of strontium can be reported relative to a standard value but are commonly reported as the actual ratio $^{87}Sr/^{86}Sr$. The values for strontium reported here are the actual ratios, but they have been corrected to the National Institute of Standards and Technology (NIST) Standard Reference Material (SRM) NIST SRM 987.

Background monitoring wells for the CCR Landfill show lower boron concentrations and higher $\delta^{11}B$ values compared to Landfill leachate samples (**Exhibit 3-7**). While only a limited number of background and waste boundary wells were tested (including two with SSIs, MW-17I and MW-21S), 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 $\delta^{11}B$ values remain approximately equivalent. This supports the hypothesis that boron is $\delta^{11}B$ values in leachate and BAP water are dominated by the CCR materials and that the increase in boron concentration observed for BAP waste boundary monitoring wells beyond the BAP water concentration is related to additional leaching of in place ash material that has the same $\delta^{11}B$ values, thus resulting in a range of boron concentrations above background having a similar $\delta^{11}B$ value.

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 3-8**).

Exhibit 3-7. Boron isotope ratio ($\delta^{11}B$) versus boron concentration for CCR Landfill leachate and monitoring wells for comparison.

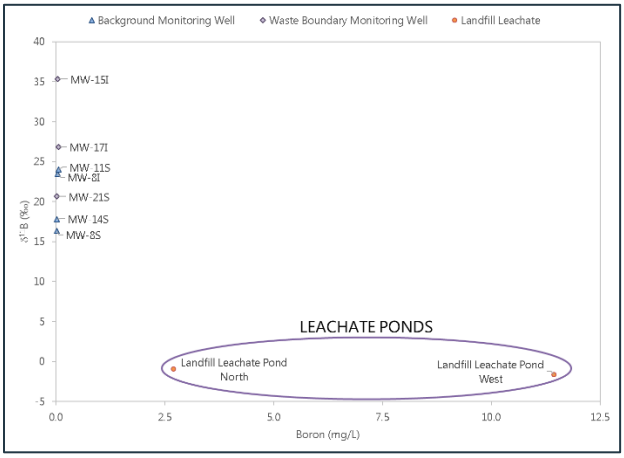
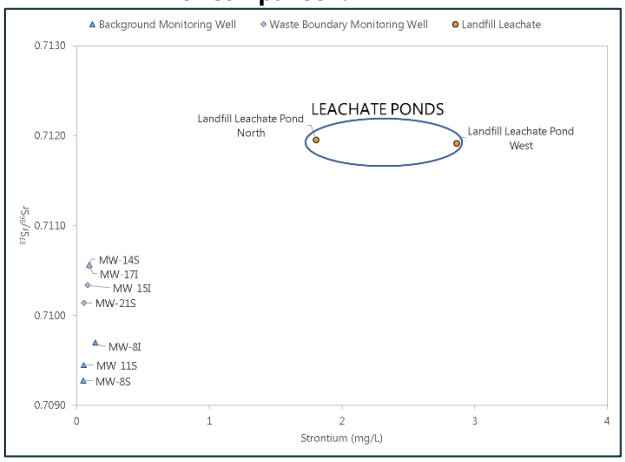


Exhibit 3-8. Strontium isotope ratio ($^{87}Sr/^{86}Sr$) versus strontium concentration for CCR Landfill leachate and monitoring wells for comparison.



3.3 Hydraulic Connection to the CCR Landfill

The groundwater monitoring network and the relationship of the wells to the regulated CCR Landfill are shown on **Figure 2**. Recent potentiometric flow data available for the site consistently indicate a local groundwater flow direction in the vicinity of MW-17 to the south and southeast. Four potentiometric surface maps are presented on **Figures 4 through 7**. As shown on these figures, well cluster MW-17 is located cross-gradient from the CCR Landfill and at least sometimes downgradient of the borrow area stormwater ponds. Therefore, groundwater monitored by this well cluster is hypothesized to be unaffected by potential releases from unit.

3.4 Summary

As summarized in **Exhibit 2-1** above, in the initial detection monitoring event, SSIs were identified in only seven of 16 downgradient monitoring wells, for the following Appendix III constituents (the number of wells with SSIs is indicated in parentheses): chloride (6), fluoride (1) and TDS (1). The following statements summarize how the lines of evidence discussed above apply to each of the constituents with identified SSIs:

- 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 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 but it does not.

- Sulfate is another typical indicator for CCR leachate impacts, which also 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 were determined in any of the waste boundary well samples.

- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations about two orders-of-magnitude above groundwater concentrations. Spatial trends

can be observed in **Exhibits 3-4** and **3-5**, and indicate that chloride concentrations tend to increase in groundwater moving downgradient from recharge areas. However, because the SSIs indicated for chloride are not associated with SSIs for boron and sulfate, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.

- The same conclusion can be drawn in regard to TDS and fluoride, for which occasional SSIs are not consistently associated with boron, sulfate, or each other. The SSIs indicated for these constituents appear to be related to the natural variation in groundwater quality, along with a spatial trend of increasing TDS with distance from recharge area.

- Monitoring well MW-17I is associated with an SSI for fluoride. This well, along with MW-17S and the well cluster MW-15S/I are located cross-gradient of potential source materials. Groundwater monitored by these wells is not hydraulically influenced by the CCR Landfill.

3.5 Conclusion

This ASD has demonstrated, through multiple lines of evidence, that the SSIs identified in the statistical analysis of the initial detection monitoring event data are not the result of a release of leachate from the CCR Landfill. Therefore, the unit will continue in detection monitoring.

3.6 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(h)(8)(3)(ii) have been met.

Kathleen D. Regan — 28 June 2019

Kathleen D. Regan, PE
Indiana Registered Engineer PE1400182

Date

4.0 References

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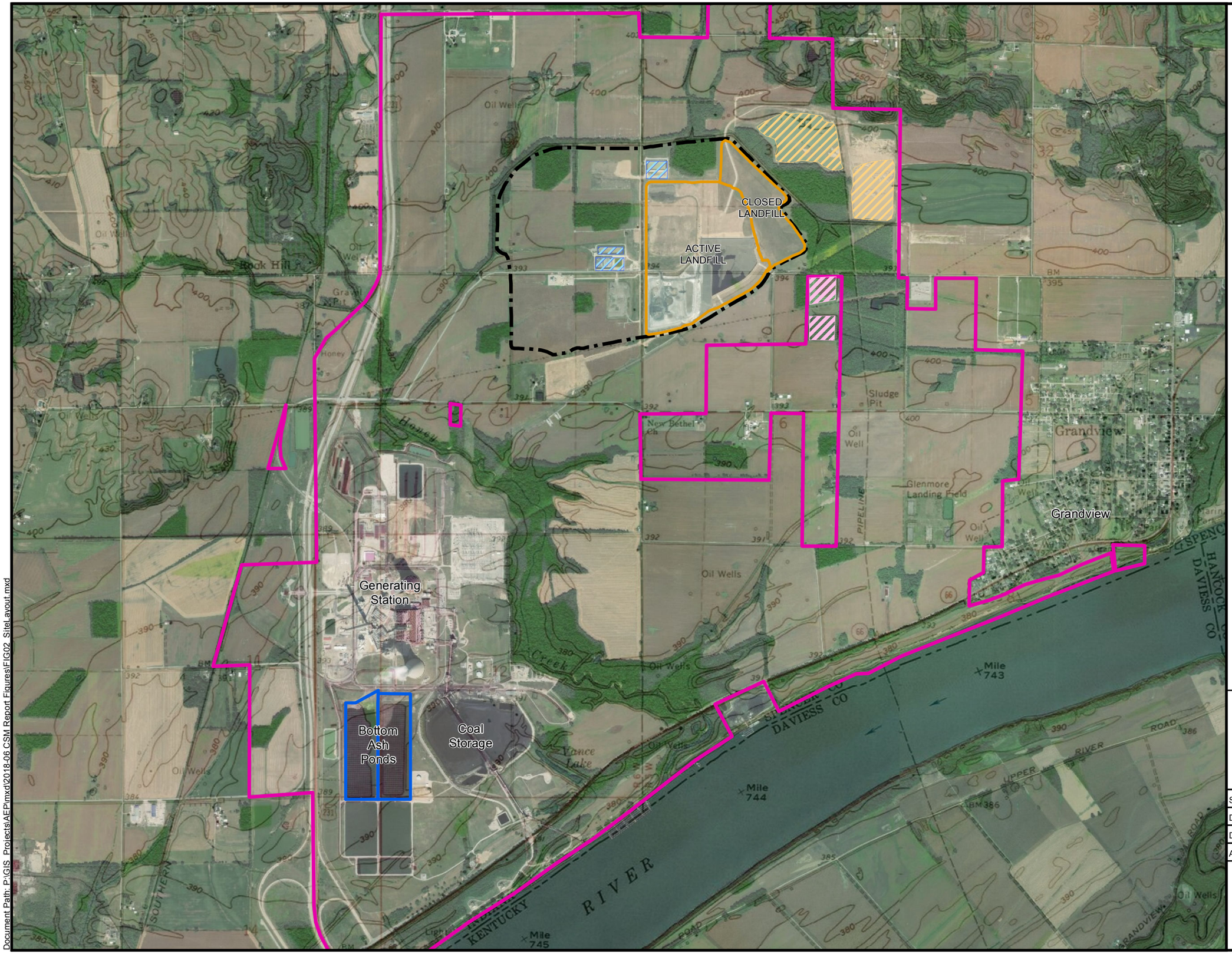
Figures



Legend

- Stormwater Ponds
- Landfill Leachate Ponds
- Grandview Wastewater Ponds
- Property Boundary
- Bottom Ash Ponds (BAP)
- Landfill Area 1A (Active and Closed)
- 1984 Landfill Permit Boundary (Area 1)

Data Sources

Date of Photography: 2016
Source of Photography: U.S. Department of Agriculture, National Agriculture Imagery Program (NAIP)

USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps

0 900 1,800
SCALE IN FEET

SITE LAYOUT

AEP - ROCKPORT, IN

PROJECT NUMBER: 7362192684

SCALE	1" = 1,800'
DATE	9/4/2018
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 1

wood.
2456 Fortune Drive, Suite 100
Lexington, Kentucky 40509
Phone: (859) 255-3308

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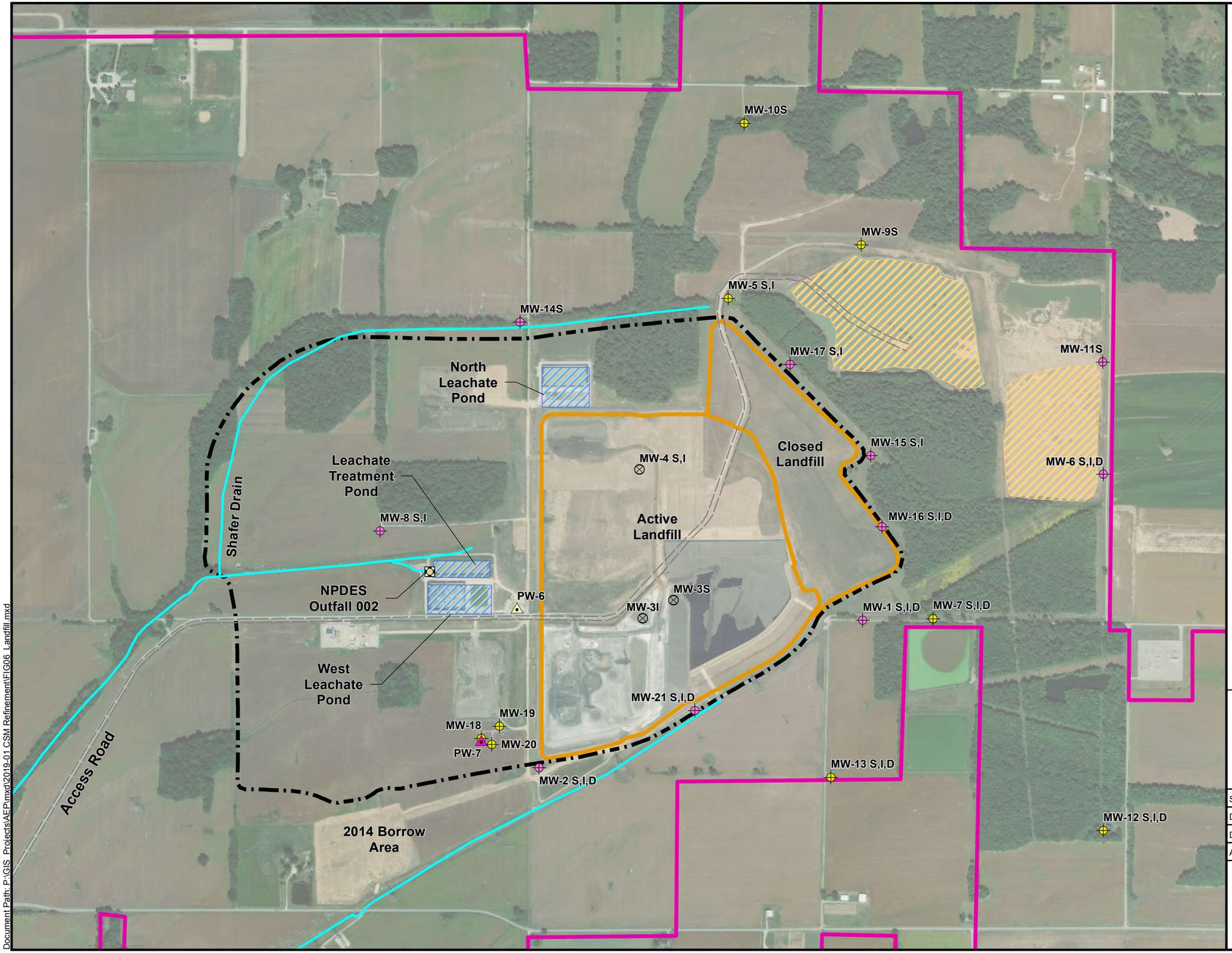

Legend

- 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

Source: USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps, 1964, photorevised 1982

0 400 800

SCALE IN FEET

LANDFILL LAYOUT

AEP - ROCKPORT, IN

PROJECT NUMBER: 7362192684

SCALE	1" = 800'
DATE	3/6/2019
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 2

wood.

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Lexington, Kentucky 40509
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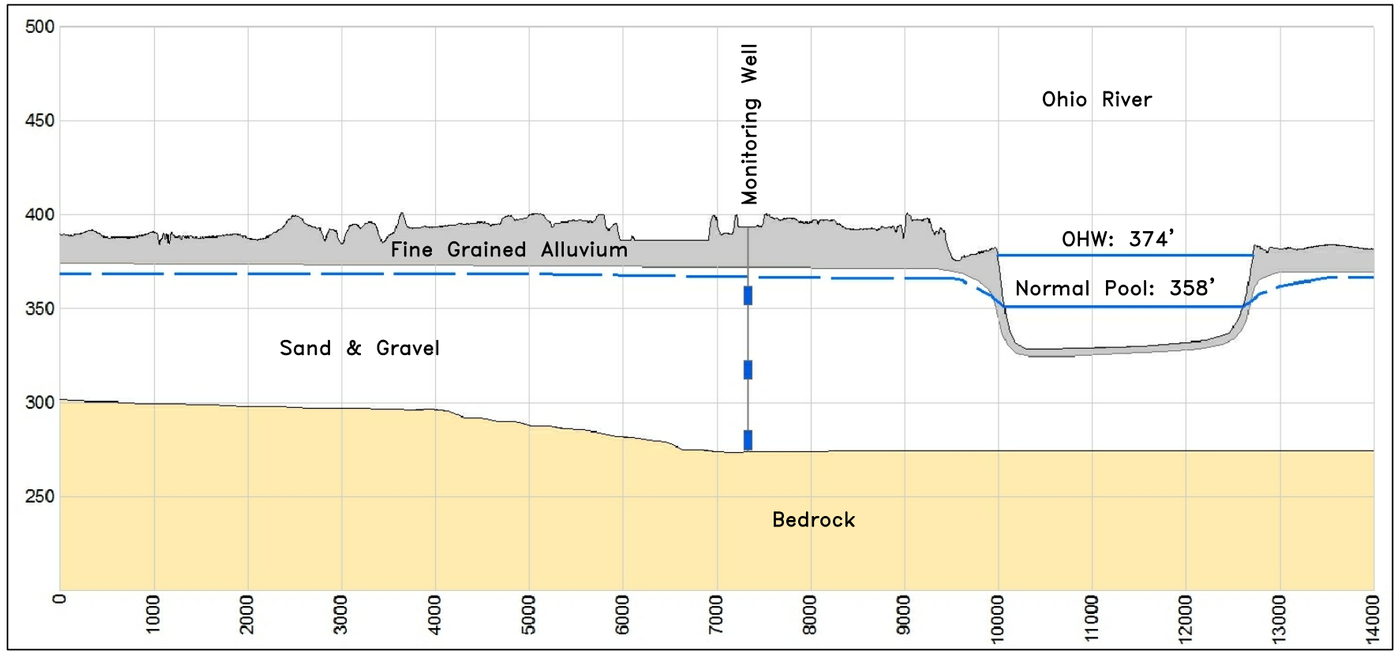
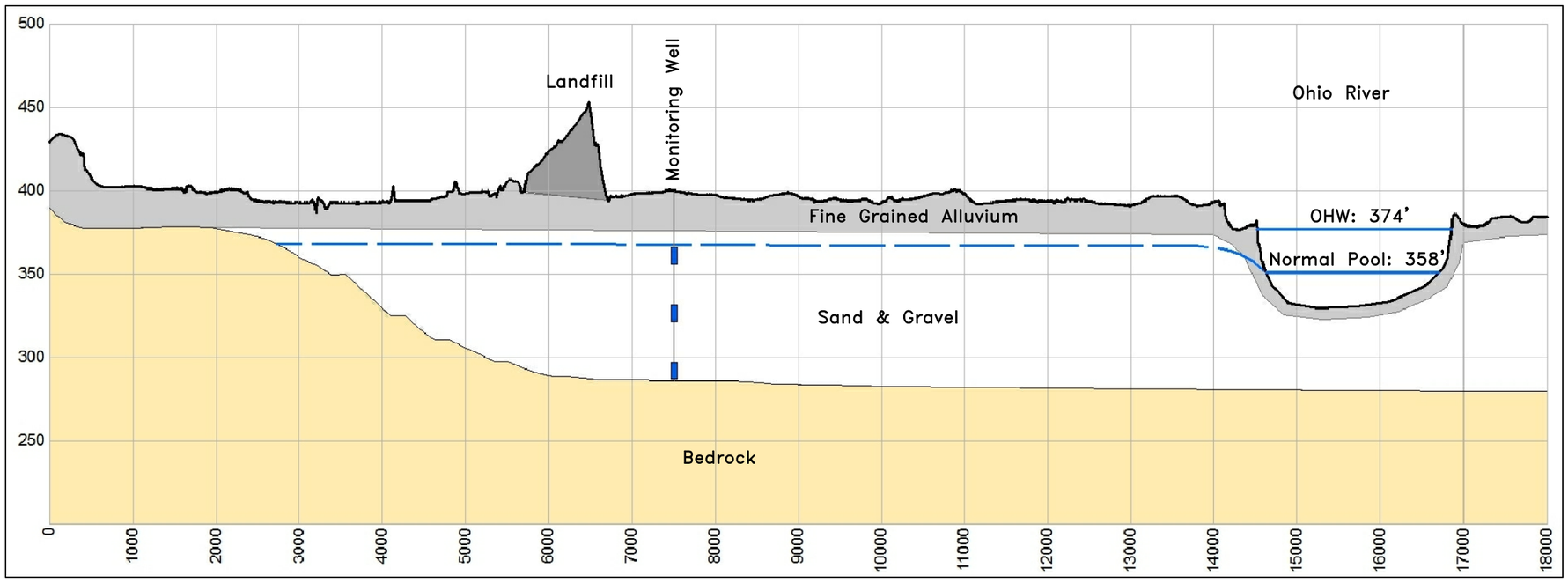




SCALE: As Shown
VERTICAL EXAGGERATION: 4X

N

wood.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
Phone: (859) 255-3308

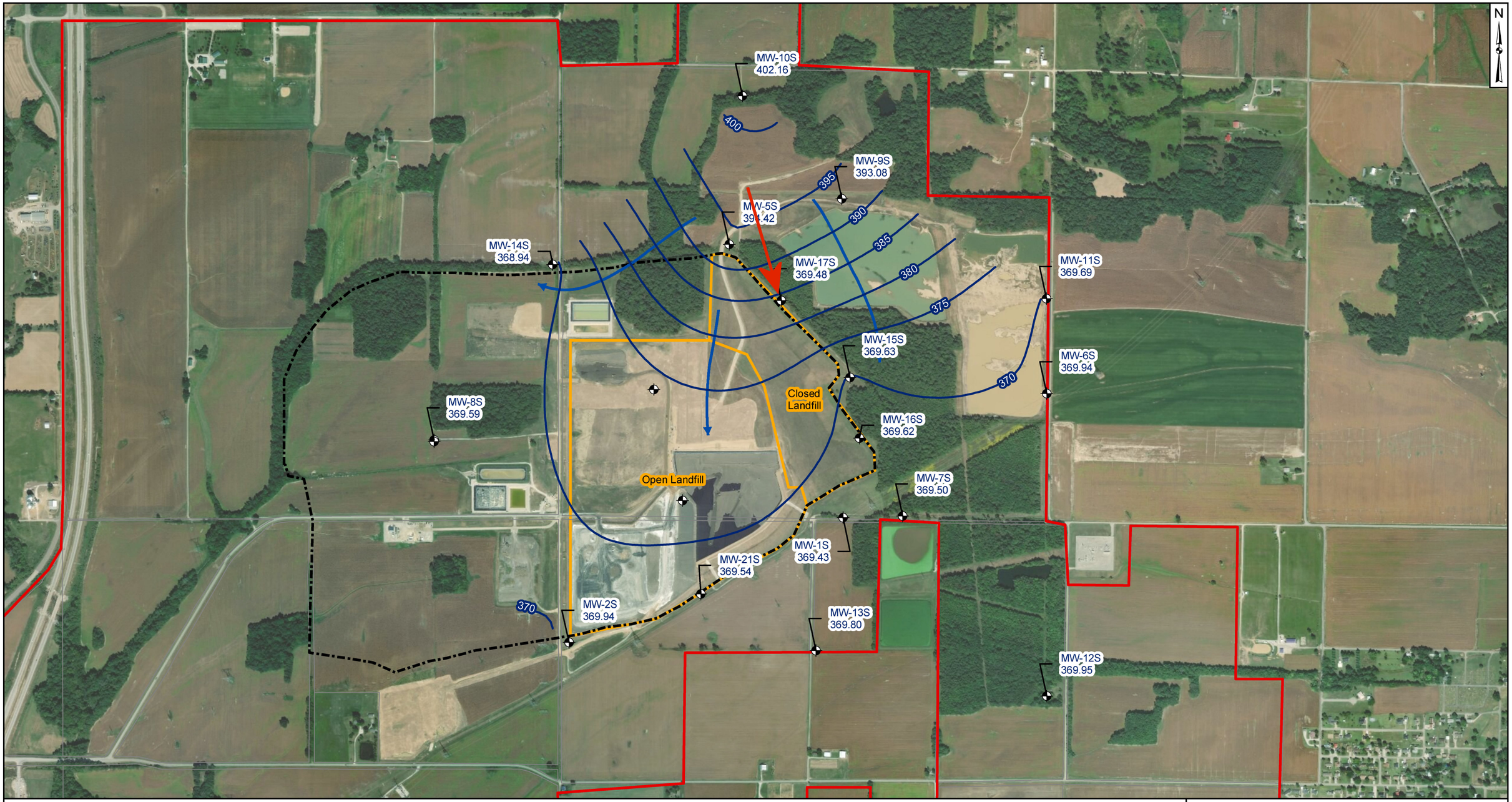
BOTTOM ASH PONDS
AEP - ROCKPORT, INDIANA

GENERALIZED CROSS-SECTIONS

PROJECT NUMBER: 7362192684

SCALE	As Shown
DATE	9/28/2017
DRAWN BY	TMR
APPROVED BY	ALD

FIG 3



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction
- Property Boundary
- Parcel Boundaries
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Notes

- Monitoring well coordinates and water level data (collected on June 4, 2018) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (AMEC, 2016) provided by AEP.
- Property and parcel boundaries taken from Spencer County Assessor.
- The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
- Groundwater elevation units are feet above mean sea level.

1,000 500 0 1,000 Feet

Aprroximate Groundwater Flow Direction

Potentiometric Surface Contours - Uppermost Aquifer June 2018

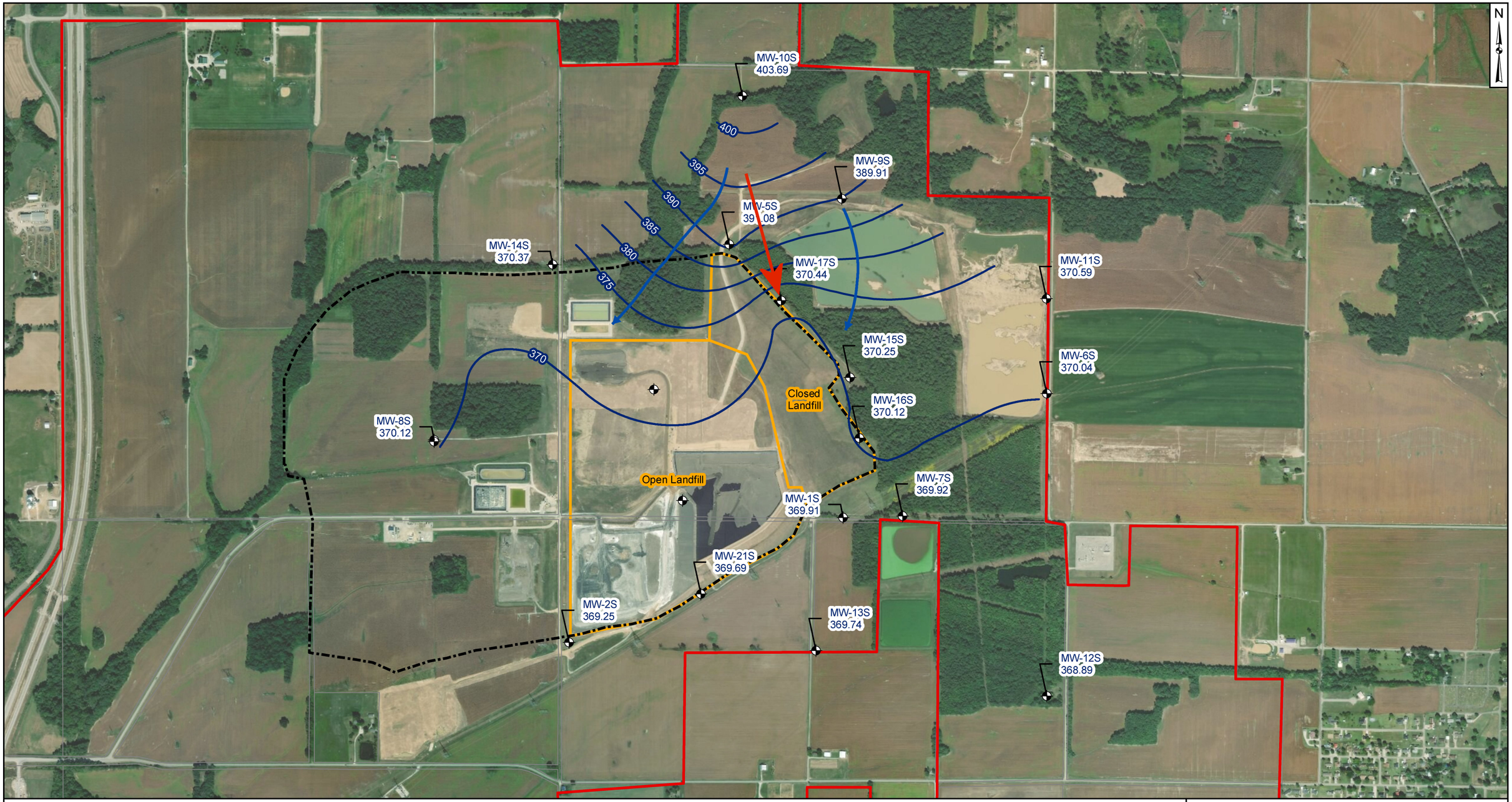
AEP-Rockport Power Plant - CCR Landfill
Rockport, Indiana

Geosyntec consultants

Columbus, Ohio | 2018/11/19

Figure 4

P:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Rockport\2018\Rockport_Landfill_GW_Elev_June2018.mxd. ARevezzo. 11/19/2018. CHA8423/08/08.



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction
- Property Boundary
- Parcel Boundaries
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Notes

- Monitoring well coordinates and water level data (collected on August 13, 2018) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (AMEC, 2016) provided by AEP.
- Property and parcel boundaries taken from Spencer County Assessor.
- The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
- Groundwater elevation units are feet above mean sea level.

1,000 500 0 1,000 Feet

Aprroximate Groundwater Flow Direction

Potentiometric Surface Contours - Uppermost Aquifer August 2018

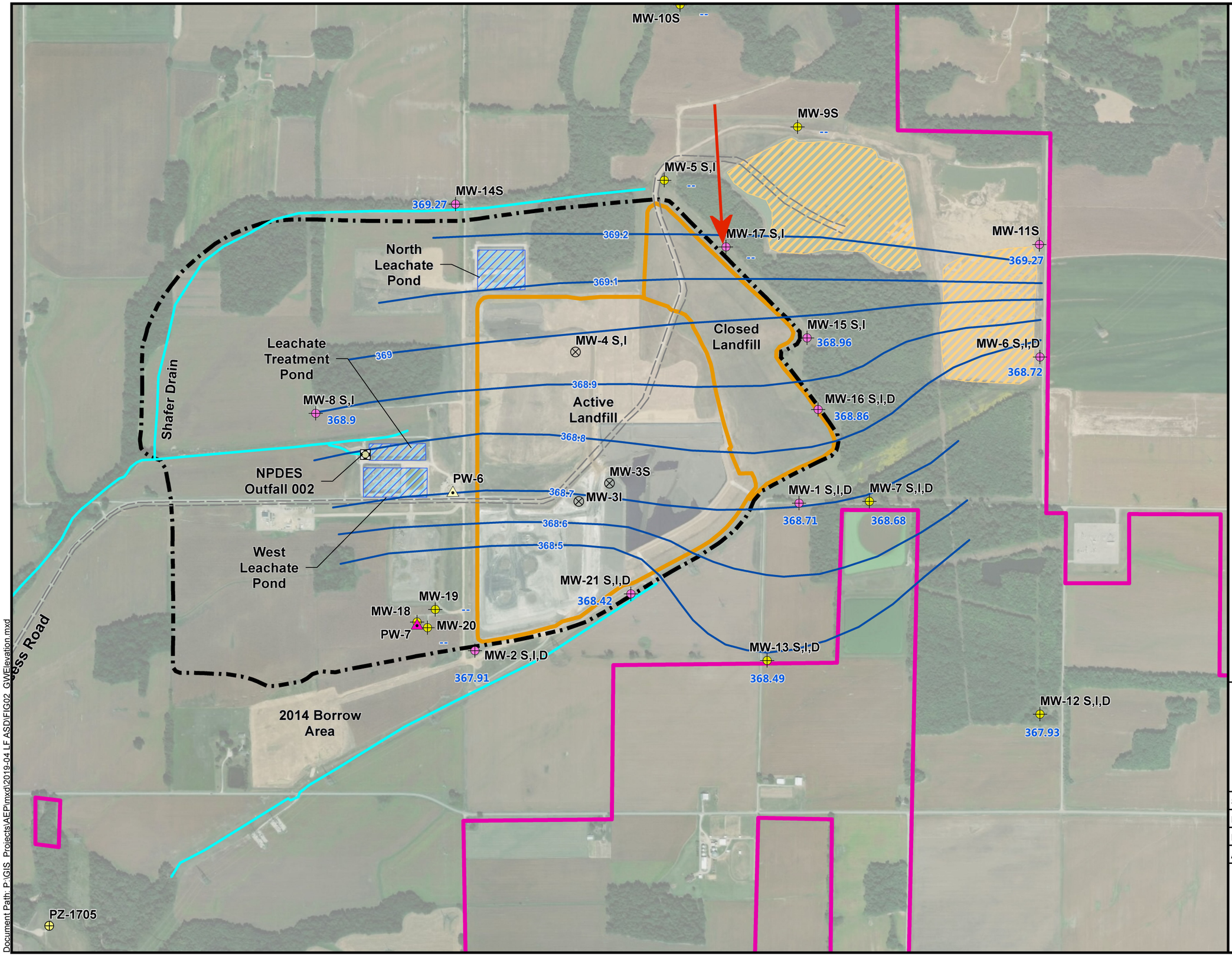
AEP-Rockport Power Plant - CCR Landfill
Rockport, Indiana

Geosyntec consultants

Columbus, Ohio | 2018/11/26

Figure **5**

P:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Rockport\2018\Rockport_Landfill_GW_Elev_Aug2018.mxd. ARevezzo. 11/26/2018. CHA8423/08/08.



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Legend

- Piezometer
- Landfill - Monitoring Well
- Landfill - CCR Monitoring Well
- Landfill - Augmentation Water Supply Well
- Landfill - Dust Control Water Supply Well
- Abandoned Monitoring Well
- NPDES Outfall 002

Date

- 2018-11-12
- Access Road
- Drains / Ditches
- Stormwater Ponds
- Landfill Leachate Ponds
- Property Boundary
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Aprroximate Groundwater Flow Direction

Data Sources

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps, 1964, photorevised 1982

0 400 800
SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOURS 12 NOVEMBER 2018

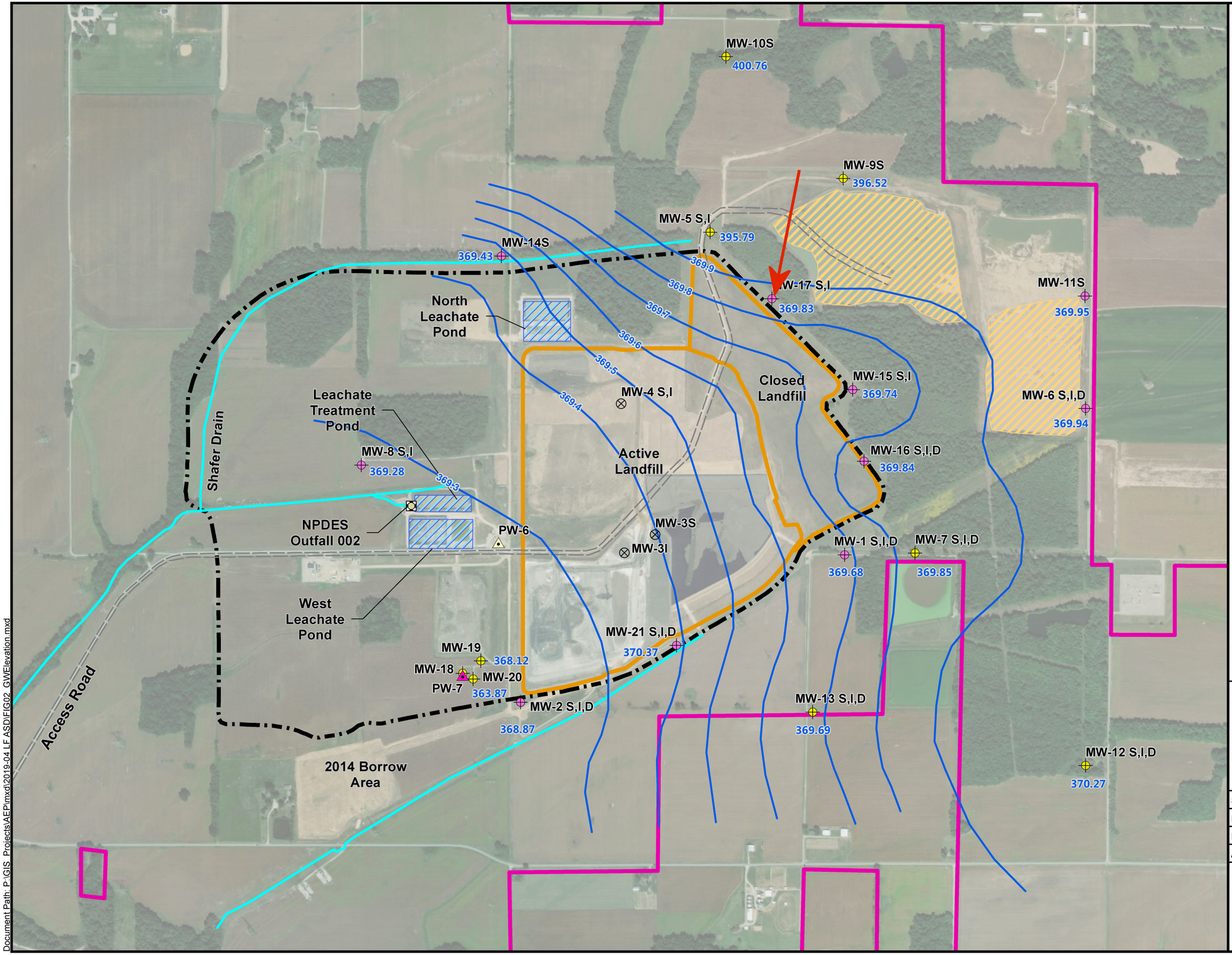
AEP - ROCKPORT, IN

PROJECT NUMBER: 7362182624

SCALE	1" = 800'
DATE	4/26/2019
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 6

wood.
2456 Fortune Drive, Suite 100
Lexington, Kentucky 40509
Phone: (859) 255-3308



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
- GW_Elev_LF
- Access Road
- Drains / Ditches
- Stormwater Ponds
- Landfill Leachate Ponds
- Property Boundary
- 1984 Landfill Permit Boundary (Area
- Landfill Area 1A (Active and Closed)

Aprroximate Groundwater Flow Direction

Data Sources

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps, 1964, photorevised 1982

0 400 800
SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOURS 11 FEBRUARY 2019

AEP - ROCKPORT, IN

PROJECT NUMBER: 7362182624

SCALE	1" = 800'
DATE	4/9/2019
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 7

wood.
2456 Fortune Drive, Suite 100
Lexington, Kentucky 40509
Phone: (859) 255-3308

Document Path: P:\GIS_Projects\AEP\mxd\2019-04 LF ASD\FIG02_GWElevation.mxd

Appendices

Appendix A
Analytical Data Tables

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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.	--	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	--	--	--	--	--	--	--
Molybdnum	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	0.677	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
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-1I

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
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
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
Specific Conductance	µmhos/cm	--	--	461	479	570	544	370	500	443	402	424	480	533	425	443	802
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
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
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
ORP	mV	--	--	-21	205	-2.1	4.4	10	36	-26.2	-118.8	-23	-102.2	253	62.9	155	134.2
Laboratory Parameters																	
Antimony	µg/L	6	--	0.04	0.04	0.01	0.02	0.02	0.01	0.04	0.02	--	--	--	<0.02	--	--
Arsenic	µg/L	10	--	0.86	0.78	0.92	0.8	0.82	0.69	0.89	0.86	--	--	--	0.82	--	--
Barium	µg/L	2000	--	85.5	86.1	84.9	93.4	90.5	76.7	85	94.3	--	--	--	85.6	--	--
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	0.1	0.02	0.02	0.02	0.05	0.01	0.007	--		--	0.02	--	--
Chromium	µg/L	100	--	0.2	1	0.2	0.051	0.39	0.686	0.155	0.112	--	--	--	<0.04	--	--
Cobalt	µg/L	6	--	0.341	0.364	0.401	0.381	0.424	0.054	0.558	0.569	--	--	--	0.48	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.12	0.2	0.48	--	0.22	--	--
Lead	µg/L	15	--	0.851	1.25	0.156	0.059	0.099	0.427	0.068	0.137	--	--	--	0.07	--	--
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	2.47	2.85	2.89	3.27	3.33	1.82	2.87	2.85	--	--	--	2.96	--	--
Selenium	µg/L	50	--	<0.03	0.04	<0.03	<0.03	<0.03	0.04	<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	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	1	4.2	--	1	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.5	18.9	20.7	17.8	--	18.2	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	1	2	2.96	--	3	--	--
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	--	--
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	--	--
Lithium	mg/L	0.04	--	0.005	0.022	0.007	0.005	0.005	0.006	0.008	0.0005	--	--	--	0.03	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	20.8	21.2	20.6	21.5	21	--	20.6	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.599	--	0.316	--	0.515	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.34	1.08	0.98	0.92	1.31	--	0.97	--	--
Sodium	mg/L	--	--	--	--	--	--	--	19.8	19.5	19.1	19.2	18.1	--	18.5	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0934	0.0926	0.086	0.0911	0.093	--	0.0882	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	222	225	226	222	230	--	227	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.061	0.087	0.081	0.072	0.081	--	0.08	--	--
Chloride	mg/L	--	(29.6) 27.4	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
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	--	--
TDS	mg/L	--	(412.7) 349	323	315	331	334	316	300	323	330	327	321	--	308	--	--
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	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--	<0.07	--	--
Radium-228	pCi/L	--	--	0.0603	0.105	1.42	0.662	0.108	-0.0752	0.3	2.21	--	--	--	0.415	--	--
Radium-226	pCi/L	--	--	0.33	1.57	0.276	0.65	0.513	0.15	0.33	0.323	--	--	--	0.288	--	--
Radium-226/228	pCi/L	5	--	0.3903	1.675	1.696	1.312	0.621	0.0748	0.63	2.533	--	--	--	0.703	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.4	--	0.12	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	1	--	0.9	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.51	--	1	--	<1	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.03	<0.0004	0.035	0.048	0.011	--	0.053	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.583	0.1	0.455	0.445	0.303	--	0.508	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	496	471	464	842	400	558	394	525	448	539	508	568	457	317
Turbidity	NTU	--	--	8.8	2	6.27	4	5	1.93	2.15	2.47	2	3.89	1.71	0	1.03	2
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
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
ORP	mV	--	--	63	220	92.8	252	182	49.6	132.7	152.8	-14	-5.3	-112	200	53	188
Laboratory Parameters																	
Antimony	µg/L	6	--	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	--	--	--	--	0.03	--
Arsenic	µg/L	10	--	1.29	0.73	1.07	0.65	0.77	0.58	0.75	0.59	--	--	--	--	0.62	--
Barium	µg/L	2000	--	255	147	160	147	162	139	142	139	--	--	--	--	101	--
Beryllium	µg/L	4	--	0.01	<0.005	0.007	<0.005	<0.005	<0.005	0.006	<0.004	--	--	--	--	<0.02	--
Cadmium	µg/L	5	--	0.13	0.07	0.04	0.04	0.15	0.04	0.04	0.05	--		--	--	0.02	--
Chromium	µg/L	100	--	0.3	1.5	0.3	0.072	0.439	0.687	0.174	0.131	--	--	--	--	0.07	--
Cobalt	µg/L	6	--	3.64	0.373	0.836	0.329	0.577	0.173	0.44	0.212	--	--	--	--	0.04	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.93	1.02	--	0.55	--	0.75	--
Lead	µg/L	15	--	1.13	1.37	0.5	0.222	0.807	1.92	0.419	0.355	--	--	--	--	0.07	--
Mercury	µg/L	2	--	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	3.44	3.59	3.6	3.24	2.43	3.4	3.05	2.94	--	--	--	--	2	--
Selenium	µg/L	50	--	0.07	0.03	0.07	0.03	0.03	0.03	0.06	<0.03	--	--	--	--	0.04	--
Thallium	µg/L	2	--	0.04	0.02	0.056	0.02	0.05	0.03	0.04	0.03	--	--	--	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.5	4.5	--	2	--	1	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.9	19.4	21.3	--	17.9	--	19	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	8.08	14.6	--	16.1	--	<1	--
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
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	--
Lithium	mg/L	0.04	--	<0.0002	0.017	0.0005	0.004	0.007	0.007	0.009	0.002	--	--	--	--	0.01	--
Magnesium	mg/L	--	--	--	--	--	--	--	21.9	22.2	20.7	20.9	--	20.4	--	22.1	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.511	--	--	0.216	--	0.138	--
Potassium	mg/L	--	--	--	--	--	--	--	1.13	1.13	0.89	0.89	--	1.34	--	1.71	--
Sodium	mg/L	--	--	--	--	--	--	--	19.4	19.3	18.8	18	--	18.2	--	20.9	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0985	0.101	0.0885	0.092	--	0.359	--	0.272	--
Alkalinity	mg/L	--	--	--	--	--	--	--	206	202	206	220	--	218	--	222	--
Bromide	mg/L	--	--	--	--	--	--	--	0.09	0.115	0.109	0.03	--	0.113	--	0.1	--
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
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	--
TDS	mg/L	--	(412.7) 369	331	329	288	339	323	330	342	338	339	--	345	--	340	--
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--
Radium-228	pCi/L	--	--	0.558	0.06	0.525	0.566	0.315	0.0844	0.511	0.444	--	--	--	--	0.295	--
Radium-226	pCi/L	--	--	0.526	0.135	0.932	6.73	0.334	0.154	0.213	0.502	--	--	--	--	0.0679	--
Radium-226/228	pCi/L	5	--	1.084	0.195	1.457	7.296	0.649	0.2384	0.724	0.946	--	--	--	--	0.3629	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.58	--	--	0.98	--	0.78	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	4.2	--	--	11.8	--	2	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	2	--	5.05	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.052	0.012	--	<0.002	--	0.02	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.553	0.62	0.486	0.616	--	0.0605	--	0.144	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	423	465	440	459	341	522	354	409	509	470	425	451	491
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
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
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
ORP	mV	--	--	34	64	90.4	-19	165	13.1	165.7	-5.9	26.6	59.1	23	71	-17.9
Laboratory Parameters																
Antimony	µg/L	6	--	<0.02	0.02	0.04	0.02	0.02	0.02	0.04	0.12	--	--	0.04	--	--
Arsenic	µg/L	10	--	0.97	1.09	0.94	0.94	0.92	0.95	0.95	0.96	--	--	0.82	--	--
Barium	µg/L	2000	--	16	14	12.4	12.4	11	12.3	12.3	13.6	--	--	16.5	--	--
Beryllium	µg/L	4	--	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.02	--	--
Cadmium	µg/L	5	--	0.01	0.01	0.02	0.02	0.09	0.009	0.01	0.03	--		0.11		
Chromium	µg/L	100	--	0.4	0.6	0.3	0.337	0.329	0.67	0.37	0.41	--	--	0.1	--	--
Cobalt	µg/L	6	--	0.177	0.09	0.017	0.019	0.014	0.051	0.064	0.121	--	--	<0.02	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.33	0.2	1.58	0.28	--	--
Lead	µg/L	15	--	0.158	0.105	0.101	0.022	0.063	0.042	0.047	0.243	--	--	0.04	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--
Molybdnum	µg/L	100	--	2.03	2.39	2.07	1.91	2.14	1.92	1.75	1.81	--	--	2	--	--
Selenium	µg/L	50	--	0.3	0.3	0.2	0.3	0.4	0.3	0.2	0.3	--	--	0.2	--	--
Thallium	µg/L	2	--	<0.02	<0.01	<0.01	<0.01	0.074	<0.01	<0.01	0.03	--	--	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	3.3	5.3	89.4	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	28.6	28.8	31.9	26.7	26.8	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	36.6	14.7	15.3	7.27	--	--
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	--	--
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	--	--
Lithium	mg/L	0.04	--	0.0004	0.018	0.005	0.008	0.009	0.0007	0.002	0.005	--	--	<0.009	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	21.2	21.9	19.5	22.8	21.3	20.9	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0124	--	0.0063	0.0025	--	--
Potassium	mg/L	--	--	--	--	--	--	--	0.73	0.81	0.65	0.64	0.68	0.68	--	--
Sodium	mg/L	--	--	--	--	--	--	--	13.4	14	11.8	16.3	22.1	23.7	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0837	0.0855	0.0756	0.0888	0.0906	0.086	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	174	191	188	207	215	207	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.071	0.116	0.06	0.063	<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
Fluoride	mg/L	4	0.299	0.26	0.29	0.26	0.26	0.25	0.26	0.26	0.23	0.25	0.29	0.28	--	--
TDS	mg/L	--	(412.7) 343	298	265	301	316	284	285	321	308	323	329	272	--	--
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	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	--	--
Radium-228	pCi/L	--	--	-0.035	0.54	0	0.228	0.343	0.0555	-0.0726	0.631	--	--	0.146	--	--
Radium-226	pCi/L	--	--		0.12	0.172	0.143	0.311	0.465	0.434	0.0617	--	--	0.0173	--	--
Radium-226/228	pCi/L	5	--	-0.035	0.66	0.172	0.371	0.654	0.5205	0.3614	0.6927	--	--	0.1633	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	0.27	1.84	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	0.6	5	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	2	1	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.013	<0.002	0.003	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0001	<0.0001	<0.0001	0.0021	0.0003	0.0005	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-2I

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
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
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
Specific Conductance	µmhos/cm	--	--	581	542	513	495	370	557	383	431	553	568	802	614	434	435
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
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
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
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
Laboratory Parameters																	
Antimony	µg/L	6	--	0.06	0.06	0.07	0.13	0.1	0.1	0.15	0.11	--	--	--	--	0.02	--
Arsenic	µg/L	10	--	0.64	0.68	0.55	0.61	0.65	0.74	0.9	0.76	--	--	--	--	0.49	--
Barium	µg/L	2000	--	78.5	84	67.1	60.1	59.4	58.4	59.3	62.9	--	--	--	--	95	--
Beryllium	µg/L	4	--	<0.005	0.006	<0.005	<0.005	<0.005	0.01	0.022	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	--
Chromium	µg/L	100	--	0.2	0.6	0.1	0.143	0.154	1.01	0.829	0.567	--	--	--	--	0.327	--
Cobalt	µg/L	6	--	0.606	0.76	0.415	0.26	0.28	0.581	1.28	0.995	--	--	--	--	0.492	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	2.21	1.82	--	0.2	--	1.52	--
Lead	µg/L	15	--	0.208	0.454	0.178	0.231	0.383	0.588	1.39	1.19	--	--	--	--	0.467	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	4.91	5	4.21	3.14	2.07	2.06	2.17	2.07	--	--	--	--	2	--
Selenium	µg/L	50	--	0.7	0.7	0.6	0.4	0.2	0.2	0.4	0.2	--	--	--	--	0.2	--
Thallium	µg/L	2	--	0.051	0.04	0.04	0.02	0.03	0.03	0.04	0.064	--	--	--	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.4	3.4	--	20.8	--	35.2	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	16.3	16.8	18.9	--	16.3	--	16.9	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	315	244	--	9.39	--	91.9	--
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
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	--
Lithium	mg/L	0.04	--	0.005	0.021	0.002	0.006	0.007	0.005	0.007	<0.0002	--	--	--	--	<0.009	--
Magnesium	mg/L	--	--	--	--	--	--	--	22.8	23.6	22.8	23.7	--	23.7	--	21.2	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.463	--	--	0.564	--	0.576	--
Potassium	mg/L	--	--	--	--	--	--	--	1.09	1.2	1.01	1.05	--	1.14	--	0.89	--
Sodium	mg/L	--	--	--	--	--	--	--	14.7	15.3	15.8	16.8	--	16.9	--	15.3	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0919	0.0977	0.0885	0.0946	--	0.0959	--	0.0864	--
Alkalinity	mg/L	--	--	--	--	--	--	--	223	218	236	252	--	254	--	247	--
Bromide	mg/L	--	--	--	--	--	--	--	0.05	0.071	0.072	0.075	--	0.077	--	0.06	--
Chloride	mg/L	--	(29.6) 32	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
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	--
TDS	mg/L	--	(412.7) 375	332	363	330	326	314	312	343	346	343	--	356	--	308	--
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.1	--
Radium-228	pCi/L	--	--	-0.0463	0.62	0.241	0.137	0.648	0.146	0.163	0.195	--	--	--	--	0.291	--
Radium-226	pCi/L	--	--	0.398	0.342	0.267	0.288	0.197	0.289	0.328	0.341	--	--	--	--	0.258	--
Radium-226/228	pCi/L	5	--	0.3517	0.962	0.508	0.425	0.845	0.435	0.491	0.536	--	--	--	--	0.549	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	1.96	--	0.2	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	--	21.7	--	2	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	154	--	<1	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.053	0.016	0.03	0.054	--	0.238	--	0.037	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.258	0.331	0.333	0.323	--	0.563	--	0.565	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	586	524	551	516	386	568	388	516	428	460	830	464	391
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
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
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
ORP	mV	--	--	-2.7	-168.3	45	-0.7	206.9	-87.3	143.6	-24.8	-41	32.3	-24	-25.4	-164
Laboratory Parameters																
Antimony	µg/L	6	--	0.03	0.06	0.02	0.02	0.03	0.03	0.04	0.02	--	--	--	0.03	--
Arsenic	µg/L	10	--	0.78	0.82	0.81	0.61	0.62	0.59	0.65	0.62	--	--	--	0.58	--
Barium	µg/L	2000	--	185	195	180	172	157	160	159	169	--	--	--	190	--
Beryllium	µg/L	4	--	<0.005	0.006	0.007	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	<0.02	--
Cadmium	µg/L	5	--	0.12	0.12	0.07	0.1	0.26	0.09	0.08	0.08	--		--	0.17	--
Chromium	µg/L	100	--	0.2	0.4	0.3	0.05	0.277	0.562	0.188	0.162	--	--	--	0.2	--
Cobalt	µg/L	6	--	0.473	0.439	0.425	0.212	0.327	0.252	0.335	0.353	--	--	--	0.5	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.16	1.96	2.09	--	0.22	--
Lead	µg/L	15	--	0.648	0.359	0.247	0.021	0.378	0.045	0.144	0.075	--	--	--	0.14	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--
Molybdnum	µg/L	100	--	2.11	2.16	1.97	2.09	1.8	2.13	1.9	1.89	--	--	--	2	--
Selenium	µg/L	50	--	<0.03	<0.03	0.05	0.09	0.08	0.03	0.06	0.04	--	--	--	<0.03	--
Thallium	µg/L	2	--	0.02	0.02	0.03	0.01	0.02	0.02	0.02	0.02	--	--	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	6	3.5	--	0.9	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.9	20.5	17.4	--	17.8	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	17.5	20.7	70.5	--	15.4	--
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	--
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	--
Lithium	mg/L	0.04	--	0.002	0.018	0.002	0.007	0.007	0.008	0.011	0.0006	--	--	--	<0.009	--
Magnesium	mg/L	--	--	--	--	--	--	--	24.3	23.9	21.9	22.6	26.4	--	24.5	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.657	--	0.943	--	0.717	--
Potassium	mg/L	--	--	--	--	--	--	--	1.17	1.21	1.32	1.1	1.28	--	0.99	--
Sodium	mg/L	--	--	--	--	--	--	--	17.3	16.9	16	15.8	16.4	--	14.8	--
Strontium	mg/L	--	--	--	--	--	--	--	0.104	0.104	0.0894	0.0952	0.111	--	0.102	--
Alkalinity	mg/L	--	--	--	--	--	--	--	249	248	261	248	263	--	247	--
Bromide	mg/L	--	--	--	--	--	--	--	0.06	0.079	0.156	0.083	0.073	--	<0.04	--
Chloride	mg/L	--	(29.6) 25	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
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	--
TDS	mg/L	--	(412.7) 358	341	339	338	327	318	318	343	340	332	361	--	348	--
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--	<0.1	--
Radium-228	pCi/L	--	--	0.0495	0.195	0.451	0.473	0.506	1.11	0.0264	0.257	--	--	--	0.0387	--
Radium-226	pCi/L	--	--	-0.0267	0.133	-0.00345	1.77	0.772	0.185	0.429	0.115	--	--	--	0.245	--
Radium-226/228	pCi/L	5	--	0.0228	0.328	0.44755	2.243	1.278	1.295	0.4554	0.372	--	--	--	0.2837	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.11	--	0.12	--	0.11	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.8	--	0.5	--	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.14	--	2.75	--	<1	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.055	0.017	0.005	--	0.007	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.565	0.602	0.662	0.619	0.621	--	0.702	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	401	430	741	360	300	441	292	347	330	483	321	430	221	464
Turbidity	NTU	--	--	1	0.5	1	2	1	1	1	1	0.47	0	8	0.51	0.4	0.53
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
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
ORP	mV	--	--	53	71	258	146	36	49	74	0.3	-9.3	155	133	115.3	126	196
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
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
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
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
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
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
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
Copper	µg/L	--	--	--	--	--	--	--	--	0.37	0.31	0.46	0.42	0.29	0.17	0.18	0.26
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
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--	-----
Molybdnum	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
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
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
Zinc	µg/L	--	--	--	--	--	--	--	--	1	0.5	2.5	1	0.7	<0.7	1	2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.4	14.6	16.9	15.4	15.2	16.8	15.3	15.2	15.9
Aluminum	µg/L	--	--	--	--	--	--	--	--	8.57	17.8	10.4	13.8	3	2	5.28	3
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
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
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
Magnesium	mg/L	--	--	--	--	--	--	23.3	23.5	20.9	19.8	19.3	24	18.8	19.3	17.5	20.8
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0007	--	0.0024	0.0021	<0.0002	0.0007	0.0002	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
Sodium	mg/L	--	--	--	--	--	--	38.9	34.9	26.3	23.2	15.6	25.6	26.1	22	20.2	23.3
Strontium	mg/L	--	--	--	--	--	--	0.0661	0.067	0.0574	0.0548	0.0555	0.065	0.051	0.0519	0.0524	0.0595
Alkalinity	mg/L	--	--	--	--	--	--	260	272	241	249	237	267	241	230	242	247
Bromide	mg/L	--	--	--	--	--	--	<0.02	0.072	<0.05	0.04	0.03	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
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
TDS	mg/L	--	294	290	266	279	287	296	305	274	261	225	277	261	225	196	240
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.4	<0.1	<0.1	<0.07	<0.07
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
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
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
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	1.85	--	0.4	2.17	1.86	0.14	0.53	0.17
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.2	--	0.9	3.1	3	0.7	<0.7	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	4.34	--	1	2.51	109	1	2	8.1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.023	<0.002	0.003	0.163	<0.003	0.005	0.01
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	<0.0001	0.0002	0.0007	0.0015	<0.0002	0.0121	0.0003	<0.0002	0.0007

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters							
Elevation	ft NGVD	--	--	369.5	368.76	368.68	368.47
pH	S.U.	--	7.4	7.4	7.33	7.31	7.3
Specific Conductance	µmhos/cm	--	--	417	611	455	629
Turbidity	NTU	--	--	106	104	42.6	44
Dissolved Oxygen	mg/L	--	--	0.4	0.32	0.7	0.23
Temperature	°C	--	--	15.4	15.01	13.9	14.43
ORP	mV	--	--	106	85.4	48.2	92
Laboratory Parameters							
Antimony	µg/L	6	--	0.14	0.15	0.06	0.09
Arsenic	µg/L	10	--	1.48	2.01	0.7	1.06
Barium	µg/L	2000	--	18.7	24.3	12.9	15.4
Beryllium	µg/L	4	--	0.101	0.127	0.05	0.07
Cadmium	µg/L	5	--	0.05	0.06	0.02	0.05
Chromium	µg/L	100	--	2.08	2.45	0.831	1.48
Cobalt	µg/L	6	--	6.48	9.82	3.47	4.98
Copper	µg/L	--	--	4.4	5.36	1.91	2.76
Lead	µg/L	15	--	4.69	6.69	2.38	3.56
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	<0.4	<0.4	<0.4	<0.4
Selenium	µg/L	50	--	0.6	0.8	0.3	0.4
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	7.9	9.5	14	5
Silica (Dissolved)	mg/L	--	--	20.8	18.7	18.6	19.3
Aluminum	µg/L	--	--	1520	1850	681	1170
Boron	mg/L	--	0.079	0.04	0.07	0.135	0.08
Calcium	mg/L	--	70.2	73.7	68.3	66.2	67.1
Lithium	mg/L	0.04	--	0.02	0.01	<0.009	<0.009
Magnesium	mg/L	--	--	25.4	25.7	24.3	24.6
Manganese	mg/L	--	--	0.334	0.49	0.182	0.248
Potassium	mg/L	--	--	1.33	1.39	1.81	1.3
Sodium	mg/L	--	--	17.9	19.1	18.9	18.7
Strontium	mg/L	--	--	0.083	0.0857	0.0883	0.0874
Alkalinity	mg/L	--	--	256	261	255	261
Bromide	mg/L	--	--	0.09	0.09	0.09	0.09
Chloride	mg/L	--	32.8	32.2	33.5	33.2	33.6
Fluoride	mg/L	4	0.52	0.54	0.53	0.54	0.55
TDS	mg/L	--	358	370	358	354	353
Sulfate	mg/L	--	32	32.2	33.1	33.1	33.7
Sulfide	mg/L	--	--	<0.1	<0.1	<00.07	<0.07
Radium-228	pCi/L	--	--	0.48	0.601	0.254	0.191
Radium-226	pCi/L	--	--	0.271	0.245	0.211	0.507
Radium-226/228	pCi/L	5	--	0.751	0.846	0.465	0.698
Copper (Dissolved)	µg/L	--	--	1.01	0.07	1.62	0.2
Zinc (Dissolved)	µg/L	--	--	2	<0.7	3	<0.7
Aluminum (Dissolved)	µg/L	--	--	311	3	2	3
Iron (Dissolved)	mg/L	--	--	0.618	0.004	0.005	0.007
Manganese (Dissolved)	mg/L	--	--	0.0797	0.0021	0.0012	0.0026

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-7I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/15/2018	12/12/2018
Field Parameters							Sentinel
Elevation	ft NGVD	--	--	369.01	368.51	368.5	368.27
pH	S.U.	--	7.4	7.5	7.3	7.03	7.27
Specific Conductance	µmhos/cm	--	--	419	613	460	645
Turbidity	NTU	--	--	19	14.4	7.05	19.9
Dissolved Oxygen	mg/L	--	--	0.3	0.36	0.95	0.21
Temperature	°C	--	--	15.5	15.17	13.78	14.46
ORP	mV	--	--	57	-19.2	68.4	44
Laboratory Parameters							
Antimony	µg/L	6	--	0.02	0.03	<0.02	<0.02
Arsenic	µg/L	10	--	0.28	0.43	0.24	0.26
Barium	µg/L	2000	--	175	230	162	147
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	0.05	0.06	0.03	0.03
Chromium	µg/L	100	--	0.2	0.315	0.09	0.07
Cobalt	µg/L	6	--	3.07	8.34	1.11	1.67
Copper	µg/L	--	--	0.55	1.45	0.59	0.76
Lead	µg/L	15	--	0.45	0.6	0.05	0.145
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	4.2	4.31	<0.4	3.45
Selenium	µg/L	50	--	0.05	0.09	0.05	0.05
Thallium	µg/L	2	--	<0.1	0.1	<0.1	<0.1
Zinc	µg/L	--	--	2	15.1	1	2
Silica (Dissolved)	mg/L	--	--	20.5	18.1	18.5	18.8
Aluminum	µg/L	--	--	74.1	304	69.9	39.5
Boron	mg/L	--	0.07	0.04	0.06	0.09	0.08
Calcium	mg/L	--	75.3	75.4	68.8	68.8	73.7
Lithium	mg/L	0.04	--	0.01	<0.009	<0.009	<0.009
Magnesium	mg/L	--	--	21.9	21.7	21.4	22.8
Manganese	mg/L	--	--	2.76	4	1.08	2.89
Potassium	mg/L	--	--	1.22	0.97	1.57	1.19
Sodium	mg/L	--	--	19.8	20.1	21.5	21.3
Strontium	mg/L	--	--	0.0928	0.0932	0.1	0.103
Alkalinity	mg/L	--	--	236	237	233	229
Bromide	mg/L	--	--	0.1	0.1	0.1	0.1
Chloride	mg/L	--	45	45.8	48.2	47.6	48.8
Fluoride	mg/L	4	0.33	0.34	0.34	0.35	0.35
TDS	mg/L	--	312	348	338	354	347
Sulfate	mg/L	--	38.4	38.9	38.9	39	39.1
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07
Radium-228	pCi/L	--	--	-0.0705	0.369	0.123	0.089
Radium-226	pCi/L	--	--	4.16	0.513	0.605	0.934
Radium-226/228	pCi/L	5	--	4.16	0.882	0.728	1.023
Copper (Dissolved)	µg/L	--	--	0.93	0.24	1.56	0.72
Zinc (Dissolved)	µg/L	--	--	2	0.9	3	2
Aluminum (Dissolved)	µg/L	--	--	1	10.6	2	137
Iron (Dissolved)	mg/L	--	--	<0.003	0.01	0.006	0.128
Manganese (Dissolved)	mg/L	--	--	0.172	0.51	0.243	3.9

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters							Sentinel
Elevation	ft NGVD	--	--	369.08	368.65	368.57	368.35
pH	S.U.	--	7.2	7.5	6.91	7.26	7.18
Specific Conductance	µmhos/cm	--	--	419	617	444	622
Turbidity	NTU	--	--	10.8	1.02	5.96	0
Dissolved Oxygen	mg/L	--	--	0.7	3.72	11.3	0.52
Temperature	°C	--	--	15.2	14.79	13.32	15.23
ORP	mV	--	--	57	26.4	26.4	-5
Laboratory Parameters							
Antimony	µg/L	6	--	0.04	0.03	0.04	0.06
Arsenic	µg/L	10	--	0.91	0.8	0.87	0.85
Barium	µg/L	2000	--	286	283	268	320
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	0.02	0.02	0.04	<0.01
Chromium	µg/L	100	--	0.2	0.334	0.1	0.1
Cobalt	µg/L	6	--	2.52	2.46	2.24	2.24
Copper	µg/L	--	--	0.34	0.44	0.57	1.59
Lead	µg/L	15	--	0.1	0.164	0.101	0.144
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	4.09	9.76	7.38	5.43
Selenium	µg/L	50	--	0.05	0.05	0.03	<0.03
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	1	2	4	3
Silica (Dissolved)	mg/L	--	--	216	19.2	19.9	19.8
Aluminum	µg/L	--	--	31.4	56.7	16.5	<1
Boron	mg/L	--	0.06	0.04	0.05	0.07	0.04
Calcium	mg/L	--	80.1	79.2	75	62.8	77.4
Lithium	mg/L	0.04	--	<0.009	0.01	0.02	<0.009
Magnesium	mg/L	--	--	25	25.8	21	25.7
Manganese	mg/L	--	--	1.89	1.66	1.34	1.51
Potassium	mg/L	--	--	1.22	1.07	1.39	1.25
Sodium	mg/L	--	--	14.2	15.4	12.9	15.3
Strontium	mg/L	--	--	0.137	0.141	0.125	0.146
Alkalinity	mg/L	--	--	273	293	296	300
Bromide	mg/L	--	--	0.09	0.08	0.08	0.08
Chloride	mg/L	--	17.3	17.5	17.2	16.9	17.2
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.27
TDS	mg/L	--	359	358	3.46	340	344
Sulfate	mg/L	--	36.9	36.3	36	35.4	35.5
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07
Radium-228	pCi/L	--	--	0.36	0.202	0.548	0.159
Radium-226	pCi/L	--	--	0.983	0.107	0.45	0.717
Radium-226/228	pCi/L	5	--	1.343	0.309	0.998	0.876
Copper (Dissolved)	µg/L	--	--	0.55	0.17	2.01	0.18
Zinc (Dissolved)	µg/L	--	--	2	2	4	1
Aluminum (Dissolved)	µg/L	--	--	6.36	6.44	2	3
Iron (Dissolved)	mg/L	--	--	0.103	0.081	0.08	0.093
Manganese (Dissolved)	mg/L	--	--	1.76	1.6	1.47	1.35

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
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
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
Specific Conductance	µmhos/cm	--	--	516	540	811	450	260	444	410	395	460	400	354
Turbidity	NTU	--	--	1.1	2	2	3	4	8	1	2.46	6	3.48	2.6
Dissolved Oxygen	mg/L	--	--	3.2	3.6	1	2	4	2	3.2	3.12	0.8	2.1	3.8
Temperature	°C	--	--	20.7	21.6	16.2	14	14.2	15.6	15.8	16.57	14.1	15.05	14.4
ORP	mV	--	--	29	18	275	131	50	50	65	29.9	-17	-33.7	158
Laboratory Parameters														
Antimony	µg/L	6	--	0.3	0.02	0.03	0.02	0.04	0.03	0.02	--	--	--	0.05
Arsenic	µg/L	10	--	1.78	1.33	1.26	1.56	1.53	2.09	1.19	--	--	--	1.61
Barium	µg/L	2000	--	13.1	12.2	10.9	13.8	14.5	16.9	10.9	--	--	--	10.4
Beryllium	µg/L	4	--	0.232	<0.005	<0.005	0.006	0.009	0.01	<0.004	--	--	--	<0.02
Cadmium	µg/L	5	--	0.31	0.02	0.05	0.01	0.26	0.09	0.13	--	--		0.03
Chromium	µg/L	100	--	0.6	0.4	0.156	1.04	0.881	0.423	0.277	--	--	--	0.578
Cobalt	µg/L	6	--	0.453	0.125	0.113	0.447	0.433	0.981	0.052	--	--	--	0.207
Copper	µg/L	--	--	--	--	--	--	--	--	0.18	0.12	--	0.25	1.7
Lead	µg/L	15	--	0.364	0.066	0.065	0.19	0.278	0.389	0.038	--	--	--	0.152
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.015	--	--	--	--
Molybdnum	µg/L	100	--	1.1	0.8	0.71	0.77	1.56	0.75	0.83	--	--	--	0.9
Selenium	µg/L	50	--	0.6	0.2	0.2	0.2	0.2	0.3	0.2	--	--	--	0.5
Thallium	µg/L	2	--	0.276	0.03	<0.01	0.01	0.17	<0.01	<0.01	--	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.6	--	1	3
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	21.5	21.2	24.7	--	21.7	21.4
Aluminum	µg/L	--	--	--	--	--	--	--	--	7.37	10.6	--	53	31
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
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
Lithium	mg/L	0.04	--	0.025	0.001	0.002	0.002	0.006	0.006	0.001	--	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	19.6	20	20	17.6	--	18.8	16
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0021	--	--	0.0323	0.0154
Potassium	mg/L	--	--	--	--	--	--	0.91	0.89	0.77	0.65	--	0.82	0.88
Sodium	mg/L	--	--	--	--	--	--	41.2	40.5	42.1	43.2	--	40.1	34.6
Strontium	mg/L	--	--	--	--	--	--	0.0562	0.0564	0.0543	0.0494	--	0.0555	0.0464
Alkalinity	mg/L	--	--	--	--	--	--	162	181	167	171	--	181	159
Bromide	mg/L	--	--	--	--	--	--	0.03	0.062	0.04	0.06	--	<0.02	<0.04
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
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
TDS	mg/L	--	345	321	332	322	300	320	319	319	317	--	324	288
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1
Radium-228	pCi/L	--	--	0.455	1.16	0.343	0.394	0.26	-0.175	1.5	--	--	--	0.346
Radium-226	pCi/L	--	--	0.122	0.131	0.147	0.282	0.0561	0.127	0.153	--	--	--	0.137
Radium-226/228	pCi/L	5	--	0.577	1.291	0.49	0.676	0.3161	-0.048	1.653	--	--	--	0.483
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.96	--	--	0.44	0.29
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.5	--	--	0.7	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2	--	--	1	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.004	<0.0004	<0.0004	0.014	--	0.002	0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	0.0002	0.0004	0.0002	0.0004	--	0.0012	0.0006

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-8I

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
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
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
Specific Conductance	µmhos/cm	--	--	580	455	968	420	80	507	485	471	390	619	453
Turbidity	NTU	--	--	9	3.29	1	5	10	2	1	6.26	1	3.18	9
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
Temperature	°C	--	--	21	15.39	17.1	14	14.4	15	16.2	15.51	14.4	17.42	13.8
ORP	mV	--	--	-60	-63.9	-1	29	25	52	-15	-67.4	111	-75.3	190
Laboratory Parameters														
Antimony	µg/L	6	--	0.27	0.07	0.1	0.08	0.08	0.08	0.07	--	--	--	0.17
Arsenic	µg/L	10	--	11.5	2.08	1.39	2.58	2.78	2.09	1.31	--	--	--	3.41
Barium	µg/L	2000	--	70.1	57	58.4	54.9	56.9	57.8	60.4	--	--	--	57.9
Beryllium	µg/L	4	--	0.119	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	<0.02
Cadmium	µg/L	5	--	0.28	0.02	0.04	0.02	0.04	0.05	0.02	--	--		0.15
Chromium	µg/L	100	--	0.5	0.1	0.055	0.817	0.511	0.23	0.077	--	--	--	0.07
Cobalt	µg/L	6	--	0.961	0.643	0.646	0.671	0.656	0.77	0.672	--	--	--	1.01
Copper	µg/L	--	--	--	--	--	--	--	--	0.11	0.13	--	0.42	1.45
Lead	µg/L	15	--	0.242	0.02	0.032	0.025	0.032	0.054	0.01	--	--	--	0.111
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--
Molybdnum	µg/L	100	--	3	2.34	2.47	2.31	2.73	2.29	2.58	--	--	--	2.7
Selenium	µg/L	50	--	7.5	2.7	3	2.3	2.9	4.5	4.7	--	--	--	2.5
Thallium	µg/L	2	--	0.166	0.03	0.03	0.04	0.05	0.03	0.03	--	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.9	--	3.2	9.2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.6	14.7	17.1	--	16.4	14.1
Aluminum	µg/L	--	--	--	--	--	--	--	--	2	1	--	0.8	8.7
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
Calcium	mg/L	--	72	67.9	67.4	77.5	79.5	74.7	71.9	72.2	74.7	--	76.7	67.7
Lithium	mg/L	0.04	--	0.007	0.008	0.009	0.005	0.01	0.001	<0.0002	--	--	--	0.02
Magnesium	mg/L	--	--	--	--	--	--	22.3	22.9	22.2	22.5	--	23.5	21.4
Manganese	mg/L	--	--	--	--	--	--	--	--	0.357	--	--	0.32	0.509
Potassium	mg/L	--	--	--	--	--	--	1.84	1.73	1.48	2.02	--	1.6	2.28
Sodium	mg/L	--	--	--	--	--	--	29.4	28.5	29.7	28.6	--	32.5	31.5
Strontium	mg/L	--	--	--	--	--	--	0.146	0.148	0.14	0.146	--	0.152	0.139
Alkalinity	mg/L	--	--	--	--	--	--	245	246	247	237	--	268	250
Bromide	mg/L	--	--	--	--	--	--	0.04	0.065	0.062	0.064	--	0.05	<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
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
TDS	mg/L	--	370	358	376	387	371	391	376	379	378	--	407	390
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07
Radium-228	pCi/L	--	--	0.4275	0.157	0.42	1.1	0.372	0.45	0.616	--	--	--	0.354
Radium-226	pCi/L	--	--	0.824	0.521	0.746	0.725	0.643	0.561	0.463	--	--	--	0.676
Radium-226/228	pCi/L	5	--	1.2515	0.678	1.166	1.825	1.015	1.011	1.079	--	--	--	1.03
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.52	--	--	0.27	0.17
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.4	--	--	16.8	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.46	--	--	<0.8	<1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	0.36	0.405	0.35	0.515	--	1.08	0.213
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	0.349	0.39	0.324	0.363	--	0.31	0.358

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	272	330	433	200	70	307	386	267	260	360	309
Turbidity	NTU	--	--	0.81	0.4	1	0.8	0.3	2.64	0.4	0.5	0.6	0.39	0.2
Dissolved Oxygen	mg/L	--	--	9.3	7.4	2	7	7	6.99	6.1	8	19.4	6.94	6.9
Temperature	°C	--	--	16.1	22.4	14.7	14.8	15	15.7	17.1	15.4	13.4	14.97	13.25
ORP	mV	--	--	24	167	227	126	47	75.6	73	-13	73	-2.7	152
Laboratory Parameters														
Antimony	µg/L	6	--	0.04	0.04	0.05	0.04	0.04	0.04	<0.05	--	--	--	0.05
Arsenic	µg/L	10	--	0.53	0.42	0.45	0.52	0.52	0.48	0.5	--	--	--	0.38
Barium	µg/L	2000	--	9.79	11.3	7.91	6.52	7.09	7.73	8.16	--	--	--	12.5
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.02	--	--	--	<0.02
Cadmium	µg/L	5	--	0.03	0.03	0.02	0.01	0.007	0.03	<0.02	--	--		0.03
Chromium	µg/L	100	--	0.5	0.8	0.416	0.725	1.25	0.567	0.568	--	--	--	0.384
Cobalt	µg/L	6	--	0.043	0.029	0.027	0.022	0.027	0.03	0.02	--	--	--	<0.02
Copper	µg/L	--	--	--	--	--	--	--	--	0.44	0.26	--	0.25	0.44
Lead	µg/L	15	--	0.02	0.046	0.027	0.02	0.02	0.023	0.06	--	--	--	0.03
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	0.002	0.002	<0.002	--	--	--	--
Molybdnum	µg/L	100	--	4.36	3.37	4.71	6.09	6.03	4.86	4.69	--	--	--	2.4
Selenium	µg/L	50	--	0.08	0.1	0.07	0.05	0.2	0.2	0.3	--	--	--	0.04
Thallium	µg/L	2	--	0.01	0.01	0.02	0.01	0.01	0.01	0.2	--	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	7	<0.4	--	2	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	24.9	24.4	27.3	--	25.8	26.6
Aluminum	µg/L	--	--	--	--	--	--	--	--	10	3.63	--	2	3
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
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
Lithium	mg/L	0.04	--	0.024	0.004	0.005	0.003	0.013	0.009	0.002	--	--	--	0.01
Magnesium	mg/L	--	--	--	--	--	--	17.2	17.7	18.8	17.6	--	24.8	19.5
Manganese	mg/L	--	--	--	--	--	--	--	--	<0.0001	--	--	<0.0002	0.0004
Potassium	mg/L	--	--	--	--	--	--	0.42	0.42	0.42	0.48	--	0.37	0.88
Sodium	mg/L	--	--	--	--	--	--	5.72	5.58	6.82	7.26	--	7.11	5.35
Strontium	mg/L	--	--	--	--	--	--	0.0508	0.0535	0.0532	0.0537	--	0.0706	0.0774
Alkalinity	mg/L	--	--	--	--	--	--	153	175	187	167	--	226	246
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	<0.02	<0.02	--	<0.02	<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
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
TDS	mg/L	--	212	201	196	182	179	197	239	224	200	--	276	238
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07
Radium-228	pCi/L	--	--	0.231	0.741	0.179	1.96	0.0959	0.0337	0.771	--	--	--	0.419
Radium-226	pCi/L	--	--	0.584	-0.0127	0.109	0.141	0.0906	0.091	0.0225	--	--	--	0.217
Radium-226/228	pCi/L	5	--	0.815	0.7283	0.288	2.101	0.1865	0.1247	0.7935	--	--	--	0.636
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.82	--	--	0.63	0.71
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	9	--	--	2	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	66.5	--	--	2.92	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	--	0.008	0.04
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0002	0.0001	<0.0002	--	<0.002	0.0005

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters							Sentinel
Elevation	ft NGVD	--	--	367.81	367.96	367.93	368.21
pH	S.U.	--	7.2	5.9	7.6	6.83	7.12
Specific Conductance	µmhos/cm	--	--	522	551	517	816
Turbidity	NTU	--	--	9	1.14	2.14	23.7
Dissolved Oxygen	mg/L	--	--	0.2	3.13	0.36	0.29
Temperature	°C	--	--	14.5	14.05	13.16	13.36
ORP	mV	--	--	68	-34.8	184.2	-10
Laboratory Parameters							
Antimony	µg/L	6	--	0.06	0.03	0.17	0.06
Arsenic	µg/L	10	--	0.3	0.27	0.25	0.61
Barium	µg/L	2000	--	26.8	26.3	25.3	31
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	0.02
Cadmium	µg/L	5	--	0.06	0.05	0.13	0.04
Chromium	µg/L	100	--	0.276	0.1	0.1	0.639
Cobalt	µg/L	6	--	0.642	0.4783	0.439	1.23
Copper	µg/L	--	--	0.5	0.36	0.55	1.08
Lead	µg/L	15	--	0.34	0.08	0.08	0.904
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	2	2	2	2
Selenium	µg/L	50	--	0.2	0.07	0.1	0.2
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	1	0.8	2	2
Silica (Dissolved)	mg/L	--	--	21.5	20	20	20.3
Aluminum	µg/L	--	--	45.2	8.53	3	291
Boron	mg/L	--	0.067	0.04	0.07	0.03	0.12
Calcium	mg/L	--	86.3	87	86.4	80.2	89.3
Lithium	mg/L	0.04	--	0.01	0.01	0.01	<0.009
Magnesium	mg/L	--	--	31.6	33.7	30.5	33
Manganese	mg/L	--	--	0.0864	0.0758	0.0811	0.106
Potassium	mg/L	--	--	1.18	1.26	1.57	1.87
Sodium	mg/L	--	--	30.2	33.9	32.1	32.4
Strontium	mg/L	--	--	0.103	0.111	0.114	0.119
Alkalinity	mg/L	--	--	392	358	374	361
Bromide	mg/L	--	--	0.1	0.1	0.1	0.1
Chloride	mg/L	--	30.1	30.1	29.9	29.4	29.5
Fluoride	mg/L	4	0.35	0.36	0.36	0.37	0.36
TDS	mg/L	--	445	446	434	422	437
Sulfate	mg/L	--	37.2	37.1	37.1	36.4	36.7
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.1
Radium-228	pCi/L	--	--	0.562	0.306	0.941	0.569
Radium-226	pCi/L	--	--	0.5	0.202	0.244	0.314
Radium-226/228	pCi/L	5	--	1.062	0.508	1.185	0.883
Copper (Dissolved)	µg/L	--	--	0.66	0.38	1.41	0.7
Zinc (Dissolved)	µg/L	--	--	3	2	3	4
Aluminum (Dissolved)	µg/L	--	--	2	1	1	76.2
Iron (Dissolved)	mg/L	--	--	0.025	0.01	0.006	0.238
Manganese (Dissolved)	mg/L	--	--	0.0847	0.0797	0.0677	0.103

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters							
Elevation	ft NGVD	--	--	369.85	367.84	367.81	368.16
pH	S.U.	--	0	7.15	7.74	7.01	7.12
Specific Conductance	µmhos/cm	--	--	662	622	579	901
Turbidity	NTU	--	--	1.48	8.76	2.54	2.3
Dissolved Oxygen	mg/L	--	--	1.2	2.68	9.27	1.99
Temperature	°C	--	--	15.21	13.94	12.9	12.92
ORP	mV	--	--	-35.1	-87.8	-54.9	-52
Laboratory Parameters							
Antimony	µg/L	6	--	<0.01	<0.02	<0.02	<0.02
Arsenic	µg/L	10	--	10.1	9.24	8.79	9.32
Barium	µg/L	2000	--	370	374	365	377
Beryllium	µg/L	4	--	0.006	<0.02	0.02	<0.02
Cadmium	µg/L	5	--	<0.005	0.02	<0.01	0.17
Chromium	µg/L	100	--	0.101	0.289	0.05	0.2
Cobalt	µg/L	6	--	1.5	1.67	1.42	1.58
Copper	µg/L	--	--	1.15	1.23	0.44	0.56
Lead	µg/L	15	--	0.063	0.21	0.03	0.07
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	2.92	2.87	2.87	3.13
Selenium	µg/L	50	--	0.04	0.06	<0.003	<0.03
Thallium	µg/L	2	--	0.01	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	1	2	1	3
Silica (Dissolved)	mg/L	--	--	20.9	18.8	19.2	12.6
Aluminum	µg/L	--	--	48.8	64.6	5.87	5.67
Boron	mg/L	--	0.115	0.062	0.115	0.03	0.05
Calcium	mg/L	--	94.1	100	94.8	90.9	95.6
Lithium	mg/L	0.04	--	0.009	<0.009	0.03	0.01
Magnesium	mg/L	--	--	32.5	32.6	30.5	31
Manganese	mg/L	--	--	1.17	1.2	1.08	1.12
Potassium	mg/L	--	--	2.03	2.43	2.28	2.26
Sodium	mg/L	--	--	43.2	45	43.9	42
Strontium	mg/L	--	--	0.134	0.138	0.144	0.142
Alkalinity	mg/L	--	--	433	448	433	441
Bromide	mg/L	--	--	0.139	0.1	0.1	0.1
Chloride	mg/L	--	33	34	33.9	33.7	33.1
Fluoride	mg/L	4	0.24	0.25	0.25	0.25	0.23
TDS	mg/L	--	499	506	493	484	485
Sulfate	mg/L	--	31.5	30.9	31	30.7	31
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.1
Radium-228	pCi/L	--	--	-0.0683	0.788	1.19	1.04
Radium-226	pCi/L	--	--	0.463	0.516	0.51	0.83
Radium-226/228	pCi/L	5	--	0.463	1.304	1.7	1.87
Copper (Dissolved)	µg/L	--	--	0.19	0.35	0.42	1.08
Zinc (Dissolved)	µg/L	--	--	1	10.2	2	8.1
Aluminum (Dissolved)	µg/L	--	--	2.36	5.95	2	3
Iron (Dissolved)	mg/L	--	--	1.15	1.18	1.09	1.16
Manganese (Dissolved)	mg/L	--	--	1.12	1.16	1.06	1.16

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters							Sentinel
Elevation	ft NGVD	--	--	367.91	367.91	367.86	368.25
pH	S.U.	--	7.3	7.16	8.06	7.08	7.17
Specific Conductance	µmhos/cm	--	--	530	510	449	717
Turbidity	NTU	--	--	9.68	12.7	5.25	2.2
Dissolved Oxygen	mg/L	--	--	1.68	1.41	4.9	1.4
Temperature	°C	--	--	15.56	15.16	12	12.56
ORP	mV	--	--	-52.6	-90.9	-40.8	-69
Laboratory Parameters							
Antimony	µg/L	6	--	0.02	0.06	<0.02	<0.02
Arsenic	µg/L	10	--	11.9	9.78	9.95	9.64
Barium	µg/L	2000	--	282	268	272	271
Beryllium	µg/L	4	--	0.006	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	<0.005	0.05	<0.01	0.01
Chromium	µg/L	100	--	0.108	0.266	0.1	0.2
Cobalt	µg/L	6	--	0.462	0.538	0.378	0.4
Copper	µg/L	--	--	0.51	41	0.64	0.24
Lead	µg/L	15	--	0.127	0.329	0.111	0.05
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	3.09	2.96	2.94	3.13
Selenium	µg/L	50	--	<0.03	0.07	<0.03	<0.03
Thallium	µg/L	2	--	<0.01	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	1	3	2	0.8
Silica (Dissolved)	mg/L	--	--	21.1	18.9	19.5	19.5
Aluminum	µg/L	--	--	14	53.9	26.1	5.83
Boron	mg/L	--	0.098	0.112	0.09	0.03	0.09
Calcium	mg/L	--	90.8	95.1	86.9	86.1	82.9
Lithium	mg/L	0.04	--	0.013	<0.009	<0.009	<0.009
Magnesium	mg/L	--	--	30.3	29.6	28.5	26.7
Manganese	mg/L	--	--	0.989	0.902	0.878	0.743
Potassium	mg/L	--	--	1.16	0.89	1.34	1.45
Sodium	mg/L	--	--	10.5	11.3	11	10.2
Strontium	mg/L	--	--	0.161	0.161	0.171	0.158
Alkalinity	mg/L	--	--	373	353	371	384
Bromide	mg/L	--	--	0.081	0.08	0.07	0.07
Chloride	mg/L	--	16.1	17.2	17	16.6	16.7
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.26
TDS	mg/L	--	328	386	381	374	380
Sulfate	mg/L	--	15.6	14.2	14.2	13.8	13.9
Sulfide	mg/L	--	--	<0.04	<0.1	<0.07	<0.1
Radium-228	pCi/L	--	--	0.643	0.405	0.589	1.69
Radium-226	pCi/L	--	--	0.702	0.454	0.608	0.766
Radium-226/228	pCi/L	5	--	1.345	0.859	1.197	2.456
Copper (Dissolved)	µg/L	--	--	0.35	0.21	0.12	0.44
Zinc (Dissolved)	µg/L	--	--	3.3	2	1	1
Aluminum (Dissolved)	µg/L	--	--	7.24	2	2	5.13
Iron (Dissolved)	mg/L	--	--	1.29	0.965	0.996	1.12
Manganese (Dissolved)	mg/L	--	--	0.994	0.88	0.801	0.832

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-13I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/11/2018
Field Parameters							
Elevation	ft NGVD	--	--	368.83	368.45	368.41	368.31
pH	S.U.	--	7.5	7.36	8.12	7.21	7.36
Specific Conductance	µmhos/cm	--	--	411	397	451	555
Turbidity	NTU	--	--	2.14	0.93	0.31	0.45
Dissolved Oxygen	mg/L	--	--	0.37	1.15	8.64	0.57
Temperature	°C	--	--	15.71	15.25	13.17	14.13
ORP	mV	--	--	-15.8	-74.3	44.5	-72
Laboratory Parameters							
Antimony	µg/L	6	--	0.02	<0.02	<0.02	0.04
Arsenic	µg/L	10	--	1.74	1.66	1.6	1.84
Barium	µg/L	2000	--	149	139	141	144
Beryllium	µg/L	4	--	0.006	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	<0.005	<0.01	<0.01	<0.01
Chromium	µg/L	100	--	0.04	0.1	0.06	0.07
Cobalt	µg/L	6	--	0.5	0.554	0.477	0.574
Copper	µg/L	--	--	0.39	0.62	0.1	0.58
Lead	µg/L	15	--	0.01	0.04	<0.02	<0.02
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	4.49	4.23	4.09	4.29
Selenium	µg/L	50	--	<0.03	<0.03	<0.03	<0.03
Thallium	µg/L	2	--	0.04	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	20.1	61.3	<0.7	2
Silica (Dissolved)	mg/L	--	--	19.6	17.9	17.9	18.4
Aluminum	µg/L	--	--	2.54	10.6	2	<1
Boron	mg/L	--	0.042	0.09	0.05	<0.02	0.04
Calcium	mg/L	--	67.5	66	58.1	59.7	65.6
Lithium	mg/L	0.04	--	0.018	0.01	<0.009	<0.009
Magnesium	mg/L	--	--	20.4	19.1	19.2	20.9
Manganese	mg/L	--	--	0.491	0.448	0.447	0.523
Potassium	mg/L	--	--	1.23	0.93	1.32	1.24
Sodium	mg/L	--	--	15.2	15.4	15.6	16.4
Strontium	mg/L	--	--	0.0781	0.0744	0.0834	0.0879
Alkalinity	mg/L	--	--	231	228	231	241
Bromide	mg/L	--	--	0.04	<0.04	<0.04	<0.04
Chloride	mg/L	--	20	20.6	20.5	20.3	20.4
Fluoride	mg/L	4	0.38	0.38	0.38	0.38	0.38
TDS	mg/L	--	297	319	305	310	310
Sulfate	mg/L	--	40.6	41.6	41.5	41.3	40.7
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.07
Radium-228	pCi/L	--	--	-0.268	0.658	0.682	0.3
Radium-226	pCi/L	--	--	0.456	0.509	0.669	0.589
Radium-226/228	pCi/L	5	--	0.456	1.167	1.351	0.889
Copper (Dissolved)	µg/L	--	--	0.11	0.39	0.2	0.2
Zinc (Dissolved)	µg/L	--	--	0.7	6.3	<0.7	3
Aluminum (Dissolved)	µg/L	--	--	1	1	1	5
Iron (Dissolved)	mg/L	--	--	0.185	0.189	0.193	0.26
Manganese (Dissolved)	mg/L	--	--	0.493	0.467	0.461	0.483

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters							
Elevation	ft NGVD	--	--	368.79	368.43	368.39	368.29
pH	S.U.	--	7.4	7.03	8.11	7.17	7.29
Specific Conductance	µmhos/cm	--	--	406	382	427	540
Turbidity	NTU	--	--	5.34	10.6	4.66	3.22
Dissolved Oxygen	mg/L	--	--	1.34	1.4	5.45	0.51
Temperature	°C	--	--	16.29	14.99	12.18	14.06
ORP	mV	--	--	-71.4	-95.1	-48.5	-94
Laboratory Parameters							
Antimony	µg/L	6	--	0.01	0.02	0.05	0.03
Arsenic	µg/L	10	--	6.44	5.62	7.55	5.3
Barium	µg/L	2000	--	206	204	198	219
Beryllium	µg/L	4	--	0.007	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	<0.005	0.04	<0.01	<0.01
Chromium	µg/L	100	--	0.071	0.353	0.209	0.06
Cobalt	µg/L	6	--	1.15	1.31	1.05	0.935
Copper	µg/L	--	--	0.26	1.02	0.55	0.28
Lead	µg/L	15	--	0.071	0.438	0.173	<0.02
Mercury	µg/L	2	--	--	--	--	--
Molybdnum	µg/L	100	--	2.88	2.59	2.77	3.23
Selenium	µg/L	50	--	<0.03	0.1	0.07	<0.03
Thallium	µg/L	2	--	0.02	<0.1	>0.1	<0.1
Zinc	µg/L	--	--	0.6	2	1	2
Silica (Dissolved)	mg/L	--	--	19.3	17.6	17.9	17.9
Aluminum	µg/L	--	--	21.8	162	58.8	2
Boron	mg/L	--	0.037	0.071	0.111	119	0.03
Calcium	mg/L	--	65.9	68.9	63.4	60.8	67.4
Lithium	mg/L	0.04	--	0.016	<0.009	<0.009	<0.009
Magnesium	mg/L	--	--	21.8	21.7	20.1	22.5
Manganese	mg/L	--	--	0.762	0.669	0.648	0.677
Potassium	mg/L	--	--	1.06	1.14	1.45	1.16
Sodium	mg/L	--	--	11.2	11.6	11.4	11.2
Strontium	mg/L	--	--	0.0852	0.0867	0.0913	0.098
Alkalinity	mg/L	--	--	231	243	223	252
Bromide	mg/L	--	--	0.05	<0.04	<0.04	<0.04
Chloride	mg/L	--	16.3	17	16.9	16.6	16.5
Fluoride	mg/L	4	0.28	0.27	0.27	0.28	0.27
TDS	mg/L	--	287	296	299	296	305
Sulfate	mg/L	--	35.5	34.8	34.7	34.1	33.3
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.07
Radium-228	pCi/L	--	--	0.141	-0.293	-0.157	0.226
Radium-226	pCi/L	--	--	0.501	0.356	0.242	0.389
Radium-226/228	pCi/L	5	--	0.642	0.356	0.242	0.615
Copper (Dissolved)	µg/L	--	--	0.07	0.11	0.09	0.21
Zinc (Dissolved)	µg/L	--	--	0.5	1	<0.7	1
Aluminum (Dissolved)	µg/L	--	--	11	3	2	20.5
Iron (Dissolved)	mg/L	--	--	1.29	0.915	0.995	1.13
Manganese (Dissolved)	mg/L	--	--	0.74	0.625	0.702	0.612

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	576	640	955	530	80	441	496	488	490	450	309
Turbidity	NTU	--	--	3.9	6	1	2	0.7	2.07	1	0.5	1	0.6	0.2
Dissolved Oxygen	mg/L	--	--	3.8	3.3	1	3.4	3	3.82	3.7	4	10.2	5.42	6.9
Temperature	°C	--	--	18.7	22.6	15.2	14.4	13.9	14.54	15.9	15.3	13.5	14.98	13.25
ORP	mV	--	--	43	53	282	147	75	55.6	67	-23	133	-7.9	152
Laboratory Parameters														
Antimony	µg/L	6	--	0.02	0.02	0.03	0.02	0.02	0.06	<0.05	--	--	--	<0.02
Arsenic	µg/L	10	--	1.54	1.29	0.75	0.91	0.76	0.75	0.7	--	--	--	0.64
Barium	µg/L	2000	--	31	27.8	26.3	27	26.3	25	27	--	--	--	27
Beryllium	µg/L	4	--	0.008	0.005	<0.005	<0.005	<0.005	<0.004	<0.02	--	--	--	<0.02
Cadmium	µg/L	5	--	0.21	0.07	0.03	0.05	0.01	0.08	<0.02	--	--		0.05
Chromium	µg/L	100	--	0.3	0.3	0.162	0.575	0.66	0.301	0.258	--	--	--	0.2
Cobalt	µg/L	6	--	0.573	0.333	0.088	0.187	0.083	0.065	0.03	--	--	--	0.03
Copper	µg/L	--	--	--	--	--	--	--	--	2.38	0.15	--	0.38	0.24
Lead	µg/L	15	--	0.307	0.31	0.549	0.115	0.061	0.071	0.116	--	--	--	0.05
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--
Molybdnum	µg/L	100	--	1.51	1.43	1.26	1.62	1.84	1.35	1.67	--	--	--	1
Selenium	µg/L	50	--	1.4	1.2	1.2	1.1	1.1	1.2	1.3	--	--	--	1.1
Thallium	µg/L	2	--	<0.01	<0.01	0.02	0.054	0.055	0.01	0.07	--	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	9	0.8	--	1	1
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	20.3	20.2	23.3	--	20.4	20.2
Aluminum	µg/L	--	--	--	--	--	--	--	--	11.4	2	--	5.75	7.32
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
Calcium	mg/L	--	59.2	56.3	59.5	65.4	65.7	63.4	59.8	65.6	67	--	61.1	59.2
Lithium	mg/L	0.04	--	0.018	0.006	0.004	0.006	0.005	0.001	<0.0002	--	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	27.6	28.1	29.3	29.9	--	27.4	26.4
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0006	--	--	0.0014	0.0015
Potassium	mg/L	--	--	--	--	--	--	0.5	0.54	0.49	0.59	--	0.51	0.55
Sodium	mg/L	--	--	--	--	--	--	33	29.4	30.1	29.9	--	29.2	24.9
Strontium	mg/L	--	--	--	--	--	--	0.101	0.102	0.103	0.106	--	0.101	0.0954
Alkalinity	mg/L	--	--	--	--	--	--	232	258	257	249	--	260	259
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	0.03	0.04	--	<0.02	<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
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
TDS	mg/L	--	368	364	361	362	344	354	376	377	376	--	360	344
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1
Radium-228	pCi/L	--	--	-0.343	0.769	0.693	0.601	-0.193	-0.019	1.73	--	--	--	0.334
Radium-226	pCi/L	--	--	0.594	0.131	0.413	0.179	0.0525	0.0316	0.153	--	--	--	0.0534
Radium-226/228	pCi/L	5	--	0.251	0.9	1.106	0.78	-0.1405	0.0126	1.883	--	--	--	0.3874
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.94	--	--	0.43	0.64
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	7	--	--	5.7	3
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	11.3	--	--	1	<1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.016	--	0.002	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0021	0.0001	<0.0002	--	<0.0002	0.0005

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-15S

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
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
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
Specific Conductance	µmhos/cm	--	--	512	512	510	904	470	60	419	368	393	416	317
Turbidity	NTU	--	--	7.6	2.2	1	1	1	0.5	2	2	2.34	0.33	0.41
Dissolved Oxygen	mg/L	--	--	0.5	0.5	1	1	1	6	0.4	0.3	0.07	1.9	0.77
Temperature	°C	--	--	16.5	17.7	19.1	15.5	13.8	13.9	14.6	15.7	14.7	14.96	12.94
ORP	mV	--	--	57	124	181	-10	179	64	65	24	18.1	-37.7	19.3
Laboratory Parameters														
Antimony	µg/L	6	--	0.04	0.04	0.02	0.04	0.04	0.03	0.04	0.02	--	--	<0.02
Arsenic	µg/L	10	--	0.32	0.24	0.21	0.18	0.26	0.21	0.21	0.23	--	--	0.13
Barium	µg/L	2000	--	4.71	5.85	3.21	3.27	6.05	4.98	3.54	3.11	--	--	2.46
Beryllium	µg/L	4	--	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.004	--	--	<0.02
Cadmium	µg/L	5	--	0.14	0.25	0.05	0.05	0.06	0.04	0.05	0.05	--		0.04
Chromium	µg/L	100	--	0.2	1.7	0.5	0.058	0.493	0.934	0.198	0.096	--	--	0.05
Cobalt	µg/L	6	--	3.03	1.17	1.09	0.794	1.75	1.26	1.2	1.25	--	--	0.74
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.4	0.26	0.24	0.37
Lead	µg/L	15	--	0.286	0.101	0.098	0.037	0.039	0.024	0.062	0.083	--	--	0.03
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Molybdnum	µg/L	100	--	2.52	2.89	2.54	1.57	0.78	1.17	2.08	2.87	--	--	2.54
Selenium	µg/L	50	--	0.4	0.7	0.5	0.3	0.3	0.5	0.5	0.2	--	--	0.1
Thallium	µg/L	2	--	0.03	<0.01	0.02	0.02	0.03	0.04	0.02	0.02	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	3.5	1	21	2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	13.1	12.7	15.8	13.1	12.4
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.9	6.68	4.42	6.41
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
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
Lithium	mg/L	0.04	--	0.007	0.022	0.005	0.005	0.008	0.008	0.003	0.0009	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	28.2	19.3	17.2	18.5	16.9	15.1
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.489	--	0.391	0.444
Potassium	mg/L	--	--	--	--	--	--	--	1.07	1.11	1.03	1.27	0.93	1.16
Sodium	mg/L	--	--	--	--	--	--	--	35.5	44.7	39.2	42.3	35.9	27.2
Strontium	mg/L	--	--	--	--	--	--	--	0.0903	0.0711	0.061	0.0662	0.0638	0.0574
Alkalinity	mg/L	--	--	--	--	--	--	--	294	257	235	267	239	226
Bromide	mg/L	--	--	--	--	--	--	--	0.04	0.062	0.05	0.074	0.03	<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
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
TDS	mg/L	--	(412.7) 407	338	319	329	338	374	342	294	263	300	274	232
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.07
Radium-228	pCi/L	--	--	0.0335	-0.092	0.302	1.11	-0.0122	-0.108	0.106	-0.0928	--	--	0.482
Radium-226	pCi/L	--	--	0.384	--	0.116	0.139	0.189	0.0973	0.135	0.0916	--	--	-0.0262
Radium-226/228	pCi/L	5	--	0.4175	-0.092	0.418	1.249	0.1768	-0.0107	0.241	0.0916	--	--	0.482
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.51	1.59
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.6	--	1	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	3.7	--	2	3
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	<0.002	0.004
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.448	0.361	0.284	0.379	0.349	0.332

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	555	574	530	874	420	60	457	400	368	350	474	420	527	412
Turbidity	NTU	--	--	0.9	0.6	0.7	0.2	1	2	1	1	1.09	1	1.12	0.88	0	0.18
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
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
ORP	mV	--	--	52.5	-86	-54	259	-87	-42	51	-50	-79.7	-52	-77.2	-94	-63	-63.7
Laboratory Parameters																	
Antimony	µg/L	6	--	0.01	0.25	0.01	0.04	0.01	0.02	0.02	0.02	--	--	--	--	--	<0.02
Arsenic	µg/L	10	--	25.2	27.9	21.1	23.6	20.2	20.4	20.2	23.6	--	--	--	--	--	23.8
Barium	µg/L	2000	--	118	132	119	107	91.2	88.9	86.1	94.8	--	--	--	--	--	93.3
Beryllium	µg/L	4	--	<0.005	0.165	<0.005	0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	--	<0.02
Cadmium	µg/L	5	--	0.02	0.23	0.009	0.06	0.005	0.03	0.03	0.02	--		--	--	--	<0.01
Chromium	µg/L	100	--	0.2	0.5	0.1	0.132	0.35	0.7	0.134	0.089	--	--	--	--	--	<0.04
Cobalt	µg/L	6	--	1.24	1.66	1.32	1.03	1	0.903	1.02	1.25	--	--	--	--	--	1.12
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.26	0.1	--	--	0.15	--	0.12
Lead	µg/L	15	--	0.026	0.254	0.026	0.213	0.01	0.065	0.09	0.082	--	--	--	--	--	0.03
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	5.76	6.74	5.75	6.73	7.63	7.91	6.52	5.58	--	--	--	--	--	5.03
Selenium	µg/L	50	--	<0.03	0.2	<0.03	<0.03	<0.03	0.07	0.04	<0.03	--	--	--	--	--	0.04
Thallium	µg/L	2	--	0.04	0.273	0.03	0.04	0.04	0.112	0.03	0.04	--	--	--	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	0.7	--	--	2.5	--	0.8
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	15	14	16.1	--	--	13.9	--	13.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.25	6.63	--	--	4.24	--	7.01
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
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
Lithium	mg/L	0.04	--	0.005	0.018	0.004	0.004	0.011	0.006	0.002	<0.0002	--	--	--	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	13.3	12.7	11.1	11.2	--	--	11.8	--	9.98
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.134	--	--	--	0.13	--	0.106
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.02	0.94	1.05	--	--	0.96	--	1.21
Sodium	mg/L	--	--	--	--	--	--	--	62.3	56.1	51.8	45.4	--	--	42	--	29.9
Strontium	mg/L	--	--	--	--	--	--	--	0.0865	0.088	0.0841	0.0871	--	--	0.0955	--	0.0827
Alkalinity	mg/L	--	--	--	--	--	--	--	229	239	224	202	--	--	226	--	199
Bromide	mg/L	--	--	--	--	--	--	--	0.084	0.101	0.081	0.067	--	--	0.071	--	0.06
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
Fluoride	mg/L	4	0.382	0.25	0.25	0.23	0.25	0.34	0.32	0.31	0.22	0.23	0.22	--	0.26	--	0.25
TDS	mg/L	--	(412.7) 398	380	356	334	340	351	331	322	300	287	--	--	279	--	248
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	<0.4	--	<0.07
Radium-228	pCi/L	--	--	0.254	0.455	0.076	1.23	0.682	0.155	-0.367	1.49	--	--	--	--	--	0.283
Radium-226	pCi/L	--	--	0.609	0.636	0.428	0.517	0.187	0.71	0.189	0.153	--	--	--	--	--	0.0962
Radium-226/228	pCi/L	5	--	0.863	1.091	0.504	1.747	0.869	0.865	-0.178	1.643	--	--	--	--	--	0.3792
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	--	0.36	--	0.2
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.1	--	--	--	2	--	0.8
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.19	--	--	--	1	--	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.742	0.709	0.789	0.949	--	--	0.879	--	0.848
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.138	0.139	0.112	0.119	--	--	0.126	--	0.121

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	0.822	764	719	669	677	804	581	595	647	872	770	920	720	570
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
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
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
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
Laboratory Parameters																	
Antimony	µg/L	6	--	0.03	0.03	0.25	0.02	0.02	0.02	0.02	0.02	--	--	--	--	0.05	--
Arsenic	µg/L	10	--	0.37	0.37	0.38	0.34	0.42	0.31	0.39	0.33	--	--	--	--	0.34	--
Barium	µg/L	2000	--	32.3	29.9	29.5	25.3	25.1	25.7	29.8	25.6	--	--	--	--	29.9	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	<0.02	--
Cadmium	µg/L	5	--	0.03	0.03	0.1	0.006	0.008	0.004	0.01	0.04	--		--	--	0.08	--
Chromium	µg/L	100	--	0.2	0.5	0.3	1.03	0.081	0.463	0.196	0.101	--	--	--	--	0.07	--
Cobalt	µg/L	6	--	0.073	0.025	0.07	0.028	0.014	0.012	0.063	0.01	--	--	--	--	<0.02	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.1	0.19	--	1.19	--	1.46	--
Lead	µg/L	15	--	0.074	0.057	0.182	<0.004	0.039	0.006	0.027	0.01	--	--	--	--	0.112	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	1.15	1.21	1.11	1.19	1.21	1.32	1.14	0.98	--	--	--	--	0.9	--
Selenium	µg/L	50	--	0.6	0.6	0.8	0.4	0.4	0.4	0.3	0.4	--	--	--	--	3.2	--
Thallium	µg/L	2	--	0.01	<0.01	<0.01	<0.01	0.02	0.02	0.01	0.01	--	--	--	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	2	--	5	--	31.6	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	24	24.1	27.6	--	24.9	--	24.9	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	2.1	7.43	--	5.68	--	3	--
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
Calcium	mg/L	--	(79.5) 114	96.2	83	93.5	96.4	94.6	106	105	91.8	108	109	108	109	104	--
Lithium	mg/L	0.04	--	0.007	0.031	0.005	0.018	0.013	0.013	0.008	0.01	--	--	--	--	0.02	--
Magnesium	mg/L	--	--	--	--	--	--	--	36.4	36.6	31.4	38.2	--	38.8	--	37.4	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0028	--	--	0.0062	--	0.004	--
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.3	0.97	1.03	--	1.1	--	1.28	--
Sodium	mg/L	--	--	--	--	--	--	--	36.9	36.7	28.7	35.7	--	38	--	44.4	--
Strontium	mg/L	--	--	--	--	--	--	--	0.129	0.132	0.108	0.133	--	0.137	--	0.138	--
Alkalinity	mg/L	--	--	--	--	--	--	--	423	431	436	438	--	463	--	510	--
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.158	0.162	0.206	--	0.118	--	0.1	--
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	--
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	--
TDS	mg/L	--	(412.7) 517	483	471	509	486	474	473	499	484	503	517	520	533	548	517
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--
Radium-228	pCi/L	--	--	-0.0274	0.34	-0.131	0.0963	1.8	0.169	-0.045	2.76	--	--	--	--	0.0697	--
Radium-226	pCi/L	--	--	0.163	0.707	0.0255	0.198	0.193	0.113	0.145	0.0933	--	--	--	--	0.0503	--
Radium-226/228	pCi/L	5	--	0.1356	1.047	-0.1055	0.2943	1.993	0.282	0.1	2.8533	--	--	--	--	0.12	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.1	--	--	1.21	--	2.59	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	5.2	--	4	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.9	--	--	1	--	1	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.015	--	0.004	--	<0.003	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0013	0.0145	0.0007	0.0127	--	0.0047	--	0.0023	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	957	870	867	702	674	779	569	665	644	821	720	797	545	476
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
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
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
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
Laboratory Parameters																	
Antimony	µg/L	6	--	0.02	0.01	0.01	0.05	0.01	0.02	0.06	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	--
Barium	µg/L	2000	--	267	267	262	234	220	221	206	238	--	--	--	--	153	--
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	--	0.06	0.03	0.03	0.05	0.04	0.03	0.08	0.03	--		--	--	0.02	--
Chromium	µg/L	100	--	0.1	0.2	0.1	0.082	0.085	0.422	0.204	0.118	--	--	--	--	0.05	--
Cobalt	µg/L	6	--	0.602	0.627	0.576	0.546	0.514	0.58	0.56	0.599	--	--	--	--	0.336	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.56	0.46	--	0.62	--	0.45	--
Lead	µg/L	15	--	0.023	0.025	0.023	0.053	0.01	0.034	0.153	0.065	--	--	--	--	<0.02	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	1.02	1.02	1.03	0.93	1	1.17	0.91	1.07	--	--	--	--	1	--
Selenium	µg/L	50	--	0.2	0.2	0.1	0.2	0.1	0.2	0.4	0.2	--	--	--	--	0.2	--
Thallium	µg/L	2	--	0.085	0.06	0.074	0.069	0.071	0.075	0.075	0.07	--	--	--	--	<0.1	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2.7	0.8	--	0.6	--	0.8	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	19.9	20	22.8	--	19.8	--	18.5	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.5	14	--	10.2	--	5	--
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
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	--
Lithium	mg/L	0.04	--	0.005	0.005	0.006	0.013	0.01	0.013	0.01	0.003	--	--	--	--	<0.009	--
Magnesium	mg/L	--	--	--	--	--	--	--	27.6	24.7	25.6	23	--	23.1	--	14.8	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	1.03	--	--	0.902	--	0.613	--
Potassium	mg/L	--	--	--	--	--	--	--	2.9	2.47	2.62	3.21	--	3.05	--	3.16	--
Sodium	mg/L	--	--	--	--	--	--	--	46.2	41.4	50	69.2	--	66	--	74.4	--
Strontium	mg/L	--	--	--	--	--	--	--	0.155	0.139	0.14	0.135	--	0.136	--	0.09	--
Alkalinity	mg/L	--	--	--	--	--	--	--	368	376	369	359	--	359	--	300	--
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.152	0.154	0.206	--	0.168	--	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	--
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	--
TDS	mg/L	--	(412.7) 589	539	532	544	508	481	460	461	465	495	487	480	456	408	--
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--	<0.07	--
Radium-228	pCi/L	--	--	0.357	1	0.977	0.174	2.27	0.182	0.427	0.513	--	--	--	--	0.483	--
Radium-226	pCi/L	--	--	0.235	0.576	0.248	0.413	0.362	0.399	0.511	0.274	--	--	--	--	0.162	--
Radium-226/228	pCi/L	5	--	0.592	1.576	1.225	0.587	2.632	0.581	0.938	0.787	--	--	--	--	0.645	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.14	--	--	0.57	--	1.43	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--	0.7	--	2	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	0.8	--	1	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.014	--	0.024	--	0.004	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	1.03	1.06	1.04	0.873	--	0.849	--	0.616	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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																	Verify	Verify
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	--	--	--	--		--	--
Molybdnum	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	0.251	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
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	350	373	344	146	310	60	357	287	351	319	280
Turbidity	NTU	--	--	0.6	0.7	0.79	1	1	1	3	1	0.47	0.4	0.89
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
Temperature	°C	--	--	14.7	17.9	14.55	14.7	13.8	13.5	14.9	14.3	16.82	14.39	13.45
ORP	mV	--	--	80	44	49.4	-40	62	47	45	30	-50.3	-84.3	121
Laboratory Parameters														
Antimony	µg/L	6	--	0.01	0.03	0.02	0.03	0.03	0.04	0.04	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
Barium	µg/L	2000	--	2.12	2.74	2.24	2.4	3.45	3.94	4.37	2.25	--	--	2.11
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	--	0.02	0.08	0.01	0.02	0.02	0.09	0.02	0.06	--	--	0.02
Chromium	µg/L	100	--	0.5	0.2	0.1	0.066	0.489	0.776	0.233	0.124	--	--	0.07
Cobalt	µg/L	6	--	0.047	0.105	0.034	0.029	0.04	0.076	0.138	0.053	--	--	0.05
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.38	0.69	0.23	0.21
Lead	µg/L	15	--	0.024	0.098	0.025	0.02	0.02	0.079	0.108	0.038	--	--	0.03
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	--	--	--
Molybdnum	µg/L	100	--	3.98	4.2	4.08	3.39	0.44	0.7	1.14	4.38	--	--	3.73
Selenium	µg/L	50	--	0.07	0.06	0.08	0.1	0.2	0.1	0.1	0.08	--	--	0.3
Thallium	µg/L	2	--	0.01	0.01	0.01	0.053	0.02	0.02	<0.01	0.03	--	--	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	5.7	0.7	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	14	13.7	15.8	13.5	13.2
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.55	10.2	4.01	2
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
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
Lithium	mg/L	0.04	--	<0.0002	0.02	0.003	0.004	0.003	0.008	0.003	<0.0002	--	--	<0.009
Magnesium	mg/L	--	--	--	--	--	--	--	19.2	17.5	13.7	12.9	13	13.7
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0428	--	0.0311	0.0418
Potassium	mg/L	--	--	--	--	--	--	--	0.88	0.79	0.49	0.47	0.5	0.59
Sodium	mg/L	--	--	--	--	--	--	--	42.5	35.3	31.9	27.7	24.5	25.8
Strontium	mg/L	--	--	--	--	--	--	--	0.0566	0.0529	0.0363	0.0345	0.0357	0.0374
Alkalinity	mg/L	--	--	--	--	--	--	--	231	221	196	189	188	202
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.05	<0.02	<0.02	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
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
TDS	mg/L	--	(412.7) 269	272	235	233	232	262	251	250	201	214	214	196
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1
Radium-228	pCi/L	--	--	0.783	-0.0129	0.027	0.791	-0.155	0.36	0.315	1.07	--	--	-0.0735
Radium-226	pCi/L	--	--	0.253	0.0439	0.0489	0.803	0.17	0.11	0.118	0.678	--	--	0.0202
Radium-226/228	pCi/L	5	--	1.036	0.031	0.0759	1.594	0.015	0.47	0.433	1.748	--	--	0.0202
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.35	--	0.56	0.7
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	1	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.2	--	6.2	2
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.026	0.004	0.004
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0028	0.0013	0.0322	0.0881	0.0304	0.041

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-17I

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	2/11/2019	4/1/2019
Field Parameters																			Verify	Verify
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	369.89	369.89
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	7.68	7.68
Specific Conductance	µmhos/cm	--	--	839	914	1000	607	670	60	768	678	786	530	848	652	728	453	450	391	391
Turbidity	NTU	--	--	13.4	9.8	--	0.1	2	9	2	1	74.99	1.74	12	1.28	0	0.58	7.42	6.9	6.9
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	0.47	0.47
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	13.5	13.5
ORP	mV	--	--	116	-73	-40	204	-52	8	46	-59	-90.8	-54	-40.5	-99.8	-69	-77.9	-77.4	-55	-55
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	--	--	--	--	--	--	--	--	--
Molybdnum	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	0.57	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	1.05	1.08
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	0.791	--	--	--	--	--	--	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
CCR Landfill
Rockport Plant, 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	11/14/2018	2/11/2019	2/11/2019
Field Parameters																Verify	Verify
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	368.42	370.37	371.3
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	7.34	7.74	7.8
Specific Conductance	µmhos/cm	--	--	387	450	454	501	410	540	344	398	402	390	400	380	318	404
Turbidity	NTU	--	--	2.5	0.91	0.78	0.46	1.03	2.6	0.71	2.28	3.31	6	2.1	1.67	2.8	2.45
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	9.55	7.1	3.89
Temperature	°C	--	--	16.4	17.49	18.53	18.78	15.15	14.9	16.27	18.01	16.21	14.9	16.2	14.14	15.2	14.3
ORP	mV	--	--	36	13.1	48.9	46.9	198.4	150	160.1	-167.7	76.7	56	43	165.5	189	21.1
Laboratory Parameters																	
Antimony	µg/L	6	--	0.03	0.02	0.02	0.02	0.03	0.03	0.04	0.05	--	--	0.04	0.02	--	--
Arsenic	µg/L	10	--	0.53	0.47	0.46	0.43	0.47	0.49	0.47	0.42	--	--	0.45	0.44	--	--
Barium	µg/L	2000	--	18.5	19.6	19.4	19.1	19.3	21.9	17.7	21.9	--	--	18.5	17.8	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.004	<0.04	--	--	<0.004	<0.02	--	--
Cadmium	µg/L	5	--	0.02	0.02	0.006	0.02	0.01	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	0.232	--	--
Cobalt	µg/L	6	--	0.104	0.033	0.03	0.023	0.022	0.053	0.027	0.006	--	--	0.02	0.06	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.27	0.35	--	0.52	0.53	--	--
Lead	µg/L	15	--	0.095	0.042	0.025	0.023	0.024	0.095	0.023	0.024	--	--	0.024	0.07	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	1.78	1.85	1.74	1.63	1.74	2	1.62	2.31	--	--	2.04	2	--	--
Selenium	µg/L	50	--	0.7	0.5	0.2	0.2	0.1	0.1	0.1	0.2	--	--	0.3	0.3	--	--
Thallium	µg/L	2	--	0.01	0.01	<0.01	<0.01	0.058	<0.01	<0.01	<0.01	--	--	<0.01	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	214	--	3.7	0.8	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	23.5	22.8	26.2	--	22.5	23.2	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	1	16.5	--	6.55	17	--	--
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	0.06	<0.02	<0.02
Calcium	mg/L	--	(79.5) 62	55.1	52.8	52	60	54.4	59	56	55.9	59.8	--	52.8	55	--	--
Lithium	mg/L	0.04	--	0.003	0.013	0.003	0.009	0.007	0.002	0.005	<0.0002	--	--	0.005	0.03	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	21.3	20.5	20.7	21.8	--	19.2	19.6	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	<0.0001	--	--	0.0008	0.0041	--	--
Potassium	mg/L	--	--	--	--	--	--	--	0.6	0.69	0.57	0.61	--	0.58	0.88	--	--
Sodium	mg/L	--	--	--	--	--	--	--	18.9	16.6	20.6	19.3	--	15.5	17.1	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0604	0.0601	0.58	0.061	--	0.0554	0.0553	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	202	195	212	210	--	183	193	--	--
Bromide	mg/L	--	--	--	--	--	--	--	<0.02	0.03	0.061	<0.02	--	0.02	<0.04	--	--
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	17.9	--	--
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	0.66	--	--
TDS	mg/L	--	(412.7) 313	275	292	285	294	287	298	296	304	300	--	283	278	--	--
Sulfate	mg/L	--	23.6	21.2	21.1	17.4	14.9	15.9	16.5	17.6	18.8	20.1	21.1	18.7	17.0	17.9	17.5
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	--	--
Radium-228	pCi/L	--	--	0.129	0.0598	0.213	0.14	1.71	-0.0315	0.0831	0.989	--	--	--	0.0549	--	--
Radium-226	pCi/L	--	--	0.0309	0.513	0.239	0.344	0.357	0.0305	0.152	0.109	--	--	--	0.0246	--	--
Radium-226/228	pCi/L	5	--	0.1599	0.5728	0.452	0.484	2.067	-0.001	0.2351	1.098	--	--	--	0.0795	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.2	--	--	0.29	0.13	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	5.1	--	--	1	<0.7	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	18.3	--	--	1	2	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.008	0.017	--	0.005	<0.003	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0001	0.0001	0.0029	<0.0002	--	<0.0002	<0.0002	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-21I

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
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
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
Specific Conductance	µmhos/cm	--	--	548	500	488	432	397	520	361	422	399	430	402
Turbidity	NTU	--	--	0.73	0.65	1.04	0.97	2.82	2.5	1.34	1.02	3.21	1.71	1.18
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
Temperature	°C	--	--	16.88	17.39	16.17	16.95	13.68	15.1	16.39	17.11	15.47	15.55	14.87
ORP	mV	--	--	-9.2	-185.2	-16.7	105.2	21.1	-3	160.7	2.1	-10.3	-13.4	8.7
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
Arsenic	µg/L	10	--	1.55	1.67	1.55	1.41	1.39	1.08	1.19	1.38	--	0.98	1.63
Barium	µg/L	2000	--	127	136	121	126	126	123	116	123	--	121	120
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.01	<0.005	<0.004	<0.004	--	<0.004	<0.02
Cadmium	µg/L	5	--	0.02	0.02	0.02	0.04	0.02	0.01	0.01	0.01	--		0.03
Chromium	µg/L	100	--	0.1	0.2	0.1	0.386	1.04	0.349	0.125	0.143	--	0.061	0.1
Cobalt	µg/L	6	--	0.514	0.558	0.422	0.524	0.437	0.437	0.412	0.517	--	0.398	0.685
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.07	0.09	0.11	0.51
Lead	µg/L	15	--	0.02	0.021	0.046	0.035	<0.004	0.01	0.022	0.033	--	0.026	0.181
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Molybdnum	µg/L	100	--	4.92	5.25	4.46	4.4	4.63	4.31	4.06	4.18	--	4.69	5.13
Selenium	µg/L	50	--	<0.03	0.05	0.03	0.09	0.07	0.07	0.05	0.05	--	<0.03	<0.03
Thallium	µg/L	2	--	0.03	0.03	0.02	0.02	0.04	0.02	0.03	0.03	--	0.03	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	0.6	0.9	1	11.1
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.8	18.1	19.7	17.6	17.7
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	4.55	2.56	3.39	17.2
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
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
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
Magnesium	mg/L	--	--	--	--	--	--	--	20.9	20.1	18.4	20	21.2	19.3
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.428	--	0.476	0.535
Potassium	mg/L	--	--	--	--	--	--	--	0.92	1.08	1.26	0.8	0.9	1.21
Sodium	mg/L	--	--	--	--	--	--	--	16	15.4	13	15	15.5	14.7
Strontium	mg/L	--	--	--	--	--	--	--	0.0931	0.0922	0.0805	0.0889	0.096	0.0887
Alkalinity	mg/L	--	--	--	--	--	--	--	212	222	221	215	230	224
Bromide	mg/L	--	--	--	--	--	--	--	0.03	0.05	<0.02	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
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
TDS	mg/L	--	(412.7) 359	331	334	305	317	292	275	306	322	306	317	294
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1
Radium-228	pCi/L	--	--	0.126	0.036	0.676	0.0796	1.78	0.281	0.108	0.45	--	--	0.638
Radium-226	pCi/L	--	--	0.223	1.37	0.305	0.576	0.953	0.601	0.483	0.775	--	--	0.315
Radium-226/228	pCi/L	5	--	0.349	1.406	0.981	0.6556	2.733	0.882	0.591	1.225	--	--	0.953
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.09	--	0.11	0.23
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.7	--	1	1
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	<0.8	<1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.019	<0.0004	0.078	0.062	0.024	0.028
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.37	0.427	0.425	0.441	0.427	0.441

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	591	544	478	585	441	60	493	531	449	564	470	451
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
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
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
ORP	mV	--	--	80.4	26.3	78.1	51.1	141.4	51	40	168.3	21.3	170.4	25.1	23.2
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
Arsenic	µg/L	10	--	1.07	1.06	0.95	0.86	0.99	0.92	0.97	1.04	--	--	0.84	0.89
Barium	µg/L	2000	--	241	240	226	206	220	220	216	226	--	--	218	201
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.01	<0.005	<0.004	<0.004	--	--	0.005	<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
Chromium	µg/L	100	--	0.2	0.3	0.1	0.05	0.124	0.433	0.165	0.11	--	--	0.091	0.06
Cobalt	µg/L	6	--	0.216	0.21	0.195	0.171	0.202	0.182	0.208	0.203	--	--	0.196	0.224
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.11	2.7	--	1.16	0.16
Lead	µg/L	15	--	0.107	0.075	0.066	0.056	0.091	0.092	0.118	0.089	--	--	0.229	0.1
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--
Molybdnum	µg/L	100	--	6.31	6.66	6.13	5.33	6.09	5.68	5.07	5.29	--	--	5.17	4.76
Selenium	µg/L	50	--	0.2	0.2	0.3	0.3	0.2	0.5	0.6	0.5	--	--	0.2	0.05
Thallium	µg/L	2	--	0.03	0.02	0.03	0.02	0.04	0.02	0.02	0.03	--	--	0.03	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	187	--	6.5	1
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.6	19.6	--	17.6	17
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	6.79	14.1	--	17.2	9.86
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
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
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
Magnesium	mg/L	--	--	--	--	--	--	--	25	24.3	23.9	22.7	--	23.6	21.3
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.592	--	--	0.596	0.634
Potassium	mg/L	--	--	--	--	--	--	--	2.11	2.41	2.44	3.91	--	1.97	3.95
Sodium	mg/L	--	--	--	--	--	--	--	18.1	17.2	19.7	20.8	--	15.7	17.7
Strontium	mg/L	--	--	--	--	--	--	--	0.144	0.142	0.144	0.168	--	0.147	0.191
Alkalinity	mg/L	--	--	--	--	--	--	--	247	271	277	262	--	268	268
Bromide	mg/L	--	--	--	--	--	--	--	<0.05	0.08	0.07	<0.05	--	0.05	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
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
TDS	mg/L	--	(412.7) 365	328	299	315	346	332	304	339	332	339	--	347	314
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07
Radium-228	pCi/L	--	--	0.441	0.77	0.604	0.688	0.722	0.518	0.0415	0.501	--	--	--	1.47
Radium-226	pCi/L	--	--	0.126	0.658	0.23	0.39	0.422	0.42	0.408	0.355	--	--	--	0.469
Radium-226/228	pCi/L	5	--	0.567	1.428	0.834	1.078	1.144	0.938	0.4495	0.856	--	--	--	1.939
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.39	--	--	0.08	1.33
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.4	--	--	0.7	3
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.16	--	--	2	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.016	--	<0.002	0.007
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.616	0.625	0.62	0.646	--	0.567	0.657

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

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 Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

NORTH POND LEACHATE INLET

Parameter	Units	11/26/2018	12/18/2018	1/8/2019	3/20/2019
Antimony	ug/L	<2.00	<4.00	<4.00	<2.00
Arsenic	ug/L	18	24.8	23.4	30.1
Barium	ug/L	71.1	58	82	65.8
Beryllium	ug/L	<2.00	<4.00	<4.00	<2.00
Cadmium	ug/L	<1.00	<2.00	<2.00	<1.00
Chromium	ug/L	36.6	71.2	82.9	58.4
Cobalt	ug/L	1.24	<2.00	<2.00	1.3
Lead	ug/L	<2.00	<4.00	<4.00	<2.00
Mercury	ug/L	<0.010	<0.010	<0.010	<0.010
Molybdnum	ug/L	1660	1230	1900	1530
Nickel	ug/L	53	11	11.1	8.97
Selenium	ug/L	490	586	653	630
Silver	ug/L	<2.00	<4.00	<4.00	<2.00
Thallium	ug/L	<10.0	<20.0	<20.0	<10.0
Zinc	ug/L	<100	<200	<200	<100
Aluminum	ug/L	4770	7280	6080	5950
Boron	mg/L	9.18	12.3	10.6	9.23
Calcium	mg/L	277	277	368	283
Iron	mg/L	0.104	<0.20	<0.200	<0.20
Lithium	mg/L	<0.030	<0.30	<0.300	<0.30
Magnesium	mg/L	3.62	4.43	4.9	3.55
Manganese	mg/L	0.009	0.0104	0.0115	0.0113
Potassium	mg/L	132	113	135	116
Sodium	mg/L	5730	6440	6780	6540
Alkalinity	mg/L	244	257	250	219
Chloride	mg/L	982	847	993	854
Fluoride	mg/L	<1.50	<1.50	<1.50	<1.50
Nitrate	mg/L	3	3.26	3.64	2.85
TDS	mg/L	25,600	24,300	28,400	23,600
Sulfate	mg/L	16,600	14,400	17,400	14,800

Table A-2
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

WEST POND LEACHATE INLET

Parameter	Units	10/31/2018	11/26/2018	12/18/2018	1/8/2019	3/20/2019
Antimony	ug/L	< 4.00	<2.00	<4.00	<4.00	<2.00
Arsenic	ug/L	23	30.4	39.3	46.8	84.8
Barium	ug/L	71.2	71	60.8	72.2	71.1
Beryllium	ug/L	< 4.00	<2.00	<4.00	<4.00	<2.00
Cadmium	ug/L	< 2.00	<1.00	<2.00	<2.00	<1.00
Chromium	ug/L	28.1	57.2	127	72.5	124
Cobalt	ug/L	< 2.0	<1.00	<2.00	<2.00	<1.00
Lead	ug/L	<4.00	<2.00	<4.00	<4.00	<2.00
Mercury	ug/L	<0.010	<0.010	<0.010	0.011	<0.010
Molybdnum	ug/L	2390	2820	2360	3040	3000
Nickel	ug/L	6.94	8.1	8.15	11.3	7.25
Selenium	ug/L	752	943	1000	1190	1310
Silver	ug/L	<4.00	<2.00	<4.00	<4.00	<2.00
Thallium	ug/L	<20.0	<10.0	<20.0	<20.0	<10.0
Zinc	ug/L	<200	<100	<200	<200	<100
Aluminum	ug/L	4410	5690	8110	6220	9850
Boron	mg/L	12.2	10.6	11	11.4	11.5
Calcium	mg/L	284	214	166	240	231
Iron	mg/L	<0.020	<0.020	<0.200	<0.200	<0.200
Lithium	mg/L	0.053	0.031	<0.300	<0.300	<0.300
Magnesium	mg/L	3.16	4.69	8.33	6.98	2.22
Manganese	mg/L	0.0086	0.0064	<0.010	<0.010	0.0129
Potassium	mg/L	182	165	113	149	192
Sodium	mg/L	5390	5220	6120	6780	8240
Alkalinity	mg/L	244	261	310	298	411
Chloride	mg/L	1190	1180	937	1250	1170
Fluoride	mg/L	<1.5	<1.50	<1.50	<1.50	<1.50
Nitrate	mg/L	5.46	5.72	5.76	6.76	7.99
TDS	mg/L	29,400	30,700	22,100	29,600	30,900
Sulfate	mg/L	18,900	18,100	14,100	18,100	19,000

Appendix B
Full Size Geochemical Exhibits

Exhibit 3-3. CCR monitoring well and landfill leachate ponds boron concentrations.

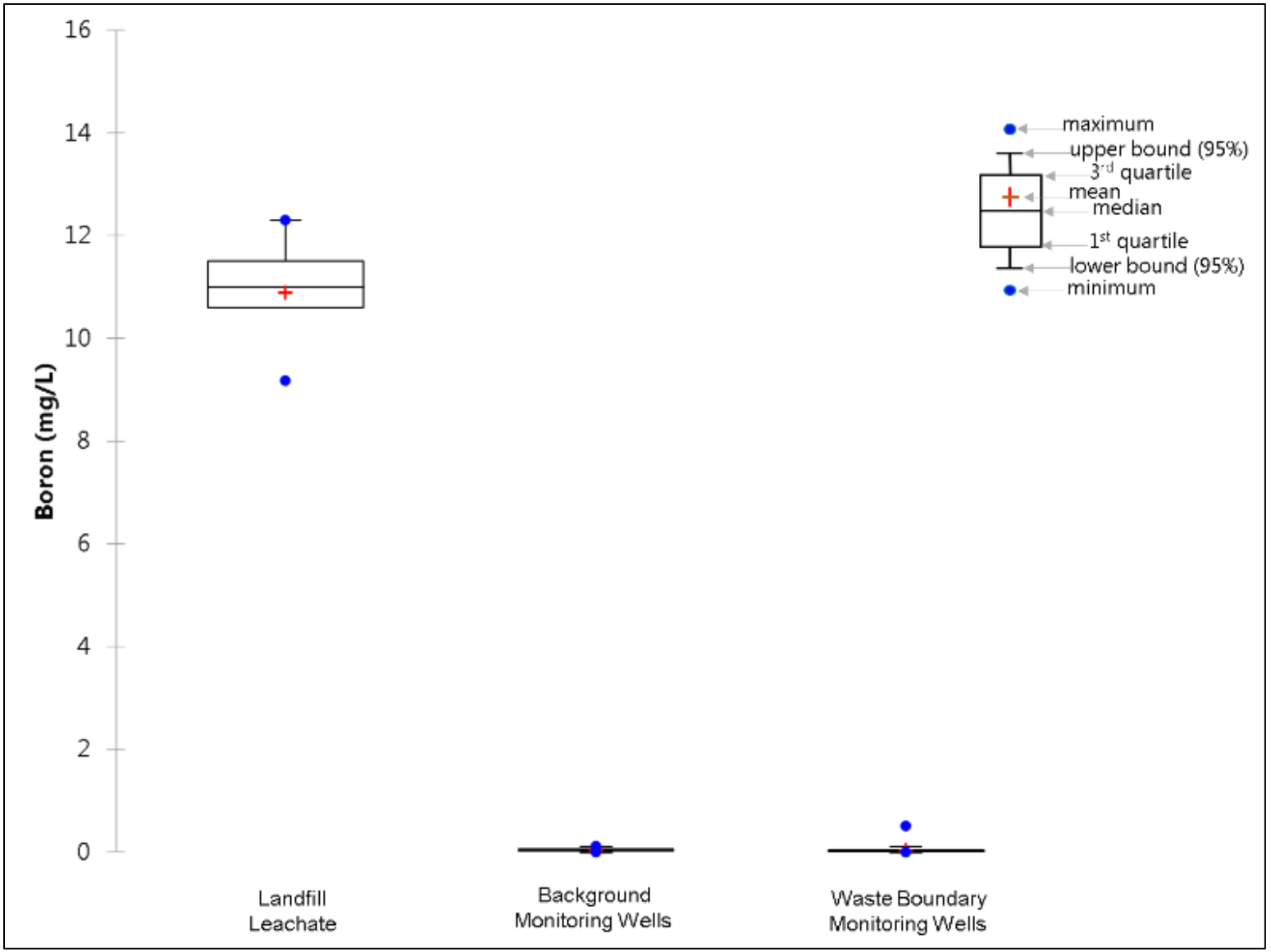


Exhibit 3-4. CCR monitoring well and landfill leachate ponds sulfate concentrations.

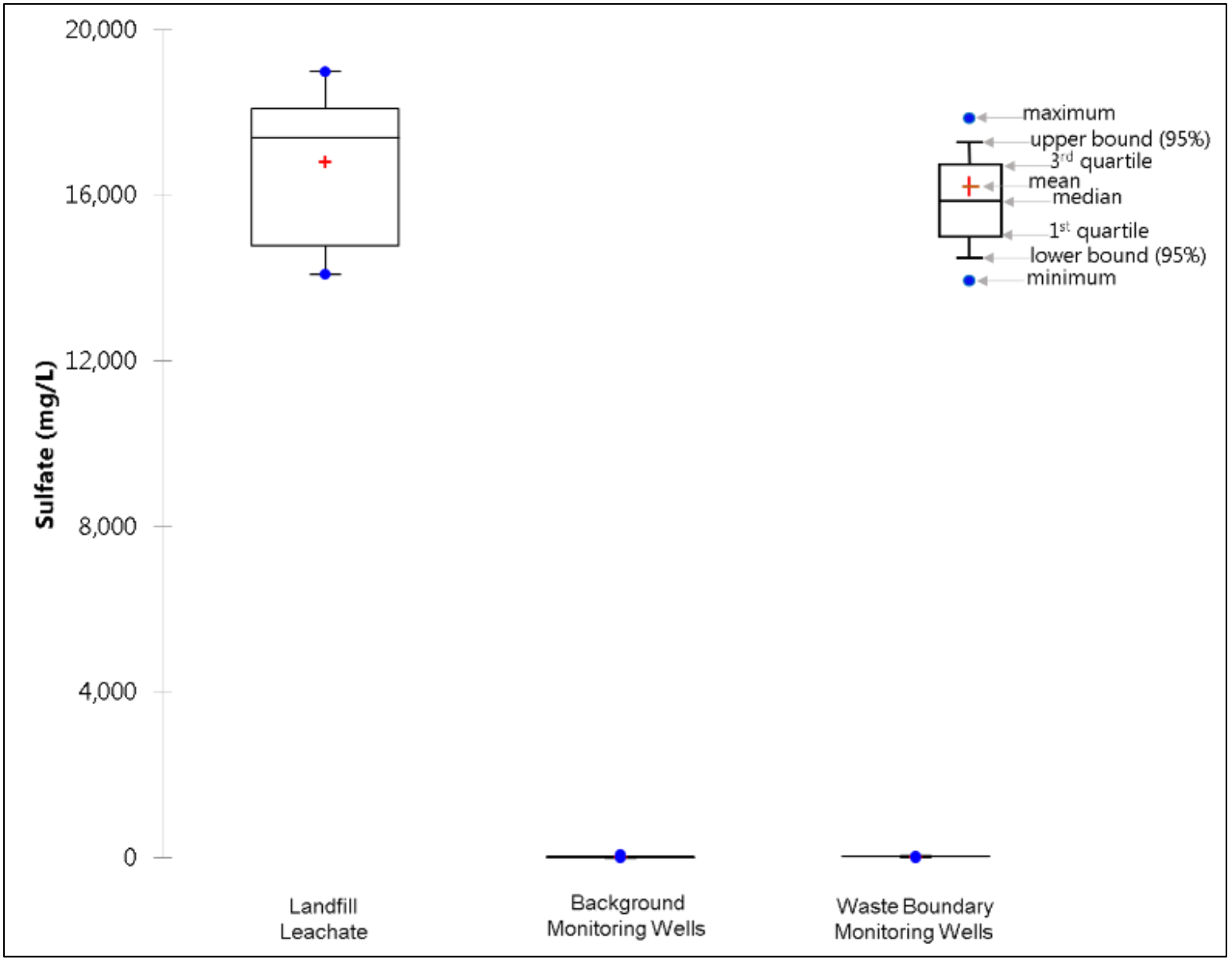


Exhibit 3-5. Boron to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.

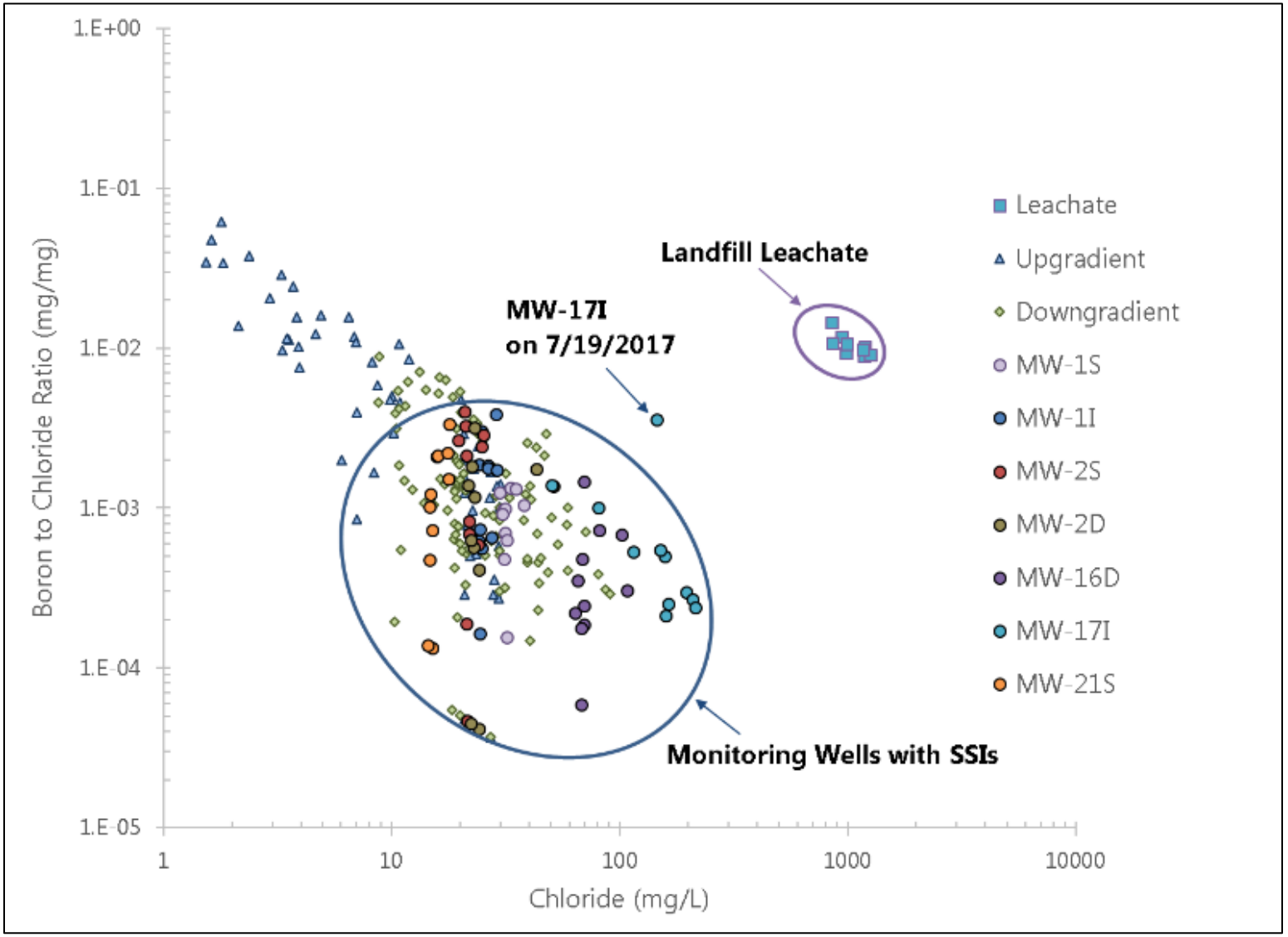


Exhibit 3-6. Sulfate to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.

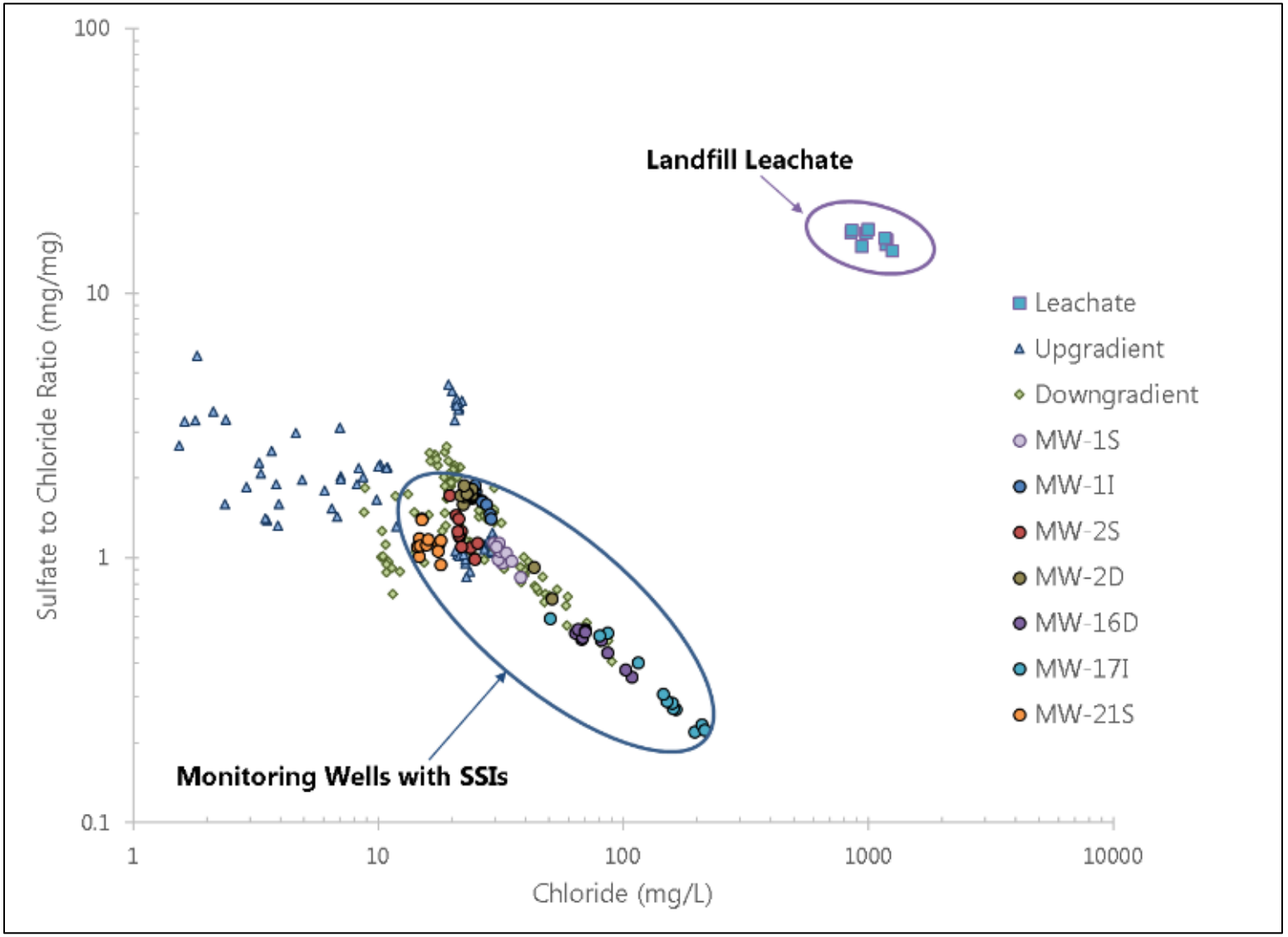


Exhibit 3-7. Piper diagram of major ion water quality for CCR Landfill monitoring wells with SSIs and leachate for comparison.

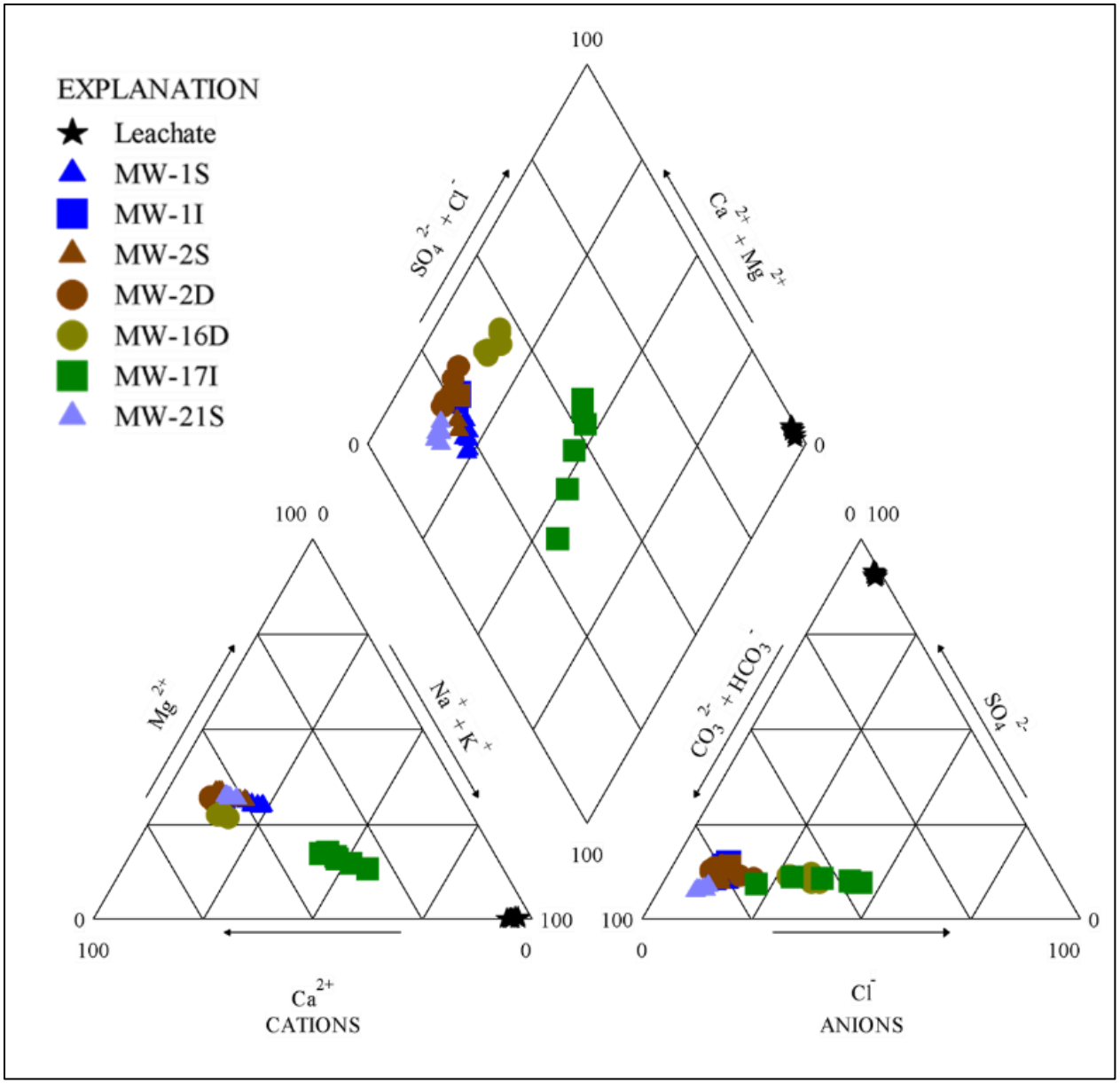


Exhibit 3-8. Boron isotope ratio (‰ 11B) versus boron concentration for CCR Landfill leachate and monitoring wells for comparison.

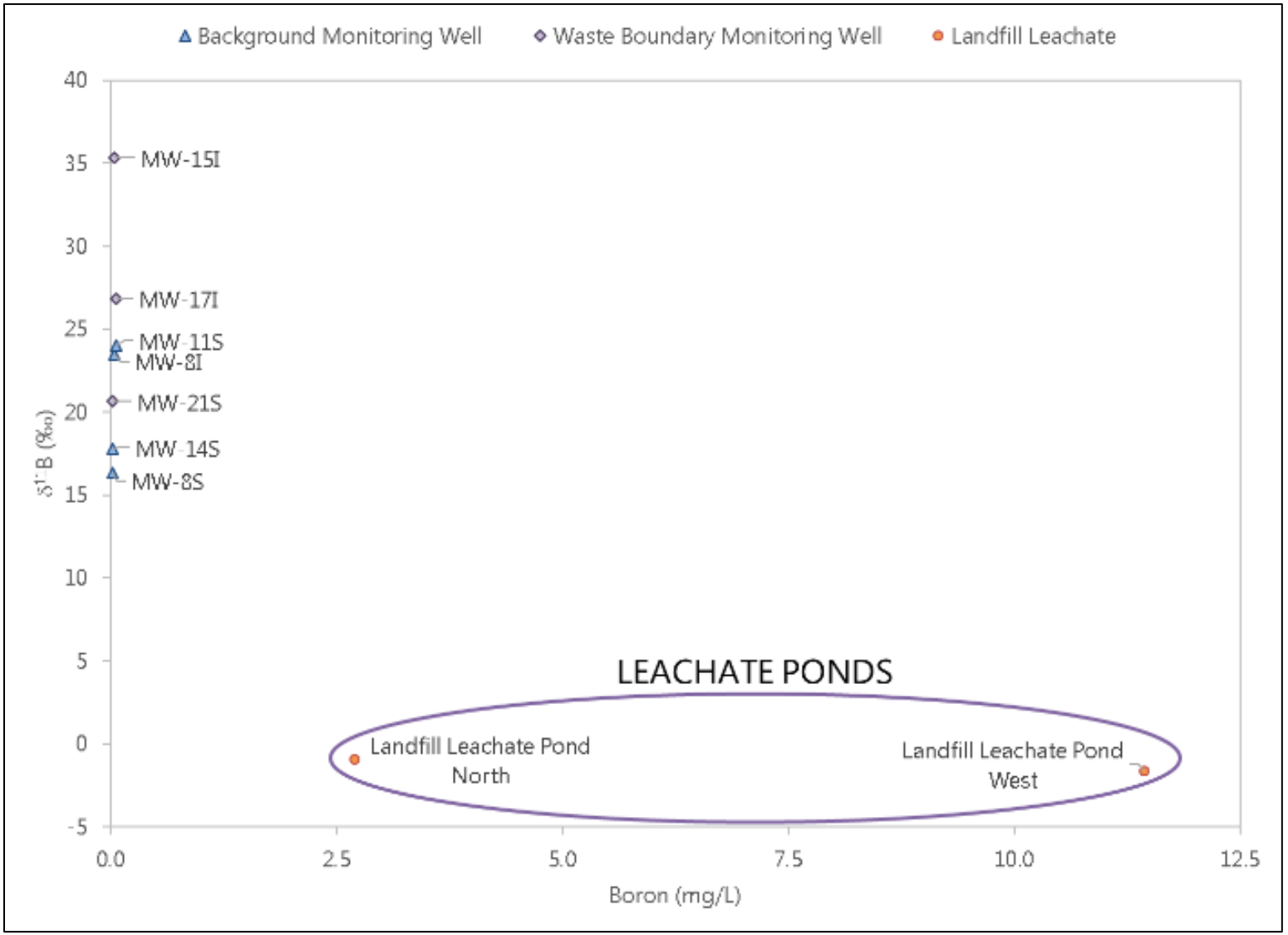
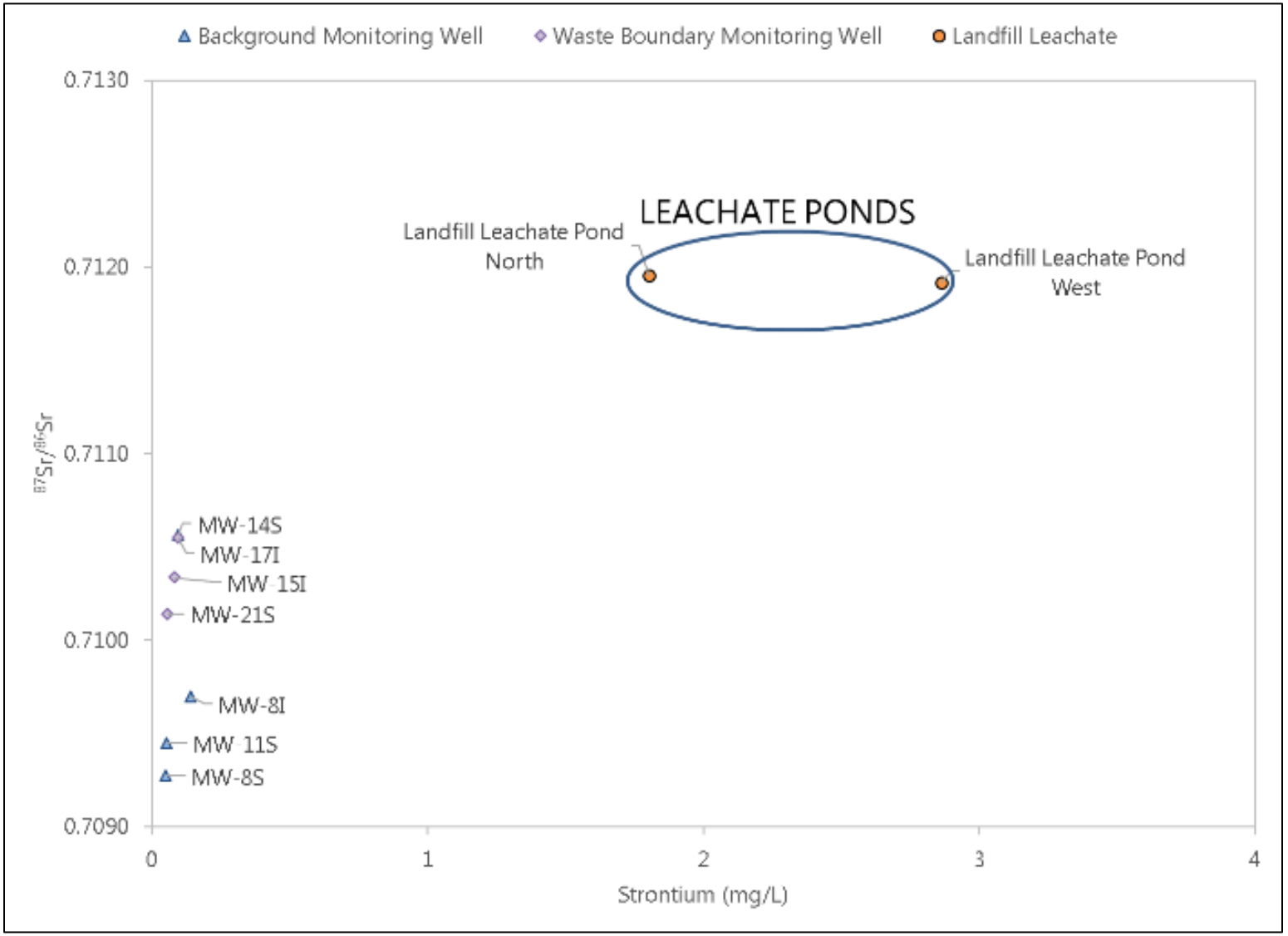


Exhibit 3-9. Strontium isotope ratio ($^{87}Sr/^{86}Sr$) versus strontium concentration for CCR Landfill leachate and monitoring wells for comparison.



APPENDIX 5

ROCKPORT PLANT CCR LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT COVERING 2019 ACTIVITIES

ALTERNATE SOURCE DEMONSTRATION

DECEMBER 10, 2019

Alternative Source Demonstration for Appendix III Constituents, CCR Landfill

American Electric Power Service Corporation
Rockport Generating Station, Rockport, Spencer County, Indiana
Project # 7362192733

Prepared for:

American Electric Power Service Corporation
1 Riverside Plaza, Columbus, Ohio 43215

10 December 2019

10 December 2019

Mr. David Miller
Director, Land Environment & Remediation Services
American Electric Power Service Corporation
1 Riverside Plaza
Columbus, OH 43215
Email: damiller@aep.com

Wood Environment & Infrastructure Solutions, Inc.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
USA
T: 859-255-3308
www.woodplc.com

Dear Mr. Miller:

Wood Environment & Infrastructure Solutions, Inc. (Wood) has prepared this Alternative Source Demonstration (ASD) for the CCR Landfill located at the AEP Rockport Plant in Rockport, Indiana. As detailed in this report, the results of this ASD conclude that statistically significant increases (SSIs) identified in 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 Kathleen Regan at (859) 566-3724.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Konrad W. Quast, PhD
Senior Hydrogeologist

Kathleen D. Regan, PE
Senior Associate Engineer
Project Manager

Attachments

/kdr

cc: Dana Sheets, 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
Project # 7362192733

Prepared for:

American Electric Power Service Corporation
1 Riverside Plaza, Columbus, Ohio 43215

Prepared by:

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10 December 2019

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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. The most recent statistical analysis of Appendix III constituents identified eight statistically significant increases (SSIs) above background, distributed among seven waste boundary monitoring wells. Four waste boundary monitoring wells exhibited SSIs for chloride (MW-1I, MW-2S, MW-2D and MW-16D). One of the six wells, MW-16D, also exhibited a SSI for total dissolved solids (TDS). The remaining SSI was observed for fluoride in monitoring well MW-17I, which did not exhibit any other SSI.

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, CCR Landfill leachate can be excluded as a source of Appendix III SSLs for the following reasons:

- 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 in the 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 observed in multiple waste boundary wells and at statistically significant concentrations above background. It does not.

- Sulfate is another typical indicator for CCR leachate impacts, which also 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 were determined in any of the waste boundary well samples.

- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations about two orders-of-magnitude above groundwater concentrations. Spatial trends can be observed in **Exhibits 3-5** and **3-6** and indicate that chloride concentrations tend to increase in groundwater moving downgradient from recharge areas. However, because the SSIs indicated for chloride are not associated with SSIs for boron and sulfate, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.

- The same conclusion can be drawn in regard to calcium, total dissolved solids (TDS) and fluoride, for which occasional SSIs are not consistently associated with boron, sulfate, or each other. The SSIs indicated for these constituents appear to be related to the natural variation in groundwater quality, along with a spatial trend of increasing TDS with distance from recharge area.

- Monitoring well MW-17I is associated with an SSI for fluoride. This well, along with MW-17S and the well cluster MW-15S/I are located cross-gradient of potential source materials. Groundwater monitored by these wells is not hydraulically influenced by the CCR Landfill.

1.0 Objective

American Electric Power (AEP) operates a CCR Landfill that is used for the management of coal combustion residuals (CCR). 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.

Four rounds of detection monitoring 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 statistically significant increases (SSIs) above background are detected in the waste boundary monitoring wells for Appendix III constituents. For each semi-annual sampling round where SSIs are detected, an alternate 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 Wood Environment & Infrastructure Solutions, Inc. (Wood) have indicated that the source of previously-identified SSIs result from natural variation in groundwater quality or potential impacts from historical off-site oil and gas operations. The most recent ASD was completed by Wood in June 2019 for the detection monitoring event of November 2018, with verification samples taken in February and April 2019.

The first semiannual detection monitoring samples for 2019 were taken in May 2019, with verification samples taken in July and September 2019. Again, a statistical evaluation of monitoring results identified SSIs for several Appendix III constituents. The objective of this ASD is to review these results, and to assess whether the findings of the June 2019 ASD remain valid; that is, that the SSIs detected in the waste boundary wells are 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 a number of 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 semiannual detection monitoring results (including verification samples) and assessing whether the data are consistent with the assessment conducted in the most recent ASD report (Wood, June 2019). The ASD will be 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, in order 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, Wood relied on supplemental analytical data, including 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. **Section 2** presents a summary the CCR Landfill setting, and a summary of the results from the statistical evaluation of the Appendix III detection monitoring parameters. **Section 3** presents the primary and secondary lines of evidence developed from a geochemical evaluation of the site. **Section 4** presents the technical findings of the ASD and includes certification by an Indiana-licensed Professional Engineer (PE). References are included in **Section 4**.

2.0 Background

2.1 Site Description

The Rockport Power Plant is located in southwest Indiana in Spencer County, on property extending into three Townships: Ohio, Hammond and Grass. 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 1**. The CCR Landfill, or Landfill, is located about 8,000 feet (1.5 miles) northeast of the generating plant. **Figure 2** shows the general layout of the CCR Landfill and the monitoring well locations.

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. As shown on Figure 2, the active portion of the CCR Landfill directly adjoins a closed portion of the landfill to the northeast.

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 10 February 2015.

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 storm water 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. A generalized cross-section is presented in **Figure 3**.

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 area from the north, northwest and west, continues flowing under the property generally to the south and east, towards Honey Creek and/or the Ohio River. Potentiometric contour maps illustrating typical groundwater flow conditions are presented in **Figures 4 through 7**.

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 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 unsaturated 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 on **Table A-1** in **Appendix A**.

2.2 Summary of SSIs

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 rounds of baseline data were used to calculate the upper prediction limits (UPLs) for each of the Appendix III constituents to represent background values. Results from the initial detection monitoring event were then compared to the UPLs established from the eight baseline rounds in order to identify SSIs compared to background. The initial statistical evaluation identified 11 SSIs for calcium (2), chloride (7), fluoride (1) and TDS (3). An initial ASD was prepared by Geosyntec focusing on statistical methods. Variation was noted in background concentrations across the site, and statistical methods were modified to use an intrawell approach for chlorine, calcium and TDS. As a result, no SSIs were identified for calcium, six SSIs were identified for chloride and two SSIs were identified for TDS. Since the statistical method remained unchanged for fluoride, one fluoride SSI remained.

In June 2018, Wood published an ASD which focused on geochemistry, and did not further evaluate statistical methods used at the site. The ASD demonstrated, through multiple lines of evidence, that the

SSIs identified in the statistical analysis of the initial detection monitoring event data are not the result of a release of leachate from the CCR Landfill.

The first semiannual detection monitoring event of 2018 was conducted in June, with verification sampling conducted in August and September 2018. 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 off-site oil and gas operations. Sampling for the second semi-annual detection monitoring event in 2018 occurred on November 2018, with verification sampling conducted in February and April 2019. Geosyntec evaluated the second round of detection monitoring results which confirmed nine previously-identified SSIs. These SSIs were the subject of the most recently completed ASD by Wood (June 2019).

The first semiannual detection monitoring samples for 2019 were taken in May 2019, with verification samples taken in July and September 2019. Again, a statistical evaluation of monitoring results identified SSIs for Appendix III constituents. **Exhibit 1** compares the SSIs detected in the second semiannual sampling for 2018 (black) and the first semiannual sampling in 2019 (red). A table of all groundwater monitoring results for the CCR Landfill since June 2016 is presented on **Table A-1** in **Appendix A**.

Exhibit 1. Monitoring Wells and Appendix III Parameters with SSIs

Parameter	MW-1S	MW-1I	MW-2S	MW-2D	MW-16S	MW-16D	MW-17I	MW-21S
Calcium				◆		◆		
Chloride	◆	◆◆	◆◆	◆◆		◆◆		◆
Fluoride							◆◆	
TDS				◆	◆	◆◆		

As shown in **Exhibit 1**, there is significant overlap between the SSIs identified in the second 2018 event and the first 2019 event, as well as several key differences.

- Fewer wells have been identified with SSIs: In the statistical analysis of the 2019 event, no new wells were identified having SSIs, and three wells no longer have identified SSIs (MW-1S, MW-16S and MW-21S).

- New SSIs have been identified for calcium (MW-2D and MW-16D), which previously had not been identified above background concentrations.

- A new SSI for TDS was identified for monitoring well MW-2D, which previously had not been identified.

Wood has reviewed their June 2019 ASD with respect to the statistical evaluation of the new semi-annual sampling event. The evaluation presented in the June 2019 ASD report is still valid, even in light of the new SSIs identified for calcium and TDS. Wood 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 the result of natural variation in groundwater quality. This ASD follows the approach of Wood's June 2019 report, updated with data collected for the first semi-annual sampling event for 2019.

In order to evaluate the potential of a release from the CCR Landfill to groundwater, Wood evaluated groundwater quality data, including isotopes, in the context of the geochemical characteristics of CCR Landfill leachate. The results of this evaluation support that CCR Landfill leachate at the Rockport site can be ruled out as a source of the 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 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.
- Recent potentiometric data indicate the MW-17 cluster (where an SSI for fluoride has been identified) is located downgradient from the borrow area stormwater ponds and is cross-gradient of the CCR Landfill.

Each of these lines of evidence are described in detail below.

3.1 SSIs 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 2**, 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	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	<0.004	0.115	0.001	0.139
Calcium	166	368	35.6	79.5	32.3	114
Chloride	847	1,250	1.54	30.0	8.78	214
Fluoride	<1.50	<1.50	0.25	1.0	0.064	1.08
Total Dissolved Solids (TDS)	22,100	30,900	179	408	196	620
Sulfate	14,100	19,000	3.8	87.5	7.7	54.7

Because the CCR Landfill leachate ponds also receive some storm water 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 seen in **Exhibit 3-1**, boron and sulfate occur at concentrations as much as three orders-of-magnitude above background groundwater levels. Results for chloride and TDS are as much as two orders-of-magnitude above background concentrations. Calcium and fluoride 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.

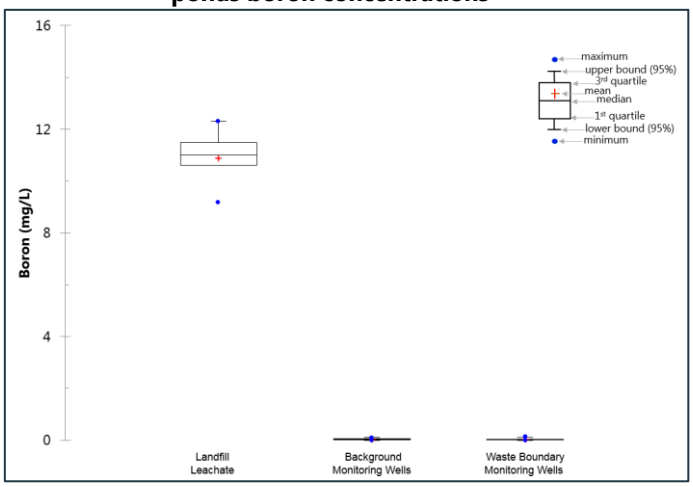
3.1.2 Occurrence of Primary indicator Constituents in Waste Boundary Monitoring Well Samples

Four primary indicator compounds are identified for the Rockport CCR Landfill leachate: boron, sulfate, TDS and chloride. Six SSIs have been identified for chloride, one for TDS and one for fluoride. However, no SSIs were identified in waste boundary wells for either boron or sulfate. Given the predominance of boron and sulfate in the CCR Landfill leachate, and that neither of these constituents are elevated above background, it is unlikely that Landfill leachate is the source of the observed SSIs. 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 <0.004 to 0.115 mg/L. Concentrations in waste boundary well samples range from 0.001 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

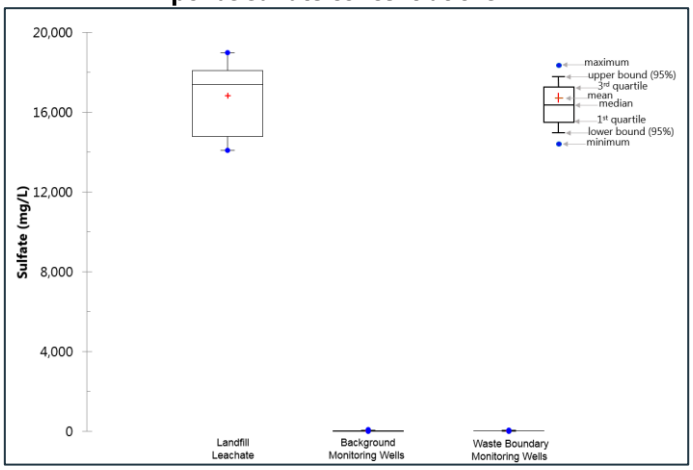


If a release of landfill leachate had occurred, boron concentrations in waste boundary well samples should be clearly higher than the range of background well results, and SSIs would likely be found in at least some of the monitoring wells with other identified SSIs.

Sulfate

No SSIs have been identified for sulfate. Sulfate has been identified in background wells at concentrations ranging from 3.8 to 87.5 mg/L. Concentrations in waste boundary well samples range from 7.7 to 54.7 mg/L. Landfill leachate sulfate concentrations are much 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 (68.2 to 87.5 mg/L).

Exhibit 3-3. CCR monitoring well and landfill leachate ponds sulfate concentrations



In conclusion, 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 statistically significant increases, 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, it is concluded that these SSIs are caused by the natural variation in groundwater quality 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.

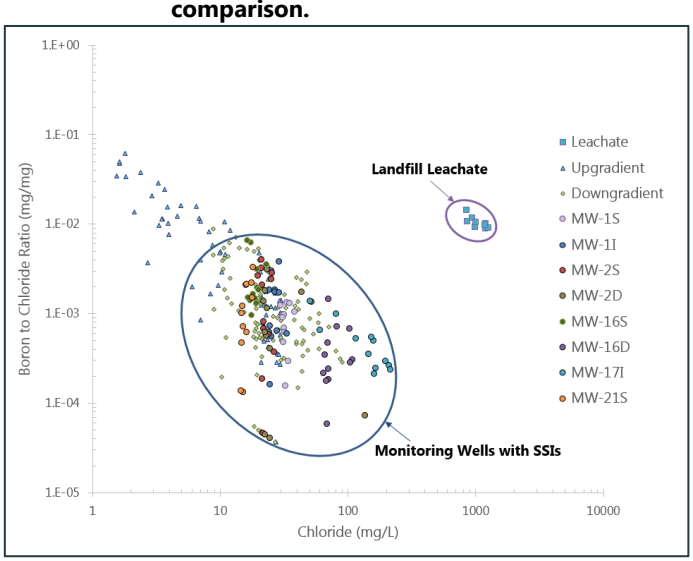
3.2.1 Indicator Parameter Cross-Plots and Major Ion Chemistry

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, and major ion chemistry was assessed as a whole system using Piper trilinear diagrams. 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

Exhibit 3-4. Boron to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.



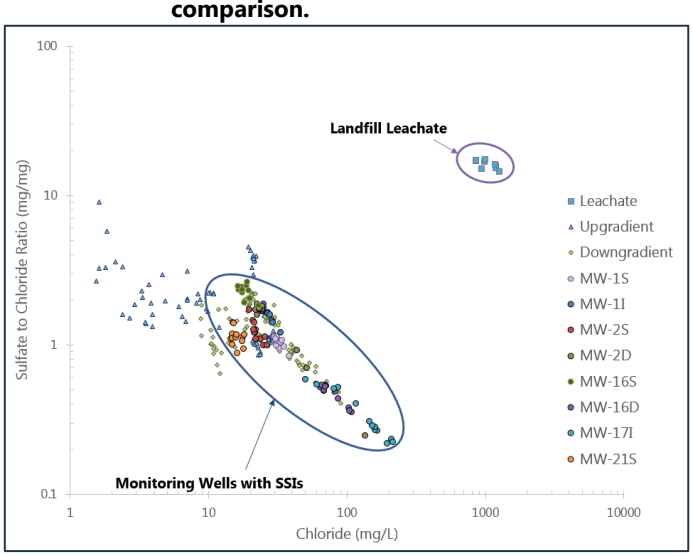
The plotting of B/Cl versus chloride groundwater data shows primarily a single cluster that is similar to what is hypothesized as background based on the composition of leachate samples (**Exhibit 3-4**). The data are plotted on log-log scales due to the large range of concentrations and ratios making 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 followed by a trend of increasing chloride concentrations and salinity with decreasing B/Cl ratios along the flow path represented by downgradient monitoring wells due to geochemical evolution of groundwater. 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 storm water holding ponds.

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.

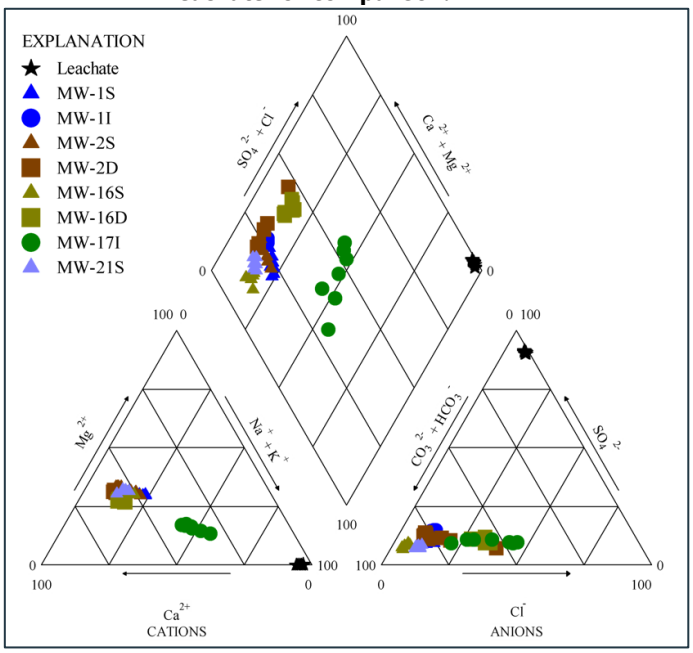
Exhibit 3-5. Sulfate to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.



CCR Landfill Major Ion Water Quality

During the sixth round of sampling, additional analytes were included in the analyses making it possible to create major ion Piper trilinear diagrams for graphical comparison of water types for the CCR Landfill monitoring wells and leachate samples. Inferences of different groundwater source end members are supported by the Piper diagram shown on **Exhibit 3-6**. All of the major ion chemistry is plotted on a single diagram and results are supportive of the observations found when reviewing the cross-plots of ion ratios versus chloride concentrations. Leachate plots as a sodium sulfate water type while the majority of monitoring wells, including those identified with SSIs in this ASD, are associated with a calcium bicarbonate water type with the exception of MW-17I. Monitoring well MW-17I shows a different major ion water type that is influenced by greater contributions of sodium and chloride, but not sulfate, and the higher sodium and chloride is potentially related to the influence of upgradient stormwater ponds.

Exhibit 3-6. Piper diagram of major ion water quality for CCR Landfill monitoring wells with SSIs and leachate for comparison.



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; Ruhl et al. 2014; Harkness et al. 2017). 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. 2017; Nigro 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) NIST SRM 951:

$$\delta^{11}B(‰) = \frac{\left(\frac{^{11}B}{^{10}B}\right)_{Sample} - \left(\frac{^{11}B}{^{10}B}\right)_{Standard}}{\left(\frac{^{11}B}{^{10}B}\right)_{Standard}} \times 1000 \qquad \text{eq. 1}$$

Isotope ratios of strontium can be reported relative to a standard value but are commonly reported as the actual ratio $^{87}Sr/^{86}Sr$. The values for strontium reported here are the actual ratios, but they have been corrected to the National Institute of Standards and Technology (NIST) Standard Reference Material (SRM) NIST SRM 987.

Background monitoring wells for the CCR Landfill show lower boron concentrations and higher $\delta^{11}B$ values compared to Landfill leachate samples (**Exhibit 3-7**). While only a limited number of background and waste boundary wells were tested (including MW-17I with a previous and current SSI, and MW-21S 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.

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 3-8**).

Exhibit 3-7. Boron isotope ratio ($\delta^{11}B$) versus boron concentration for CCR Landfill leachate and monitoring wells for comparison.

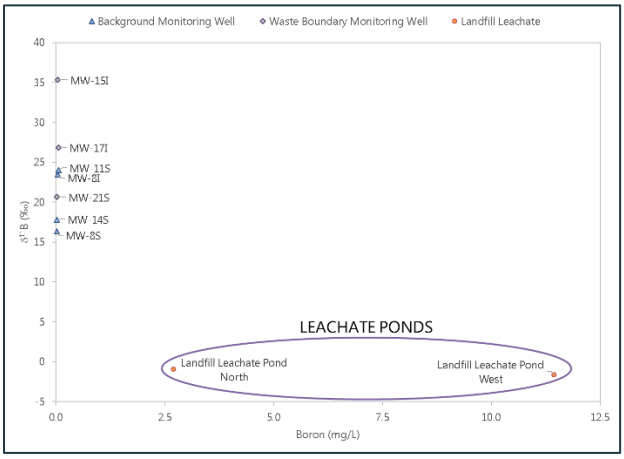
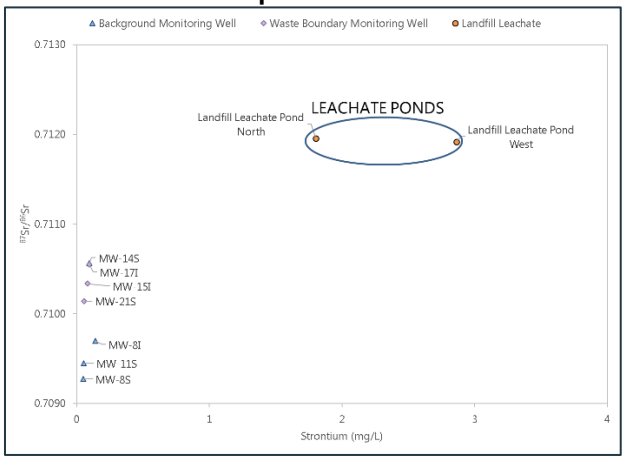


Exhibit 3-8. Strontium isotope ratio ($^{87}Sr/^{86}Sr$) versus strontium concentration for CCR Landfill leachate and monitoring wells for comparison.



3.3 Hydraulic Connection to the CCR Landfill

The groundwater monitoring network and the relationship of the wells to the regulated CCR Landfill are shown on **Figure 2**. Recent potentiometric flow data available for the site consistently indicate a local groundwater flow direction in the vicinity of MW-17 to the south and southeast. Four potentiometric surface maps are presented on **Figures 4 through 7**. As shown on these figures, well cluster MW-17 is

located cross-gradient from the CCR Landfill and at least sometimes downgradient of the borrow area stormwater ponds. Therefore, groundwater monitored by this well cluster is hypothesized to be unaffected by potential releases from the CCR Landfill unit.

4.0 Summary

As summarized in **Exhibit 2-1** above, in the initial detection monitoring event, SSIs were identified in only five of 16 downgradient monitoring wells, for the following Appendix III constituents (the number of SSIs is indicated in parentheses): chloride (4), fluoride (1), calcium (2), and TDS (2). The following statements summarize how the lines of evidence discussed above apply to each of the constituents with identified SSIs:

- 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 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, but it does not and the boron that is present has been shown to be isotopically different.

- Sulfate is another common indicator for CCR leachate impacts, which also 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 were determined in any of the waste boundary well samples.

- Chloride is a naturally occurring and conservative ion, which occurs in the CCR Landfill leachate at concentrations about two orders-of-magnitude above groundwater concentrations. Spatial trends can be observed in **Exhibits 3-4** and **3-5** and indicate that chloride concentrations tend to increase in groundwater moving downgradient from recharge areas. However, because the SSIs indicated for chloride are not associated with SSIs for boron and sulfate, the CCR Landfill leachate is not considered a source for the chloride detected in groundwater.

- The same conclusion can be drawn in regard to calcium, TDS and fluoride, for which occasional SSIs are not consistently associated with boron, sulfate, or each other. The SSIs indicated for these constituents appear to be related to the natural variation in groundwater quality, along with a spatial trend of increasing TDS with distance from recharge area.

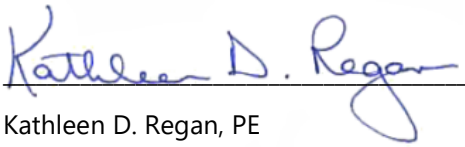
- Monitoring well MW-17I is associated with an SSI for fluoride. This well, along with MW-17S and the well cluster MW-15S/I are located cross-gradient of potential source materials. Groundwater monitored by these wells is not hydraulically influenced by the CCR Landfill. Additionally, the CCR landfill leachate does not contain significant contributions of fluoride where samples were non-detect (<1.5 mg/L) for fluoride.

4.1 Conclusion

This ASD has demonstrated, through multiple lines of evidence, that the SSIs identified in the statistical analysis of the second detection monitoring event data are not the result of a release of leachate from the CCR Landfill. Therefore, the unit will 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(h)(8)(3)(ii) have been met.



10 December 2019

Kathleen D. Regan, PE
Indiana Registered Engineer PE1400182

Date

5.0 References

Buszka, P.M., Fitzpatrick, J., Watson, L.R., and Kay, R.T., 2007. *Evaluation of Ground-Water and Boron Sources by Use of Boron Stable-Isotope Ratios, Tritium, and Selected Water-Chemistry Constituents near Beverly Shores, Northwestern Indiana*, 2004 U.S. Geological Survey Scientific Investigations Report 2007–5166. (Buszka et al. 2007).

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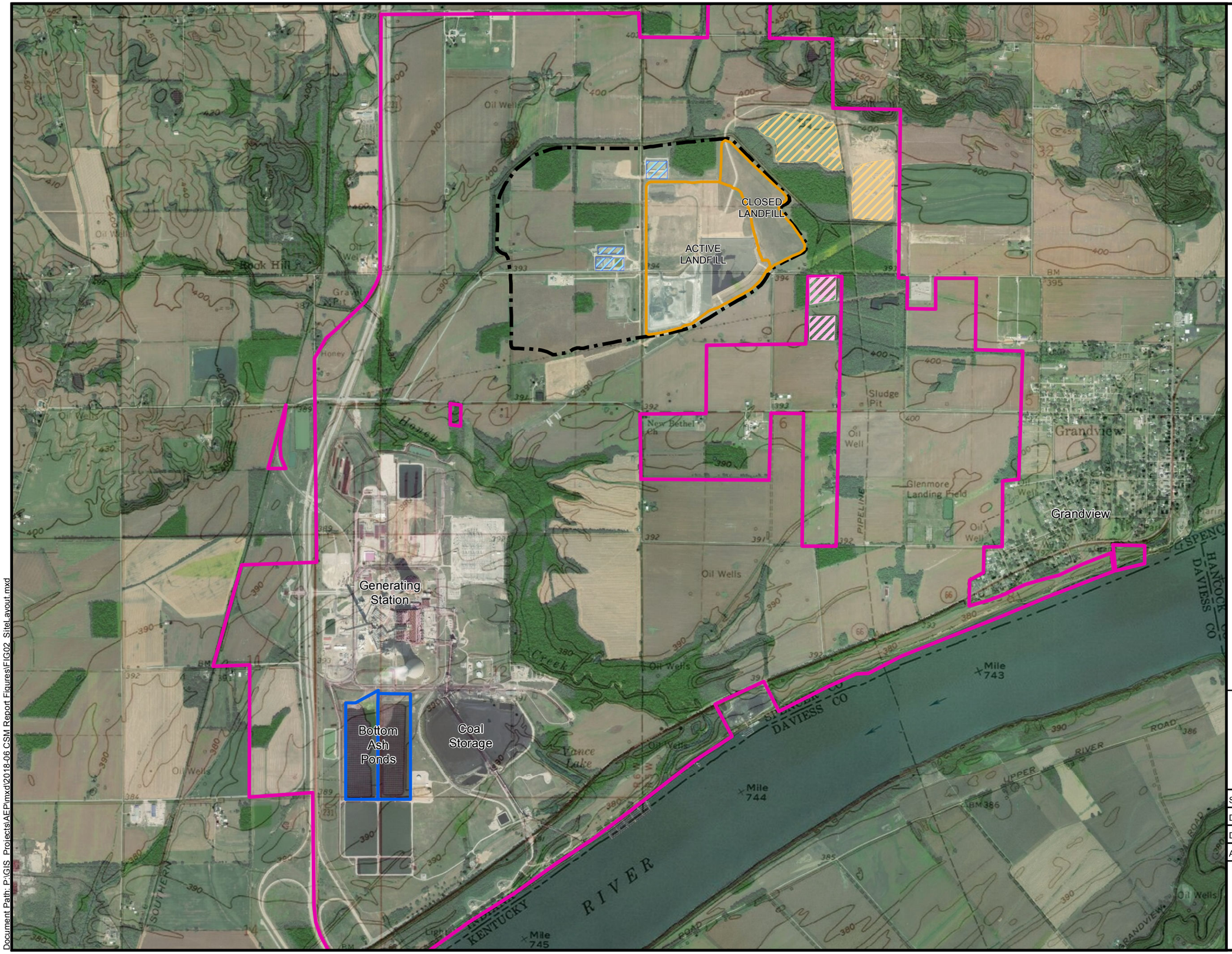
Figures



Legend

- Stormwater Ponds
- Landfill Leachate Ponds
- Grandview Wastewater Ponds
- Property Boundary
- Bottom Ash Ponds (BAP)
- Landfill Area 1A (Active and Closed)
- 1984 Landfill Permit Boundary (Area 1)

Data Sources

Date of Photography: 2016
Source of Photography: U.S. Department of Agriculture, National Agriculture Imagery Program (NAIP)

USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps

0 900 1,800
SCALE IN FEET

SITE LAYOUT

AEP - ROCKPORT, IN

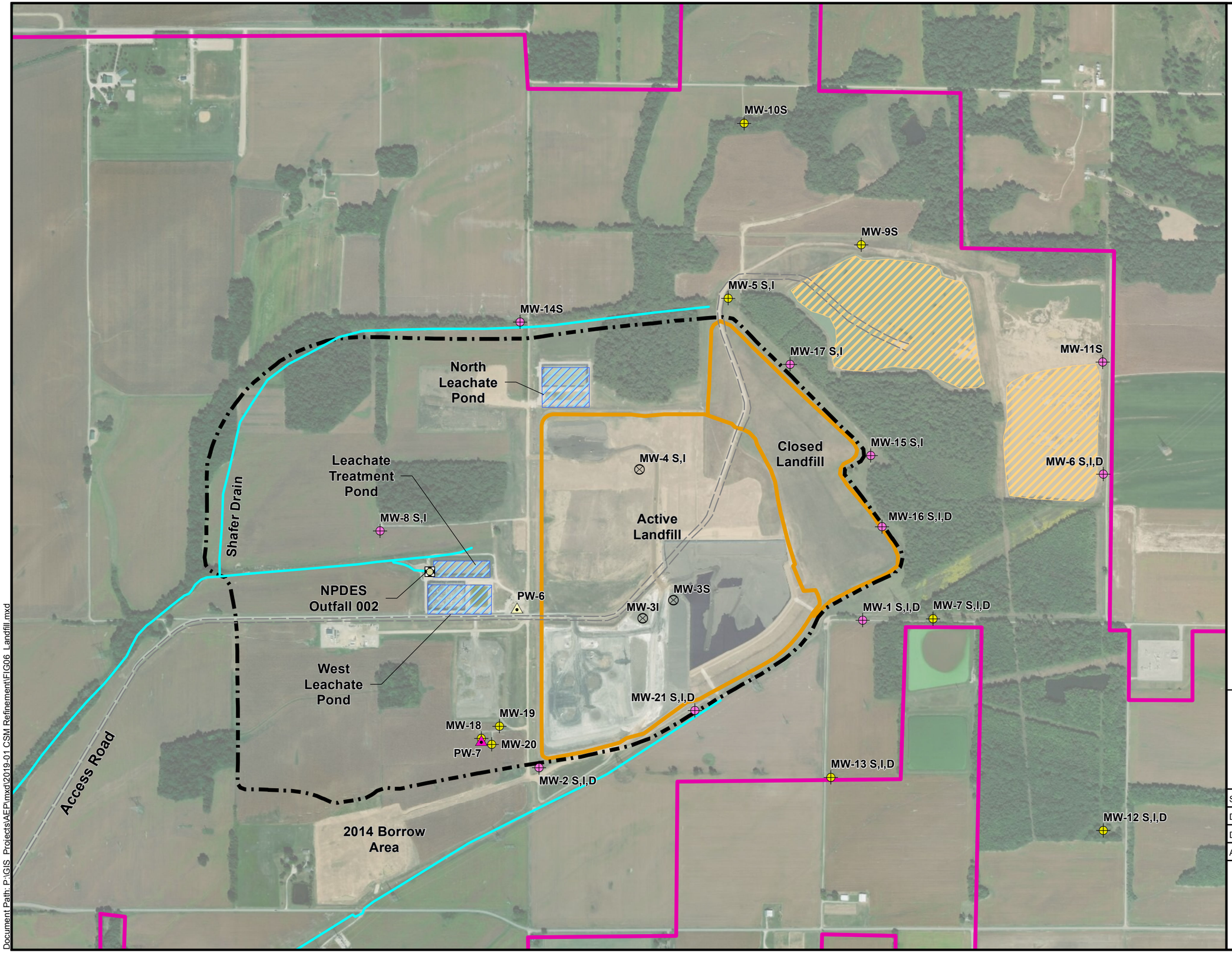
PROJECT NUMBER: 7362192733

SCALE	1" = 1,800'
DATE	9/4/2018
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 1

wood.
2456 Fortune Drive, Suite 100
Lexington, Kentucky 40509
Phone: (859) 255-3308

Document Path: P:\GIS_Projects\AEP\mxd\2018-06 CSM Report Figures\FIG02_SiteLayout.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

Source: USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps, 1964, photorevised 1982

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SCALE IN FEET

LANDFILL LAYOUT

AEP - ROCKPORT, IN

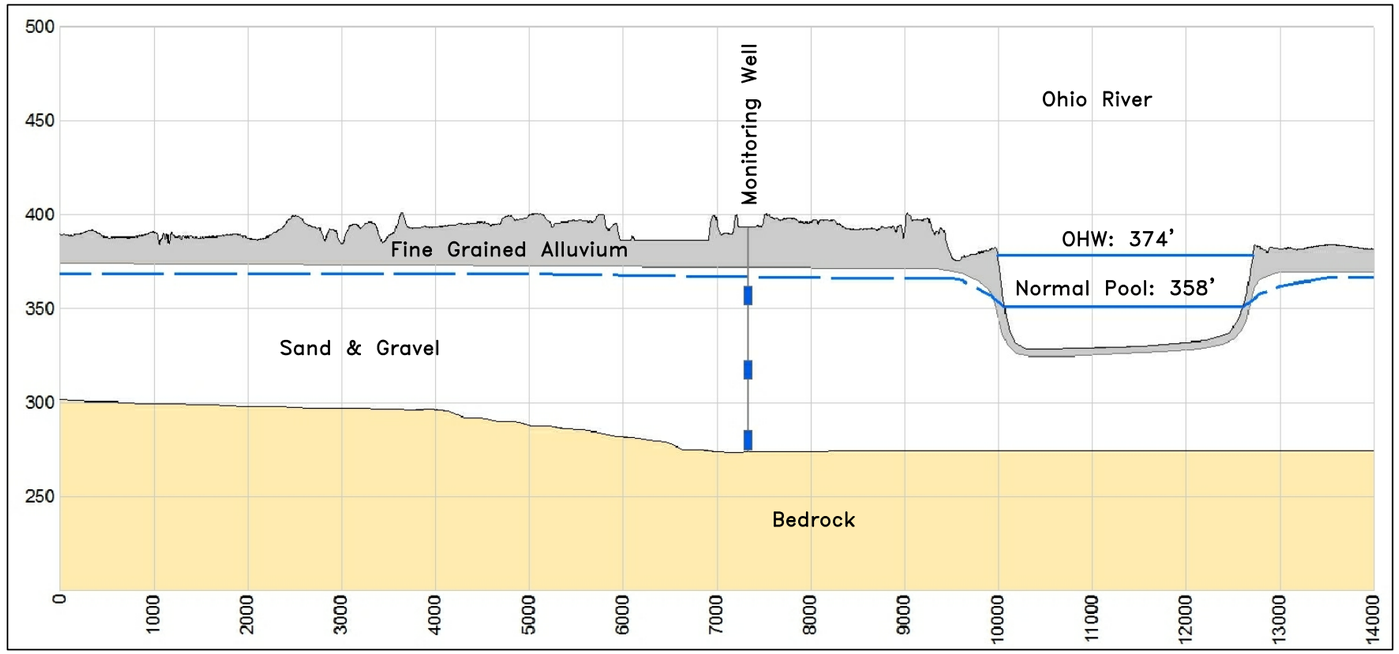
PROJECT NUMBER: 7362192733

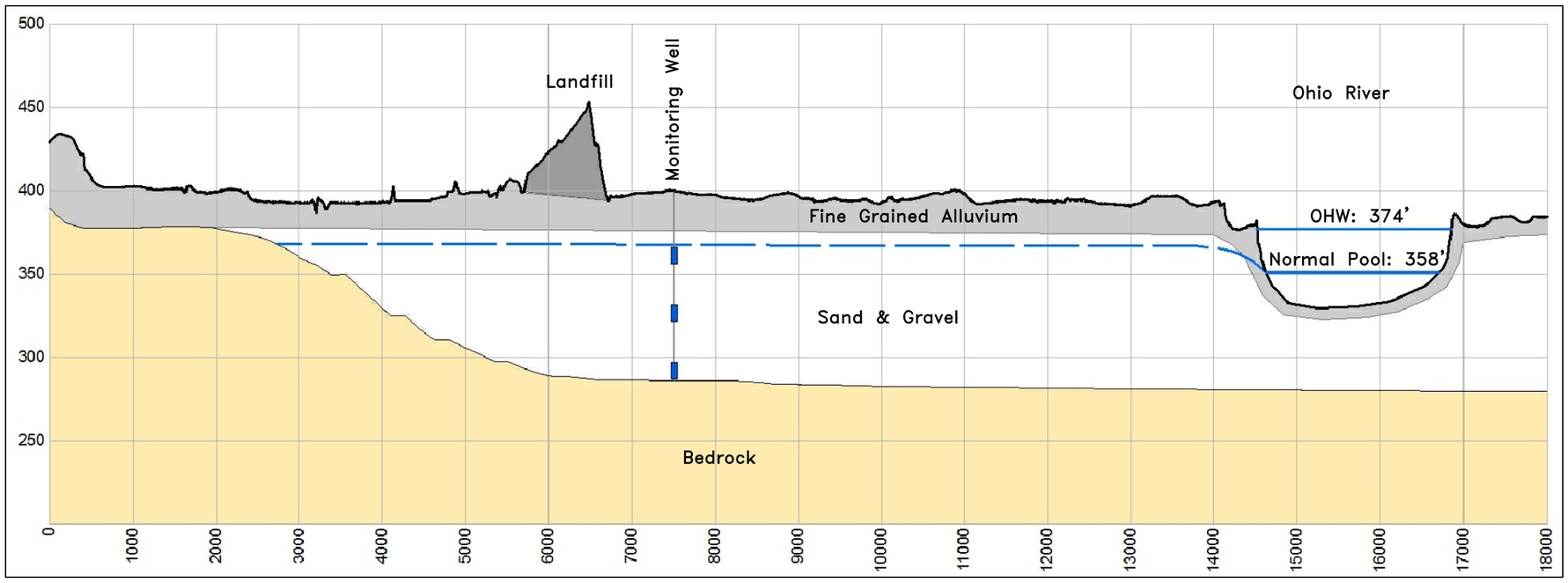
SCALE	1" = 800'
DATE	3/6/2019
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 2

wood.
2456 Fortune Drive, Suite 100
Lexington, Kentucky 40509
Phone: (859) 255-3308

Document Path: P:\GIS_Projects\AEP\mxd\2019-01 CSM Refinement\FIG06_Landfill.mxd





SCALE: As Shown
VERTICAL EXAGGERATION: 4X

N

wood.
2456 Fortune Drive, Suite 100
Lexington, KY 40509
Phone: (859) 255-3308

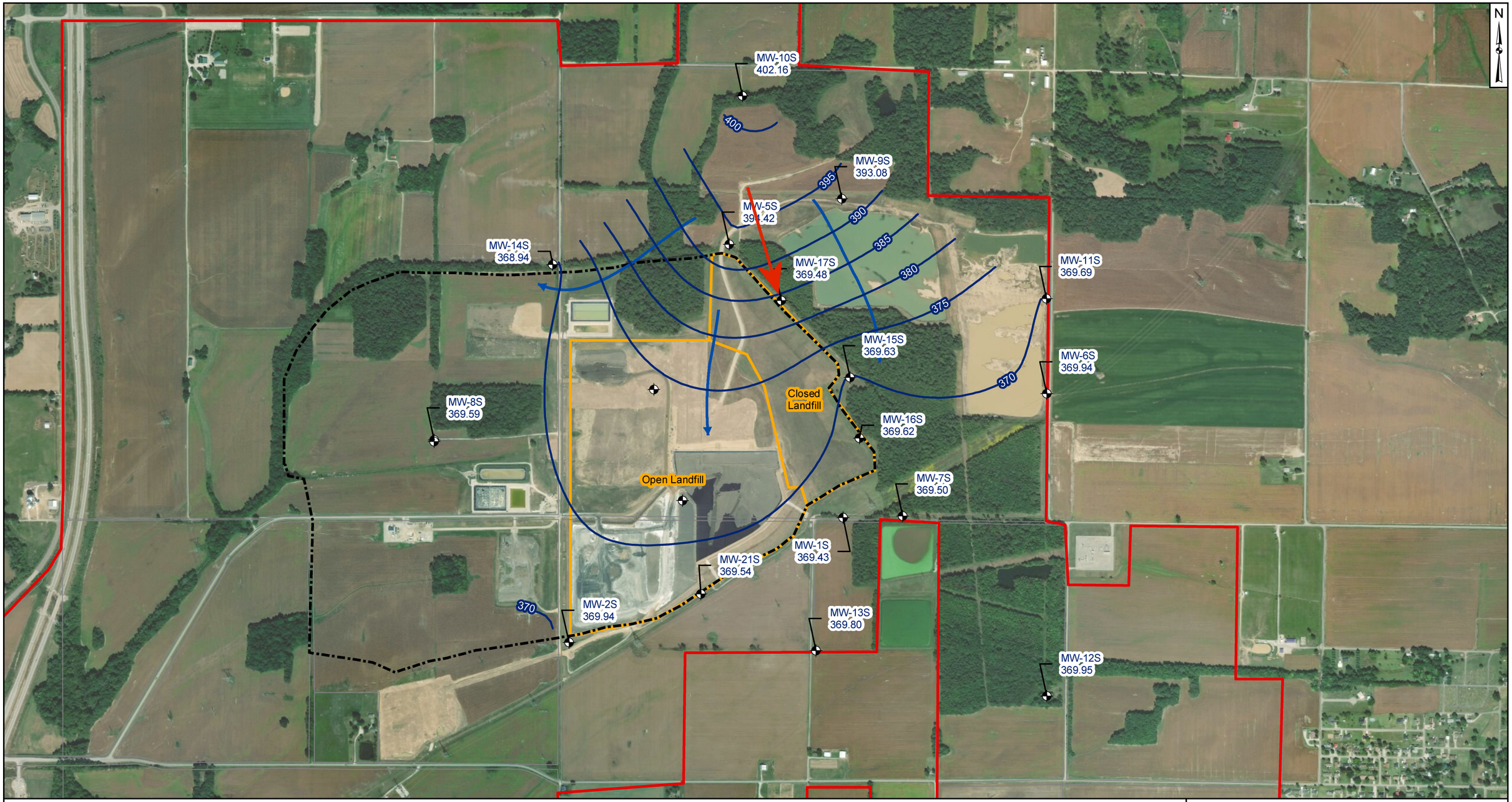
BOTTOM ASH PONDS
AEP - ROCKPORT, INDIANA

GENERALIZED CROSS-SECTIONS

PROJECT NUMBER: 7362192733

SCALE	As Shown
DATE	9/28/2017
DRAWN BY	TMR
APPROVED BY	ALD

FIG 3



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction
- Property Boundary
- Parcel Boundaries
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Notes

- Monitoring well coordinates and water level data (collected on June 4, 2018) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (AMEC, 2016) provided by AEP.
- Property and parcel boundaries taken from Spencer County Assessor.
- The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
- Groundwater elevation units are feet above mean sea level.

1,000 500 0 1,000 Feet

Aprroximate Groundwater Flow Direction

Potentiometric Surface Contours - Uppermost Aquifer June 2018

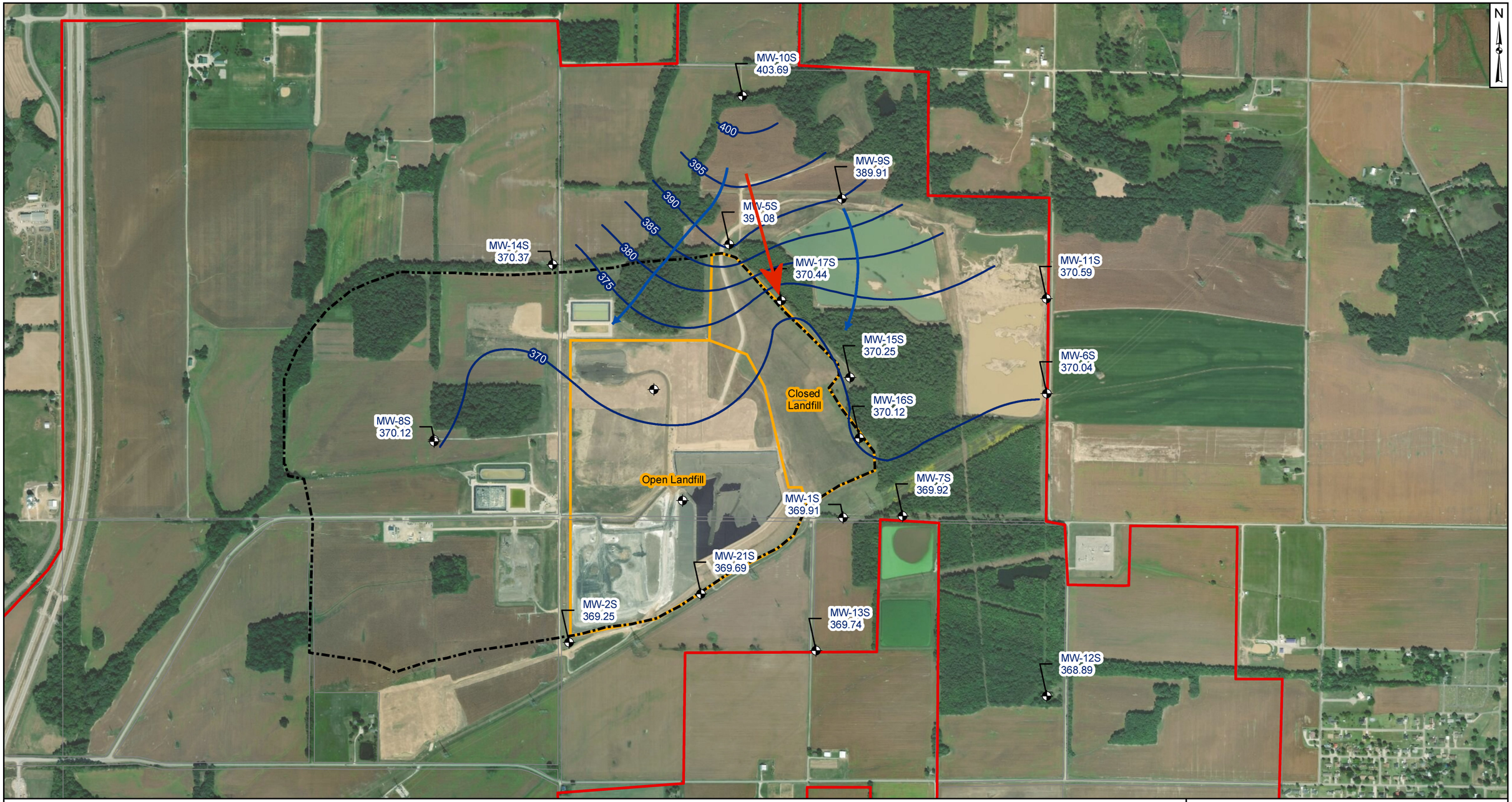
AEP-Rockport Power Plant - CCR Landfill
Rockport, Indiana

Geosyntec consultants

Columbus, Ohio | 2018/11/19

Figure 4

P:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Rockport\2018\Rockport_Landfill_GW_Elev_June2018.mxd. ARevezzo. 11/19/2018. CHA8423/08/08.



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Approximate Groundwater Flow Direction
- Property Boundary
- Parcel Boundaries
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Notes

- Monitoring well coordinates and water level data (collected on August 13, 2018) provided by AEP.
- Site features based on information available in the Groundwater Monitoring Network Evaluation (AMEC, 2016) provided by AEP.
- Property and parcel boundaries taken from Spencer County Assessor.
- The water level from the shallowest screen interval in each well cluster was used in groundwater contouring.
- Groundwater elevation units are feet above mean sea level.

1,000 500 0 1,000 Feet

Aprroximate Groundwater Flow Direction

Potentiometric Surface Contours - Uppermost Aquifer August 2018

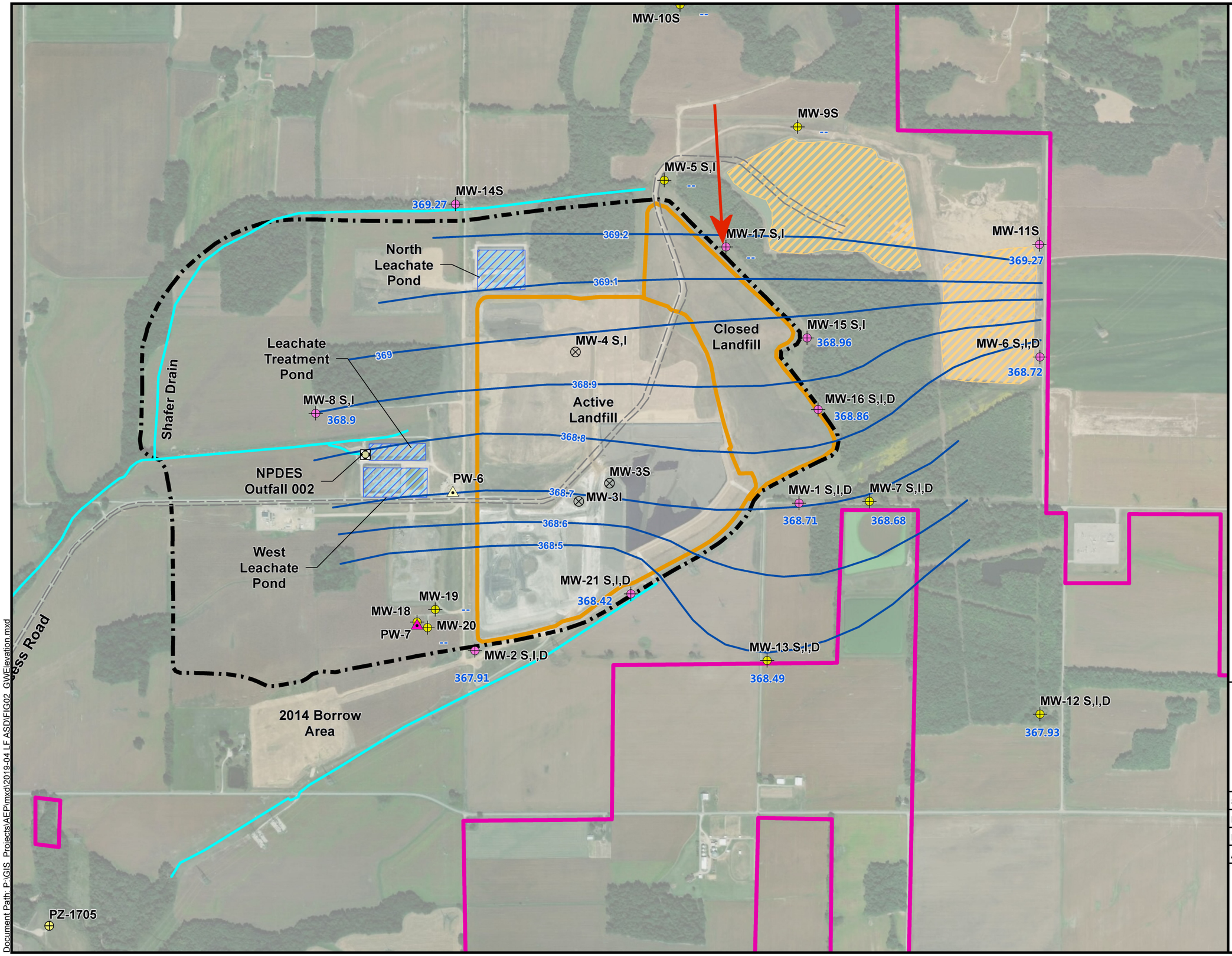
AEP-Rockport Power Plant - CCR Landfill
Rockport, Indiana

Geosyntec consultants

Columbus, Ohio | 2018/11/26

Figure **5**

P:\Projects\AEP\Groundwater Statistical Evaluation - CHA8423\Groundwater Mapping\GIS Files\MXD\Rockport\2018\Rockport_Landfill_GW_Elev_Aug2018.mxd. ARevezzo. 11/26/2018. CHA8423/08/08.



Document Path: P:\GIS_Projects\AEP\mxd\2019-04 LF ASD\FIG02_GWElevation.mxd

Legend

- Piezometer
- Landfill - Monitoring Well
- Landfill - CCR Monitoring Well
- Landfill - Augmentation Water Supply Well
- Landfill - Dust Control Water Supply Well
- Abandoned Monitoring Well
- NPDES Outfall 002

Date

- 2018-11-12
- Access Road
- Drains / Ditches
- Stormwater Ponds
- Landfill Leachate Ponds
- Property Boundary
- 1984 Landfill Permit Boundary (Area 1)
- Landfill Area 1A (Active and Closed)

Aprroximate Groundwater Flow Direction

Data Sources

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps, 1964, photorevised 1982

0 400 800
SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOURS 12 NOVEMBER 2018

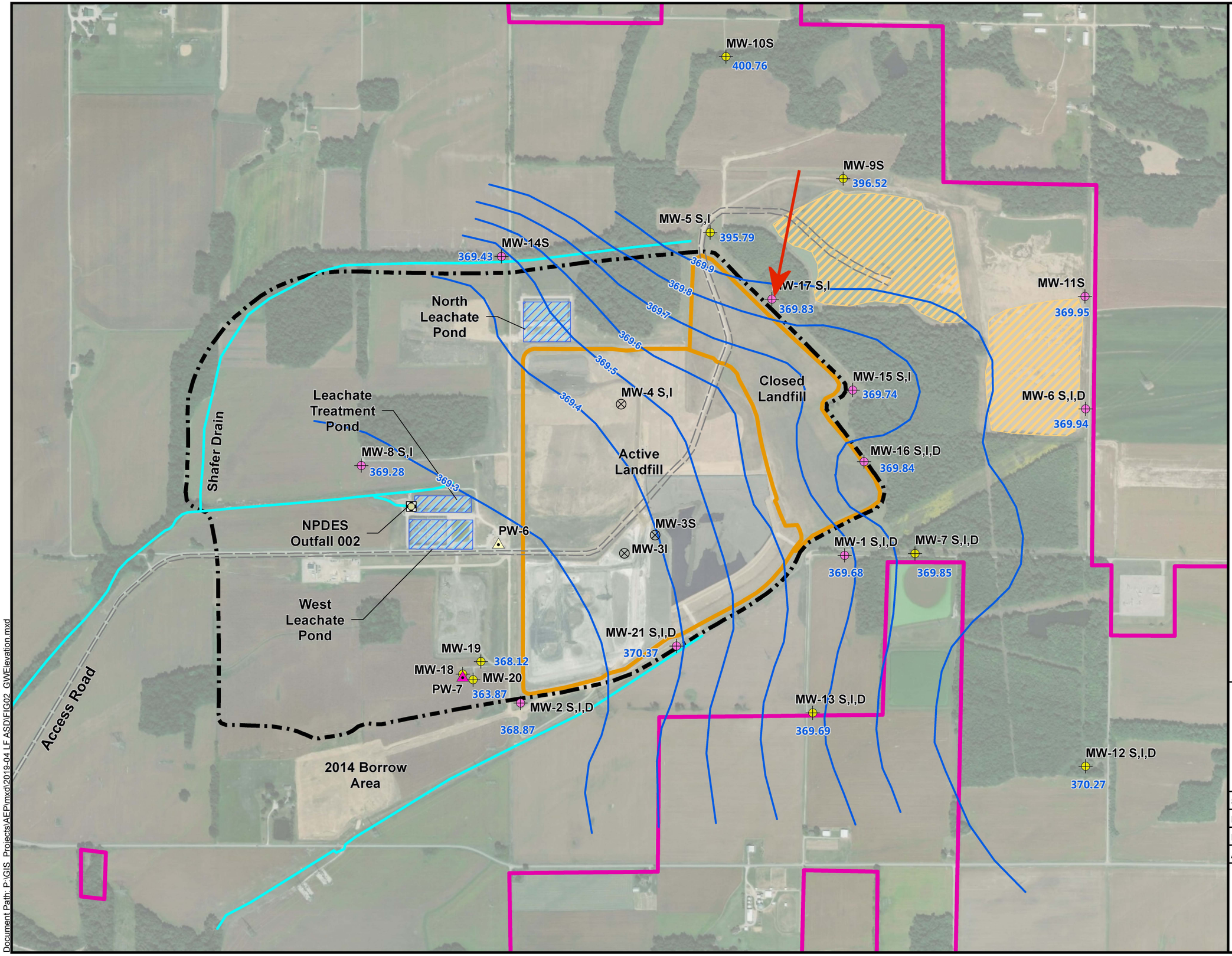
AEP - ROCKPORT, IN

PROJECT NUMBER: 7362192733

SCALE	1" = 800'
DATE	4/26/2019
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 6

wood.
2456 Fortune Drive, Suite 100
Lexington, Kentucky 40509
Phone: (859) 255-3308



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
- GW_Elev_LF
- Access Road
- Drains / Ditches
- Stormwater Ponds
- Landfill Leachate Ponds
- Property Boundary
- 1984 Landfill Permit Boundary (Area
- Landfill Area 1A (Active and Closed)

Aprroximate Groundwater Flow Direction

Data Sources

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: USGS Rockport and Lewisport (IN/KY) Topographic Quadrangle Maps, 1964, photorevised 1982

0 400 800
SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOURS 11 FEBRUARY 2019

AEP - ROCKPORT, IN

PROJECT NUMBER: 7362192733

SCALE	1" = 800'
DATE	4/9/2019
DRAWN BY	TMR
APPROVED BY	KDR

FIG. 7

wood.
2456 Fortune Drive, Suite 100
Lexington, Kentucky 40509
Phone: (859) 255-3308

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Appendices

Appendix A
Analytical Data Tables

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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.	--	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	--	--	--	--	--	--	--
Molybdnum	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	0.677	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
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-1S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	5/23/2019	7/23/2019
Field Parameters					
Elevation	ft NGVD	--	--	371.82	372.42
pH	S.U.	--	7.09 - 8.14	7.91	7.36
Specific Conductance	µmhos/cm	--	--	593	618
Turbidity	NTU	--	--	0.05	1.6
Dissolved Oxygen	mg/L	--	--	0.87	1.5
Temperature	°C	--	--	15.6	18.2
ORP	mV	--	--	-28.8	57
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	--
Molybdnum	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	--
Calcium	mg/L	--	(79.5) 79	73.7	--
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	--
Chloride	mg/L	--	(29.6) 33	33.7	30
Fluoride	mg/L	4	0.677	0.55	--
TDS	mg/L	--	(412.7) 419	388	--
Sulfate	mg/L	--	(36.95) 37	36.3	--
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
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-1I

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
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
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
Specific Conductance	µmhos/cm	--	--	461	479	570	544	370	500	443	402	424	480	533
Turbidity	NTU	--	--	0.9	0.7	0.24	0.35	1	1	0.6	0.36	1	0.32	0
Dissolved Oxygen	mg/L	--	--	0.4	0.3	1.07	0	0.3	1	0.46	27.63	0.5	0.87	0.22
Temperature	°C	--	--	17.5	18.2	16.99	14.53	14.4	15.7	15.44	16.52	16.4	16.25	16.03
ORP	mV	--	--	-21	205	-2.1	4.4	10	36	-26.2	-118.8	-23	-102.2	253
Laboratory Parameters														
Antimony	µg/L	6	--	0.04	0.04	0.01	0.02	0.02	0.01	0.04	0.02	--	--	--
Arsenic	µg/L	10	--	0.86	0.78	0.92	0.8	0.82	0.69	0.89	0.86	--	--	--
Barium	µg/L	2000	--	85.5	86.1	84.9	93.4	90.5	76.7	85	94.3	--	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.004	<0.004	--	--	--
Cadmium	µg/L	5	--	0.08	0.1	0.02	0.02	0.02	0.05	0.01	0.007	--		--
Chromium	µg/L	100	--	0.2	1	0.2	0.051	0.39	0.686	0.155	0.112	--	--	--
Cobalt	µg/L	6	--	0.341	0.364	0.401	0.381	0.424	0.054	0.558	0.569	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.12	0.2	0.48	--
Lead	µg/L	15	--	0.851	1.25	0.156	0.059	0.099	0.427	0.068	0.137	--	--	--
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Molybdnum	µg/L	100	--	2.47	2.85	2.89	3.27	3.33	1.82	2.87	2.85	--	--	--
Selenium	µg/L	50	--	<0.03	0.04	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	--	--	--
Thallium	µg/L	2	--	0.03	0.02	0.02	0.03	0.104	0.03	0.02	0.02	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	1	4.2	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.5	18.9	20.7	17.8	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	1	2	2.96	--
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
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	--
Lithium	mg/L	0.04	--	0.005	0.022	0.007	0.005	0.005	0.006	0.008	0.0005	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	20.8	21.2	20.6	21.5	21	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.599	--	0.316	--
Potassium	mg/L	--	--	--	--	--	--	--	1.34	1.08	0.98	0.92	1.31	--
Sodium	mg/L	--	--	--	--	--	--	--	19.8	19.5	19.1	19.2	18.1	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0934	0.0926	0.086	0.0911	0.093	--
Alkalinity	mg/L	--	--	--	--	--	--	--	222	225	226	222	230	--
Bromide	mg/L	--	--	--	--	--	--	--	0.061	0.087	0.081	0.072	0.081	--
Chloride	mg/L	--	(29.6) 27.4	24.9	24.8	24.3	24.1	24.4	24.1	26.5	26.5	27.5	28.6	--
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	--
TDS	mg/L	--	(412.7) 349	323	315	331	334	316	300	323	330	327	321	--
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--
Radium-228	pCi/L	--	--	0.0603	0.105	1.42	0.662	0.108	-0.0752	0.3	2.21	--	--	--
Radium-226	pCi/L	--	--	0.33	1.57	0.276	0.65	0.513	0.15	0.33	0.323	--	--	--
Radium-226/228	pCi/L	5	--	0.3903	1.675	1.696	1.312	0.621	0.0748	0.63	2.533	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.4	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	1	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.51	--	1	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.03	<0.0004	0.035	0.048	0.011	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.583	0.1	0.455	0.445	0.303	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-1I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/14/2018	2/13/2019	4/1/2019	5/23/2019	7/23/2019	9/11/2019
Field Parameters									
Elevation	ft NGVD	--	--	368.74	369.73	370.51	371.86	372.45	--
pH	S.U.	--	6.43 - 7.90	7.75	7.5	7.37	7.01	7.21	7.25
Specific Conductance	µmhos/cm	--	--	425	443	802	503	493	481
Turbidity	NTU	--	--	0.61	1	1.06	0.06	2.1	0.58
Dissolved Oxygen	mg/L	--	--	0.19	2	1.28	0.73	0.57	0.26
Temperature	°C	--	--	14.68	14.7	14.6	16.79	16.4	17.5
ORP	mV	--	--	62.9	155	134.2	5.2	27	-35.8
Laboratory Parameters									
Antimony	µg/L	6	--	<0.02	--	--	<0.02	--	--
Arsenic	µg/L	10	--	0.82	--	--	0.73	--	--
Barium	µg/L	2000	--	85.6	--	--	83.8	--	--
Beryllium	µg/L	4	--	<0.02	--	--	<0.02	--	--
Cadmium	µg/L	5	--	0.02	--	--	<0.01	--	--
Chromium	µg/L	100	--	<0.04	--	--	0.04	--	--
Cobalt	µg/L	6	--	0.48	--	--	0.368	--	--
Copper	µg/L	--	--	0.22	--	--	0.08	--	--
Lead	µg/L	15	--	0.07	--	--	<0.02	--	--
Mercury	µg/L	2	--	--	--	--	<0.002	--	--
Molybdnum	µg/L	100	--	2.96	--	--	2.38	--	--
Selenium	µg/L	50	--	<0.03	--	--	<0.03	--	--
Thallium	µg/L	2	--	<0.1	--	--	<0.1	--	--
Zinc	µg/L	--	--	1	--	--	0.9	--	--
Silica (Dissolved)	mg/L	--	--	18.2	--	--	18	--	--
Aluminum	µg/L	--	--	3	--	--	<1	--	--
Boron	mg/L	--	0.093	0.05	--	--	0.02	--	--
Calcium	mg/L	--	(79.5) 71	65.5	--	--	67.7	--	--
Lithium	mg/L	0.04	--	0.03	--	--	<0.009	--	--
Magnesium	mg/L	--	--	20.6	--	--	20.6	--	--
Manganese	mg/L	--	--	0.515	--	--	0.37	--	--
Potassium	mg/L	--	--	0.97	--	--	0.98	--	--
Sodium	mg/L	--	--	18.5	--	--	18.2	--	--
Strontium	mg/L	--	--	0.0882	--	--	0.0912	--	--
Alkalinity	mg/L	--	--	227	--	--	243	--	--
Bromide	mg/L	--	--	0.08	--	--	0.09	--	--
Chloride	mg/L	--	(29.6) 27.4	28.8	30.1	34.1	33.1	30.6	33.5
Fluoride	mg/L	4	0.428	0.41	--	--	0.42	--	--
TDS	mg/L	--	(412.7) 349	308	--	--	341	--	--
Sulfate	mg/L	--	(47.8) 48	40.7	--	--	40.2	--	--
Sulfide	mg/L	--	--	<0.07	--	--	<0.1	--	--
Radium-228	pCi/L	--	--	0.415	--	--	0.71	--	--
Radium-226	pCi/L	--	--	0.288	--	--	0.37	--	--
Radium-226/228	pCi/L	5	--	0.703	--	--	1.08	--	--
Copper (Dissolved)	µg/L	--	--	0.12	--	--	0.43	--	--
Zinc (Dissolved)	µg/L	--	--	0.9	--	--	<0.7	--	--
Aluminum (Dissolved)	µg/L	--	--	<1	--	--	1	--	--
Iron (Dissolved)	mg/L	--	--	0.053	--	--	0.034	--	--
Manganese (Dissolved)	mg/L	--	--	0.508	--	--	0.397	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	496	471	464	842	400	558	394	525	448	539
Turbidity	NTU	--	--	8.8	2	6.27	4	5	1.93	2.15	2.47	2	3.89
Dissolved Oxygen	mg/L	--	--	0.5	0.2	0.55	0.8	2	0.25	0.53	0.81	0.4	1.83
Temperature	°C	--	--	19.4	16.7	15.77	14.8	14.7	15.14	15.84	21.46	16.5	6.7
ORP	mV	--	--	63	220	92.8	252	182	49.6	132.7	152.8	-14	-5.3
Laboratory Parameters													
Antimony	µg/L	6	--	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	--	--
Arsenic	µg/L	10	--	1.29	0.73	1.07	0.65	0.77	0.58	0.75	0.59	--	--
Barium	µg/L	2000	--	255	147	160	147	162	139	142	139	--	--
Beryllium	µg/L	4	--	0.01	<0.005	0.007	<0.005	<0.005	<0.005	0.006	<0.004	--	--
Cadmium	µg/L	5	--	0.13	0.07	0.04	0.04	0.15	0.04	0.04	0.05	--	
Chromium	µg/L	100	--	0.3	1.5	0.3	0.072	0.439	0.687	0.174	0.131	--	--
Cobalt	µg/L	6	--	3.64	0.373	0.836	0.329	0.577	0.173	0.44	0.212	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.93	1.02	--
Lead	µg/L	15	--	1.13	1.37	0.5	0.222	0.807	1.92	0.419	0.355	--	--
Mercury	µg/L	2	--	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Molybdnum	µg/L	100	--	3.44	3.59	3.6	3.24	2.43	3.4	3.05	2.94	--	--
Selenium	µg/L	50	--	0.07	0.03	0.07	0.03	0.03	0.03	0.06	<0.03	--	--
Thallium	µg/L	2	--	0.04	0.02	0.056	0.02	0.05	0.03	0.04	0.03	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.5	4.5	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	18.9	19.4	21.3	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	8.08	14.6	--
Boron	mg/L	--	0.066	0.017	0.015	0.016	0.018	0.006	0.055	0.046	0.019	0.002	--
Calcium	mg/L	--	(79.5) 75	63.6	57.9	65.2	69.3	63.4	70	67.8	63.9	65.7	--
Lithium	mg/L	0.04	--	<0.0002	0.017	0.0005	0.004	0.007	0.007	0.009	0.002	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	21.9	22.2	20.7	20.9	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.511	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.13	1.13	0.89	0.89	--
Sodium	mg/L	--	--	--	--	--	--	--	19.4	19.3	18.8	18	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0985	0.101	0.0885	0.092	--
Alkalinity	mg/L	--	--	--	--	--	--	--	206	202	206	220	--
Bromide	mg/L	--	--	--	--	--	--	--	0.09	0.115	0.109	0.03	--
Chloride	mg/L	--	(29.6) 50	27.3	29.8	29.8	39.3	40.6	40.3	40.9	39.3	10.3	--
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
TDS	mg/L	--	(412.7) 369	331	329	288	339	323	330	342	338	339	--
Sulfate	mg/L	--	(45.1) 45	40.2	40.6	32.3	33.6	36.4	37	39.5	39.6	10.4	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--
Radium-228	pCi/L	--	--	0.558	0.06	0.525	0.566	0.315	0.0844	0.511	0.444	--	--
Radium-226	pCi/L	--	--	0.526	0.135	0.932	6.73	0.334	0.154	0.213	0.502	--	--
Radium-226/228	pCi/L	5	--	1.084	0.195	1.457	7.296	0.649	0.2384	0.724	0.946	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.58	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	4.2	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.052	0.012	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.553	0.62	0.486	0.616	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-1D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/7/2018	8/16/2018	11/14/2018	2/13/2019	5/23/2019	7/23/2019
Field Parameters									
Elevation	ft NGVD	--	--	369.56	369.94	368.73	369.71	371.84	372.45
pH	S.U.	--	6.74 - 8.16	8.24	7.35	7.77	7.41	7.18	7.3
Specific Conductance	µmhos/cm	--	--	508	568	457	317	0.504	510
Turbidity	NTU	--	--	1.71	0	1.03	2	0.3	1.5
Dissolved Oxygen	mg/L	--	--	0.25	0.26	0.2	10	3.68	2.1
Temperature	°C	--	--	15.85	16.71	14.06	14	17.02	16.7
ORP	mV	--	--	-112	200	53	188	55.9	44
Laboratory Parameters									
Antimony	µg/L	6	--	--	--	0.03	--	0.05	--
Arsenic	µg/L	10	--	--	--	0.62	--	0.47	--
Barium	µg/L	2000	--	--	--	101	--	99.2	--
Beryllium	µg/L	4	--	--	--	<0.02	--	<0.02	--
Cadmium	µg/L	5	--	--	--	0.02	--	0.02	--
Chromium	µg/L	100	--	--	--	0.07	--	0.1	--
Cobalt	µg/L	6	--	--	--	0.04	--	0.058	--
Copper	µg/L	--	--	0.55	--	0.75	--	0.83	--
Lead	µg/L	15	--	--	--	0.07	--	0.138	--
Mercury	µg/L	2	--	--	--	--	--	<0.002	--
Molybdnum	µg/L	100	--	--	--	2	--	1	--
Selenium	µg/L	50	--	--	--	0.04	--	0.09	--
Thallium	µg/L	2	--	--	--	<0.1	--	<0.1	--
Zinc	µg/L	--	--	2	--	1	--	65.9	--
Silica (Dissolved)	mg/L	--	--	17.9	--	19	--	17.8	--
Aluminum	µg/L	--	--	16.1	--	<1	--	4	--
Boron	mg/L	--	0.066	0.103	0.02	0.1	<0.02	0.02	--
Calcium	mg/L	--	(79.5) 75	70.9	--	71.9	--	73.6	--
Lithium	mg/L	0.04	--	--	--	0.01	--	0.01	--
Magnesium	mg/L	--	--	20.4	--	22.1	--	18.3	--
Manganese	mg/L	--	--	0.216	--	0.138	--	0.169	--
Potassium	mg/L	--	--	1.34	--	1.71	--	1.23	--
Sodium	mg/L	--	--	18.2	--	20.9	--	18.7	--
Strontium	mg/L	--	--	0.359	--	0.272	--	0.553	--
Alkalinity	mg/L	--	--	218	--	222	--	208	--
Bromide	mg/L	--	--	0.113	--	0.1	--	0.09	--
Chloride	mg/L	--	(29.6) 50	43.1	43.8	46.9	43.8	32.1	--
Fluoride	mg/L	4	0.321	0.3	--	0.3	--	0.27	--
TDS	mg/L	--	(412.7) 369	345	--	340	--	346	--
Sulfate	mg/L	--	(45.1) 45	39.5	--	39.8	--	45.3	39.2
Sulfide	mg/L	--	--	<0.4	--	<0.07	--	<0.1	--
Radium-228	pCi/L	--	--	--	--	0.295	--	0.55	--
Radium-226	pCi/L	--	--	--	--	0.0679	--	0.652	--
Radium-226/228	pCi/L	5	--	--	--	0.3629	--	1.202	--
Copper (Dissolved)	µg/L	--	--	0.98	--	0.78	--	0.8	--
Zinc (Dissolved)	µg/L	--	--	11.8	--	2	--	2	--
Aluminum (Dissolved)	µg/L	--	--	2	--	5.05	--	3	--
Iron (Dissolved)	mg/L	--	--	<0.002	--	0.02	--	<0.003	--
Manganese (Dissolved)	mg/L	--	--	0.0605	--	0.144	--	0.148	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	423	465	440	459	341	522	354	409	509	470
Turbidity	NTU	--	--	3.1	1.85	0.51	0.96	0.74	1.31	2.68	4.81	1.55	1.84
Dissolved Oxygen	mg/L	--	--	2.8	1.85	4.67	3.91	4.18	3.63	4.52	2.62	2.63	4.66
Temperature	°C	--	--	17.5	16.34	15.81	16.03	15.1	15.73	15.67	16.06	16.42	16.48
ORP	mV	--	--	34	64	90.4	-19	165	13.1	165.7	-5.9	26.6	59.1
Laboratory Parameters													
Antimony	µg/L	6	--	<0.02	0.02	0.04	0.02	0.02	0.02	0.04	0.12	--	--
Arsenic	µg/L	10	--	0.97	1.09	0.94	0.94	0.92	0.95	0.95	0.96	--	--
Barium	µg/L	2000	--	16	14	12.4	12.4	11	12.3	12.3	13.6	--	--
Beryllium	µg/L	4	--	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--
Cadmium	µg/L	5	--	0.01	0.01	0.02	0.02	0.09	0.009	0.01	0.03	--	
Chromium	µg/L	100	--	0.4	0.6	0.3	0.337	0.329	0.67	0.37	0.41	--	--
Cobalt	µg/L	6	--	0.177	0.09	0.017	0.019	0.014	0.051	0.064	0.121	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.33	0.2	1.58
Lead	µg/L	15	--	0.158	0.105	0.101	0.022	0.063	0.042	0.047	0.243	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Molybdnum	µg/L	100	--	2.03	2.39	2.07	1.91	2.14	1.92	1.75	1.81	--	--
Selenium	µg/L	50	--	0.3	0.3	0.2	0.3	0.4	0.3	0.2	0.3	--	--
Thallium	µg/L	2	--	<0.02	<0.01	<0.01	<0.01	0.074	<0.01	<0.01	0.03	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	3.3	5.3
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	28.6	28.8	31.9	26.7
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	36.6	14.7	15.3
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
Calcium	mg/L	--	(79.5) 66	59.4	51.6	57.4	62.4	51.6	57.9	59	53.3	60.7	57
Lithium	mg/L	0.04	--	0.0004	0.018	0.005	0.008	0.009	0.0007	0.002	0.005	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	21.2	21.9	19.5	22.8	21.3
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0124	--	0.0063
Potassium	mg/L	--	--	--	--	--	--	--	0.73	0.81	0.65	0.64	0.68
Sodium	mg/L	--	--	--	--	--	--	--	13.4	14	11.8	16.3	22.1
Strontium	mg/L	--	--	--	--	--	--	--	0.0837	0.0855	0.0756	0.0888	0.0906
Alkalinity	mg/L	--	--	--	--	--	--	--	174	191	188	207	215
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.071	0.116	0.06	0.063
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
Fluoride	mg/L	4	0.299	0.26	0.29	0.26	0.26	0.25	0.26	0.26	0.23	0.25	0.29
TDS	mg/L	--	(412.7) 343	298	265	301	316	284	285	321	308	323	329
Sulfate	mg/L	--	(35.08) 35	26	27.6	26.2	24.1	25.9	26.6	30.3	33.8	30	28.9
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4
Radium-228	pCi/L	--	--	-0.035	0.54	0	0.228	0.343	0.0555	-0.0726	0.631	--	--
Radium-226	pCi/L	--	--		0.12	0.172	0.143	0.311	0.465	0.434	0.0617	--	--
Radium-226/228	pCi/L	5	--	-0.035	0.66	0.172	0.371	0.654	0.5205	0.3614	0.6927	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	0.27
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	0.6
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	2
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.013	<0.002
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0001	<0.0001	<0.0001	0.0021	0.0003

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-2S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/13/2018	2/13/2019	4/1/2019	5/22/2019	7/23/2019	9/11/2019
Field Parameters									
Elevation	ft NGVD	--	--	367.91	368.87	369.97	371.02	371.37	370.52
pH	S.U.	--	6.30 - 8.44	7.53	7.77	7.72	7.66	7.45	7.33
Specific Conductance	µmhos/cm	--	--	425	451	491	500	486	473
Turbidity	NTU	--	--	2.15	0.8	1.51	1.08	1.7	0.83
Dissolved Oxygen	mg/L	--	--	3.7	3.1	4.7	5.77	1.3	1.78
Temperature	°C	--	--	14.51	14.6	14.5	15.93	16.2	16.4
ORP	mV	--	--	23	71	-17.9	-3.2	55	7.7
Laboratory Parameters									
Antimony	µg/L	6	--	0.04	--	--	0.03	--	--
Arsenic	µg/L	10	--	0.82	--	--	0.78	--	--
Barium	µg/L	2000	--	16.5	--	--	18	--	--
Beryllium	µg/L	4	--	<0.02	--	--	<0.02	--	--
Cadmium	µg/L	5	--	0.11			0.08	--	--
Chromium	µg/L	100	--	0.1	--	--	0.1	--	--
Cobalt	µg/L	6	--	<0.02	--	--	0.02	--	--
Copper	µg/L	--	--	0.28	--	--	0.56	--	--
Lead	µg/L	15	--	0.04	--	--	0.133	--	--
Mercury	µg/L	2	--	--	--	--	<0.002	--	--
Molybdnum	µg/L	100	--	2	--	--	2	--	--
Selenium	µg/L	50	--	0.2	--	--	1	--	--
Thallium	µg/L	2	--	<0.1	--	--	<0.1	--	--
Zinc	µg/L	--	--	89.4	--	--	7.5	--	--
Silica (Dissolved)	mg/L	--	--	26.8	--	--	25	--	--
Aluminum	µg/L	--	--	7.27	--	--	6.68	--	--
Boron	mg/L	--	0.109	0.06	--	--	<0.02	--	--
Calcium	mg/L	--	(79.5) 66	54.7	--	--	51.3	--	--
Lithium	mg/L	0.04	--	<0.009	--	--	<0.009	--	--
Magnesium	mg/L	--	--	20.9	--	--	19	--	--
Manganese	mg/L	--	--	0.0025	--	--	0.0017	--	--
Potassium	mg/L	--	--	0.68	--	--	0.66	--	--
Sodium	mg/L	--	--	23.7	--	--	26	--	--
Strontium	mg/L	--	--	0.086	--	--	0.0803	--	--
Alkalinity	mg/L	--	--	207	--	--	220	--	--
Bromide	mg/L	--	--	<0.04	--	--	<0.04	--	--
Chloride	mg/L	--	(29.6) 24	24.8	26.5	26.1	26.4	26.8	26.6
Fluoride	mg/L	4	0.299	0.28	--	--	0.3	--	--
TDS	mg/L	--	(412.7) 343	272	--	--	352	339	--
Sulfate	mg/L	--	(35.08) 35	24.7	--	--	26.2	--	--
Sulfide	mg/L	--	--	<0.1	--	--	<0.1	--	--
Radium-228	pCi/L	--	--	0.146	--	--	0.54	--	--
Radium-226	pCi/L	--	--	0.0173	--	--	0.0674	--	--
Radium-226/228	pCi/L	5	--	0.1633	--	--	0.6074	--	--
Copper (Dissolved)	µg/L	--	--	1.84	--	--	0.87	--	--
Zinc (Dissolved)	µg/L	--	--	5	--	--	4	--	--
Aluminum (Dissolved)	µg/L	--	--	1	--	--	5.16	--	--
Iron (Dissolved)	mg/L	--	--	0.003	--	--	0.003	--	--
Manganese (Dissolved)	mg/L	--	--	0.0005	--	--	0.0009	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-2I

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
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
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
Specific Conductance	µmhos/cm	--	--	581	542	513	495	370	557	383	431	553	568	802	614
Turbidity	NTU	--	--	2.02	1.41	0.94	1.83	3.99	16	24.3	6.25	10.3	1.3	0.91	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
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
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
Laboratory Parameters															
Antimony	µg/L	6	--	0.06	0.06	0.07	0.13	0.1	0.1	0.15	0.11	--	--	--	--
Arsenic	µg/L	10	--	0.64	0.68	0.55	0.61	0.65	0.74	0.9	0.76	--	--	--	--
Barium	µg/L	2000	--	78.5	84	67.1	60.1	59.4	58.4	59.3	62.9	--	--	--	--
Beryllium	µg/L	4	--	<0.005	0.006	<0.005	<0.005	<0.005	0.01	0.022	0.02	--	--	--	--
Cadmium	µg/L	5	--	0.03	0.05	0.05	0.07	0.16	0.22	0.09	0.05	--		--	--
Chromium	µg/L	100	--	0.2	0.6	0.1	0.143	0.154	1.01	0.829	0.567	--	--	--	--
Cobalt	µg/L	6	--	0.606	0.76	0.415	0.26	0.28	0.581	1.28	0.995	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	2.21	1.82	--	0.2	--
Lead	µg/L	15	--	0.208	0.454	0.178	0.231	0.383	0.588	1.39	1.19	--	--	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	--	--	--	--
Molybdnum	µg/L	100	--	4.91	5	4.21	3.14	2.07	2.06	2.17	2.07	--	--	--	--
Selenium	µg/L	50	--	0.7	0.7	0.6	0.4	0.2	0.2	0.4	0.2	--	--	--	--
Thallium	µg/L	2	--	0.051	0.04	0.04	0.02	0.03	0.03	0.04	0.064	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.4	3.4	--	20.8	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	16.3	16.8	18.9	--	16.3	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	315	244	--	9.39	--
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
Calcium	mg/L	--	(79.5) 78	74	67.5	66.8	73.9	63.9	71.5	71	68.9	72.5	--	72.7	--
Lithium	mg/L	0.04	--	0.005	0.021	0.002	0.006	0.007	0.005	0.007	<0.0002	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	22.8	23.6	22.8	23.7	--	23.7	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.463	--	--	0.564	--
Potassium	mg/L	--	--	--	--	--	--	--	1.09	1.2	1.01	1.05	--	1.14	--
Sodium	mg/L	--	--	--	--	--	--	--	14.7	15.3	15.8	16.8	--	16.9	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0919	0.0977	0.0885	0.0946	--	0.0959	--
Alkalinity	mg/L	--	--	--	--	--	--	--	223	218	236	252	--	254	--
Bromide	mg/L	--	--	--	--	--	--	--	0.05	0.071	0.072	0.075	--	0.077	--
Chloride	mg/L	--	(29.6) 32	28.6	29.7	28	25.8	27.1	25.8	28.6	29.7	29.8	28.8	31.8	31.5
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	--
TDS	mg/L	--	(412.7) 375	332	363	330	326	314	312	343	346	343	--	356	--
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	--
Radium-228	pCi/L	--	--	-0.0463	0.62	0.241	0.137	0.648	0.146	0.163	0.195	--	--	--	--
Radium-226	pCi/L	--	--	0.398	0.342	0.267	0.288	0.197	0.289	0.328	0.341	--	--	--	--
Radium-226/228	pCi/L	5	--	0.3517	0.962	0.508	0.425	0.845	0.435	0.491	0.536	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	1.96	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.3	--	--	21.7	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	154	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.053	0.016	0.03	0.054	--	0.238	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.258	0.331	0.333	0.323	--	0.563	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-2I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/13/2018	2/13/2019	5/22/2019
Field Parameters						
Elevation	ft NGVD	--	--	367.97	368.87	371.17
pH	S.U.	--	6.43 - 8.69	7.2	7.55	7.34
Specific Conductance	µmhos/cm	--	--	434	435	481
Turbidity	NTU	--	--	17.03	2.8	0
Dissolved Oxygen	mg/L	--	--	0.13	10	0.71
Temperature	°C	--	--	14.25	14.3	16.09
ORP	mV	--	--	36.8	-17	-83.8
Laboratory Parameters						
Antimony	µg/L	6	--	0.02	--	0.03
Arsenic	µg/L	10	--	0.49	--	0.4
Barium	µg/L	2000	--	95	--	102
Beryllium	µg/L	4	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	0.04	--	0.003
Chromium	µg/L	100	--	0.327	--	0.06
Cobalt	µg/L	6	--	0.492	--	0.347
Copper	µg/L	--	--	1.52	--	0.24
Lead	µg/L	15	--	0.467	--	0.143
Mercury	µg/L	2	--	--	--	<0.002
Molybdnum	µg/L	100	--	2	--	2.13
Selenium	µg/L	50	--	0.2	--	0.05
Thallium	µg/L	2	--	<0.1	--	<0.1
Zinc	µg/L	--	--	35.2	--	7.4
Silica (Dissolved)	mg/L	--	--	16.9	--	15.9
Aluminum	µg/L	--	--	91.9	--	6.25
Boron	mg/L	--	0.043	0.05	<0.02	<0.02
Calcium	mg/L	--	(79.5) 78	64.8	--	64.3
Lithium	mg/L	0.04	--	<0.009	--	<0.009
Magnesium	mg/L	--	--	21.2	--	20.4
Manganese	mg/L	--	--	0.576	--	0.699
Potassium	mg/L	--	--	0.89	--	0.92
Sodium	mg/L	--	--	15.3	--	13.5
Strontium	mg/L	--	--	0.0864	--	0.083
Alkalinity	mg/L	--	--	247	--	241
Bromide	mg/L	--	--	0.06	--	0.05
Chloride	mg/L	--	(29.6) 32	27.9	31.5	25.4
Fluoride	mg/L	4	0.371	0.32	--	0.32
TDS	mg/L	--	(412.7) 375	308	--	328
Sulfate	mg/L	--	(48.53) 49	39	--	39.2
Sulfide	mg/L	--	--	<0.1	--	<0.1
Radium-228	pCi/L	--	--	0.291	--	0.451
Radium-226	pCi/L	--	--	0.258	--	0.194
Radium-226/228	pCi/L	5	--	0.549	--	0.645
Copper (Dissolved)	µg/L	--	--	0.2	--	0.64
Zinc (Dissolved)	µg/L	--	--	2	--	0.9
Aluminum (Dissolved)	µg/L	--	--	<1	--	1
Iron (Dissolved)	mg/L	--	--	0.037	--	0.02
Manganese (Dissolved)	mg/L	--	--	0.565	--	0.643

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	586	524	551	516	386	568	388	516	428	460	830
Turbidity	NTU	--	--	2.31	3.15	3.5	0.79	3.45	2.67	2.32	1.72	1.82	5.05	0
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
Temperature	°C	--	--	15.8	15.79	19.32	15.58	14.22	14.45	15.65	16.06	15.71	15.35	17.83
ORP	mV	--	--	-2.7	-168.3	45	-0.7	206.9	-87.3	143.6	-24.8	-41	32.3	-24
Laboratory Parameters														
Antimony	µg/L	6	--	0.03	0.06	0.02	0.02	0.03	0.03	0.04	0.02	--	--	--
Arsenic	µg/L	10	--	0.78	0.82	0.81	0.61	0.62	0.59	0.65	0.62	--	--	--
Barium	µg/L	2000	--	185	195	180	172	157	160	159	169	--	--	--
Beryllium	µg/L	4	--	<0.005	0.006	0.007	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--
Cadmium	µg/L	5	--	0.12	0.12	0.07	0.1	0.26	0.09	0.08	0.08	--		--
Chromium	µg/L	100	--	0.2	0.4	0.3	0.05	0.277	0.562	0.188	0.162	--	--	--
Cobalt	µg/L	6	--	0.473	0.439	0.425	0.212	0.327	0.252	0.335	0.353	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.16	1.96	2.09	--
Lead	µg/L	15	--	0.648	0.359	0.247	0.021	0.378	0.045	0.144	0.075	--	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Molybdnum	µg/L	100	--	2.11	2.16	1.97	2.09	1.8	2.13	1.9	1.89	--	--	--
Selenium	µg/L	50	--	<0.03	<0.03	0.05	0.09	0.08	0.03	0.06	0.04	--	--	--
Thallium	µg/L	2	--	0.02	0.02	0.03	0.01	0.02	0.02	0.02	0.02	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	6	3.5	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.9	20.5	17.4	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	17.5	20.7	70.5	--
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
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	--
Lithium	mg/L	0.04	--	0.002	0.018	0.002	0.007	0.007	0.008	0.011	0.0006	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	24.3	23.9	21.9	22.6	26.4	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.657	--	0.943	--
Potassium	mg/L	--	--	--	--	--	--	--	1.17	1.21	1.32	1.1	1.28	--
Sodium	mg/L	--	--	--	--	--	--	--	17.3	16.9	16	15.8	16.4	--
Strontium	mg/L	--	--	--	--	--	--	--	0.104	0.104	0.0894	0.0952	0.111	--
Alkalinity	mg/L	--	--	--	--	--	--	--	249	248	261	248	263	--
Bromide	mg/L	--	--	--	--	--	--	--	0.06	0.079	0.156	0.083	0.073	--
Chloride	mg/L	--	(29.6) 25	24.2	24.2	22.8	22.2	22.3	21.7	23.1	23	22.4	43.1	93.0 ?
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	--
TDS	mg/L	--	(412.7) 358	341	339	338	327	318	318	343	340	332	361	--
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	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	--
Radium-228	pCi/L	--	--	0.0495	0.195	0.451	0.473	0.506	1.11	0.0264	0.257	--	--	--
Radium-226	pCi/L	--	--	-0.0267	0.133	-0.00345	1.77	0.772	0.185	0.429	0.115	--	--	--
Radium-226/228	pCi/L	5	--	0.0228	0.328	0.44755	2.243	1.278	1.295	0.4554	0.372	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.11	--	0.12	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.8	--	0.5	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.14	--	2.75	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.055	0.017	0.005	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.565	0.602	0.662	0.619	0.621	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-2D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/12/2018	2/13/2019	5/22/2019	7/24/2019	9/11/2019
Field Parameters								
Elevation	ft NGVD	--	--	367.91	368.89	371.01	371.37	-----
pH	S.U.	--	6.45 -8.63	7.36	7.32	7.25	6.28	7.15
Specific Conductance	µmhos/cm	--	--	464	391	803	834	705
Turbidity	NTU	--	--	5.4	2.1	1.25	3	1.9
Dissolved Oxygen	mg/L	--	--	0.86	0.37	2.29	0.9	0.58
Temperature	°C	--	--	14.61	13.7	15.57	15.8	16.5
ORP	mV	--	--	-25.4	-164	-71.2	8	-109
Laboratory Parameters								
Antimony	µg/L	6	--	0.03	--	<0.02	--	--
Arsenic	µg/L	10	--	0.58	--	0.53	--	--
Barium	µg/L	2000	--	190	--	248	--	--
Beryllium	µg/L	4	--	<0.02	--	<0.02	--	--
Cadmium	µg/L	5	--	0.17	--	0.3	--	--
Chromium	µg/L	100	--	0.2	--	<0.04	--	--
Cobalt	µg/L	6	--	0.5	--	0.488	--	--
Copper	µg/L	--	--	0.22	--	0.18	--	--
Lead	µg/L	15	--	0.14	--	0.129	--	--
Mercury	µg/L	2	--	--	--	<0.002	--	--
Molybdnum	µg/L	100	--	2	--	2	--	--
Selenium	µg/L	50	--	<0.03	--	<0.03	--	--
Thallium	µg/L	2	--	<0.1	--	<0.1	--	--
Zinc	µg/L	--	--	0.9	--	533	--	--
Silica (Dissolved)	mg/L	--	--	17.8	--	17.1	--	--
Aluminum	µg/L	--	--	15.4	--	3	--	--
Boron	mg/L	--	0.074	0.07	--	<0.02	--	--
Calcium	mg/L	--	(79.5) 81	72.4	--	98.5	114	103
Lithium	mg/L	0.04	--	<0.009	--	0.02	--	--
Magnesium	mg/L	--	--	24.5	--	32.2	--	--
Manganese	mg/L	--	--	0.717	--	0.941	--	--
Potassium	mg/L	--	--	0.99	--	1.2	--	--
Sodium	mg/L	--	--	14.8	--	20.7	--	--
Strontium	mg/L	--	--	0.102	--	0.138	--	--
Alkalinity	mg/L	--	--	247	--	261	--	--
Bromide	mg/L	--	--	<0.04	--	0.08	--	--
Chloride	mg/L	--	(29.6) 25	51.3	40.9	135	156	110
Fluoride	mg/L	4	0.222	0.2	--	0.18	--	SSI ↓
TDS	mg/L	--	(412.7) 358	348	--	531	540	443
Sulfate	mg/L	--	(46.44) 46	36.1	--	33.3	--	--
Sulfide	mg/L	--	--	<0.1	--	<0.1	--	--
Radium-228	pCi/L	--	--	0.0387	--	0.553	--	--
Radium-226	pCi/L	--	--	0.245	--	0.207	--	--
Radium-226/228	pCi/L	5	--	0.2837	--	0.76	--	--
Copper (Dissolved)	µg/L	--	--	0.11	--	0.39	--	--
Zinc (Dissolved)	µg/L	--	--	1	--	3	--	--
Aluminum (Dissolved)	µg/L	--	--	<1	--	1	--	--
Iron (Dissolved)	mg/L	--	--	0.007	--	0.009	--	--
Manganese (Dissolved)	mg/L	--	--	0.702	--	0.948	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	401	430	741	360	300	441	292	347	330	483	321
Turbidity	NTU	--	--	1	0.5	1	2	1	1	1	1	0.47	0	8
Dissolved Oxygen	mg/L	--	--	7.1	5.7	1	6	5	5	7	7	5.82	8.1	5.1
Temperature	°C	--	--	16.8	19	15	14.8	14.7	15.5	15.2	16.4	16.28	16	15.5
ORP	mV	--	--	53	71	258	146	36	49	74	0.3	-9.3	155	133
Laboratory Parameters														
Antimony	µg/L	6	--	0.03	0.03	0.03	0.03	0.03	0.03	0.02	--	--	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
Barium	µg/L	2000	--	13.6	13.6	14.1	14.8	15.8	15.4	14.3	--	--	14.8	13.5
Beryllium	µg/L	4	--	0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	<0.004	<0.02
Cadmium	µg/L	5	--	0.25	0.02	0.02	0.008	0.05	0.009	0.04	--	--	0.06	0.04
Chromium	µg/L	100	--	0.4	0.3	0.2	0.599	1.37	0.583	0.291	--	--	0.42	0.265
Cobalt	µg/L	6	--	0.052	0.019	0.027	0.045	0.049	0.061	0.026	--	--	0.039	<0.02
Copper	µg/L	--	--	--	--	--	--	--	--	0.37	0.31	0.46	0.42	0.29
Lead	µg/L	15	--	0.074	0.034	0.05	0.032	0.113	0.083	0.056	--	--	0.247	0.03
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--
Molybdnum	µg/L	100	--	3.28	3.34	2.8	2.93	3.29	2.73	4.36	--	--	2.22	2.37
Selenium	µg/L	50	--	0.3	0.2	0.3	0.4	0.7	0.8	0.4	--	--	0.4	0.2
Thallium	µg/L	2	--	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	--	--	0.01	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	1	0.5	2.5	1	0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.4	14.6	16.9	15.4	15.2	16.8
Aluminum	µg/L	--	--	--	--	--	--	--	--	8.57	17.8	10.4	13.8	3
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
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
Lithium	mg/L	0.04	--	0.015	0.004	0.006	0.014	0.009	0.011	<0.0002	--	--	0.005	0.02
Magnesium	mg/L	--	--	--	--	--	--	23.3	23.5	20.9	19.8	19.3	24	18.8
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0007	--	0.0024	0.0021	<0.0002
Potassium	mg/L	--	--	--	--	--	--	0.7	0.75	0.82	0.78	0.57	0.91	0.71
Sodium	mg/L	--	--	--	--	--	--	38.9	34.9	26.3	23.2	15.6	25.6	26.1
Strontium	mg/L	--	--	--	--	--	--	0.0661	0.067	0.0574	0.0548	0.0555	0.065	0.051
Alkalinity	mg/L	--	--	--	--	--	--	260	272	241	249	237	267	241
Bromide	mg/L	--	--	--	--	--	--	<0.02	0.072	<0.05	0.04	0.03	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
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
TDS	mg/L	--	294	290	266	279	287	296	305	274	261	225	277	261
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.4	<0.1
Radium-228	pCi/L	--	--	0.101	0.798	-0.249	0.501	0.297	-0.337	0.954	--	--	0.328	0.367
Radium-226	pCi/L	--	--	0	0.0671	0.202	0.0815	-0.00471	0.12	-0.0229	--	--	0.0553	0.089
Radium-226/228	pCi/L	5	--	0.101	0.8651	-0.047	0.5825	0.29229	-0.217	0.954	--	--	0.3833	0.456
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	1.85	--	0.4	2.17	1.86
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.2	--	0.9	3.1	3
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	4.34	--	1	2.51	109
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.023	<0.002	0.003	0.163
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	<0.0001	0.0002	0.0007	0.0015	<0.0002	0.0121

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-6S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/1/2018	11/14/2018	12/12/2018	5/23/2019
Field Parameters							
Elevation	ft NGVD	--	--	368.89	368.72	368.4	372.52
pH	S.U.	--	7.9	7.31	7.91	7.46	7.42
Specific Conductance	µmhos/cm	--	--	430	221	464	473
Turbidity	NTU	--	--	0.51	0.4	0.53	1.4
Dissolved Oxygen	mg/L	--	--	7.53	5.5	4.42	6.4
Temperature	°C	--	--	15.04	14.4	14.71	16.6
ORP	mV	--	--	115.3	126	196	70
Laboratory Parameters							
Antimony	µg/L	6	--	0.02	0.03	0.03	0.03
Arsenic	µg/L	10	--	0.23	0.23	0.24	0.22
Barium	µg/L	2000	--	12.1	11.8	13.4	15.9
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	0.01	<0.01	<0.01	0.03
Chromium	µg/L	100	--	0.221	0.218	0.212	0.285
Cobalt	µg/L	6	--	<0.02	<0.02	<0.02	<0.02
Copper	µg/L	--	--	0.17	0.18	0.26	0.51
Lead	µg/L	15	--	<0.02	0.02	<0.02	0.04
Mercury	µg/L	2	--	--	--	-----	<0.002
Molybdnum	µg/L	100	--	2.38	2.18	2.2	2
Selenium	µg/L	50	--	0.2	0.2	0.4	0.6
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	<0.7	1	2	<0.7
Silica (Dissolved)	mg/L	--	--	15.3	15.2	15.9	15.8
Aluminum	µg/L	--	--	2	5.28	3	2
Boron	mg/L	--	0.012	0.04	0.04	0.102	0.02
Calcium	mg/L	--	46.1	42.3	38.8	46.8	52.5
Lithium	mg/L	0.04	--	<0.009	0.01	<0.009	0.02
Magnesium	mg/L	--	--	19.3	17.5	20.8	22.9
Manganese	mg/L	--	--	0.0007	0.0002	0.0003	0.0003
Potassium	mg/L	--	--	0.5	0.92	0.86	0.62
Sodium	mg/L	--	--	22	20.2	23.3	25.5
Strontium	mg/L	--	--	0.0519	0.0524	0.0595	0.691
Alkalinity	mg/L	--	--	230	242	247	264
Bromide	mg/L	--	--	<0.04	<0.04	<0.04	<0.04
Chloride	mg/L	--	8.44	3.52	3.91	6.48	9.64
Fluoride	mg/L	4	0.73	0.86	0.88	0.88	0.95
TDS	mg/L	--	294	225	196	240	315
Sulfate	mg/L	--	18.8	4.9	5.2	10	16.8
Sulfide	mg/L	--	--	<0.1	<0.07	<0.07	<0.1
Radium-228	pCi/L	--	--	0.354	0.387	-0.368	0.343
Radium-226	pCi/L	--	--	0.0398	0.0239	0.0533	0.0431
Radium-226/228	pCi/L	5	--	0.3938	0.4109	0.0533	0.3861
Copper (Dissolved)	µg/L	--	--	0.14	0.53	0.17	1.22
Zinc (Dissolved)	µg/L	--	--	0.7	<0.7	2	1
Aluminum (Dissolved)	µg/L	--	--	1	2	8.1	1
Iron (Dissolved)	mg/L	--	--	<0.003	0.005	0.01	<0.003
Manganese (Dissolved)	mg/L	--	--	0.0003	<0.0002	0.0007	0.0002

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-6I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/25/2018	10/31/2018	11/15/2018	12/12/2018	5/23/2019
Field Parameters								
Elevation	ft NGVD	--	--	369.18	368.75	368.62	368.48	372.32
pH	S.U.	--	7.6	7.8	7.25	7.35	7.44	7.66
Specific Conductance	µmhos/cm	--	--	332	467	344	458	453
Turbidity	NTU	--	--	6.5	0.76	0.74	0.25	0.36
Dissolved Oxygen	mg/L	--	--	1.7	0.27	2.78	0.79	1.02
Temperature	°C	--	--	16.4	15.9	14.2	14.71	16.5
ORP	mV	--	--	149	24.9	140.5	163	168.8
Laboratory Parameters								
Antimony	µg/L	6	--	0.25	0.25	0.25	0.23	0.23
Arsenic	µg/L	10	--	0.2	0.2	0.19	0.19	0.19
Barium	µg/L	2000	--	31.9	32.2	31.9	30.5	35.8
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	0.11	0.01	0.01	0.01	0.01
Chromium	µg/L	100	--	0.05	0.1	<0.04	0.05	0.07
Cobalt	µg/L	6	--	0.313	0.452	0.42	0.362	0.436
Copper	µg/L	--	--	2.36	0.78	0.92	1.21	0.6
Lead	µg/L	15	--	0.05	0.118	<0.02	<0.02	<0.02
Mercury	µg/L	2	--	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	5.31	4.7	4.46	4.17	4.4
Selenium	µg/L	50	--	0.6	0.7	0.8	0.6	0.6
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	0.1
Zinc	µg/L	--	--	3	<0.7	0.7	2	1
Silica (Dissolved)	mg/L	--	--	19.9	18.1	18.8	18.6	18.1
Aluminum	µg/L	--	--	6.57	5.88	5.54	3	4
Boron	mg/L	--	0.06	0.06	0.04	0.03	0.06	<0.02
Calcium	mg/L	--	42.2	43.1	42.4	43.1	47.2	47.4
Lithium	mg/L	0.04	--	0.01	<0.009	0.034	<0.009	0.01
Magnesium	mg/L	--	--	13.9	15.1	14.6	16.1	15.7
Manganese	mg/L	--	--	0.185	0.24	0.247	0.249	0.272
Potassium	mg/L	--	--	0.93	0.76	0.78	0.88	1.13
Sodium	mg/L	--	--	35.7	35.9	32.9	32.7	29.9
Strontium	mg/L	--	--	0.0482	0.0528	0.0549	0.061	0.0622
Alkalinity	mg/L	--	--	267	259	246	257	278
Bromide	mg/L	--	--	<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
Fluoride	mg/L	4	0.89	0.88	0.86	0.86	0.86	0.85
TDS	mg/L	--	281	274	245	248	245	268
Sulfate	mg/L	--	9.9	5.4	4.9	6.3	7.3	4.1
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1
Radium-228	pCi/L	--	--	0.218	0.216	0.675	0.488	0.496
Radium-226	pCi/L	--	--	0.35	0.323	0.638	0.489	0.557
Radium-226/228	pCi/L	5	--	0.568	0.539	1.313	0.977	1.053
Copper (Dissolved)	µg/L	--	--	2.79	1.09	0.86	0.74	2.58
Zinc (Dissolved)	µg/L	--	--	4	1	<0.7	<0.7	3
Aluminum (Dissolved)	µg/L	--	--	30.9	1	8.05	4	4
Iron (Dissolved)	mg/L	--	--	0.064	<0.003	0.003	0.004	0.003
Manganese (Dissolved)	mg/L	--	--	0.254	0.232	0.246	0.231	0.256

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters								
Elevation	ft NGVD	--	--	369.15	368.72	369.6	368.44	372.31
pH	S.U.	--	7.5	7.7	7.21	7.54	7.4	7.55
Specific Conductance	µmhos/cm	--	--	369	521	365	513	681
Turbidity	NTU	--	--	9	0	8.4	0.25	1.2
Dissolved Oxygen	mg/L	--	--	0.4	0.34	0.42	0.15	0.9
Temperature	°C	--	--	16.2	16	13.5	15.07	18.6
ORP	mV	--	--	155	54.3	131	110	145
Laboratory Parameters								
Antimony	µg/L	6	--	0.02	0.03	0.03	0.02	<0.02
Arsenic	µg/L	10	--	0.89	1.3	1.05	0.93	0.94
Barium	µg/L	2000	--	77.1	75.7	73.6	76.5	112
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	0.03	0.01	0.02	0.01	0.01
Chromium	µg/L	100	--	0.04	0.346	0.2	0.05	0.08
Cobalt	µg/L	6	--	0.392	0.806	0.598	0.404	0.578
Copper	µg/L	--	--	0.45	1.18	1.6	1.64	0.17
Lead	µg/L	15	--	<0.02	0.205	0.167	<0.02	<0.02
Mercury	µg/L	2	--	--	--	--	--	0.002
Molybdnum	µg/L	100	--	3.23	2.79	2.83	3.02	2.81
Selenium	µg/L	50	--	7.3	8.5	8.2	4.3	0.09
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	<0.7	2	73.1	2	<0.7
Silica (Dissolved)	mg/L	--	--	19.5	17.5	17.6	18	18.2
Aluminum	µg/L	--	--	2	142	70.3	3	1
Boron	mg/L	--	0.094	0.05	0.03	0.05	0.115	0.03
Calcium	mg/L	--	61.9	61.7	57.2	53.1	60.1	78.9
Lithium	mg/L	0.04	--	0.02	0.009	0.01	<0.009	0.01
Magnesium	mg/L	--	--	16.8	16.9	15.2	17.1	22.1
Manganese	mg/L	--	--	0.147	0.145	0.156	0.144	0.278
Potassium	mg/L	--	--	1.2	1.04	1.43	1.47	1.29
Sodium	mg/L	--	--	29	27.8	26.5	29	35.5
Strontium	mg/L	--	--	0.0919	0.093	0.0927	0.102	0.14
Alkalinity	mg/L	--	--	260	260	266	271	305
Bromide	mg/L	--	--	<0.04	<0.04	<0.04	<0.04	0.07
Chloride	mg/L	--	12.3	10.9	10.2	10	10.8	25.1
Fluoride	mg/L	4	0.39	0.41	0.41	0.42	0.42	0.36
TDS	mg/L	--	331	310	295	276	296	408
Sulfate	mg/L	--	27.3	24.1	23	22.2	23.6	39.5
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.07	<0.1
Radium-228	pCi/L	--	--	0.29	0.21	0.275	-0.0272	0.586
Radium-226	pCi/L	--	--	0.295	0.122	0.102	0.423	0.543
Radium-226/228	pCi/L	5	--	0.585	0.332	0.377	0.423	0.423
Copper (Dissolved)	µg/L	--	--	1.27	0.44	0.7	0.5	0.53
Zinc (Dissolved)	µg/L	--	--	2	0.9	2	2	1
Aluminum (Dissolved)	µg/L	--	--	31.6	3	2	45.3	15.6
Iron (Dissolved)	mg/L	--	--	0.082	<0.003	0.004	0.117	0.007
Manganese (Dissolved)	mg/L	--	--	0.127	0.137	0.135	0.142	0.263

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters								
Elevation	ft NGVD	--	--	369.5	368.76	368.68	368.47	371.91
pH	S.U.	--	7.4	7.4	7.33	7.31	7.3	8.39
Specific Conductance	µmhos/cm	--	--	417	611	455	629	527
Turbidity	NTU	--	--	106	104	42.6	44	4.77
Dissolved Oxygen	mg/L	--	--	0.4	0.32	0.7	0.23	0.65
Temperature	°C	--	--	15.4	15.01	13.9	14.43	14.69
ORP	mV	--	--	106	85.4	48.2	92	0.1
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
Molybdnum	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
Calcium	mg/L	--	70.2	73.7	68.3	66.2	67.1	62.4
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
Fluoride	mg/L	4	0.52	0.54	0.53	0.54	0.55	0.55
TDS	mg/L	--	358	370	358	354	353	353
Sulfate	mg/L	--	32	32.2	33.1	33.1	33.7	34.1
Sulfide	mg/L	--	--	<0.1	<0.1	<00.07	<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
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-7I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/30/2018	11/15/2018	12/12/2018	5/22/2019
Field Parameters								
Elevation	ft NGVD	--	--	369.01	368.51	368.5	368.27	371.73
pH	S.U.	--	7.4	7.5	7.3	7.03	7.27	8.4
Specific Conductance	µmhos/cm	--	--	419	613	460	645	573
Turbidity	NTU	--	--	19	14.4	7.05	19.9	1.6
Dissolved Oxygen	mg/L	--	--	0.3	0.36	0.95	0.21	0.7
Temperature	°C	--	--	15.5	15.17	13.78	14.46	15.1
ORP	mV	--	--	57	-19.2	68.4	44	-71.2
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
Molybdnum	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
Calcium	mg/L	--	75.3	75.4	68.8	68.8	73.7	73.7
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
Chloride	mg/L	--	45	45.8	48.2	47.6	48.8	49
Fluoride	mg/L	4	0.33	0.34	0.34	0.35	0.35	0.33
TDS	mg/L	--	312	348	338	354	347	376
Sulfate	mg/L	--	38.4	38.9	38.9	39	39.1	43.1
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
CCR Landfill
Rockport Plant, 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
Field Parameters								
Elevation	ft NGVD	--	--	369.08	368.65	368.57	368.35	371.82
pH	S.U.	--	7.2	7.5	6.91	7.26	7.18	7.91
Specific Conductance	µmhos/cm	--	--	419	617	444	622	549
Turbidity	NTU	--	--	10.8	1.02	5.96	0	0.01
Dissolved Oxygen	mg/L	--	--	0.7	3.72	11.3	0.52	2
Temperature	°C	--	--	15.2	14.79	13.32	15.23	16.25
ORP	mV	--	--	57	26.4	26.4	-5	-40.4
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
Molybdnum	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
Calcium	mg/L	--	80.1	79.2	75	62.8	77.4	76.7
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
Chloride	mg/L	--	17.3	17.5	17.2	16.9	17.2	19.1
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.27	0.26
TDS	mg/L	--	359	358	3.46	340	344	371
Sulfate	mg/L	--	36.9	36.3	36	35.4	35.5	35.2
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
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
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
Specific Conductance	µmhos/cm	--	--	516	540	811	450	260	444	410	395	460	400	354	440
Turbidity	NTU	--	--	1.1	2	2	3	4	8	1	2.46	6	3.48	2.6	0.69
Dissolved Oxygen	mg/L	--	--	3.2	3.6	1	2	4	2	3.2	3.12	0.8	2.1	3.8	6.54
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
ORP	mV	--	--	29	18	275	131	50	50	65	29.9	-17	-33.7	158	54.2
Laboratory Parameters															
Antimony	µg/L	6	--	0.3	0.02	0.03	0.02	0.04	0.03	0.02	--	--	--	0.05	<0.02
Arsenic	µg/L	10	--	1.78	1.33	1.26	1.56	1.53	2.09	1.19	--	--	--	1.61	1.52
Barium	µg/L	2000	--	13.1	12.2	10.9	13.8	14.5	16.9	10.9	--	--	--	10.4	9.22
Beryllium	µg/L	4	--	0.232	<0.005	<0.005	0.006	0.009	0.01	<0.004	--	--	--	<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
Chromium	µg/L	100	--	0.6	0.4	0.156	1.04	0.881	0.423	0.277	--	--	--	0.578	0.235
Cobalt	µg/L	6	--	0.453	0.125	0.113	0.447	0.433	0.981	0.052	--	--	--	0.207	0.058
Copper	µg/L	--	--	--	--	--	--	--	--	0.18	0.12	--	0.25	1.7	0.13
Lead	µg/L	15	--	0.364	0.066	0.065	0.19	0.278	0.389	0.038	--	--	--	0.152	0.03
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.015	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	1.1	0.8	0.71	0.77	1.56	0.75	0.83	--	--	--	0.9	0.9
Selenium	µg/L	50	--	0.6	0.2	0.2	0.2	0.2	0.3	0.2	--	--	--	0.5	0.6
Thallium	µg/L	2	--	0.276	0.03	<0.01	0.01	0.17	<0.01	<0.01	--	--	--	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.6	--	1	3	2
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	21.5	21.2	24.7	--	21.7	21.4	<0.06
Aluminum	µg/L	--	--	--	--	--	--	--	--	7.37	10.6	--	53	31	8.03
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
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
Lithium	mg/L	0.04	--	0.025	0.001	0.002	0.002	0.006	0.006	0.001	--	--	--	<0.009	0.02
Magnesium	mg/L	--	--	--	--	--	--	19.6	20	20	17.6	--	18.8	16	16.1
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0021	--	--	0.0323	0.0154	0.0033
Potassium	mg/L	--	--	--	--	--	--	0.91	0.89	0.77	0.65	--	0.82	0.88	0.76
Sodium	mg/L	--	--	--	--	--	--	41.2	40.5	42.1	43.2	--	40.1	34.6	37.4
Strontium	mg/L	--	--	--	--	--	--	0.0562	0.0564	0.0543	0.0494	--	0.0555	0.0464	0.0458
Alkalinity	mg/L	--	--	--	--	--	--	162	181	167	171	--	181	159	150
Bromide	mg/L	--	--	--	--	--	--	0.03	0.062	0.04	0.06	--	<0.02	<0.04	<0.04
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
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
TDS	mg/L	--	345	321	332	322	300	320	319	319	317	--	324	288	312
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1	<0.1
Radium-228	pCi/L	--	--	0.455	1.16	0.343	0.394	0.26	-0.175	1.5	--	--	--	0.346	0.113
Radium-226	pCi/L	--	--	0.122	0.131	0.147	0.282	0.0561	0.127	0.153	--	--	--	0.137	0.0183
Radium-226/228	pCi/L	5	--	0.577	1.291	0.49	0.676	0.3161	-0.048	1.653	--	--	--	0.483	0.1313
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.96	--	--	0.44	0.29	0.48
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.5	--	--	0.7	2	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2	--	--	1	1	7.36
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.004	<0.0004	<0.0004	0.014	--	0.002	0.003	0.007
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	0.0002	0.0004	0.0002	0.0004	--	0.0012	0.0006	0.0007

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-8I

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
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
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
Specific Conductance	µmhos/cm	--	--	580	455	968	420	80	507	485	471	390	619	453	607
Turbidity	NTU	--	--	9	3.29	1	5	10	2	1	6.26	1	3.18	9	2.4
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
Temperature	°C	--	--	21	15.39	17.1	14	14.4	15	16.2	15.51	14.4	17.42	13.8	19.41
ORP	mV	--	--	-60	-63.9	-1	29	25	52	-15	-67.4	111	-75.3	190	-8.1
Laboratory Parameters															
Antimony	µg/L	6	--	0.27	0.07	0.1	0.08	0.08	0.08	0.07	--	--	--	0.17	0.17
Arsenic	µg/L	10	--	11.5	2.08	1.39	2.58	2.78	2.09	1.31	--	--	--	3.41	1.07
Barium	µg/L	2000	--	70.1	57	58.4	54.9	56.9	57.8	60.4	--	--	--	57.9	63.8
Beryllium	µg/L	4	--	0.119	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	<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
Chromium	µg/L	100	--	0.5	0.1	0.055	0.817	0.511	0.23	0.077	--	--	--	0.07	0.05
Cobalt	µg/L	6	--	0.961	0.643	0.646	0.671	0.656	0.77	0.672	--	--	--	1.01	0.55
Copper	µg/L	--	--	--	--	--	--	--	--	0.11	0.13	--	0.42	1.45	0.2
Lead	µg/L	15	--	0.242	0.02	0.032	0.025	0.032	0.054	0.01	--	--	--	0.111	<0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	3	2.34	2.47	2.31	2.73	2.29	2.58	--	--	--	2.7	2.72
Selenium	µg/L	50	--	7.5	2.7	3	2.3	2.9	4.5	4.7	--	--	--	2.5	3.7
Thallium	µg/L	2	--	0.166	0.03	0.03	0.04	0.05	0.03	0.03	--	--	--	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	0.7	0.9	--	3.2	9.2	21.9
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	14.6	14.7	17.1	--	16.4	14.1	<0.06
Aluminum	µg/L	--	--	--	--	--	--	--	--	2	1	--	0.8	8.7	<1
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
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
Lithium	mg/L	0.04	--	0.007	0.008	0.009	0.005	0.01	0.001	<0.0002	--	--	--	0.02	0.02
Magnesium	mg/L	--	--	--	--	--	--	22.3	22.9	22.2	22.5	--	23.5	21.4	22.4
Manganese	mg/L	--	--	--	--	--	--	--	--	0.357	--	--	0.32	0.509	0.407
Potassium	mg/L	--	--	--	--	--	--	1.84	1.73	1.48	2.02	--	1.6	2.28	1.76
Sodium	mg/L	--	--	--	--	--	--	29.4	28.5	29.7	28.6	--	32.5	31.5	31.6
Strontium	mg/L	--	--	--	--	--	--	0.146	0.148	0.14	0.146	--	0.152	0.139	0.138
Alkalinity	mg/L	--	--	--	--	--	--	245	246	247	237	--	268	250	250
Bromide	mg/L	--	--	--	--	--	--	0.04	0.065	0.062	0.064	--	0.05	<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
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
TDS	mg/L	--	370	358	376	387	371	391	376	379	378	--	407	390	371
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1
Radium-228	pCi/L	--	--	0.4275	0.157	0.42	1.1	0.372	0.45	0.616	--	--	--	0.354	0.43
Radium-226	pCi/L	--	--	0.824	0.521	0.746	0.725	0.643	0.561	0.463	--	--	--	0.676	0.663
Radium-226/228	pCi/L	5	--	1.2515	0.678	1.166	1.825	1.015	1.011	1.079	--	--	--	1.03	1.093
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.52	--	--	0.27	0.17	0.45
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.4	--	--	16.8	<0.7	2
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	2.46	--	--	<0.8	<1	2
Iron (Dissolved)	mg/L	--	--	--	--	--	--	0.36	0.405	0.35	0.515	--	1.08	0.213	0.334
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
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	272	330	433	200	70	307	386	267	260	360	309	440
Turbidity	NTU	--	--	0.81	0.4	1	0.8	0.3	2.64	0.4	0.5	0.6	0.39	0.2	1
Dissolved Oxygen	mg/L	--	--	9.3	7.4	2	7	7	6.99	6.1	8	19.4	6.94	6.9	9
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
ORP	mV	--	--	24	167	227	126	47	75.6	73	-13	73	-2.7	152	240
Laboratory Parameters															
Antimony	µg/L	6	--	0.04	0.04	0.05	0.04	0.04	0.04	<0.05	--	--	--	0.05	0.05
Arsenic	µg/L	10	--	0.53	0.42	0.45	0.52	0.52	0.48	0.5	--	--	--	0.38	0.36
Barium	µg/L	2000	--	9.79	11.3	7.91	6.52	7.09	7.73	8.16	--	--	--	12.5	13.7
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.02	--	--	--	<0.02	0.03
Cadmium	µg/L	5	--	0.03	0.03	0.02	0.01	0.007	0.03	<0.02	--	--		0.03	0.02
Chromium	µg/L	100	--	0.5	0.8	0.416	0.725	1.25	0.567	0.568	--	--	--	0.384	0.483
Cobalt	µg/L	6	--	0.043	0.029	0.027	0.022	0.027	0.03	0.02	--	--	--	<0.02	0.03
Copper	µg/L	--	--	--	--	--	--	--	--	0.44	0.26	--	0.25	0.44	2.07
Lead	µg/L	15	--	0.02	0.046	0.027	0.02	0.02	0.023	0.06	--	--	--	0.03	<0.02
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	0.002	0.002	<0.002	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	4.36	3.37	4.71	6.09	6.03	4.86	4.69	--	--	--	2.4	2.04
Selenium	µg/L	50	--	0.08	0.1	0.07	0.05	0.2	0.2	0.3	--	--	--	0.04	<0.03
Thallium	µg/L	2	--	0.01	0.01	0.02	0.01	0.01	0.01	0.2	--	--	--	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	7	<0.4	--	2	<0.7	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	24.9	24.4	27.3	--	25.8	26.6	24.5
Aluminum	µg/L	--	--	--	--	--	--	--	--	10	3.63	--	2	3	3
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
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
Lithium	mg/L	0.04	--	0.024	0.004	0.005	0.003	0.013	0.009	0.002	--	--	--	0.01	0.01
Magnesium	mg/L	--	--	--	--	--	--	17.2	17.7	18.8	17.6	--	24.8	19.5	17.7
Manganese	mg/L	--	--	--	--	--	--	--	--	<0.0001	--	--	<0.0002	0.0004	<0.0002
Potassium	mg/L	--	--	--	--	--	--	0.42	0.42	0.42	0.48	--	0.37	0.88	0.4
Sodium	mg/L	--	--	--	--	--	--	5.72	5.58	6.82	7.26	--	7.11	5.35	4.43
Strontium	mg/L	--	--	--	--	--	--	0.0508	0.0535	0.0532	0.0537	--	0.0706	0.0774	0.0707
Alkalinity	mg/L	--	--	--	--	--	--	153	175	187	167	--	226	246	235
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	<0.02	<0.02	--	<0.02	<0.04	<0.4
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
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
TDS	mg/L	--	212	201	196	182	179	197	239	224	200	--	276	238	279
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1
Radium-228	pCi/L	--	--	0.231	0.741	0.179	1.96	0.0959	0.0337	0.771	--	--	--	0.419	0.805
Radium-226	pCi/L	--	--	0.584	-0.0127	0.109	0.141	0.0906	0.091	0.0225	--	--	--	0.217	0.0772
Radium-226/228	pCi/L	5	--	0.815	0.7283	0.288	2.101	0.1865	0.1247	0.7935	--	--	--	0.636	0.8822
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.82	--	--	0.63	0.71	0.26
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	9	--	--	2	1	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	66.5	--	--	2.92	3	2
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	--	0.008	0.04	0.004
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0002	0.0001	<0.0002	--	<0.002	0.0005	<0.0002

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters								
Elevation	ft NGVD	--	--	367.81	367.96	367.93	368.21	372.14
pH	S.U.	--	7.2	5.9	7.6	6.83	7.12	7.31
Specific Conductance	µmhos/cm	--	--	522	551	517	816	757
Turbidity	NTU	--	--	9	1.14	2.14	23.7	13.8
Dissolved Oxygen	mg/L	--	--	0.2	3.13	0.36	0.29	0
Temperature	°C	--	--	14.5	14.05	13.16	13.36	14.8
ORP	mV	--	--	68	-34.8	184.2	-10	9
Laboratory Parameters								
Antimony	µg/L	6	--	0.06	0.03	0.17	0.06	0.07
Arsenic	µg/L	10	--	0.3	0.27	0.25	0.61	0.45
Barium	µg/L	2000	--	26.8	26.3	25.3	31	29.7
Beryllium	µg/L	4	--	<0.02	<0.02	<0.02	0.02	<0.02
Cadmium	µg/L	5	--	0.06	0.05	0.13	0.04	0.09
Chromium	µg/L	100	--	0.276	0.1	0.1	0.639	0.476
Cobalt	µg/L	6	--	0.642	0.4783	0.439	1.23	0.924
Copper	µg/L	--	--	0.5	0.36	0.55	1.08	1.59
Lead	µg/L	15	--	0.34	0.08	0.08	0.904	0.538
Mercury	µg/L	2	--	--	--	--	--	0.002
Molybdnum	µg/L	100	--	2	2	2	2	1
Selenium	µg/L	50	--	0.2	0.07	0.1	0.2	0.09
Thallium	µg/L	2	--	<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	1	0.8	2	2	19.3
Silica (Dissolved)	mg/L	--	--	21.5	20	20	20.3	19.3
Aluminum	µg/L	--	--	45.2	8.53	3	291	119
Boron	mg/L	--	0.067	0.04	0.07	0.03	0.12	0.02
Calcium	mg/L	--	86.3	87	86.4	80.2	89.3	84.9
Lithium	mg/L	0.04	--	0.01	0.01	0.01	<0.009	0.01
Magnesium	mg/L	--	--	31.6	33.7	30.5	33	30.3
Manganese	mg/L	--	--	0.0864	0.0758	0.0811	0.106	0.163
Potassium	mg/L	--	--	1.18	1.26	1.57	1.87	1.19
Sodium	mg/L	--	--	30.2	33.9	32.1	32.4	30.5
Strontium	mg/L	--	--	0.103	0.111	0.114	0.119	0.114
Alkalinity	mg/L	--	--	392	358	374	361	354
Bromide	mg/L	--	--	0.1	0.1	0.1	0.1	0.1
Chloride	mg/L	--	30.1	30.1	29.9	29.4	29.5	29.7
Fluoride	mg/L	4	0.35	0.36	0.36	0.37	0.36	0.38
TDS	mg/L	--	445	446	434	422	437	455
Sulfate	mg/L	--	37.2	37.1	37.1	36.4	36.7	37.4
Sulfide	mg/L	--	--	<0.1	<0.1	<0.07	<0.1	<0.1
Radium-228	pCi/L	--	--	0.562	0.306	0.941	0.569	0.568
Radium-226	pCi/L	--	--	0.5	0.202	0.244	0.314	0.379
Radium-226/228	pCi/L	5	--	1.062	0.508	1.185	0.883	0.947
Copper (Dissolved)	µg/L	--	--	0.66	0.38	1.41	0.7	0.33
Zinc (Dissolved)	µg/L	--	--	3	2	3	4	7.5
Aluminum (Dissolved)	µg/L	--	--	2	1	1	76.2	2
Iron (Dissolved)	mg/L	--	--	0.025	0.01	0.006	0.238	0.05
Manganese (Dissolved)	mg/L	--	--	0.0847	0.0797	0.0677	0.103	0.144

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters								
Elevation	ft NGVD	--	--	369.85	367.84	367.81	368.16	371.95
pH	S.U.	--	0	7.15	7.74	7.01	7.12	7.27
Specific Conductance	µmhos/cm	--	--	662	622	579	901	882
Turbidity	NTU	--	--	1.48	8.76	2.54	2.3	39.5
Dissolved Oxygen	mg/L	--	--	1.2	2.68	9.27	1.99	0.2
Temperature	°C	--	--	15.21	13.94	12.9	12.92	14.8
ORP	mV	--	--	-35.1	-87.8	-54.9	-52	-57
Laboratory Parameters								
Antimony	µg/L	6	--	<0.01	<0.02	<0.02	<0.02	0.12
Arsenic	µg/L	10	--	10.1	9.24	8.79	9.32	12.6
Barium	µg/L	2000	--	370	374	365	377	395
Beryllium	µg/L	4	--	0.006	<0.02	0.02	<0.02	0.04
Cadmium	µg/L	5	--	<0.005	0.02	<0.01	0.17	0.16
Chromium	µg/L	100	--	0.101	0.289	0.05	0.2	1.32
Cobalt	µg/L	6	--	1.5	1.67	1.42	1.58	2.7
Copper	µg/L	--	--	1.15	1.23	0.44	0.56	8.39
Lead	µg/L	15	--	0.063	0.21	0.03	0.07	1.47
Mercury	µg/L	2	--	--	--	--	--	0.002
Molybdnum	µg/L	100	--	2.92	2.87	2.87	3.13	2.8
Selenium	µg/L	50	--	0.04	0.06	<0.003	<0.03	0.1
Thallium	µg/L	2	--	0.01	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	1	2	1	3	6.3
Silica (Dissolved)	mg/L	--	--	20.9	18.8	19.2	12.6	19
Aluminum	µg/L	--	--	48.8	64.6	5.87	5.67	581
Boron	mg/L	--	0.115	0.062	0.115	0.03	0.05	0.03
Calcium	mg/L	--	94.1	100	94.8	90.9	95.6	99.2
Lithium	mg/L	0.04	--	0.009	<0.009	0.03	0.01	0.01
Magnesium	mg/L	--	--	32.5	32.6	30.5	31	31.5
Manganese	mg/L	--	--	1.17	1.2	1.08	1.12	2.13
Potassium	mg/L	--	--	2.03	2.43	2.28	2.26	2.13
Sodium	mg/L	--	--	43.2	45	43.9	42	45.7
Strontium	mg/L	--	--	0.134	0.138	0.144	0.142	0.15
Alkalinity	mg/L	--	--	433	448	433	441	458
Bromide	mg/L	--	--	0.139	0.1	0.1	0.1	0.1
Chloride	mg/L	--	33	34	33.9	33.7	33.1	33.4
Fluoride	mg/L	4	0.24	0.25	0.25	0.25	0.23	0.25
TDS	mg/L	--	499	506	493	484	485	532
Sulfate	mg/L	--	31.5	30.9	31	30.7	31	32.5
Sulfide	mg/L	--	--	<0.4	<0.1	<0.07	<0.1	<0.1
Radium-228	pCi/L	--	--	-0.0683	0.788	1.19	1.04	1.17
Radium-226	pCi/L	--	--	0.463	0.516	0.51	0.83	0.565
Radium-226/228	pCi/L	5	--	0.463	1.304	1.7	1.87	1.735
Copper (Dissolved)	µg/L	--	--	0.19	0.35	0.42	1.08	0.64
Zinc (Dissolved)	µg/L	--	--	1	10.2	2	8.1	1
Aluminum (Dissolved)	µg/L	--	--	2.36	5.95	2	3	16.6
Iron (Dissolved)	mg/L	--	--	1.15	1.18	1.09	1.16	1.51
Manganese (Dissolved)	mg/L	--	--	1.12	1.16	1.06	1.16	1.11

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
Field Parameters								
Elevation	ft NGVD	--	--	367.91	367.91	367.86	368.25	372.03
pH	S.U.	--	7.3	7.16	8.06	7.08	7.17	7.41
Specific Conductance	µmhos/cm	--	--	530	510	449	717	686
Turbidity	NTU	--	--	9.68	12.7	5.25	2.2	1.4
Dissolved Oxygen	mg/L	--	--	1.68	1.41	4.9	1.4	0.7
Temperature	°C	--	--	15.56	15.16	12	12.56	15.1
ORP	mV	--	--	-52.6	-90.9	-40.8	-69	-56
Laboratory Parameters								
Antimony	µg/L	6	--	0.02	0.06	<0.02	<0.02	0.02
Arsenic	µg/L	10	--	11.9	9.78	9.95	9.64	13.3
Barium	µg/L	2000	--	282	268	272	271	282
Beryllium	µg/L	4	--	0.006	<0.02	<0.02	<0.02	<0.02
Cadmium	µg/L	5	--	<0.005	0.05	<0.01	0.01	0.04
Chromium	µg/L	100	--	0.108	0.266	0.1	0.2	0.06
Cobalt	µg/L	6	--	0.462	0.538	0.378	0.4	0.554
Copper	µg/L	--	--	0.51	41	0.64	0.24	0.46
Lead	µg/L	15	--	0.127	0.329	0.111	0.05	0.02
Mercury	µg/L	2	--	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	3.09	2.96	2.94	3.13	3.57
Selenium	µg/L	50	--	<0.03	0.07	<0.03	<0.03	<0.03
Thallium	µg/L	2	--	<0.01	<0.1	<0.1	<0.1	<0.1
Zinc	µg/L	--	--	1	3	2	0.8	1
Silica (Dissolved)	mg/L	--	--	21.1	18.9	19.5	19.5	18.8
Aluminum	µg/L	--	--	14	53.9	26.1	5.83	3
Boron	mg/L	--	0.098	0.112	0.09	0.03	0.09	<0.02
Calcium	mg/L	--	90.8	95.1	86.9	86.1	82.9	84.5
Lithium	mg/L	0.04	--	0.013	<0.009	<0.009	<0.009	0.02
Magnesium	mg/L	--	--	30.3	29.6	28.5	26.7	26.5
Manganese	mg/L	--	--	0.989	0.902	0.878	0.743	0.979
Potassium	mg/L	--	--	1.16	0.89	1.34	1.45	0.76
Sodium	mg/L	--	--	10.5	11.3	11	10.2	9.06
Strontium	mg/L	--	--	0.161	0.161	0.171	0.158	0.147
Alkalinity	mg/L	--	--	373	353	371	384	368
Bromide	mg/L	--	--	0.081	0.08	0.07	0.07	0.07
Chloride	mg/L	--	16.1	17.2	17	16.6	16.7	15.9
Fluoride	mg/L	4	0.27	0.26	0.26	0.26	0.26	0.26
TDS	mg/L	--	328	386	381	374	380	393
Sulfate	mg/L	--	15.6	14.2	14.2	13.8	13.9	14.8
Sulfide	mg/L	--	--	<0.04	<0.1	<0.07	<0.1	<0.1
Radium-228	pCi/L	--	--	0.643	0.405	0.589	1.69	0.698
Radium-226	pCi/L	--	--	0.702	0.454	0.608	0.766	0.548
Radium-226/228	pCi/L	5	--	1.345	0.859	1.197	2.456	1.246
Copper (Dissolved)	µg/L	--	--	0.35	0.21	0.12	0.44	0.25
Zinc (Dissolved)	µg/L	--	--	3.3	2	1	1	0.7
Aluminum (Dissolved)	µg/L	--	--	7.24	2	2	5.13	1
Iron (Dissolved)	mg/L	--	--	1.29	0.965	0.996	1.12	1.62
Manganese (Dissolved)	mg/L	--	--	0.994	0.88	0.801	0.832	1.03

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-13I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	9/26/2018	10/31/2018	11/15/2018	12/11/2018	5/21/2019
Field Parameters								
Elevation	ft NGVD	--	--	368.83	368.45	368.41	368.31	371.99
pH	S.U.	--	7.5	7.36	8.12	7.21	7.36	7.54
Specific Conductance	µmhos/cm	--	--	411	397	451	555	522
Turbidity	NTU	--	--	2.14	0.93	0.31	0.45	1.4
Dissolved Oxygen	mg/L	--	--	0.37	1.15	8.64	0.57	0.4
Temperature	°C	--	--	15.71	15.25	13.17	14.13	16.5
ORP	mV	--	--	-15.8	-74.3	44.5	-72	-30
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
Molybdnum	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
Calcium	mg/L	--	67.5	66	58.1	59.7	65.6	67.9
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
Chloride	mg/L	--	20	20.6	20.5	20.3	20.4	20.1
Fluoride	mg/L	4	0.38	0.38	0.38	0.38	0.38	0.37
TDS	mg/L	--	297	319	305	310	310	318
Sulfate	mg/L	--	40.6	41.6	41.5	41.3	40.7	41.6
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
CCR Landfill
Rockport Plant, 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
Field Parameters								
Elevation	ft NGVD	--	--	368.79	368.43	368.39	368.29	371.95
pH	S.U.	--	7.4	7.03	8.11	7.17	7.29	7.45
Specific Conductance	µmhos/cm	--	--	406	382	427	540	524
Turbidity	NTU	--	--	5.34	10.6	4.66	3.22	2
Dissolved Oxygen	mg/L	--	--	1.34	1.4	5.45	0.51	1.7
Temperature	°C	--	--	16.29	14.99	12.18	14.06	18.7
ORP	mV	--	--	-71.4	-95.1	-48.5	-94	-48
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
Molybdnum	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
Calcium	mg/L	--	65.9	68.9	63.4	60.8	67.4	66.2
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
Chloride	mg/L	--	16.3	17	16.9	16.6	16.5	15.9
Fluoride	mg/L	4	0.28	0.27	0.27	0.28	0.27	0.26
TDS	mg/L	--	287	296	299	296	305	303
Sulfate	mg/L	--	35.5	34.8	34.7	34.1	33.3	33.9
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
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	576	640	955	530	80	441	496	488	490	450	309	604
Turbidity	NTU	--	--	3.9	6	1	2	0.7	2.07	1	0.5	1	0.6	0.2	0.61
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
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
ORP	mV	--	--	43	53	282	147	75	55.6	67	-23	133	-7.9	152	-203.7
Laboratory Parameters															
Antimony	µg/L	6	--	0.02	0.02	0.03	0.02	0.02	0.06	<0.05	--	--	--	<0.02	<0.02
Arsenic	µg/L	10	--	1.54	1.29	0.75	0.91	0.76	0.75	0.7	--	--	--	0.64	0.62
Barium	µg/L	2000	--	31	27.8	26.3	27	26.3	25	27	--	--	--	27	28.9
Beryllium	µg/L	4	--	0.008	0.005	<0.005	<0.005	<0.005	<0.004	<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
Chromium	µg/L	100	--	0.3	0.3	0.162	0.575	0.66	0.301	0.258	--	--	--	0.2	0.2
Cobalt	µg/L	6	--	0.573	0.333	0.088	0.187	0.083	0.065	0.03	--	--	--	0.03	0.03
Copper	µg/L	--	--	--	--	--	--	--	--	2.38	0.15	--	0.38	0.24	0.25
Lead	µg/L	15	--	0.307	0.31	0.549	0.115	0.061	0.071	0.116	--	--	--	0.05	0.04
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	1.51	1.43	1.26	1.62	1.84	1.35	1.67	--	--	--	1	1
Selenium	µg/L	50	--	1.4	1.2	1.2	1.1	1.1	1.2	1.3	--	--	--	1.1	0.9
Thallium	µg/L	2	--	<0.01	<0.01	0.02	0.054	0.055	0.01	0.07	--	--	--	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	9	0.8	--	1	1	<0.7
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	20.3	20.2	23.3	--	20.4	20.2	<0.06
Aluminum	µg/L	--	--	--	--	--	--	--	--	11.4	2	--	5.75	7.32	4
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
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
Lithium	mg/L	0.04	--	0.018	0.006	0.004	0.006	0.005	0.001	<0.0002	--	--	--	<0.009	0.01
Magnesium	mg/L	--	--	--	--	--	--	27.6	28.1	29.3	29.9	--	27.4	26.4	30
Manganese	mg/L	--	--	--	--	--	--	--	--	0.0006	--	--	0.0014	0.0015	0.0008
Potassium	mg/L	--	--	--	--	--	--	0.5	0.54	0.49	0.59	--	0.51	0.55	0.53
Sodium	mg/L	--	--	--	--	--	--	33	29.4	30.1	29.9	--	29.2	24.9	23.3
Strontium	mg/L	--	--	--	--	--	--	0.101	0.102	0.103	0.106	--	0.101	0.0954	0.109
Alkalinity	mg/L	--	--	--	--	--	--	232	258	257	249	--	260	259	275
Bromide	mg/L	--	--	--	--	--	--	<0.02	<0.06	0.03	0.04	--	<0.02	<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
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
TDS	mg/L	--	368	364	361	362	344	354	376	377	376	--	360	344	390
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.1	<0.1
Radium-228	pCi/L	--	--	-0.343	0.769	0.693	0.601	-0.193	-0.019	1.73	--	--	--	0.334	0.271
Radium-226	pCi/L	--	--	0.594	0.131	0.413	0.179	0.0525	0.0316	0.153	--	--	--	0.0534	0.0483
Radium-226/228	pCi/L	5	--	0.251	0.9	1.106	0.78	-0.1405	0.0126	1.883	--	--	--	0.3874	0.3193
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	0.94	--	--	0.43	0.64	0.31
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	7	--	--	5.7	3	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	11.3	--	--	1	<1	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.016	--	0.002	<0.003	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	<0.0001	0.0021	0.0001	<0.0002	--	<0.0002	0.0005	<0.0002

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-15S

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
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
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
Specific Conductance	µmhos/cm	--	--	512	512	510	904	470	60	419	368	393	416	317	348	362	269
Turbidity	NTU	--	--	7.6	2.2	1	1	1	0.5	2	2	2.34	0.33	0.41	1.51	8.3	3
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
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
ORP	mV	--	--	57	124	181	-10	179	64	65	24	18.1	-37.7	19.3	-218	47	63
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	--	--
Arsenic	µg/L	10	--	0.32	0.24	0.21	0.18	0.26	0.21	0.21	0.23	--	--	0.13	0.12	--	--
Barium	µg/L	2000	--	4.71	5.85	3.21	3.27	6.05	4.98	3.54	3.11	--	--	2.46	2.54	--	--
Beryllium	µg/L	4	--	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.004	--	--	<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	--	--
Chromium	µg/L	100	--	0.2	1.7	0.5	0.058	0.493	0.934	0.198	0.096	--	--	0.05	0.08	--	--
Cobalt	µg/L	6	--	3.03	1.17	1.09	0.794	1.75	1.26	1.2	1.25	--	--	0.74	0.775	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.4	0.26	0.24	0.37	0.32	--	--
Lead	µg/L	15	--	0.286	0.101	0.098	0.037	0.039	0.024	0.062	0.083	--	--	0.03	0.05	--	--
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	<0.002	--	--
Molybdnum	µg/L	100	--	2.52	2.89	2.54	1.57	0.78	1.17	2.08	2.87	--	--	2.54	3.47	--	--
Selenium	µg/L	50	--	0.4	0.7	0.5	0.3	0.3	0.5	0.5	0.2	--	--	0.1	0.06	--	--
Thallium	µg/L	2	--	0.03	<0.01	0.02	0.02	0.03	0.04	0.02	0.02	--	--	<0.1	<0.1	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	3.5	1	21	2	2	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	13.1	12.7	15.8	13.1	12.4	<0.06	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.9	6.68	4.42	6.41	11.7	--	--
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	--	--
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	--	--
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	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	28.2	19.3	17.2	18.5	16.9	15.1	13.9	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.489	--	0.391	0.444	0.452	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.07	1.11	1.03	1.27	0.93	1.16	0.68	--	--
Sodium	mg/L	--	--	--	--	--	--	--	35.5	44.7	39.2	42.3	35.9	27.2	17.3	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0903	0.0711	0.061	0.0662	0.0638	0.0574	0.0502	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	294	257	235	267	239	226	197	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.04	0.062	0.05	0.074	0.03	<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	--	--
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
TDS	mg/L	--	(412.7) 407	338	319	329	338	374	342	294	263	300	274	232	207	--	--
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	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.07	<0.1	--	--
Radium-228	pCi/L	--	--	0.0335	-0.092	0.302	1.11	-0.0122	-0.108	0.106	-0.0928	--	--	0.482	0.439	--	--
Radium-226	pCi/L	--	--	0.384	--	0.116	0.139	0.189	0.0973	0.135	0.0916	--	--	-0.0262	0.282	--	--
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	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.37	--	0.51	1.59	0.53	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.6	--	1	2	<0.7	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	3.7	--	2	3	2	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.014	<0.002	0.004	<0.003	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.448	0.361	0.284	0.379	0.349	0.332	0.289	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	555	574	530	874	420	60	457	400	368	350	474
Turbidity	NTU	--	--	0.9	0.6	0.7	0.2	1	2	1	1	1.09	1	1.12
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
Temperature	°C	--	--	15.1	18.2	17.6	15.6	13.9	13.6	14.8	16.3	14.68	12.8	12.38
ORP	mV	--	--	52.5	-86	-54	259	-87	-42	51	-50	-79.7	-52	-77.2
Laboratory Parameters														
Antimony	µg/L	6	--	0.01	0.25	0.01	0.04	0.01	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	--	--	--
Barium	µg/L	2000	--	118	132	119	107	91.2	88.9	86.1	94.8	--	--	--
Beryllium	µg/L	4	--	<0.005	0.165	<0.005	0.005	<0.005	<0.005	<0.004	<0.004	--	--	--
Cadmium	µg/L	5	--	0.02	0.23	0.009	0.06	0.005	0.03	0.03	0.02	--		--
Chromium	µg/L	100	--	0.2	0.5	0.1	0.132	0.35	0.7	0.134	0.089	--	--	--
Cobalt	µg/L	6	--	1.24	1.66	1.32	1.03	1	0.903	1.02	1.25	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.26	0.1	--	--
Lead	µg/L	15	--	0.026	0.254	0.026	0.213	0.01	0.065	0.09	0.082	--	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--
Molybdnum	µg/L	100	--	5.76	6.74	5.75	6.73	7.63	7.91	6.52	5.58	--	--	--
Selenium	µg/L	50	--	<0.03	0.2	<0.03	<0.03	<0.03	0.07	0.04	<0.03	--	--	--
Thallium	µg/L	2	--	0.04	0.273	0.03	0.04	0.04	0.112	0.03	0.04	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	0.7	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	15	14	16.1	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.25	6.63	--	--
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
Calcium	mg/L	--	(79.5) 54	44.1	44.6	46.1	51.4	46.5	51.1	46.6	43.9	44.6	--	--
Lithium	mg/L	0.04	--	0.005	0.018	0.004	0.004	0.011	0.006	0.002	<0.0002	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	13.3	12.7	11.1	11.2	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.134	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.02	0.94	1.05	--	--
Sodium	mg/L	--	--	--	--	--	--	--	62.3	56.1	51.8	45.4	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.0865	0.088	0.0841	0.0871	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	229	239	224	202	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.084	0.101	0.081	0.067	--	--
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	--
Fluoride	mg/L	4	0.382	0.25	0.25	0.23	0.25	0.34	0.32	0.31	0.22	0.23	0.22	--
TDS	mg/L	--	(412.7) 398	380	356	334	340	351	331	322	300	287	--	--
Sulfate	mg/L	--	(47.44) 47	42.5	41	34	33.6	35.4	31.1	29.7	26.6	27.3	26.7	
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	--
Radium-228	pCi/L	--	--	0.254	0.455	0.076	1.23	0.682	0.155	-0.367	1.49	--	--	--
Radium-226	pCi/L	--	--	0.609	0.636	0.428	0.517	0.187	0.71	0.189	0.153	--	--	--
Radium-226/228	pCi/L	5	--	0.863	1.091	0.504	1.747	0.869	0.865	-0.178	1.643	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.28	--	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.1	--	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.19	--	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.742	0.709	0.789	0.949	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.138	0.139	0.112	0.119	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-15I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/6/2018	8/16/2016	11/13/2018	5/23/2019
Field Parameters							
Elevation	ft NGVD	--	--	369.64	370.28	369.01	372.01
pH	S.U.	--	6.77 - 7.86	8.06	7.36	7.6	7.29
Specific Conductance	µmhos/cm	--	--	420	527	412	414
Turbidity	NTU	--	--	0.88	0	0.18	0.95
Dissolved Oxygen	mg/L	--	--	1.89	0.25	0.31	1.61
Temperature	°C	--	--	14.9	17.77	12.52	18.94
ORP	mV	--	--	-94	-63	-63.7	-207.7
Laboratory Parameters							
Antimony	µg/L	6	--	--	--	<0.02	<0.02
Arsenic	µg/L	10	--	--	--	23.8	25.8
Barium	µg/L	2000	--	--	--	93.3	95
Beryllium	µg/L	4	--	--	--	<0.02	<0.02
Cadmium	µg/L	5	--	--	--	<0.01	0.01
Chromium	µg/L	100	--	--	--	<0.04	0.06
Cobalt	µg/L	6	--	--	--	1.12	1.12
Copper	µg/L	--	--	0.15	--	0.12	0.1
Lead	µg/L	15	--	--	--	0.03	<0.02
Mercury	µg/L	2	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	--	--	5.03	5.63
Selenium	µg/L	50	--	--	--	0.04	<0.03
Thallium	µg/L	2	--	--	--	<0.1	<0.1
Zinc	µg/L	--	--	2.5	--	0.8	7.9
Silica (Dissolved)	mg/L	--	--	13.9	--	13.8	<0.06
Aluminum	µg/L	--	--	4.24	--	7.01	3
Boron	mg/L	--	0.072	0.066	--	0.07	0.03
Calcium	mg/L	--	(79.5) 54	47	--	39.9	47.8
Lithium	mg/L	0.04	--	--	--	<0.009	0.01
Magnesium	mg/L	--	--	11.8	--	9.98	11.7
Manganese	mg/L	--	--	0.13	--	0.106	0.128
Potassium	mg/L	--	--	0.96	--	1.21	0.9
Sodium	mg/L	--	--	42	--	29.9	29.9
Strontium	mg/L	--	--	0.0955	--	0.0827	0.0942
Alkalinity	mg/L	--	--	226	--	199	208
Bromide	mg/L	--	--	0.071	--	0.06	0.04
Chloride	mg/L	--	(29.6) 70	25.1	--	23.7	18
Fluoride	mg/L	4	0.382	0.26	--	0.25	0.26
TDS	mg/L	--	(412.7) 398	279	--	248	260
Sulfate	mg/L	--	(47.44) 47	25.3	--	25.3	20.9
Sulfide	mg/L	--	--	<0.4	--	<0.07	<0.1
Radium-228	pCi/L	--	--	--	--	0.283	0.423
Radium-226	pCi/L	--	--	--	--	0.0962	0.557
Radium-226/228	pCi/L	5	--	--	--	0.3792	0.98
Copper (Dissolved)	µg/L	--	--	0.36	--	0.2	0.83
Zinc (Dissolved)	µg/L	--	--	2	--	0.8	1
Aluminum (Dissolved)	µg/L	--	--	1	--	1	2
Iron (Dissolved)	mg/L	--	--	0.879	--	0.848	0.826
Manganese (Dissolved)	mg/L	--	--	0.126	--	0.121	0.116

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	0.822	764	719	669	677	804	581	595	647	872
Turbidity	NTU	--	--	0.74	0.34	5.21	0.5	0.25	0.42	1.78	0.57	0.72	0.54
Dissolved Oxygen	mg/L	--	--	0.34	0.4	7.29	0.62	0.55	0.18	0.69	22.45	0.31	0.82
Temperature	°C	--	--	15.7	16.39	17.48	16.91	14.47	18.48	16.01	15.63	15.99	14.46
ORP	mV	--	--	112.4	56.2	153.4	233.5	83	56.1	177.3	-118.9	13.6	-12.2
Laboratory Parameters													
Antimony	µg/L	6	--	0.03	0.03	0.25	0.02	0.02	0.02	0.02	0.02	--	--
Arsenic	µg/L	10	--	0.37	0.37	0.38	0.34	0.42	0.31	0.39	0.33	--	--
Barium	µg/L	2000	--	32.3	29.9	29.5	25.3	25.1	25.7	29.8	25.6	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--
Cadmium	µg/L	5	--	0.03	0.03	0.1	0.006	0.008	0.004	0.01	0.04	--	
Chromium	µg/L	100	--	0.2	0.5	0.3	1.03	0.081	0.463	0.196	0.101	--	--
Cobalt	µg/L	6	--	0.073	0.025	0.07	0.028	0.014	0.012	0.063	0.01	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.1	0.19	--
Lead	µg/L	15	--	0.074	0.057	0.182	<0.004	0.039	0.006	0.027	0.01	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Molybdnum	µg/L	100	--	1.15	1.21	1.11	1.19	1.21	1.32	1.14	0.98	--	--
Selenium	µg/L	50	--	0.6	0.6	0.8	0.4	0.4	0.4	0.3	0.4	--	--
Thallium	µg/L	2	--	0.01	<0.01	<0.01	<0.01	0.02	0.02	0.01	0.01	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2	2	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	24	24.1	27.6	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	2.1	7.43	--
Boron	mg/L	--	0.088	0.028	0.025	0.024	0.025	0.017	0.038	0.082	0.037	0.061	--
Calcium	mg/L	--	(79.5) 114	96.2	83	93.5	96.4	94.6	106	105	91.8	108	109
Lithium	mg/L	0.04	--	0.007	0.031	0.005	0.018	0.013	0.013	0.008	0.01	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	36.4	36.6	31.4	38.2	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0028	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.01	1.3	0.97	1.03	--
Sodium	mg/L	--	--	--	--	--	--	--	36.9	36.7	28.7	35.7	--
Strontium	mg/L	--	--	--	--	--	--	--	0.129	0.132	0.108	0.133	--
Alkalinity	mg/L	--	--	--	--	--	--	--	423	431	436	438	--
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.158	0.162	0.206	--
Chloride	mg/L	--	(29.6) 24	18.7	19	17.1	16.4	17.5	19.3	22.9	19.8	19.3	--
Fluoride	mg/L	4	0.506	0.44	0.46	0.38	0.3	0.35	0.36	0.38	0.33	0.41	--
TDS	mg/L	--	(412.7) 517	483	471	509	486	474	473	499	484	503	517
Sulfate	mg/L	--	(52.4) 52	46.9	50.1	42.1	38.3	39.2	39.6	42.3	40.7	45	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--
Radium-228	pCi/L	--	--	-0.0274	0.34	-0.131	0.0963	1.8	0.169	-0.045	2.76	--	--
Radium-226	pCi/L	--	--	0.163	0.707	0.0255	0.198	0.193	0.113	0.145	0.0933	--	--
Radium-226/228	pCi/L	5	--	0.1356	1.047	-0.1055	0.2943	1.993	0.282	0.1	2.8533	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.1	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.9	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.015	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0013	0.0145	0.0007	0.0127	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-16S

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/6/2018	8/16/2018	11/14/2018	2/11/2019	5/22/2019
Field Parameters								
Elevation	ft NGVD	--	--	369.62	370.12	368.86	369.84	371.94
pH	S.U.	--	5.88 - 8.55	7.23	7.07	7.02	7.12	7.1
Specific Conductance	µmhos/cm	--	--	770	920	720	570	774
Turbidity	NTU	--	--	2.2	0	0.3	1.3	0.18
Dissolved Oxygen	mg/L	--	--	7.8	0	1.35	0.41	0.34
Temperature	°C	--	--	15.73	17.04	14.2	14.4	14.54
ORP	mV	--	--	-36.9	147	142	183	-211.4
Laboratory Parameters								
Antimony	µg/L	6	--	--	--	0.05	--	0.03
Arsenic	µg/L	10	--	--	--	0.34	--	0.26
Barium	µg/L	2000	--	--	--	29.9	--	21.9
Beryllium	µg/L	4	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	--	--	0.08	--	0.01
Chromium	µg/L	100	--	--	--	0.07	--	0.1
Cobalt	µg/L	6	--	--	--	<0.02	--	<0.02
Copper	µg/L	--	--	1.19	--	1.46	--	0.66
Lead	µg/L	15	--	--	--	0.112	--	<0.02
Mercury	µg/L	2	--	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	--	--	0.9	--	0.9
Selenium	µg/L	50	--	--	--	3.2	--	0.6
Thallium	µg/L	2	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	5	--	31.6	--	<0.7
Silica (Dissolved)	mg/L	--	--	24.9	--	24.9	--	23.3
Aluminum	µg/L	--	--	5.68	--	3	--	1
Boron	mg/L	--	0.088	0.109	0.034	0.107	0.02	0.03
Calcium	mg/L	--	(79.5) 114	108	109	104	--	99.2
Lithium	mg/L	0.04	--	--	--	0.02	--	0.01
Magnesium	mg/L	--	--	38.8	--	37.4	--	34.5
Manganese	mg/L	--	--	0.0062	--	0.004	--	0.0035
Potassium	mg/L	--	--	1.1	--	1.28	--	0.95
Sodium	mg/L	--	--	38	--	44.4	--	29.4
Strontium	mg/L	--	--	0.137	--	0.138	--	0.21
Alkalinity	mg/L	--	--	463	--	510	--	478
Bromide	mg/L	--	--	0.118	--	0.1	--	0.08
Chloride	mg/L	--	(29.6) 24	17.3	--	16.2	--	18
Fluoride	mg/L	4	0.506	0.42	--	0.39	--	0.38
TDS	mg/L	--	(412.7) 517	520	533	548	517	493
Sulfate	mg/L	--	(52.4) 52	40.8	--	40.3	--	34.5
Sulfide	mg/L	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	--	--	0.0697	--	0.299
Radium-226	pCi/L	--	--	--	--	0.0503	--	0.0904
Radium-226/228	pCi/L	5	--	--	--	0.12	--	0.3894
Copper (Dissolved)	µg/L	--	--	1.21	--	2.59	--	0.38
Zinc (Dissolved)	µg/L	--	--	5.2	--	4	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	1	--	1	--	3
Iron (Dissolved)	mg/L	--	--	0.004	--	<0.003	--	<0.003
Manganese (Dissolved)	mg/L	--	--	0.0047	--	0.0023	--	<0.0027

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	957	870	867	702	674	779	569	665	644	821
Turbidity	NTU	--	--	0.42	0.46	1.37	1.4	0.18	1.41	2.27	3.15	0.7	1.9
Dissolved Oxygen	mg/L	--	--	0.29	8.08	0.68	0.53	0.46	0.34	0.21	0.29	0.28	0.38
Temperature	°C	--	--	16.2	16.86	15.43	15.64	14.71	15.19	15.48	15.99	15.71	13.08
ORP	mV	--	--	224.4	-158.9	54.7	242.3	86.1	53.5	49.8	-3.1	4.1	-25.6
Laboratory Parameters													
Antimony	µg/L	6	--	0.02	0.01	0.01	0.05	0.01	0.02	0.06	0.02	--	--
Arsenic	µg/L	10	--	0.71	0.75	0.75	0.67	0.72	0.68	0.7	0.73	--	--
Barium	µg/L	2000	--	267	267	262	234	220	221	206	238	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--
Cadmium	µg/L	5	--	0.06	0.03	0.03	0.05	0.04	0.03	0.08	0.03	--	
Chromium	µg/L	100	--	0.1	0.2	0.1	0.082	0.085	0.422	0.204	0.118	--	--
Cobalt	µg/L	6	--	0.602	0.627	0.576	0.546	0.514	0.58	0.56	0.599	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.56	0.46	--
Lead	µg/L	15	--	0.023	0.025	0.023	0.053	0.01	0.034	0.153	0.065	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Molybdnum	µg/L	100	--	1.02	1.02	1.03	0.93	1	1.17	0.91	1.07	--	--
Selenium	µg/L	50	--	0.2	0.2	0.1	0.2	0.1	0.2	0.4	0.2	--	--
Thallium	µg/L	2	--	0.085	0.06	0.074	0.069	0.071	0.075	0.075	0.07	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	2.7	0.8	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	19.9	20	22.8	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	15.5	14	--
Boron	mg/L	--	0.107	0.031	0.027	0.026	0.024	0.015	0.1	0.032	0.044	0.05	--
Calcium	mg/L	--	(79.5) 114	110	93.9	95.9	96.2	89.3	101	86.7	91.3	84	71.9
Lithium	mg/L	0.04	--	0.005	0.005	0.006	0.013	0.01	0.013	0.01	0.003	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	27.6	24.7	25.6	23	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	1.03	--	--
Potassium	mg/L	--	--	--	--	--	--	--	2.9	2.47	2.62	3.21	--
Sodium	mg/L	--	--	--	--	--	--	--	46.2	41.4	50	69.2	--
Strontium	mg/L	--	--	--	--	--	--	--	0.155	0.139	0.14	0.135	--
Alkalinity	mg/L	--	--	--	--	--	--	--	368	376	369	359	--
Bromide	mg/L	--	--	--	--	--	--	--	0.1	0.152	0.154	0.206	--
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
Fluoride	mg/L	4	0.192	0.1	0.15	0.1	0.1	0.1	0.16	0.1	0.08	0.1	--
TDS	mg/L	--	(412.7) 589	539	532	544	508	481	460	461	465	495	487
Sulfate	mg/L	--	(43.51) 44	38.7	42.2	36.8	33	34	35.4	35.1	36.1	40.4	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--
Radium-228	pCi/L	--	--	0.357	1	0.977	0.174	2.27	0.182	0.427	0.513	--	--
Radium-226	pCi/L	--	--	0.235	0.576	0.248	0.413	0.362	0.399	0.511	0.274	--	--
Radium-226/228	pCi/L	5	--	0.592	1.576	1.225	0.587	2.632	0.581	0.938	0.787	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.14	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.051	0.014	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	1.03	1.06	1.04	0.873	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-16I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/6/2018	8/16/2018	11/14/2018	2/11/2019	5/22/2019
Field Parameters								
Elevation	ft NGVD	--	--	369.62	370.06	368.78	369.77	371.86
pH	S.U.	--	6.73 - 7.90	7.37	7.23	7.3	7.4	7.31
Specific Conductance	µmhos/cm	--	--	720	797	545	476	641
Turbidity	NTU	--	--	0.89	0	0.41	0.8	0.2
Dissolved Oxygen	mg/L	--	--	0.46	0	0.95	0.36	0.25
Temperature	°C	--	--	15.93	15.56	14.42	14.5	14.58
ORP	mV	--	--	-68.4	120	148	122	-21107
Laboratory Parameters								
Antimony	µg/L	6	--	--	--	<0.02	--	<0.02
Arsenic	µg/L	10	--	--	--	0.66	--	0.64
Barium	µg/L	2000	--	--	--	153	--	151
Beryllium	µg/L	4	--	--	--	<0.02	--	<0.02
Cadmium	µg/L	5	--	--	--	0.02	--	0.02
Chromium	µg/L	100	--	--	--	0.05	--	<0.04
Cobalt	µg/L	6	--	--	--	0.336	--	0.346
Copper	µg/L	--	--	0.62	--	0.45	--	0.46
Lead	µg/L	15	--	--	--	<0.02	--	0.02
Mercury	µg/L	2	--	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	--	--	1	--	1
Selenium	µg/L	50	--	--	--	0.2	--	0.1
Thallium	µg/L	2	--	--	--	<0.1	--	<0.1
Zinc	µg/L	--	--	0.6	--	0.8	--	<0.7
Silica (Dissolved)	mg/L	--	--	19.8	--	18.5	--	18
Aluminum	µg/L	--	--	10.2	--	5	--	4
Boron	mg/L	--	0.107	0.046	--	0.139	0.02	0.03
Calcium	mg/L	--	(79.5) 114	82.9	61.6	53.7	--	56
Lithium	mg/L	0.04	--	--	--	<0.009	--	0.02
Magnesium	mg/L	--	--	23.1	--	14.8	--	15.1
Manganese	mg/L	--	--	0.902	--	0.613	--	0.626
Potassium	mg/L	--	--	3.05	--	3.16	--	2.55
Sodium	mg/L	--	--	66	--	74.4	--	68.4
Strontium	mg/L	--	--	0.136	--	0.09	--	0.0898
Alkalinity	mg/L	--	--	359	--	300	--	261
Bromide	mg/L	--	--	0.168	--	0.1	--	0.1
Chloride	mg/L	--	(29.6) 114	58.6	61.1	47.8	--	45.5
Fluoride	mg/L	4	0.192	0.17	--	0.17	--	0.17
TDS	mg/L	--	(412.7) 589	480	456	408	--	405
Sulfate	mg/L	--	(43.51) 44	38.7	--	32.5	--	33.2
Sulfide	mg/L	--	--	<0.4	--	<0.07	--	<0.1
Radium-228	pCi/L	--	--	--	--	0.483	--	0.269
Radium-226	pCi/L	--	--	--	--	0.162	--	0.156
Radium-226/228	pCi/L	5	--	--	--	0.645	--	0.425
Copper (Dissolved)	µg/L	--	--	0.57	--	1.43	--	1.14
Zinc (Dissolved)	µg/L	--	--	0.7	--	2	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	0.8	--	1	--	1
Iron (Dissolved)	mg/L	--	--	0.024	--	0.004	--	<0.003
Manganese (Dissolved)	mg/L	--	--	0.849	--	0.616	--	0.615

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	519	582	538	613	525	614	436	597	516	692
Turbidity	NTU	--	--	1.8	0.24	0.31	0.55	0.4	0.81	1.74	0.41	2.95	1.85
Dissolved Oxygen	mg/L	--	--	0.4	--	1.33	0.55	0.49	0.11	0.29	0.32	0.21	0.47
Temperature	°C	--	--	16.8	16.96	16.04	15.1	14.55	15.2	15.46	15.62	15.77	13.14
ORP	mV	--	--	-19	23.5	35.7	108	14.6	2.1	36.6	108.9	-26.4	-36.7
Laboratory Parameters													
Antimony	µg/L	6	--	0.02	0.02	0.02	0.02	0.01	0.02	0.03	0.03	--	--
Arsenic	µg/L	10	--	0.48	0.4	0.31	0.32	0.34	0.31	0.33	0.39	--	--
Barium	µg/L	2000	--	240	246	221	217	210	224	212	247	--	--
Beryllium	µg/L	4	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--
Cadmium	µg/L	5	--	0.08	0.08	0.02	0.05	0.02	0.01	0.07	0.1	--	
Chromium	µg/L	100	--	0.3	0.4	0.1	1.21	0.112	0.188	0.151	0.141	--	--
Cobalt	µg/L	6	--	0.617	0.547	0.418	0.452	0.354	0.401	0.466	0.571	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	2.21	0.11	--
Lead	µg/L	15	--	0.078	0.04	0.021	0.066	0.008	0.022	0.07	0.103	--	--
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--
Molybdnum	µg/L	100	--	2.06	2.31	1.96	1.98	1.99	2.27	1.9	2.03	--	--
Selenium	µg/L	50	--	0.04	0.04	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	--	--
Thallium	µg/L	2	--	0.03	0.069	0.02	0.02	0.02	0.04	0.02	0.02	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	12.8	52.4	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.1	17.6	20.3	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	6.2	3.72	--
Boron	mg/L	--	0.113	0.033	0.013	0.012	0.014	0.004	0.023	0.102	0.017	0.059	--
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
Lithium	mg/L	0.04	--	0.001	0.013	0.003	0.006	0.013	0.007	0.008	0.0006	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	22.4	22.2	21	23.3	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.975	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.12	1.54	0.97	1.33	--
Sodium	mg/L	--	--	--	--	--	--	--	22.3	21.6	22.1	24.7	--
Strontium	mg/L	--	--	--	--	--	--	--	0.142	0.143	0.128	0.146	--
Alkalinity	mg/L	--	--	--	--	--	--	--	202	210	215	195	--
Bromide	mg/L	--	--	--	--	--	--	--	0.15	0.204	<0.05	0.233	--
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
Fluoride	mg/L	4	0.251	0.2	0.22	0.22	0.17	0.21	0.22	0.22	0.17	0.22	--
TDS	mg/L	--	(412.7) 384	350	321	342	356	343	347	367	363	383	--
Sulfate	mg/L	--	(39.69) 40	36.4	37.4	33.4	33.2	34	35.3	37.2	36.8	40	37.9
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--
Radium-228	pCi/L	--	--	-0.173	0.294	1.1	0.285	0.92	0.583	-0.121	0.222	--	--
Radium-226	pCi/L	--	--	0.0514	--	0.248	0.624	0.796	0.228	0.151	0.292	--	--
Radium-226/228	pCi/L	5	--	-0.1216	0.294	1.348	0.909	1.716	0.811	0.03	0.514	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.18	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.004	0.002	0.098	0.051	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.862	0.948	0.989	0.947	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-16D

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	6/6/2018	8/16/2018	11/14/2018	2/11/2019	4/1/2019	5/22/2019	7/23/2019	9/11/2019
Field Parameters											
Elevation	ft NGVD	--	--	369.69	370.13	368.87	369.84	370.82	371.96	372.67	-----
pH	S.U.	--	6.04 - 9.13	7.32	7.26	7.35	7.37	7.28	7.31	7.02	7.28
Specific Conductance	µmhos/cm	--	--	690	782	607	510	945	755	731	813
Turbidity	NTU	--	--	0.9	0	0.35	1.4	0.91	0.3	1.9	0.43
Dissolved Oxygen	mg/L	--	--	0.44	0	0.94	1.48	0.64	0.26	0.5	0.36
Temperature	°C	--	--	15.94	15.88	14.45	13.2	13.5	14.43	15.9	17.5
ORP	mV	--	--	-70.7	-11	62.8	60	-16.7	-216.5	50	-52.5
Laboratory Parameters											
Antimony	µg/L	6	--	--	--	<0.02	--	--	0.02	--	--
Arsenic	µg/L	10	--	--	--	0.32	--	--	0.39	--	--
Barium	µg/L	2000	--	--	--	270	--	--	286	--	--
Beryllium	µg/L	4	--	--	--	<0.02	--	--	<0.02	--	--
Cadmium	µg/L	5	--	--	--	0.04	--	--	<0.01	--	--
Chromium	µg/L	100	--	--	--	0.05	--	--	0.25	--	--
Cobalt	µg/L	6	--	--	--	0.472	--	--	0.64	--	--
Copper	µg/L	--	--	0.07	--	0.23	--	--	0.17	--	--
Lead	µg/L	15	--	--	--	0.03	--	--	0.02	--	--
Mercury	µg/L	2	--	--	--		--	--	<0.002	--	--
Molybdnum	µg/L	100	--	--	--	2	--	--	2	--	--
Selenium	µg/L	50	--	--	--	0.03	--	--	<0.03	--	--
Thallium	µg/L	2	--	--	--	<0.1	--	--	<0.1	--	--
Zinc	µg/L	--	--	7.1	--	15.4	--	--	1	--	--
Silica (Dissolved)	mg/L	--	--	18.5	--	18.2	--	--	17.9	--	--
Aluminum	µg/L	--	--	2.86	--	1	--	--	2	--	--
Boron	mg/L	--	0.113	0.033	--	0.07	--	--	0.03	--	--
Calcium	mg/L	--	(79.5) 88	90.2	83.8	84.1	--	--	88.5	95.6	109
Lithium	mg/L	0.04	--	--	--	<0.009	--	--	0.02	--	--
Magnesium	mg/L	--	--	27.1	--	24.3	--	--	25.4	--	--
Manganese	mg/L	--	--	1.2	--	1	--	--	1.17	--	--
Potassium	mg/L	--	--	1.22	--	1.27	--	--	1.27	--	--
Sodium	mg/L	--	--	26.7	--	30	--	--	30.8	--	--
Strontium	mg/L	--	--	0.18	--	0.166	--	--	0.176	--	--
Alkalinity	mg/L	--	--	235	--	238	--	--	249	--	--
Bromide	mg/L	--	--	0.303	--	0.275	--	--	0.344	--	--
Chloride	mg/L	--	(29.6) 73	108	99.7	102	109	107	104	106	125
Fluoride	mg/L	4	0.251	0.22	--	0.21	--	--	0.2	--	--
TDS	mg/L	--	(412.7) 384	434	447	434	439	429	460	457	523
Sulfate	mg/L	--	(39.69) 40	38.6	--	38.6	--	--	38	--	--
Sulfide	mg/L	--	--	<0.4	--	<0.07	--	--	<0.1	--	--
Radium-228	pCi/L	--	--	--	--	0.138	--	--	0.688	--	--
Radium-226	pCi/L	--	--	--	--	0.179	--	--	0.551	--	--
Radium-226/228	pCi/L	5	--	--	--	0.317	--	--	1.239	--	--
Copper (Dissolved)	µg/L	--	--	0.35	--	1.5	--	--	0.25	--	--
Zinc (Dissolved)	µg/L	--	--	1	--	3	--	--	<0.7	--	--
Aluminum (Dissolved)	µg/L	--	--	2	--	2	--	--	<1	--	--
Iron (Dissolved)	mg/L	--	--	0.058	--	0.023	--	--	0.067	--	--
Manganese (Dissolved)	mg/L	--	--	1.19	--	1	--	--	1.23	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	350	373	344	146	310	60	357	287	351	319	280	322
Turbidity	NTU	--	--	0.6	0.7	0.79	1	1	1	3	1	0.47	0.4	0.89	0
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
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
ORP	mV	--	--	80	44	49.4	-40	62	47	45	30	-50.3	-84.3	121	-48.2
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
Arsenic	µg/L	10	--	0.24	0.26	0.22	0.2	0.21	0.2	0.22	0.22	--	--	0.17	0.18
Barium	µg/L	2000	--	2.12	2.74	2.24	2.4	3.45	3.94	4.37	2.25	--	--	2.11	2.3
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	--	0.02	0.08	0.01	0.02	0.02	0.09	0.02	0.06	--	--	0.02	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
Cobalt	µg/L	6	--	0.047	0.105	0.034	0.029	0.04	0.076	0.138	0.053	--	--	0.05	0.04
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.38	0.69	0.23	0.21	0.39
Lead	µg/L	15	--	0.024	0.098	0.025	0.02	0.02	0.079	0.108	0.038	--	--	0.03	0.05
Mercury	µg/L	2	--	<0.002	0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	--	--	--	<0.002
Molybdnum	µg/L	100	--	3.98	4.2	4.08	3.39	0.44	0.7	1.14	4.38	--	--	3.73	4.78
Selenium	µg/L	50	--	0.07	0.06	0.08	0.1	0.2	0.1	0.1	0.08	--	--	0.3	0.2
Thallium	µg/L	2	--	0.01	0.01	0.01	0.053	0.02	0.02	<0.01	0.03	--	--	<0.1	<0.1
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	5.7	0.7	<0.7	14.4
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	14	13.7	15.8	13.5	13.2	<0.06
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	9.55	10.2	4.01	2	17.4
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
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
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
Magnesium	mg/L	--	--	--	--	--	--	--	19.2	17.5	13.7	12.9	13	13.7	12.9
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.0428	--	0.0311	0.0418	0.0377
Potassium	mg/L	--	--	--	--	--	--	--	0.88	0.79	0.49	0.47	0.5	0.59	0.62
Sodium	mg/L	--	--	--	--	--	--	--	42.5	35.3	31.9	27.7	24.5	25.8	26.5
Strontium	mg/L	--	--	--	--	--	--	--	0.0566	0.0529	0.0363	0.0345	0.0357	0.0374	0.0347
Alkalinity	mg/L	--	--	--	--	--	--	--	231	221	196	189	188	202	193
Bromide	mg/L	--	--	--	--	--	--	--	0.02	0.05	<0.02	<0.02	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
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
TDS	mg/L	--	(412.7) 269	272	235	233	232	262	251	250	201	214	214	196	217
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	<0.1
Radium-228	pCi/L	--	--	0.783	-0.0129	0.027	0.791	-0.155	0.36	0.315	1.07	--	--	-0.0735	0.34
Radium-226	pCi/L	--	--	0.253	0.0439	0.0489	0.803	0.17	0.11	0.118	0.678	--	--	0.0202	0.0449
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
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.35	--	0.56	0.7	2.05
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	1	1	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.2	--	6.2	2	1
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	<0.0004	0.026	0.004	0.004	0.01
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.0028	0.0013	0.0322	0.0881	0.0304	0.041	0.0332

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-17I

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
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
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
Specific Conductance	µmhos/cm	--	--	839	914	1000	607	670	60	768	678	786	530	848	652	728	453
Turbidity	NTU	--	--	13.4	9.8	--	0.1	2	9	2	1	74.99	1.74	12	1.28	0	0.58
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
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
ORP	mV	--	--	116	-73	-40	204	-52	8	46	-59	-90.8	-54	-40.5	-99.8	-69	-77.9
Laboratory Parameters																	
Antimony	µg/L	6	--	0.07	0.05	0.04	0.03	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	--	--	--	--	--	--
Barium	µg/L	2000	--	168	190	198	149	148	159	133	140	--	--	--	--	--	--
Beryllium	µg/L	4	--	0.02	0.006	<0.005	<0.005	<0.005	<0.005	<0.004	<0.004	--	--	--	--	--	--
Cadmium	µg/L	5	--	0.12	0.13	0.04	0.04	0.008	0.007	0.03	0.02	--	--	--	--	--	--
Chromium	µg/L	100	--	0.6	2.1	0.1	0.059	0.254	0.776	0.196	0.127	--	--	--	--	--	--
Cobalt	µg/L	6	--	1.24	0.778	0.472	0.37	0.391	0.406	0.394	0.372	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.26	0.24	--	--	0.52	--	--
Lead	µg/L	15	--	1.19	0.284	0.133	0.049	0.02	0.026	0.115	0.02	--	--	--	--	--	--
Mercury	µg/L	2	--	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	--	--
Molybdnum	µg/L	100	--	3.6	3.66	3.08	3.37	3.2	3.62	3.26	3.42	--	--	--	--	--	--
Selenium	µg/L	50	--	0.1	0.05	0.05	<0.03	<0.03	0.05	0.03	<0.03	--	--	--	--	--	--
Thallium	µg/L	2	--	0.03	0.02	0.02	0.056	0.02	0.02	0.01	0.05	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--	--	--	--	4.3	30.8	--	--	2.4	--	--
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.1	17	19.8	--	--	16.5	--	--
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	3.39	21.5	--	--	5.91	--	--
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	--	--
Calcium	mg/L	--	(79.5) 96	73.7	83.1	88.9	80	72.3	81.4	69.6	64.4	63	--	--	51.2	--	--
Lithium	mg/L	0.04	--	<0.0002	0.004	0.005	0.006	0.009	0.008	0.005	<0.0002	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	21	19.6	17.4	16.5	--	--	13.4	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.155	--	--	--	0.122	--	--
Potassium	mg/L	--	--	--	--	--	--	--	1.28	1.36	1.04	1.12	--	--	0.94	--	--
Sodium	mg/L	--	--	--	--	--	--	--	101	93.6	95.4	94.6	--	--	89.1	--	--
Strontium	mg/L	--	--	--	--	--	--	--	0.153	0.14	0.119	0.12	--	--	0.104	--	--
Alkalinity	mg/L	--	--	--	--	--	--	--	221	226	229	245	--	--	238	--	--
Bromide	mg/L	--	--	--	--	--	--	--	0.347	0.396	0.372	0.283	--	--	0.213	--	
Chloride	mg/L	--	(29.6) 241	195	209	214	164	159	158	151	145	115	86	110	80.2	61.1	--
Fluoride	mg/L	4	0.656	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
TDS	mg/L	--	(412.7) 657	609	569	620	540	513	549	528	509	486	--	471	418	376	--
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	--	--
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	--	<0.4	--	--
Radium-228	pCi/L	--	--	0.615	0.386	1	0.499	0.531	0.33	0.191	0.791	--	--	--	--	--	--
Radium-226	pCi/L	--	--	1.31	0.781	0.587	0.263	0.979	0.693	0.816	0.0231	--	--	--	--	--	--
Radium-226/228	pCi/L	5	--	1.925	1.167	1.587	0.762	1.51	1.023	1.007	0.8141	--	--	--	--	--	--
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.33	--	--	--	0.57	--	--
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.2	--	--	--	1	--	--
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2	--	--	--	2.64	--	--
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.896	0.909	0.741	0.603	--	--	0.546	--	--
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.185	0.188	0.141	0.144	--	--	0.113	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-17I

Parameter	Units	GWPS (MCL or RSL)	Appendix III UPL	11/13/2018	2/11/2019	4/1/2019	5/23/2019	7/23/2019	9/11/2019
Field Parameters									
Elevation	ft NGVD	--	--	369.35	369.89	369.89	372.03	373.11	-----
pH	S.U.	--	6.82 - 7.96	7.55	7.68	7.68	7.51	6.65	7.63
Specific Conductance	µmhos/cm	--	--	450	391	391	570	488	363
Turbidity	NTU	--	--	7.42	6.9	6.9	3.67	6.4	5
Dissolved Oxygen	mg/L	--	--	0.76	0.47	0.47	0.91	1.1	0
Temperature	°C	--	--	12.6	13.5	13.5	17.85	14.8	15.49
ORP	mV	--	--	-77.4	-55	-55	-94.3	-5.3	-112
Laboratory Parameters									
Antimony	µg/L	6	--	0.02	--	--	0.02	--	--
Arsenic	µg/L	10	--	3.65	--	--	3.72	--	--
Barium	µg/L	2000	--	86.8	--	--	91.8	--	--
Beryllium	µg/L	4	--	<0.02	--	--	<0.02	--	--
Cadmium	µg/L	5	--	0.03	--	--	<0.01	--	--
Chromium	µg/L	100	--	<0.04	--	--	<0.04	--	--
Cobalt	µg/L	6	--	0.186	--	--	0.22	--	--
Copper	µg/L	--	--	0.26	--	--	0.07	--	--
Lead	µg/L	15	--	0.03	--	--	0.02	--	--
Mercury	µg/L	2	--	--	--	--	<0.002	--	--
Molybdnum	µg/L	100	--	4.09	--	--	3.01	--	--
Selenium	µg/L	50	--	<0.03	--	--	<0.03	--	--
Thallium	µg/L	2	--	<0.1	--	--	<0.1	--	--
Zinc	µg/L	--	--	2	--	--	15.1	--	--
Silica (Dissolved)	mg/L	--	--	15.8	--	--	<0.06	--	--
Aluminum	µg/L	--	--	2	--	--	1	--	--
Boron	mg/L	--	0.098	0.07	--	--	0.04	--	--
Calcium	mg/L	--	(79.5) 96	36.5	--	--	45.1	--	--
Lithium	mg/L	0.04	--	<0.009	--	--	0.01	--	--
Magnesium	mg/L	--	--	9.44	--	--	11.8	--	--
Manganese	mg/L	--	--	0.0779	--	--	0.112	--	--
Potassium	mg/L	--	--	0.83	--	--	0.84	--	--
Sodium	mg/L	--	--	74.7	--	--	60.5	--	--
Strontium	mg/L	--	--	0.0796	--	--	0.098	--	--
Alkalinity	mg/L	--	--	231	--	--	201	--	--
Bromide	mg/L	--	--	0.1	--	--	0.2	--	--
Chloride	mg/L	--	(29.6) 241	50.1	--	--	60.2	--	--
Fluoride	mg/L	4	0.656	1.00	1.05	1.08	1.07	1.06	1.08
TDS	mg/L	--	(412.7) 657	328	--	--	352	--	--
Sulfate	mg/L	--	(50.8) 51	29.6	--	--	32.8	--	--
Sulfide	mg/L	--	--	<0.1	--	--	<0.1	--	--
Radium-228	pCi/L	--	--	0.275	--	--	-0.107	--	--
Radium-226	pCi/L	--	--	0.351	--	--	0.403	--	--
Radium-226/228	pCi/L	5	--	0.626	--	--	0.403	--	--
Copper (Dissolved)	µg/L	--	--	1.62	--	--	1.24	--	--
Zinc (Dissolved)	µg/L	--	--	3	--	--	3	--	--
Aluminum (Dissolved)	µg/L	--	--	3	--	--	5.77	--	--
Iron (Dissolved)	mg/L	--	--	0.348	--	--	0.418	--	--
Manganese (Dissolved)	mg/L	--	--	0.0765	--	--	0.106	--	--

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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	--	--	--
Molybdnum	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	--	23.6	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
CCR Landfill
Rockport Plant, 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
Field Parameters							
Elevation	ft NGVD	--	--	368.42	370.37	371.3	371.43
pH	S.U.	--	5.99 - 9.07	7.34	7.74	7.8	7.59
Specific Conductance	µmhos/cm	--	--	380	318	404	424
Turbidity	NTU	--	--	1.67	2.8	2.45	0.29
Dissolved Oxygen	mg/L	--	--	9.55	7.1	3.89	5.26
Temperature	°C	--	--	14.14	15.2	14.3	15.98
ORP	mV	--	--	165.5	189	21.1	-194.8
Laboratory Parameters							
Antimony	µg/L	6	--	0.02	--	--	<0.02
Arsenic	µg/L	10	--	0.44	--	--	0.44
Barium	µg/L	2000	--	17.8	--	--	15.9
Beryllium	µg/L	4	--	<0.02	--	--	<0.02
Cadmium	µg/L	5	--	0.01	--	--	0.01
Chromium	µg/L	100	--	0.232	--	--	0.287
Cobalt	µg/L	6	--	0.06	--	--	0.02
Copper	µg/L	--	--	0.53	--	--	0.13
Lead	µg/L	15	--	0.07	--	--	0.02
Mercury	µg/L	2	--	--	--	--	<0.002
Molybdnum	µg/L	100	--	2	--	--	2
Selenium	µg/L	50	--	0.3	--	--	0.1
Thallium	µg/L	2	--	<0.1	--	--	<0.1
Zinc	µg/L	--	--	0.8	--	--	<0.7
Silica (Dissolved)	mg/L	--	--	23.2	--	--	21.3
Aluminum	µg/L	--	--	17	--	--	5.26
Boron	mg/L	--	0.046	0.06	<0.02	--	<0.02
Calcium	mg/L	--	(79.5) 62	55	--	--	52.5
Lithium	mg/L	0.04	--	0.03	--	--	<0.009
Magnesium	mg/L	--	--	19.6	--	--	17
Manganese	mg/L	--	--	0.0041	--	--	0.0009
Potassium	mg/L	--	--	0.88	--	--	0.55
Sodium	mg/L	--	--	17.1	--	--	13
Strontium	mg/L	--	--	0.0553	--	--	0.0506
Alkalinity	mg/L	--	--	193	--	--	167
Bromide	mg/L	--	--	<0.04	--	--	<0.04
Chloride	mg/L	--	(29.6) 16	17.9	17.9	17.5	16
Fluoride	mg/L	4	0.689	0.66	--	--	0.65
TDS	mg/L	--	(412.7) 313	278	--	--	258
Sulfate	mg/L	--	23.6	17.0	--	--	14.1
Sulfide	mg/L	--	--	<0.07	--	--	<0.1
Radium-228	pCi/L	--	--	0.0549	--	--	0.366
Radium-226	pCi/L	--	--	0.0246	--	--	-0.0257
Radium-226/228	pCi/L	5	--	0.0795	--	--	0.366
Copper (Dissolved)	µg/L	--	--	0.13	--	--	0.27
Zinc (Dissolved)	µg/L	--	--	<0.7	--	--	<0.7
Aluminum (Dissolved)	µg/L	--	--	2	--	--	5
Iron (Dissolved)	mg/L	--	--	<0.003	--	--	<0.003
Manganese (Dissolved)	mg/L	--	--	<0.0002	--	--	<0.0002

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

MW-21I

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
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
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
Specific Conductance	µmhos/cm	--	--	548	500	488	432	397	520	361	422	399	430	402	403
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
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
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
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
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
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
Barium	µg/L	2000	--	127	136	121	126	126	123	116	123	--	121	120	106
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
Cadmium	µg/L	5	--	0.02	0.02	0.02	0.04	0.02	0.01	0.01	0.01	--		0.03	0.01
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
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
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.07	0.09	0.11	0.51	0.77
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
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	<0.002
Molybdnum	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
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
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
Zinc	µg/L	--	--	--	--	--	--	--	--	--	0.6	0.9	1	11.1	1
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.8	18.1	19.7	17.6	17.7	16.6
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	4.55	2.56	3.39	17.2	6.03
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
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
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
Magnesium	mg/L	--	--	--	--	--	--	--	20.9	20.1	18.4	20	21.2	19.3	17.5
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.428	--	0.476	0.535	0.371
Potassium	mg/L	--	--	--	--	--	--	--	0.92	1.08	1.26	0.8	0.9	1.21	0.82
Sodium	mg/L	--	--	--	--	--	--	--	16	15.4	13	15	15.5	14.7	13.3
Strontium	mg/L	--	--	--	--	--	--	--	0.0931	0.0922	0.0805	0.0889	0.096	0.0887	0.0829
Alkalinity	mg/L	--	--	--	--	--	--	--	212	222	221	215	230	224	199
Bromide	mg/L	--	--	--	--	--	--	--	0.03	0.05	<0.02	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
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
TDS	mg/L	--	(412.7) 359	331	334	305	317	292	275	306	322	306	317	294	278
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	<0.4	<0.1	<0.1
Radium-228	pCi/L	--	--	0.126	0.036	0.676	0.0796	1.78	0.281	0.108	0.45	--	--	0.638	0.458
Radium-226	pCi/L	--	--	0.223	1.37	0.305	0.576	0.953	0.601	0.483	0.775	--	--	0.315	0.284
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
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.09	--	0.11	0.23	0.21
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.7	--	1	1	<0.7
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	1	--	<0.8	<1	4
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	0.019	<0.0004	0.078	0.062	0.024	0.028	<0.003
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.37	0.427	0.425	0.441	0.427	0.441	0.346

Table A-1
Summary of Analytical Data
CCR Landfill
Rockport Plant, 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
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
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
Specific Conductance	µmhos/cm	--	--	591	544	478	585	441	60	493	531	449	564	470	451	511
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
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
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
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
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
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
Barium	µg/L	2000	--	241	240	226	206	220	220	216	226	--	--	218	201	202
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
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
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
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
Copper	µg/L	--	--	--	--	--	--	--	--	--	0.11	2.7	--	1.16	0.16	0.16
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
Mercury	µg/L	2	--	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	--	--	--	--	<0.002
Molybdnum	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
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
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
Zinc	µg/L	--	--	--	--	--	--	--	--	--	1	187	--	6.5	1	1
Silica (Dissolved)	mg/L	--	--	--	--	--	--	--	--	17.5	17.6	19.6	--	17.6	17	16.9
Aluminum	µg/L	--	--	--	--	--	--	--	--	--	6.79	14.1	--	17.2	9.86	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
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
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
Magnesium	mg/L	--	--	--	--	--	--	--	25	24.3	23.9	22.7	--	23.6	21.3	23.1
Manganese	mg/L	--	--	--	--	--	--	--	--	--	0.592	--	--	0.596	0.634	0.717
Potassium	mg/L	--	--	--	--	--	--	--	2.11	2.41	2.44	3.91	--	1.97	3.95	2.81
Sodium	mg/L	--	--	--	--	--	--	--	18.1	17.2	19.7	20.8	--	15.7	17.7	15.1
Strontium	mg/L	--	--	--	--	--	--	--	0.144	0.142	0.144	0.168	--	0.147	0.191	0.189
Alkalinity	mg/L	--	--	--	--	--	--	--	247	271	277	262	--	268	268	286
Bromide	mg/L	--	--	--	--	--	--	--	<0.05	0.08	0.07	<0.05	--	0.05	0.05	0.04
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
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
TDS	mg/L	--	(412.7) 365	328	299	315	346	332	304	339	332	339	--	347	314	348
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
Sulfide	mg/L	--	--	--	--	--	--	--	--	--	<0.4	--	--	<0.4	<0.07	<0.1
Radium-228	pCi/L	--	--	0.441	0.77	0.604	0.688	0.722	0.518	0.0415	0.501	--	--	--	1.47	0.59
Radium-226	pCi/L	--	--	0.126	0.658	0.23	0.39	0.422	0.42	0.408	0.355	--	--	--	0.469	0.669
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
Copper (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	0.39	--	--	0.08	1.33	0.85
Zinc (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.4	--	--	0.7	3	3
Aluminum (Dissolved)	µg/L	--	--	--	--	--	--	--	--	--	2.16	--	--	2	1	2
Iron (Dissolved)	mg/L	--	--	--	--	--	--	--	<0.0004	<0.0004	0.053	0.016	--	<0.002	0.007	0.005
Manganese (Dissolved)	mg/L	--	--	--	--	--	--	--	0.616	0.625	0.62	0.646	--	0.567	0.657	0.684

Table 4
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

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 Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

NORTH POND LEACHATE INLET

Parameter	Units	11/26/2018	12/18/2018	1/8/2019	3/20/2019
Antimony	ug/L	<2.00	<4.00	<4.00	<2.00
Arsenic	ug/L	18	24.8	23.4	30.1
Barium	ug/L	71.1	58	82	65.8
Beryllium	ug/L	<2.00	<4.00	<4.00	<2.00
Cadmium	ug/L	<1.00	<2.00	<2.00	<1.00
Chromium	ug/L	36.6	71.2	82.9	58.4
Cobalt	ug/L	1.24	<2.00	<2.00	1.3
Lead	ug/L	<2.00	<4.00	<4.00	<2.00
Mercury	ug/L	<0.010	<0.010	<0.010	<0.010
Molybdnum	ug/L	1660	1230	1900	1530
Nickel	ug/L	53	11	11.1	8.97
Selenium	ug/L	490	586	653	630
Silver	ug/L	<2.00	<4.00	<4.00	<2.00
Thallium	ug/L	<10.0	<20.0	<20.0	<10.0
Zinc	ug/L	<100	<200	<200	<100
Aluminum	ug/L	4770	7280	6080	5950
Boron	mg/L	9.18	12.3	10.6	9.23
Calcium	mg/L	277	277	368	283
Iron	mg/L	0.104	<0.20	<0.200	<0.20
Lithium	mg/L	<0.030	<0.30	<0.300	<0.30
Magnesium	mg/L	3.62	4.43	4.9	3.55
Manganese	mg/L	0.009	0.0104	0.0115	0.0113
Potassium	mg/L	132	113	135	116
Sodium	mg/L	5730	6440	6780	6540
Alkalinity	mg/L	244	257	250	219
Chloride	mg/L	982	847	993	854
Fluoride	mg/L	<1.50	<1.50	<1.50	<1.50
Nitrate	mg/L	3	3.26	3.64	2.85
TDS	mg/L	25,600	24,300	28,400	23,600
Sulfate	mg/L	16,600	14,400	17,400	14,800

Table A-2
Summary of Analytical Data
CCR Landfill
Rockport Plant, Rockport, Indiana

WEST POND LEACHATE INLET

Parameter	Units	10/31/2018	11/26/2018	12/18/2018	1/8/2019	3/20/2019
Antimony	ug/L	< 4.00	<2.00	<4.00	<4.00	<2.00
Arsenic	ug/L	23	30.4	39.3	46.8	84.8
Barium	ug/L	71.2	71	60.8	72.2	71.1
Beryllium	ug/L	< 4.00	<2.00	<4.00	<4.00	<2.00
Cadmium	ug/L	< 2.00	<1.00	<2.00	<2.00	<1.00
Chromium	ug/L	28.1	57.2	127	72.5	124
Cobalt	ug/L	< 2.0	<1.00	<2.00	<2.00	<1.00
Lead	ug/L	<4.00	<2.00	<4.00	<4.00	<2.00
Mercury	ug/L	<0.010	<0.010	<0.010	0.011	<0.010
Molybdnum	ug/L	2390	2820	2360	3040	3000
Nickel	ug/L	6.94	8.1	8.15	11.3	7.25
Selenium	ug/L	752	943	1000	1190	1310
Silver	ug/L	<4.00	<2.00	<4.00	<4.00	<2.00
Thallium	ug/L	<20.0	<10.0	<20.0	<20.0	<10.0
Zinc	ug/L	<200	<100	<200	<200	<100
Aluminum	ug/L	4410	5690	8110	6220	9850
Boron	mg/L	12.2	10.6	11	11.4	11.5
Calcium	mg/L	284	214	166	240	231
Iron	mg/L	<0.020	<0.020	<0.200	<0.200	<0.200
Lithium	mg/L	0.053	0.031	<0.300	<0.300	<0.300
Magnesium	mg/L	3.16	4.69	8.33	6.98	2.22
Manganese	mg/L	0.0086	0.0064	<0.010	<0.010	0.0129
Potassium	mg/L	182	165	113	149	192
Sodium	mg/L	5390	5220	6120	6780	8240
Alkalinity	mg/L	244	261	310	298	411
Chloride	mg/L	1190	1180	937	1250	1170
Fluoride	mg/L	<1.5	<1.50	<1.50	<1.50	<1.50
Nitrate	mg/L	5.46	5.72	5.76	6.76	7.99
TDS	mg/L	29,400	30,700	22,100	29,600	30,900
Sulfate	mg/L	18,900	18,100	14,100	18,100	19,000

Appendix B
Full Size Geochemical Exhibits

Exhibit 3-3. CCR monitoring well and landfill leachate ponds boron concentrations.

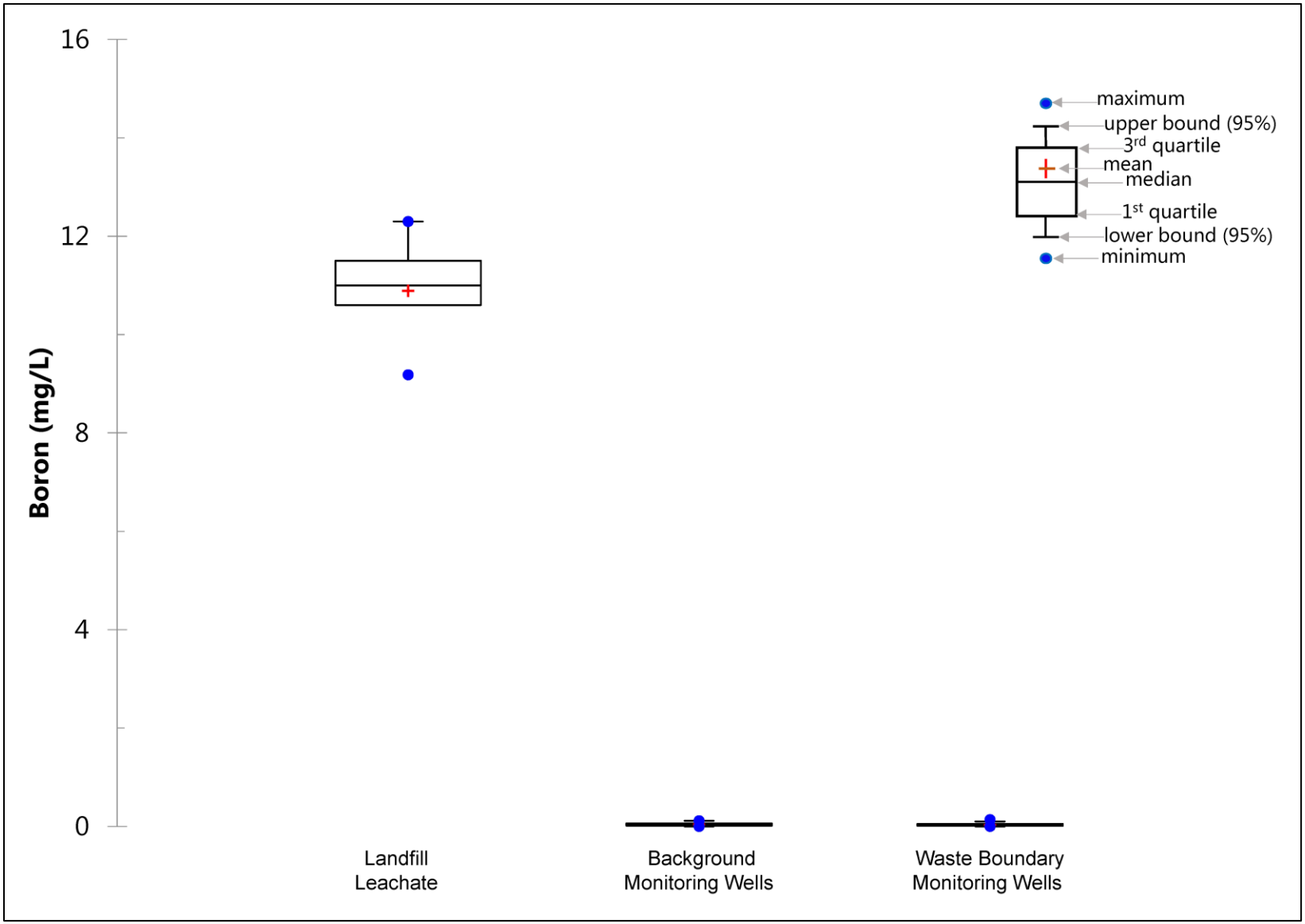

Exhibit 3-4. CCR monitoring well and landfill leachate ponds sulfate concentrations.

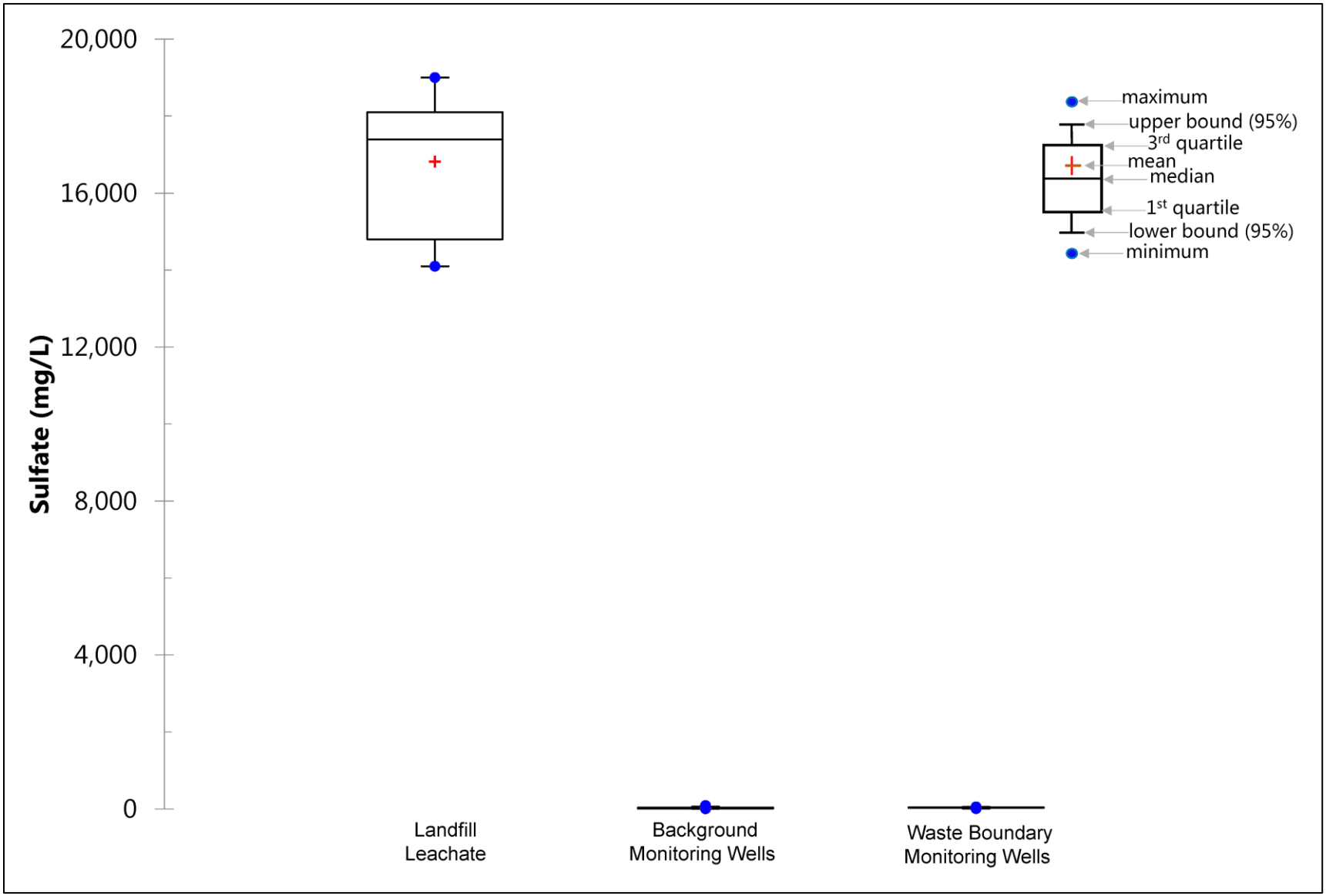

Exhibit 3-5. Boron to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.

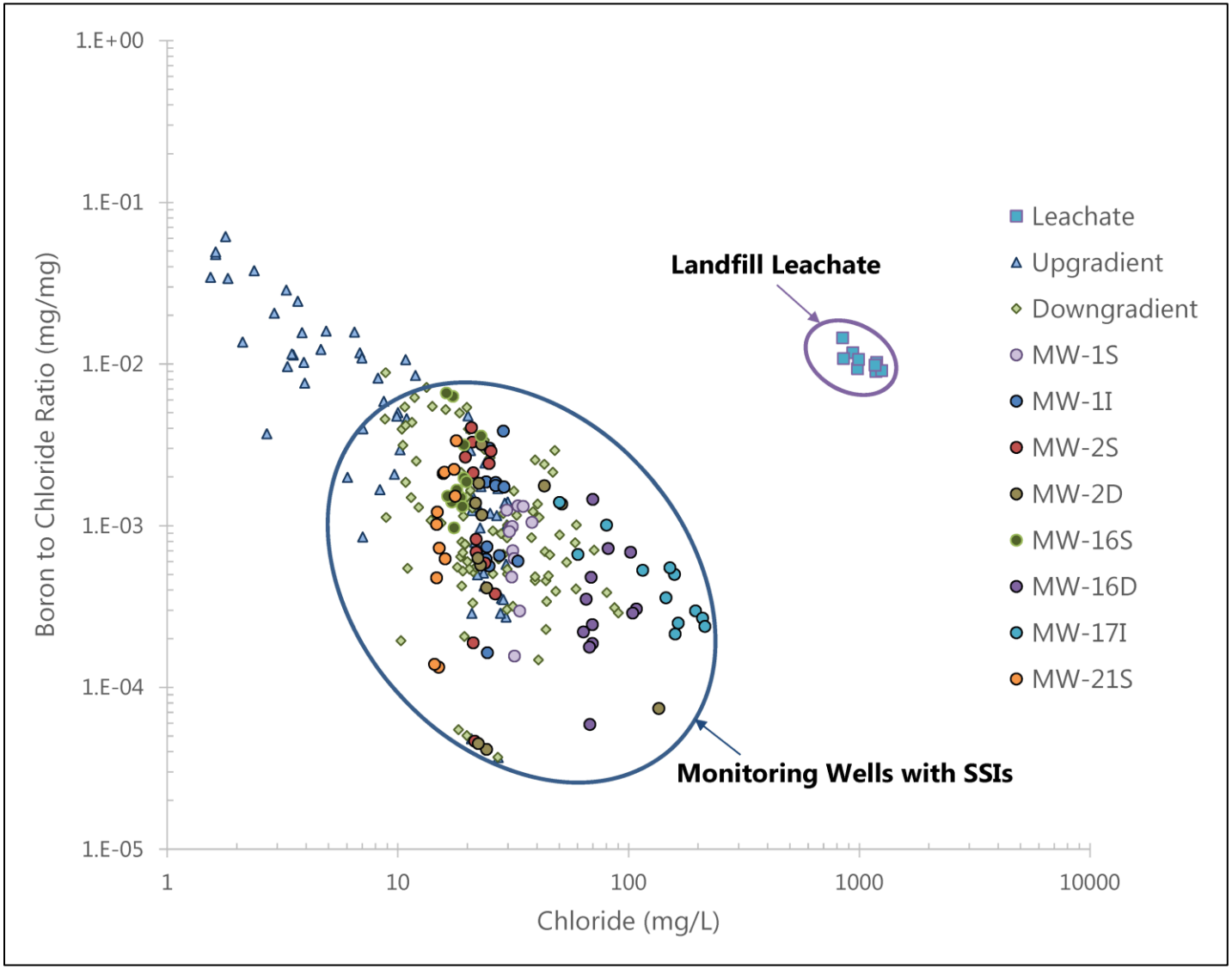

Exhibit 3-6. Sulfate to chloride ratio versus chloride concentration for CCR Landfill groundwater monitoring wells and leachate for comparison.

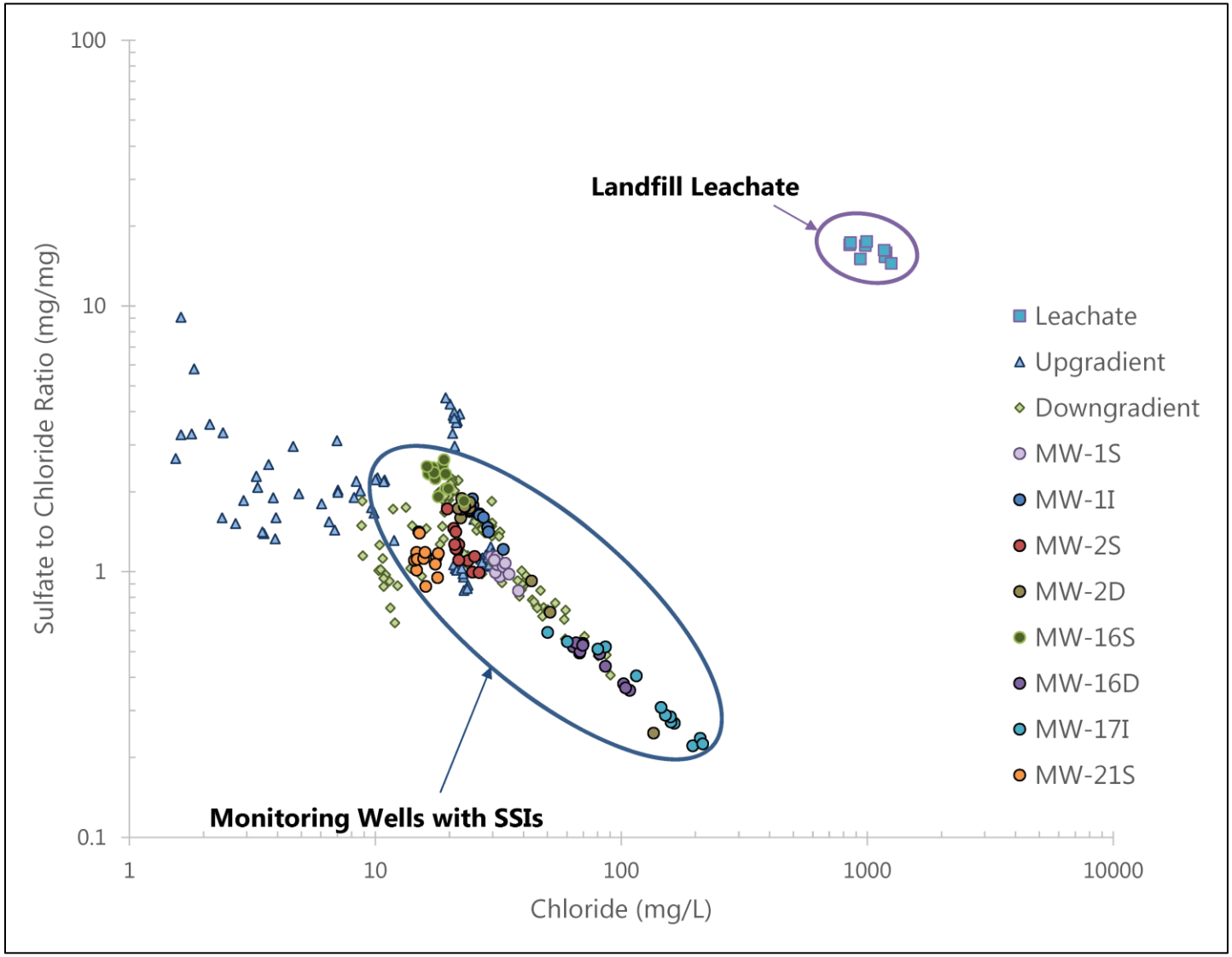

Exhibit 3-7. Piper diagram of major ion water quality for CCR Landfill monitoring wells with SSIs and leachate for comparison.

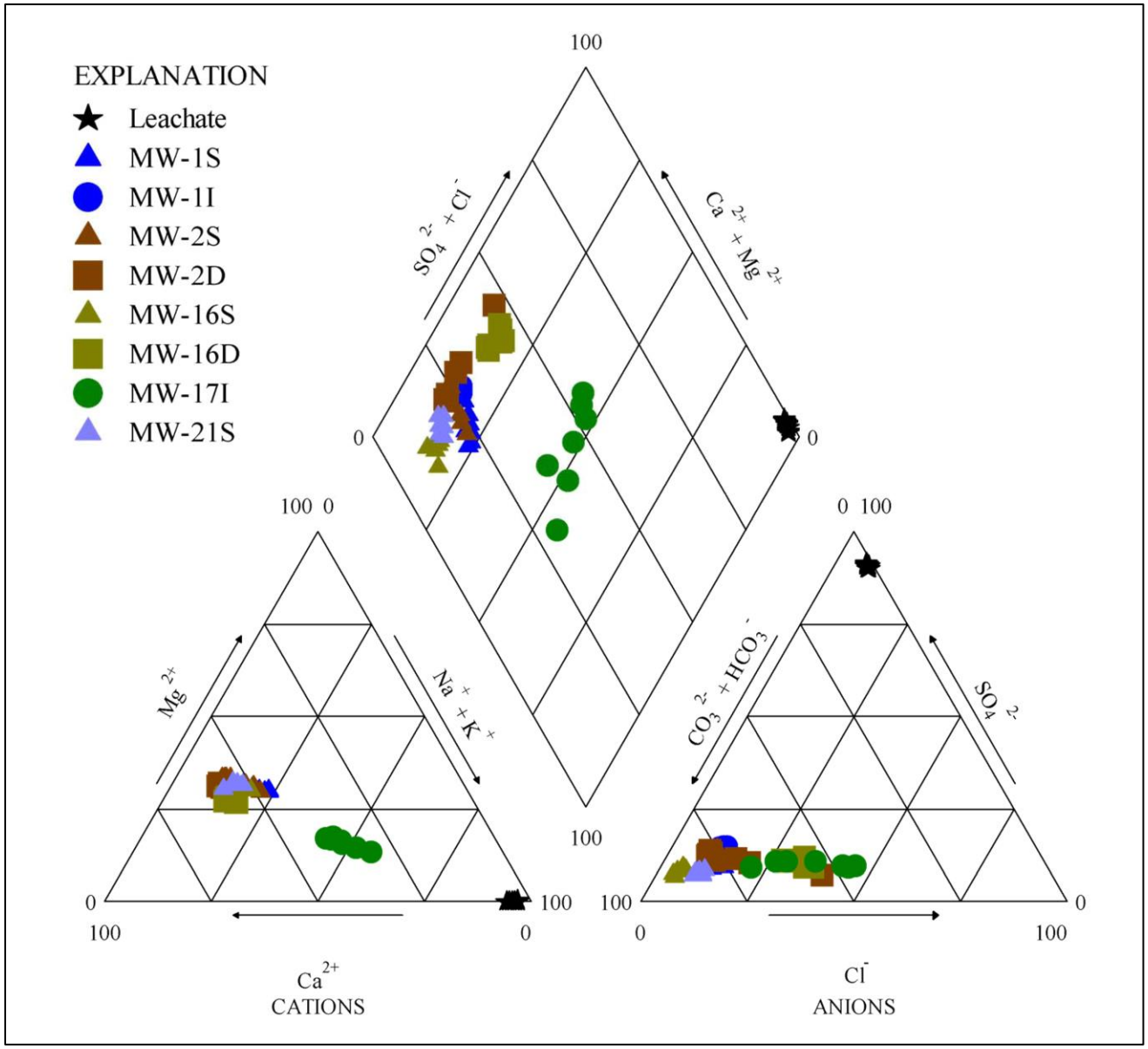

Exhibit 3-8. Boron isotope ratio (‰ 11B) versus boron concentration for CCR Landfill leachate and monitoring wells for comparison.

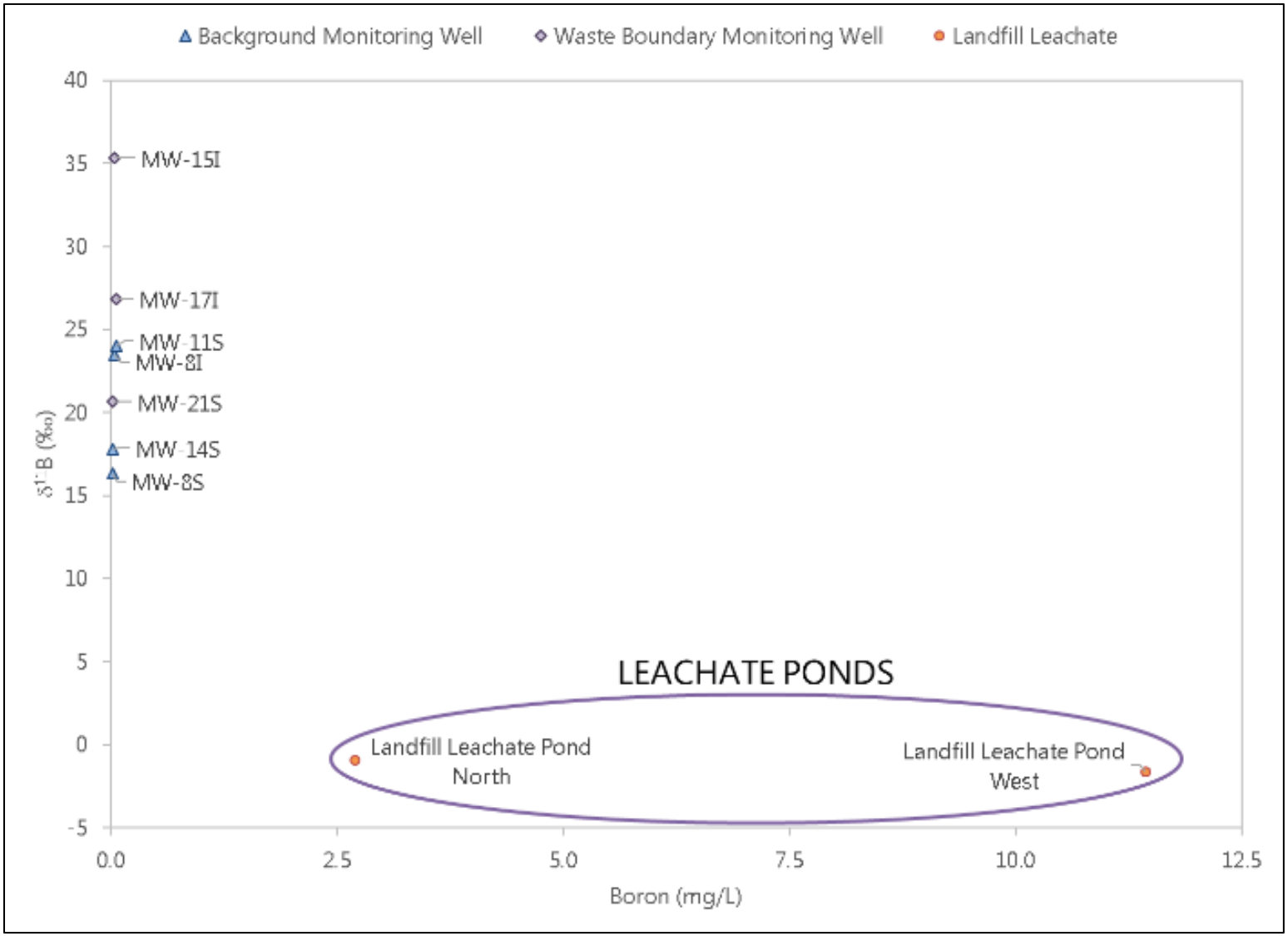

Exhibit 3-9. Strontium isotope ratio ($^{87}Sr/^{86}Sr$) versus strontium concentration for CCR Landfill leachate and monitoring wells for comparison.

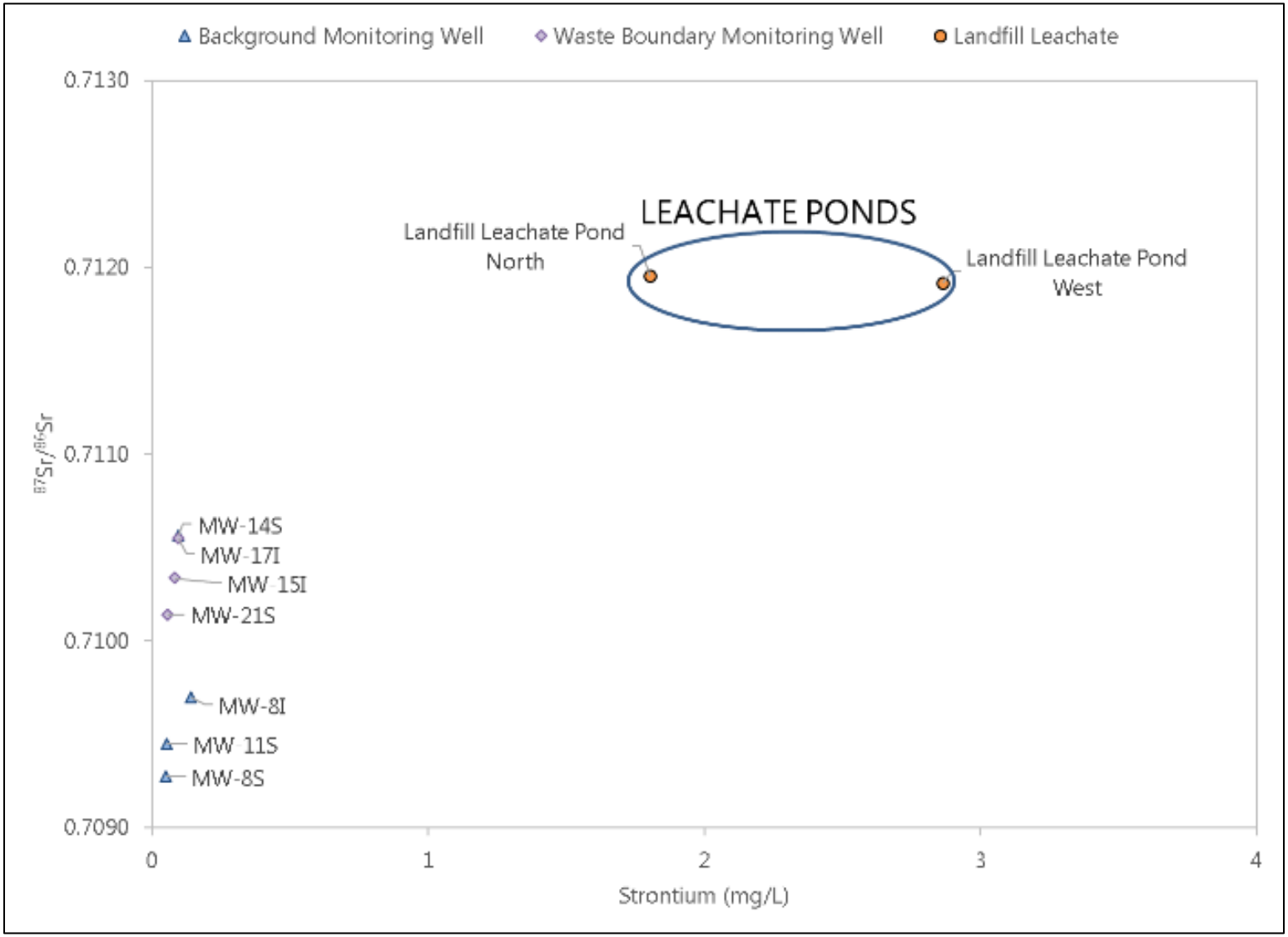

Exhibit 3-7. Piper diagram of major ion water quality for CCR Landfill monitoring wells with SSIs and leachate for comparison.

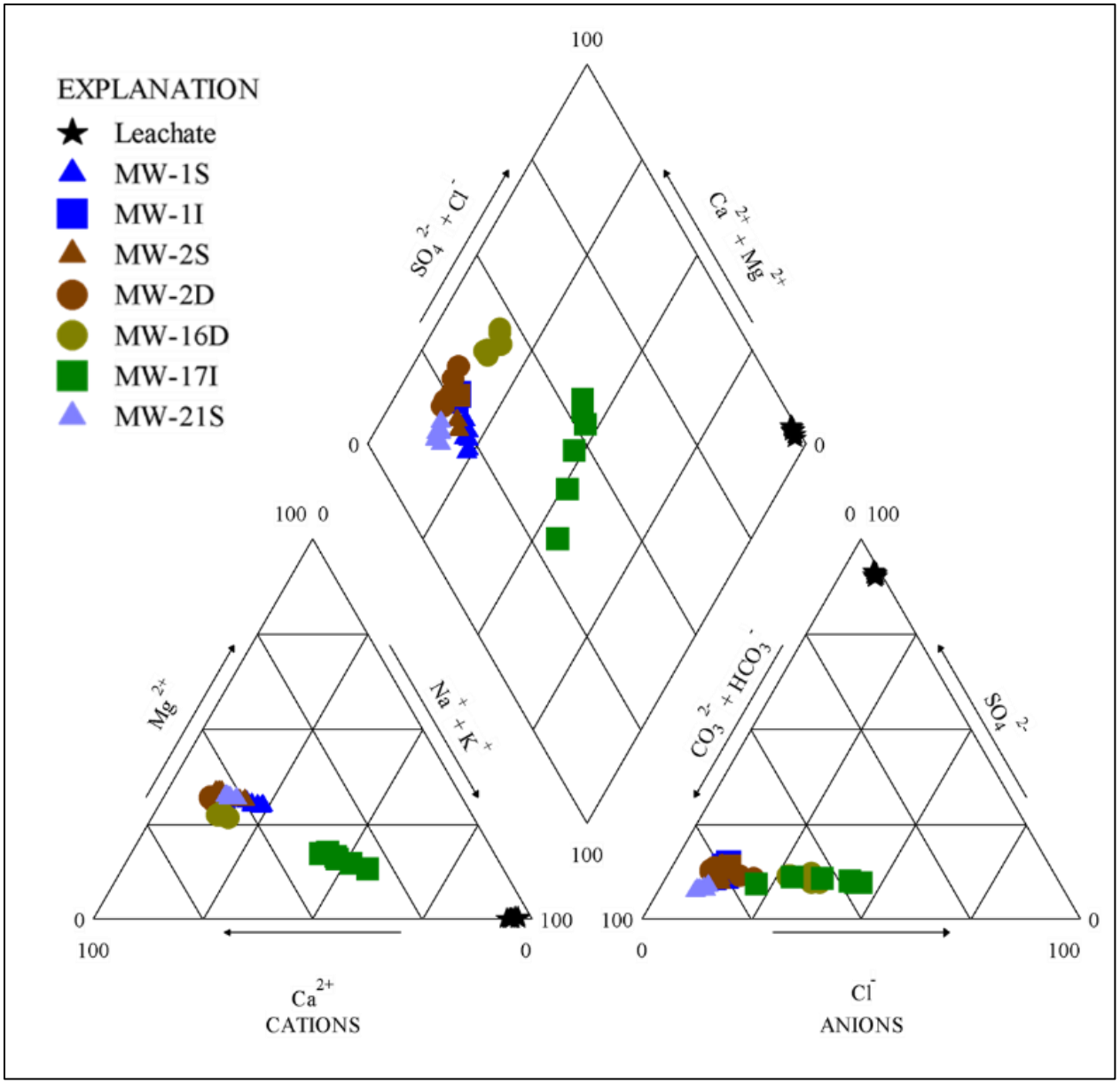

Exhibit 3-8. Boron isotope ratio (‰ 11B) versus boron concentration for CCR Landfill leachate and monitoring wells for comparison.

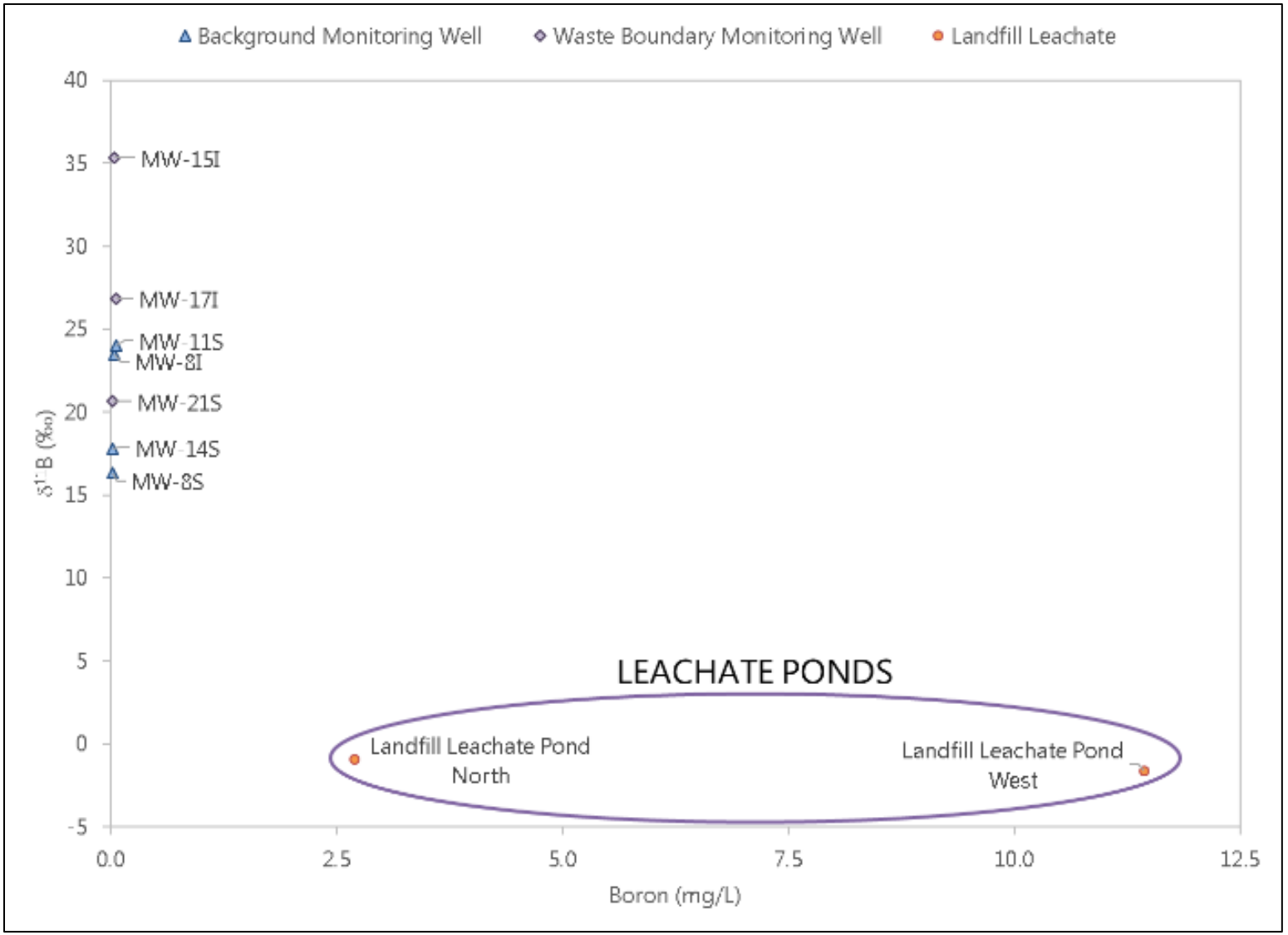

Exhibit 3-9. Strontium isotope ratio ($^{87}Sr/^{86}Sr$) versus strontium concentration for CCR Landfill leachate and monitoring wells for comparison.