

Prepared for

**Dynegy Miami Fort, LLC**

Document type

**2019 Annual Groundwater Monitoring and Corrective Action Report**

Date

**January 31, 2020**

# **2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**

## **MIAMI FORT LAWRENCEBURG ROAD LANDFILL, MIAMI FORT POWER STATION**



Bright ideas. Sustainable change.

**2019 ANNUAL GROUNDWATER MONITORING AND  
CORRECTIVE ACTION REPORT  
MIAMI FORT LAWRENCEBURG ROAD LANDFILL, MIAMI  
FORT POWER STATION**

Project name **Miami Fort Power Station**  
Project no. **72759**  
Recipient **Dynegy Miami Fort, LLC**  
Document type **Annual Groundwater Monitoring and Corrective Action Report**  
Version **FINAL**  
Date **January 31, 2020**  
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Description **Annual Report in Support of the CCR Rule Groundwater Monitoring Program**

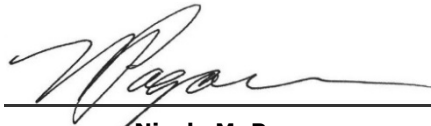
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## ACRONYMS AND ABBREVIATIONS

CCR	Coal Combustion Residuals
SSI	Statistically Significant Increase
SAP	Sampling and Analysis Plan

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## EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.90(e) for the Miami Fort Lawrenceburg Road Landfill located near Miami Fort Power Station and North Bend, Ohio.

Groundwater is being monitored at Miami Fort Lawrenceburg Road Landfill in accordance with the Detection Monitoring Program requirements specified in 40 C.F.R. § 257.94.

No changes were made to the monitoring system in 2019 (no wells were installed or decommissioned).

No Statistically Significant Increases (SSIs) of 40 C.F.R. Part 257 Appendix III parameter concentrations greater than background concentrations were determined in 2019 and Miami Fort Lawrenceburg Road Landfill remains in the Detection Monitoring Program.

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## 1. INTRODUCTION

This report has been prepared by Ramboll on behalf of Dynegy Miami Fort, LLC, to provide the information required by 40 C.F.R. § 257.90(e) for Miami Fort Lawrenceburg Road Landfill located near Miami Fort Power Station and North Bend, Ohio.

In accordance with 40 C.F.R. § 257.90(e), the owner or operator of a Coal Combustion Residuals (CCR) unit must prepare an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year that documents the status of the Groundwater Monitoring and Corrective Action Program for the CCR unit, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year. At a minimum, the Annual Report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit.
2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.
3. In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection Monitoring or Assessment Monitoring Programs.
4. A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from Detection Monitoring to Assessment Monitoring in addition to identifying the constituent(s) detected at a Statistically Significant Increase relative to background levels).
5. Other information required to be included in the Annual Report as specified in §§ 257.90 through 257.98.

This report provides the required information for Miami Fort Lawrenceburg Road Landfill for calendar year 2019.

## **2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS**

No changes have occurred to the monitoring program status in calendar year 2019, and Miami Fort Lawrenceburg Road Landfill remains in the Detection Monitoring Program in accordance with 40 C.F.R. § 257.94.

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### 3. KEY ACTIONS COMPLETED IN 2019

The Detection Monitoring Program is summarized in Table A. The groundwater monitoring system, including the CCR unit and all background and downgradient monitoring wells, is presented in Figure 1. No changes were made to the monitoring system in 2019 (no wells were installed or decommissioned). In general, one groundwater sample was collected from each background and downgradient well during each monitoring event. All samples were collected and analyzed in accordance with the Sampling and Analysis Plan (SAP) (AECOM, 2017). All monitoring data obtained under 40 C.F.R. §§ 257.90 through 257.98 (as applicable) in 2019 are presented in Table 1. Analytical data were evaluated in accordance with the Statistical Analysis Plan (NRT/OBG, 2017) to determine any SSIs of Appendix III parameters relative to background concentrations.

Statistical background values are provided in Table 2.

Analytical results for the November 2018 sampling event were provided in the 2018 Annual Groundwater Monitoring and Corrective Action Report.

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**Table A – 2018–2019 Detection Monitoring Program Summary**

<b>Sampling Date</b>	<b>Analytical Data Receipt Date</b>	<b>Parameters Collected</b>	<b>SSI(s)</b>	<b>SSI(s) Determination Date</b>
November 13-14, 2018	January 2, 2019	Appendix III	None	April 15, 2019
March 11-12, 2019	April 10, 2019	Appendix III	None	July 9, 2019
September 9, 2019	October 25, 2019	Appendix III	TBD	TBD

**Notes:**

NA: Not Applicable

TBD: To Be Determined

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#### **4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS**

No problems were encountered with the Groundwater Monitoring Program during 2019. Groundwater samples were collected and analyzed in accordance with the SAP(AECOM, 2017), and all data were accepted.

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## 5. KEY ACTIVITIES PLANNED FOR 2020

The following key activities are planned for 2020:

- Continuation of the Detection Monitoring Program with semi-annual sampling scheduled for the first and third quarters of 2020.
- Complete evaluation of analytical data from the downgradient wells, using background data to determine whether an SSI of Appendix III parameters detected at concentrations greater than background concentrations has occurred.
- If an SSI is identified, potential alternate sources (i.e., a source other than the CCR unit caused the SSI or that that SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternate source is demonstrated to be the cause of the SSI, a written demonstration will be completed within 90 days of SSI determination and included in the 2020 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternate source(s) is not identified to be the cause of the SSI, the applicable requirements of 40 C.F.R. §§ 257.94 through 257.98 as may apply in 2020 (e.g., Assessment Monitoring) will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.

## 6. REFERENCES

AECOM, 2017, Sampling and Analysis Plan, CCR Rule Groundwater Monitoring, Lawrenceburg Road Landfill, Unit 113, Miami Fort Power Station, Cleves, Ohio, Job Number 60442412, Revision 0, October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017, Statistical Analysis Plan, Miami Fort Power Station, Dynegy Miami Fort, LLC, October 17, 2017.

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## TABLES

Miami Fort

**TABLE 1.**  
**2019 ANALYTICAL RESULTS - GROUNDWATER ELEVATION AND APPENDIX III PARAMETERS**  
**2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**  
 MIAMI FORT POWER STATION  
 UNIT ID 113 - MIAMI FORT LAWRENCEBURG ROAD LANDFILL  
 NORTH BEND, OHIO  
 DETECTION MONITORING PROGRAM

Well Identification Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date & Time Sampled	Depth to Groundwater (ft) <sup>1</sup>	Groundwater Elevation (ft NAVD88)	40 C.F.R. Part 257 Appendix III						
						Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (S.U.)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
						6020A <sup>2</sup>	6020A <sup>2</sup>	9251 <sup>2</sup>	9214 <sup>2</sup>	SM 4500 H+B <sup>2</sup>	9036 <sup>2</sup>	SM 2540C <sup>2</sup>
<b>Background / Upgradient Monitoring Wells</b>												
MW-5	39.149229	-84.793436	3/11/2019 14:45	63.49	467.02	1.58	120	25.9	<1.00	7.1	121	542
			9/9/2019 11:05	72.68	457.83	2.79	100	6.39	<1.00	6.9	135	498
MW-13	39.148381	-84.790834	3/11/2019 14:05	69.57	467.15	<0.080	128	239	<1.00	7.3	36.1	874
			9/9/2019 10:30	79.25	457.47	0.104	124	196	<1.00	6.6	41.0	800
<b>Downgradient Monitoring Wells</b>												
MW-8	39.144669	-84.796010	3/11/2019 15:15	47.79	465.71	0.108	105	14.3	<1.00	7.4	27.6	393
			9/9/2019 11:40	56.09	457.41	0.172	101	11.9	<1.00	6.8	25.7	385
MW-9	39.143099	-84.795876	3/11/2019 17:25	16.00	465.63	0.142	139	82.2	<1.00	7.2	43.3	646
			9/9/2019 12:20	24.29	457.34	0.200	122	64.1	<1.00	6.7	51.0	665
MW-11	39.142564	-84.795180	3/11/2019 15:45	56.09	465.38	0.0809	116	18.1	<1.00	7.3	36.1	427
			9/9/2019 13:05	64.13	457.34	0.136	118	11.2	<1.00	6.8	43.7	467
MW-12	39.142476	-84.794262	3/11/2019 16:25	62.38	465.00	0.105	144	23.9	<1.00	7.3	61.6	537
			9/9/2019 13:40	70.05	457.33	0.140	136	24.8	<1.00	6.7	62.4	578
MW-14	39.147433	-84.792341	3/12/2019 10:45	56.05	466.08	0.108	96.6	33.2	<1.00	7.5	53.8	377
			9/9/2019 14:30	64.74	457.39	0.168	137	80.5	<1.00	6.9	50.4	632
MW-15	39.145699	-84.793925	3/12/2019 11:45	43.28	465.00	<0.080	102	15.7	<1.00	7.5	36.4	384
			9/9/2019 14:55	51.36	456.92	0.0935	103	23.6	<1.00	6.9	29.9	388

[O: RAB 12/25/19, C: KLT 12/26/19][U: KLT 1/17/20, C: RAB 1/17/2020]

**Notes:**

40 C.F.R. = Title 40 of the Code of Federal Regulations

ft = foot/feet

mg/L = milligrams per liter

NAVD88 = North American Vertical Datum of 1988

S.U. = Standard Units

< = concentration is less than the concentration shown, which corresponds to the reporting limit for the method; estimated concentrations below the reporting limit and associated qualifiers are not provided since not utilized in statistics to determine Statistically Significant Increases (SSIs) over background.

<sup>1</sup>All depths to groundwater were measured on the first day of the sampling event.

<sup>2</sup>4-digit numbers represent SW-846 analytical methods.

**TABLE 2.**  
**STATISTICAL BACKGROUND VALUES**  
**2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**  
 MIAMI FORT POWER STATION  
 UNIT ID 113 - MIAMI FORT LAWRENCEBURG ROAD LANDFILL  
 NORTH BEND, OHIO  
 DETECTION MONITORING PROGRAM

Parameter	Statistical Background Value (UPL)
<b>40 C.F.R. Part 257 Appendix III</b>	
Boron (mg/L)	5.67
Calcium (mg/L)	186
Chloride (mg/L)	516
Fluoride (mg/L)	0.275
pH (S.U.)	6.6 / 8.0
Sulfate (mg/L)	322
Total Dissolved Solids (mg/L)	1062

[O: RAB 12/25/19, C: KLT 12/26/19]

**Notes:**

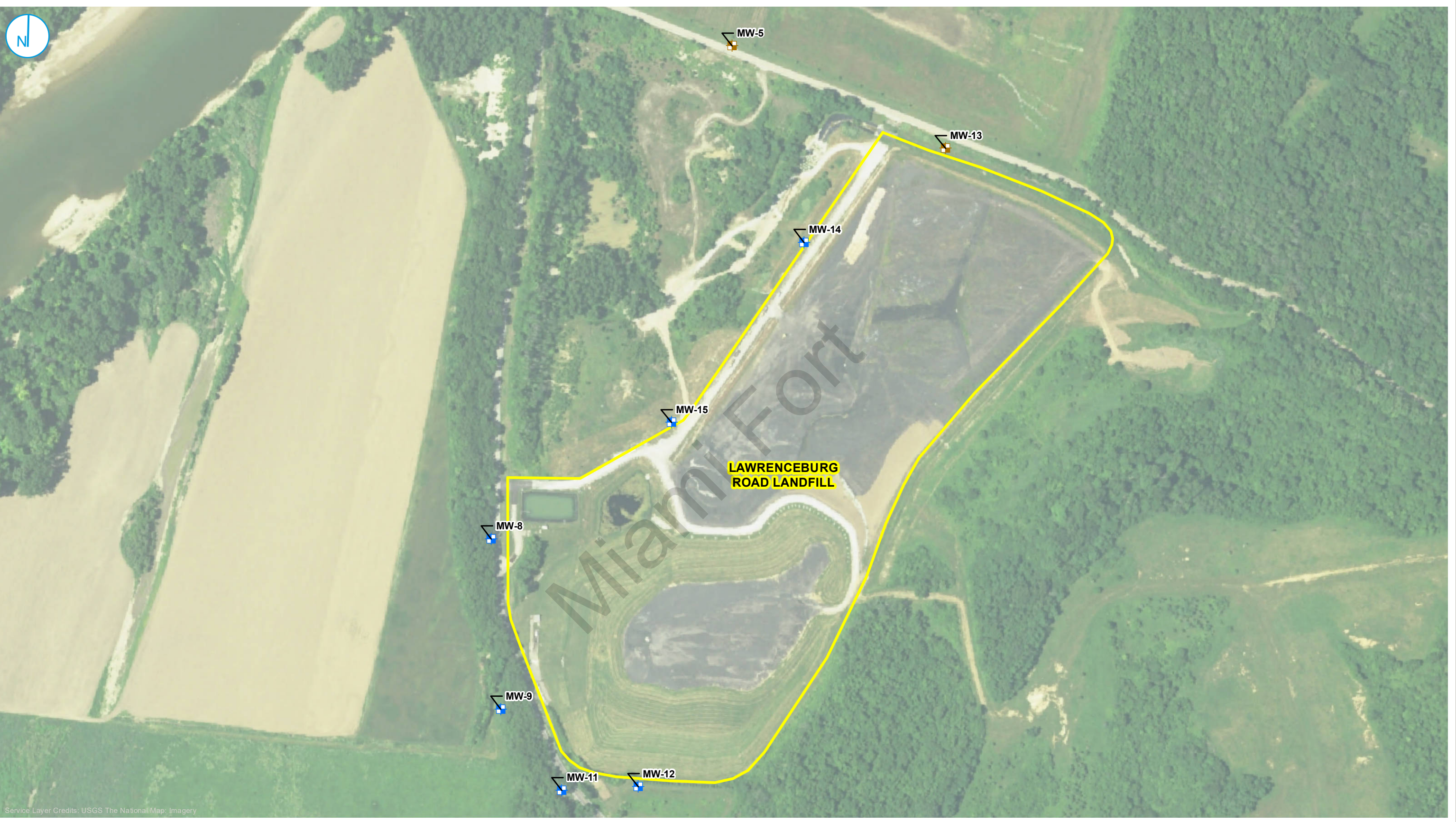
40 C.F.R. = Title 40 of the Code of Federal Regulations  
 mg/L = milligrams per liter  
 S.U. = Standard Units  
 UPL = Upper Prediction Limit

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## FIGURES

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- DOWNGRADIENT MONITORING WELL LOCATION
- UPGRADIENT MONITORING WELL LOCATION
- CCR MONITORED UNIT

0 150 300  
Feet

**MONITORING WELL LOCATION MAP**  
**MIAMI FORT LAWRENCEBURG ROAD LANDFILL**  
**UNIT ID:113**

**2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**  
VISTRA CCR RULE GROUNDWATER MONITORING  
MIAMI FORT POWER STATION  
NORTH BEND, OHIO

**FIGURE 1**

O'BRIEN & GERE ENGINEERS, INC.  
A RAMBOLL COMPANY

