Prepared for
**Dynegy Miami Fort, LLC**

Date
**January 31, 2021**

Project No.
**1940074922**

# 2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

## MIAMI FORT LAWRENCEBURG ROAD LANDFILL, DYNEGY MIAMI FORT, LLC



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# 2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
# MIAMI FORT LAWRENCEBURG ROAD LANDFILL, DYNEGY MIAMI FORT, LLC

| | |
|---|---|
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| Description | **Annual Report in Support of the CCR Rule Groundwater Monitoring Program** |

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| 40 C.F.R. | Title 40 of the Code of Federal Regulations |
| ASD | Alternate Source Demonstration |
| CCR | Coal Combustion Residuals |
| CMA | Corrective Measures Assessment |
| GWPS | Groundwater Protection Standard |
| SSI | Statistically Significant Increase |
| SSL | Statistically Significant Level |

# 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 at Miami Fort Power Station near 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 2020.

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

# 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 at Miami Fort Power Station near 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 SSI relative to background levels).
5. Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.
6. A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:
   i. At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
   ii. At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
   iii. If it was determined that there was a SSI over background for one or more constituents listed in Appendix III of §257 pursuant to §257.94(e):
      A. Identify those constituents listed in Appendix III of §257 and the names of the monitoring wells associated with the SSI(s).
      B. Provide the date when the assessment monitoring program was initiated for the CCR unit.

iv. If it was determined that there was a Statistically Significant Level (SSL) above the Groundwater Protection Standard (GWPS) for one or more constituents listed in Appendix IV of §257 pursuant to §257.95(g) include all of the following:

   A. Identify those constituents listed in Appendix IV of §257 and the names of the monitoring wells associated with the SSL(s).

   B. Provide the date when the Corrective Measures Assessment (CMA) was initiated for the CCR unit.

   C. Provide the date when the public meeting was held for CMA for the CCR unit.

   D. Provide the date when the CMA was completed for the CCR unit.

v. Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection.

vi. Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.

This report provides the required information for Miami Fort Lawrenceburg Road Landfill for calendar year 2020.

# 2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the monitoring program status in calendar year 2020, and Miami Fort Lawrenceburg Road Landfill remains in the Detection Monitoring Program in accordance with 40 C.F.R. § 257.94.

# 3. KEY ACTIONS COMPLETED IN 2020

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 2020. In general, one groundwater sample was collected from each background and downgradient well during each monitoring event[1]. All samples were collected and analyzed in accordance with the Sampling and Analysis Plan (AECOM, 2017). All monitoring data obtained under 40 C.F.R. §§ 257.90 through 257.98 (as applicable) in 2020, and analytical results for the September 2019 sampling event, are presented in Table 1. Analytical data were evaluated in accordance with the Statistical Analysis Plan (OBG, 2020) to determine any SSIs of Appendix III parameters relative to background concentrations.

Statistical background values are provided in Table 2.



[1] Sampling was limited to MW-9 and MW-12 during the July 2020 sampling event to confirm Appendix III parameters initially detected at concentrations greater than statistical background values in the preceding sampling event to confirm SSIs, as allowed by the Statistical Analysis Plan.

**Table A – 2019–2020 Detection Monitoring Program Summary**

| Sampling Date | Analytical Data Receipt Date | Parameters Collected | SSI(s) | SSI(s) Determination Date |
|---|---|---|---|---|
| September 9, 2019 | October 25, 2019 | Appendix III | none | January 23, 2020 |
| April 6, 2020<br><br>July 1, 2020 [1] | April 15, 2020 | Appendix III<br><br>Appendix III Greater than Background [2] | none | July 14, 2020 |
| September 14, 2020 | October 20, 2020 | Appendix III | TBD | TBD |

**Notes:**
NA: Not Applicable
TBD: To Be Determined
1. Sampling was limited to MW-9 and MW-12 during the July 2020 sampling event to confirm Appendix III parameters initially detected at concentrations greater than statistical background values in the preceding sampling event to confirm SSIs, as allowed by the Statistical Analysis Plan.
2. Groundwater sample analysis was limited to Appendix III parameters initially detected at concentrations greater than statistical background values in the preceding sampling event to confirm SSIs, as allowed by the Statistical Analysis Plan.

# 4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

No problems were encountered with the Groundwater Monitoring Program during 2020. Groundwater samples were collected and analyzed in accordance with the Sampling and Analysis Plan (AECOM, 2017), and all data were accepted.

# 5. KEY ACTIVITIES PLANNED FOR 2021

The following key activities are planned for 2021:

- Continuation of the Detection Monitoring Program with semi-annual sampling scheduled for the first and third quarters of 2021.
- 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 2021 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 2021 (*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.

OBG, Part of Ramboll, 2020, Statistical Analysis Plan, Miami Fort Power Station, Rev 1, Dynegy Miami Fort, LLC, May 22, 2020.

## TABLES

**TABLE 1.**
**ANALYTICAL RESULTS - GROUNDWATER ELEVATION AND APPENDIX III PARAMETERS**
**2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**
MIAMI FORT POWER STATION
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OH

| Well ID | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | Date | Depth to Groundwater (ft) 6020A | Groundwater Elevation (ft NAVD88) 6020A | Boron, total (mg/L) 6020A | Calcium, total (mg/L) 6020A | Chloride, total (mg/L) 9251 | Fluoride, total (mg/L) 9214 | pH (field) (STD) SM4500 H+B | Sulfate, total (mg/L) 9036 | Total Dissolved Solids (mg/L) SM 2540C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-5 Background | 39.149229 | -84.793436 | 9/9/2019 | 72.68 | 457.83 | 2.79 | 100 | 6.39 | <1 | 6.9 | 135 | 498 |
| | | | 4/6/2020 | 65.18 | 465.33 | 2.73 | 102 | 19 | 0.188 | 6.7 | 153 | 510 |
| | | | 9/14/2020 | 72.35 | 458.16 | 2.09 | 81.6 | 9.34 | 0.225 | 6.8 | 99.6 | 384 |
| MW-8 Downgradient | 39.144669 | -84.79601 | 9/9/2019 | 56.09 | 457.41 | <1 | 101 | 11.9 | <1 | 6.8 | 25.7 | 385 |
| | | | 4/6/2020 | 49.46 | 464.04 | 0.22 | 98.9 | 14.5 | <0.15 | 6.6 | 24.8 | 412 |
| | | | 9/14/2020 | 55.66 | 457.84 | 0.0688 | 95 | 12 | <0.15 | 6.8 | 26.8 | 371 |
| MW-9 Downgradient | 39.143099 | -84.795876 | 9/9/2019 | 24.29 | 457.34 | <1 | 122 | 64.1 | <1 | 6.7 | 51 | 665 |
| | | | 4/6/2020 | 17.75 | 463.88 | 0.198 | 112 | 58.3 | <0.15 | 6.5 | 53 | 632 |
| | | | 7/1/2020 | | | | | | | 6.9 | | |
| | | | 9/14/2020 | 23.83 | 457.8 | 0.108 | 132 | 62.7 | <0.15 | 6.9 | 67.3 | 578 |
| MW-11 Downgradient | 39.142564 | -84.79518 | 9/9/2019 | 64.13 | 457.34 | <1 | 118 | 11.2 | <1 | 6.8 | 43.7 | 467 |
| | | | 4/6/2020 | 57.25 | 464.22 | 0.126 | 99.7 | 12.7 | <0.15 | 6.6 | 33.3 | 410 |
| | | | 9/14/2020 | 63.68 | 457.79 | 0.0564 | 114 | 12.6 | <0.15 | 6.9 | 52.9 | 443 |
| MW-12 Downgradient | 39.142476 | -84.794262 | 9/9/2019 | 70.05 | 457.33 | <1 | 136 | 24.8 | <1 | 6.7 | 62.4 | 578 |
| | | | 4/6/2020 | 62.83 | 464.55 | 0.107 | 141 | 12.1 | <0.15 | 6.4 | 47.3 | 543 |
| | | | 7/1/2020 | | | | | | | 7.0 | | |
| | | | 9/14/2020 | 69.62 | 457.76 | 0.0745 | 146 | 25.4 | <0.15 | 6.9 | 71.7 | 552 |
| MW-13 Background | 39.148381 | -84.790834 | 9/9/2019 | 79.25 | 457.47 | <1 | 124 | 196 | <1 | 6.6 | 41 | 800 |
| | | | 4/6/2020 | 70.03 | 466.69 | 0.0765 | 109 | 202 | 0.188 | 6.5 | 37.7 | 794 |
| | | | 9/14/2020 | 79.04 | 457.68 | 0.0426 | 127 | 211 | 0.172 | 6.7 | 47.9 | 749 |
| MW-14 Downgradient | 39.147433 | -84.792341 | 9/9/2019 | 64.74 | 457.39 | <1 | 137 | 80.5 | <1 | 6.9 | 50.4 | 632 |
| | | | 4/6/2020 | 56.13 | 466 | 0.151 | 128 | 74.1 | 0.178 | 6.6 | 45.8 | 567 |
| | | | 9/14/2020 | 64.54 | 457.59 | 0.092 | 137 | 112 | <0.15 | 6.8 | 50.7 | 641 |
| MW-15 Downgradient | 39.145699 | -84.793925 | 9/9/2019 | 51.36 | 456.92 | <1 | 103 | 23.6 | <1 | 6.9 | 29.9 | 388 |
| | | | 4/6/2020 | 44.02 | 464.26 | 0.0618 | 119 | 16.9 | <0.15 | 6.6 | 28.3 | 461 |
| | | | 9/14/2020 | 50.98 | 457.3 | 0.0508 | 101 | 17.4 | <0.15 | 6.8 | 34.8 | 391 |

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.
4-digit numbers below parameter represent SW-846 analytical methods and alpha-numeric values that begin with SM represent Standard Methods for the Examination of Water and Wastewater.

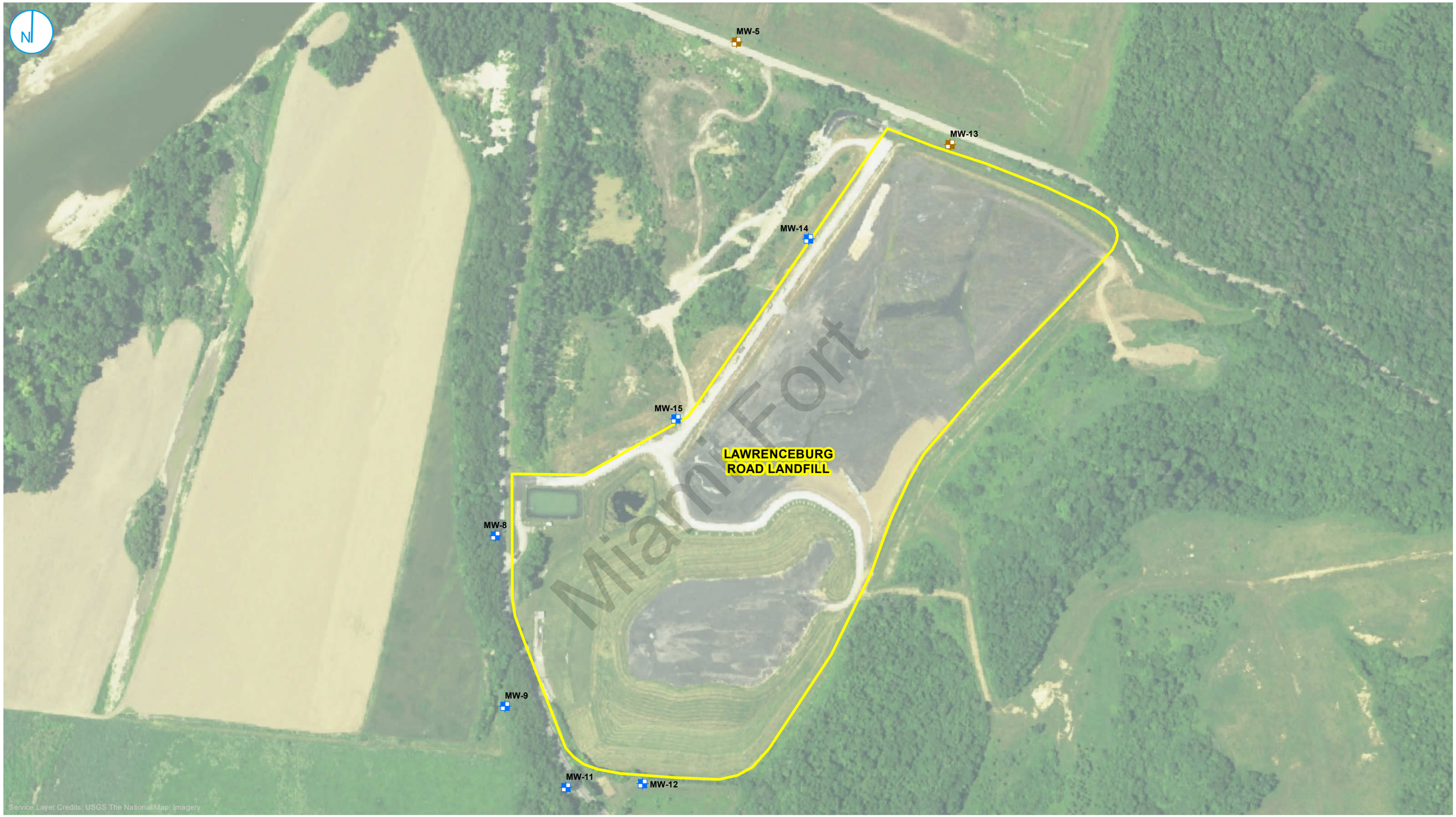
**TABLE 2.**
**STATISTICAL BACKGROUND VALUES**
**2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**
MIAMI FORT POWER STATION
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OHIO
DETECTION MONITORING PROGRAM

| Parameter | Statistical Background Value (UPL) |
|---|---|
| **40 C.F.R. Part 257 Appendix III** | |
| 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

## FIGURES




Y:\Mapping\Projects\222285\MXD\2020_AnnualGWM_CAR\Figure 1_GWS_WellLoc_MiamiFort_LRL.mxd

PROJECT: 169000XXXX | DATED: 1/25/2021 | DESIGNER: galammc

DOWNGRADIENT MONITORING WELL LOCATION
BACKGROUND MONITORING WELL LOCATION
CCR MONITORED UNIT

0 150 300 Feet

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

**2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT**
VISTRA CCR RULE GROUNDWATER MONITORING
MIAMI FORT POWER STATION
NORTH BEND, OHIO

**FIGURE 1**

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL