Prepared for
Illinois Power Generating Company

Date
January 31, 2022

Project No.
1940100711-003

2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

LANDFILL
COFFEEN POWER PLANT
COFFEEN, ILLINOIS
CCR UNIT 105

RAMBOLL Bright ideas. Sustainable change.

2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT GYPSUM MANAGEMENT FACILITY
GYPSUM STACK POND

Project name	**Coffeen Power Plant**
Project no.	**1940100711-003**
Recipient	**Illinois Power Generating Company**
Document type	**Annual Groundwater Monitoring and Corrective Action Report**
Version	**FINAL**
Date	**January 31, 2022**
Prepared by	**Kristen L. Theesfeld**
Checked by	**Lauren Cook**
Approved by	**Eric J. Tlachac**
Description	**Annual Report in Support of the CCR Rule Groundwater Monitoring Program**

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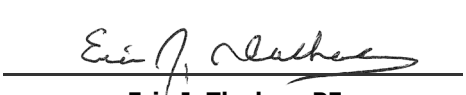


Eric J. Tlachac, PE
Senior Managing Engineer

CONTENTS

TABLES (IN TEXT)

TABLES (ATTACHED)

FIGURES (ATTACHED)

APPENDICES

ACRONYMS AND ABBREVIATIONS

§	Section
40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
CPP	Coffeen Power Plant
CMA	Corrective Measures Assessment
GWPS	groundwater protection standard
LF	Landfill
NRT/OBG	Natural Resource Technology, an OBG Company
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	Sampling and Analysis Plan
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.) Section (§) 257.90(e) for the Landfill (LF) located at Coffeen Power Plant (CPP) near Coffeen, Illinois.

Groundwater is being monitored at the LF 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 2021 (no wells were installed or decommissioned).

The following Statistically Significant Increases (SSIs) of 40 C.F.R. § 257 Appendix III parameter concentrations greater than background concentrations were determined:

- Chloride at wells G120
- Fluoride at wells T127

Alternate Source Demonstrations (ASDs) were completed for the SSIs referenced above and the LF remains in the Detection Monitoring Program.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of Illinois Power Generating Company, to provide the information required by 40 C.F.R. § 257.90(e) for the LF located at the CPP near Coffeen, Illinois.

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 [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 the LF for calendar year 2021.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the monitoring program status in calendar year 2021 and the LF remains in the Detection Monitoring Program in accordance with 40 C.F.R. § 257.94.

3. KEY ACTIONS COMPLETED IN 2021

The Detection Monitoring Program is summarized in **Table A** on the following page. The groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. No changes were made to the monitoring system in 2021. In general, one groundwater sample was collected from each background and compliance well during each monitoring event.[1] All samples were collected and analyzed in accordance with the Sampling and Analysis Plan (SAP; Natural Resource Technology, an OBG Company [NRT/OBG], 2017a). All monitoring data obtained under 40 C.F.R. § 257.90 through 257.98 (as applicable) in 2021, and analytical results for the August 2020 sampling event, are presented in **Tables 1** and **2**. Analytical data were evaluated in accordance with the Statistical Analysis Plan (NRT/OBG, 2017b) to determine any SSIs of Appendix III parameters relative to background concentrations.

Statistical background values are provided in **Table 3**. The background values reported in **Table 3** are slightly different from those reported previously because different software was utilized to calculate these values in 2021.

[1] Sampling was limited to G106 and T127 during the June 2021 sampling event, and G110, G125, and T127 during the November 2021 sampling event, to confirm SSIs of select Appendix III parameters initially detected at concentrations greater than statistical background values in the preceding sampling event, as allowed by the Statistical Analysis Plan.

Table A. 2020-2021 Detection Monitoring Program Summary

Sampling Date	Analytical Data Receipt Date	Parameters Collected	SSI(s)	SSI(s) Determination Date	ASD Completion Date
August 11, 2020	October 15, 2020	Appendix III	Chloride (G120)	January 13, 2021	April 13, 2021
January 26 - 29, 2021	April 14, 2021	Appendix III	Chloride (G120) Fluoride (T127)	July 13, 2021	October 11, 2021
June 29, 2021 [1]	August 3, 2021	Fluoride at well T127; pH at wells G106 and T127 [2]	NA	NA	NA
August 18 - 24, 2021	September 21, 2021	Appendix III	Chloride (G120) Fluoride (T127)	December 20, 2021	TBD
November 29, 2021 [3]	December 9, 2021	Fluoride at wells G110, G125, and T127; pH at wells G110, G125, and T127 [2]	NA	NA	NA

Notes:

NA: not applicable

TBD: to be determined

[1] Sampling was limited to G106 and T127 during the June 2021 sampling event to confirm SSIs of select Appendix III parameters initially detected at concentrations greater than statistical background values in the preceding sampling event, as allowed by the Statistical Analysis Plan.

[2] Groundwater sample analysis was limited to select 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.

[3] Sampling was limited to G110, G125, and T127 during the November 2021 sampling event to confirm SSIs of select Appendix III parameters initially detected at concentrations greater than statistical background values in the preceding sampling event, 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 2021. Groundwater samples were collected and analyzed in accordance with the SAP (NRT/OBG, 2017a), and all data were accepted.

5. KEY ACTIVITIES PLANNED FOR 2022

The following key activities are planned for 2022:

- Continuation of the Detection Monitoring Program with semi-annual sampling scheduled for the first and third quarters of 2022.
- Complete evaluation of analytical data from the compliance 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 the 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 2022 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 2022 (*e.g.,* Assessment Monitoring) will be met, including associated recordkeeping/notifications required by 40 C.F.R. § 257.105 through 257.108.

6. REFERENCES

Natural Resource Technology, an OBG Company (NRT/OBG), 2017a, Sampling and Analysis Plan, Coffeen Landfill, Coffeen Power Station, Coffeen, Illinois, Project No. 2285, Revision 0, October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017b. Statistical Analysis Plan, Coffeen Power Station, Newton Power Station, Illinois Power Generating Company, October 17, 2017.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
105 - LANDFILL
COFFEEN, IL

Well ID	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (ft BMP)	Groundwater Elevation (ft NAVD88)
G102	Background	39.07139	-89.39899	08/10/2020	9.24	621.72
				01/20/2021	9.25	619.79
				03/29/2021	Not Measured	
				04/20/2021	5.18	623.86
				05/03/2021	4.76	624.28
				05/17/2021	5.21	623.83
				06/09/2021	5.95	623.09
				06/23/2021	7.82	621.22
				07/12/2021	6.12	622.92
				07/26/2021	6.07	622.97
				08/16/2021	6.35	622.69
				10/25/2021	5.58	623.46
G106	Compliance	39.06753	-89.39910	08/10/2020	10.67	620.48
				01/20/2021	10.25	620.90
				03/29/2021	Not Measured	
				04/20/2021	9.46	621.69
				07/26/2021	9.27	621.88
				08/16/2021	9.25	621.90
				10/25/2021	8.44	622.71
G110	Compliance	39.06717	-89.40070	08/10/2020	13.51	616.14
				01/20/2021	12.84	616.81
				03/29/2021	Not Measured	
				04/20/2021	11.94	617.71
				07/26/2021	11.89	617.76
				08/16/2021	11.68	617.97
				10/25/2021	11.08	618.57
				11/29/2021	12.21	617.44
G120	Compliance	39.06948	-89.40121	08/10/2020	16.65	615.22
				01/20/2021	16.07	615.80
				03/29/2021	Not Measured	
				04/20/2021	14.32	617.55
				07/26/2021	14.92	616.95
				08/16/2021	14.68	617.19
				10/25/2021	15.58	616.29
G125	Compliance	39.07100	-89.40122	08/10/2020	18.13	615.38
				01/20/2021	17.85	615.66
				03/29/2021	Not Measured	
				04/20/2021	11.05	622.46
				07/26/2021	14.40	619.11
				08/16/2021	14.02	619.49
				10/25/2021	13.13	620.38
				11/29/2021	13.31	620.20
G200	Background	39.07514	-89.39501	08/10/2020	7.78	618.16
				01/20/2021	6.31	619.63
				03/29/2021	2.67	623.27
				04/20/2021	4.08	621.86

TABLE 1
GROUNDWATER ELEVATIONS
2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
105 - LANDFILL
COFFEEN, IL

Well ID	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (ft BMP)	Groundwater Elevation (ft NAVD88)
G200	Background	39.07514	-89.39501	05/03/2021	3.25	622.69
				05/17/2021	3.84	622.10
				06/09/2021	5.10	620.84
				06/23/2021	6.56	619.38
				07/12/2021	5.42	620.52
				07/26/2021	6.20	619.74
				08/16/2021	6.06	619.88
				10/25/2021	3.60	622.34
R201	Background	39.07514	-89.39786	08/10/2020	7.45	618.89
				01/20/2021	5.82	620.52
				03/29/2021	2.82	623.52
				04/20/2021	4.18	622.16
				05/03/2021	3.43	622.91
				05/17/2021	3.66	622.68
				06/09/2021	5.22	621.12
				06/23/2021	6.42	619.92
				07/12/2021	5.00	621.34
				07/26/2021	5.97	620.37
				08/16/2021	5.73	620.61
				10/25/2021	3.00	623.34
T127	Compliance	39.06812	-89.40121	08/10/2020	15.06	615.90
				01/20/2021	15.07	615.89
				03/29/2021	Not Measured	
				04/20/2021	14.42	616.54
				07/26/2021	14.43	616.53
				08/16/2021	14.31	616.65
				10/25/2021	14.14	616.82
				11/29/2021	14.16	616.80

Notes:
BMP = below measuring point
ft = foot/feet
NAVD88 = North American Vertical Datum of 1988

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
105 - LANDFILL
COFFEEN, IL

Well ID	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
G102	Background	39.07139	-89.39899	08/11/2020	<0.01	75	30	0.265	7.3	120	470
				01/26/2021	0.017	55	12	0.365	7.1	70	410
				08/24/2021	0.014	62	24	0.429	7.3	120	530
G106	Compliance	39.06753	-89.39910	08/11/2020	0.016	87	39	0.36	7.0	69	490
				01/26/2021	0.045	100	59	0.399	7.5	140	600
				06/29/2021	--	--	--	--	7.2	--	--
				08/23/2021	0.033	95	46	0.456	7.1	100	570
G110	Compliance	39.06717	-89.40070	08/11/2020	<0.01	91	51	0.363	7.0	90	500
				01/28/2021	<0.01	91	55	<0.25	6.9	90	600
				08/24/2021	<0.01	97	55	0.518	7.1	93	580
				11/29/2021	--	--	--	0.44	6.9	--	--
G120	Compliance	39.06948	-89.40121	08/11/2020	<0.01	83	98	0.323	7.2	37	440
				01/27/2021	<0.01	72	110	0.369	7.3	34	510
				08/24/2021	<0.01	93	110	0.498	7.3	37	540
G125	Compliance	39.07100	-89.40122	08/11/2020	<0.01	66	90	0.369	7.2	73	470
				01/27/2021	<0.01	61	88	0.416	7.2	68	490
				08/24/2021	<0.01	72	95	0.558	7.3	75	500
				11/29/2021	--	--	--	0.467	7.1	--	--
G200	Background	39.07514	-89.39501	08/11/2020	<0.01	85	63	0.427	7.2	110	530
				01/29/2021	0.014	81	53	0.36	7.3	110	580
				08/18/2021	0.016	87	44	0.383	7.2	100	540
R201	Background	39.07514	-89.39786	08/11/2020	<0.01	120	87	0.364	6.9	240	790
				01/29/2021	0.01	94	46	<0.25	7.0	160	710
				08/18/2021	0.012	110	88	0.472	7.0	180	740
T127	Compliance	39.06812	-89.40121	08/11/2020	<0.01	66	41	0.443	7.2	87	480

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
105 - LANDFILL
COFFEEN, IL

Well ID	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
T127	Compliance	39.06812	-89.40121	01/29/2021	0.016	62	34	0.552	7.1	85	500
				06/29/2021	--	--	--	0.541	7.3	--	--
				08/24/2021	0.016	69	37	0.654	7.3	90	530
				11/29/2021	--	--	--	0.568	7.1	--	--

Notes:
mg/L = milligrams per liter
SU = 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 they are not utilized in statistics to determine Statistically Significant Increases (SSIs) over background
-- = not analyzed

TABLE 3
STATISTICAL BACKGROUND VALUES
2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
COFFEEN POWER PLANT
105 - LANDFILL
COFFEEN, IL

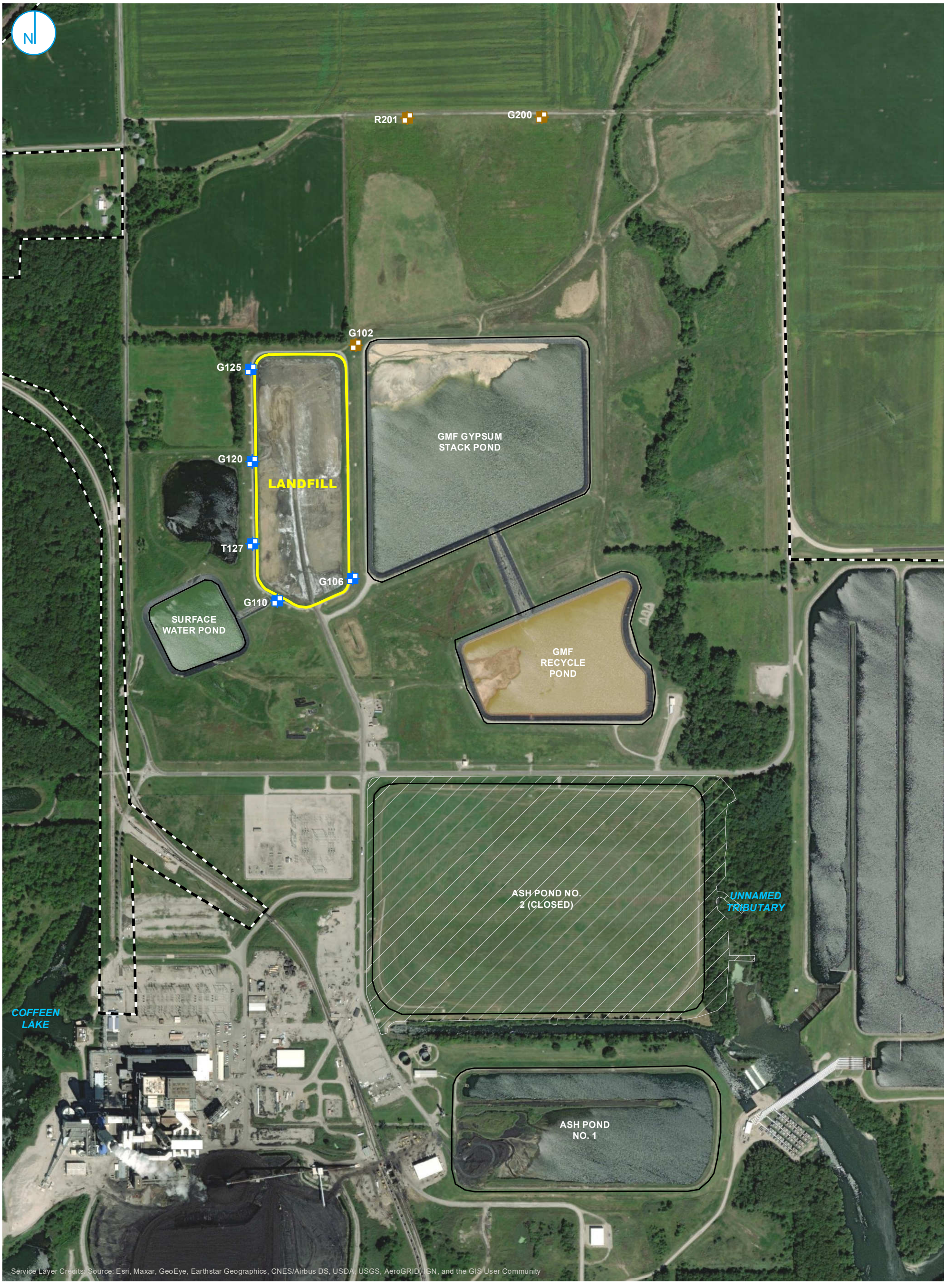
Parameter	**Statistical Background Value (LPL/UPL)**
40 C.F.R. Part 257 Appendix III	
Boron (mg/L)	0.390
Calcium (mg/L)	140
Chloride (mg/L)	96.0
Fluoride (mg/L)	0.508
pH (field) (SU)	6.9/7.4
Sulfate (mg/L)	351
Total Dissolved Solids (mg/L)	911

Notes:
40 C.F.R. = Title 40 of the Code of Federal Regulations
LPL = Lower Prediction Limit (applicable for pH only)
mg/L = milligrams per liter
SU = Standard Units
UPL = Upper Prediction Limit

FIGURES

PROJECT: 169000XXXX | DATED: 1/6/2022 | DESIGNER: galarnmc

Y:\Mapping\Projects\22\2285\MXD\2021_AnnualGWM_CAR\Coffeen\LF_105\Figure 1 COF LF MW Location Map.mxd



BACKGROUND WELL

COMPLIANCE WELL

PART 257 REGULATED UNIT (SUBJECT UNIT)

SITE FEATURE

CAPPED AREA (IEPA APPROVED CLOSURE)

0 275 550
Feet

MONITORING WELL LOCATION MAP

2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT LANDFILL

COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

APPENDICES

APPENDIX A
ALTERNATE SOURCE DEMONSTRATIONS

Intended for
Illinois Power Generating Company

Date
April 13, 2021

Project No.
1940100711-003

40 C.F.R. § 257.94(e)(2): ALTERNATE SOURCE DEMONSTRATION

COFFEEN LANDFILL

RAMBOLL Bright ideas. Sustainable change.

CERTIFICATIONS

I, Brian G. Hennings, a professional geologist in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used for other than its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Brian G. Hennings
Professional Geologist
196-001482
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: April 13, 2021

I, Anne Frances Ackerman, a qualified professional engineer in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used for other than its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Anne Frances Ackerman
Qualified Professional Engineer
062-060586
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: April 13, 2021

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CONTENTS

TABLES (IN TEXT)

FIGURES (IN TEXT)

FIGURES (ATTACHED)

ACRONYMS AND ABBREVIATIONS

40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternate Source Demonstration
CCR	Coal Combustion Residuals
cm/s	centimeters per second
GMF	Gypsum Management Facility
HDPE	high-density polyethylene
IEPA	Illinois Environmental Protection Agency
LOE	Line of Evidence
mg/L	milligrams per liter
NAVD88	North American Vertical Datum of 1988
NRT/OBG	Natural Resource Technology, an OBG Company
Site	Coffeen Power Station
SSI	Statistically Significant Increase
UPL	Upper Prediction Limit

1. INTRODUCTION

Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.94(e)(2) allows the owner or operator of a Coal Combustion Residuals (CCR) unit 90 days from the date of determination of a Statistically Significant Increase (SSI) over background for groundwater constituents listed in Appendix III of 40 C.F.R. Part 257 to complete a written demonstration that a source other than the CCR unit being monitored caused the SSI(s), or that the SSI(s) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality (Alternate Source Demonstration [ASD]).

This ASD has been prepared on behalf of Illinois Power Generating Company, by Ramboll Americas Engineering Solutions, Inc., to provide pertinent information pursuant to 40 C.F.R. § 257. 94(e)(2) for the Coffeen Landfill, located near Coffeen, Illinois.

The most recent Detection Monitoring sampling event (D7) was completed on August 11, 2020, and analytical data were received on October 15, 2020. Analytical data from D7 were evaluated in accordance with the Statistical Analysis Plan (Natural Resource Technology, an OBG Company [NRT/OBG], 2017a) to determine any SSIs of Appendix III parameters over background concentrations. That evaluation identified SSIs at downgradient monitoring wells as follows:

- Chloride at well G120

Pursuant to 40 C.F.R. § 257. 94(e)(2), the following lines of evidence (LOE) demonstrate that sources other than Coffeen Landfill were the cause of the chloride SSI listed above. This ASD was completed by April 13, 2021, within 90 days of determination of the SSI (January 13, 2021), as required by 40 C.F.R. § 257.94(e)(2).

2. BACKGROUND

2.1 Site Location and Description

The Coffeen Power Station (Site) is located in Montgomery County, in central Illinois, approximately 2 miles south of the city of Coffeen. The area is bordered by Coffeen Lake to the west, east, and south, and by agricultural land to the north. Several underground coal mines were historically operated both beneath and near the Site. Fly ash is managed in an approximately 15-acre composite lined landfill constructed in 2010.

2.2 Geology and Hydrogeology

The Site geologic and hydrogeologic setting summarized below is from the Coffeen Hydrogeologic Monitoring Plan (NRT/OBG, 2017b).

Pleistocene deposits of unlithified glacial diamictons, lacustrine/alluvial deposits, and windblown loess overlie Pennsylvanian-age bedrock throughout central Illinois. The most extensive glacial deposits are those from the Illinoian Stage which cover much of the state and are present at the Site. Windblown (aeolian) deposits, the Peoria and Roxana Silts, cover the glacial deposits over a majority of the state. These units are fine-grained deposits blown from river valleys by prevailing winds.

Till members of the Glasford Formation include the Smithboro Member, the Mulberry Grove Member, the Vandalia Member, and the Hagarstown Member (oldest to youngest). The Smithboro Member is described as a gray, compact, silty till. The Smithboro is bounded below by the Yarmouth Soil. The Mulberry Grove Member is intermittent at the Site, and is described as a calcareous gray silt and fine sand containing some fossil mollusks. The Vandalia Member is a sandy till with thin lenticular bodies of silt, sand, and gravel. It is calcareous, except where weathered, generally gray, and moderately compact. The Hagarstown Member is bounded at the top by the Sangamon Soil. The member consists of gravelly till, poorly sorted gravel, well sorted gravel, and sand.

The Quaternary deposits in the Coffeen area consist mainly of diamictons and intercalated outwash deposits that were deposited during Illinoian and Pre-Illinoian glaciations. The unconsolidated deposits and bedrock which occur at the Site include the following units (beginning at the ground surface):

- Upper Confining Unit – Low permeability clays and silts, including the Roxana Silt and Peoria Silt (Loess Unit) and the upper clayey till portion of the Hagarstown Member.
- Uppermost Aquifer – Thin (generally less than 3 feet), moderate to high permeability sand, silty sand, and sandy silt/clay units which include the Hagarstown Member (also referred to as the Hagarstown Beds) and the upper Vandalia Till Member (where weathered). The Uppermost Aquifer thins to less than 1.0 foot surrounding the Landfill.
- Lower Confining Unit – Thick (generally greater than 15 feet), very low permeability sandy, silt till, or clay till that includes the unweathered Vandalia Member, Mulberry Grove Member (discontinuous), and Smithboro Member.
- Bedrock – Pennsylvanian-age Bond Formation characterized by limestone and calcareous clays and shales.

Coffeen Lake was built by damming the McDavid Branch of the East Fork of Shoal Creek in 1963 for use as an artificial cooling lake for the Coffeen Power Station. The Site is located between the

two lobes of the lake (identified as "Coffeen Lake" and "Unnamed Tributary" on Figure 1), which results in a north/south trending groundwater divide observed beneath the CCR units. Groundwater flow is to the southeast or southwest, downgradient of the divide, converging on the tributary valleys leading to Coffeen Lake on the east and west sides of the property.

Groundwater elevations (referenced to North American Vertical Datum of 1988 [NAVD88]) were obtained from measurements in monitoring wells on August 10, 2020 prior to a sampling event for the five CCR units at Coffeen Power Station. As noted above, groundwater sampling for D7 was completed on August 11, 2020. Water levels in the Landfill area ranged from approximately 625 to 615 feet (Figure 1). The groundwater elevations and flow direction for the Coffeen Power Station during the D7 sampling event are shown in Figure 1, and generally follow the flow patterns established by the groundwater divide beneath the CCR units with groundwater flowing from east to west beneath the Landfill.

2.3 Groundwater Monitoring

Figure 1 shows all monitoring wells present at the site, including those in the groundwater monitoring systems established in accordance with 40 C.F.R. § 257.91 at Ash Pond No. 1, Ash Pond No. 2, the Gypsum Management Facility (GMF) Recycle Pond, the Landfill, and the Gypsum Stack Pond, and wells not used for federal CCR monitoring. Figure 2 shows the monitoring system for the Landfill including background wells G102, R201 and G200, located north of the Landfill, and downgradient monitoring wells G106, G110, G120, G125, and T127. Leachate was sampled at one location (L203), at the northeast corner of the Landfill, during the D7 sampling event.

3. ALTERNATE SOURCE DEMONSTRATION: LINES OF EVIDENCE

As allowed by 40 C.F.R. § 257.94(e)(2), this ASD demonstrates that sources other than Coffeen Landfill (the CCR unit) caused the SSIs. LOEs supporting this ASD include the following:

1. Landfill liner design.
2. The ionic composition of Landfill leachate is different from the ionic composition of groundwater.
3. Downgradient concentrations of boron and sulfate do not exceed background limits.

These LOEs are described and supported in greater detail below. Monitoring wells and leachate sample locations are shown in Figure 2.

3.1 LOE #1: Landfill Liner Design

The Coffeen Landfill was constructed in 2010. The Landfill liner system includes the following components:

- A 60-milimeter high-density polyethylene (HDPE) geomembrane.
- A three-foot-thick layer of recompacted, low-permeability soil having a maximum hydraulic conductivity of 1×10^{-7} centimeters per second (cm/s).

The Illinois Environmental Protection Agency (IEPA)-approved Coffeen Landfill liner system exceeds the design criteria for a composite liner for new CCR landfills established by 40 C.F.R. § 257.70. The composite liner design criteria were established to help prevent contaminants in CCR from leaking from the CCR unit and impacting groundwater. Therefore, the presence of the composite liner system suggests that the Landfill is not the source of the observed SSIs.

3.2 LOE #2: The Ionic Composition of Landfill Leachate is Different from the Ionic Composition of Groundwater

Piper diagrams graphically represent ionic composition of aqueous solutions. A Piper diagram displays the position of water samples relative to their major cation and anion content on the two lower triangular portions of the diagram, providing the information which, when combined on the central diamond-shaped portion of the diagram, identifies the compositional categories or groupings (hydrochemical facies).

Groundwater samples collected from Landfill monitoring wells on August 11, 2020 and Landfill leachate samples collected from leachate well L203 on August 26, 2020 were analyzed for ionic composition (major ions). Figure A, below, is a Piper diagram that displays the ionic composition of groundwater and Landfill leachate.

It is evident from the Piper diagram that the background and downgradient groundwater (enclosed within the black ellipse) are in the calcium-bicarbonate facies and that the Landfill leachate is in the sodium-chloride facies. The differences in ionic composition between the groundwater and Landfill leachate indicate that the Landfill is not the source of SSI identified in groundwater.

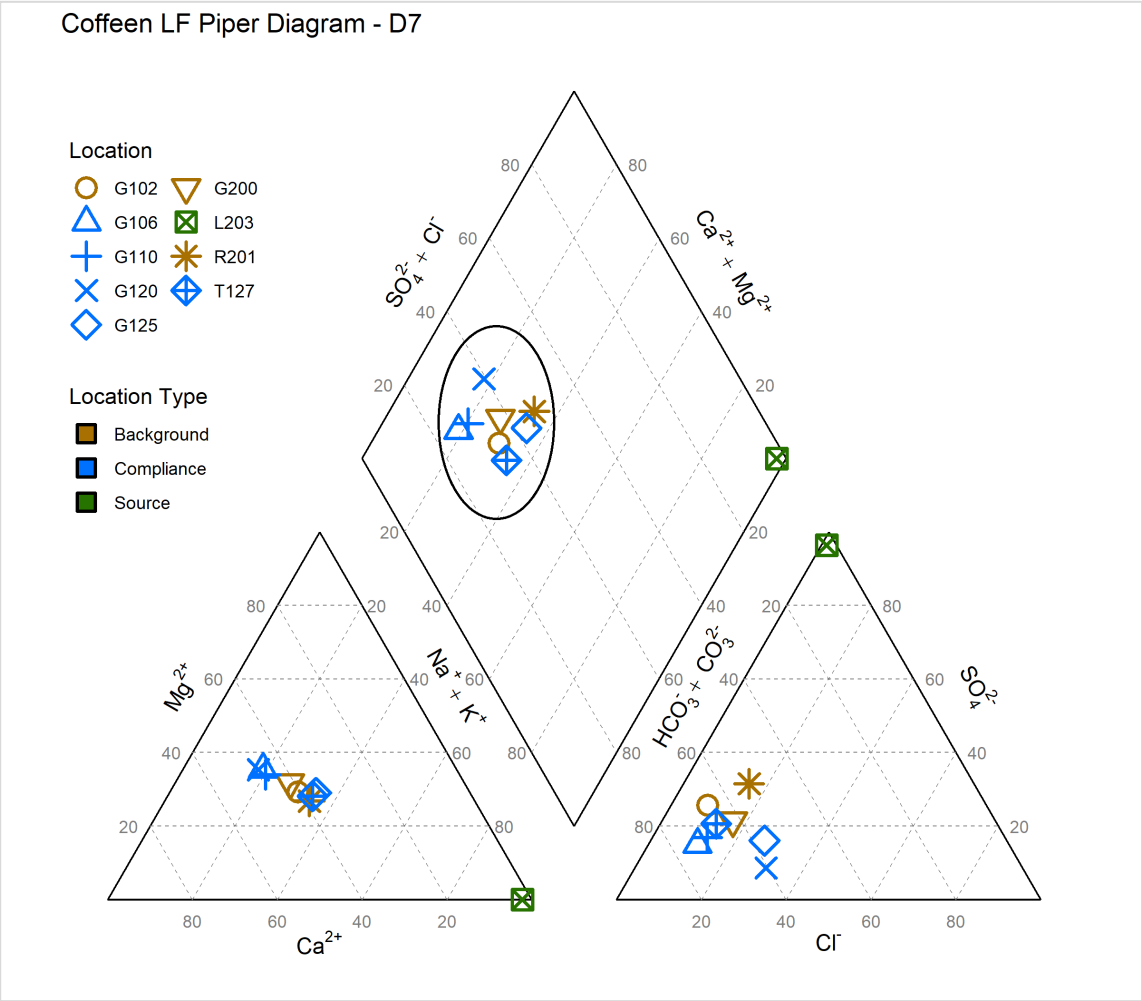


Figure A. Piper Diagram. The piper diagram above shows the ionic composition of samples of background and downgradient groundwater and Landfill leachate.

3.3 LOE #3: Downgradient Concentrations of Boron and Sulfate Do Not Exceed Background Limits

Boron and sulfate are indicators of CCR impacts to groundwater due to their leachability from CCR and mobility in groundwater. If the groundwater downgradient of the Landfill had been impacted by CCR from the unit, boron and sulfate concentrations would be expected to be elevated above background Upper Prediction Limits (UPLs). The UPL is an upper bound on background concentrations calculated for comparing downgradient measurements to background. The downgradient monitoring well having an SSI had concentrations of boron and sulfate that were below their respective UPLs (0.39 milligrams per liter [mg/L] for boron and 329 mg/L for sulfate; Table A).

Table A. Summary Statistics for Boron and Sulfate in Downgradient Well Groundwater (from November 2015 to August 2020).

	Boron (UPL=0.39 mg/L)		Sulfate (UPL=329 mg/L)	
Location	*Minimum*	*Maximum*	*Minimum*	*Maximum*
G120	0.01	0.028	34	47

Concentrations of boron and sulfate in the downgradient monitoring well containing an SSI (G120) are below the UPLs which indicates that this downgradient well has not been affected by CCR. Therefore, the Landfill is not the source of the SSI.

4. CONCLUSIONS

Based on these three LOE, it has been demonstrated that Coffeen Landfill has not caused the SSI in G120.

1. Landfill liner design.
2. The ionic composition of Landfill leachate is different from the ionic composition of groundwater.
3. Downgradient concentrations of boron and sulfate do not exceed background limits.

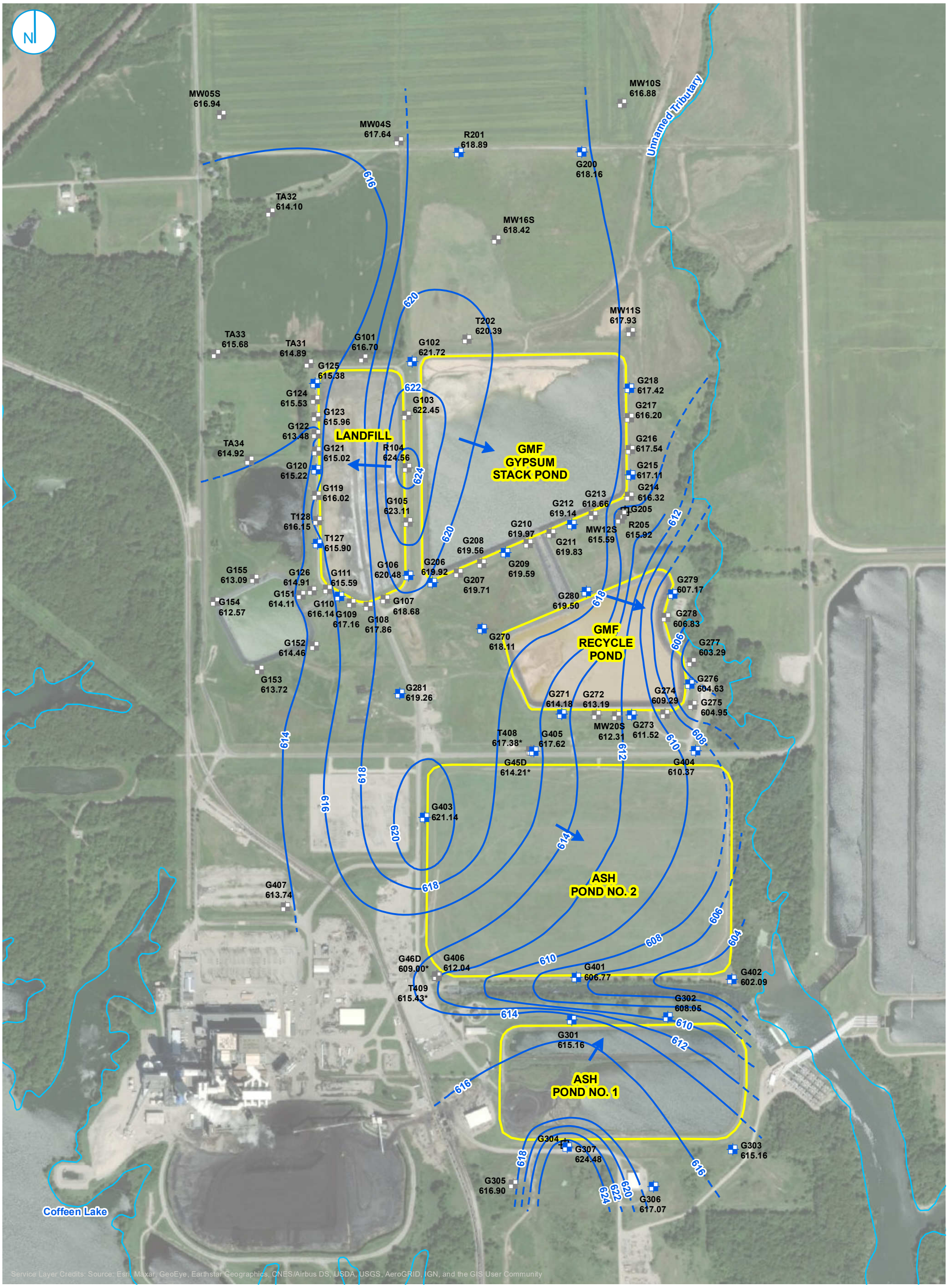
This information serves as the written ASD prepared in accordance with 40 C.F.R. § 257.95(e)(2) that the SSI observed during the Detection Monitoring Program D7 sampling event was not due to the CCR unit. Therefore, an Assessment Monitoring Program is not required, and Coffeen Landfill will remain in detection monitoring.

5. REFERENCES

Natural Resource Technology, an OBG Company (NRT/OBG), October 17, 2017a. *Statistical Analysis Plan. Coffeen Power Station, Newton Power Station. Illinois Power Generating Company*.

Natural Resource Technology, an OBG Company (NRT/OBG), October 17, 2017b. *Hydrogeologic Monitoring Plan. Coffeen Ash Pond No. 1 – CCR Unit ID 101, Coffeen Ash Pond No. 2 – CCR Unit ID 102, Coffeen GMF Gypsum Stack Pond – CCR Unit ID 103, Coffeen GMF Recycle Pond – CCR Unit ID 104, Coffeen Landfill – CCR Unit ID 105.* Coffeen Power Station, Coffeen, Illinois. Illinois Power Generating Company.

FIGURES



CCR RULE MONITORING WELL LOCATION
NON-CCR RULE MONITORING WELL LOCATION
ABANDONED MONITORING WELL
GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION

CCR UNIT BOUNDARY
SURFACE WATER FEATURE

0 300 600 Feet

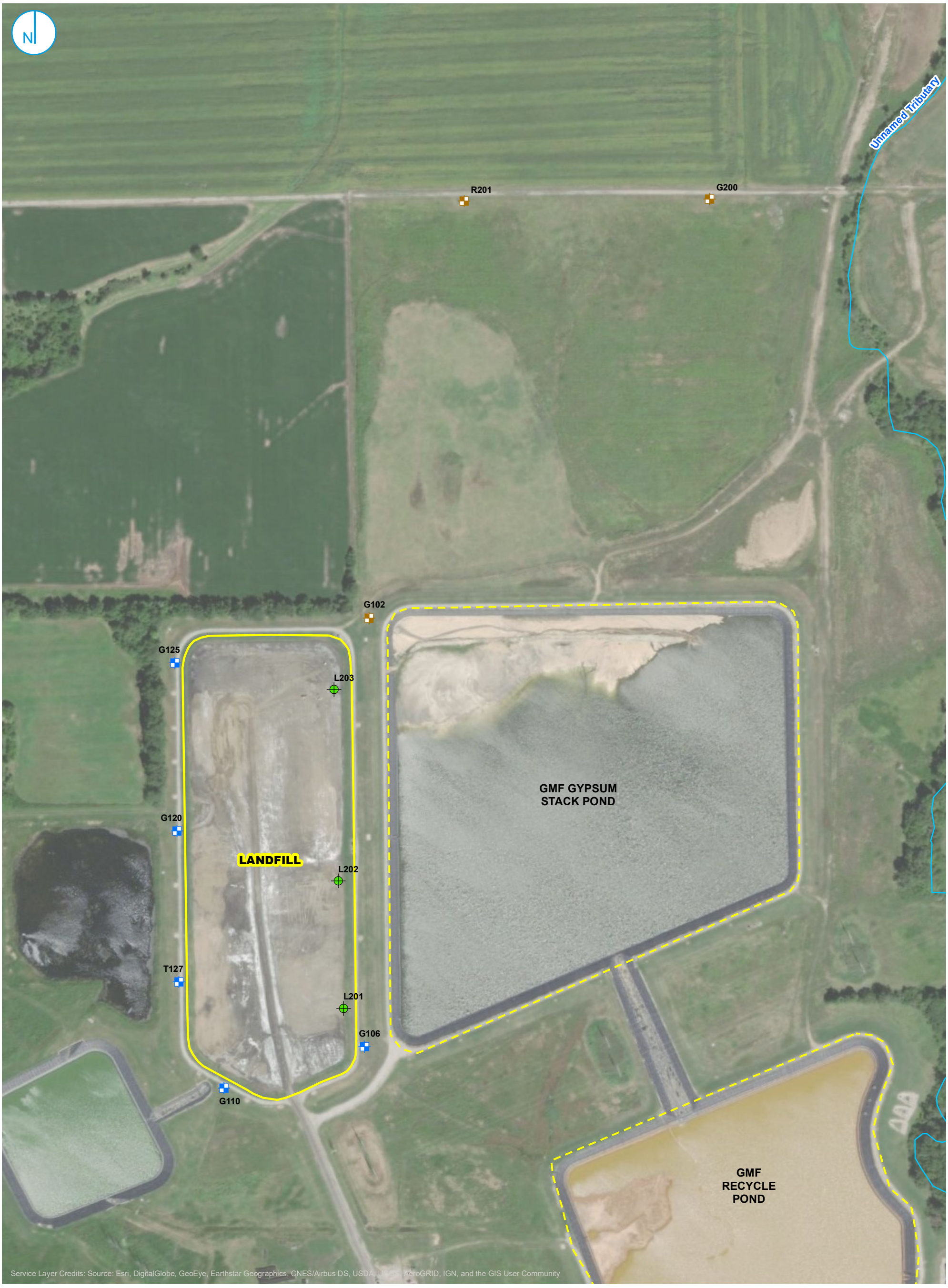
NOTE:
* = NOT USED FOR CONTOURING
NM = NOT MEASURED
[1] G307 WAS FROZEN DURING THE JANUARY 20, 2020 SAMPLING EVENT AND WATER LEVEL COULD NOT BE COLLECTED.
[2] MW10S WAS DAMAGED PRIOR TO THE JANUARY 20, 2020 SAMPLING EVENT AND WATER LEVEL COULD NOT BE COLLECTED.

GROUNDWATER ELEVATION CONTOUR MAP AUGUST 10, 2020

CCR RULE GROUNDWATER MONITORING
COFFEEN POWER STATION
COFFEEN, ILLINOIS

FIGURE 1

RAMBOLL US CORPORATION
A RAMBOLL COMPANY



BACKGROUND MONITORING WELL
DOWNGRADIENT MONITORING WELL
LEACHATE WELL LOCATION
CCR UNIT BOUNDARY, SUBJECT SITE
CCR UNIT BOUNDARY
SURFACE WATER FEATURE

0 150 300 Feet

SAMPLE LOCATION MAP

40 C.F.R. § 257.95(e)(2): ALTERNATE SOURCE DEMONSTRATION
COFFEEN LANDFILL
COFFEEN POWER STATION
COFFEEN, ILLINOIS

FIGURE 2

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RAMBOLL

Intended for
Illinois Power Generating Company

Date
October 11, 2021

Project No.
1940100711-003

40 C.F.R. § 257.94(e)(2): ALTERNATE SOURCE DEMONSTRATION

COFFEEN POWER PLANT
LANDFILL
CCR UNIT 105

RAMBOLL Bright ideas. Sustainable change.

CERTIFICATIONS

I, Nicole M. Pagano, a professional geologist in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Nicole M. Pagano
Professional Geologist
196-000750
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: October 11, 2021

I, Anne Frances Ackerman, a qualified professional engineer in good standing in the State of Illinois, certify that the information in this report is accurate as of the date of my signature below. The content of this report is not to be used other than for its intended purpose and meaning, or for extrapolations beyond the interpretations contained herein.

Anne Frances Ackerman
Qualified Professional Engineer
062-060586
Illinois
Ramboll Americas Engineering Solutions, Inc.
Date: October 11, 2021

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CONTENTS

FIGURES (IN TEXT)

FIGURES (ATTACHED)

ACRONYMS AND ABBREVIATIONS

40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternate Source Demonstration
CCR	Coal Combustion Residuals
CCR Rule	40 C.F.R. § 257 Subpart D
cm/s	centimeters per second
CPP	Coffeen Power Plant
D8	Detection Monitoring Round 8
GMF	Gypsum Management Facility
HDPE	high-density polyethylene
IEPA	Illinois Environmental Protection Agency
LOE	Line of Evidence
mg/L	milligrams per liter
NAVD88	North American Vertical Datum of 1988
NRT/OBG	Natural Resource Technology, an OBG Company
SSI	Statistically Significant Increase
UPL	Upper Prediction Limit

1. INTRODUCTION

Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.94(e)(2) allows the owner or operator of a Coal Combustion Residuals (CCR) unit 90 days from the date of determination of a Statistically Significant Increase (SSI) over background for groundwater constituents listed in Appendix III of 40 C.F.R. § 257 to complete a written demonstration that a source other than the CCR unit being monitored caused the SSI(s), or that the SSI(s) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality (Alternate Source Demonstration [ASD]).

This ASD has been prepared on behalf of Illinois Power Generating Company, by Ramboll Americas Engineering Solutions, Inc., to provide pertinent information pursuant to 40 C.F.R. § 257. 94(e)(2) for the Coffeen Power Plant (CPP) Landfill, located near Coffeen, Illinois.

The most recent Detection Monitoring sampling event (D8) was completed on January 29, 2021, and analytical data were received on April 14, 2021. In accordance with 40 C.F.R. § 257.93(h)(2), statistical analysis of the data to identify SSIs of 40 C.F.R. § 257 Subpart D (CCR Rule) Appendix III parameters over background concentrations was completed by July 13, 2021, within 90 days of receipt of the analytical data. The statistical determination identified the following SSIs at compliance monitoring wells:

- Chloride at well G120
- Fluoride at well T127

In accordance with the Statistical Analysis Plan (Natural Resource Technology, an OBG Company [NRT/OBG], 2017a), well T127 was resampled on June 29, 2021 and analyzed for fluoride to confirm the SSI. Following evaluation of analytical data from the resample event, the following SSIs remained:

- Chloride at well G120
- Fluoride at well T127

Pursuant to 40 C.F.R. § 257. 94(e)(2), the following lines of evidence (LOE) demonstrate that sources other than Landfill were the cause of the chloride SSI listed above. This ASD was completed by October 11, 2021, within 90 days of determination of the SSI (July 13, 2021), as required by 40 C.F.R. § 257.94(e)(2).

2. BACKGROUND

2.1 Site Location and Description

The CPP is located in Montgomery County, in central Illinois, approximately 2 miles south of the city of Coffeen. The area is bordered by Coffeen Lake to the west, east, and south, and by agricultural land to the north. Several underground coal mines were historically operated both beneath and near the CPP. Fly ash is managed in an approximately 15-acre composite lined landfill constructed in 2010.

2.2 Geology and Hydrogeology

The CPP geologic and hydrogeologic setting summarized below is from the Coffeen Hydrogeologic Monitoring Plan (NRT/OBG, 2017b).

Pleistocene deposits of unlithified glacial diamictons, lacustrine/alluvial deposits, and windblown loess overlie Pennsylvanian-age bedrock throughout central Illinois. The most extensive glacial deposits are those from the Illinoian Stage which cover much of the state and are present at the CPP. Windblown (aeolian) deposits, the Peoria and Roxana Silts, cover the glacial deposits over a majority of the state. These units are fine-grained deposits blown from river valleys by prevailing winds.

Till members of the Glasford Formation include (oldest to youngest): the Smithboro Member, the Mulberry Grove Member, the Vandalia Member, and the Hagarstown Member. The Smithboro Member is described as a gray, compact, silty till. The Smithboro is bounded below by the Yarmouth Soil. The Mulberry Grove Member is intermittent at the CPP, and is described as a calcareous gray silt and fine sand containing some fossil mollusks. The Vandalia Member is a sandy till with thin lenticular bodies of silt, sand, and gravel. It is calcareous, except where weathered, generally gray, and moderately compact. The Hagarstown Member is bounded at the top by the Sangamon Soil. The member consists of gravelly till, poorly sorted gravel, well sorted gravel, and sand.

The Quaternary deposits in the Coffeen area consist mainly of diamictons and intercalated outwash deposits that were deposited during Illinoian and Pre-Illinoian glaciations. The unconsolidated deposits and bedrock which occur at the CPP include the following units (beginning at the ground surface):

- Upper Confining Unit – Low permeability clays and silts, including the Roxana Silt and Peoria Silt (Loess Unit) and the upper clayey till portion of the Hagarstown Member.
- Uppermost Aquifer – Thin (generally less than 3 feet), moderate to high permeability sand, silty sand, and sandy silt/clay units which include the Hagarstown Member (also referred to as the Hagarstown Beds) and the upper Vandalia Till Member (where weathered). The Uppermost Aquifer thins to less than 1.0 foot surrounding the Landfill.
- Lower Confining Unit – Thick (generally greater than 15 feet), very low permeability sandy, silt till, or clay till that includes the unweathered Vandalia Member, Mulberry Grove Member (discontinuous), and Smithboro Member.
- Bedrock – Pennsylvanian-age Bond Formation characterized by limestone and calcareous clays and shales.

Coffeen Lake was built by damming the McDavid Branch of the East Fork of Shoal Creek in 1963 for use as an artificial cooling lake for the power plant. The Site is located between the two lobes of the lake (identified as "Coffeen Lake" and "Unnamed Tributary" on Figure 1), which results in a north/south trending groundwater divide observed beneath the CCR units. Groundwater flow is to the southeast or southwest, downgradient of the divide, converging on the tributary valleys leading to Coffeen Lake on the east and west sides of the property.

Groundwater elevations (referenced to North American Vertical Datum of 1988 [NAVD88]) were obtained from measurements in monitoring wells on January 20, 2021 prior to a sampling event for the five CCR units at the CPP. As noted above, groundwater sampling for D8 was completed on January 29, 2021. Water levels in the Landfill area ranged from approximately 616 to 622 feet (Figure 1). The groundwater elevations and flow direction for the CPP during the D8 sampling event are shown in Figure 1, and generally follow the flow patterns established by the groundwater divide beneath the CCR units with groundwater flowing from east to west beneath the Landfill.

2.3 Groundwater Monitoring

Figure 1 shows all monitoring wells present at the site, including those in the groundwater monitoring systems established in accordance with 40 C.F.R. § 257.91 at Ash Pond No. 1, Ash Pond No. 2, the Gypsum Management Facility (GMF) Recycle Pond, the Landfill, and the GMF Gypsum Stack Pond, and wells not used for federal CCR monitoring. Figure 2 shows the monitoring system for the Landfill including background wells G102, R201 and G200, located north of the Landfill, and downgradient monitoring wells G106, G110, G120, G125, and T127. Leachate was sampled at one location (L203), at the northeast corner of the Landfill, during the D8 sampling event.

3. ALTERNATE SOURCE DEMONSTRATION: LINES OF EVIDENCE

As allowed by 40 C.F.R. § 257.94(e)(2), this ASD demonstrates that sources other than Landfill (the CCR unit) caused the SSIs. LOEs supporting this ASD include the following:

1. Landfill liner design.
2. The ionic composition of Landfill leachate is different from the ionic composition of groundwater.
3. Downgradient concentrations of boron and sulfate do not exceed background limits.

These LOEs are described and supported in greater detail below. Monitoring wells and leachate sample locations are shown in Figure 2.

3.1 LOE #1: Landfill Liner Design

The Landfill was constructed in 2010. The Landfill liner system includes the following components:

- A 60-millimeter high-density polyethylene (HDPE) geomembrane.
- A three-foot-thick layer of recompacted, low-permeability soil having a maximum hydraulic conductivity of 1×10^{-7} centimeters per second (cm/s).

The Illinois Environmental Protection Agency (IEPA)-approved Landfill liner system exceeds the design criteria for a composite liner for new CCR landfills established by 40 C.F.R. § 257.70. The composite liner design criteria were established to help prevent contaminants in CCR from leaking from the CCR unit and impacting groundwater. Therefore, the presence of the composite liner system suggests that the Landfill is not the source of the observed SSIs.

3.2 LOE #2: The Ionic Composition of Landfill Leachate is Different from the Ionic Composition of Groundwater

Piper diagrams graphically represent ionic composition of aqueous solutions. A Piper diagram displays the position of water samples relative to their major cation and anion content on the two lower triangular portions of the diagram, providing the information which, when combined on the central diamond-shaped portion of the diagram, identifies the compositional categories or groupings (hydrochemical facies).

Groundwater samples collected from Landfill monitoring wells on January 29, 2021 and Landfill leachate samples collected from leachate well L203 on February 1, 2021 were analyzed for ionic composition (major ions). Figure A, below, is a Piper diagram that displays the ionic composition of groundwater and Landfill leachate.

It is evident from the Piper diagram that the background and downgradient groundwater are in the calcium-bicarbonate facies and that the Landfill leachate is in the sodium-chloride facies. The differences in ionic composition between the groundwater and Landfill leachate indicate that the Landfill is not the source of SSI identified in groundwater.

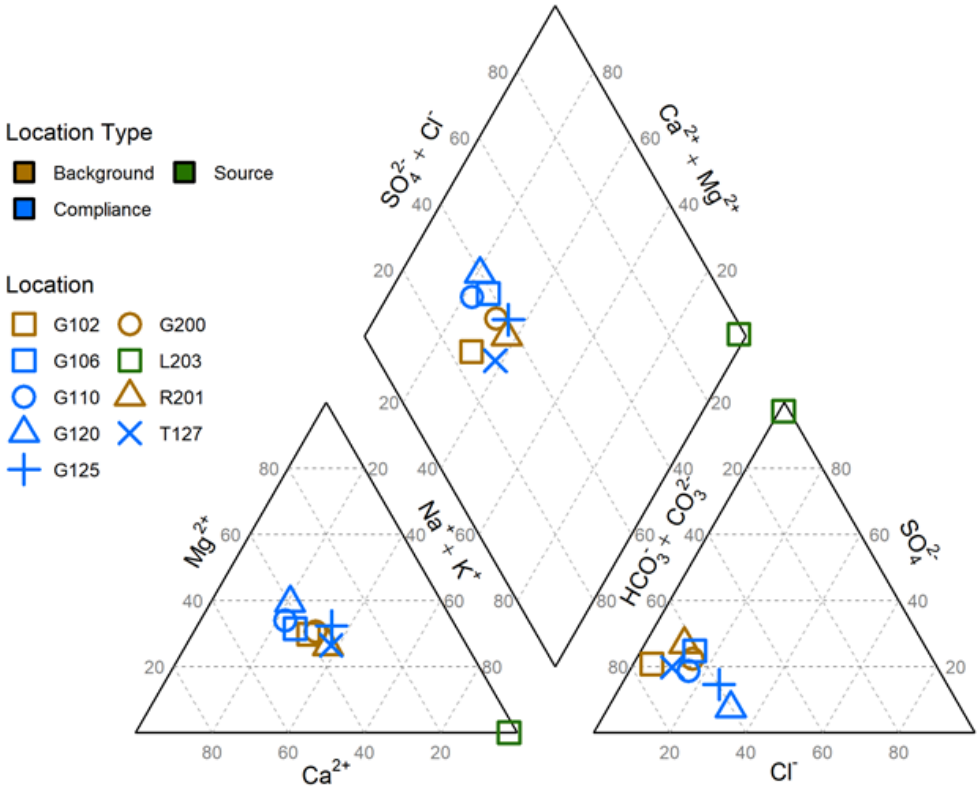


Figure A. Piper Diagram. The piper diagram above shows the ionic composition of samples of background and downgradient groundwater and Landfill leachate.

3.3 LOE #3: Downgradient Concentrations of Boron and Sulfate Do Not Exceed Background Limits

Boron and sulfate are indicators of CCR impacts to groundwater due to their leachability from CCR and mobility in groundwater. If the groundwater downgradient of the Landfill had been impacted by CCR from the unit, boron and sulfate concentrations would be expected to be elevated above background Upper Prediction Limits (UPLs). The UPL is an upper bound on background concentrations calculated for comparing downgradient measurements to background. The downgradient monitoring wells with SSIs had concentrations of boron and sulfate below their respective UPLs (0.39 milligrams per liter [mg/L] for boron and 351 mg/L for sulfate).

In downgradient monitoring wells with SSIs (G120 and T127), concentrations of boron and sulfate below the UPLs indicates that this downgradient well has not been affected by CCR. Therefore, the Landfill is not the source of the SSIs.

4. CONCLUSIONS

Based on the three LOEs below, it has been demonstrated that the Landfill is not the source of the SSI of chloride in G120.

1. Landfill liner design.
2. The ionic composition of Landfill leachate is different from the ionic composition of groundwater.
3. Downgradient concentrations of boron and sulfate do not exceed background limits.

This information serves as the written ASD prepared in accordance with 40 C.F.R. § 257.94(e)(2) that the SSI observed during the detection monitoring program D8 sampling event was not due to the CCR unit. Therefore, an assessment monitoring program is not required, and the Landfill will remain in detection monitoring.

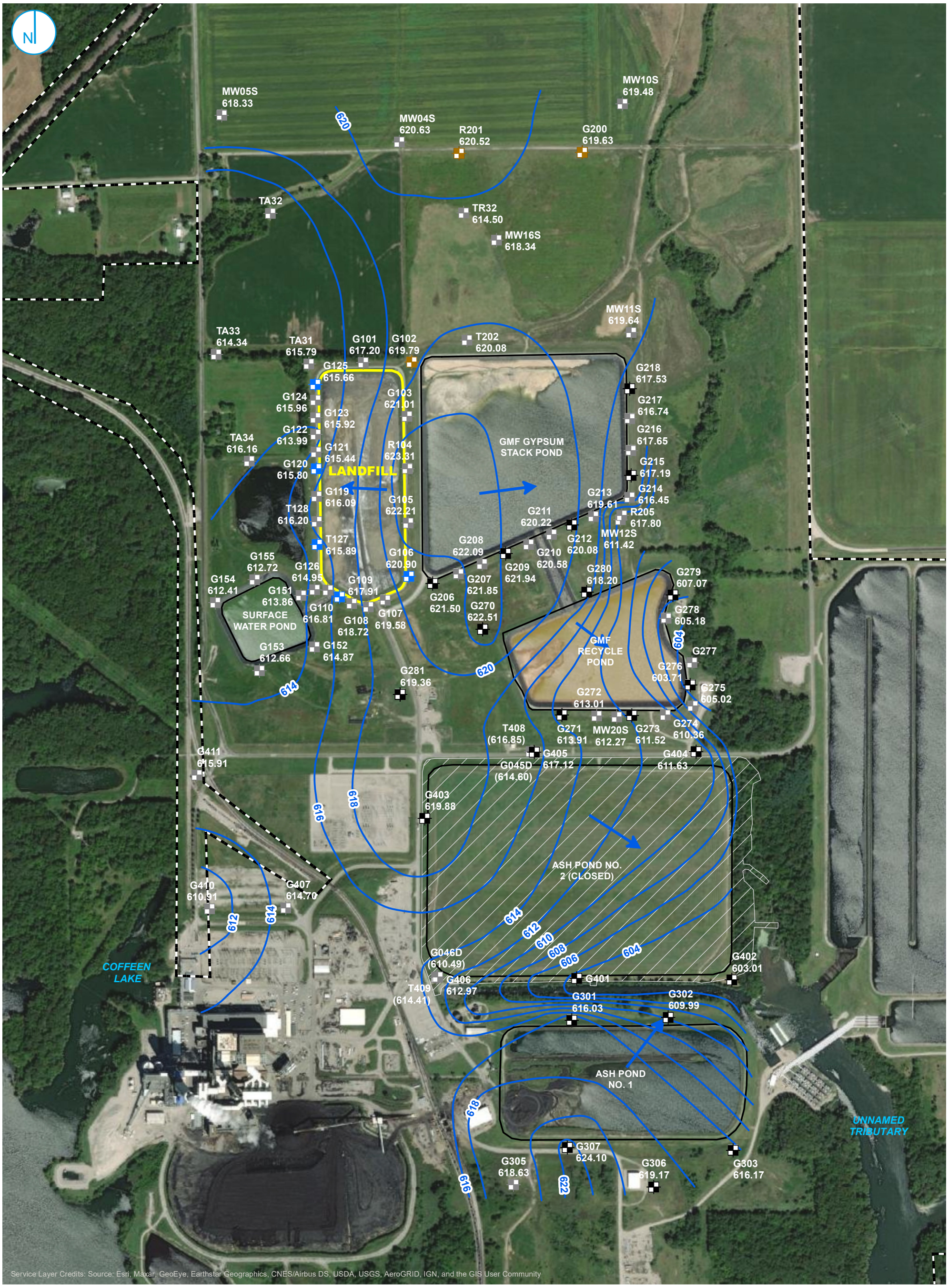
5. REFERENCES

Natural Resource Technology, an OBG Company (NRT/OBG), October 17, 2017a. Statistical Analysis Plan. Coffeen Power Station, Newton Power Station. Illinois Power Generating Company.

Natural Resource Technology, an OBG Company (NRT/OBG), October 17, 2017b. Hydrogeologic Monitoring Plan. Coffeen Ash Pond No. 1 – CCR Unit ID 101, Coffeen Ash Pond No. 2 – CCR Unit ID 102, Coffeen GMF Gypsum Stack Pond – CCR Unit ID 103, Coffeen GMF Recycle Pond – CCR Unit ID 104, Coffeen Landfill – CCR Unit ID 105. Coffeen Power Station, Coffeen, Illinois. Illinois Power Generating Company.

United States Environmental Protection Agency, 2020. Disposal of Coal Combustion Residuals from Electric Utilities, 40 C.F.R. § 257 Subpart D, published April 17, 2015, updated 2020. Accessed from URL https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-257/subpart-D#page-top

FIGURES



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

- BACKGROUND WELL
- COMPLIANCE WELL
- CCR RULE MONITORING WELL
- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
- GROUNDWATER FLOW DIRECTION
- PART 845 REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- PROPERTY BOUNDARY

0 300 600 Feet

NOTE:
ELEVATIONS IN PARENTHESIS WERE NOT USED FOR CONTOURING.

GROUNDWATER ELEVATION CONTOUR MAP JANUARY 20, 2021

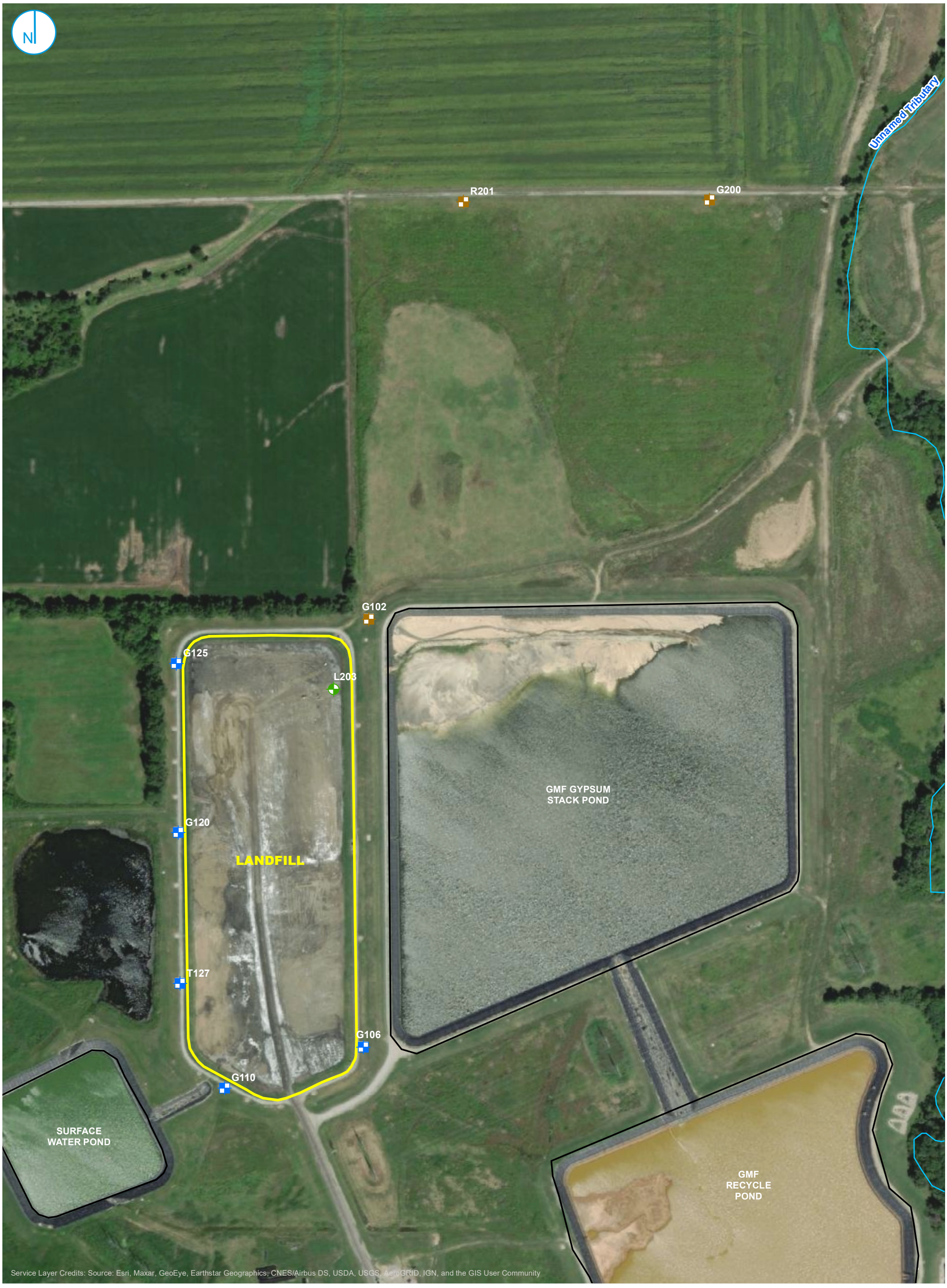
ALTERNATE SOURCE DEMONSTRATION LANDFILL (UNIT ID:105)

COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL



COMPLIANCE WELL
BACKGROUND WELL
LEACHATE WELL LOCATION
PART 257 REGULATED UNIT (SUBJECT UNIT)
SITE FEATURE
SURFACE WATER FEATURE

0 150 300
Feet

SAMPLE LOCATION MAP

ALTERNATE SOURCE DEMONSTRATION
LANDFILL (UNIT ID:105)
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL