Illinois Power Resources Generating, LLC
1500 Eastport Plaza Dr.
Collinsville, IL 62234

January 30, 2024

Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Duck Creek Bottom Ash Basin (IEPA ID: W0578010001-03) 2023 Annual Consolidated Report

Dear Mr. LeCrone:

In accordance with 35 IAC § 845.550, Illinois Power Resources Generating, LLC (IPRG) is submitting the annual consolidated report for the Duck Creek Bottom Ash Basin (IEPA ID: W0578010001-03), as enclosed.

Sincerely,

Dianna Tickner
Sr. Director Decommissioning & Demolition

Enclosures

Annual Consolidated Report
Illinois Power Resources Generating, LLC
Duck Creek Power Plant
Bottom Ash Basin; IEPA **ID: W0578010001-03**

In accordance with 35 IAC § 845.550, Illinois Power Resources Generating, LLC (IPRG) has prepared the annual consolidated report. The report is provided in three sections as follows:

Section 1
1) Annual CCR fugitive dust control report (Section 845.500(c))

Section 2
2) Annual inspection report (Section 845.540(b)), including:

A) Annual hazard potential classification certification

B) Annual structural stability assessment certification

C) Annual safety factor assessment certification

D) Inflow design flood control system plan certification

Section 3
3) Annual Groundwater Monitoring and Corrective Action Report (Section 845.610(e))

Section 1
Annual CCR Fugitive Dust Control Report

Annual CCR Fugitive Dust Control Report

for

Duck Creek Power Plant

Prepared for:

Illinois Power Resources Generating, LLC

Duck Creek Power Plant
17751 North Cilco Road
Canton, IL 61520

December 2023

Reporting Year: 4th Quarter 2022 through 3rd Quarter 2023

Approved by: _____ Sr. Director, Decommissioning & Demolition

Name Title

This Annual CCR Fugitive Dust Control Report has been prepared for the Duck Creek Power Plant in accordance with 40 CFR 257.80(c) and 35 I.A.C. 845.500. Section 1 provides a description of the actions taken to control CCR fugitive dust at the facility during the reporting year, including a summary of any corrective measures taken. Section 2 provides a record of citizen complaints received concerning CCR fugitive dust at the facility during the reporting year, including a summary of any corrective measures taken.

Section 1 Actions Taken to Control CCR Fugitive Dust

In accordance with the Duck Creek Power Plant CCR Fugitive Dust Control Plan (Plan), the following measures were used to control CCR fugitive dust from becoming airborne at the facility during the reporting year:

CCR Activity	Actions Taken to Control CCR Fugitive Dust
Management of CCR in the facility's CCR units	CCR to be emplaced in the landfill is conditioned before emplacement.
	Cover exposed dry CCR in the landfill.
	Wet management of CCR bottom ash and flue gas desulfurization materials in CCR surface impoundments.
	Water areas of exposed CCR in CCR units, as necessary.
	Naturally occurring grass vegetation in areas of exposed CCR in CCR surface impoundments.
	Apply chemical dust suppressant on areas of exposed CCR in CCR units, as necessary.
Handling of CCR at the facility	Wet sluice CCR bottom ash and flue gas desulfurization materials to CCR surface impoundments.
	CCR bottom ash removed from CCR surface impoundments and loaded into trucks for transport remains conditioned during handling.
	Pneumatically convey dry CCR fly ash to storage silos in an enclosed system.

CCR Activity	Actions Taken to Control CCR Fugitive Dust
Handling of CCR at the facility	CCR to be emplaced in the landfill is conditioned before emplacement.
	Load CCR transport trucks from the CCR fly ash silos in a partially enclosed area.
	Load CCR transport trucks from the CCR fly ash silos using a telescoping chute.
	Maintain and operate the bin vent filters on each CCR fly ash silo as needed during fly ash loadout.
	Perform housekeeping, as necessary, in the fly ash loading area.
	Operate fly ash handling system in accordance with good operating practices.
	Maintain and repair as necessary dust controls on the fly ash handling system.
Transportation of CCR at the facility	CCR from the CCR fly ash silos to be emplaced in the landfill is conditioned before emplacement.
	Cover or enclose trucks used to transport CCR fly ash.
	Limit the speed of vehicles to no more than 15 mph on facility roads.
	Cover or enclose trucks used to transport CCR other than fly ash, as necessary.
	Sweep or rinse off the outside of the trucks transporting CCR, as necessary.
	Remove CCR, as necessary, deposited on facility road surfaces during transport.

Based on a review of the Plan and inspections associated with CCR fugitive dust control performed in the reporting year, the control measures identified in the Plan as implemented at the facility effectively minimized CCR from becoming airborne at the facility. No revisions or additions to control measures identified in the Plan were needed.

The Illinois Environmental Protection Agency rule 35 IAC 212.314 does not require fugitive dust controls when the wind speed is greater than 25 mph.

No material changes occurred in the reporting year in site conditions potentially resulting in CCR fugitive dust becoming airborne at the facility that warrant an amendment of the Plan.

Duck Creek ceased operation in December of 2019. Not all the CCR activities that are listed in the table occurred after the plant was permanently shut down. For the activities that did occur, the actions taken to control CCR Fugitive Dust that are listed in the table were followed and were adequate to effectively minimize fugitive dust.

Section 2 Record of Citizen Complaints

No citizen complaints were received regarding CCR fugitive dust at Duck Creek Power Plant in the reporting year.

Section 2

Annual inspection report (Section 845.540(b)), including:

A) Annual hazard potential classification certification, if applicable (Section 845.440)

B) Annual structural stability assessment certification, if applicable (Section 845.450)

C) Annual safety factor assessment certification, if applicable (Section 845.460)

D) Inflow design flood control system plan certification (Section 845.510(c))

ANNUAL INSPECTION BY A QUALIFIED PROFESSIONAL ENGINEER 35 IAC § 845.540
(b)(1) The CCR surface impoundment must be inspected on an annual basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted engineering standards. The inspection must, at a minimum, include: A) A review of available information regarding the status and condition of the CCR surface impoundment, including files available in the operating record (e.g., CCR surface impoundment design and construction information required by Sections 845.220(a)(1) and 845.230(d)(2)(A), previous structural stability assessments required under Section 845.450, the results of inspections by a qualified person, and results of previous annual inspections); B) A visual inspection of the CCR surface impoundment to identify signs of distress or malfunction of the CCR surface impoundment and appurtenant structures; C) A visual inspection of any hydraulic structures underlying the base of the CCR surface impoundment or passing through the dike of the CCR surface impoundment for structural integrity and continued safe and reliable operation; D) The annual hazard potential classification certification, if applicable (see Section 845.440); E) The annual structural stability assessment certification, if applicable (see Section 845.450); F) The annual safety factor assessment certification, if applicable (see Section 845.460); and G) The inflow design flood control system plan certification (see Section 845.510(c)).

SITE INFORMATION	
Site Name / Address / Date of Inspection	Duck Creek Power Station Fulton County, Illinois 61520 10/4/2023
Operator Name / Address	Luminant Generation Company LLC 6555 Sierra Drive, Irving, TX 75039
CCR unit	Bottom Ash Basin

INSPECTION REPORT 35 IAC § 845.540	
(b)(1)(D) The annual hazard potential classification certification, if applicable (see Section 845.440).	Based on a review of the CCR unit's annual hazard potential classification, the unit is classified as a Class II CCR surface impoundment.
(b)(2)(A) Any changes in geometry of the structure since the previous annual inspection.	Based on a review of the CCR unit's records and visual observation during the on-site inspection, no changes in geometry of the structure have taken place since the previous annual inspection.
(b)(2)(B) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection	None
b)(2)(C) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;	See the attached.
b)(2)(D) The storage capacity of the impounding structure at the time of the inspection	Approximately 18 acre-feet
(b)(2)(E) The approximate volume of the impounded water and CCR contained in the unit at the time of the inspection.	Zero
(b)(2)(F) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit	Based on a review of the CCR unit's records and visual observation during the on-site inspection, there was no appearance of an actual or potential structural weakness of the CCR unit, nor an existing condition that is disrupting or would disrupt the operation and safety of the unit.

INSPECTION REPORT 35 IAC § 845.540	
(b)(2)(G) Any other changes that may have affected the stability or operation of the impounding structure since the previous annual inspection.	Based on a review of the CCR unit's records and visual observation during the on-site inspection, no other changes which may have affected the stability or operation of the CCR unit have taken place since the previous annual inspection.
(b)(1)(G) The inflow design flood control system plan certification (see Section 845.510(c))	Based on a review of the CCR unit's records, the CCR unit is designed, operated, and maintained to adequately manage the flow from the CCR impoundment and control the peak discharge from the inflow design flood.

35 IAC § 845.540 - Annual inspection by a qualified professional engineer.

I, James Knutelski, P.E., certify under penalty of law that the information submitted in this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Illinois. The information submitted, is to the best of my knowledge and belief, true, accurate and complete. Based on the annual inspection, the design, construction, operation, and maintenance of the CCR Unit is consistent with recognized and generally accepted good engineering standards. Based on a review of the records for the CCR unit and a visual inspection of the unit to document no material changes to the unit, the hazard potential classification was conducted in accordance with the requirements of Section 845.440, the structural stability assessment was conducted in accordance with the requirements of Section 845.450, the safety factor assessment was conducted in accordance with the requirements of Section 845.460, and the inflow design flood control system plan assessment was conducted in accordance with the requirements of Section 845.510.

James Knutelski, PE
Illinois PE No. 062-054206, Expires: 11/30/2025
Date: 01/07/2024

Site Name: Duck Creek Power Station

CCR Unit: Bottom Ash Basin

35 IAC § 845.540 (b)(2)(B)		
Instrument ID #	Type	Maximum recorded reading since previous annual inspection (ft)
None		

35 IAC § 845.540 (b)(2)(C)						
	Approximate Depth / Elevation					
Since previous inspection:	Elevation (ft)			Depth (ft)		
	Minimum	Present	Maximum	Minimum	Present	Maximum
Impounded Water					0	
CCR				0		0

Section 3

Annual Groundwater Monitoring and Corrective Action Report (Section 845.610(e))

Prepared for
Illinois Power Resources Generating, LLC

Date
January 31, 2024

Project No.
1940103649-005

2023 35 I.A.C. § 845 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

BOTTOM ASH BASIN

DUCK CREEK POWER PLANT

CANTON, ILLINOIS

IEPA ID NO. W0578010001-03

RAMBOLL Bright ideas. Sustainable change.

2023 35 I.A.C. § 845 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT DUCK CREEK POWER PLANT BOTTOM ASH BASIN

Project name	**Duck Creek Power Plant Bottom Ash Basin**
Project no.	**1940103649-005**
Recipient	**Illinois Power Resources Generating, LLC**
Document type	**Annual Groundwater Monitoring and Corrective Action Report**
Version	**FINAL**
Date	**January 31, 2024**
Prepared by	**Scott S. Woods**
Checked by	**Lauren D. Cook**
Approved by	**Brian G. Hennings, PG**
Description	**Annual Report in Support of 35 I.A.C. § 845**

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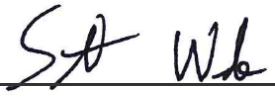

Scott S. Woods
Hydrogeologist

Brian G. Hennings, PG
Project Officer, Hydrogeology

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FIGURES (ATTACHED)

ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

35 I.A.C.	Title 35 of the Illinois Administrative Code
BAB	Bottom Ash Basin
CCA	compliance commitment agreement
CCR	coal combustion residuals
DCPP	Duck Creek Power Plant
E001	Quarter 2, 2023 sampling event
E002	Quarter 3, 2023 sampling event
E003	Quarter 4, 2023 sampling event
GWPS	groundwater protection standard
ID	identification
IEPA	Illinois Environmental Protection Agency
IPRG	Illinois Power Resources Generating, LLC
NID	National Inventory of Dams
No.	number
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SI	surface impoundment
SSI	statistically significant increase

EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845.610(e) (*Annual Groundwater Monitoring and Corrective Action Report*) for the Bottom Ash Basin (BAB) located at Duck Creek Power Plant (DCPP) near Canton, Illinois. The BAB is recognized by coal combustion residuals (CCR) unit identification (ID) number (No.) 205, Illinois Environmental Protection Agency (IEPA) ID No. W0578010001-03, and National Inventory of Dams (NID) No. IL50716.

As required by 35 I.A.C. § 845, an operating permit application for the BAB was submitted by Kincaid Generation, LLC to IEPA by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d) and is pending approval. IPRG entered into a compliance commitment agreement (CCA) with IEPA on December 28, 2022. As specified in the CCA, groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the BAB commenced in the second quarter of 2023. All available groundwater monitoring data collected in 2023 is summarized in **Table 1** (field parameters and analytical results) and **Attachment A** (groundwater elevation data)[1]. After the BAB has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit.

In accordance with 35 I.A.C. § 845.610(b)(3)(C) and the statistical analysis plan submitted with the operating permit application (Appendix A of the Groundwater Monitoring Plan [Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021]), statistically derived values for constituent concentrations observed at compliance monitoring wells were compared with the groundwater protection standards (GWPSs) described in 35 I.A.C. § 845.600 to determine exceedances of the GWPS (**Table 2**). No GWPS exceedances were determined in 2023[2]. Therefore, an assessment of corrective measures (CMA) has not been initiated for the BAB.

In accordance with 35 I.A.C. § 845.610(b)(3)(B), statistically derived values for constituent concentrations observed at compliance monitoring wells were also evaluated quarterly for statistical exceedances over background levels as discussed in **Section 3** and summarized in **Attachment B**.

[1] Analytical data received after December 31, 2023 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

[2] GWPS exceedances determined after January 31, 2024 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of IPRG, to provide the information required by 35 I.A.C. § 845.610(e) for the BAB located at DCPP near Canton, Illinois. The owner or operator of a CCR Surface Impoundment (SI) must prepare and submit to IEPA by January 31st of each year an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year as part of the Annual Consolidated Report required by 35 I.A.C. § 845.550. The Annual Groundwater Monitoring and Corrective Action Report shall document the status of the groundwater monitoring and corrective action plan for the CCR SI (**Section 2**), summarize key actions completed, including the status of permit applications and Agency approvals (**Section 3**), describe any problems encountered and actions to resolve the problems (**Section 4**), and project key activities for the upcoming year (**Section 5**).

At a minimum, the annual report must contain the following information, to the extent available:

A. A map, aerial image, or diagram showing the CCR SI and all background (or upgradient) and [downgradient] compliance monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the CCR SI (**Figure 1**), and a visual delineation of any exceedances of the [groundwater protection standard] GWPS (**Figures 2 and 3**).

B. 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 (**Section 3**, paragraph 1).

C. A potentiometric surface map for each groundwater elevation sampling event required by 35 I.A.C. § 845.650(b)(2) (**Figures 4 through 12**).

D. In addition to all the monitoring data obtained under 35 I.A.C. §§ 845.600-680, a summary including the number of groundwater samples that were collected for analysis for each background and [downgradient] compliance well, and the dates the samples were collected (**Section 3.1** and **Table A**).

E. A narrative discussion of any statistically significant increases (SSIs) over background levels for the constituents listed in 35 I.A.C. § 845.600 (**Section 3.3** and **Attachment B**).

F. Other information required to be included in the annual report as specified in 35 I.A.C. §§ 845.600-680.

A section at the beginning of the annual report that provides an overview of the current status of the groundwater monitoring program and corrective action plan for the CCR SI (see **Executive Summary**). At a minimum, the summary must:

A. Specify whether groundwater monitoring data shows an SSI over background concentrations for one or more constituents listed in 35 I.A.C. § 845.600.

B. Identify those constituents having an SSI over background concentrations and the names of the monitoring wells associated with the SSI(s).

C. Specify whether there have been any exceedances of the GWPS for one or more constituents listed in 35 I.A.C. § 845.600.

D. Identify those constituents with exceedances of the GWPS in 35 I.A.C. § 845.600 and the names of the monitoring wells associated with the exceedance.

E. Provide the date when the assessment of corrective measures was initiated for the CCR SI.

F. Provide the date when the assessment of corrective measures was completed for the CCR SI.

G. Specify whether a remedy was selected under 35 I.A.C. § 845.670 during the current annual reporting period, and if so, the date of remedy selection.

H. Specify whether remedial activities were initiated or are ongoing under 35 I.A.C. § 845.780 during the current annual reporting period.

This report provides the required information for the BAB for calendar year 2023.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

An operating permit application for the BAB was submitted by IPRG to IEPA by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d) and is pending approval. IPRG entered into a CCA with IEPA on December 28, 2022. The CCA required that groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the BAB commenced in the second quarter of 2023. After the BAB has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit. As specified in the CCA, groundwater sampling requirements that apply to the CCR SI under other existing permit programs will become void upon issuance of an approved operating permit pursuant to 35 I.A.C § 845.

A construction permit application for the BAB was also submitted by IPRG to IEPA on January 28, 2022 in accordance with the requirements specified in 35 I.A.C. § 845.220(a) and (d) and is pending approval.

As noted in the **Executive Summary** and **Section 3.2**, No GWPS exceedances were determined in 2023. Therefore, a CMA has not been initiated for the BAB.

3. KEY ACTIONS COMPLETED IN 2022

The proposed 35 I.A.C. § 845 monitoring system is presented in **Figure 1**. No wells were installed or decommissioned in 2023.

Monitoring well inspections and redevelopment of the monitoring wells that were not sampled in 2022 were also completed prior to initiating groundwater monitoring in the second quarter of 2023.

Pressure transducers equipped with data loggers were deployed in monitoring system monitoring wells for measurement of monthly water level elevations as required by 35 I.A.C. § 845.650(b)(2). **Attachment A** summarizes the groundwater elevation data collected in 2023. Potentiometric surfaces for April through December 2023 are included in **Figures 3 through 12**.

A summary of the samples collected in 2023 is included in **Section 3.1**. Narrative discussions of exceedances of GWPSs and background are included in **Section 3.2** and **Section 3.3**, respectively. Statistical procedures used to evaluate groundwater results are provided in Appendix A of the Groundwater Monitoring Plan provided in the operating permit application (Ramboll, 2021).

3.1 Sample and Analysis Summary

One groundwater sample was collected from each background and compliance well during each quarterly monitoring event beginning in the second quarter of 2023[3]. All samples were collected and analyzed in accordance with the Groundwater Monitoring Plan provided in the operating permit application (Ramboll, 2021). A summary of the samples collected from background and compliance monitoring wells in 2023 is included in **Table A** on the following page. **Table 1** is a summary of the field parameters and analytical results from the 2023 sampling events. Laboratory analytical reports and field data sheets were provided in the quarterly Groundwater Monitoring Data and Detected Exceedances Reports for Quarter 2 and Quarter 3 (Ramboll, 2023a; Ramboll, 2023b); therefore, these reports are not attached to this annual report to avoid reproduction of lengthy data transmittals that have been previously provided in hardcopy. Analytical data received after December 31, 2023 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

[3] BA02L was dry during the E002 sampling event, so no groundwater sample was collected.

Table A. 35 I.A.C. § 845 Monitoring Program Summary for 2023

Event ID	Sampling Dates [1, 2, 3]	Analytical Data Receipt Date [4]	Exceedance Determination Date	ASD Completion Date	CMA Initiation Date
E001	May 10 - 15, 2023	July 14, 2023	September 12, 2023	NA	NA
E002 [5]	July 24 - September 6, 2023	October 21, 2023	December 20, 2023	NA	NA
E003	October 17 - 19, 2023	January 4, 2024	TBD	TBD	NA

Notes:

ASD: Alternative Source Demonstration

CMA: Corrective Measures Assessment

NA: not applicable

TBD: to be determined in 2024

[1] All samples were analyzed for the parameters listed in 35 I.A.C. § 845.600, calcium, and turbidity.

[2] The following background wells were sampled for each event: BA05 and BA06

[3] The following compliance wells were sampled for each event: BA01, BA02, BA02L, BA03, BA03L, and BA04

[4] Analytical data received after December 31, 2023 and GWPS exceedances determined after January 31, 2024 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

[5] BA02L was dry during the E002 sampling event, so no groundwater sample was collected.

3.2 Exceedances of GWPS

In accordance with 35 I.A.C. § 845.610(b)(3)(C), the statistically derived values identified as Statistical Results in **Table 2** were compared with the GWPSs described in 35 I.A.C. § 845.600 to determine exceedances of the GWPS. No statistical exceedances of the GWPSs were determined as shown on **Figures 2 and 3**[4].

3.3 Exceedances of Background

In accordance with 35 I.A.C. § 845.610(b)(3)(B), groundwater monitoring data were evaluated quarterly for statistical exceedances over background levels for the constituents listed in 35 I.A.C. § 845.600. **Attachment B** shows the statistically derived values compared to background levels.

[4] GWPS exceedances determined after January 31, 2024 will be reported in the Quarter 4, 2023 Groundwater Monitoring Data and Detected Exceedances Report.

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

Groundwater monitoring commenced in the second quarter of 2023. Groundwater samples were collected and analyzed in accordance with the Groundwater Monitoring Plan provided in the operating permit application (Ramboll, 2021) and all data were accepted. After the BAB has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit.

Due to malfunctioning pressure transducers, data gaps exist in monthly water level elevations prior to the fourth quarter. Monthly depth to water measurements were collected manually in the fourth quarter. Pressure transducers were refurbished and were redeployed in December 2023.

5. KEY ACTIVITIES PLANNED FOR 2024

The following key activities are planned for 2024:

- Continuation of groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the BAB. After the BAB has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit. Groundwater monitoring will include:
  - Monthly groundwater elevations
  - Quarterly groundwater sampling
- Complete evaluation of analytical data from the compliance wells to determine whether exceedances above GWPSs have occurred.
- If a GWPS exceedance is identified, potential alternative sources (*i.e.,* a source other than the CCR unit caused the GWPS exceedance or that the exceedance resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternative source is identified to be the cause of the GWPS exceedance, a written demonstration will be completed within 60 days of determination and included in the 2024 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternative source(s) is not identified to be the cause of the GWPS exceedance, the applicable requirements of 35 I.A.C. § 845.660 (*i.e.,* assessment of corrective measures) will be met.

6. REFERENCES

Illinois Administrative Code, Title 35, Subtitle G, Chapter I, Subchapter J, Part 845: Standards for The Disposal of Coal Combustion Residuals In Surface Impoundments, effective April 21, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. *Groundwater Monitoring Plan.* Duck Creek Power Plant, Bottom Ash Basin, Canton, Illinois. Illinois Power Resources Generating, LLC. October 25, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2023a. 35 I.A.C. § 845.610(B)(3)(D) Groundwater Monitoring Data and Detected Exceedances, 2023 Quarter 2, Bottom Ash Basin, Duck Creek Power Plant, Canton, Illinois. September 12, 2023.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2023b. 35 I.A.C. § 845.610(B)(3)(D) Groundwater Monitoring Data and Detected Exceedances, 2023 Quarter 3, Bottom Ash Basin, Duck Creek Power Plant, Canton, Illinois. December 20, 2023.

TABLES

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA05	Background	E001	05/12/2023	Antimony, total	0.00043 U	mg/L
BA05	Background	E001	05/12/2023	Arsenic, total	0.00560	mg/L
BA05	Background	E001	05/12/2023	Barium, total	0.0810	mg/L
BA05	Background	E001	05/12/2023	Beryllium, total	0.00059 U	mg/L
BA05	Background	E001	05/12/2023	Boron, total	0.100 J+	mg/L
BA05	Background	E001	05/12/2023	Cadmium, total	0.00074 U	mg/L
BA05	Background	E001	05/12/2023	Calcium, total	210	mg/L
BA05	Background	E001	05/12/2023	Chloride, total	8.20	mg/L
BA05	Background	E001	05/12/2023	Chromium, total	0.00640	mg/L
BA05	Background	E001	05/12/2023	Cobalt, total	0.00330	mg/L
BA05	Background	E001	05/12/2023	Dissolved Oxygen	3.00	mg/L
BA05	Background	E001	05/12/2023	Fluoride, total	0.228 J	mg/L
BA05	Background	E001	05/12/2023	Lead, total	0.00310	mg/L
BA05	Background	E001	05/12/2023	Lithium, total	0.0083 J	mg/L
BA05	Background	E001	05/12/2023	Mercury, total	0.00014 U	mg/L
BA05	Background	E001	05/12/2023	Molybdenum, total	0.00260	mg/L
BA05	Background	E001	05/12/2023	Oxidation Reduction Potential	1.00	mV
BA05	Background	E001	05/12/2023	pH (field)	7.0	SU
BA05	Background	E001	05/12/2023	Radium 226 + Radium 228, total	2.07 J+	pCi/L
BA05	Background	E001	05/12/2023	Selenium, total	0.00074 U	mg/L
BA05	Background	E001	05/12/2023	Specific Conductance @ 25C (field)	1,560	micromhos/cm
BA05	Background	E001	05/12/2023	Sulfate, total	500	mg/L
BA05	Background	E001	05/12/2023	Temperature	16.3	degrees C
BA05	Background	E001	05/12/2023	Thallium, total	0.00038 U	mg/L
BA05	Background	E001	05/12/2023	Total Dissolved Solids	1,200	mg/L
BA05	Background	E001	05/12/2023	Turbidity, field	768	NTU
BA06	Background	E001	05/12/2023	Antimony, total	0.00043 U	mg/L
BA06	Background	E001	05/12/2023	Arsenic, total	0.00520	mg/L
BA06	Background	E001	05/12/2023	Barium, total	0.110	mg/L
BA06	Background	E001	05/12/2023	Beryllium, total	0.00059 U	mg/L
BA06	Background	E001	05/12/2023	Boron, total	8.70	mg/L
BA06	Background	E001	05/12/2023	Cadmium, total	0.00074 U	mg/L
BA06	Background	E001	05/12/2023	Calcium, total	340	mg/L
BA06	Background	E001	05/12/2023	Chloride, total	510	mg/L
BA06	Background	E001	05/12/2023	Chromium, total	0.0035 J	mg/L
BA06	Background	E001	05/12/2023	Cobalt, total	0.00950	mg/L
BA06	Background	E001	05/12/2023	Dissolved Oxygen	0.820	mg/L
BA06	Background	E001	05/12/2023	Fluoride, total	0.231 J	mg/L
BA06	Background	E001	05/12/2023	Lead, total	0.00036 J	mg/L
BA06	Background	E001	05/12/2023	Lithium, total	0.0052 J	mg/L
BA06	Background	E001	05/12/2023	Mercury, total	0.00014 U	mg/L
BA06	Background	E001	05/12/2023	Molybdenum, total	0.00120	mg/L
BA06	Background	E001	05/12/2023	Oxidation Reduction Potential	-39.0	mV
BA06	Background	E001	05/12/2023	pH (field)	6.4	SU
BA06	Background	E001	05/12/2023	Radium 226 + Radium 228, total	1.11	pCi/L
BA06	Background	E001	05/12/2023	Selenium, total	0.00074 U	mg/L

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2023
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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA06	Background	E001	05/12/2023	Specific Conductance @ 25C (field)	2,930	micromhos/cm
BA06	Background	E001	05/12/2023	Sulfate, total	340	mg/L
BA06	Background	E001	05/12/2023	Temperature	15.7	degrees C
BA06	Background	E001	05/12/2023	Thallium, total	0.00038 U	mg/L
BA06	Background	E001	05/12/2023	Total Dissolved Solids	2,200	mg/L
BA06	Background	E001	05/12/2023	Turbidity, field	55.1	NTU
BA01	Compliance	E001	05/11/2023	Antimony, total	0.00043 U	mg/L
BA01	Compliance	E001	05/11/2023	Arsenic, total	0.00160	mg/L
BA01	Compliance	E001	05/11/2023	Barium, total	0.120	mg/L
BA01	Compliance	E001	05/11/2023	Beryllium, total	0.00059 U	mg/L
BA01	Compliance	E001	05/11/2023	Boron, total	0.0230 J+	mg/L
BA01	Compliance	E001	05/11/2023	Cadmium, total	0.00074 U	mg/L
BA01	Compliance	E001	05/11/2023	Calcium, total	120 J+	mg/L
BA01	Compliance	E001	05/11/2023	Chloride, total	16.0	mg/L
BA01	Compliance	E001	05/11/2023	Chromium, total	0.0028 U	mg/L
BA01	Compliance	E001	05/11/2023	Cobalt, total	0.00079 J	mg/L
BA01	Compliance	E001	05/11/2023	Dissolved Oxygen	1.20	mg/L
BA01	Compliance	E001	05/11/2023	Fluoride, total	0.24 J	mg/L
BA01	Compliance	E001	05/11/2023	Lead, total	0.00022 U	mg/L
BA01	Compliance	E001	05/11/2023	Lithium, total	0.005 U	mg/L
BA01	Compliance	E001	05/11/2023	Mercury, total	0.00014 U	mg/L
BA01	Compliance	E001	05/11/2023	Molybdenum, total	0.00150	mg/L
BA01	Compliance	E001	05/11/2023	Oxidation Reduction Potential	58.0	mV
BA01	Compliance	E001	05/11/2023	pH (field)	6.8	SU
BA01	Compliance	E001	05/11/2023	Radium 226 + Radium 228, total	0.829 J	pCi/L
BA01	Compliance	E001	05/11/2023	Selenium, total	0.00074 U	mg/L
BA01	Compliance	E001	05/11/2023	Specific Conductance @ 25C (field)	796	micromhos/cm
BA01	Compliance	E001	05/11/2023	Sulfate, total	130	mg/L
BA01	Compliance	E001	05/11/2023	Temperature	18.0	degrees C
BA01	Compliance	E001	05/11/2023	Thallium, total	0.00038 U	mg/L
BA01	Compliance	E001	05/11/2023	Total Dissolved Solids	620 J+	mg/L
BA01	Compliance	E001	05/11/2023	Turbidity, field	9.90	NTU
BA02	Compliance	E001	05/15/2023	Antimony, total	0.00043 U	mg/L
BA02	Compliance	E001	05/15/2023	Arsenic, total	0.00160	mg/L
BA02	Compliance	E001	05/15/2023	Barium, total	0.210	mg/L
BA02	Compliance	E001	05/15/2023	Beryllium, total	0.00059 U	mg/L
BA02	Compliance	E001	05/15/2023	Boron, total	0.0680 J+	mg/L
BA02	Compliance	E001	05/15/2023	Cadmium, total	0.00074 U	mg/L
BA02	Compliance	E001	05/15/2023	Calcium, total	96.0 J+	mg/L
BA02	Compliance	E001	05/15/2023	Chloride, total	8.00	mg/L
BA02	Compliance	E001	05/15/2023	Chromium, total	0.0028 U	mg/L
BA02	Compliance	E001	05/15/2023	Cobalt, total	0.00048 U	mg/L
BA02	Compliance	E001	05/15/2023	Dissolved Oxygen	0.900	mg/L
BA02	Compliance	E001	05/15/2023	Fluoride, total	0.185 J	mg/L
BA02	Compliance	E001	05/15/2023	Lead, total	0.00065 J	mg/L
BA02	Compliance	E001	05/15/2023	Lithium, total	0.005 U	mg/L

TABLE 1.
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CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA02	Compliance	E001	05/15/2023	Mercury, total	0.000730	mg/L
BA02	Compliance	E001	05/15/2023	Molybdenum, total	0.00520 J+	mg/L
BA02	Compliance	E001	05/15/2023	Oxidation Reduction Potential	228	mV
BA02	Compliance	E001	05/15/2023	pH (field)	7.3	SU
BA02	Compliance	E001	05/15/2023	Radium 226 + Radium 228, total	0.478 <0	pCi/L
BA02	Compliance	E001	05/15/2023	Selenium, total	0.00074 U	mg/L
BA02	Compliance	E001	05/15/2023	Specific Conductance @ 25C (field)	897	micromhos/cm
BA02	Compliance	E001	05/15/2023	Sulfate, total	12.0	mg/L
BA02	Compliance	E001	05/15/2023	Temperature	14.2	degrees C
BA02	Compliance	E001	05/15/2023	Thallium, total	0.00047 J	mg/L
BA02	Compliance	E001	05/15/2023	Total Dissolved Solids	480 J	mg/L
BA02	Compliance	E001	05/15/2023	Turbidity, field	11.2	NTU
BA02L	Compliance	E001	05/10/2023	Antimony, total	0.00043 U	mg/L
BA02L	Compliance	E001	05/10/2023	Arsenic, total	0.0130	mg/L
BA02L	Compliance	E001	05/10/2023	Barium, total	0.0750	mg/L
BA02L	Compliance	E001	05/10/2023	Beryllium, total	0.001 U	mg/L
BA02L	Compliance	E001	05/10/2023	Boron, total	0.0680 J+	mg/L
BA02L	Compliance	E001	05/10/2023	Cadmium, total	0.00074 U	mg/L
BA02L	Compliance	E001	05/10/2023	Calcium, total	77.0	mg/L
BA02L	Compliance	E001	05/10/2023	Chloride, total	2.60	mg/L
BA02L	Compliance	E001	05/10/2023	Chromium, total	0.0028 U	mg/L
BA02L	Compliance	E001	05/10/2023	Cobalt, total	0.0011 J	mg/L
BA02L	Compliance	E001	05/10/2023	Dissolved Oxygen	0.300	mg/L
BA02L	Compliance	E001	05/10/2023	Fluoride, total	0.403	mg/L
BA02L	Compliance	E001	05/10/2023	Lead, total	0.00032 J	mg/L
BA02L	Compliance	E001	05/10/2023	Lithium, total	0.005 U	mg/L
BA02L	Compliance	E001	05/10/2023	Mercury, total	0.00014 U	mg/L
BA02L	Compliance	E001	05/10/2023	Molybdenum, total	0.00470 J+	mg/L
BA02L	Compliance	E001	05/10/2023	Oxidation Reduction Potential	-122	mV
BA02L	Compliance	E001	05/10/2023	pH (field)	7.1	SU
BA02L	Compliance	E001	05/10/2023	Radium 226 + Radium 228, total	1.57	pCi/L
BA02L	Compliance	E001	05/10/2023	Selenium, total	0.00074 U	mg/L
BA02L	Compliance	E001	05/10/2023	Specific Conductance @ 25C (field)	583	micromhos/cm
BA02L	Compliance	E001	05/10/2023	Sulfate, total	14.0	mg/L
BA02L	Compliance	E001	05/10/2023	Temperature	12.6	degrees C
BA02L	Compliance	E001	05/10/2023	Thallium, total	0.00038 U	mg/L
BA02L	Compliance	E001	05/10/2023	Total Dissolved Solids	370 J	mg/L
BA02L	Compliance	E001	05/10/2023	Turbidity, field	99.1	NTU
BA03	Compliance	E001	05/10/2023	Antimony, total	0.00043 U	mg/L
BA03	Compliance	E001	05/10/2023	Arsenic, total	0.00069 U	mg/L
BA03	Compliance	E001	05/10/2023	Barium, total	0.150	mg/L
BA03	Compliance	E001	05/10/2023	Beryllium, total	0.001 U	mg/L
BA03	Compliance	E001	05/10/2023	Boron, total	0.0240 J+	mg/L
BA03	Compliance	E001	05/10/2023	Cadmium, total	0.00074 U	mg/L
BA03	Compliance	E001	05/10/2023	Calcium, total	100	mg/L
BA03	Compliance	E001	05/10/2023	Chloride, total	6.40	mg/L

TABLE 1.
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Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA03	Compliance	E001	05/10/2023	Chromium, total	0.0028 U	mg/L
BA03	Compliance	E001	05/10/2023	Cobalt, total	0.00048 U	mg/L
BA03	Compliance	E001	05/10/2023	Dissolved Oxygen	5.00	mg/L
BA03	Compliance	E001	05/10/2023	Fluoride, total	0.191 J	mg/L
BA03	Compliance	E001	05/10/2023	Lead, total	0.00022 U	mg/L
BA03	Compliance	E001	05/10/2023	Lithium, total	0.005 U	mg/L
BA03	Compliance	E001	05/10/2023	Mercury, total	0.00014 U	mg/L
BA03	Compliance	E001	05/10/2023	Molybdenum, total	0.001 UJ	mg/L
BA03	Compliance	E001	05/10/2023	Oxidation Reduction Potential	225	mV
BA03	Compliance	E001	05/10/2023	pH (field)	6.7	SU
BA03	Compliance	E001	05/10/2023	Radium 226 + Radium 228, total	0.788	pCi/L
BA03	Compliance	E001	05/10/2023	Selenium, total	0.00160	mg/L
BA03	Compliance	E001	05/10/2023	Specific Conductance @ 25C (field)	819	micromhos/cm
BA03	Compliance	E001	05/10/2023	Sulfate, total	19.0	mg/L
BA03	Compliance	E001	05/10/2023	Temperature	15.4	degrees C
BA03	Compliance	E001	05/10/2023	Thallium, total	0.00038 U	mg/L
BA03	Compliance	E001	05/10/2023	Total Dissolved Solids	500 J	mg/L
BA03	Compliance	E001	05/10/2023	Turbidity, field	42.0	NTU
BA03L	Compliance	E001	05/10/2023	Antimony, total	0.00043 U	mg/L
BA03L	Compliance	E001	05/10/2023	Arsenic, total	0.00069 U	mg/L
BA03L	Compliance	E001	05/10/2023	Barium, total	0.130	mg/L
BA03L	Compliance	E001	05/10/2023	Beryllium, total	0.001 U	mg/L
BA03L	Compliance	E001	05/10/2023	Boron, total	0.480	mg/L
BA03L	Compliance	E001	05/10/2023	Cadmium, total	0.00074 U	mg/L
BA03L	Compliance	E001	05/10/2023	Calcium, total	190	mg/L
BA03L	Compliance	E001	05/10/2023	Chloride, total	26.0	mg/L
BA03L	Compliance	E001	05/10/2023	Chromium, total	0.00490	mg/L
BA03L	Compliance	E001	05/10/2023	Cobalt, total	0.00048 U	mg/L
BA03L	Compliance	E001	05/10/2023	Dissolved Oxygen	2.70	mg/L
BA03L	Compliance	E001	05/10/2023	Fluoride, total	0.205 J	mg/L
BA03L	Compliance	E001	05/10/2023	Lead, total	0.00023 J	mg/L
BA03L	Compliance	E001	05/10/2023	Lithium, total	0.005 U	mg/L
BA03L	Compliance	E001	05/10/2023	Mercury, total	0.00014 U	mg/L
BA03L	Compliance	E001	05/10/2023	Molybdenum, total	0.00100 J+	mg/L
BA03L	Compliance	E001	05/10/2023	Oxidation Reduction Potential	221	mV
BA03L	Compliance	E001	05/10/2023	pH (field)	6.7	SU
BA03L	Compliance	E001	05/10/2023	Radium 226 + Radium 228, total	0.744	pCi/L
BA03L	Compliance	E001	05/10/2023	Selenium, total	0.00074 U	mg/L
BA03L	Compliance	E001	05/10/2023	Specific Conductance @ 25C (field)	1,380	micromhos/cm
BA03L	Compliance	E001	05/10/2023	Sulfate, total	360	mg/L
BA03L	Compliance	E001	05/10/2023	Temperature	15.0	degrees C
BA03L	Compliance	E001	05/10/2023	Thallium, total	0.00038 U	mg/L
BA03L	Compliance	E001	05/10/2023	Total Dissolved Solids	1,100 J	mg/L
BA03L	Compliance	E001	05/10/2023	Turbidity, field	50.0	NTU
BA04	Compliance	E001	05/11/2023	Antimony, total	0.00043 U	mg/L
BA04	Compliance	E001	05/11/2023	Arsenic, total	0.00069 U	mg/L

TABLE 1.
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Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA04	Compliance	E001	05/11/2023	Barium, total	0.0870	mg/L
BA04	Compliance	E001	05/11/2023	Beryllium, total	0.00059 U	mg/L
BA04	Compliance	E001	05/11/2023	Boron, total	0.330 J+	mg/L
BA04	Compliance	E001	05/11/2023	Cadmium, total	0.00074 U	mg/L
BA04	Compliance	E001	05/11/2023	Calcium, total	130 J+	mg/L
BA04	Compliance	E001	05/11/2023	Chloride, total	30.0	mg/L
BA04	Compliance	E001	05/11/2023	Chromium, total	0.0028 U	mg/L
BA04	Compliance	E001	05/11/2023	Cobalt, total	0.00048 U	mg/L
BA04	Compliance	E001	05/11/2023	Dissolved Oxygen	1.00	mg/L
BA04	Compliance	E001	05/11/2023	Fluoride, total	0.275	mg/L
BA04	Compliance	E001	05/11/2023	Lead, total	0.00022 U	mg/L
BA04	Compliance	E001	05/11/2023	Lithium, total	0.005 U	mg/L
BA04	Compliance	E001	05/11/2023	Mercury, total	0.00014 U	mg/L
BA04	Compliance	E001	05/11/2023	Molybdenum, total	0.00270	mg/L
BA04	Compliance	E001	05/11/2023	Oxidation Reduction Potential	178	mV
BA04	Compliance	E001	05/11/2023	pH (field)	6.8	SU
BA04	Compliance	E001	05/11/2023	Radium 226 + Radium 228, total	0.152	pCi/L
BA04	Compliance	E001	05/11/2023	Selenium, total	0.00074 U	mg/L
BA04	Compliance	E001	05/11/2023	Specific Conductance @ 25C (field)	942	micromhos/cm
BA04	Compliance	E001	05/11/2023	Sulfate, total	78.0	mg/L
BA04	Compliance	E001	05/11/2023	Temperature	17.6	degrees C
BA04	Compliance	E001	05/11/2023	Thallium, total	0.00110	mg/L
BA04	Compliance	E001	05/11/2023	Total Dissolved Solids	740 J+	mg/L
BA04	Compliance	E001	05/11/2023	Turbidity, field	0 U	NTU

Notes:
C = Celsius
cm = centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = Nephelometric Turbidity Units
pCi/L = picocuries per liter
SU = Standard Units
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023
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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA05	Background	E002	07/24/2023	Antimony, total	0.00043 U	mg/L
BA05	Background	E002	07/24/2023	Arsenic, total	0.00250	mg/L
BA05	Background	E002	07/24/2023	Barium, total	0.0560	mg/L
BA05	Background	E002	07/24/2023	Beryllium, total	0.00059 U	mg/L
BA05	Background	E002	07/24/2023	Boron, total	0.120 J+	mg/L
BA05	Background	E002	07/24/2023	Cadmium, total	0.00074 U	mg/L
BA05	Background	E002	07/24/2023	Calcium, total	180	mg/L
BA05	Background	E002	07/24/2023	Chloride, total	9.60	mg/L
BA05	Background	E002	07/24/2023	Chromium, total	0.0028 U	mg/L
BA05	Background	E002	07/24/2023	Cobalt, total	0.00077 J	mg/L
BA05	Background	E002	07/24/2023	Dissolved Oxygen	0.450	mg/L
BA05	Background	E002	07/24/2023	Fluoride, total	0.25 UJ	mg/L
BA05	Background	E002	07/24/2023	Lead, total	0.00022 U	mg/L
BA05	Background	E002	07/24/2023	Lithium, total	0.0056 J	mg/L
BA05	Background	E002	07/24/2023	Mercury, total	0.00014 U	mg/L
BA05	Background	E002	07/24/2023	Molybdenum, total	0.00200	mg/L
BA05	Background	E002	07/24/2023	Oxidation Reduction Potential	-51.4	mV
BA05	Background	E002	07/24/2023	pH (field)	6.8	SU
BA05	Background	E002	07/24/2023	Radium 226 + Radium 228, total	0.296 U*	pCi/L
BA05	Background	E002	07/24/2023	Selenium, total	0.00074 U	mg/L
BA05	Background	E002	07/24/2023	Specific Conductance @ 25C (field)	1,592	micromhos/cm
BA05	Background	E002	07/24/2023	Sulfate, total	500	mg/L
BA05	Background	E002	07/24/2023	Temperature	14.6	degrees C
BA05	Background	E002	07/24/2023	Thallium, total	0.00038 U	mg/L
BA05	Background	E002	07/24/2023	Total Dissolved Solids	1,200	mg/L
BA05	Background	E002	07/24/2023	Turbidity, field	5,270	NTU
BA06	Background	E002	07/24/2023	Antimony, total	0.00043 U	mg/L
BA06	Background	E002	07/24/2023	Arsenic, total	0.00420	mg/L
BA06	Background	E002	07/24/2023	Barium, total	0.0930	mg/L
BA06	Background	E002	07/24/2023	Beryllium, total	0.00059 U	mg/L
BA06	Background	E002	07/24/2023	Boron, total	9.00	mg/L
BA06	Background	E002	07/24/2023	Cadmium, total	0.00074 U	mg/L
BA06	Background	E002	07/24/2023	Calcium, total	280	mg/L
BA06	Background	E002	07/24/2023	Chloride, total	560	mg/L
BA06	Background	E002	07/24/2023	Chromium, total	0.0028 U	mg/L
BA06	Background	E002	07/24/2023	Cobalt, total	0.00970	mg/L
BA06	Background	E002	07/24/2023	Dissolved Oxygen	2.50	mg/L
BA06	Background	E002	07/24/2023	Fluoride, total	0.264 J+	mg/L
BA06	Background	E002	07/24/2023	Lead, total	0.00022 U	mg/L
BA06	Background	E002	07/24/2023	Lithium, total	0.005 U	mg/L
BA06	Background	E002	07/24/2023	Mercury, total	0.00014 U	mg/L
BA06	Background	E002	07/24/2023	Molybdenum, total	0.00120	mg/L
BA06	Background	E002	07/24/2023	Oxidation Reduction Potential	-40.0	mV
BA06	Background	E002	07/24/2023	pH (field)	6.5	SU
BA06	Background	E002	07/24/2023	Radium 226 + Radium 228, total	0.223 U*	pCi/L
BA06	Background	E002	07/24/2023	Selenium, total	0.00074 U	mg/L

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023
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CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA06	Background	E002	07/24/2023	Specific Conductance @ 25C (field)	3,140	micromhos/cm
BA06	Background	E002	07/24/2023	Sulfate, total	360	mg/L
BA06	Background	E002	07/24/2023	Temperature	18.7	degrees C
BA06	Background	E002	07/24/2023	Thallium, total	0.00038 U	mg/L
BA06	Background	E002	07/24/2023	Total Dissolved Solids	2,300	mg/L
BA06	Background	E002	07/24/2023	Turbidity, field	5.30	NTU
BA01	Compliance	E002	07/24/2023	Antimony, total	0.00043 U	mg/L
BA01	Compliance	E002	07/24/2023	Arsenic, total	0.00079 J	mg/L
BA01	Compliance	E002	07/24/2023	Barium, total	0.130	mg/L
BA01	Compliance	E002	07/24/2023	Beryllium, total	0.00059 U	mg/L
BA01	Compliance	E002	07/24/2023	Boron, total	0.0720 J+	mg/L
BA01	Compliance	E002	07/24/2023	Cadmium, total	0.00074 U	mg/L
BA01	Compliance	E002	07/24/2023	Calcium, total	110	mg/L
BA01	Compliance	E002	07/24/2023	Chloride, total	18.0	mg/L
BA01	Compliance	E002	07/24/2023	Chromium, total	0.0028 U	mg/L
BA01	Compliance	E002	07/24/2023	Cobalt, total	0.00097 J	mg/L
BA01	Compliance	E002	07/24/2023	Dissolved Oxygen	3.40	mg/L
BA01	Compliance	E002	07/24/2023	Fluoride, total	0.25 UJ	mg/L
BA01	Compliance	E002	07/24/2023	Lead, total	0.00047 J	mg/L
BA01	Compliance	E002	07/24/2023	Lithium, total	0.005 U	mg/L
BA01	Compliance	E002	07/24/2023	Mercury, total	0.00014 U	mg/L
BA01	Compliance	E002	07/24/2023	Molybdenum, total	0.00110	mg/L
BA01	Compliance	E002	07/24/2023	Oxidation Reduction Potential	26.0	mV
BA01	Compliance	E002	07/24/2023	pH (field)	6.7	SU
BA01	Compliance	E002	07/24/2023	Radium 226 + Radium 228, total	0.478 J	pCi/L
BA01	Compliance	E002	07/24/2023	Selenium, total	0.00074 U	mg/L
BA01	Compliance	E002	07/24/2023	Specific Conductance @ 25C (field)	982	micromhos/cm
BA01	Compliance	E002	07/24/2023	Sulfate, total	150	mg/L
BA01	Compliance	E002	07/24/2023	Temperature	18.8	degrees C
BA01	Compliance	E002	07/24/2023	Thallium, total	0.00038 U	mg/L
BA01	Compliance	E002	07/24/2023	Total Dissolved Solids	640	mg/L
BA01	Compliance	E002	07/24/2023	Turbidity, field	19.1	NTU
BA02	Compliance	E002	07/25/2023	Antimony, total	0.00043 U	mg/L
BA02	Compliance	E002	07/25/2023	Arsenic, total	0.00220	mg/L
BA02	Compliance	E002	07/25/2023	Barium, total	0.240	mg/L
BA02	Compliance	E002	07/25/2023	Beryllium, total	0.00059 U	mg/L
BA02	Compliance	E002	07/25/2023	Boron, total	0.0510 J+	mg/L
BA02	Compliance	E002	07/25/2023	Cadmium, total	0.00074 U	mg/L
BA02	Compliance	E002	07/25/2023	Calcium, total	99.0	mg/L
BA02	Compliance	E002	07/25/2023	Chloride, total	11.0	mg/L
BA02	Compliance	E002	07/25/2023	Chromium, total	0.0028 U	mg/L
BA02	Compliance	E002	07/25/2023	Cobalt, total	0.00055 J	mg/L
BA02	Compliance	E002	07/25/2023	Dissolved Oxygen	1.80	mg/L
BA02	Compliance	E002	07/25/2023	Fluoride, total	0.322 J+	mg/L
BA02	Compliance	E002	07/25/2023	Lead, total	0.00022 U	mg/L
BA02	Compliance	E002	07/25/2023	Lithium, total	0.005 U	mg/L

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA02	Compliance	E002	07/25/2023	Mercury, total	0.00014 U	mg/L
BA02	Compliance	E002	07/25/2023	Molybdenum, total	0.00460	mg/L
BA02	Compliance	E002	07/25/2023	Oxidation Reduction Potential	-25.9	mV
BA02	Compliance	E002	07/25/2023	pH (field)	6.8	SU
BA02	Compliance	E002	07/25/2023	Radium 226 + Radium 228, total	0.186 UJ*	pCi/L
BA02	Compliance	E002	07/25/2023	Selenium, total	0.00074 U	mg/L
BA02	Compliance	E002	07/25/2023	Specific Conductance @ 25C (field)	741	micromhos/cm
BA02	Compliance	E002	07/25/2023	Sulfate, total	13.0	mg/L
BA02	Compliance	E002	07/25/2023	Temperature	19.6	degrees C
BA02	Compliance	E002	07/25/2023	Thallium, total	0.00038 U	mg/L
BA02	Compliance	E002	07/25/2023	Total Dissolved Solids	620	mg/L
BA02	Compliance	E002	07/25/2023	Turbidity, field	37.3	NTU
BA03	Compliance	E002	07/24/2023	Antimony, total	0.00043 U	mg/L
BA03	Compliance	E002	07/24/2023	Arsenic, total	0.00069 U	mg/L
BA03	Compliance	E002	07/24/2023	Barium, total	0.170	mg/L
BA03	Compliance	E002	07/24/2023	Beryllium, total	0.00059 U	mg/L
BA03	Compliance	E002	07/24/2023	Boron, total	0.0450 J+	mg/L
BA03	Compliance	E002	07/24/2023	Cadmium, total	0.00074 U	mg/L
BA03	Compliance	E002	07/24/2023	Calcium, total	98.0	mg/L
BA03	Compliance	E002	07/24/2023	Chloride, total	5.00	mg/L
BA03	Compliance	E002	07/24/2023	Chromium, total	0.0028 U	mg/L
BA03	Compliance	E002	07/24/2023	Cobalt, total	0.0011 J	mg/L
BA03	Compliance	E002	07/24/2023	Dissolved Oxygen	0.420	mg/L
BA03	Compliance	E002	07/24/2023	Fluoride, total	0.261 J+	mg/L
BA03	Compliance	E002	07/24/2023	Lead, total	0.00140	mg/L
BA03	Compliance	E002	07/24/2023	Lithium, total	0.005 U	mg/L
BA03	Compliance	E002	07/24/2023	Mercury, total	0.00014 U	mg/L
BA03	Compliance	E002	07/24/2023	Molybdenum, total	0.00190	mg/L
BA03	Compliance	E002	07/24/2023	Oxidation Reduction Potential	11.1	mV
BA03	Compliance	E002	07/24/2023	pH (field)	6.9	SU
BA03	Compliance	E002	07/24/2023	Radium 226 + Radium 228, total	1.89	pCi/L
BA03	Compliance	E002	07/24/2023	Selenium, total	0.00120	mg/L
BA03	Compliance	E002	07/24/2023	Specific Conductance @ 25C (field)	799	micromhos/cm
BA03	Compliance	E002	07/24/2023	Sulfate, total	17.0	mg/L
BA03	Compliance	E002	07/24/2023	Temperature	18.6	degrees C
BA03	Compliance	E002	07/24/2023	Thallium, total	0.00038 U	mg/L
BA03	Compliance	E002	07/24/2023	Total Dissolved Solids	460	mg/L
BA03	Compliance	E002	07/24/2023	Turbidity, field	81.9	NTU
BA03L	Compliance	E002	09/06/2023	Antimony, total	0.00043 U	mg/L
BA03L	Compliance	E002	09/06/2023	Arsenic, total	0.00069 U	mg/L
BA03L	Compliance	E002	09/06/2023	Barium, total	0.130	mg/L
BA03L	Compliance	E002	09/06/2023	Beryllium, total	0.00059 U	mg/L
BA03L	Compliance	E002	09/06/2023	Boron, total	0.330	mg/L
BA03L	Compliance	E002	09/06/2023	Cadmium, total	0.00074 U	mg/L
BA03L	Compliance	E002	09/06/2023	Calcium, total	200	mg/L
BA03L	Compliance	E002	09/06/2023	Chloride, total	13.0 J	mg/L

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023
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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA03L	Compliance	E002	09/06/2023	Chromium, total	0.0028 U	mg/L
BA03L	Compliance	E002	09/06/2023	Cobalt, total	0.00048 U	mg/L
BA03L	Compliance	E002	09/06/2023	Dissolved Oxygen	4.10	mg/L
BA03L	Compliance	E002	09/06/2023	Fluoride, total	0.165 J	mg/L
BA03L	Compliance	E002	09/06/2023	Lead, total	0.00022 U	mg/L
BA03L	Compliance	E002	09/06/2023	Lithium, total	0.005 U	mg/L
BA03L	Compliance	E002	09/06/2023	Mercury, total	0.000470	mg/L
BA03L	Compliance	E002	09/06/2023	Molybdenum, total	0.00100	mg/L
BA03L	Compliance	E002	09/06/2023	Oxidation Reduction Potential	217	mV
BA03L	Compliance	E002	09/06/2023	pH (field)	6.7	SU
BA03L	Compliance	E002	09/06/2023	Radium 226 + Radium 228, total	1.86 J+	pCi/L
BA03L	Compliance	E002	09/06/2023	Selenium, total	0.00074 U	mg/L
BA03L	Compliance	E002	09/06/2023	Specific Conductance @ 25C (field)	1,490	micromhos/cm
BA03L	Compliance	E002	09/06/2023	Sulfate, total	420	mg/L
BA03L	Compliance	E002	09/06/2023	Temperature	19.4	degrees C
BA03L	Compliance	E002	09/06/2023	Thallium, total	0.00038 U	mg/L
BA03L	Compliance	E002	09/06/2023	Total Dissolved Solids	1,900	mg/L
BA03L	Compliance	E002	09/06/2023	Turbidity, field	44.2	NTU
BA04	Compliance	E002	07/24/2023	Antimony, total	0.00086 J	mg/L
BA04	Compliance	E002	07/24/2023	Arsenic, total	0.00069 U	mg/L
BA04	Compliance	E002	07/24/2023	Barium, total	0.100	mg/L
BA04	Compliance	E002	07/24/2023	Beryllium, total	0.00059 U	mg/L
BA04	Compliance	E002	07/24/2023	Boron, total	1.90	mg/L
BA04	Compliance	E002	07/24/2023	Cadmium, total	0.00074 U	mg/L
BA04	Compliance	E002	07/24/2023	Calcium, total	130	mg/L
BA04	Compliance	E002	07/24/2023	Chloride, total	54.0	mg/L
BA04	Compliance	E002	07/24/2023	Chromium, total	0.0028 U	mg/L
BA04	Compliance	E002	07/24/2023	Cobalt, total	0.00065 J	mg/L
BA04	Compliance	E002	07/24/2023	Dissolved Oxygen	0.420	mg/L
BA04	Compliance	E002	07/24/2023	Fluoride, total	0.25 UJ	mg/L
BA04	Compliance	E002	07/24/2023	Lead, total	0.00022 U	mg/L
BA04	Compliance	E002	07/24/2023	Lithium, total	0.005 U	mg/L
BA04	Compliance	E002	07/24/2023	Mercury, total	0.00014 U	mg/L
BA04	Compliance	E002	07/24/2023	Molybdenum, total	0.00330	mg/L
BA04	Compliance	E002	07/24/2023	Oxidation Reduction Potential	138	mV
BA04	Compliance	E002	07/24/2023	pH (field)	6.7	SU
BA04	Compliance	E002	07/24/2023	Radium 226 + Radium 228, total	0.272 U*	pCi/L
BA04	Compliance	E002	07/24/2023	Selenium, total	0.00074 U	mg/L
BA04	Compliance	E002	07/24/2023	Specific Conductance @ 25C (field)	1,129	micromhos/cm
BA04	Compliance	E002	07/24/2023	Sulfate, total	180	mg/L
BA04	Compliance	E002	07/24/2023	Temperature	18.0	degrees C
BA04	Compliance	E002	07/24/2023	Thallium, total	0.00038 U	mg/L
BA04	Compliance	E002	07/24/2023	Total Dissolved Solids	710	mg/L
BA04	Compliance	E002	07/24/2023	Turbidity, field	39.1	NTU

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 3, 2023
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DUCK CREEK POWER PLANT
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Notes:
C = Celsius
cm = centimeter
mg/L = milligrams per liter
mV = millivolts
NTU = Nephelometric Turbidity Units
pCi/L = picocuries per liter
SU = Standard Units
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Exceedance Type
BA01	UA	E001	Antimony, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA01	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/11/23	9	11	CI around mean	0.00103	0.024	Background	No Exceedance
BA01	UA	E001	Barium, total	mg/L	02/05/16 - 05/11/23	9	0	CI around mean	0.136	2	Standard	No Exceedance
BA01	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA01	UA	E001	Boron, total	mg/L	02/05/16 - 05/11/23	21	0	CI around median	0.021	7.9	Background	No Exceedance
BA01	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA01	UA	E001	Chloride, total	mg/L	02/05/16 - 05/11/23	21	0	CI around median	10	700	Background	No Exceedance
BA01	UA	E001	Chromium, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.004	0.1	Standard	No Exceedance
BA01	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/11/23	9	78	CI around median	0.002	0.03	Background	No Exceedance
BA01	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/11/23	21	52	CI around median	0.25	4	Standard	No Exceedance
BA01	UA	E001	Lead, total	mg/L	02/05/16 - 05/11/23	9	22	CI around geomean	0.00184	0.042	Background	No Exceedance
BA01	UA	E001	Lithium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.02	0.068	Background	No Exceedance
BA01	UA	E001	Mercury, total	mg/L	02/05/16 - 05/11/23	9	89	Most recent sample	0.0002	0.004	Background	No Exceedance
BA01	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/11/23	9	0	CI around median	0.0019	0.1	Standard	No Exceedance
BA01	UA	E001	pH (field)	SU	02/05/16 - 05/11/23	25	0	CI around median	6.8/7.0	6.4/9	Background/Standard	No Exceedance
BA01	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/11/23	9	0	CI around mean	0.448	7.27	Background	No Exceedance
BA01	UA	E001	Selenium, total	mg/L	02/05/16 - 05/11/23	8	100	All ND - Last	0.001	0.05	Standard	No Exceedance
BA01	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/11/23	21	0	CI around mean	129	890	Background	No Exceedance
BA01	UA	E001	Thallium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA01	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/11/23	21	0	CI around mean	525	2,590	Background	No Exceedance
BA02	UA	E001	Antimony, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA02	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/15/23	9	11	CI around mean	0.000936	0.024	Background	No Exceedance
BA02	UA	E001	Barium, total	mg/L	02/05/16 - 05/15/23	9	0	CI around mean	0.184	2	Standard	No Exceedance
BA02	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/15/23	9	89	CI around median	0.001	0.004	Standard	No Exceedance
BA02	UA	E001	Boron, total	mg/L	02/05/16 - 05/15/23	21	0	CB around linear reg	0.0482	7.9	Background	No Exceedance
BA02	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA02	UA	E001	Chloride, total	mg/L	02/05/16 - 05/15/23	21	0	CB around linear reg	9	700	Background	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023
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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Exceedance Type
BA02	UA	E001	Chromium, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.004	0.1	Standard	No Exceedance
BA02	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.002	0.03	Background	No Exceedance
BA02	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/15/23	21	81	CI around median	0.25	4	Standard	No Exceedance
BA02	UA	E001	Lead, total	mg/L	02/05/16 - 05/15/23	9	67	CI around median	0.001	0.042	Background	No Exceedance
BA02	UA	E001	Lithium, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.02	0.068	Background	No Exceedance
BA02	UA	E001	Mercury, total	mg/L	02/05/16 - 05/15/23	9	89	CI around median	0.0002	0.004	Background	No Exceedance
BA02	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/15/23	9	0	CI around mean	0.00371	0.1	Standard	No Exceedance
BA02	UA	E001	pH (field)	SU	02/05/16 - 05/15/23	22	0	CI around median	6.9/7.3	6.4/9	Background/Standard	No Exceedance
BA02	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/15/23	9	0	CI around mean	0.462	7.27	Background	No Exceedance
BA02	UA	E001	Selenium, total	mg/L	02/05/16 - 05/15/23	9	78	CI around median	0.001	0.05	Standard	No Exceedance
BA02	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/15/23	21	0	CB around linear reg	11.4	890	Background	No Exceedance
BA02	UA	E001	Thallium, total	mg/L	02/05/16 - 05/15/23	9	89	Most recent sample	0.001	0.002	Standard	No Exceedance
BA02	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/15/23	21	0	CI around mean	434	2,590	Background	No Exceedance
BA02L	UA/PMP	E001	Antimony, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA02L	UA/PMP	E001	Arsenic, total	mg/L	04/14/21 - 05/10/23	9	0	CI around mean	0.0102	0.024	Background	No Exceedance
BA02L	UA/PMP	E001	Barium, total	mg/L	04/14/21 - 05/10/23	9	0	CI around median	0.046	2	Standard	No Exceedance
BA02L	UA/PMP	E001	Beryllium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA02L	UA/PMP	E001	Boron, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	0.0779	7.9	Background	No Exceedance
BA02L	UA/PMP	E001	Cadmium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA02L	UA/PMP	E001	Chloride, total	mg/L	04/14/21 - 05/10/23	10	0	CB around linear reg	0.0094	700	Background	No Exceedance
BA02L	UA/PMP	E001	Chromium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.004	0.1	Standard	No Exceedance
BA02L	UA/PMP	E001	Cobalt, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.002	0.03	Background	No Exceedance
BA02L	UA/PMP	E001	Fluoride, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	0.506	4	Standard	No Exceedance
BA02L	UA/PMP	E001	Lead, total	mg/L	04/14/21 - 05/10/23	9	78	CI around median	0.001	0.042	Background	No Exceedance
BA02L	UA/PMP	E001	Lithium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.02	0.068	Background	No Exceedance
BA02L	UA/PMP	E001	Mercury, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.0002	0.004	Background	No Exceedance
BA02L	UA/PMP	E001	Molybdenum, total	mg/L	04/14/21 - 05/10/23	9	0	CI around mean	0.00894	0.1	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023
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CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Exceedance Type
BA02L	UA/PMP	E001	pH (field)	SU	04/14/21 - 05/10/23	10	0	CI around mean	7.2/7.6	6.4/9	Background/Standard	No Exceedance
BA02L	UA/PMP	E001	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 05/10/23	8	0	CI around mean	-0.00325	7.27	Background	No Exceedance
BA02L	UA/PMP	E001	Selenium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.05	Standard	No Exceedance
BA02L	UA/PMP	E001	Sulfate, total	mg/L	04/14/21 - 05/10/23	10	0	CI around geomean	2.43	890	Background	No Exceedance
BA02L	UA/PMP	E001	Thallium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA02L	UA/PMP	E001	Total Dissolved Solids	mg/L	04/14/21 - 05/10/23	10	0	CI around geomean	196	2,590	Background	No Exceedance
BA03	UA	E001	Antimony, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA03	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/10/23	9	78	CI around median	0.001	0.024	Background	No Exceedance
BA03	UA	E001	Barium, total	mg/L	02/05/16 - 05/10/23	9	0	CI around mean	0.172	2	Standard	No Exceedance
BA03	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA03	UA	E001	Boron, total	mg/L	02/05/16 - 05/10/23	21	0	CI around mean	0.0252	7.9	Background	No Exceedance
BA03	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03	UA	E001	Chloride, total	mg/L	02/05/16 - 05/10/23	21	0	CI around median	5.9	700	Background	No Exceedance
BA03	UA	E001	Chromium, total	mg/L	02/05/16 - 05/10/23	9	78	CI around median	0.004	0.1	Standard	No Exceedance
BA03	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.002	0.03	Background	No Exceedance
BA03	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/10/23	21	52	CI around median	0.25	4	Standard	No Exceedance
BA03	UA	E001	Lead, total	mg/L	02/05/16 - 05/10/23	9	67	CI around median	0.001	0.042	Background	No Exceedance
BA03	UA	E001	Lithium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.02	0.068	Background	No Exceedance
BA03	UA	E001	Mercury, total	mg/L	02/05/16 - 05/10/23	9	89	CI around median	0.0002	0.004	Background	No Exceedance
BA03	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/10/23	9	11	CI around mean	0.00158	0.1	Standard	No Exceedance
BA03	UA	E001	pH (field)	SU	02/05/16 - 05/10/23	23	0	CI around mean	7.1/7.3	6.4/9	Background/Standard	No Exceedance
BA03	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/10/23	9	0	CI around mean	0.433	7.27	Background	No Exceedance
BA03	UA	E001	Selenium, total	mg/L	02/05/16 - 05/10/23	9	56	CI around median	0.001	0.05	Standard	No Exceedance
BA03	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/10/23	21	0	CB around linear reg	14.3	890	Background	No Exceedance
BA03	UA	E001	Thallium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/10/23	21	0	CB around linear reg	435	2,590	Background	No Exceedance
BA03L	UA/PMP	E001	Antimony, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.003	0.006	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Exceedance Type
BA03L	UA/PMP	E001	Arsenic, total	mg/L	04/14/21 - 05/10/23	9	67	CI around median	0.001	0.024	Background	No Exceedance
BA03L	UA/PMP	E001	Barium, total	mg/L	04/14/21 - 05/10/23	9	0	CI around median	0.13	2	Standard	No Exceedance
BA03L	UA/PMP	E001	Beryllium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.001	0.004	Standard	No Exceedance
BA03L	UA/PMP	E001	Boron, total	mg/L	04/14/21 - 05/10/23	10	0	CB around linear reg	0.364	7.9	Background	No Exceedance
BA03L	UA/PMP	E001	Cadmium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03L	UA/PMP	E001	Chloride, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	21.5	700	Background	No Exceedance
BA03L	UA/PMP	E001	Chromium, total	mg/L	04/14/21 - 05/10/23	9	33	CI around median	0.004	0.1	Standard	No Exceedance
BA03L	UA/PMP	E001	Cobalt, total	mg/L	04/14/21 - 05/10/23	9	78	CI around median	0.002	0.03	Background	No Exceedance
BA03L	UA/PMP	E001	Fluoride, total	mg/L	04/14/21 - 05/10/23	10	70	CI around median	0.25	4	Standard	No Exceedance
BA03L	UA/PMP	E001	Lead, total	mg/L	04/14/21 - 05/10/23	9	44	CI around median	0.001	0.042	Background	No Exceedance
BA03L	UA/PMP	E001	Lithium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.02	0.068	Background	No Exceedance
BA03L	UA/PMP	E001	Mercury, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.0002	0.004	Background	No Exceedance
BA03L	UA/PMP	E001	Molybdenum, total	mg/L	04/14/21 - 05/10/23	9	44	CI around median	0.001	0.1	Standard	No Exceedance
BA03L	UA/PMP	E001	pH (field)	SU	04/14/21 - 05/10/23	10	0	CI around mean	6.8/6.9	6.4/9	Background/Standard	No Exceedance
BA03L	UA/PMP	E001	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 05/10/23	8	0	CI around geomean	0.27	7.27	Background	No Exceedance
BA03L	UA/PMP	E001	Selenium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.001	0.05	Standard	No Exceedance
BA03L	UA/PMP	E001	Sulfate, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	342	890	Background	No Exceedance
BA03L	UA/PMP	E001	Thallium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03L	UA/PMP	E001	Total Dissolved Solids	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	971	2,590	Background	No Exceedance
BA04	UA	E001	Antimony, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA04	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.024	Background	No Exceedance
BA04	UA	E001	Barium, total	mg/L	02/05/16 - 05/11/23	9	0	CI around mean	0.1	2	Standard	No Exceedance
BA04	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA04	UA	E001	Boron, total	mg/L	02/05/16 - 05/11/23	21	0	CB around T-S line	0.305	7.9	Background	No Exceedance
BA04	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA04	UA	E001	Chloride, total	mg/L	02/05/16 - 05/11/23	21	0	CB around T-S line	34	700	Background	No Exceedance
BA04	UA	E001	Chromium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.004	0.1	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023
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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Exceedance Type
BA04	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.002	0.03	Background	No Exceedance
BA04	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/11/23	21	14	CI around median	0.268	4	Standard	No Exceedance
BA04	UA	E001	Lead, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.042	Background	No Exceedance
BA04	UA	E001	Lithium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.02	0.068	Background	No Exceedance
BA04	UA	E001	Mercury, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.0002	0.004	Background	No Exceedance
BA04	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/11/23	9	0	CI around geomean	0.0017	0.1	Standard	No Exceedance
BA04	UA	E001	pH (field)	SU	02/05/16 - 05/11/23	22	0	CI around mean	7.0/7.2	6.4/9	Background/Standard	No Exceedance
BA04	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/11/23	9	0	CI around mean	0.316	7.27	Background	No Exceedance
BA04	UA	E001	Selenium, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.05	Standard	No Exceedance
BA04	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/11/23	21	0	CB around linear reg	123	890	Background	No Exceedance
BA04	UA	E001	Thallium, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.002	Standard	No Exceedance
BA04	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/11/23	21	0	CB around T-S line	670	2,590	Background	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2023
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BOTTOM ASH BASIN
CANTON, IL

Notes:
Exceedance Type:

No Exceedance: No exceedance of the GWPS and no resample was collected.

HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

UA/PMP = Uppermost Aquifer/Potential Migration Pathway

mg/L = milligrams per liter
ND = non-detect
pCi/L = picocuries per liter
SU = standard units
Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Most recent sample = Result for the most recently collected sample used due to insufficient data

Statistical Result = calculated in accordance with Statistical Analysis Plan using constituent concentrations observed at monitoring well during all sampling events within the specified date range
For pH, the values presented are the lower / upper limits
GWPS = Groundwater Protection Standard
GWPS Source:

Standard = standard specified in 35 I.A.C. § 845.600(a)(1)

Background = background concentration (see cover page for additional information)

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA01	UA	E002	Antimony, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA01	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/24/23	10	20	CI around mean	0.000199	0.0240	Background	No Exceedance
BA01	UA	E002	Barium, total	mg/L	02/05/16 - 07/24/23	10	0	CI around mean	0.134	2.0	Standard	No Exceedance
BA01	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA01	UA	E002	Boron, total	mg/L	02/05/16 - 07/24/23	22	0	CI around median	0.021	7.90	Background	No Exceedance
BA01	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA01	UA	E002	Chloride, total	mg/L	02/05/16 - 07/24/23	22	0	CB around T-S line	10.2	700	Background	No Exceedance
BA01	UA	E002	Chromium, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.004	0.1	Standard	No Exceedance
BA01	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/24/23	10	80	CI around median	0.002	0.0300	Background	No Exceedance
BA01	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/24/23	22	54	CI around median	0.25	4.0	Standard	No Exceedance
BA01	UA	E002	Lead, total	mg/L	02/05/16 - 07/24/23	10	30	CI around geomean	0.0016	0.0420	Background	No Exceedance
BA01	UA	E002	Lithium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA01	UA	E002	Mercury, total	mg/L	02/05/16 - 07/24/23	10	90	Most recent sample	0.0002	0.00400	Background	No Exceedance
BA01	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/24/23	10	0	CI around median	0.0015	0.1	Standard	No Exceedance
BA01	UA	E002	pH (field)	SU	02/05/16 - 07/24/23	26	0	CI around median	6.8/7.0	6.4/9.0	Background/Standard	No Exceedance
BA01	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/24/23	10	0	CI around mean	0.447	7.27	Background	No Exceedance
BA01	UA	E002	Selenium, total	mg/L	02/05/16 - 07/24/23	9	100	All ND - Last	0.001	0.05	Standard	No Exceedance
BA01	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/24/23	22	0	CI around mean	130	890	Background	No Exceedance
BA01	UA	E002	Thallium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA01	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/24/23	22	0	CI around mean	530	2,590	Background	No Exceedance
BA02	UA	E002	Antimony, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA02	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/25/23	10	10	CI around mean	0.00107	0.0240	Background	No Exceedance
BA02	UA	E002	Barium, total	mg/L	02/05/16 - 07/25/23	10	0	CI around mean	0.19	2.0	Standard	No Exceedance
BA02	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/25/23	10	90	CI around median	0.001	0.004	Standard	No Exceedance
BA02	UA	E002	Boron, total	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	0.0478	7.90	Background	No Exceedance
BA02	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA02	UA	E002	Chloride, total	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	9.26	700	Background	No Exceedance

TABLE 2.
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CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA02	UA	E002	Chromium, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.004	0.1	Standard	No Exceedance
BA02	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA02	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/25/23	22	77	CI around median	0.25	4.0	Standard	No Exceedance
BA02	UA	E002	Lead, total	mg/L	02/05/16 - 07/25/23	10	70	CI around median	0.001	0.0420	Background	No Exceedance
BA02	UA	E002	Lithium, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA02	UA	E002	Mercury, total	mg/L	02/05/16 - 07/25/23	10	90	CI around median	0.0002	0.00400	Background	No Exceedance
BA02	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/25/23	10	0	CI around mean	0.00383	0.1	Standard	No Exceedance
BA02	UA	E002	pH (field)	SU	02/05/16 - 07/25/23	23	0	CI around median	6.9/7.3	6.4/9.0	Background/Standard	No Exceedance
BA02	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/25/23	10	0	CI around mean	0.397	7.27	Background	No Exceedance
BA02	UA	E002	Selenium, total	mg/L	02/05/16 - 07/25/23	10	80	CI around median	0.001	0.05	Standard	No Exceedance
BA02	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	11.4	890	Background	No Exceedance
BA02	UA	E002	Thallium, total	mg/L	02/05/16 - 07/25/23	10	90	Most recent sample	0.001	0.002	Standard	No Exceedance
BA02	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	483	2,590	Background	No Exceedance
BA03	UA	E002	Antimony, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA03	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/24/23	10	80	CI around median	0.001	0.0240	Background	No Exceedance
BA03	UA	E002	Barium, total	mg/L	02/05/16 - 07/24/23	10	0	CI around mean	0.171	2.0	Standard	No Exceedance
BA03	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA03	UA	E002	Boron, total	mg/L	02/05/16 - 07/24/23	22	0	CI around mean	0.0258	7.90	Background	No Exceedance
BA03	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03	UA	E002	Chloride, total	mg/L	02/05/16 - 07/24/23	22	0	CI around median	5.8	700	Background	No Exceedance
BA03	UA	E002	Chromium, total	mg/L	02/05/16 - 07/24/23	10	80	CI around median	0.004	0.1	Standard	No Exceedance
BA03	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA03	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/24/23	22	50	CI around median	0.25	4.0	Standard	No Exceedance
BA03	UA	E002	Lead, total	mg/L	02/05/16 - 07/24/23	10	60	CI around median	0.001	0.0420	Background	No Exceedance
BA03	UA	E002	Lithium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA03	UA	E002	Mercury, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.0002	0.00400	Background	No Exceedance
BA03	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/24/23	10	10	CB around linear reg	-0.0025	0.1	Standard	No Exceedance

TABLE 2.
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Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA03	UA	E002	pH (field)	SU	02/05/16 - 07/24/23	24	0	CI around mean	7.0/7.2	6.4/9.0	Background/Standard	No Exceedance
BA03	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/24/23	10	0	CI around mean	0.491	7.27	Background	No Exceedance
BA03	UA	E002	Selenium, total	mg/L	02/05/16 - 07/24/23	10	50	CI around median	0.001	0.05	Standard	No Exceedance
BA03	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	14.4	890	Background	No Exceedance
BA03	UA	E002	Thallium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	436	2,590	Background	No Exceedance
BA03L	UA/PMP	E002	Antimony, total	mg/L	04/14/21 - 09/06/23	10	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA03L	UA/PMP	E002	Arsenic, total	mg/L	04/14/21 - 09/06/23	10	70	CI around median	0.001	0.0240	Background	No Exceedance
BA03L	UA/PMP	E002	Barium, total	mg/L	04/14/21 - 09/06/23	10	0	CI around median	0.13	2.0	Standard	No Exceedance
BA03L	UA/PMP	E002	Beryllium, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.001	0.004	Standard	No Exceedance
BA03L	UA/PMP	E002	Boron, total	mg/L	04/14/21 - 09/06/23	11	0	CB around linear reg	0.308	7.90	Background	No Exceedance
BA03L	UA/PMP	E002	Cadmium, total	mg/L	04/14/21 - 09/06/23	10	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03L	UA/PMP	E002	Chloride, total	mg/L	04/14/21 - 09/06/23	11	0	CI around mean	19.4	700	Background	No Exceedance
BA03L	UA/PMP	E002	Chromium, total	mg/L	04/14/21 - 09/06/23	10	40	CI around median	0.004	0.1	Standard	No Exceedance
BA03L	UA/PMP	E002	Cobalt, total	mg/L	04/14/21 - 09/06/23	10	80	CI around median	0.002	0.0300	Background	No Exceedance
BA03L	UA/PMP	E002	Fluoride, total	mg/L	04/14/21 - 09/06/23	11	73	CI around median	0.25	4.0	Standard	No Exceedance
BA03L	UA/PMP	E002	Lead, total	mg/L	04/14/21 - 09/06/23	10	50	CI around median	0.001	0.0420	Background	No Exceedance
BA03L	UA/PMP	E002	Lithium, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.02	0.0680	Background	No Exceedance
BA03L	UA/PMP	E002	Mercury, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.0002	0.00400	Background	No Exceedance
BA03L	UA/PMP	E002	Molybdenum, total	mg/L	04/14/21 - 09/06/23	10	40	CI around median	0.001	0.1	Standard	No Exceedance
BA03L	UA/PMP	E002	pH (field)	SU	04/14/21 - 09/06/23	11	0	CI around mean	6.7/6.9	6.4/9.0	Background/Standard	No Exceedance
BA03L	UA/PMP	E002	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 09/06/23	9	0	CI around geomean	0.331	7.27	Background	No Exceedance
BA03L	UA/PMP	E002	Selenium, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.001	0.05	Standard	No Exceedance
BA03L	UA/PMP	E002	Sulfate, total	mg/L	04/14/21 - 09/06/23	11	0	CI around mean	340	890	Background	No Exceedance
BA03L	UA/PMP	E002	Thallium, total	mg/L	04/14/21 - 09/06/23	10	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03L	UA/PMP	E002	Total Dissolved Solids	mg/L	04/14/21 - 09/06/23	11	0	CI around median	960	2,590	Background	No Exceedance
BA04	UA	E002	Antimony, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.003	0.006	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA04	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.0240	Background	No Exceedance
BA04	UA	E002	Barium, total	mg/L	02/05/16 - 07/24/23	10	0	CI around mean	0.0996	2.0	Standard	No Exceedance
BA04	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA04	UA	E002	Boron, total	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	0.595	7.90	Background	No Exceedance
BA04	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA04	UA	E002	Chloride, total	mg/L	02/05/16 - 07/24/23	22	0	CB around T-S line	37	700	Background	No Exceedance
BA04	UA	E002	Chromium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.004	0.1	Standard	No Exceedance
BA04	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA04	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/24/23	22	18	CI around mean	0.278	4.0	Standard	No Exceedance
BA04	UA	E002	Lead, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.0420	Background	No Exceedance
BA04	UA	E002	Lithium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA04	UA	E002	Mercury, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.0002	0.00400	Background	No Exceedance
BA04	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/24/23	10	0	CI around geomean	0.00183	0.1	Standard	No Exceedance
BA04	UA	E002	pH (field)	SU	02/05/16 - 07/24/23	23	0	CB around T-S line	6.6/6.8	6.4/9.0	Background/Standard	No Exceedance
BA04	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/24/23	10	0	CI around mean	0.301	7.27	Background	No Exceedance
BA04	UA	E002	Selenium, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.05	Standard	No Exceedance
BA04	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/24/23	22	0	CB around T-S line	130	890	Background	No Exceedance
BA04	UA	E002	Thallium, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.002	Standard	No Exceedance
BA04	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	681	2,590	Background	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Notes:
Compliance Result:

No Exceedance: the statistical result did not exceed the GWPS.

HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

UA/PMP = Uppermost Aquifer/Potential Migration Pathway

mg/L = milligrams per liter
ND = non-detect
pCi/L = picocuries per liter
SU = standard units
Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Most recent sample = Result for the most recently collected sample used due to insufficient data

Statistical Result = calculated in accordance with the Statistical Analysis Plan using constituent concentrations observed at each monitoring well during all sampling events within the specified date range
For pH, the values presented are the lower / upper limits
GWPS = Groundwater Protection Standard
GWPS Source:

Standard = standard specified in 35 I.A.C. § 845.600(a)(1)

Background = background concentration (see cover page for additional information)

FIGURES

BACKGROUND WELL
COMPLIANCE WELL
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

MONITORING WELL LOCATION MAP

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

● COMPLIANCE WELL LOCATION WITHOUT EXCEEDANCE

35 I.A.C. § 845 REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

GWPS EXCEEDANCE MAP
UPPERMOST AQUIFER - QUARTERS 2-3, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

● COMPLIANCE WELL LOCATION WITHOUT EXCEEDANCE

▭ REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

GWPS EXCEEDANCE MAP
POTENTIAL MIGRATION PATHWAY - QUARTERS 2-3, 2023

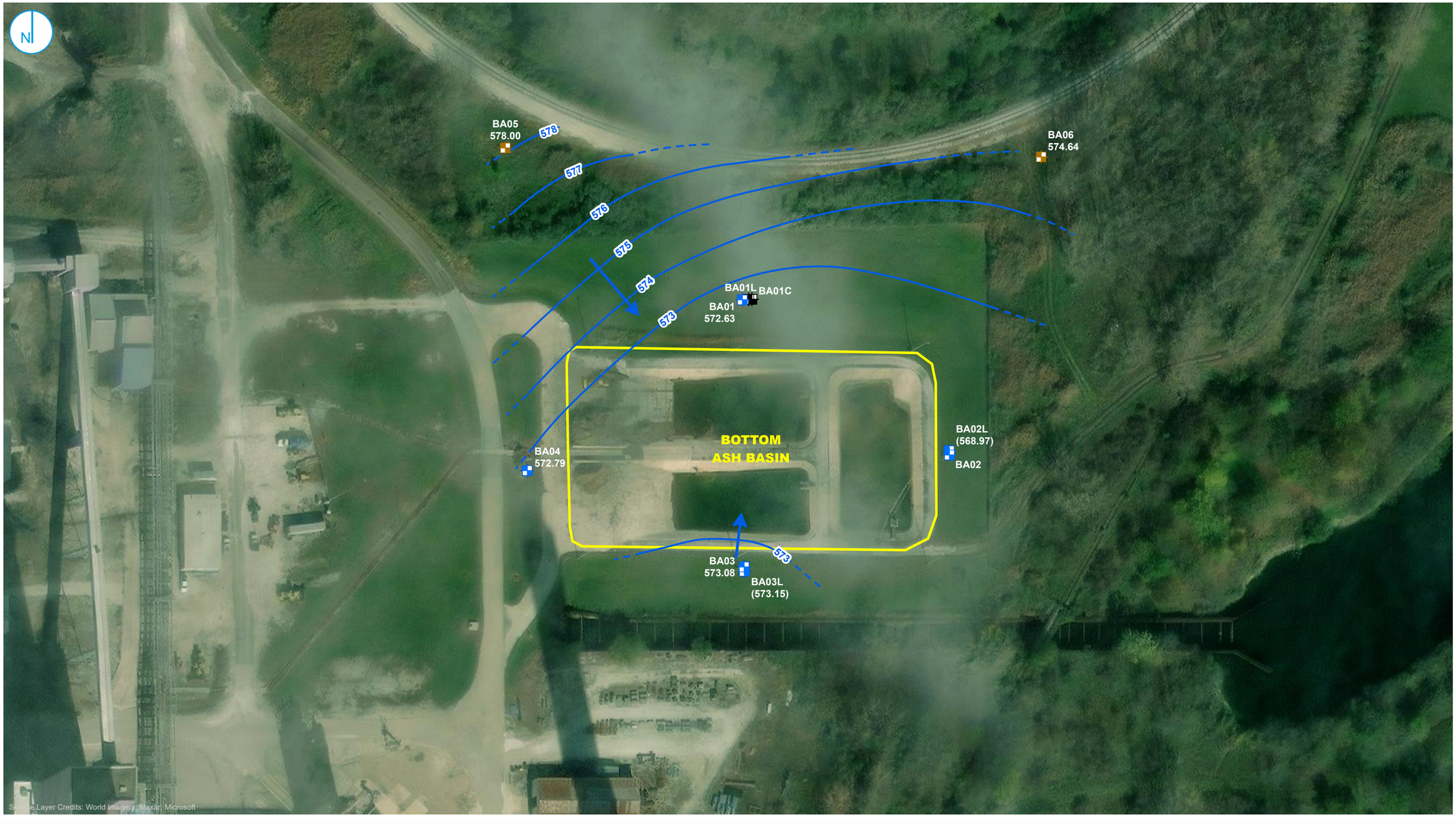
2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 3

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL



COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP
APRIL 8, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 4

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATIONS IN BRACKETS WERE OBTAINED OUTSIDE OF THE 24 HOUR PERIOD FROM INITIATION OF DEPTH TO GROUNDWATER MEASUREMENTS BUT WITHIN THE SAME SAMPLING EVENT.
3. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP
MAY 8, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 5

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL
GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP
JUNE 17, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 6

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATIONS IN BRACKETS WERE OBTAINED OUTSIDE OF THE 24 HOUR PERIOD FROM INITIATION OF DEPTH TO GROUNDWATER MEASUREMENTS BUT WITHIN THE SAME SAMPLING EVENT.
3. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP
JULY 17, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 7

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL
GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP
AUGUST 16, 2023

BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 8

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL
GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP SEPTEMBER 16, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 9

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL
GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP OCTOBER 16, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 10

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL
GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP NOVEMBER 20, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 11

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

COMPLIANCE WELL
BACKGROUND WELL
MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)

0 50 100 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988.

POTENTIOMETRIC SURFACE MAP DECEMBER 4, 2023

2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 12

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

ATTACHMENTS

ATTACHMENT A
GROUNDWATER ELEVATION DATA

ATTACHMENT A
GROUNDWATER ELEVATION DATA
2023 35 I.A.C. § 845 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
BA01	Compliance	UA	04/08/2023	14.46	572.63
BA01	Compliance	UA	05/08/2023	14.89	572.20
BA01	Compliance	UA	06/17/2023	16.91	570.17
BA01	Compliance	UA	07/17/2023	14.99	572.09
BA01	Compliance	UA	08/16/2023	14.22	572.87
BA01	Compliance	UA	09/16/2023	15.63	571.46
BA01	Compliance	UA	10/16/2023	16.25	570.84
BA01	Compliance	UA	11/20/2023	16.08	571.01
BA01	Compliance	UA	12/04/2023	15.54	571.55
BA02	Compliance	UA	05/15/2023	[8.39]	[571.53]
BA02	Compliance	UA	07/25/2023	[12.02]	[567.90]
BA02	Compliance	UA	10/16/2023	13.03	566.89
BA02	Compliance	UA	11/20/2023	12.23	567.69
BA02	Compliance	UA	12/04/2023	11.89	568.03
BA02L	Compliance	UA/PMP	04/08/2023	10.93	568.97
BA02L	Compliance	UA/PMP	05/08/2023	11.49	568.41
BA02L	Compliance	UA/PMP	06/17/2023	11.06	568.84
BA02L	Compliance	UA/PMP	07/17/2023	11.06	568.84
BA02L	Compliance	UA/PMP	09/06/2023	[10.95]	[568.96]
BA02L	Compliance	UA/PMP	10/18/2023	11.31	568.60
BA02L	Compliance	UA/PMP	11/20/2023	Dry	Dry
BA02L	Compliance	UA/PMP	12/04/2023	Dry	Dry
BA03	Compliance	UA	04/08/2023	5.25	573.08
BA03	Compliance	UA	05/08/2023	5.95	572.39
BA03	Compliance	UA	07/24/2023	[10.48]	[567.86]
BA03	Compliance	UA	08/16/2023	8.53	569.81
BA03	Compliance	UA	10/16/2023	11.06	567.28
BA03	Compliance	UA	11/20/2023	9.48	568.86
BA03	Compliance	UA	12/04/2023	7.35	570.99
BA03L	Compliance	UA/PMP	04/08/2023	4.60	573.15
BA03L	Compliance	UA/PMP	05/08/2023	5.03	572.72
BA03L	Compliance	UA/PMP	06/17/2023	9.34	568.40
BA03L	Compliance	UA/PMP	07/17/2023	8.87	568.87
BA03L	Compliance	UA/PMP	08/16/2023	9.64	568.10
BA03L	Compliance	UA/PMP	09/06/2023	[9.46]	[568.29]
BA03L	Compliance	UA/PMP	09/16/2023	10.85	566.90
BA03L	Compliance	UA/PMP	10/16/2023	10.85	566.90
BA03L	Compliance	UA/PMP	11/20/2023	9.19	568.56
BA03L	Compliance	UA/PMP	12/04/2023	6.95	570.80
BA04	Compliance	UA	04/08/2023	5.40	572.79
BA04	Compliance	UA	05/08/2023	5.49	572.70
BA04	Compliance	UA	07/24/2023	[6.99]	[571.20]
BA04	Compliance	UA	10/16/2023	7.75	570.44
BA04	Compliance	UA	11/20/2023	7.40	570.79
BA04	Compliance	UA	12/04/2023	7.30	570.89
BA05	Background	UA	04/08/2023	17.71	578.00

ATTACHMENT A
GROUNDWATER ELEVATION DATA
2023 35 I.A.C. § 845 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
BA05	Background	UA	05/08/2023	18.53	577.18
BA05	Background	UA	06/17/2023	22.50	573.22
BA05	Background	UA	07/17/2023	21.09	574.63
BA05	Background	UA	08/16/2023	20.22	575.50
BA05	Background	UA	09/16/2023	21.93	573.79
BA05	Background	UA	10/16/2023	22.89	572.83
BA05	Background	UA	11/20/2023	21.49	574.23
BA05	Background	UA	12/04/2023	20.61	575.11
BA06	Background	UA	04/08/2023	20.99	574.64
BA06	Background	UA	05/08/2023	21.46	574.17
BA06	Background	UA	06/17/2023	26.66	568.97
BA06	Background	UA	07/17/2023	24.89	570.74
BA06	Background	UA	08/16/2023	22.00	573.63
BA06	Background	UA	09/16/2023	23.52	572.11
BA06	Background	UA	10/16/2023	24.70	570.93
BA06	Background	UA	11/20/2023	24.38	571.25
BA06	Background	UA	12/04/2023	22.62	573.01

Notes:
Due to malfunctioning pressure transducer, data gaps exist in monthly water level elevations prior to the fourth quarter. Monthly depth to water measurements were collected manually in the fourth quarter.
BMP = below measuring point
Bracketing [ ] indicates that the measurement was obtained outside of the episodic depth to groundwater measurements time frame.
NAVD88 = North American Vertical Datum of 1988
Monitored Unit Abbreviations:

UA = uppermost aquifer

UA/PMP = uppermost aquifer/potential migration pathway

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ATTACHMENT B
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND

- **ATTACHMENT C FROM THE QUARTER 2, 2023 GROUNDWATER MONITORING DATA AND DETECTED EXCEEDANCES REPORT (RAMBOLL, 2023a)**

- **ATTACHMENT C FROM THE QUARTER 3, 2023 GROUNDWATER MONITORING DATA AND DETECTED EXCEEDANCES REPORT (RAMBOLL, 2023b)**

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA01	UA	E001	Antimony, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.003	0.003
BA01	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/11/23	9	11	CI around mean	0.00103	0.024
BA01	UA	E001	Barium, total	mg/L	02/05/16 - 05/11/23	9	0	CI around mean	0.136	0.48
BA01	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.0021
BA01	UA	E001	Boron, total	mg/L	02/05/16 - 05/11/23	21	0	CI around median	0.021	7.9
BA01	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.001
BA01	UA	E001	Chloride, total	mg/L	02/05/16 - 05/11/23	21	0	CI around median	10	700
BA01	UA	E001	Chromium, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.004	0.073
BA01	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/11/23	9	78	CI around median	0.002	0.03
BA01	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/11/23	21	52	CI around median	0.25	0.461
BA01	UA	E001	Lead, total	mg/L	02/05/16 - 05/11/23	9	22	CI around geomean	0.00184	0.042
BA01	UA	E001	Lithium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.02	0.068
BA01	UA	E001	Mercury, total	mg/L	02/05/16 - 05/11/23	9	89	Most recent sample	0.0002	0.004
BA01	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/11/23	9	0	CI around median	0.0019	0.0055
BA01	UA	E001	pH (field)	SU	02/05/16 - 05/11/23	25	0	CI around median	6.8/7.0	6.4/7.5
BA01	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/11/23	9	0	CI around mean	0.448	7.27
BA01	UA	E001	Selenium, total	mg/L	02/05/16 - 05/11/23	8	100	All ND - Last	0.001	0.0023
BA01	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/11/23	21	0	CI around mean	129	890
BA01	UA	E001	Thallium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.001
BA01	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/11/23	21	0	CI around mean	525	2,590
BA02	UA	E001	Antimony, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.003	0.003
BA02	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/15/23	9	11	CI around mean	0.000936	0.024
BA02	UA	E001	Barium, total	mg/L	02/05/16 - 05/15/23	9	0	CI around mean	0.184	0.48
BA02	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/15/23	9	89	CI around median	0.001	0.0021
BA02	UA	E001	Boron, total	mg/L	02/05/16 - 05/15/23	21	0	CB around linear reg	0.0482	7.9
BA02	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.001	0.001
BA02	UA	E001	Chloride, total	mg/L	02/05/16 - 05/15/23	21	0	CB around linear reg	9	700

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA02	UA	E001	Chromium, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.004	0.073
BA02	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.002	0.03
BA02	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/15/23	21	81	CI around median	0.25	0.461
BA02	UA	E001	Lead, total	mg/L	02/05/16 - 05/15/23	9	67	CI around median	0.001	0.042
BA02	UA	E001	Lithium, total	mg/L	02/05/16 - 05/15/23	9	100	All ND - Last	0.02	0.068
BA02	UA	E001	Mercury, total	mg/L	02/05/16 - 05/15/23	9	89	CI around median	0.0002	0.004
BA02	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/15/23	9	0	CI around mean	0.00371	0.0055
BA02	UA	E001	pH (field)	SU	02/05/16 - 05/15/23	22	0	CI around median	6.9/7.3	6.4/7.5
BA02	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/15/23	9	0	CI around mean	0.462	7.27
BA02	UA	E001	Selenium, total	mg/L	02/05/16 - 05/15/23	9	78	CI around median	0.001	0.0023
BA02	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/15/23	21	0	CB around linear reg	11.4	890
BA02	UA	E001	Thallium, total	mg/L	02/05/16 - 05/15/23	9	89	Most recent sample	0.001	0.001
BA02	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/15/23	21	0	CI around mean	434	2,590
BA02L	UA/PMP	E001	Antimony, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.003	0.003
BA02L	UA/PMP	E001	Arsenic, total	mg/L	04/14/21 - 05/10/23	9	0	CI around mean	0.0102	0.024
BA02L	UA/PMP	E001	Barium, total	mg/L	04/14/21 - 05/10/23	9	0	CI around median	0.046	0.48
BA02L	UA/PMP	E001	Beryllium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.0021
BA02L	UA/PMP	E001	Boron, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	0.0779	7.9
BA02L	UA/PMP	E001	Cadmium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.001
BA02L	UA/PMP	E001	Chloride, total	mg/L	04/14/21 - 05/10/23	10	0	CB around linear reg	0.0094	700
BA02L	UA/PMP	E001	Chromium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.004	0.073
BA02L	UA/PMP	E001	Cobalt, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.002	0.03
BA02L	UA/PMP	E001	Fluoride, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	0.506	0.461
BA02L	UA/PMP	E001	Lead, total	mg/L	04/14/21 - 05/10/23	9	78	CI around median	0.001	0.042
BA02L	UA/PMP	E001	Lithium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.02	0.068
BA02L	UA/PMP	E001	Mercury, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.0002	0.004
BA02L	UA/PMP	E001	Molybdenum, total	mg/L	04/14/21 - 05/10/23	9	0	CI around mean	0.00894	0.0055

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023
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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA02L	UA/PMP	E001	pH (field)	SU	04/14/21 - 05/10/23	10	0	CI around mean	7.2/7.6	6.4/7.5
BA02L	UA/PMP	E001	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 05/10/23	8	0	CI around mean	-0.00325	7.27
BA02L	UA/PMP	E001	Selenium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.0023
BA02L	UA/PMP	E001	Sulfate, total	mg/L	04/14/21 - 05/10/23	10	0	CI around geomean	2.43	890
BA02L	UA/PMP	E001	Thallium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.001
BA02L	UA/PMP	E001	Total Dissolved Solids	mg/L	04/14/21 - 05/10/23	10	0	CI around geomean	196	2,590
BA03	UA	E001	Antimony, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.003	0.003
BA03	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/10/23	9	78	CI around median	0.001	0.024
BA03	UA	E001	Barium, total	mg/L	02/05/16 - 05/10/23	9	0	CI around mean	0.172	0.48
BA03	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.001	0.0021
BA03	UA	E001	Boron, total	mg/L	02/05/16 - 05/10/23	21	0	CI around mean	0.0252	7.9
BA03	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.001	0.001
BA03	UA	E001	Chloride, total	mg/L	02/05/16 - 05/10/23	21	0	CI around median	5.9	700
BA03	UA	E001	Chromium, total	mg/L	02/05/16 - 05/10/23	9	78	CI around median	0.004	0.073
BA03	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.002	0.03
BA03	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/10/23	21	52	CI around median	0.25	0.461
BA03	UA	E001	Lead, total	mg/L	02/05/16 - 05/10/23	9	67	CI around median	0.001	0.042
BA03	UA	E001	Lithium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.02	0.068
BA03	UA	E001	Mercury, total	mg/L	02/05/16 - 05/10/23	9	89	CI around median	0.0002	0.004
BA03	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/10/23	9	11	CI around mean	0.00158	0.0055
BA03	UA	E001	pH (field)	SU	02/05/16 - 05/10/23	23	0	CI around mean	7.1/7.3	6.4/7.5
BA03	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/10/23	9	0	CI around mean	0.433	7.27
BA03	UA	E001	Selenium, total	mg/L	02/05/16 - 05/10/23	9	56	CI around median	0.001	0.0023
BA03	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/10/23	21	0	CB around linear reg	14.3	890
BA03	UA	E001	Thallium, total	mg/L	02/05/16 - 05/10/23	9	100	All ND - Last	0.001	0.001
BA03	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/10/23	21	0	CB around linear reg	435	2,590
BA03L	UA/PMP	E001	Antimony, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.003	0.003

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BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA03L	UA/PMP	E001	Arsenic, total	mg/L	04/14/21 - 05/10/23	9	67	CI around median	0.001	0.024
BA03L	UA/PMP	E001	Barium, total	mg/L	04/14/21 - 05/10/23	9	0	CI around median	0.13	0.48
BA03L	UA/PMP	E001	Beryllium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.001	0.0021
BA03L	UA/PMP	E001	Boron, total	mg/L	04/14/21 - 05/10/23	10	0	CB around linear reg	0.364	7.9
BA03L	UA/PMP	E001	Cadmium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E001	Chloride, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	21.5	700
BA03L	UA/PMP	E001	Chromium, total	mg/L	04/14/21 - 05/10/23	9	33	CI around median	0.004	0.073
BA03L	UA/PMP	E001	Cobalt, total	mg/L	04/14/21 - 05/10/23	9	78	CI around median	0.002	0.03
BA03L	UA/PMP	E001	Fluoride, total	mg/L	04/14/21 - 05/10/23	10	70	CI around median	0.25	0.461
BA03L	UA/PMP	E001	Lead, total	mg/L	04/14/21 - 05/10/23	9	44	CI around median	0.001	0.042
BA03L	UA/PMP	E001	Lithium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.02	0.068
BA03L	UA/PMP	E001	Mercury, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.0002	0.004
BA03L	UA/PMP	E001	Molybdenum, total	mg/L	04/14/21 - 05/10/23	9	44	CI around median	0.001	0.0055
BA03L	UA/PMP	E001	pH (field)	SU	04/14/21 - 05/10/23	10	0	CI around mean	6.8/6.9	6.4/7.5
BA03L	UA/PMP	E001	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 05/10/23	8	0	CI around geomean	0.27	7.27
BA03L	UA/PMP	E001	Selenium, total	mg/L	04/14/21 - 05/10/23	9	89	CI around median	0.001	0.0023
BA03L	UA/PMP	E001	Sulfate, total	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	342	890
BA03L	UA/PMP	E001	Thallium, total	mg/L	04/14/21 - 05/10/23	9	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E001	Total Dissolved Solids	mg/L	04/14/21 - 05/10/23	10	0	CI around mean	971	2,590
BA04	UA	E001	Antimony, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.003	0.003
BA04	UA	E001	Arsenic, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.024
BA04	UA	E001	Barium, total	mg/L	02/05/16 - 05/11/23	9	0	CI around mean	0.1	0.48
BA04	UA	E001	Beryllium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.0021
BA04	UA	E001	Boron, total	mg/L	02/05/16 - 05/11/23	21	0	CB around T-S line	0.305	7.9
BA04	UA	E001	Cadmium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.001	0.001
BA04	UA	E001	Chloride, total	mg/L	02/05/16 - 05/11/23	21	0	CB around T-S line	34	700
BA04	UA	E001	Chromium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.004	0.073

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2023
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DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA04	UA	E001	Cobalt, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.002	0.03
BA04	UA	E001	Fluoride, total	mg/L	02/05/16 - 05/11/23	21	14	CI around median	0.268	0.461
BA04	UA	E001	Lead, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.042
BA04	UA	E001	Lithium, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.02	0.068
BA04	UA	E001	Mercury, total	mg/L	02/05/16 - 05/11/23	9	100	All ND - Last	0.0002	0.004
BA04	UA	E001	Molybdenum, total	mg/L	02/05/16 - 05/11/23	9	0	CI around geomean	0.0017	0.0055
BA04	UA	E001	pH (field)	SU	02/05/16 - 05/11/23	22	0	CI around mean	7.0/7.2	6.4/7.5
BA04	UA	E001	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 05/11/23	9	0	CI around mean	0.316	7.27
BA04	UA	E001	Selenium, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.0023
BA04	UA	E001	Sulfate, total	mg/L	02/05/16 - 05/11/23	21	0	CB around linear reg	123	890
BA04	UA	E001	Thallium, total	mg/L	02/05/16 - 05/11/23	9	89	CI around median	0.001	0.001
BA04	UA	E001	Total Dissolved Solids	mg/L	02/05/16 - 05/11/23	21	0	CB around T-S line	670	2,590

Notes:
Lower Confidence Limit (LCL) or Upper Confidence Limit (UCL) exceeded the statistical background value
HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

UA/PMP = Uppermost Aquifer/Potential Migration Pathway

mg/L = milligrams per liter
ND = non-detect
pCi/L = picocuries per liter
SU = standard units
Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Most recent sample = Result for the most recently collected sample used due to insufficient data

Statistical Result = calculated in accordance with Statistical Analysis Plan using constituent concentrations observed at monitoring well during all sampling events within the specified date range
For pH, the values presented are the lower / upper limits of the background determination

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA01	UA	E002	Antimony, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.003	0.003
BA01	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/24/23	10	20	CI around mean	0.000199	0.0240
BA01	UA	E002	Barium, total	mg/L	02/05/16 - 07/24/23	10	0	CI around mean	0.134	0.480
BA01	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.00210
BA01	UA	E002	Boron, total	mg/L	02/05/16 - 07/24/23	22	0	CI around median	0.021	7.90
BA01	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.001
BA01	UA	E002	Chloride, total	mg/L	02/05/16 - 07/24/23	22	0	CB around T-S line	10.2	700
BA01	UA	E002	Chromium, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.004	0.0730
BA01	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/24/23	10	80	CI around median	0.002	0.0300
BA01	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/24/23	22	54	CI around median	0.25	0.461
BA01	UA	E002	Lead, total	mg/L	02/05/16 - 07/24/23	10	30	CI around geomean	0.0016	0.0420
BA01	UA	E002	Lithium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.02	0.0680
BA01	UA	E002	Mercury, total	mg/L	02/05/16 - 07/24/23	10	90	Most recent sample	0.0002	0.004
BA01	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/24/23	10	0	CI around median	0.0015	0.00550
BA01	UA	E002	pH (field)	SU	02/05/16 - 07/24/23	26	0	CI around median	6.8/7.0	6.4/7.5
BA01	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/24/23	10	0	CI around mean	0.447	7.27
BA01	UA	E002	Selenium, total	mg/L	02/05/16 - 07/24/23	9	100	All ND - Last	0.001	0.00230
BA01	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/24/23	22	0	CI around mean	130	890
BA01	UA	E002	Thallium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.001
BA01	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/24/23	22	0	CI around mean	530	2,590
BA02	UA	E002	Antimony, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.003	0.003
BA02	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/25/23	10	10	CI around mean	0.00107	0.0240
BA02	UA	E002	Barium, total	mg/L	02/05/16 - 07/25/23	10	0	CI around mean	0.19	0.480
BA02	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/25/23	10	90	CI around median	0.001	0.00210
BA02	UA	E002	Boron, total	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	0.0478	7.90
BA02	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.001	0.001
BA02	UA	E002	Chloride, total	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	9.26	700

ATTACHMENT C.
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Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA02	UA	E002	Chromium, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.004	0.0730
BA02	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.002	0.0300
BA02	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/25/23	22	77	CI around median	0.25	0.461
BA02	UA	E002	Lead, total	mg/L	02/05/16 - 07/25/23	10	70	CI around median	0.001	0.0420
BA02	UA	E002	Lithium, total	mg/L	02/05/16 - 07/25/23	10	100	All ND - Last	0.02	0.0680
BA02	UA	E002	Mercury, total	mg/L	02/05/16 - 07/25/23	10	90	CI around median	0.0002	0.004
BA02	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/25/23	10	0	CI around mean	0.00383	0.00550
BA02	UA	E002	pH (field)	SU	02/05/16 - 07/25/23	23	0	CI around median	6.9/7.3	6.4/7.5
BA02	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/25/23	10	0	CI around mean	0.397	7.27
BA02	UA	E002	Selenium, total	mg/L	02/05/16 - 07/25/23	10	80	CI around median	0.001	0.00230
BA02	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	11.4	890
BA02	UA	E002	Thallium, total	mg/L	02/05/16 - 07/25/23	10	90	Most recent sample	0.001	0.001
BA02	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/25/23	22	0	CB around linear reg	483	2,590
BA03	UA	E002	Antimony, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.003	0.003
BA03	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/24/23	10	80	CI around median	0.001	0.0240
BA03	UA	E002	Barium, total	mg/L	02/05/16 - 07/24/23	10	0	CI around mean	0.171	0.480
BA03	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.00210
BA03	UA	E002	Boron, total	mg/L	02/05/16 - 07/24/23	22	0	CI around mean	0.0258	7.90
BA03	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.001
BA03	UA	E002	Chloride, total	mg/L	02/05/16 - 07/24/23	22	0	CI around median	5.8	700
BA03	UA	E002	Chromium, total	mg/L	02/05/16 - 07/24/23	10	80	CI around median	0.004	0.0730
BA03	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.002	0.0300
BA03	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/24/23	22	50	CI around median	0.25	0.461
BA03	UA	E002	Lead, total	mg/L	02/05/16 - 07/24/23	10	60	CI around median	0.001	0.0420
BA03	UA	E002	Lithium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.02	0.0680
BA03	UA	E002	Mercury, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.0002	0.004
BA03	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/24/23	10	10	CB around linear reg	-0.0025	0.00550

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA03	UA	E002	pH (field)	SU	02/05/16 - 07/24/23	24	0	CI around mean	7.0/7.2	6.4/7.5
BA03	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/24/23	10	0	CI around mean	0.491	7.27
BA03	UA	E002	Selenium, total	mg/L	02/05/16 - 07/24/23	10	50	CI around median	0.001	0.00230
BA03	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	14.4	890
BA03	UA	E002	Thallium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.001
BA03	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	436	2,590
BA03L	UA/PMP	E002	Antimony, total	mg/L	04/14/21 - 09/06/23	10	100	All ND - Last	0.003	0.003
BA03L	UA/PMP	E002	Arsenic, total	mg/L	04/14/21 - 09/06/23	10	70	CI around median	0.001	0.0240
BA03L	UA/PMP	E002	Barium, total	mg/L	04/14/21 - 09/06/23	10	0	CI around median	0.13	0.480
BA03L	UA/PMP	E002	Beryllium, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.001	0.00210
BA03L	UA/PMP	E002	Boron, total	mg/L	04/14/21 - 09/06/23	11	0	CB around linear reg	0.308	7.90
BA03L	UA/PMP	E002	Cadmium, total	mg/L	04/14/21 - 09/06/23	10	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E002	Chloride, total	mg/L	04/14/21 - 09/06/23	11	0	CI around mean	19.4	700
BA03L	UA/PMP	E002	Chromium, total	mg/L	04/14/21 - 09/06/23	10	40	CI around median	0.004	0.0730
BA03L	UA/PMP	E002	Cobalt, total	mg/L	04/14/21 - 09/06/23	10	80	CI around median	0.002	0.0300
BA03L	UA/PMP	E002	Fluoride, total	mg/L	04/14/21 - 09/06/23	11	73	CI around median	0.25	0.461
BA03L	UA/PMP	E002	Lead, total	mg/L	04/14/21 - 09/06/23	10	50	CI around median	0.001	0.0420
BA03L	UA/PMP	E002	Lithium, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.02	0.0680
BA03L	UA/PMP	E002	Mercury, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.0002	0.004
BA03L	UA/PMP	E002	Molybdenum, total	mg/L	04/14/21 - 09/06/23	10	40	CI around median	0.001	0.00550
BA03L	UA/PMP	E002	pH (field)	SU	04/14/21 - 09/06/23	11	0	CI around mean	6.7/6.9	6.4/7.5
BA03L	UA/PMP	E002	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 09/06/23	9	0	CI around geomean	0.331	7.27
BA03L	UA/PMP	E002	Selenium, total	mg/L	04/14/21 - 09/06/23	10	90	CI around median	0.001	0.00230
BA03L	UA/PMP	E002	Sulfate, total	mg/L	04/14/21 - 09/06/23	11	0	CI around mean	340	890
BA03L	UA/PMP	E002	Thallium, total	mg/L	04/14/21 - 09/06/23	10	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E002	Total Dissolved Solids	mg/L	04/14/21 - 09/06/23	11	0	CI around median	960	2,590
BA04	UA	E002	Antimony, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.003	0.003

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA04	UA	E002	Arsenic, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.0240
BA04	UA	E002	Barium, total	mg/L	02/05/16 - 07/24/23	10	0	CI around mean	0.0996	0.480
BA04	UA	E002	Beryllium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.00210
BA04	UA	E002	Boron, total	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	0.595	7.90
BA04	UA	E002	Cadmium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.001	0.001
BA04	UA	E002	Chloride, total	mg/L	02/05/16 - 07/24/23	22	0	CB around T-S line	37	700
BA04	UA	E002	Chromium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.004	0.0730
BA04	UA	E002	Cobalt, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.002	0.0300
BA04	UA	E002	Fluoride, total	mg/L	02/05/16 - 07/24/23	22	18	CI around mean	0.278	0.461
BA04	UA	E002	Lead, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.0420
BA04	UA	E002	Lithium, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.02	0.0680
BA04	UA	E002	Mercury, total	mg/L	02/05/16 - 07/24/23	10	100	All ND - Last	0.0002	0.004
BA04	UA	E002	Molybdenum, total	mg/L	02/05/16 - 07/24/23	10	0	CI around geomean	0.00183	0.00550
BA04	UA	E002	pH (field)	SU	02/05/16 - 07/24/23	23	0	CB around T-S line	6.6/6.8	6.4/7.5
BA04	UA	E002	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 07/24/23	10	0	CI around mean	0.301	7.27
BA04	UA	E002	Selenium, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.00230
BA04	UA	E002	Sulfate, total	mg/L	02/05/16 - 07/24/23	22	0	CB around T-S line	130	890
BA04	UA	E002	Thallium, total	mg/L	02/05/16 - 07/24/23	10	90	CI around median	0.001	0.001
BA04	UA	E002	Total Dissolved Solids	mg/L	02/05/16 - 07/24/23	22	0	CB around linear reg	681	2,590

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 3, 2023
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Notes:
HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

UA/PMP = Uppermost Aquifer/Potential Migration Pathway

mg/L = milligrams per liter
ND = non-detect
pCi/L = picocuries per liter
SU = standard units
Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Most recent sample = Result for the most recently collected sample used due to insufficient data

Statistical Result = calculated in accordance with the Statistical Analysis Plan using constituent concentrations observed at each monitoring well during all sampling events within the specified date range
For pH, the values presented are the lower / upper limits of the background determination