OHIO VALLEY ELECTRIC CORPORATION
3932 U. S. Route 23
P. O. Box 468
Piketon, Ohio 45661
740-289-7200

WRITER'S DIRECT DIAL NO:
(740) 289-7259

January 31, 2024

Delivered Electronically

Ms. Anne Vogel, Director
Ohio Environmental Protection Agency
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

Dear Ms. Vogel:

Re: Ohio Valley Electric Corporation - Kyger Creek Station
2023 Annual Groundwater Monitoring and Corrective Actions Report

As required by 40 CFR 257.106(h)(1), the Ohio Valley Electric Corporation (OVEC) is providing notification to the State Director of the Ohio Environmental Protection Agency that the seventh Annual Groundwater and Corrective Actions Report has been completed in compliance with 40 CFR 257.90(e) for OVEC's Kyger Creek Station. The groundwater monitoring and corrective action report was prepared by AGES, Inc., the site's hydrogeologist, summarizing the findings in 2023. The report has been placed in the facility's operating record in accordance with 40 CFR 257.105(h)(1), as well as, on the company's publicly accessible internet site in accordance with 40 CFR 257.107(h)(1), which can be viewed at http://www.ovec.com/CCRCompliance.php .

If you have any questions, or require any additional information, please contact me at (740) 289-7259 or Gabe Coriell at (740)289-7267.

Sincerely,

Jeremy Galloway
Environmental Specialist

JDG:tlf

Stantec Consulting Services Inc.
10200 Alliance Road, Suite 300
Cincinnati OH 45242-4754

January 31, 2024

Project/File: 175532013

Mr. Jeremy Galloway
Ohio Valley Electric Corporation
Indiana-Kentucky Electric Corporation
3932 U.S. Route 23
P.O. Box 468
Piketon, Ohio 45661

Reference: 2023 Annual Groundwater Monitoring and Corrective Action Report
EPA Final Coal Combustion Residuals (CCR) Rule
Kyger Creek Generating Station
Cheshire, Ohio

Dear Mr. Galloway,

The EPA Final CCR Rule requires owners or operators of existing CCR landfills and surface impoundments to prepare an annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by 40 CFR 257.90(e). For the Ohio Valley Electric Corporation (OVEC), this applies to the Kyger Creek Station's South Fly Ash Pond, Boiler Slag Pond, and CCR Landfill.

The annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

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

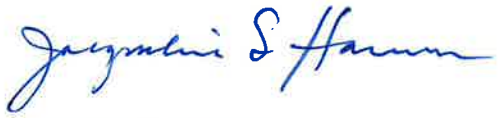
Reference: **2023 Annual Groundwater Monitoring and Corrective Action Report**
EPA Final Coal Combustion Residuals (CCR) Rule
Kyger Creek Generating Station
Cheshire, Ohio

IKEC has retained Applied Geology and Environmental Science, Inc. of Clinton, Pennsylvania (AGES) to perform the Kyger Creek Station's groundwater monitoring and corrective action support under the EPA Final CCR Rule. The 2023 CCR Regulation Groundwater Monitoring and Corrective Action Report (GWCAR) was prepared by AGES to present the annual groundwater monitoring at the South Fly Ash Pond, Boiler Slag Pond, and CCR Landfill of the Clifty Creek Station. Stantec Consulting Services Inc. (Stantec) has reviewed AGES (2024), and it meets the requirements specified in 40 CFR 257.90(e).

Please contact us with any questions or concerns. We appreciate the opportunity to continue to work with the Kyger Creek Generating Station and the Ohio Valley Electric Corporation.

Regards,

STANTEC CONSULTING SERVICES INC.



Jacqueline S. Harmon PE
Project Manager
Phone: (513) 842-8200 EXT 8220
jacqueline.harmon@stantec.com

Attachment: AGES (2024). Coal Combustion Residuals Regulation, 2023 Groundwater Monitoring and Corrective Action Report, Ohio Valley Electric Corporation. Kyger Creek Station, Cheshire, Ohio, January.

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AGES
Applied Geology And Environmental Science, Inc.

2402 Hookstown Grade Road, Suite 200
Clinton, PA 15026
www.appliedgeology.net
P 412. 264. 6453
F 412. 264. 6567

COAL COMBUSTION RESIDUALS REGULATION
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

JANUARY 2024

Prepared for:

OHIO VALLEY ELECTRIC CORPORATION (OVEC)

By:

APPLIED GEOLOGY AND ENVIRONMENTAL SCIENCE, INC.

COAL COMBUSTION RESIDUALS REGULATION
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

JANUARY 2024

Prepared for:

OHIO VALLEY ELECTRIC CORPORATION (OVEC)

Prepared By:

Applied Geology and Environmental Science, Inc.

Bethany J. Flaherty

Bethany Flaherty
Senior Scientist II

Robert W. King

Robert W. King, P.G.
President/Chief Hydrogeologist

COAL COMBUSTION RESIDUALS REGULATION
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

T A B L E O F C O N T E N T S

COAL COMBUSTION RESIDUALS REGULATION
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

T A B L E O F C O N T E N T S

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FIGURES

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LIST OF ACRONYMS

AGES	Applied Geology and Environmental Science, Inc.
ASD	Alternate Source Demonstration
BSP	Boiler Slag Pond
CCR	Coal Combustion Residuals
GMPP	Groundwater Monitoring Program Plan
GWPS	Groundwater Protection Standard
Landfill	Class III Residual Waste Landfill
LCL	Lower Confidence Limit
MCL	Maximum Contaminant Level
OEPA	Ohio Environmental Protection Agency
OVEC	Ohio Valley Electric Corporation
RCRA	Resource Conservation and Recovery Act
StAP	Statistical Analysis Plan
SFAP	South Fly Ash Pond
Stantec	Stantec Consulting Services Inc.
SSI	Statistically Significant Increase
TDS	Total Dissolved Solids
ug/L	Micrograms per liter
U.S. EPA	United States Environmental Protection Agency

COAL COMBUSTION RESIDUALS REGULATION
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

EXECUTIVE SUMMARY

The Kyger Creek Station, located in Cheshire, Ohio, is a 1.1 gigawatt coal-fired generating station operated by Ohio Valley Electric Corporation (OVEC). The Kyger Creek Station has five (5), 217-megawatt generating units and has been in operation since 1955. Beginning in 1955, Coal Combustion Residuals (CCRs) were sluiced to surface impoundments located in the plant site. During the course of plant operations, CCRs have been managed in various units at the station.

There are three (3) CCR units at the Kyger Creek Station:

- Class III Residual Waste Landfill (Landfill);
- Boiler Slag Pond (BSP); and
- South Fly Ash Pond (SFAP).

A brief overview of the current status of groundwater monitoring and corrective action programs for the CCR units is provided below:

Landfill

At the start of this 2023 reporting period, the Landfill was operating under the Detection Monitoring program in accordance with §257.94 of the CCR Rule. The 11th and 12th rounds of Detection Monitoring were conducted in March/April and September/October 2023, respectively. Based on the sampling results, it was determined that there were no Appendix III constituent SSIs over background for either Detection Monitoring events. Therefore, the Landfill will remain operating under the Detection Monitoring program in accordance with §257.94 of the CCR Rule.

BSP

At the start of this 2023 reporting period, the BSP was operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule. Based on exceedances of the Groundwater Protection Standard (GWPS) for an Appendix IV constituent (Arsenic at well KC-15-07), an assessment of corrective measures was initiated on May 15, 2019. An Assessment of Corrective Measures Report was completed on September 19, 2019 (Revision 1.0, November 2020); a public meeting was held on November 6, 2019.

The 10th and 11th rounds of Assessment Monitoring were conducted in March/April and September/October 2023, respectively. Based on the sampling results, it was determined that there were Appendix III SSIs over background. SSIs were confirmed in well KC-15-08 (Boron, Calcium, Sulfate and Total Dissolved Solids [TDS]) during the March/April and September/October 2023 Assessment Monitoring events.

Arsenic, an Appendix IV constituent, exceeded the GWPS in well KC-15-07 during both Assessment Monitoring events. Arsenic did not exceed the GWPS in wells located at the property boundary downgradient of the BSP indicating that Arsenic exceedances are confined to the site. Based on these results, the BSP will remain operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule.

To support the selection of a remedy, field monitoring activities, including the collection of water level measurements and ongoing groundwater sampling, were performed during 2023. Although a remedy was not selected pursuant to §257.97 of the CCR Rule during this current annual reporting period, the continued evaluation of remedial activities pursuant to §257.97 and §257.98 of the CCR Rule will continue during the 2024 annual reporting period.

SFAP

At the start of this 2023 reporting period, the SFAP was operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule. The 10th and 11th rounds of rounds of Assessment Monitoring were conducted in March/April and September/October 2023, respectively. Based on the sampling results, it was determined that there were Appendix III SSIs over background. During the March/April 2023 Assessment Monitoring event SSIs were confirmed in wells KC-15-18 (Calcium and Chloride), KC-15-20 (Calcium) and KC-15-21 (Calcium). During the September/October 2023 Assessment Monitoring event SSIs were confirmed in wells KC-15-18 (Calcium, Chloride and TDS), KC-15-20 (Calcium) and KC-15-21 (Calcium).

As part of the Assessment Monitoring program, concentrations of the Appendix IV constituents are compared to the applicable GWPS. No exceedances were noted during the March and October 2023 Assessment Monitoring events for any well included in the approved monitoring program. The SFAP will remain operating under the Assessment Monitoring program in accordance with §257.95 of the CCR Rule.

COAL COMBUSTION RESIDUALS REGULATION
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
OHIO VALLEY ELECTRIC CORPORATION
KYGER CREEK STATION
CHESHIRE, OHIO

1.0 INTRODUCTION

On December 19, 2014, the United States Environmental Protection Agency (U.S. EPA) issued their final Coal Combustion Residuals (CCR) regulation which regulates CCR as a non-hazardous waste under Subtitle D of Resource Conservation and Recovery Act (RCRA) and became effective six (6) months from the date of its publication (April 17, 2015) in the Federal Register, referred to as the "CCR Rule." The rule applies to new and existing landfills, and surface impoundments used to dispose of or otherwise manage CCR generated by electric utilities and independent power producers. Because the rule was promulgated under Subtitle D of RCRA, it does not require regulated facilities to obtain permits, does not require state adoption, and cannot be enforced by U.S. EPA.

This Groundwater Monitoring and Corrective Action Report has been prepared in accordance with §257.90 (e) of the CCR Rule and documents the status of the groundwater monitoring and corrective action program for each CCR unit, summarizes the key actions completed during 2023, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year.

2.0 BACKGROUND

The Kyger Creek Station, located in Cheshire, Ohio, is a 1.1 gigawatt coal-fired generating station operated by Ohio Valley Electric Corporation (OVEC). The Kyger Creek Station has five (5), 217-megawatt generating units and has been in operation since 1955. Beginning in 1955, CCRs were sluiced to surface impoundments located in the plant site. During the course of plant operations, CCRs have been managed in various units at the station.

There are three (3) CCR units at the Kyger Creek Station (Figure 1):

- Class III Residual Waste Landfill (Landfill);
- Boiler Slag Pond (BSP); and
- South Fly Ash Pond (SFAP).

A discussion of the status of the groundwater monitoring program for each CCR unit is presented in the following sections of this report.

3.0 CLASS III RESIDUAL WASTE LANDFILL

The Landfill is a residual solid waste landfill located approximately one-half mile south of the intersection of Little Kyger Creek Road and Shaver Road in Addison Township, Gallia County, Ohio (Figure 1). The Landfill is bordered on the east by Shaver Road, and on the west, north and south by vacant, forested land owned by OVEC. The proposed permitted footprint of the Landfill occupies approximately 98 acres and is capable of managing approximately 20.4 million cubic yards (approximately 4,000 tons per day) of Class III residual waste generated by the coal-powered Kyger Creek Station located approximately two (2) miles southeast of the Landfill.

3.1 Groundwater Monitoring Network

As detailed in the Monitoring Well Installation Report (Applied Geology and Environmental Science, Inc. [AGES] 2016), the CCR groundwater monitoring network for the Landfill consists of the following 13 wells:

- BUSW-1 (Downgradient);
- BUSW-2 (Upgradient);
- BUSW-3 (Variable: usually side or downgradient);
- BUSW-4 (Downgradient);
- BUSW-5a (Upgradient);
- IMW-1BU (Upgradient);
- BUSW-8 (Upgradient);
- BUSW-10 (Downgradient);
- MW-3D (Upgradient);
- IMW-2BU (Upgradient);
- MW-4D (Upgradient);
- CCR-1BU (Downgradient); and
- CCR-2BU (Downgradient).

The locations of all of the wells in the groundwater monitoring network are shown on Figure 2. As listed above and shown on Table 3-1, the CCR groundwater monitoring network for the Landfill includes seven (7) upgradient monitoring wells and six (6) downgradient monitoring wells, which satisfies the requirements of the CCR Rule.

At the time of the October 2022 sampling event, the sample team determined that well BuSW-5 had been destroyed and the well could not be sampled. In April 2023, well BuSW-5 was repaired, developed and sampled per industry standards and the Groundwater Monitoring Program Plan (GMPP) (AGES 2024). The well was sampled as part of the March/April 2023 Detection Monitoring event described below.

Groundwater levels measured in 2023 are included in Table A-1 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2023 are included in Appendix B.

3.2 Groundwater Sampling

In accordance with §257.94 of the CCR Rule, OVEC completed two (2) rounds of groundwater monitoring in 2023 in accordance with the requirements of the Detection Monitoring Program at the Landfill. The 11th round of Detection Monitoring samples was collected in March/April 2023 and the 12th round of Detection Monitoring groundwater samples was collected in September/October 2023. In accordance with §257.90(e)(3), Table 3-2 presents a sampling summary, including the number of groundwater samples collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection or the Assessment Monitoring program. Table 3-3 summarizes the measurements of field parameters collected at the completion of purging, immediately prior to collection of each sample. All samples were collected in accordance with the GMPP (AGES 2024) and shipped to an analytical laboratory to be analyzed for all of the parameters listed in Appendix III of the CCR Rule (Appendix C).

3.3 Analytical Results

Upon receipt of the March/April and September/October 2023 analytical results, the groundwater monitoring data were statistically evaluated in accordance with §257.93(h) of the CCR Rule and the Kyger Creek Station CCR Statistical Analysis Plan (StAP) (Stantec Consulting Services Inc. [Stantec] 2021). Appendix D summarizes the analytical results for groundwater samples collected in 2023. No potential SSIs were identified during either Detection Monitoring events. Therefore, the Landfill will remain in Detection Monitoring.

4.0 BOILER SLAG POND

The BSP is located at the south end of the Kyger Creek Station and is approximately 32 acres in size (Figure 3). The BSP was built in 1955 to serve as a process and disposal area for the coal combustion waste products generated at the station. All flow into the BSP was terminated in July 2023 as part of ongoing construction. Overflow from the BSP had been carried into a reinforced concrete intake structure at the south end of the Boiler Slag Complex. Water entering the intake structure was previously discharged into the Clearwater Pond. The Clearwater Pond was built in 1980, is approximately nine (9) acres in size and is located to the southwest end of the BSP. The Clearwater Pond is not a CCR unit and monitoring is not required.

In 2019, OVEC conducted additional groundwater sampling to characterize the nature and extent of the release and an Assessment of Corrective Measures (ACM) in accordance with §257.95(g). As part of this assessment, in April 2019, three (3) additional wells (KC-19-27, KC-19-28 and KC-19-29) were installed in the uppermost aquifer at the property boundary downgradient from the

BSP (Figure 3). Details regarding the installation of these wells and potential corrective measures are included in the ACM Report for the BSP (AGES 2020a). All details regarding the monitoring and corrective action associated with this unit in 2019 are provided in the 2019 Groundwater Monitoring and Corrective Action Report, Revision 1.0 (AGES 2020b).

4.1 Groundwater Monitoring Network

As detailed in the Monitoring Well Installation Report (AGES 2016) and 2019 Groundwater Monitoring and Corrective Action Report, Revision 1.0 (AGES 2020b), the CCR groundwater monitoring network for the BSP consists of the following eleven (11) wells:

- KC-15-01 (Upgradient);
- KC-15-02 (Upgradient);
- KC-15-03 (Upgradient);
- KC-15-04 (Downgradient);
- KC-15-05 (Downgradient);
- KC-15-06 (Downgradient);
- KC-15-07 (Downgradient);
- KC-15-08 (Downgradient);
- KC-19-27 (Downgradient/Boundary);
- KC-19-28 (Downgradient/Boundary); and
- KC-19-29 (Downgradient/Boundary).

The locations of all the wells in the groundwater monitoring network are shown on Figure 3. As listed above and shown on Table 4-1, the CCR groundwater monitoring network for the BSP includes three (3) upgradient wells and five (5) downgradient wells, which satisfies the requirements of the CCR Rule. Three (3) wells (KC-19-27, KC-19-28 and KC-19-29) are located at the property boundary downgradient from the BSP.

Due to ongoing construction and the lowering of the berm surrounding the BSP, the upper few feet of stick-up casing for three (3) wells on the berm (wells KC-15-01, KC-15-02 and KC-15-03) were removed by a driller, under the supervision of AGES in April 2023. Revised information for these wells is provided on Table 4-1.

At the time of the March 2022 sampling event, the sample team determined that well KC-15-05 had been destroyed. The well could not be sampled, and a replacement well (KC-15-05a) was installed in August 2022. Well KC-15-05a was installed approximately 10 feet north of original well KC-15-05 at the same depth and with the same construction as the original well. During the October 2022 sampling event, well KC-15-05a could not be safely accessed due to ongoing site construction activities. This replacement well will therefore be sampled during future events; the results of the sampling will be used to evaluate whether the well KC-15-05a is a representative replacement for original well KC-15-05.

Groundwater levels measured in 2023 are included in Table A-2 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed 2023 are included in Appendix B.

At the time of the initial groundwater level measurements during the March/April 2023 sampling event, wells KC-15-04 and KC-15-05a could not be located and groundwater levels at the wells were not measured. The wells were accessed approximately two (2) weeks later for sampling and water levels were collected at that time.

Groundwater in the BSP flows from the northwest to the south and southeast toward the Ohio River. Because the BSP is located adjacent to the Ohio River, during periods when the water level in the Ohio River rises significantly and flooding occurs, groundwater flow in the uppermost aquifer may temporarily reverse and groundwater will flow toward the north and west beneath the BSP.

4.2 Groundwater Sampling

In accordance with §257.95 of the CCR Rule, the 10th and 11th rounds of Assessment Monitoring were conducted in March/April and September/October 2023, respectively.

All samples were collected in accordance with the GMPP (AGES 2024) and analyzed for all Appendix III and Appendix IV constituents, which are listed in Appendix C. In accordance with §257.90(e)(3), Table 4-2 presents a sampling summary, including the number of groundwater samples collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection or the Assessment Monitoring program. Table 4-3 summarizes the measurements of field parameters collected at the completion of purging, immediately prior to collection of each sample. All samples were shipped to an analytical laboratory to be analyzed.

4.3 Analytical Results

4.3.1 Analytical Results-Appendix III Constituents

Upon receipt, the groundwater monitoring data were statistically evaluated in accordance with §257.93(h) of the CCR Rule and the Kyger Creek Station CCR StAP (Stantec 2021). Appendix D summarizes the analytical results for groundwater samples collected in 2023.

The statistical evaluation of the data identified potential SSIs of one (1) or more Appendix III constituents in wells KC-15-06 and KC-15-08 in the March/April 2023 Assessment Monitoring Event and in wells KC-15-04 and KC-15-08 in the September/October 2023 Assessment Monitoring Event (Table 4-4). In accordance with the StAP, OVEC resampled the wells for those constituents with potential SSIs. Based on the results of the resampling events, the SSIs for Boron,

Calcium, Sulfate and Total Dissolved Solids (TDS) in well KC-15-08 were confirmed at the BSP for both events in 2023 (Table 4-4).

4.3.2 Analytical Results-Appendix IV Constituents

Based on previous detections of Appendix IV constituents in groundwater at the BSP, OVEC established a Groundwater Protection Standard (GWPS) for each detected Appendix IV constituent in accordance with the §257.95(h)(1) through §257.95(h)(3) as follows:

(1) For constituents for which the U.S. EPA has established a Maximum Contaminant Level (MCL), the GWPS shall be the MCL for that constituent.

(2) On July 30, 2018, the U.S. EPA published alternate limits to be used for several constituents that did not have previously established MCLs to be used as the GWPS for those constituents.

(3) For constituents for which the background level is higher than the MCL or the alternate limit, the background concentration shall be the GWPS for that constituent.

Table 4-5 presents the list of GWPSs for the Assessment Monitoring program at the BSP that were developed in accordance with the above requirements.

During the 10th (March/April 2023) and 11th (September/October 2023) Assessment Monitoring Events, it was confirmed that Arsenic in well KC-15-07 exceeded the GWPS of 10 micrograms per liter (ug/L) (Table 4-6).

Arsenic concentrations did not exceed the GWPS at the wells located at the property boundary downgradient from the BSP (wells KC-19-27, KC-19-28 and KC-19-29). These results indicate that Arsenic concentrations in the uppermost aquifer exceeding the GWPS are confined to the site and are not reaching the Ohio River.

5.0 SOUTH FLY ASH POND

The SFAP is located at the northwest end of the station (Figure 4). The SFAP was built in 1955 to serve as a process and disposal area for the coal combustion waste products generated at the station. This collection pond is approximately 67 acres in size and banked on all sides.

5.1 Groundwater Monitoring Network

As detailed in the Monitoring Well Installation Report (AGES 2016), the CCR groundwater monitoring network for the SFAP consists of the following 14 wells. The wells, along with revised location designations based on updated groundwater flow directions, are:

- KC-15-09 (Upgradient);
- KC-15-10 (Upgradient);
- KC-15-11 (Upgradient);
- KC-15-12 (Upgradient);
- KC-15-13 (Upgradient);
- KC-15-14 (Upgradient);
- KC-15-15 (Variable);
- KC-15-16 (Variable);
- KC-15-17 (Variable);
- KC-15-18 (Downgradient);
- KC-15-19 (Downgradient);
- KC-15-20 (Downgradient);
- KC-15-21 (Downgradient); and
- KC-15-22 (Downgradient).

The locations of the monitoring wells are shown on Figure 4. As listed above and shown on Table 5-1, the CCR groundwater monitoring network for the SFAP includes six (6) upgradient and five (5) downgradient wells, which satisfies the requirements of the CCR Rule.

At the time of the June 2022 resampling event, the sample team determined that well KC-15-19 had been destroyed. The well could not be sampled, and a replacement well (KC-15-19a) was installed in August 2022. Well KC-15-19a was installed approximately 10 feet north of the original well KC-15-19 at the same depth and with the same construction as the original well. Replacement well KC-15-19a was sampled in October 2022 and March/April and September/October 2023. Results from the sampling event indicate that KC-15-19a may not be a representative replacement for KC-15-19, and the facility currently is evaluating whether the sampling results are the result of an error in accordance with 40 C.F.R. § 257.95(g)(3)(ii). The results are included in Appendix D.

As noted in the 2017 Annual Groundwater Monitoring and Corrective Action Report, due to fluctuations in the stage of the nearby Ohio River, well KC-15-17 was located upgradient of the northeast portion of the SFAP during five (5) of the nine (9) monitoring events conducted from October 2015 through September 2017 (prior to the Detection Monitoring period at the unit). Well KC-15-17 was downgradient of the area during three (3) events and sidegradient during one (1) event. Well KC-15-15 was located upgradient of the northeast portion of the SFAP during three (3) of the nine (9) events, downgradient of the area during five (5) events, and sidegradient during one (1) event. Because of this high degree of variability in flow direction, wells KC-15-15 and KC-15-17 (and well KC-15-16 which is located between the wells) could not be designated as either upgradient or downgradient. These wells are therefore not included in the statistical evaluations for the SFAP.

Groundwater levels measured during 2023 are included in Table A-3 of Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2023 are included in Appendix B. Based on the groundwater level measurements, groundwater in the central portion of the SFAP flows generally from the north/northwest to the south/southeast toward the Ohio River. However, due to the close proximity of the SFAP to the Ohio River, changes in the stage of the river have a significant impact on the direction of groundwater flow at the unit. However, during periods when the stage of the Ohio River rises, groundwater flow in the uppermost aquifer reverses direction and flows toward the north/northwest. When the Ohio River stage lowers, groundwater levels also begin to lower and return to a more typical flow pattern. With these fluctuations in groundwater levels, the assignment of the upgradient and downgradient well designations above may fluctuate as well.

5.2 Groundwater Sampling

In accordance with §257.95 of the CCR Rule, the 10th and 11th rounds of Assessment Monitoring were conducted in March/April and September/October 2023, respectively.

All samples were collected in accordance with the GMPP (AGES 2024) and analyzed for all Appendix III and Appendix IV constituents, which are listed in Appendix C. In accordance with §257.90(e)(3), Table 5-2 presents a sampling summary, including the number of groundwater samples collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection or the Assessment Monitoring program. Table 5-3 summarizes the measurements of field parameters collected at the completion of purging, immediately prior to collection of each sample. All samples were shipped to an analytical laboratory to be analyzed.

5.3 Analytical Results

5.3.1 Analytical Results-Appendix III Constituents

Upon receipt, the groundwater monitoring data were statistically evaluated in accordance with §257.93(h) of the CCR Rule and the Kyger Creek Station CCR StAP (Stantec 2021). Appendix D summarizes the analytical results for groundwater samples collected in 2023. The statistical evaluation identified potential SSIs of one (1) or more Appendix III constituents in monitoring wells KC-15-18, KC-15-20 and KC-15-21 at the SFAP. In accordance with the StAP, OVEC resampled the wells for those constituents with potential SSIs with the exception of well KC-15-19. Based on the results, the following Appendix III SSIs were confirmed at the SFAP (Table 5-4):

March/April 2023 Assessment Monitoring Event Appendix III SSIs

- KC-15-18: Calcium and Chloride;
- KC-15-20: Calcium; and

- KC-15-21: Calcium.

September/October 2023 Assessment Monitoring Event Appendix III SSIs

- KC-15-18: Calcium, Chloride and TDS;
- KC-15-20: Calcium; and
- KC-15-21: Calcium.

5.3.2 Analytical Results-Appendix IV Constituents

Table 5-5 presents the list of GWPSs for the Assessment Monitoring program at the SFAP that were developed in accordance with the requirements listed in Section 4.3.2. All Appendix IV results were compared to the GWPSs. There were no GWPS exceedances during the March/April or September/October 2023 Assessment Monitoring Events for any well included in the approved monitoring program.

6.0 PROBLEMS ENCOUNTERED

There were no problems encountered during the 2023 groundwater morning program at Kyger Creek Station.

7.0 PROJECTED ACTIVITIES FOR 2024

The Landfill will remain in Detection Monitoring and continue to be sampled on a semi-annual basis.

The BSP will remain in Assessment Monitoring and continue to be sampled on a semi-annual basis. As described above, an ACM has been completed for this unit and the process of the selection of remedy for the BSP will continue in 2024.

The SFAP will remain in Assessment Monitoring and continue to be sampled on a semi-annual basis.

Replacement wells KC-15-05a and KC-15-19a will be sampled during future events; the results of the sampling will be used to evaluate whether the wells are representative replacements for the respective original wells.

8.0 REFERENCES

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Applied Geology and Environmental Science, Inc. (AGES) 2016. Coal Combustion Residuals Regulation Monitoring Well Installation Report, Ohio Valley Electric Corporation, Kyger Creek Station, Cheshire, Gallia County, Ohio. August 2016.

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TABLES

TABLE 3-1
GROUNDWATER MONITORING NETWORK
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGAM
KYGER CREEK STATION
CHESHIRE, OHIO

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft)[2]	Top of Casing Elevation (ft)[2]	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
CCR Unit Boundary Wells									
BUSW-1	Downgradient	6/20/2006	335756.52	2063859.43	781.46	784.21	521.21	508.10	276.11
BUSW-2	Upgradient	--	336285.22	2062985.02	792.19	794.98	526.69	506.69	288.56
BUSW-3	Variable	9/13/2007	336746.19	2062430.81	787.57	790.01	529.57	504.57	283.56
BUSW-4	Downgradient	5/17/2006	337738.57	2062566.35	780.99	783.46	535.76	525.76	257.70
BUSW-5	Upgradient	8/2/2007 (Repaired 4/4/2023)	338123.59	2063553.15	779.58	782.28	542.06	502.06	281.12
IMW-1BU	Upgradient	9/6/2007	337177.94	2064160.50	699.89	702.29	519.39	499.39	202.97
CCR-1BU	Downgradient	10/13/2015	337641.36	2063220.23	783.41	785.80	524.41	504.41	281.39
CCR-2BU	Downgradient	10/21/2015	336302.19	2064286.87	742.28	744.69	514.78	494.78	249.91
Supplemental CCR Wells									
BUSW-8	Upgradient	4/17/2006	337692.04	2065706.88	630.59	633.48	498.12	498.12	145.36
BUSW-10	Downgradient	6/29/2007	336364.75	2065495.79	617.26	619.76	513.85	498.85	120.91
IMW-2BU	Upgradient	9/10/2007	337417.23	2065170.91	609.77	612.44	508.96	493.96	118.48
MW-3D	Upgradient	5/1/2006	338184.68	2065077.38	741.11	743.53	515.58	505.58	237.95
MW-4D	Upgradient	5/10/2006	336365.51	2066044.36	576.87	579.51	504.94	494.94	84.57

Notes:

1. The well locations are referenced to the Ohio State Plane South, North American Datum (NAD83), east zone coordinate system.

2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988.

TABLE 3-2
SAMPLES COLLECTED DURING 2023
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar/Apr-23	Sept/Oct-23
BUSW-1	Downgradient	DM	DM
BUSW-2	Upgradient	DM	DM
BUSW-3	Variable	DM	DM
BUSW-4	Downgradient	DM	DM
BUSW-5	Upgradient	DM	DM
BUSW-8	Upgradient	DM	DM
BUSW-10	Downgradient	DM	DM
IMW-1BU	Upgradient	DM	DM
IMW-2BU	Upgradient	DM	DM
CCR-1BU	Downgradient	DM	DM
CCR-2BU	Downgradient	DM	DM
MW-3D	Upgradient	DM	DM
MW-4D	Upgradient	DM	DM

Notes:
1. DM: Detection Monitoring.

TABLE 3-3
SUMMARY OF MEASURED FIELD PARAMETERS DURING 2023
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGAM
KYGER CREEK STATION
CHESHIRE, OHIO

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
BUSW-1	Apr-23	12.51	6900	7.40	76	1.74	2.91
BUSW-2	Apr-23	12.57	11800	6.98	-30	2.03	3.95
BUSW-3	Apr-23	13.53	44800	7.21	53	1.07	4.48
BUSW-4	Apr-23	12.86	43000	7.31	331	2.12	7.35
BUSW-5	Apr-23	19.36	42700	7.05	28	1.25	4.11
BUSW-8	Apr-23	23.49	33100	7.45	-42	1.75	3.91
BUSW-10	Apr-23	12.18	9440	7.06	138	1.6	3.91
IMW-1BU	Apr-23	15.35	15700	7.29	135	2.95	3.62
IMW-2BU	Apr-23	20.36	3210	7.20	148	2.25	4.28
MW-3D	Apr-23	18.84	47	7.32	66	1.45	4.38
MW-4D	Apr-23	12.38	205	7.43	257	3.28	4.03
CCR-1BU	Apr-23	19.87	36700	7.29	15	2.02	4.98
CCR-2BU	Apr-23	14.66	463	7.03	-55	1.85	4.12
BUSW-1	Oct-23	14.98	728	7.08	22.8	3.34	4.38
BUSW-2	Oct-23	23.89	11000	7.27	16.7	2.36	4.09
BUSW-3	Oct-23	12.54	77000	7.16	-67	0.88	4.75
BUSW-4	Oct-23	15.76	43700	7.02	248	1.36	3.87
BUSW-5	Oct-23	12.11	3550	7.11	192	2.57	4.61
BUSW-8	Oct-23	18.12	3300	7.21	209	1.81	4.00
BUSW-10	Oct-23	14.94	847	7.19	130	2.27	4.71
IMW-1BU	Oct-23	13.38	12900	7.25	258	1.89	2.55
IMW-2BU	Oct-23	15.54	30200	7.35	203	2.08	3.95
MW-3D	Oct-23	16.81	4810	6.97	169	1.71	3.99
MW-4D	Oct-23	16.3	1920	7.17	132	2.39	3.56
CCR-1BU	Oct-23	19.72	3620	7.00	167	4.31	3.12
CCR-2BU	Oct-23	11.79	1170	7.29	145	3.15	4.65

Notes:
1. °C: Degrees Celsius.
2. µohms/cm: Micro-ohms per centimeter.
3. S.U.: Standard Units.
4. mV: Millivolts.
5. mg/L: Milligrams per liter.
6. NTUs: Nephelometric Turbidity Units.

TABLE 4-1
GROUNDWATER MONITORING NETWORK
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft)[2]	Top of Casing Elevation (ft)[2]	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
KC-15-01	Upgradient	8/5/2015 (Modified 4/5/2023)	332114.55	2072393.84	573.81	576.42	519.77	509.77	69.43
KC-15-02	Upgradient	8/7/2012 (Modified 4/5/2023)	332500.654	2072569.222	574.17	576.68	520.79	510.79	69.46
KC-15-03	Upgradient	8/12/2015 (Modified 4/5/2023)	332546.402	2073001.342	573.91	576.76	520.03	510.03	71.52
KC-15-04	Downgradient	8/12/2015	331782.439	2073755.607	579.89	579.37	519.89	509.89	69.48
KC-15-05	Downgradient	8/19/2015	331569.994	2073574.832	580.52	580.07	520.52	510.52	69.55
KC-15-06	Downgradient	8/18/2015	331218.52	2073210.42	579.98	579.48	519.98	509.98	69.50
KC-15-07	Downgradient	8/11/2015	331291.75	2072957.79	578.54	578.04	508.54	498.54	79.50
KC-15-08	Downgradient	8/10/2015	331460.59	2072675.87	579.41	578.75	509.41	499.41	79.34
KC-19-27	Downgradient	4/5/2019	331507.38	2073611.94	558.22	561.13	530.22	520.22	38.00
KC-19-28	Downgradient	4/4/2019	331064.43	2073270.03	558.41	561.10	526.41	516.41	42.00
KC-19-29	Downgradient	4/3/2019	330558.94	2072840.95	561.13	564.17	530.13	520.13	41.00

Notes:

1. The well locations are referenced to the Ohio State Plane South, North American Datum (NAD83), east zone coordinate system.

2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988.

TABLE 4-2
SAMPLES COLLECTED DURING 2023
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
KC-15-01	Upgradient	AM	NS	AM	NS
KC-15-02	Upgradient	AM	NS	AM	NS
KC-15-03	Upgradient	AM	NS	AM	NS
KC-15-04	Downgradient	AM	NS	AM	AM
KC-15-05a	Downgradient	AM	AM	AM	NS
KC-15-06	Downgradient	AM	AM	AM	NS
KC-15-07	Downgradient	AM	AM	AM	AM
KC-15-08	Downgradient	AM	AM	AM	AM
KC-19-27	Downgradient	AM	AM	AM	NS
KC-19-28	Downgradient	AM	NS	AM	NS
KC-19-29	Downgradient	AM	NS	AM	NS

Notes:
1. AM: Assessment Monitoring.
2. NS: Not Sampled.
3. Well KC-15-05a was sampled and is being evaluated to determine if it is representative of the original well.

TABLE 4-3
SUMMARY OF MEASURED FIELD PARAMETERS DURING 2023
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
KC-15-01	Apr-23	17.04	689	6.91	142	0.48	3.27
KC-15-02	Apr-23	15.36	757	6.69	123	0.51	3.17
KC-15-03	Apr-23	15.07	805	6.87	187	0.41	3.58
KC-15-04	Apr-23	15.46	904	7.09	11	9.28	4.60
KC-15-05a	Apr-23	17.76	1080	7.54	6	13.34	12.1
KC-15-06	Apr-23	15.21	830	6.51	40	0.47	4.01
KC-15-07	Apr-23	15.31	781	6.51	17	0.41	3.88
KC-15-08	Apr-23	13.14	140	7.62	114	3.32	4.64
KC-19-27	Apr-23	15.45	178	6.87	225	0.61	3.62
KC-19-28	Apr-23	15.04	315	6.50	313	0.47	3.88
KC-19-29	Apr-23	15.1	816	6.45	340	0.72	3.77
KC-15-06	Jun-23	17.11	727	7.02	273	2.83	4.01
KC-15-07	Jun-23	18.07	779	6.80	169	0.35	5.46
KC-15-08	Jun-23	18.99	1560	6.97	-99	0.53	4.02
KC-19-27	Jun-23	18.36	1610	7.13	-57	1.11	9.65
KC-15-01	Oct-23	16.90	808	7.70	285	0.25	3.45
KC-15-02	Oct-23	17.44	910	7.57	326	0.3	3.24
KC-15-03	Oct-23	21.88	676	7.74	338	0.51	3.18
KC-15-04	Oct-23	18.22	830	7.30	-39	15.25	30.4
KC-15-05a	Oct-23	19.72	1071	7.75	17	0.21	3.15
KC-15-06	Oct-23	19.75	512	7.53	330	0.76	4.01
KC-15-07	Oct-23	14.77	786	7.91	127	0.83	3.90
KC-15-08	Oct-23	17.46	14.25	7.75	350	0.44	3.71
KC-19-27	Oct-23	17.24	1670	6.16	-36	9.03	20.6
KC-19-28	Oct-23	15.89	482	6.75	81	14.69	4.51
KC-19-29	Oct-23	21.34	726	6.15	104	0.3	4.28
KC-15-04	Dec-23	13.59	824	6.23	131	0.38	8.89
KC-15-07	Dec-23	14.1	939	6.70	-92	0.44	4.09
KC-15-08	Dec-23	17.05	1560	7.80	-101	14.62	13.9

Notes:
1. °C: Degrees Celsius.
2. µohms/cm: Micro-ohms per centimeter.
3. S.U.: Standard Units.
4. mV: Millivolts.
5. mg/L: Milligrams per liter.
6. NTUs: Nephelometric Turbidity Units.
7. Well KC-15-05a was sampled and is being evaluated to determine if it is representative of the original well.

TABLE 4-4
SUMMARY OF POTENTIAL AND CONFIRMED APPENDIX III SSIs
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Potential SSI Parameter (Units)	10th Assessment Monitoring Sampling Event March/April 2023		10th Assessment Monitoring Resampling Event June 2023		11th Assessment Monitoring Sampling Event September/October 2023		11th Assessment Monitoring Resampling Event December 2023	
		Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)	Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)
KC-15-04	TDS (mg/L)	NA	NA	NA	NA	590	588.4	550	No
KC-15-06	Boron (mg/L)	1.2	0.54	0.49	No	NA	NA	NA	NA
KC-15-08	Boron (mg/L)	0.68	0.54	0.67	**Yes**	0.63	0.62	0.68	**Yes**
	Calcium (mg/L)	220	129	200	**Yes**	200	133	210	**Yes**
	Sulfate (mg/L)	540	312	550	**Yes**	500	309	580	**Yes**
	TDS (mg/L)	970	586	590	**Yes**	1100	588	1100	**Yes**

Notes:
1. SSI: Statistically Significant Increase.
2. UTL: Upper Tolerance Limit (Pooled Interwell UTL).
3. mg/L: Milligrams per liter.
4. NA: Not Applicable—no SSI.

TABLE 4-5
GROUNDWATER PROTECTION STANDARDS
BOILER SLAG POND
CCR ASSESSMENT MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Appendix IV Constituents			
Constituent (Units)	**Background**	**MCL/SMCL**	**GWPS**
Antimony, Sb (µg/L)	1	6	6
Arsenic, As (µg/L)	6.6	10	10
Barium, Ba (µg/L)	125	2000	2000
Beryllium, Be (µg/L)	0.5	4	4
Cadmium, Cd (µg/L)	0.5	5	5
Chromium, Cr (µg/L)	3.9	100	100
Cobalt, Co (µg/L)	9.3	6*	9.3
Fluoride, F (mg/L)	0.2	4	4
Lead, Pb (µg/L)	0.9	15*	15
Lithium, Li (µg/L)	0.01	40*	40
Mercury, Hg (µg/L)	0.25	2	2
Molybdenum, Mo (µg/L)	5.1	100*	100
Radium 226 & 228 (combined) (pCi/L)	2.5	5	5
Selenium, Se (µg/L)	2.5	50	50
Thallium, Tl (µg/L)	0.9	2	2

Notes:
1. MCL: Maximum Contaminant Level.
2. SMCL: Secondary Maximum Contaminant Level.
3. *: Established by U.S. EPA as part of 2018 decision.
4. GWPS: Groundwater Protection Standard.
5. µg/L: Micrograms per liter.
6. mg/L: Milligrams per liter.
7. pCi/L: Picocuries per liter.

TABLE 4-6
SUMMARY OF POTENTIAL AND CONFIRMED GWPS EXCEEDANCES
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Potential Exceedance Parameter (Units)	10th Assessment Monitoring Sampling Event March/April 2023		10th Assessment Monitoring Resampling Event June 2023		11th Assessment Monitoring Sampling Event September/October 2023		11th Assessment Monitoring Resampling Event December 2023	
		Potential Exceedance Result	GWPS	Potential Exceedance Result	Confirmed Exceedance (Yes/No)	Potential Exceedance Result	GWPS	Potential Exceedance Result	Confirmed Exceedance (Yes/No)
KC-15-07	Arsenic (µg/L)	180	10	190	**Yes**	180	10	100	**Yes**
KC-19-27	Arsenic (µg/L)	18	10	10	No	NA	NA	NA	NA

Notes:
1. GWPS: Groundwater Protection Standard.
2. µg/L: Micrograms per liter.
3. NA: Not Applicable—no potential exceedance.

TABLE 5-1
GROUNDWATER MONITORING NETWORK
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK PLANT
CHESHIRE, OHIO

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft)[2]	Top of Casing Elevation (ft)[2]	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
KC-15-09	Upgradient	9/15/2015	334631.959	2072494.446	587.85	587.47	516.85	506.85	80.62
KC-15-10	Upgradient	9/16/2015	335018.949	2072695.744	587.75	587.45	523.75	513.75	73.70
KC-15-11	Upgradient	8/20/2015	335426.144	2072970.304	588.07	587.71	524.07	514.07	73.64
KC-15-12	Upgradient	9/17/2015	335867.034	2073268.666	588.40	587.94	524.40	514.40	73.54
KC-15-13	Upgradient	9/1/2015	336047.047	2073665.155	588.23	587.86	521.23	511.23	76.73
KC-15-14	Upgradient	8/20/2015	335808.537	2074057.138	588.85	587.80	524.85	513.85	72.95
KC-15-15	Variable	9/2/2015	335558.54	2074472.666	587.95	587.63	523.95	513.95	73.68
KC-15-16	Variable	9/3/2015	335223.916	2074799.53	588.82	588.38	524.82	514.82	73.50
KC-15-17	Variable	9/3/2015	334881.253	2074480.308	588.68	588.13	524.68	514.68	73.45
KC-15-18	Downgradient	8/25/2015	334507.455	2074126.888	588.27	587.72	524.27	514.27	73.45
KC-15-19	Downgradient	9/9/2015	334132.454	2073771.27	588.47	588.18	524.47	514.47	73.71
KC-15-20	Downgradient	8/27/2015	333841.393	2073452.842	589.45	588.72	525.45	515.45	73.26
KC-15-21	Downgradient	8/27/2015	334089.953	2073009.526	588.28	587.84	518.28	508.28	79.56
KC-15-22	Downgradient	9/10/2015	334307.567	2072647.434	587.51	587.27	518.51	508.51	78.76

Notes:

1. The well locations are referenced to the Ohio State Plane South, North American Datum (NAD83), east zone coordinate system.

2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988.

TABLE 5-2
SAMPLES COLLECTED DURING 2023
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Designation	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
KC-15-09	Upgradient	AM	NS	AM	NS
KC-15-10	Upgradient	AM	NS	AM	NS
KC-15-11	Upgradient	AM	NS	AM	NS
KC-15-12	Upgradient	AM	NS	AM	NS
KC-15-13	Upgradient	AM	NS	AM	NS
KC-15-14	Upgradient	AM	NS	AM	NS
KC-15-15	Variable	AM	NS	AM	NS
KC-15-16	Variable	AM	NS	AM	NS
KC-15-17	Variable	AM	NS	AM	NS
KC-15-18	Downgradient	AM	AM	AM	AM
KC-15-19a	Downgradient	AM	NS	AM	NS
KC-15-20	Downgradient	AM	AM	AM	AM
KC-15-21	Downgradient	AM	AM	AM	AM
KC-15-22	Downgradient	AM	NS	AM	NS

Notes:
1. AM: Assessment Monitoring.
2. NS: Not Sampled.
3. Well KC-15-19a was sampled and is being evaluated to determine if it is representative of the original well.

TABLE 5-3
SUMMARY OF MEASURED FIELD PARAMETERS DURING 2023
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OH

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
KC-15-09	Mar-23	13.12	656	6.75	-31.5	0.39	3.78
KC-15-10	Mar-23	13.5	697	6.81	-88	0.72	3.53
KC-15-11	Mar-23	14.62	695	6.92	-94	0.43	3.17
KC-15-12	Mar-23	13.39	992	7.01	-55	0.25	3.70
KC-15-13	Mar-23	13.07	915	6.18	-41	0.47	3.77
KC-15-14	Mar-23	14.79	1087	6.17	210	0.73	3.91
KC-15-15	Mar-23	15.72	929	6.65	197	0.19	4.03
KC-15-16	Mar-23	16.02	1065	6.37	21	0.32	3.78
KC-15-17	Mar-23	16.5	1945	6.57	-57	0.29	3.51
KC-15-18	Apr-23	14.01	119	7.90	88	9.04	24.10
KC-15-19a	Apr-23	13.78	128	7.26	168	10.11	2.78
KC-15-20	Apr-23	14.82	115	7.68	141	2.72	16.00
KC-15-21	Apr-23	15.02	357	7.98	1178	0.5	3.17
KC-15-22	Mar-23	14.2	185	7.95	737	0.47	3.50
KC-15-18	Jun-23	17.92	1470	7.18	226	2.68	4.37
KC-15-20	Jun-23	18.42	1260	7.18	84	0.45	23.80
KC-15-21	Jun-23	17.77	11000	6.91	13	9.1	3.92
KC-15-09	Sep-23	17.34	526	7.71	231	0.22	3.72
KC-15-10	Sep-23	19.14	475	7.81	250	0.15	3.12
KC-15-11	Sep-23	17.3	486	7.77	281	0.21	3.44
KC-15-12	Sep-23	15.97	648	7.39	333	0.31	3.17
KC-15-13	Sep-23	18.07	1110	7.47	8	0.21	3.15
KC-15-14	Sep-23	17.15	742	7.75	313	0.53	3.51
KC-15-15	Sep-23	17.55	689	7.65	398	0.37	3.12
KC-15-16	Sep-23	17.15	1880	7.76	398	0.31	3.45
KC-15-17	Oct-23	19.72	2305	7.75	-236	0.33	3.47
KC-15-18	Oct-23	18.17	1425	7.81	213	0.23	3.22
KC-15-20	Oct-23	17.18	1281	7.70	175	0.77	3.10
KC-15-19a	Oct-23	22.92	1290	6.28	162	0.65	6.80
KC-15-21	Oct-23	21.36	1132	7.86	177	0.27	3.21
KC-15-22	Oct-23	20.2	725	7.50	121	0.23	3.17
KC-15-18	Dec-23	14.98	1200	7.08	212	2.88	1.89
KC-15-20	Dec-23	16.65	1170	7.71	16	12.86	18.00
KC-15-21	Dec-23	12.23	1410	6.57	340	1.95	4.23

Notes:
1. °C: Degrees Celsius.
2. µohms/cm: Micro-ohms per centimeter.
3. S.U.: Standard Units.
4. mV: Millivolts.
5. mg/L: Milligrams per liter.
6. NTUs: Nephelometric Turbidity Units.
7. Well KC-15-19a was sampled and is being evaluated to determine if it is representative of the original well.

TABLE 5-4
SUMMARY OF POTENTIAL AND CONFIRMED APPENDIX III SSIs
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Potential SSI Parameter (Units)	10th Assessment Monitoring Sampling Event March/April 2023		10th Assessment Monitoring Resampling Event June 2023		11th Assessment Monitoring Sampling Event September/October 2023		11th Assessment Monitoring Resampling Event December 2023	
		Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)	Potential SSI Result	UTL	Potential SSI Result	Confirmed SSI (Yes/No)
KC-15-18	Calcium (mg/L)	140	115	220	Yes	170	112	140	Yes
	Chloride (mg/L)	72	65	100	Yes	92	65	80	Yes
	Sulfate (mg/L)	NA	NA	NA	NA	530	508	470	No
	TDS (mg/L)	NA	NA	NA	NA	1100	890	920	Yes
KC-15-20	Calcium (mg/L)	190	115	240	Yes	190	112	198	Yes
	TDS (mg/L)	NA	NA	NA	NA	930	890	810	No
KC-15-21	Calcium (mg/L)	200	115	200	Yes	170	112	250	Yes

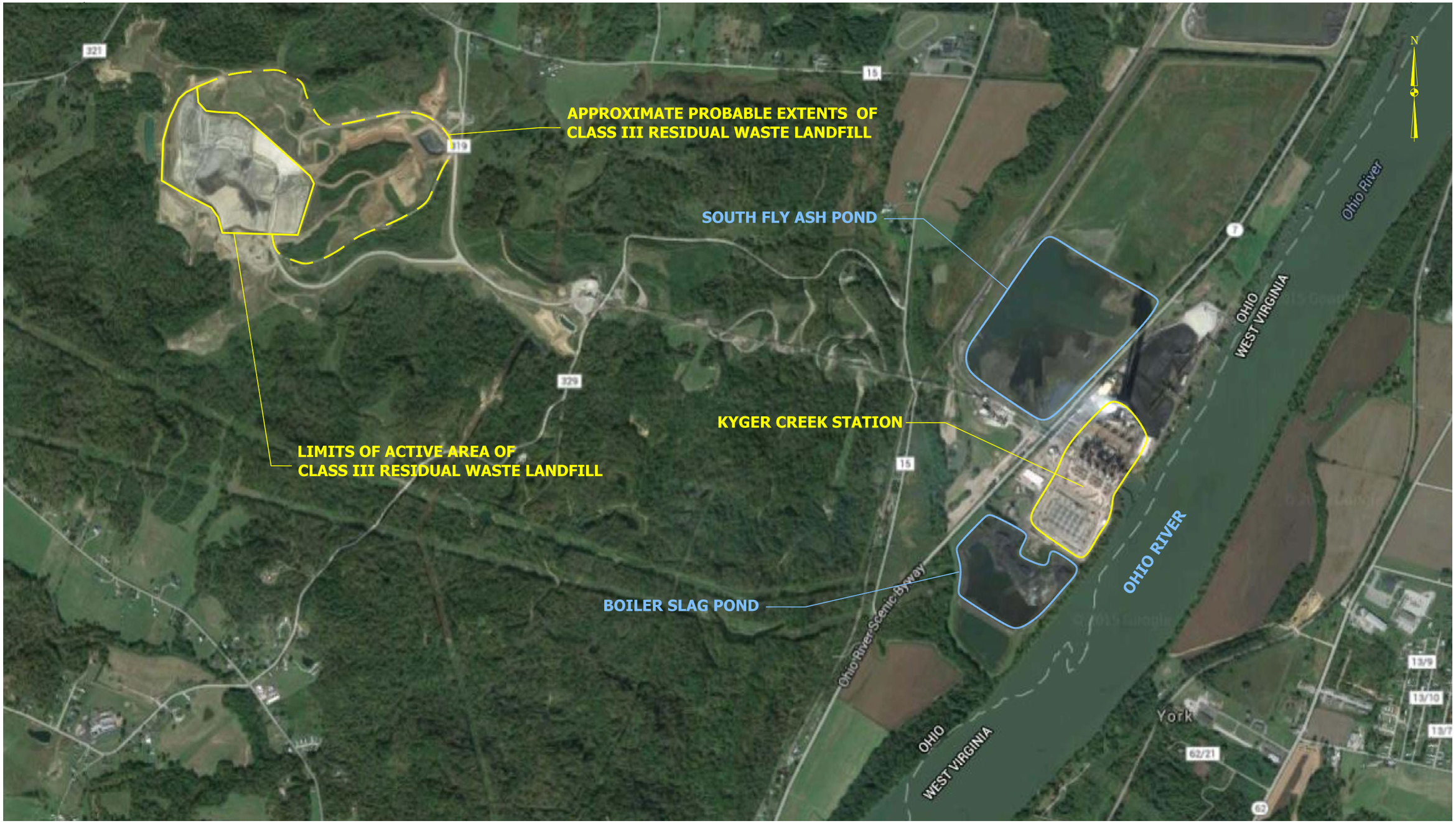
Notes:
1. SSI: Statistically Significant Increase.
2. UTL: Upper Tolerance Limit (Pooled Interwell UTL).
3. mg/L: Milligrams per liter.
4. NA: Not Applicable.

TABLE 5-5
GROUNDWATER PROTECTION STANDARDS
SOUTH FLY ASH POND
CCR ASSESSMENT MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Appendix IV Constituents			
Constituent (Units)	**Background**	**MCL/SMCL**	**GWPS**
Antimony, Sb (µg/L)	1	6	6
Arsenic, As (µg/L)	4.612	10	10
Barium, Ba (µg/L)	179	2000	2000
Beryllium, Be (µg/L)	0.6	4	4
Cadmium, Cd (µg/L)	1.2	5	5
Chromium, Cr (µg/L)	5.3	100	100
Cobalt, Co (µg/L)	12.7	6*	12.7
Fluoride, F (mg/L)	0.32	4	4
Lead, Pb (µg/L)	1.2	15*	15
Lithium, Li (µg/L)	0.03	40*	40
Mercury, Hg (µg/L)	0.25	2	2
Molybdenum, Mo (µg/L)	7	100*	100
Radium 226 & 228 (combined) (pCi/L)	2.5	5	5
Selenium, Se (µg/L)	2.5	50	50
Thallium, Tl (µg/L)	0.7	2	2

Notes:
1. MCL: Maximum Contaminant Level.
2. SMCL: Secondary Maximum Contaminant Level.
3. *: Established by U.S. EPA as part of 2018 decision.
4. GWPS: Groundwater Protection Standard.
5. µg/L: Micrograms per liter.
6. mg/L: Milligrams per liter.
7. pCi/L: Picocuries per liter.

FIGURES



DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2019018-KYG
DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Aerial Site b01.dwg
DRAWING SCALE	NOT TO SCALE

AGES
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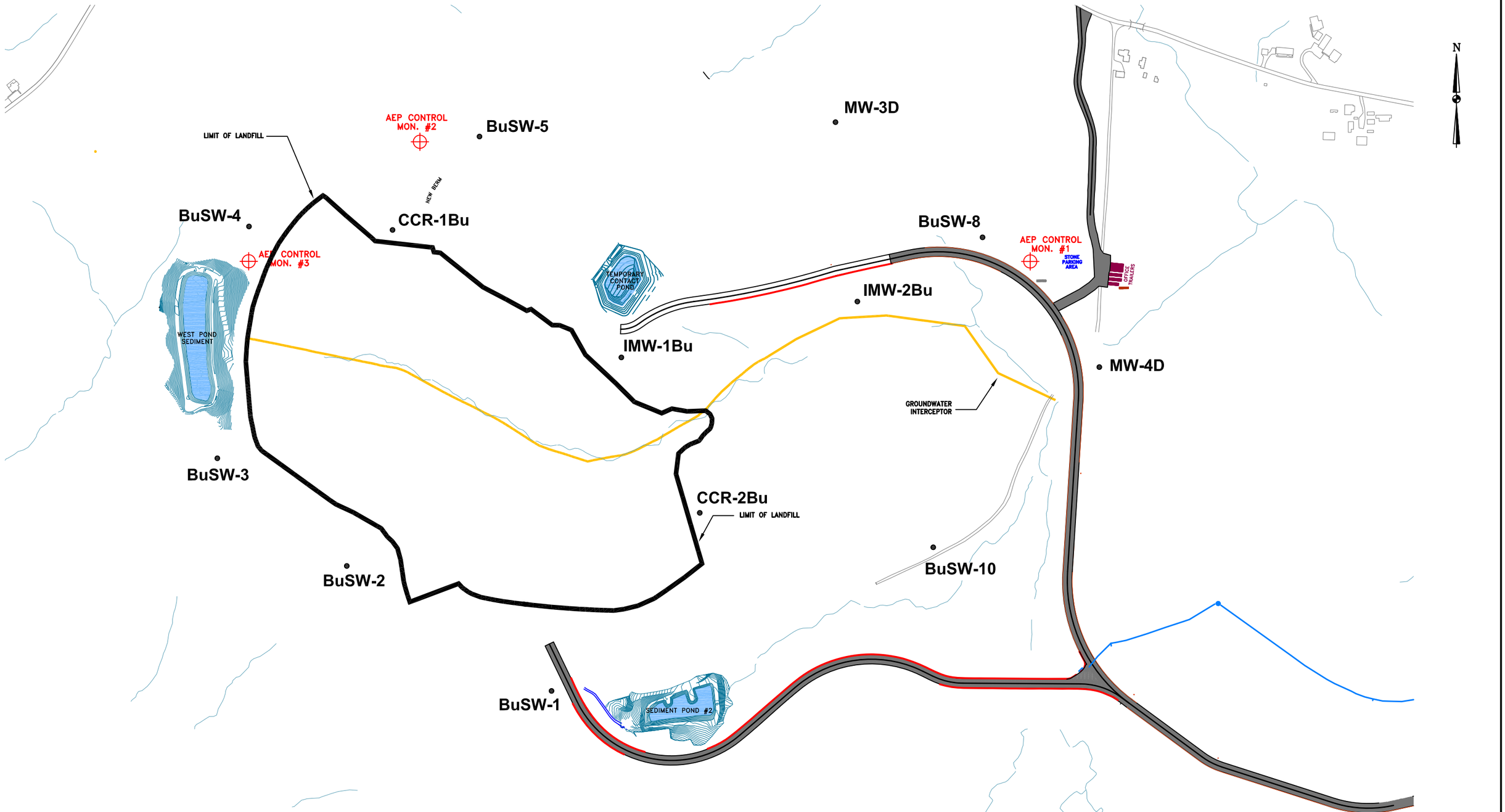
OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
SITE LOCATION MAP

DRAWING NAME	REV.
FIGURE 1	0



LEGEND:

BuSW-1 BUFFALO SANDSTONE WELL

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2019018-KYGER
DWG FILE	KYGER_CCR_2019 Annual GW Rpt_Well Locs b02.dwg
DRAWING SCALE	AS SHOWN

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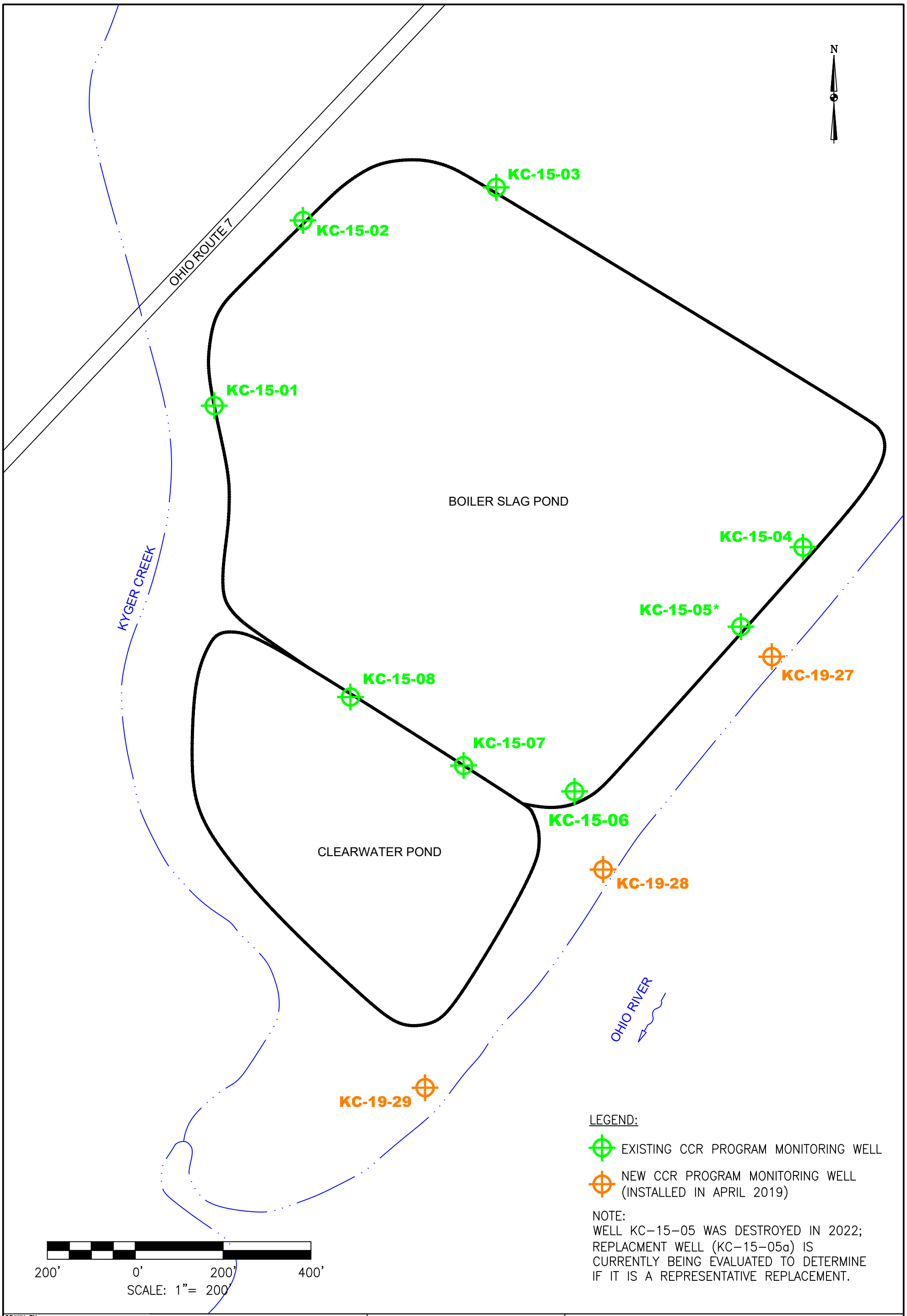
OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
CLASS III RESIDUAL WASTE LANDFILL
GROUNDWATER MONITORING WELL LOCATIONS

DRAWING NAME: FIGURE 2

REV. 0

Plot: 01/08/2020 09:28 _PROGRAMS-KYGER OVEC\Kyger Creek-CCR Program\CAD\2019 GW Monitoring-Corrective Action Rpt\KYGER_CCR_2019 Annual GW Rpt_Well Locs b02.dwg



DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2022042–KYGER
DWG FILE	KYGER_CCR_2022 Annual GW Rpt_Ponds+MWs b03–b04.dwg
DRAWING SCALE	1”=200’

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OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
BOILER SLAG POND
GROUNDWATER MONITORING WELL LOCATIONS

DRAWING NAME	REV.
FIGURE 3	0

N

KYGER CREEK

RAILROAD TRACKS

DRAINAGE DITCH

NORTH FLY ASH POND

SOUTH FLY ASH POND

KC-15-13

KC-15-12

KC-15-14

KC-15-15

KC-15-16

KC-15-11

KC-15-10

KC-15-17

KC-15-09

KC-15-18

KC-15-22

KC-15-21

KC-15-19*

KC-15-20

OHIO ROUTE 7

POWER PLANT

OHIO RIVER

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

NOTE:
WELL KC-15-19 WAS DESTROYED IN 2022; REPLACMENT WELL (KC-15-19a) IS CURRENTLY BEING EVALUATED TO DETERMINE IF IT IS A REPRESENTATIVE REPLACEMENT.

300' 0' 300' 600'

SCALE: 1"= 300'

DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2022042-KYGER
DWG FILE	KYGER_CCR_2022 Annual GW Rpt_Ponds+MWs b03-b04.dwg
DRAWING SCALE	1"=300'

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OHIO VALLEY ELECTRIC COMPANY

KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
SOUTH FLY ASH POND
GROUNDWATER MONITORING WELL LOCATIONS

DRAWING NAME: FIGURE 4

REV.: 0

Plot: 01/09/2023 15:34 _PROGRAMS-KYGER OVEC\Kyger Creek-CCR Program\CAD\2022 GW Monitoring-Corrective Action Rpt\KYGER_CCR_2022 Annual GW Rpt_Ponds+MWs b04.dwg

APPENDIX A

GROUNDWATER ELEVATIONS

TABLE A-1
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2023
CLASS III RESIDUAL WASTE LANDFILL
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
	Groundwater Elevation (ft)			
BUSW-1	568.80	NM	569.56	NM
BUSW-2	571.87	NM	561.63	NM
BUSW-3	605.14	NM	546.16	NM
BUSW-4	558.15	NM	566.67	NM
BUSW-5	577.03	NM	565.89	NM
BUSW-8	564.10	NM	564.25	NM
BUSW-10	565.04	NM	568.74	NM
IMW-1BU	574.44	NM	574.29	NM
IMW-2BU	564.29	NM	565.84	NM
CCR-1BU	584.54	NM	553.83	NM
CCR-2BU	567.36	NM	567.06	NM
MW-3D	578.64	NM	578.23	NM
MW-4D	565.54	NM	565.15	NM

Notes:
1. NM: Not Measured

TABLE A-2
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2023
BOILER SLAG POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
	Groundwater Elevation (ft)			
KC-15-01	543.30	NM	541.15	NM
KC-15-02	543.40	NM	540.28	NM
KC-15-03	543.38	NM	543.60	NM
KC-15-04	NM	538.76	538.11	NM
KC-15-05a	NM	538.83	538.17	NM
KC-15-06	543.47	NM	538.03	NM
KC-15-07	543.41	538.74	538.04	538.69
KC-15-08	543.31	538.90	538.24	538.85
KC-19-27	543.38	538.60	538.03	NM
KC-19-28	543.29	NM	537.80	NM
KC-19-29	543.27	NM	540.36	NM

Notes:
1. NM: Not Measured

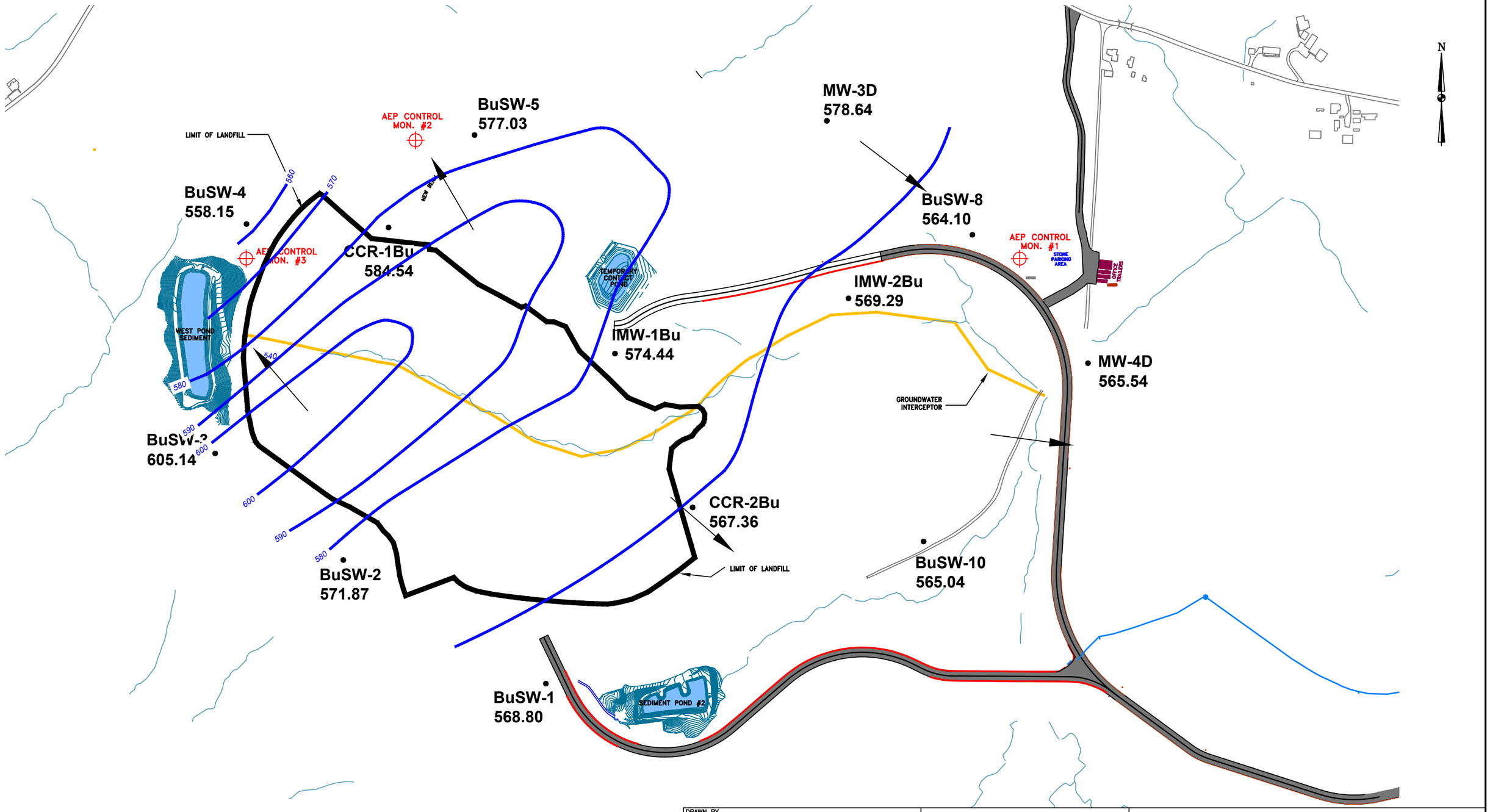
TABLE A-3
SUMMARY OF GROUNDWATER ELEVATION DATA DURING 2023
SOUTH FLY ASH POND
CCR GROUNDWATER MONITORING PROGRAM
KYGER CREEK STATION
CHESHIRE, OHIO

Well ID	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
	Groundwater Elevation (ft)			
KC-15-09	541.76	NM	542.22	NM
KC-15-10	542.23	NM	542.38	NM
KC-15-11	542.26	NM	539.69	NM
KC-15-12	542.23	NM	542.69	NM
KC-15-13	543.11	NM	542.65	NM
KC-15-14	542.98	NM	542.51	NM
KC-15-15	542.68	NM	542.30	NM
KC-15-16	541.74	NM	542.14	NM
KC-15-17	541.82	NM	542.24	NM
KC-15-18	540.51	538.82	542.00	539.72
KC-15-19a	535.80	NM	543.04	NM
KC-15-20	537.47	539.81	541.75	539.57
KC-15-21	541.53	539.98	541.88	539.65
KC-15-22	541.49	NM	542.09	NM

Notes:
1. NM: Not Measured

APPENDIX B

GROUNDWATER FLOW MAPS



LEGEND:

● BuSW–1 BUFFALO SANDSTONE WELL

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2023042–KYGER
DWG FILE	B–1_KYGER_CCR_2023 Annual GW Rpt_Landfill_GW Flow_MAR2023.dwg
DRAWING SCALE	AS SHOWN

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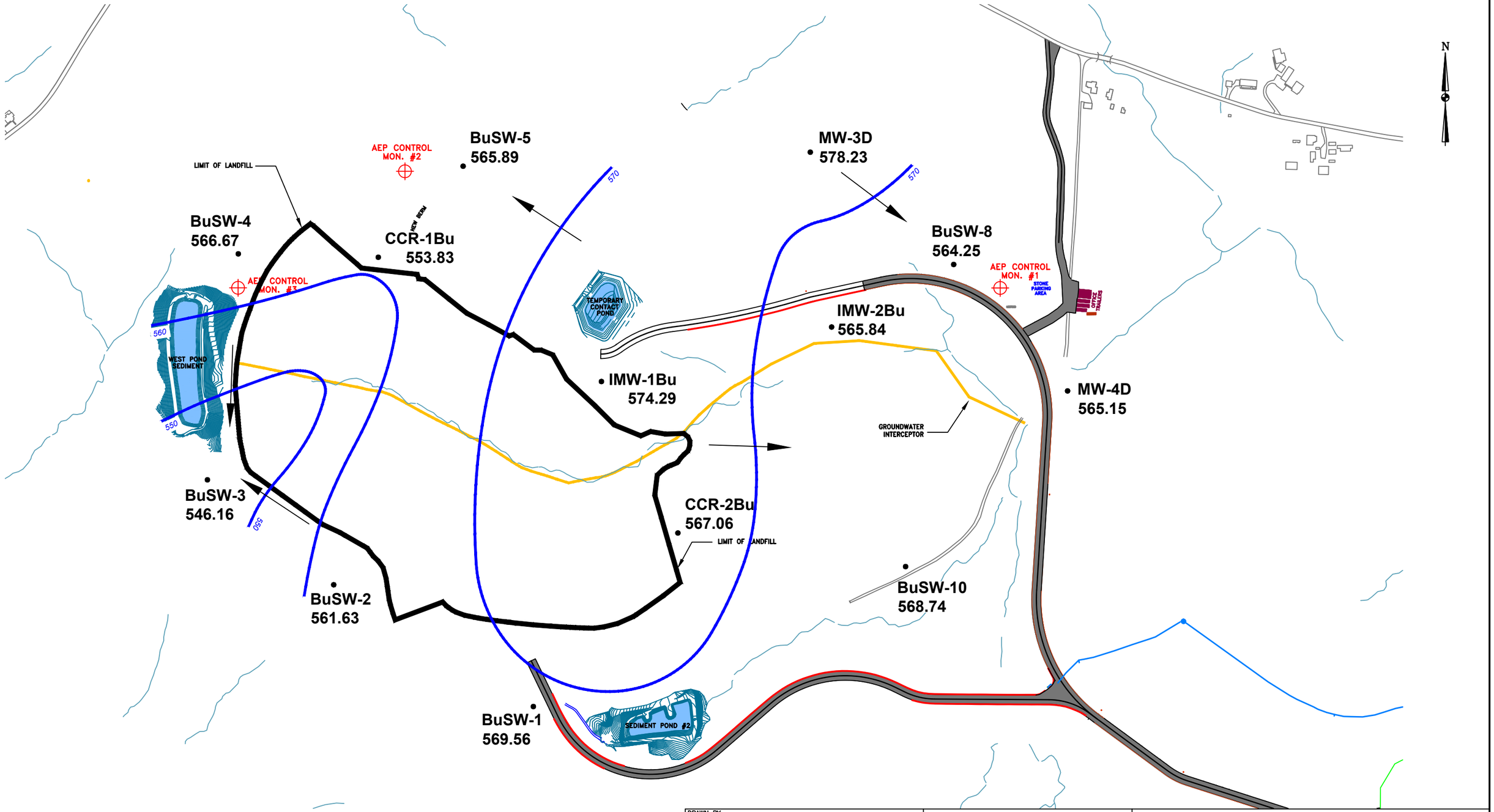
OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
CLASS III RESIDUAL WASTE LANDFILL
GROUNDWATER ELEVATIONS AND FLOW MAP
MARCH/APRIL 2023

DRAWING NAME: FIGURE B–1

REV.: 0

Plot: 01/09/2023 20:55 _PROGRAMS–KYGER OVEC\Kyger Creek–CCR Program\CAD\2023 GW Monitoring–Corrective Action Rpt\B–1_KYGER_CCR_2023 Annual GW Rpt_Landfill_GW Flow_MAR2023.dwg



LEGEND:

● BuSW-1 BUFFALO SANDSTONE WELL

400' 0' 400' 800'

SCALE: 1"= 400'

DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2023042-KYGER
DWG FILE	B-2_KYGER_CCR_2023 Annual GW Rpt_Landfill_GW Flow_OCT2023.dwg
DRAWING SCALE	AS SHOWN

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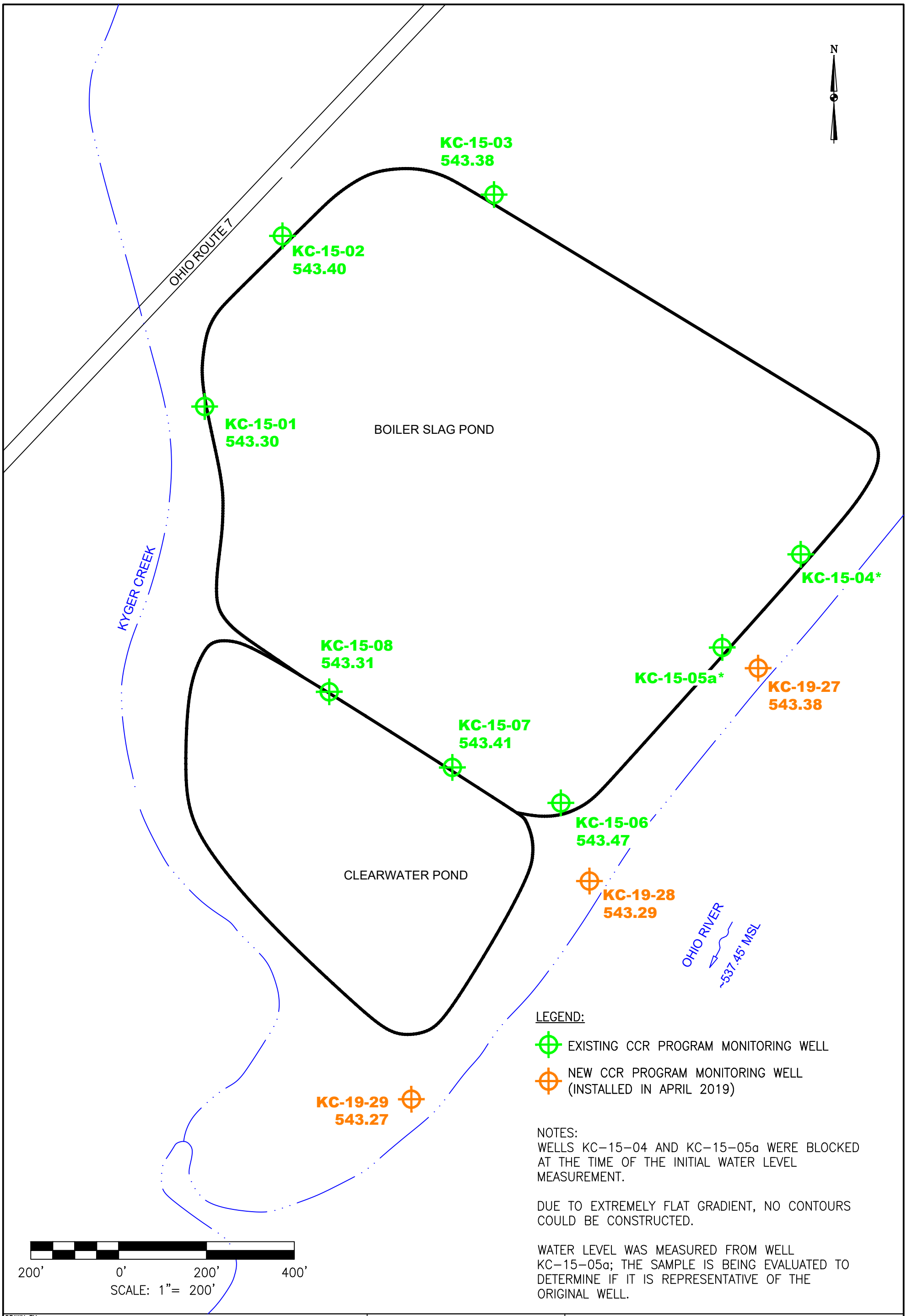
OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
CLASS III RESIDUAL WASTE LANDFILL
GROUNDWATER ELEVATIONS AND FLOW MAP
SEPTEMBER/OCTOBER 2023

DRAWING NAME: FIGURE B-2 REV. 0

Plot: 01/09/2024 21:29 _PROGRAMS-KYGER OVEC\Kyger Creek-CCR Program\CAD\2023 GW Monitoring-Corrective Action Rpt\B-2_KYGER_CCR_2023 Annual GW Rpt_Landfill_GW Flow_OCT2023.dwg



LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

NEW CCR PROGRAM MONITORING WELL (INSTALLED IN APRIL 2019)

NOTES:
WELLS KC–15–04 AND KC–15–05a WERE BLOCKED AT THE TIME OF THE INITIAL WATER LEVEL MEASUREMENT.

DUE TO EXTREMELY FLAT GRADIENT, NO CONTOURS COULD BE CONSTRUCTED.

WATER LEVEL WAS MEASURED FROM WELL KC–15–05a; THE SAMPLE IS BEING EVALUATED TO DETERMINE IF IT IS REPRESENTATIVE OF THE ORIGINAL WELL.

DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2023042–KYGER
DWG FILE	B–3_KYGER_CCR_2023 Annual GW Rpt_BSP_GW Flow_MAR2023.dwg
DRAWING SCALE	1"=200'

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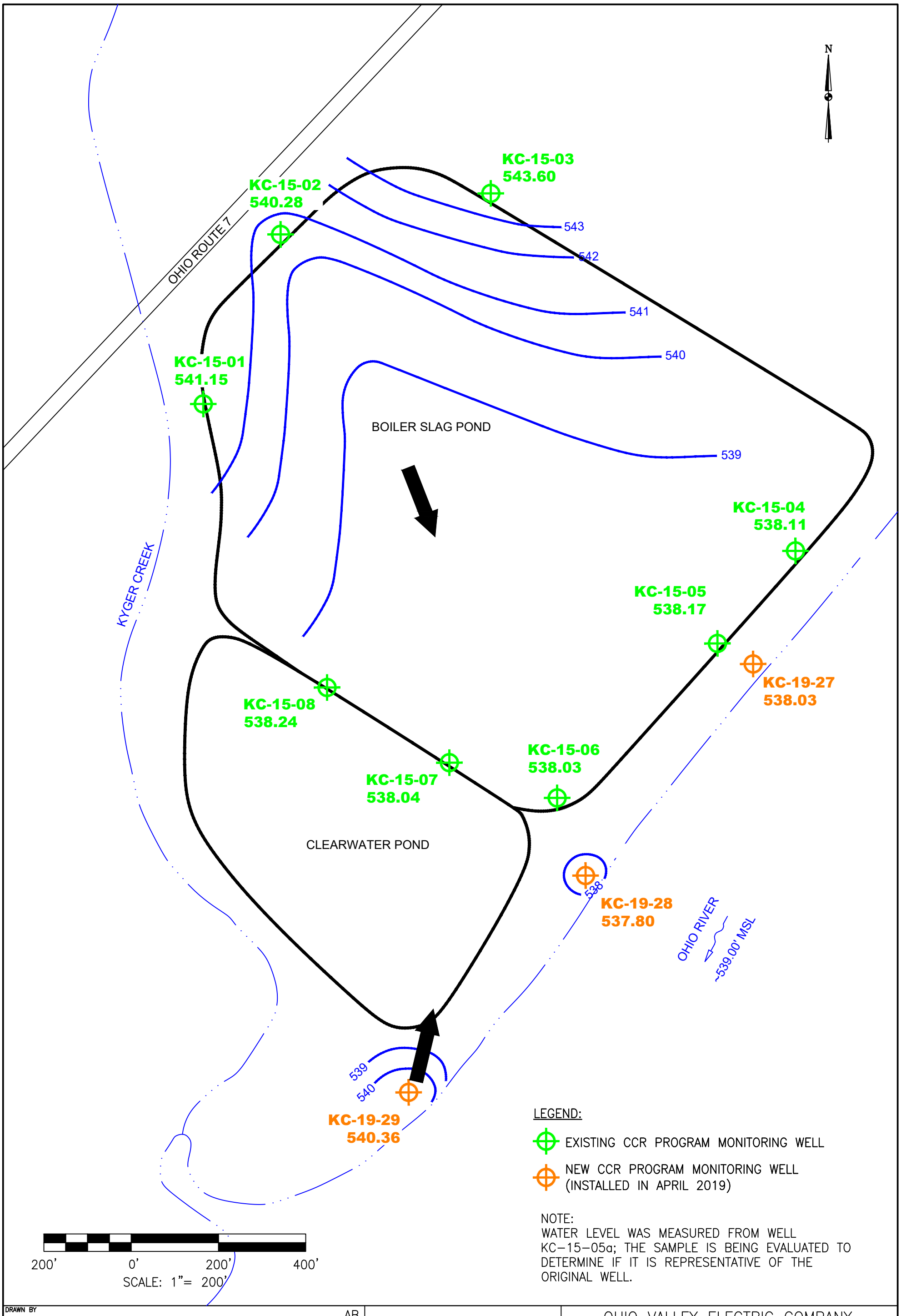
OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
BOILER SLAG POND
GROUNDWATER LEVELS AND FLOW DIRECTION
MARCH/APRIL 2023

DRAWING NAME: FIGURE B–3
REV.: 0

Plot: 01/09/2024 20:50 \Kyger Creek–CCR Program\CAD\2023 GW Monitoring–Corrective Action Rpt\B–3_KYGER_CCR_2023 Annual GW Rpt_BSP_GW Flow_MAR2023.dwg



DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2023042-KYGER
DWG FILE	B-4_KYGER_CCR_2023 Annual GW Rpt_BSP_GW Flow_MAR2023.dwg
DRAWING SCALE	1"=200'

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OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
BOILER SLAG POND
GROUNDWATER LEVELS AND FLOW DIRECTION
SEPTEMBER/OCTOBER 2023

DRAWING NAME	REV.
FIGURE B-4	0

Plot: 01/10/2024 13:57 \Kyger Creek-CCR Program\CAD\2023 GW Monitoring-Corrective Action Rpt\B-4_KYGER_CCR_2023 Annual GW Rpt_BSP_GW Flow_MAR2023.dwg

N

KYGER CREEK

RAILROAD TRACKS

DRAINAGE DITCH

NORTH FLY ASH POND

KC-15-13
543.11

543

KC-15-14
542.98

KC-15-12
542.23

KC-15-15
542.68

542

KC-15-11
542.26

KC-15-16
541.74

KC-15-10
542.23

SOUTH FLY ASH POND

KC-15-17
541.82

OHIO ROUTE 7

KC-15-09
541.76

KC-15-18
540.51

541

540

539

538

537

536

KC-15-22
541.49

KC-15-21
541.53

KC-15-19a
535.80

KC-15-20
537.47

POWER PLANT

OHIO RIVER
~537.90 MSL

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

NOTE:
WATER LEVEL WAS MEASURED FROM WELL KC-15-19a; THE SAMPLE IS BEING EVALUATED TO DETERMINE IF IT IS REPRESENTATIVE OF THE ORIGINAL WELL.

300' 0' 300' 600'

SCALE: 1"= 300'

DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2023042-KYG
DWG FILE	B-5_KYGER_CCR_2023 Annual GW Rpt_SFAP_GW Flow_MAR2023.dwg
DRAWING SCALE	1"=300'

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OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
SOUTH FLY ASH POND
GROUNDWATER LEVELS AND FLOW DIRECTION
MARCH/APRIL 2023

DRAWING NAME: FIGURE B-5

REV. 0

Plot: 01/10/2024 10:57 \Kyger Creek-CCR Program\CAD\2023 GW Monitoring-Corrective Action Rpt\B-5_KYGER_CCR_2023 Annual GW Rpt_SFAP_GW Flow_MAR2023.dwg

N

KYGER CREEK

RAILROAD TRACKS

DRAINAGE DITCH

NORTH FLY ASH POND

KC-15-13
542.65

KC-15-14
542.51

KC-15-12
542.69

KC-15-15
540.30

KC-15-11*
539.69

KC-15-16
542.14

KC-15-10
542.38

SOUTH FLY ASH POND

KC-15-17
542.24

KC-15-09
542.22

KC-15-18
542.00

OHIO ROUTE 7

KC-15-22
542.09

KC-15-19a
543.04

543

542

543

542

KC-15-21
541.88

KC-15-20
541.75

POWER PLANT

OHIO RIVER
~537.90 MSL

LEGEND:

EXISTING CCR PROGRAM MONITORING WELL

NOTES:
WELL KC-15-11 GROUNDWATER LEVEL ANOMALOUSLY LOW AND NOT USED IN GROUNDWATER CONTOURING.

WATER LEVEL WAS MEASURED FROM WELL KC-15-19a; THE SAMPLE IS BEING EVALUATED TO DETERMINE IF IT IS REPRESENTATIVE OF THE ORIGINAL WELL.

300' 0' 300' 600'
SCALE: 1"= 300'

DRAWN BY	AB
DATE	
CHECKED BY	
JOB NO.	2023042-KYG
DWG FILE	B-6_KYGER_CCR_2023 Annual GW Rpt_SFAP_GW Flow_OCT2023.dwg
DRAWING SCALE	1"=300'

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OHIO VALLEY ELECTRIC COMPANY
KYGER CREEK STATION
CHESHIRE, GALLIA COUNTY, OHIO
SOUTH FLY ASH POND
GROUNDWATER LEVELS AND FLOW DIRECTION
SEPTEMBER/OCTOBER 2023

DRAWING NAME	REV.
FIGURE B-6	0

Plot: 01/10/2024 08:53 \Kyger Creek-CCR Program\CAD\2023 GW Monitoring-Corrective Action Rpt\B-6_KYGER_CCR_2023 Annual GW Rpt_SFAP_GW Flow_OCT2023.dwg

APPENDIX C

APPENDIX III AND APPENDIX IV CONSTITUENTS

APPENDIX III AND APPENDIX IV CONSTITUENTS
KYGER CREEK STATION
CHESHIRE, OHIO

Appendix III Constituents
Boron, B
Calcium, Ca
Chloride, Cl
Fluoride, F
pH (units=SU)
Sulfate, SO4
Total Dissolved Solids (TDS)
Appendix IV Constituents
Antimony, Sb
Arsenic, As
Barium, Ba
Beryllium, Be
Cadmium, Cd
Chromium, Cr
Cobalt, Co
Fluoride, F
Lithium, Li
Lead, Pb
Mercury, Hg
Molybdenum, Mo
Radium 226 & 228 (combined)(units=pCi/L)
Selenium, Se
Thallium, Tl

APPENDIX D

ANALYTICAL RESULTS

BuSW-1
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.35	0.33
Calcium, Ca	mg/L	15	28
Chloride, Cl	mg/L	2300	1900
Fluoride, F	mg/L	1.4	1
pH	s.u.	7.4	7.08
Sulfate, SO4	mg/L	79	70
Total Dissolved Solids (TDS)	mg/L	4000	3700

BuSW-2
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.42	0.42
Calcium, Ca	mg/L	64	74
Chloride, Cl	mg/L	5000	4400
Fluoride, F	mg/L	1.6	1.3
pH	s.u.	6.98	7.27
Sulfate, SO4	mg/L	100 U	100 U
Total Dissolved Solids (TDS)	mg/L	7000	6000

BuSW-3
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.2	0.42
Calcium, Ca	mg/L	1100	1200
Chloride, Cl	mg/L	21000	21000
Fluoride, F	mg/L	5.0 U	5.0 U
pH	s.u.	7.21	7.16
Sulfate, SO4	mg/L	200 U	200 U
Total Dissolved Solids (TDS)	mg/L	30000	33000

BuSW-4
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.39	0.37
Calcium, Ca	mg/L	850	1200
Chloride, Cl	mg/L	19000	18000
Fluoride, F	mg/L	10 U	5.0 U
pH	s.u.	7.31	7.02
Sulfate, SO4	mg/L	400 U	41
Total Dissolved Solids (TDS)	mg/L	30000	32000

BuSW-5
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.1	0.36
Calcium, Ca	mg/L	950	680
Chloride, Cl	mg/L	14000	16000
Fluoride, F	mg/L	5.0 U	5.0 U
pH	s.u.	7.05	7.11
Sulfate, SO4	mg/L	200 U	200 U
Total Dissolved Solids (TDS)	mg/L	18000	19000

Notes:
NS: Well not sampled.

BuSW-8
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.99	0.35
Calcium, Ca	mg/L	580	610
Chloride, Cl	mg/L	19000	15000
Fluoride, F	mg/L	5.0 U	5.0 U
pH	s.u.	7.45	7.21
Sulfate, SO4	mg/L	200 U	200 U
Total Dissolved Solids (TDS)	mg/L	22000	23000

BuSW-10
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.1	0.39
Calcium, Ca	mg/L	55	50
Chloride, Cl	mg/L	3200	3100
Fluoride, F	mg/L	1.2	1.1
pH	s.u.	7.06	7.19
Sulfate, SO4	mg/L	40 U	40 U
Total Dissolved Solids (TDS)	mg/L	2000	4700

CCR-1BU
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.0	0.28
Calcium, Ca	mg/L	910	960
Chloride, Cl	mg/L	16000	15000
Fluoride, F	mg/L	5.0 U	5.0 U
pH	s.u.	7.29	7.00
Sulfate, SO4	mg/L	200 U	200 U
Total Dissolved Solids (TDS)	mg/L	27000	25000

CCR-2BU
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.28	0.28
Calcium, Ca	mg/L	65	85
Chloride, Cl	mg/L	4300	4100
Fluoride, F	mg/L	1.5	1.3
pH	s.u.	7.03	7.29
Sulfate, SO4	mg/L	23	20
Total Dissolved Solids (TDS)	mg/L	6200	5900

IMW-1BU
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.2	0.41
Calcium, Ca	mg/L	140	140
Chloride, Cl	mg/L	5800	6200
Fluoride, F	mg/L	1.4	1.4
pH	s.u.	7.29	7.25
Sulfate, SO4	mg/L	100 U	100 U
Total Dissolved Solids (TDS)	mg/L	9100	8400

IMW-2BU
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.1	0.4
Calcium, Ca	mg/L	580	600
Chloride, Cl	mg/L	16000	19000
Fluoride, F	mg/L	5.0 U	5.0 U
pH	s.u.	7.2	7.35
Sulfate, SO4	mg/L	200 U	200 U
Total Dissolved Solids (TDS)	mg/L	22000	13000

MW-3D
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.1	0.36
Calcium, Ca	mg/L	1100	1100
Chloride, Cl	mg/L	22000	20000
Fluoride, F	mg/L	5.0 U	10 U
pH	s.u.	7.32	6.97
Sulfate, SO4	mg/L	200 U	400 U
Total Dissolved Solids (TDS)	mg/L	31000	15000

MW-4D
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.4	0.41
Calcium, Ca	mg/L	3.6	5
Chloride, Cl	mg/L	220	200
Fluoride, F	mg/L	1.4	1.3
pH	s.u.	7.43	7.17
Sulfate, SO4	mg/L	290	270
Total Dissolved Solids (TDS)	mg/L	1100	1200

KC-15-01
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.77	0.15
Calcium, Ca	mg/L	110	95
Chloride, Cl	mg/L	36	37
Fluoride, F	mg/L	0.082	0.12
pH	s.u.	6.91	7.7
Sulfate, SO4	mg/L	210	210
Total Dissolved Solids (TDS)	mg/L	820	510
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.8	1.7
Barium, Ba	ug/L	39	58
Beryllium, Be	ug/L	0.057	0.061
Cadmium, Cd	ug/L	0.17	0.17
Chromium, Cr	ug/L	3.8	4.3
Cobalt, Co	ug/L	6.5	7.4
Fluoride, F	mg/L	0.082	0.12
Lead, Pb	ug/L	0.29	0.79
Lithium, Li	mg/L	0.0067	0.0058
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.77	0.5
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.20 U	0.20 U

Notes:
NS: Well not sampled.

KC-15-02
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.72	0.13
Calcium, Ca	mg/L	140	120
Chloride, Cl	mg/L	33	38
Fluoride, F	mg/L	0.13	0.12
pH	s.u.	6.69	7.57
Sulfate, SO4	mg/L	170	160
Total Dissolved Solids (TDS)	mg/L	570	560
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	2.7	2.1
Barium, Ba	ug/L	110	110
Beryllium, Be	ug/L	0.056	0.70 U
Cadmium, Cd	ug/L	0.087	0.13
Chromium, Cr	ug/L	3.9	1.1
Cobalt, Co	ug/L	1	1.7
Fluoride, F	mg/L	0.13	0.12
Lead, Pb	ug/L	0.6	1.0 U
Lithium, Li	mg/L	0.007	0.0054
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	1.5	0.99
Radium 226 & 228 (combined)	pCi/L	1.09	1.09
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.026	0.20 U

KC-15-03
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	1.3	0.55
Calcium, Ca	mg/L	140	100
Chloride, Cl	mg/L	29	23
Fluoride, F	mg/L	0.098	0.091
pH	s.u.	6.87	7.74
Sulfate, SO4	mg/L	220	180
Total Dissolved Solids (TDS)	mg/L	1000	480
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.1	1.3
Barium, Ba	ug/L	55	45
Beryllium, Be	ug/L	0.052	0.045
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	1.5	1.5
Cobalt, Co	ug/L	4.5	5
Fluoride, F	mg/L	0.098	0.091
Lead, Pb	ug/L	0.62	0.38
Lithium, Li	mg/L	0.0056	0.031
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.98	1.6
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.028	0.20 U

Notes:
NS: Well not sampled.

KC-15-04
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23	Dec-23
Appendix III Constituents				
Boron, B	mg/L	0.44	0.37	NA
Calcium, Ca	mg/L	110	95	NA
Chloride, Cl	mg/L	26	22	NA
Fluoride, F	mg/L	0.096	0.17	NA
pH	s.u.	7.09	7.3	NA
Sulfate, SO4	mg/L	300	270	NA
Total Dissolved Solids (TDS)	mg/L	520	590	550
Appendix IV Constituents				
Antimony, Sb	ug/L	1.0 U	1.0 U	NA
Arsenic, As	ug/L	1.7	2.3	NA
Barium, Ba	ug/L	38	46	NA
Beryllium, Be	ug/L	0.70 U	0.071	NA
Cadmium, Cd	ug/L	0.50 U	0.50 U	NA
Chromium, Cr	ug/L	0.87	2.7	NA
Cobalt, Co	ug/L	7.1	7.4	NA
Fluoride, F	mg/L	0.096	0.17	NA
Lead, Pb	ug/L	1.0 U	1	NA
Lithium, Li	mg/L	0.012	0.01	NA
Mercury, Hg	ug/L	0.20 U	0.20 U	NA
Molybdenum, Mo	ug/L	0.3	5.4	NA
Radium 226 & 228 (combined)	pCi/L	5 U	0.966	NA
Selenium, Se	ug/L	1.0 U	1.0 U	NA
Thallium, Tl	ug/L	0.20 U	0.033	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-05a
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
Appendix III Constituents					
Boron, B	mg/L	0.61	0.77	0.59	NA
Calcium, Ca	mg/L	150	180	140	140
Chloride, Cl	mg/L	30	NA	31	NA
Fluoride, F	mg/L	0.14	NA	0.14	NA
pH	s.u.	7.54	NA	7.75	NA
Sulfate, SO4	mg/L	350	340	330	340
Total Dissolved Solids (TDS)	mg/L	650	720	760	720
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	1.6	NA	1.8	NA
Barium, Ba	ug/L	49	NA	57	NA
Beryllium, Be	ug/L	0.70 U	NA	0.049	NA
Cadmium, Cd	ug/L	0.50 U	NA	0.50 U	NA
Chromium, Cr	ug/L	0.72	NA	1.4	NA
Cobalt, Co	ug/L	4.6	NA	4.9	NA
Fluoride, F	mg/L	0.14	NA	0.14	NA
Lead, Pb	ug/L	1.0 U	NA	0.4	NA
Lithium, Li	mg/L	0.0038	NA	0.0038	NA
Mercury, Hg	ug/L	0.20 U	NA	0.20 U	NA
Molybdenum, Mo	ug/L	0.6	NA	0.52	NA
Radium 226 & 228 (combined)	pCi/L	5 U	NA	5 U	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.20 U	NA	0.20 U	NA

Notes:
NS: Well not sampled.

KC-15-06
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23
Appendix III Constituents				
Boron, B	mg/L	1.2	0.49	0.34
Calcium, Ca	mg/L	110	NA	75
Chloride, Cl	mg/L	38	NA	21
Fluoride, F	mg/L	0.11	NA	0.093
pH	s.u.	6.51	NA	7.53
Sulfate, SO4	mg/L	180	NA	130
Total Dissolved Solids (TDS)	mg/L	560	NA	380
Appendix IV Constituents				
Antimony, Sb	ug/L	1.0 U	NA	1.0 U
Arsenic, As	ug/L	2.6	NA	1.8
Barium, Ba	ug/L	110	NA	48
Beryllium, Be	ug/L	0.70 U	NA	0.11
Cadmium, Cd	ug/L	0.12	NA	0.14
Chromium, Cr	ug/L	0.84	NA	3.6
Cobalt, Co	ug/L	2.2	NA	1.9
Fluoride, F	mg/L	0.11	NA	0.093
Lead, Pb	ug/L	1.0 U	NA	1.3
Lithium, Li	mg/L	0.0051	NA	0.0054
Mercury, Hg	ug/L	0.20 U	NA	0.20 U
Molybdenum, Mo	ug/L	0.29	NA	4.9
Radium 226 & 228 (combined)	pCi/L	0.821	NA	1.48
Selenium, Se	ug/L	1.0 U	NA	0.46
Thallium, Tl	ug/L	0.20 U	NA	0.057

Notes:
NS: Well not sampled.

KC-15-07
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
Appendix III Constituents					
Boron, B	mg/L	0.1	NA	0.19	NA
Calcium, Ca	mg/L	74	NA	89	NA
Chloride, Cl	mg/L	30	NA	34	NA
Fluoride, F	mg/L	0.075	NA	0.15	NA
pH	s.u.	6.51	NA	7.91	NA
Sulfate, SO4	mg/L	18	NA	110	NA
Total Dissolved Solids (TDS)	mg/L	240	NA	460	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	180	190	140	100
Barium, Ba	ug/L	570	NA	510	NA
Beryllium, Be	ug/L	0.70 U	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.50 U	NA	0.50 U	NA
Chromium, Cr	ug/L	0.84	NA	0.77	NA
Cobalt, Co	ug/L	0.19	NA	0.42	NA
Fluoride, F	mg/L	0.075	NA	0.15	NA
Lead, Pb	ug/L	1.0 U	NA	1.0 U	NA
Lithium, Li	mg/L	0.0042	NA	0.0036	NA
Mercury, Hg	ug/L	0.20 U	NA	0.20 U	NA
Molybdenum, Mo	ug/L	0.85	NA	0.84	NA
Radium 226 & 228 (combined)	pCi/L	1.72	NA	1.92	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.20 U	NA	0.20 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-08
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
Appendix III Constituents					
Boron, B	mg/L	0.68	0.67	0.63	0.68
Calcium, Ca	mg/L	220	200	200	210
Chloride, Cl	mg/L	41	NA	39	NA
Fluoride, F	mg/L	0.14	NA	0.16	NA
pH	s.u.	7.62	NA	7.75	NA
Sulfate, SO4	mg/L	540	550	500	580
Total Dissolved Solids (TDS)	mg/L	970	590	1100	1100
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	9.2	NA	5.9	NA
Barium, Ba	ug/L	52	NA	49	NA
Beryllium, Be	ug/L	0.70 U	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.50 U	NA	0.50 U	NA
Chromium, Cr	ug/L	0.82	NA	0.76	NA
Cobalt, Co	ug/L	5.7	NA	4.7	NA
Fluoride, F	mg/L	0.14	NA	0.16	NA
Lead, Pb	ug/L	1.0 U	NA	1.0 U	NA
Lithium, Li	mg/L	0.022	NA	0.058	NA
Mercury, Hg	ug/L	0.20 U	NA	0.20 U	NA
Molybdenum, Mo	ug/L	0.5	NA	0.34	NA
Radium 226 & 228 (combined)	pCi/L	0.543	NA	1.23	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.20 U	NA	0.20 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-19-27
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23
Appendix IV Constituents				
Arsenic, As	ug/L	18	10	8.2

KC-19-28
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix IV Constituents			
Arsenic, As	ug/L	0.79	0.96

KC-19-29
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix IV Constituents			
Arsenic, As	ug/L	0.47	0.37

KC-15-09
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.023	0.03
Calcium, Ca	mg/L	75	72
Chloride, Cl	mg/L	12	12
Fluoride, F	mg/L	0.2	0.21
pH	s.u.	6.75	7.71
Sulfate, SO4	mg/L	57	56
Total Dissolved Solids (TDS)	mg/L	370	290
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.2	1.1
Barium, Ba	ug/L	23	23
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.68	0.72
Cobalt, Co	ug/L	1.9	1.9
Fluoride, F	mg/L	0.2	0.21
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.0055	0.0054
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.24	0.15
Radium 226 & 228 (combined)	pCi/L	5 U	0.505
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.20 U	0.20 U

KC-15-10
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.036	0.017
Calcium, Ca	mg/L	66	60
Chloride, Cl	mg/L	9.3	8.9
Fluoride, F	mg/L	0.21	0.2
pH	s.u.	6.81	7.81
Sulfate, SO4	mg/L	70	69
Total Dissolved Solids (TDS)	mg/L	300	260
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	2.7	2.9
Barium, Ba	ug/L	33	34
Beryllium, Be	ug/L	0.70 U	0.031
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.78	1
Cobalt, Co	ug/L	1.1	1
Fluoride, F	mg/L	0.21	0.2
Lead, Pb	ug/L	1.0 U	0.37
Lithium, Li	mg/L	0.0064	0.0066
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	1.0 U	1.0 U
Radium 226 & 228 (combined)	pCi/L	5 U	0.718
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.20 U	0.20 U

KC-15-11
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.033	0.029
Calcium, Ca	mg/L	81	62
Chloride, Cl	mg/L	11	11
Fluoride, F	mg/L	0.25	0.19
pH	s.u.	6.92	7.77
Sulfate, SO4	mg/L	87	85
Total Dissolved Solids (TDS)	mg/L	380	450
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	0.63	0.5
Barium, Ba	ug/L	28	27
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.093
Chromium, Cr	ug/L	0.7	0.75
Cobalt, Co	ug/L	1	0.94
Fluoride, F	mg/L	0.25	0.19
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.006	0.006
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.14	1.0 U
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.20 U	0.20 U

KC-15-12
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.19	0.12
Calcium, Ca	mg/L	100	100
Chloride, Cl	mg/L	19	16
Fluoride, F	mg/L	0.12	0.15
pH	s.u.	7.01	7.39
Sulfate, SO4	mg/L	89	84
Total Dissolved Solids (TDS)	mg/L	480	440
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	0.41	0.97
Barium, Ba	ug/L	76	88
Beryllium, Be	ug/L	0.70 U	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.74	0.91
Cobalt, Co	ug/L	0.36	0.64
Fluoride, F	mg/L	0.12	0.15
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.0047	0.0048
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.49	0.46
Radium 226 & 228 (combined)	pCi/L	0.86	0.764
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.20 U	0.20 U

KC-15-13
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	4.3	5.3
Calcium, Ca	mg/L	88	94
Chloride, Cl	mg/L	65	67
Fluoride, F	mg/L	0.13	0.19
pH	s.u.	6.18	7.47
Sulfate, SO4	mg/L	350	340
Total Dissolved Solids (TDS)	mg/L	700	630
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.9	1.5
Barium, Ba	ug/L	54	60
Beryllium, Be	ug/L	0.70 U	0.037
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.84	0.82
Cobalt, Co	ug/L	12	14
Fluoride, F	mg/L	0.13	0.19
Lead, Pb	ug/L	1.0 U	1.0 U
Lithium, Li	mg/L	0.01	0.011
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.22	0.15
Radium 226 & 228 (combined)	pCi/L	0.705	5 U
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.20 U	0.021

KC-15-14
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	11	12
Calcium, Ca	mg/L	73	73
Chloride, Cl	mg/L	59	57
Fluoride, F	mg/L	0.14	0.15
pH	s.u.	6.17	7.75
Sulfate, SO4	mg/L	210	210
Total Dissolved Solids (TDS)	mg/L	490	490
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.9	2.8
Barium, Ba	ug/L	28	29
Beryllium, Be	ug/L	0.7	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	0.7	0.8
Cobalt, Co	ug/L	3.4	2.8
Fluoride, F	mg/L	0.14	0.15
Lead, Pb	ug/L	1	1.0 U
Lithium, Li	mg/L	0.018	0.018
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.3	0.27
Radium 226 & 228 (combined)	pCi/L	5 U	0.554
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.2	0.20 U

KC-15-15
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	13	14
Calcium, Ca	mg/L	65	73
Chloride, Cl	mg/L	71	56
Fluoride, F	mg/L	0.096	0.13
pH	s.u.	6.65	7.65
Sulfate, SO4	mg/L	180	220
Total Dissolved Solids (TDS)	mg/L	450	460
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.0 U	2.7
Barium, Ba	ug/L	16	28
Beryllium, Be	ug/L	0.7	0.056
Cadmium, Cd	ug/L	0.76	1.2
Chromium, Cr	ug/L	0.69	2.4
Cobalt, Co	ug/L	18	9.7
Fluoride, F	mg/L	0.096	0.13
Lead, Pb	ug/L	1	0.97
Lithium, Li	mg/L	0.018	0.023
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	1.0 U	0.19
Radium 226 & 228 (combined)	pCi/L	5 U	1.27
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.2	0.021

KC-15-16
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	9.4	14
Calcium, Ca	mg/L	220	270
Chloride, Cl	mg/L	72	110
Fluoride, F	mg/L	1.4	0.14
pH	s.u.	6.37	7.76
Sulfate, SO4	mg/L	670	840
Total Dissolved Solids (TDS)	mg/L	1100	1400
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	1.1	1.7
Barium, Ba	ug/L	54	50
Beryllium, Be	ug/L	0.035	0.087
Cadmium, Cd	ug/L	0.31	0.42
Chromium, Cr	ug/L	4.3	1.9
Cobalt, Co	ug/L	0.42	7.4
Fluoride, F	mg/L	1.4	0.14
Lead, Pb	ug/L	1.0 U	0.88
Lithium, Li	mg/L	0.011	0.017
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.48	0.47
Radium 226 & 228 (combined)	pCi/L	5 U	1.28
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.03	0.05

KC-15-17
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	6.3	15
Calcium, Ca	mg/L	230	400
Chloride, Cl	mg/L	69	110
Fluoride, F	mg/L	0.2	0.25 U
pH	s.u.	6.57	7.75
Sulfate, SO4	mg/L	79	910
Total Dissolved Solids (TDS)	mg/L	1000	1800
Appendix IV Constituents			
Antimony, Sb	ug/L	0.94	0.64
Arsenic, As	ug/L	2.3	3.2
Barium, Ba	ug/L	94	160
Beryllium, Be	ug/L	0.073	0.071
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	26	35
Cobalt, Co	ug/L	1.5	2.1
Fluoride, F	mg/L	0.2	0.25 U
Lead, Pb	ug/L	0.94	0.96
Lithium, Li	mg/L	0.069	0.094
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	13	12
Radium 226 & 228 (combined)	pCi/L	5 U	1.13
Selenium, Se	ug/L	1.0 U	0.47
Thallium, Tl	ug/L	0.20 U	0.053

KC-15-18
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
Appendix III Constituents					
Boron, B	mg/L	11	NA	13	NA
Calcium, Ca	mg/L	140	220	170	140
Chloride, Cl	mg/L	72	100	92	80
Fluoride, F	mg/L	0.13	NA	0.25 U	NA
pH	s.u.	7.9	NA	7.81	NA
Sulfate, SO4	mg/L	430	NA	530	470
Total Dissolved Solids (TDS)	mg/L	780	NA	1100	920
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	1.2	NA	1.1	NA
Barium, Ba	ug/L	23	NA	14	NA
Beryllium, Be	ug/L	0.70 U	NA	0.039	NA
Cadmium, Cd	ug/L	0.57	NA	0.45	NA
Chromium, Cr	ug/L	27	NA	26	NA
Cobalt, Co	ug/L	4.4	NA	7.2	NA
Fluoride, F	mg/L	0.13	NA	0.25 U	NA
Lead, Pb	ug/L	0.24	NA	0.61	NA
Lithium, Li	mg/L	0.067	NA	0.06	NA
Mercury, Hg	ug/L	0.20 U	NA	0.20 U	NA
Molybdenum, Mo	ug/L	5.5	NA	4.2	NA
Radium 226 & 228 (combined)	pCi/L	5 U	NA	0.712	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.051	NA	0.03	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-19a
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	14	16
Calcium, Ca	mg/L	150	160
Chloride, Cl	mg/L	51	52
Fluoride, F	mg/L	0.13	0.25 U
pH	s.u.	7.26	7.7
Sulfate, SO4	mg/L	530	480
Total Dissolved Solids (TDS)	mg/L	930	950
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	0.46	0.55
Barium, Ba	ug/L	37	26
Beryllium, Be	ug/L	0.70 U	0.05
Cadmium, Cd	ug/L	0.28	0.32
Chromium, Cr	ug/L	1.1	1.3
Cobalt, Co	ug/L	23	16
Fluoride, F	mg/L	0.13	0.25 U
Lead, Pb	ug/L	1.0 U	1.5
Lithium, Li	mg/L	0.016	0.016
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.88	0.097
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.06	0.066

Notes:
Results for well KC-15-19a are provided; the facility is evaluating whether the sampling results are the result of an error in accordance with 40 C.F.R. § 257.95(g)(3)(ii).

KC-15-20
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
Appendix III Constituents					
Boron, B	mg/L	4.6	NA	9.5	NA
Calcium, Ca	mg/L	190	240	190	198
Chloride, Cl	mg/L	22	NA	43	NA
Fluoride, F	mg/L	0.15	NA	0.23	NA
pH	s.u.	7.68	NA	6.28	NA
Sulfate, SO4	mg/L	470	NA	460	NA
Total Dissolved Solids (TDS)	mg/L	800	NA	930	810
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	0.92	NA	0.64	NA
Barium, Ba	ug/L	25	NA	17	NA
Beryllium, Be	ug/L	0.043	NA	0.70 U	NA
Cadmium, Cd	ug/L	0.63	NA	0.38	NA
Chromium, Cr	ug/L	3.3	NA	2.5	NA
Cobalt, Co	ug/L	1.4	NA	1.3	NA
Fluoride, F	mg/L	0.15	NA	0.23	NA
Lead, Pb	ug/L	0.48	NA	0.21	NA
Lithium, Li	mg/L	0.014	NA	0.018	NA
Mercury, Hg	ug/L	0.20 U	NA	0.20 U	NA
Molybdenum, Mo	ug/L	2.8	NA	2.3	NA
Radium 226 & 228 (combined)	pCi/L	5 U	NA	5 U	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.049	NA	0.033	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-21
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Jun-23	Sept/Oct-23	Dec-23
Appendix III Constituents					
Boron, B	mg/L	4.1	NA	4.7	NA
Calcium, Ca	mg/L	200	200	170	250
Chloride, Cl	mg/L	29	NA	32	NA
Fluoride, F	mg/L	0.29	NA	0.23	NA
pH	s.u.	7.98	NA	7.86	NA
Sulfate, SO4	mg/L	460	NA	370	NA
Total Dissolved Solids (TDS)	mg/L	890	NA	770	NA
Appendix IV Constituents					
Antimony, Sb	ug/L	1.0 U	NA	1.0 U	NA
Arsenic, As	ug/L	0.93	NA	0.87	NA
Barium, Ba	ug/L	13	NA	14	NA
Beryllium, Be	ug/L	0.03	NA	0.031	NA
Cadmium, Cd	ug/L	0.12	NA	0.18	NA
Chromium, Cr	ug/L	1.7	NA	1.2	NA
Cobalt, Co	ug/L	4.3	NA	4.5	NA
Fluoride, F	mg/L	0.29	NA	0.23	NA
Lead, Pb	ug/L	0.21	NA	1.0 U	NA
Lithium, Li	mg/L	0.0056	NA	0.0067	NA
Mercury, Hg	ug/L	0.20 U	NA	0.20 U	NA
Molybdenum, Mo	ug/L	0.38	NA	0.47	NA
Radium 226 & 228 (combined)	pCi/L	5 U	NA	5 U	NA
Selenium, Se	ug/L	1.0 U	NA	1.0 U	NA
Thallium, Tl	ug/L	0.021	NA	0.20 U	NA

Notes:
NA: Sampling not required for this parameter.

KC-15-22
SUMMARY OF 2023 ANALYTICAL RESULTS
Ohio Valley Electric Corporation
Kyger Creek Station
Gallia County, Ohio

Parameter	Units	Mar/Apr-23	Sept/Oct-23
Appendix III Constituents			
Boron, B	mg/L	0.87	0.43
Calcium, Ca	mg/L	110	110
Chloride, Cl	mg/L	17	15
Fluoride, F	mg/L	0.12	0.11
pH	s.u.	7.95	7.5
Sulfate, SO4	mg/L	120	97
Total Dissolved Solids (TDS)	mg/L	490	440
Appendix IV Constituents			
Antimony, Sb	ug/L	1.0 U	1.0 U
Arsenic, As	ug/L	4.2	3.6
Barium, Ba	ug/L	83	70
Beryllium, Be	ug/L	0.057	0.70 U
Cadmium, Cd	ug/L	0.50 U	0.50 U
Chromium, Cr	ug/L	1.8	0.58
Cobalt, Co	ug/L	0.42	0.16
Fluoride, F	mg/L	0.12	0.11
Lead, Pb	ug/L	0.49	1.0 U
Lithium, Li	mg/L	0.0067	0.0054
Mercury, Hg	ug/L	0.20 U	0.20 U
Molybdenum, Mo	ug/L	0.28	0.27
Radium 226 & 228 (combined)	pCi/L	5 U	5 U
Selenium, Se	ug/L	1.0 U	1.0 U
Thallium, Tl	ug/L	0.20 U	0.20 U

Notes:
NA: Sampling not required for this parameter.