



**OHIO VALLEY ELECTRIC CORPORATION**

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

WRITER'S DIRECT DIAL NO:  
740-897-7768

March 1, 2019

Mr. Bruno Pigott, Commissioner  
Indiana Department of Environmental Management  
100 N. Senate Avenue  
Mail Code 50-01  
Indianapolis, IN 46204-2251

Dear Mr. Pigott:

**Re: Indiana-Kentucky Electric Corporation  
2018 Annual Groundwater Monitoring and Corrective Actions Report**

As required by 40 CFR 257.106(h)(1), the Indiana-Kentucky Electric Corporation (IKEC) is providing notification to the Commissioner (State Director) of the Indiana Department of Environmental Management that the second Annual CCR Groundwater Monitoring and Corrective Actions report has been completed in compliance with 40 CFR 257.90(e) for IKEC's Clifty Creek Station. 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 publically accessible internet site in accordance with 40 CFR 257.107(h)(1), which can be viewed at <https://www.ovec.com/CCRCCompliance.php>.

If you have any questions, or require any additional information, please call me at (740) 897-7768.

Sincerely,

A handwritten signature in black ink that reads "Tim Fulk". The signature is written in a cursive style.

Tim Fulk  
Engineer II

TLF:klr



Stantec Consulting Services Inc.  
11687 Lebanon Road, Cincinnati OH 45241-2012

February 27, 2019

File: 175534018, 200.201

Ohio Valley Electric Corporation  
Indiana-Kentucky Electric Corporation  
Attention: Mr. Gabriel Coriell  
3932 U.S. Route 23  
P.O. Box 468  
Piketon, Ohio 45661

**Reference: 2018 Annual Groundwater Monitoring and Corrective Action Report (Rev. 1.0)  
EPA Final Coal Combustion Residuals (CCR) Rule  
Clifty Creek Generating Station  
Madison, Indiana**

Dear Mr. Coriell,

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 Indiana-Kentucky Electric Corporation (IKEC), this applies to the Clifty Creek Station's West Boiler Slag Pond, Landfill Runoff Collection 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

Design with community in mind



February 27, 2019  
Mr. Gabriel Coriell  
Page 2 of 2

**Reference: 2018 Annual Groundwater Monitoring and Corrective Action Report (Rev. 1.0)  
EPA Final Coal Combustion Residuals (CCR) Rule  
Clifty Creek Generating Station  
Madison, Indiana**

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.

IKEC has retained Applied Geology and Environmental Science, Inc. of Clinton, Pennsylvania (AGES) to perform the Clifty Creek Station's groundwater monitoring and corrective action support under the EPA Final CCR Rule. The 2018 CCR Regulation Groundwater Monitoring and Corrective Action Report (GWCAR) was prepared by AGES to present the annual groundwater monitoring at the West Boiler Slag Pond, Landfill Runoff Collection Pond, and CCR Landfill of the Clifty Creek Station. AGES (2019a) was posted to the Clifty Creek Station's operating record by January 31, 2019. AGES (2019b) revised the annual report's discussion of the groundwater protection standards and the projected activities to summarize the results of the statistical evaluations. Stantec Consulting Services Inc. (Stantec) has reviewed AGES (2019a and 2019b); and they meet 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 Clifty Creek Generating Station and the Indiana-Kentucky Electric Corporation.

Regards,

**Stantec Consulting Services Inc.**

Jacqueline S. Harmon, P.E.  
Senior Associate  
Phone: (513) 842-8200 ext 8220  
Fax: (513) 842-8250  
Jacqueline.Harmon@stantec.com

Attachment: AGES (2019b). Coal Combustion Residuals Regulation, 2018 Groundwater Monitoring and Corrective Action Report, Indiana-Kentucky Electric Corporation. Clifty Creek Station, Madison, Indiana, January. February 2019. Revision 1.0.

c. Stan Harris, John Griggs, John McInnes

js h v:\1755\active\175534018\geotechnical\analysis\groundwater\2018 annual report - ages\175534018 let 20190227.docx

Design with community in mind



**AGES**  
Applied Geology And Environmental Science, Inc.

---

2402 Hookstown Grade Road, Suite 200

Clinton, PA 15026

[www.appliedgeology.net](http://www.appliedgeology.net)

**P 412. 264. 6453**

**F 412. 264. 6567**

**COAL COMBUSTION RESIDUALS REGULATION  
2018 GROUNDWATER MONITORING AND  
CORRECTIVE ACTION REPORT**

**INDIANA-KENTUCKY ELECTRIC CORPORATION  
CLIFTY CREEK STATION  
MADISON, INDIANA**

**JANUARY 2019  
FEBRUARY 2019 REVISION 1.0**

**Prepared for:**

**INDIANA-KENTUCKY ELECTRIC CORPORATION (IKEC)**

**By:**

**APPLIED GEOLOGY AND ENVIRONMENTAL SCIENCE, INC.**

**COAL COMBUSTION RESIDUALS REGULATION  
2018 GROUNDWATER MONITORING AND  
CORRECTIVE ACTION REPORT  
INDIANA-KENTUCKY ELECTRIC CORPORATION  
CLIFTY CREEK STATION  
MADISON, INDIANA**

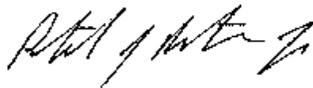
**JANUARY 2019  
FEBRUARY 2019 REVISION 1.0**

**Prepared for:**

**INDIANA-KENTUCKY ELECTRIC CORPORATION (IKEC)**

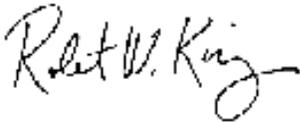
**Prepared By:**

**APPLIED GEOLOGY AND ENVIRONMENTAL SCIENCE, INC.**



---

**R. John Ristow**  
Chief Hydrogeologist



---

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

**COAL COMBUSTION RESIDUALS REGULATION  
2018 GROUNDWATER MONITORING AND  
CORRECTIVE ACTION REPORT  
INDIANA-KENTUCKY ELECTRIC CORPORATION  
CLIFTY CREEK STATION  
MADISON, INDIANA**

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

**1.0 INTRODUCTION .....1**

**2.0 BACKGROUND.....1**

**3.0 TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF  
COLLECTION POND.....2**

    3.1 Groundwater Monitoring Network .....2

    3.2 Groundwater Sampling .....3

    3.3 Analytical Results .....3

    3.4 Groundwater Protection Standards.....7

**4.0 WEST BOILER SLAG POND.....5**

    4.1 Groundwater Monitoring Network .....5

    4.2 Groundwater Sampling .....5

    4.3 Analytical Results .....6

**5.0 PROBLEMS ENCOUNTERED .....6**

**6.0 PROJECTED ACTIVITIES FOR 2019.....7**

**7.0 REFERENCES .....7**

**COAL COMBUSTION RESIDUALS REGULATION  
2018 GROUNDWATER MONITORING AND  
CORRECTIVE ACTION REPORT  
INDIANA-KENTUCKY ELECTRIC CORPORATION  
CLIFTY CREEK STATION  
MADISON, INDIANA**

**T A B L E O F C O N T E N T S  
(Continued)**

**LIST OF TABLES**

- 3-1 Groundwater Monitoring Network – Type I Residual Waste Landfill and Landfill Runoff Collection Pond
- 3-2 Summary of Samples Collected During 2018 - Type I Residual Waste Landfill and Landfill Runoff Collection Pond
- 3-3 Summary of Measured Field Parameters - 2018 – Type I Residual Waste Landfill and Landfill Runoff Collection Pond
- 3-4 Summary of Potential and Confirmed Statistically Significant Increases - Type I Residual Waste Landfill and Landfill Runoff Collection Pond
- 3-5 Groundwater Protection Standards – Type I Residual Waste Landfill and Landfill Runoff Collection Pond
- 4-1 Groundwater Monitoring Network – West Boiler Slag Pond
- 4-2 Summary of Samples Collected During 2018 – West Boiler Slag Pond
- 4-3 Summary of Measured Field Parameters - 2018 – West Boiler Slag Pond

**LIST OF FIGURES**

- 1 Site Location Map
- 2 Monitoring Well Locations – Type I Residual Waste Landfill and Landfill Runoff Collection Pond
- 3 Monitoring Well Locations – West Boiler Slag Pond

**LIST OF APPENDICES**

- A Groundwater Elevations
- B Groundwater Flow Maps
- C Appendix III and Appendix IV Constituents
- D Analytical Results

## LIST OF ACRONYMS

AGES	Applied Geology and Environmental Science, Inc.
CCR	Coal Combustion Residuals
GMPP	Groundwater Monitoring Program Plan
GWPS	Groundwater Protection Standard
IDEM	Indiana Department of Environmental Management
IKEC	Indiana-Kentucky Electric Corporation
LRCF	Landfill Runoff Collection Pond
MCL	Maximum Contaminant Level
MW	Megawatt
OVEC	Ohio Valley Electric Corporation
RCRA	Resource Conservation and Recovery Act
SAP	Statistical Analysis Plan
SSI	Statistically Significant Increase
Stantec	Stantec Consulting Services, Inc.
Type I Landfill	Type I Residual Waste Landfill
S.U.	Standard Unit
U.S. EPA	United States Environmental Protection Agency
WBSP	West Boiler Slag Pond

**COAL COMBUSTION RESIDUALS REGULATION  
2018 GROUNDWATER MONITORING AND  
CORRECTIVE ACTION REPORT  
INDIANA-KENTUCKY ELECTRIC CORPORATION  
CLIFTY CREEK STATION  
MADISON, INDIANA**

## **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. The only compliance mechanism is for a state or citizen group to bring a RCRA suit in federal district court against any facility that is alleged to be in non-compliance with the new requirements.

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 2018, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year.

## **2.0 BACKGROUND**

The Clifty Creek Station, located in Madison, Indiana, is a 1,304-megawatt (MW) coal-fired generating plant operated by the Indiana-Kentucky Electric Corporation (IKEC), a subsidiary of the Ohio Valley Electric Corporation (OVEC). The Clifty Creek Station has six (6) 217.26-MW generating units and has been in operation since 1955. Beginning in 1955, ash products were sluiced to disposal ponds located in the plant site. During the course of plant operations, CCRs have been managed and disposed of in various units at the station. There are three (3) CCR units at the Clifty Creek Station (Figure 1):

- Type I Residual Waste Landfill (Type I Landfill);
- Landfill Runoff Collection Pond (LRCP); and
- West Boiler Slag Pond (WBSP).

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 TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND**

The Type I Landfill and LRCP occupy an approximately 200-acre area situated within an eroded bedrock channel (Figures 1 and 2). Beginning in 1955, ash products were sluiced to disposal ponds located in the plant site. To allow for more disposal capacity, an on-site fly ash pond was developed into a Type III Landfill in 1988. All required permits for the Type III Landfill were obtained from the Indiana Department of Environmental Management (IDEM) and the Type III Landfill went operational in 1991. In March 1994, IDEM approved a pH variance for the disposal of low-sulfur coal ash in the fly ash Type III Landfill. Emplacement of low-sulfur coal ash in the Type III Landfill began in January 1995. In April 2007, IKEC submitted a permit application to IDEM to upgrade the former Type III landfill to a Type I landfill. In 2013, IDEM issued a renewed permit and approved IKEC's request to upgrade the landfill to a Type I landfill.

The Type I Landfill consists of approximately 109 acres, and has been approved by IDEM as a Type I Residual Waste Landfill. The remaining 91 acres consist of the LRCP located at the southwest end of the Type I Landfill.

#### **3.1 Groundwater Monitoring Network**

As detailed in the *Monitoring Well Installation Report* (Applied Geology and Environmental Science, Inc. [AGES] 2018a), the CCR groundwater monitoring network for the Type I Landfill and LRCP consists of the following eight (8) monitoring wells:

- CF-15-04 (Background);
- CF-15-05 (Background);
- CF-15-06 (Background);
- CF-15-07 (Downgradient);
- CF-15-08 (Downgradient);
- CF-15-09 (Downgradient);
- WBSP-15-01 (Background); and
- WBSP-15-02 (Background).

The locations of all 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 includes five (5) background and three (3) downgradient monitoring wells, which satisfies the requirements of the CCR Rule. Groundwater levels measured in 2018 are included in Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2018 are included in Appendix B.

### 3.2 Groundwater Sampling

In accordance with §257.94 of the CCR Rule, the first round of Detection Monitoring was conducted in March 2018. Based on the results of the statistical evaluation of the Detection Monitoring data (see Section 3.3), the Type I Landfill and LRCP entered into Assessment Monitoring on September 11, 2018. The first round of Assessment Monitoring samples were collected in October 2018.

All groundwater samples were collected in accordance with the Groundwater Monitoring Program Plan (GMPP) (AGES 2018b). The Detection Monitoring samples were analyzed for all Appendix III constituents, and the Assessment Monitoring samples were analyzed for all Appendix III and Appendix IV constituents. 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 shipped to an analytical laboratory to be analyzed for all of the parameters listed in Appendix III and/or Appendix IV of the CCR Rule (Appendix C) as appropriate.

### 3.3 Analytical Results

Upon receipt, the March 2018 groundwater monitoring data were statistically evaluated in accordance with §257.93(f) of the CCR Rule and the SAP (Stantec 2018) for the Clifty Creek Station CCR program. Appendix D summarizes the analytical results for groundwater samples collected in 2018. The initial statistical evaluation of the Detection Monitoring data identified potential SSIs of Appendix III constituents pH and Boron in three (3) wells. (As discussed in Section 5.0, a faulty pH meter was suspected of causing the SSIs for pH.) In accordance with the SAP, the wells were re-sampled for those constituents in May 2018. Based on the results of the re-sampling the SSIs were confirmed for Boron in wells CF-15-08 and CF-15-09 at the Type I Landfill and LRCP (Table 3-4).

Upon receipt of the October 2018 analytical results, the groundwater monitoring data were statistically evaluated in accordance with §257.93(f) of the CCR Rule and the SAP (Stantec 2018) for the Clifty Creek Station CCR program. The initial statistical evaluation of the Assessment Monitoring data collected in October 2018 identified potential SSIs of one (1) or more Appendix III and Appendix IV constituents in three (3) wells. In accordance with the SAP, the wells were re-sampled for those constituents in December 2018. Based on the results of the re-sampling, the following Appendix III and Appendix IV SSIs were confirmed (Table 3-4):

### Appendix III SSIs

CF-15-08: Boron; and

CF-15-09: Boron.

### Appendix IV SSIs

CF-15-08: Molybdenum; and

CF-15-09: Molybdenum.

## 3.4 Groundwater Protection Standards

Based on the first round of Assessment Monitoring at the Type I Landfill & LRCP, SSIs were confirmed for one (1) Appendix IV constituent: Molybdenum. Therefore, IKEC has established a Groundwater Protection Standard (GWPS) for each 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. Environmental Protection Agency (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 3-5 presents the list of GWPS for the Assessment Monitoring program at the Type I Landfill & LRCP that were developed in accordance with the above requirements. Molybdenum concentrations in CF-15-08 in September 2018 (524 µg/L) and December 2018 (429 µg/L) were greater than the GWPS of 100 µg/L. Molybdenum concentrations in CF-15-09 in September 2018 (85.9 µg/L) and December (87.1 µg/L) were not greater than the GWPS.

Based on the results above, the Molybdenum concentrations in CF-15-08 were further evaluated to determine if Molybdenum was present at a Statistically Significant Level (SSL) above the GWPS. In accordance with the SAP (Stantec 2018), a 95% Lower Confidence Limit (LCL) of the mean Molybdenum concentration was calculated using the samples collected from CF-15-08 throughout the CCR groundwater monitoring program. The 95% LCL for Molybdenum in CF-15-08 (262.3 µg/L) was greater than the Molybdenum GWPS (100 µg/L). The statistical evaluation therefore concluded that Molybdenum in CF-15-08 was present at a SSL above the GWPS.

## 4.0 WEST BOILER SLAG POND

The WBSP currently serves as a settling facility for sluiced boiler slag produced at the plant. The pond is formed by natural grade to the north, east and west and a southern dike that runs along the bank of the Ohio River. The Devil's Backbone borders the northern side of the WBSP (Figures 1 and 3).

### 4.1 Groundwater Monitoring Network

As detailed in the *Monitoring Well Installation Report* (AGES 2018a), the CCR groundwater monitoring network for the WBSP includes the following 13 wells:

- CF-15-04 (Background);
- CF-15-05 (Background);
- CF-15-06 (Background);
- WBSP-15-01 (Upgradient);
- WBSP-15-02 (Upgradient);
- WBSP-15-03 (Upgradient);
- WBSP-15-04 (Downgradient);
- WBSP-15-05 (Downgradient);
- WBSP-15-06 (Downgradient);
- WBSP-15-07 (Downgradient);
- WBSP-15-08 (Downgradient);
- WBSP-15-09 (Downgradient); and
- WBSP-15-10 (Downgradient).

The locations of 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 WBSP includes six (6) background and upgradient wells, and seven (7) downgradient wells, which satisfies the requirements of the CCR Rule.

Groundwater levels measured in 2018 are included in Appendix A. Groundwater flow maps for the two (2) monitoring events completed in 2018 are included in Appendix B.

### 4.2 Groundwater Sampling

In accordance with §257.94 of the CCR Rule, IKEC completed two (2) rounds of groundwater monitoring in accordance with the Detection Monitoring Program at the WBSP. Table 4-2 presents a sampling summary, which includes the number of groundwater samples collected for analysis for each upgradient, background and downgradient well, the dates the samples were collected, and whether the sample was required by the Detection 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 collected in accordance with the GMPP (AGES 2018b) and shipped to an analytical laboratory to be analyzed for all of the parameters listed in Appendix III of the CCR Rule (Appendix C).

#### 4.3 Analytical Results

Upon receipt of the March 2018 and October 2018 analytical results, the groundwater monitoring data were statistically evaluated in accordance with §257.93(f) of the CCR Rule and the SAP (Stantec 2018). Appendix D summarizes the analytical results for groundwater samples collected in 2018. No potential SSIs were identified during either of the Detection Monitoring events. Therefore, the WBSP will remain in Detection Monitoring.

### **5.0 PROBLEMS ENCOUNTERED**

During the March 2018 Detection Monitoring event, potential SSIs for pH were reported in all downgradient wells at the Type I Landfill and LRCP (ranging from 10.12 standard units (S.U.) to 11.57 S.U.). A thorough review of historic pH data for all of the wells, and well purging and sampling forms from the March 2018 event indicated that the elevated pH readings were the result of a faulty pH meter used during the March 2018 sampling event.

The range of historic pH values measured at all the Type I Landfill and LRCP wells (CF-15-07, CF-15-08, and CF-15-09) ranged from 6.69 S.U. to 7.91 S.U. with the average being 7.29 S.U. The highest March 2018 pH value (10.85 S.U.) was three (3) orders of magnitude higher than the historic average for pH. In addition, all the Type I Landfill and LRCP wells were sampled by the same field crew using the same pH meter. The WBSP wells were sampled by a different crew and pH meter. Only wells monitored by the field crew working at the Type I Landfill and LRCP exhibited elevated pH readings.

Prior to the resampling event in May 2018, a new pH meter and new calibration solutions were acquired, and all the field staff were re-trained on proper calibration methods. During the May 2018 sampling event, all the affected wells were purged until stabilization of field parameters was achieved in accordance with the methods detailed in the GMPP (AGES 2018b). After stabilization of the field parameters, the pH of water collected from each well was measured and recorded on the purge forms. None of the previously identified SSIs for pH were confirmed by the resampling.

## **6.0 PROJECTED ACTIVITIES FOR 2019**

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

The Type I Landfill and LRCP entered into Assessment Monitoring on September 11, 2018, and two (2) Appendix IV SSIs were reported for Molybdenum during the October 2018 monitoring event. Molybdenum was detected at a SSL above the GWPS. Therefore, IKEC will characterize the nature and extent of the release, complete required notifications, and complete an alternate source demonstration or initiate an assessment of corrective measures in accordance with §257.95(g).

## **7.0 REFERENCES**

Applied Geology and Environmental Science, Inc. (AGES) 2018a. Coal Combustion Residuals Regulation Monitoring Well Installation Report. Indiana-Kentucky Electric Corporation, Clifty Creek Station, Madison, Jefferson County, Indiana. Revision 1.0. November 2018.

Applied Geology and Environmental Science, Inc. (AGES) 2018b. Coal Combustion Residuals Regulation Groundwater Monitoring Program Plan, Indiana-Kentucky Electric Corporation, Clifty Creek Station, Madison, Jefferson County, Indiana. Revision 1.0. November 2018.

Stantec Consulting Services, Inc. (Stantec), 2018. Coal Combustion Residuals Regulation Statistical Analysis Plan, Indiana-Kentucky Electric Corporation, Clifty Creek Station, Madison, Jefferson County, Indiana. January 2018.

## **TABLES**

**TABLE 3-1**  
**GROUNDWATER MONITORING NETWORK**  
**TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND**  
**CLIFTY CREEK STATION**  
**MADISON, INDIANA**

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft) <sup>2</sup>	Top of Casing Elevation (ft) <sup>2</sup>	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
CF-15-04	Background	12/3/2015	451482.81	569307.19	465.55	468.03	439.55	429.55	38.48
CF-15-05	Background	12/1/2015	447491.91	565533.64	439.85	442.58	422.85	412.85	29.73
CF-15-06	Background	11/30/2015	447026.92	565190.31	437.49	440.40	431.49	421.49	18.91
CF-15-07	Downgradient	11/23/2015	443135.08	562259.25	438.61	441.11	432.61	422.61	18.50
CF-15-08	Downgradient	11/19/2015	443219.57	562537.29	460.33	462.79	430.33	420.33	42.46
CF-15-09	Downgradient	11/25/2015	443445.96	562871.69	456.73	459.45	447.73	442.73	16.72
WBSP-15-01	Background	11/30/2015	449072.27	566322.12	466.93	469.36	458.93	448.93	20.43
WBSP-15-02	Background	11/11/2015	449803.91	566987.30	473.83	476.76	457.83	452.83	23.93

Notes:

1. The Well locations are referenced to the North American Datum (NAD83), east zone coordinate system.
2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988

**TABLE 3-2**  
**SUMMARY OF SAMPLES COLLECTED DURING 2018**  
**TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND**  
**CLIFTY CREEK STATION**  
**MADISON, INDIANA**

<b>Well ID</b>	<b>Designation</b>	<b>Mar-18</b>	<b>May-18</b>	<b>Oct-18</b>	<b>Dec-18</b>
CF-15-04	Background	DM	NS	AM	NS
CF-15-05	Background	DM	NS	AM	NS
CF-15-06	Background	DM	NS	AM	NS
CF-15-07	Downgradient	DM	DM	AM	AM
CF-15-08	Downgradient	DM	DM	AM	AM
CF-15-09	Downgradient	DM	DM	AM	AM
WBSP-15-01	Background	DM	NS	AM	NS
WBSP-15-02	Background	DM	NS	AM	NS

DM: Detection Monitoring  
AM: Assessment Monitoring  
NS: Not Sampled

**TABLE 3-3**  
**SUMMARY OF MEASURED FIELD PARAMETERS - 2018**  
**TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND**  
**CLIFTY CREEK STATION**  
**MADISON, INDIANA**

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
CF-15-04	Mar-18	9.84	1491	10.06	-49.9	14.42	3.46
CF-15-05	Mar-18	10.85	1071	9.56	-37.6	13.28	4.03
CF-15-06	Mar-18	5.70	1201	10.36	-57.2	0.41	4.81
CF-15-07	Mar-18	9.08	1086	10.18	-50.0	0.14	4.76
CF-15-08	Mar-18	13.29	1018	10.21	-47.7	10.9	4.86
CF-15-09	Mar-18	9.04	1160	10.85	-50.4	15.39	3.71
WBSP-15-01	Mar-18	11.27	1508	6.65	97.2	3.55	18
WBSP-15-02	Mar-18	19.20	749	7.34	151.8	5.98	4.10
CF-15-07	May-18	18.32	985	7.12	-22	8.43	4.76
CF-15-08	May-18	21.34	755	7.45	304	8.36	4.91
CF-15-09	May-18	19.68	942	7.13	192	4.15	9.34
CF-15-04	Oct-18	16.34	661	7.76	390	6.03	4.38
CF-15-05	Oct-18	21.87	869	7.18	146	5.2	3.82
CF-15-06	Oct-18	21.32	12980	7.89	332	1.12	n/a
CF-15-07	Oct-18	19.25	1040	7.24	-30	4.43	4.38
CF-15-08	Oct-18	21.38	860	7.57	335	4.69	3.75
CF-15-09	Oct-18	20.42	1380	7.05	310	1.23	23.8
WBSP-15-01	Oct-18	21.64	1260	6.37	261	5.51	53.8
WBSP-15-02	Oct-18	24.17	1640	6.64	309	1.23	4.14
CF-15-07	Dec-18	16.49	1027	7.31	34.7	2.27	3.74
CF-15-08	Dec-18	16.27	847	7.61	273.4	1.44	3.55
CF-15-09	Dec-18	18.33	1123	7.03	325.1	1.27	9.34

°C: Degrees Celcius  
µohms/cm: Micro-ohms per centimeter  
S.U.: Standard Units  
mV: Millivolts  
mg/L: Milligrams per liter  
NTUs: Nephelometric Turbidity Units

**TABLE 3-4**  
**SUMMARY OF POTENTIAL AND CONFIRMED SSIs**  
**TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND**  
**CLIFTY CREEK STATION**  
**MADISON, INDIANA**

Well Id	Appendix III or IV	Parameter	1st Detection Monitoring Event	1st Detection Monitoring Resampling May 2018	1st Assessment Monitoring Event	1st Assessment Monitoring Resampling December 2018
			Potential SSI	Confirmed SSI (Yes/No)	Potential SSI	Confirmed SSI (Yes/No)
<b>Type I Residual Waste Landfill &amp; Landfill Runoff Collection Pond</b>						
CF-15-07	III	pH	Yes	No	No	--
	IV	Arsenic	--	--	Yes	No
CF-15-08	III	Boron	Yes	Yes	Yes	Yes
	III	pH	Yes	No	No	--
	IV	Molybdenum	--	--	Yes	Yes
CF-15-09	III	Boron	Yes	Yes	Yes	Yes
	III	pH	Yes	No	No	--
	IV	Arsenic	--	--	Yes	No
	IV	Beryllium	--	--	Yes	No
	IV	Chromium	--	--	Yes	No
	IV	Cobalt	--	--	Yes	No
	IV	Lead	--	--	Yes	No
	IV	Molybdenum	--	--	Yes	Yes
	IV	Selenium	--	--	Yes	No

SSI: Statistically Significant Increase  
UPL: Upper Prediction Limit  
mg/L: Milligrams per liter  
s.u.: Standard Units  
-- : Not evaluated

**TABLE 3-5  
GROUNDWATER PROTECTION STANDARDS  
TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND  
CLIFTY CREEK STATION  
MADISON, INDIANA**

<b>Appendix IV Constituents</b>			
<b>Constituent</b>	<b>Background</b>	<b>MCL/SMCL</b>	<b>Groundwater Protection Standard</b>
Antimony, Sb	0.2185 (µg/L)	6 (µg/L)	6 (µg/L)
Arsenic, As	4.47 (µg/L)	10 (µg/L)	10 (µg/L)
Barium, Ba	116.7 (µg/L)	2000 (µg/L)	2000 (µg/L)
Beryllium, Be	0.176 (µg/L)	4 (µg/L)	4 (µg/L)
Cadmium, Cd	0.08 (µg/L)	5 (µg/L)	5 (µg/L)
Chromium, Cr	8.4 (µg/L)	100 (µg/L)	100 (µg/L)
Cobalt, Co	2.578 (µg/L)	6 (µg/L)*	6 (µg/L)
Fluoride, F	0.5532 (mg/L)	4 (mg/L)	4 (mg/L)
Lithium, Li	0.103 (µg/L)	40 (µg/L)*	40 (µg/L)
Lead, Pb	2.023 (µg/L)	15 (µg/L)*	15 (µg/L)
Mercury, Hg	1.33 (µg/L)	2 (µg/L)	2 (µg/L)
Molybdenum, Mo	62.4 (µg/L)	100 (µg/L)*	100 (µg/L)
Radium 226 & 228 (combined)	8.02 (pCi/L)	5 (pCi/L)	8.02 (pCi/L)
Selenium, Se	0.44 (µg/L)	50 (µg/L)	50 (µg/L)
Thallium, Tl	0.1788 (µg/L)	2 (µg/L)	2 (µg/L)

\* Established by EPA as part of 2018 decision.

**TABLE 4-1  
GROUNDWATER MONITORING NETWORK  
WEST BOILER SLAG POND  
CLIFTY CREEK STATION  
MADISON, INDIANA**

Monitoring Well ID	Designation	Date of Installation	Coordinates		Ground Elevation (ft) <sup>2</sup>	Top of Casing Elevation (ft) <sup>2</sup>	Top of Screen Elevation (ft)	Base of Screen Elevation (ft)	Total Depth From Top of Casing (ft)
			Northing	Easting					
CF-15-04	Background	12/3/2015	451482.81	569307.19	465.55	468.03	439.55	429.55	38.48
CF-15-05	Background	12/1/2015	447491.91	565533.64	439.85	442.58	422.85	412.85	29.73
CF-15-06	Background	11/30/2015	447026.92	565190.31	437.49	440.40	431.49	421.49	18.91
WBSP-15-01	Upgradient	11/30/2015	449072.27	566322.12	466.93	469.36	458.93	448.93	20.43
WBSP-15-02	Upgradient	11/11/2015	449803.91	566987.30	473.83	476.76	457.83	452.83	23.93
WBSP-15-03	Upgradient	12/4/2015	451181.98	568093.60	484.91	488.03	476.91	471.91	16.12
WBSP-15-04	Downgradient	11/12/2015	450610.07	568637.65	471.17	473.71	416.17	406.17	67.54
WBSP-15-05	Downgradient	11/17/2015	450051.40	568495.72	471.90	474.42	410.90	400.90	73.52
WBSP-15-06	Downgradient	11/19/2015	449470.57	568402.50	471.28	473.51	395.78	385.78	87.73
WBSP-15-07	Downgradient	11/23/2015	448947.93	567946.39	468.82	471.31	426.82	416.82	54.49
WBSP-15-08	Downgradient	11/25/2015	448625.46	567343.24	468.56	471.06	415.76	405.76	65.30
WBSP-15-09	Downgradient	1/6/2016	448359.31	566711.13	471.21	470.69	421.21	410.21	59.48
WBSP-15-10	Downgradient	1/5/2016	448125.51	566225.21	471.21	470.69	425.21	435.21	55.48

Notes:

1. The Well locations are referenced to the North American Datum (NAD83), east zone coordinate system.
2. Elevations are referenced to the North American Vertical Datum (NAVD) 1988

**TABLE 4-2**  
**SUMMARY OF SAMPLES COLLECTED DURING 2018**  
**WEST BOILER SLAG POND**  
**CLIFTY CREEK STATION**  
**MADISON, INDIANA**

Well ID	Designation	Mar-18	Oct-18
CF-15-04	Background	DM	DM
CF-15-05	Background	DM	DM
CF-15-06	Background	DM	DM
WBSP-15-01	Upgradient	DM	DM
WBSP-15-02	Upgradient	DM	DM
WBSP-15-03	Upgradient	DM	DM
WBSP-15-04	Downgradient	DM	DM
WBSP-15-05	Downgradient	DM	DM
WBSP-15-06	Downgradient	DM	DM
WBSP-15-07	Downgradient	DM	DM
WBSP-15-08	Downgradient	DM	DM
WBSP-15-09	Downgradient	DM	DM
WBSP-15-10	Downgradient	DM	DM

DM: Detection Monitoring

NS: Not Sampled

**TABLE 4-3**  
**SUMMARY OF MEASURED FIELD PARAMETERS - 2018**  
**WEST BOILER SLAG POND**  
**CLIFTY CREEK STATION**  
**MADISON, INDIANA**

Sample ID	Date	Temperature (°C)	Conductivity (µohms/cm)	pH (S.U.)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)
CF-15-04	Mar-18	9.84	1491	10.06	-49.9	14.42	3.46
CF-15-05	Mar-18	10.86	1071	9.56	-37.6	13.28	4.63
CF-15-06	Mar-18	5.7	1201	10.36	-57.2	0.41	4.81
WBSP-15-01	Mar-18	11.27	1508	6.65	97.2	3.55	18
WBSP-15-02	Mar-18	19.2	749	7.34	151.8	5.98	4.1
WBSP-15-03	Mar-18	11.39	1130	7.05	70.5	5.72	2.73
WBSP-15-04	Mar-18	11.55	1020	7.89	-87.1	0.68	4.16
WBSP-15-05	Mar-18	11.4	867	7.02	-102.5	0.34	1.66
WBSP-15-06	Mar-18	9.75	1045	7.32	-135.6	1.06	4.02
WBSP-15-07	Mar-18	11.16	1495	6.95	-77.8	3.85	4.29
WBSP-15-08	Mar-18	9.91	740	7.08	-128.1	4.25	62.6
WBSP-15-09	Mar-18	10.15	852	7.22	-120.4	1.01	4.37
WBSP-15-10	Mar-18	10.75	822	6.95	-68.7	1.08	42.7
CF-15-04	Oct-18	16.34	66.1	7.76	390	6.03	4.38
CF-15-05	Oct-18	21.87	869	7.18	146	5.2	3.82
CF-15-06	Oct-18	21.32	12980	7.89	332	1.12	n/a
WBSP-15-01	Oct-18	21.64	1260	6.37	261	5.51	53.8
WBSP-15-02	Oct-18	24.17	1640	6.64	309	1.23	4.14
WBSP-15-03	Oct-18	20.62	918	7.7	367	4.65	4.48
WBSP-15-04	Oct-18	21.23	831	8.55	200	6.87	4.01
WBSP-15-05	Oct-18	20.15	952	7.48	-151	0	3.56
WBSP-15-06	Oct-18	17.43	1010	7.3	-89	0	4.77
WBSP-15-07	Oct-18	21.23	1490	6.75	-153	0	4.31
WBSP-15-08	Oct-18	21.3	939	6.35	-140	0	9.81
WBSP-15-09	Oct-18	24.09	503	6.48	-130	0.01	4.72
WBSP-15-10	Oct-18	23.11	611	6.39	-89	0.39	33.1

°C: Degrees Celcius

µohms/cm: Micro-ohms per centimeter

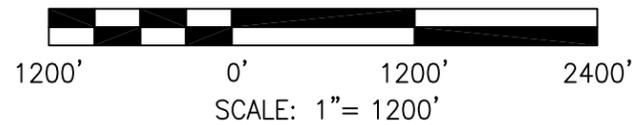
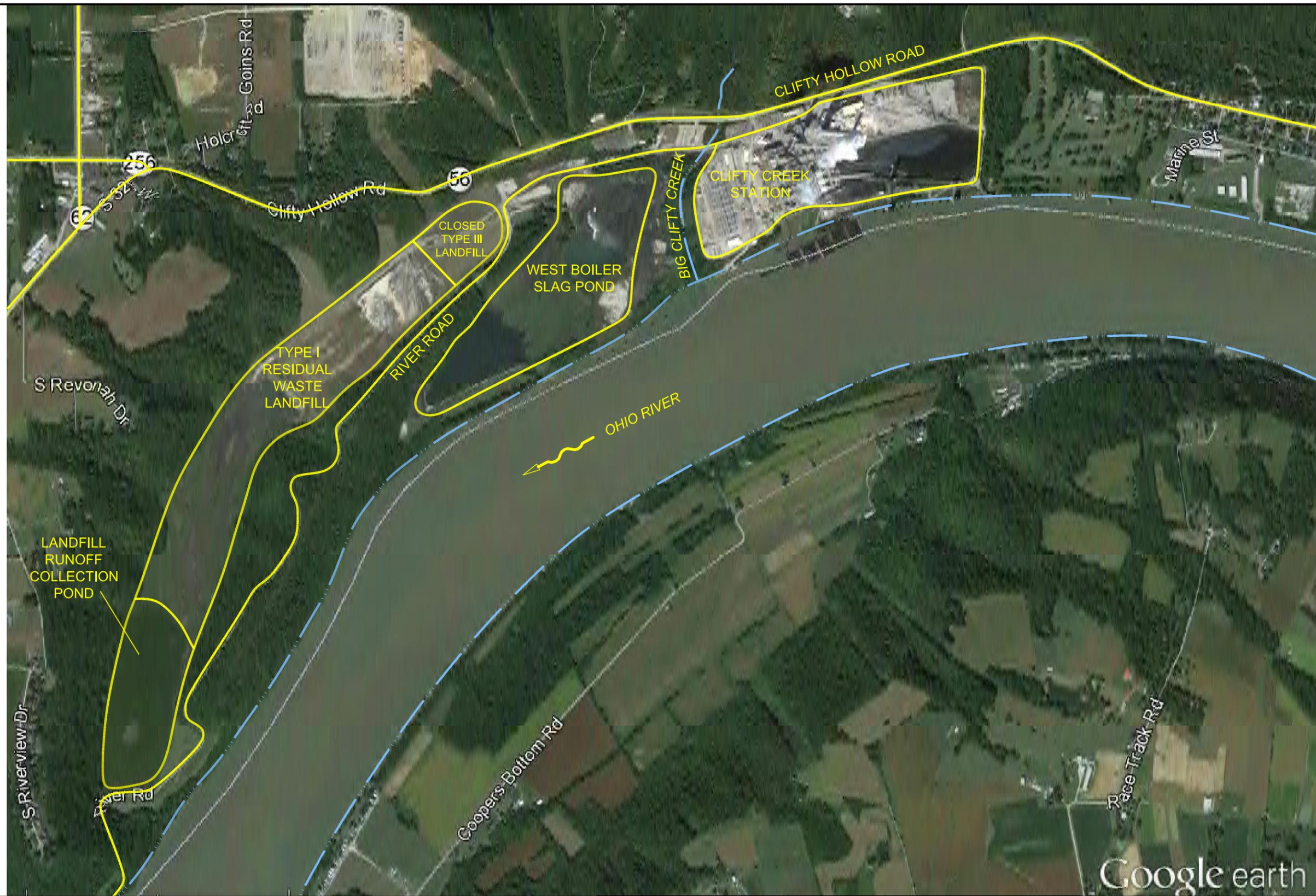
S.U.: Standard Units

mV: Millivolts

mg/L: Milligrams per liter

NTUs: Nephelometric Turbidity Units

## **FIGURES**



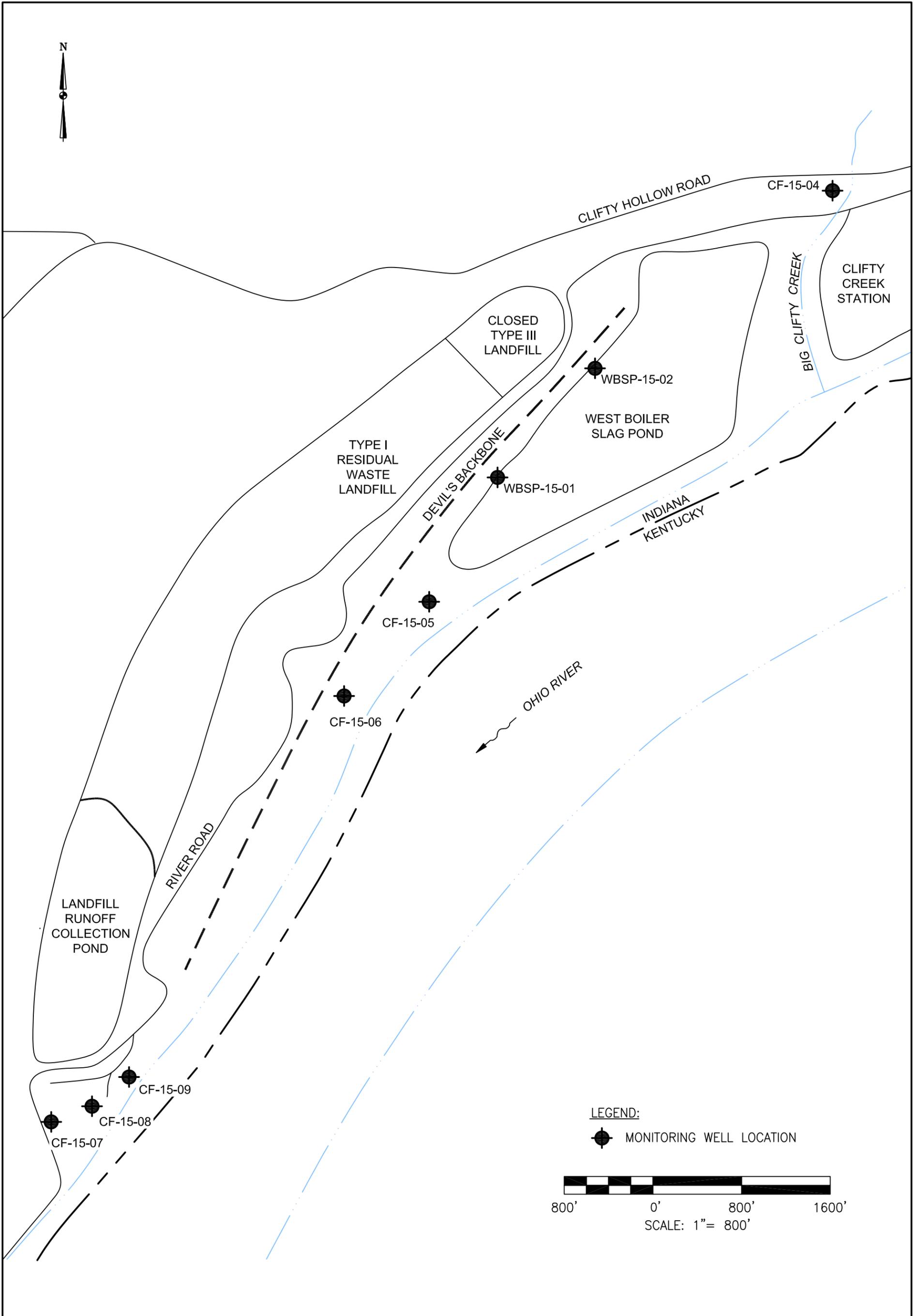
DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG. FILE	2018_IKEC_Clifty_Corrective Action_Site Loc_FIG 1.dwg
DRAWING SCALE	AS SHOWN

2402 Hookstown Grade Road, Suite 200  
Clinton, PA 15026  
412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION

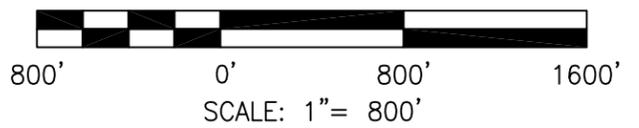
CLIFTY CREEK STATION  
MADISON, INDIANA  
SITE LOCATION MAP

DRAWING NAME	FIGURE 1	REV.	0
--------------	----------	------	---



**LEGEND:**

 MONITORING WELL LOCATION



DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLIF
DWG FILE	2018_IKEC_Clifty_Corrective Action_MW Locs.dwg
DRAWING SCALE	NOT TO SCALE



**AGES**  
Applied Geology And Environmental Science, Inc.

2402 Hookstown Grade Road, Suite 200  
Clinton, PA 15026  
412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION

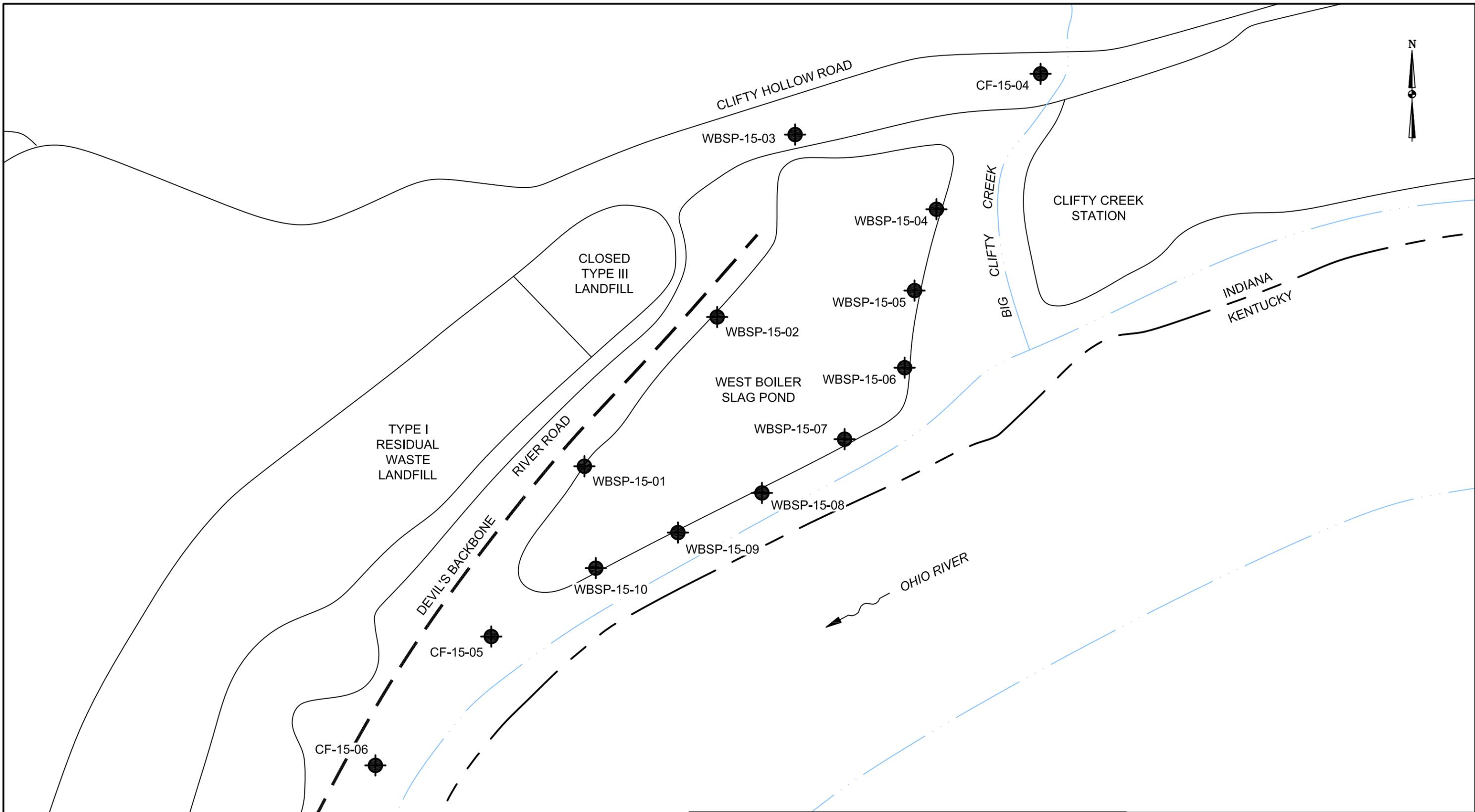
CLIFTY CREEK STATION  
MADISON, INDIANA  
TYPE I RESIDUAL WASTE LANDFILL AND  
LANDFILL RUNOFF COLLECTION POND  
MONITORING WELL LOCATIONS

DRAWING NAME

FIGURE 2

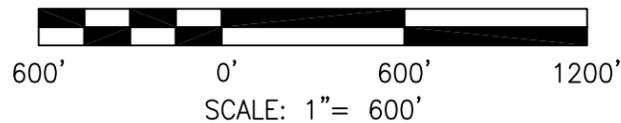
REV.

0



**LEGEND:**

 MONITORING WELL LOCATION



DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG FILE	2018_IKEC_Clifty_Corrective Action_MW Locs.dwg
DRAWING SCALE	AS SHOWN



2402 Hookstown Grade Road, Suite 200  
Clinton, PA 15026  
412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION

CLIFTY CREEK STATION  
MADISON, INDIANA  
WEST BOILER SLAG POND  
MONITORING WELL LOCATIONS

DRAWING NAME	FIGURE 3	REV.	0
--------------	----------	------	---

**APPENDIX A**

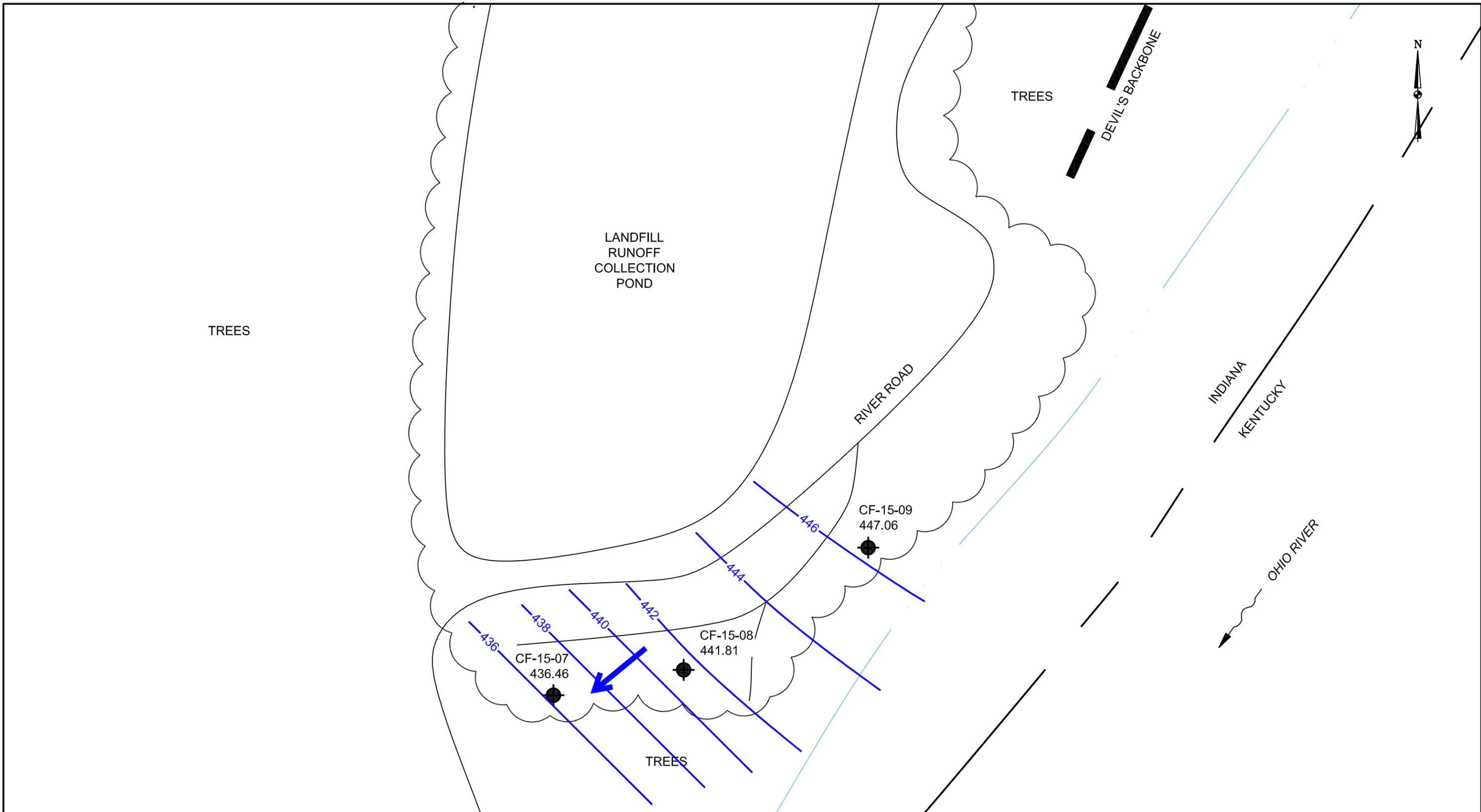
**GROUNDWATER ELEVATIONS**

**TABLE A-1**  
**CLIFTY CREEK CREEK PLANT**  
**SUMMARY OF GROUNDWATER ELEVATION DATA - MARCH 2018 AND OCTOBER 2018**  
**TYPE I LANDFILL, LANDFILL RUNOFF COLLECTION POND AND WEST BOILER SLAG POND**  
**CLIFTY CREEK STATION**  
**MADISON, INDIANA**

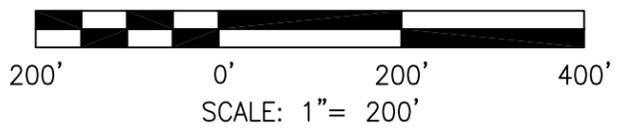
	Mar-18	Oct-18
Monitoring Well Designation	Groundwater Elevation (ft)	Groundwater Elevation (ft)
<b>TYPE I LANDFILL AND LANDFILL RUNOFF COLLECTION POND</b>		
<b>CF-15-04</b>	437.62	436.47
<b>CF-15-05</b>	436.33	433.98
<b>CF-15-06</b>	426.21	425.35
<b>CF-15-07</b>	436.46	435.66
<b>CF-15-08</b>	441.81	440.56
<b>CF-15-09</b>	447.06	444.98
<b>WEST BOILER SLAG POND</b>		
<b>WBSP-15-01</b>	451.53	450.21
<b>WBSP-15-02</b>	467.19	459.58
<b>WBSP-15-03</b>	476.58	476.91
<b>WBSP-15-04</b>	423.67	424.69
<b>WBSP-15-05</b>	423.51	424.52
<b>WBSP-15-06</b>	423.42	424.52
<b>WBSP-15-07</b>	431.73	431.85
<b>WBSP-15-08</b>	436.06	435.37
<b>WBSP-15-09</b>	435.73	432.67
<b>WBSP-15-10</b>	436.06	432.46

**APPENDIX B**

**GROUNDWATER FLOW MAPS**



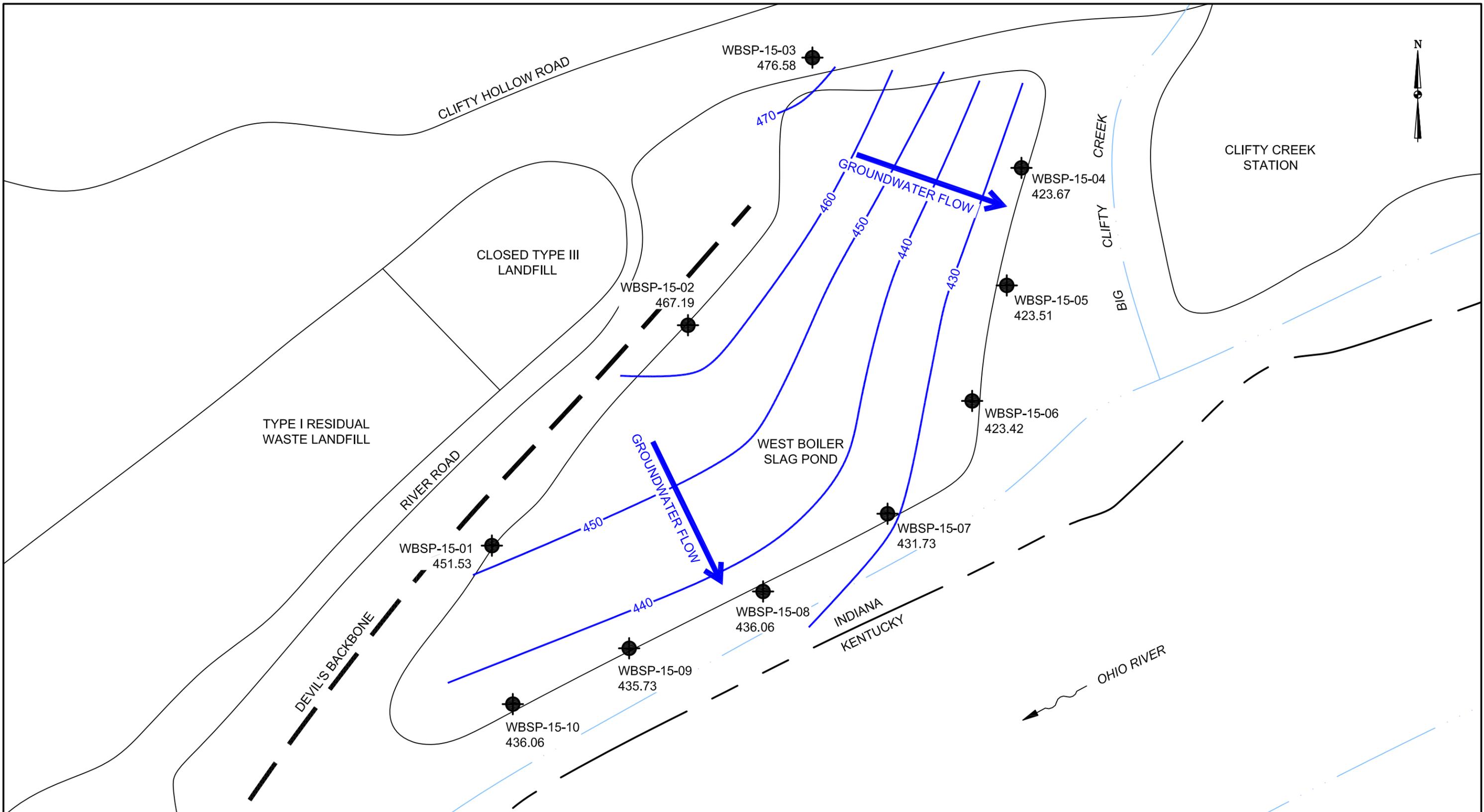
**LEGEND:**  
 MONITORING WELL LOCATION  
 GROUNDWATER FLOW DIRECTION



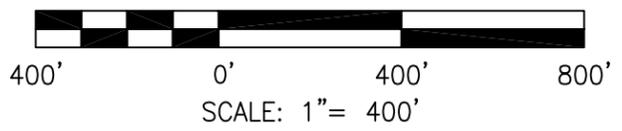
DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG. FILE	2018_IKEC_Clifty_Corrective Action_Appx B_MAR18 b10.dwg
DRAWING SCALE	AS SHOWN

**AGES**  
 Applied Geology And Environmental Science, Inc.  
 2402 Hookstown Grade Road, Suite 200  
 Clinton, PA 15026  
 412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION	
CLIFTY CREEK STATION MADISON, INDIANA TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END GROUNDWATER LEVELS & FLOW DIRECTION - MARCH 2018	
DRAWING NAME	FIGURE B-1
REV.	0



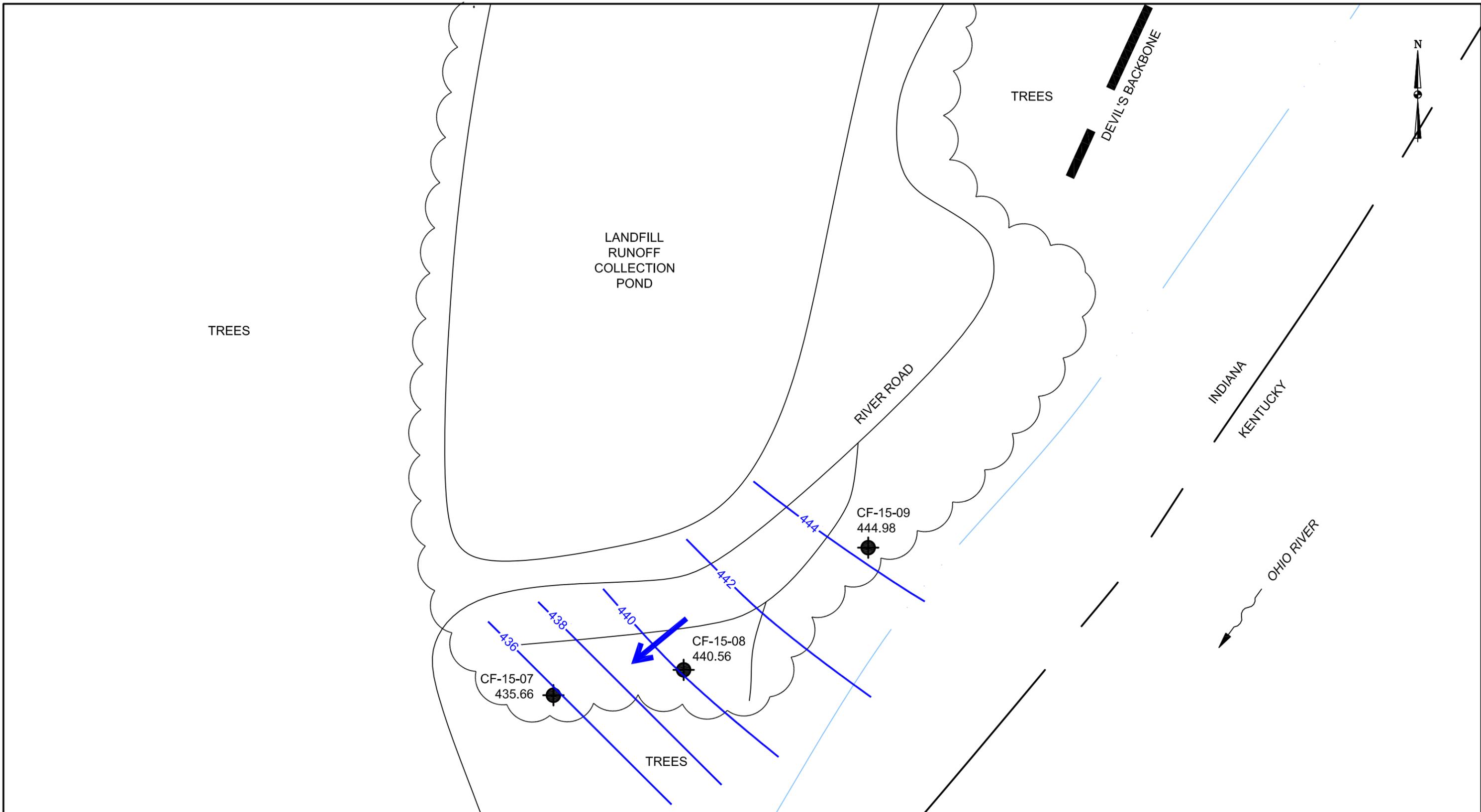
**LEGEND:**  
 MONITORING WELL LOCATION  
 GROUNDWATER FLOW DIRECTION



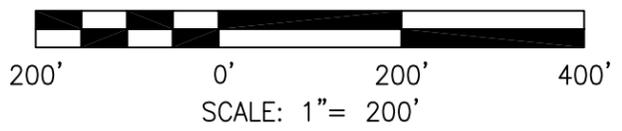
DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG. FILE	2018_IKEC_Clifty_Corrective Action_Appx B_MAR18 b10.dwg
DRAWING SCALE	AS SHOWN

2402 Hookstown Grade Road, Suite 200  
Clinton, PA 15026  
412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION	
CLIFTY CREEK STATION MADISON, INDIANA WEST BOILER SLAG POND GROUNDWATER LEVELS & FLOW DIRECTION - MARCH 2018	
DRAWING NAME	FIGURE B-2
REV.	0



**LEGEND:**  
 MONITORING WELL LOCATION  
 GROUNDWATER FLOW DIRECTION

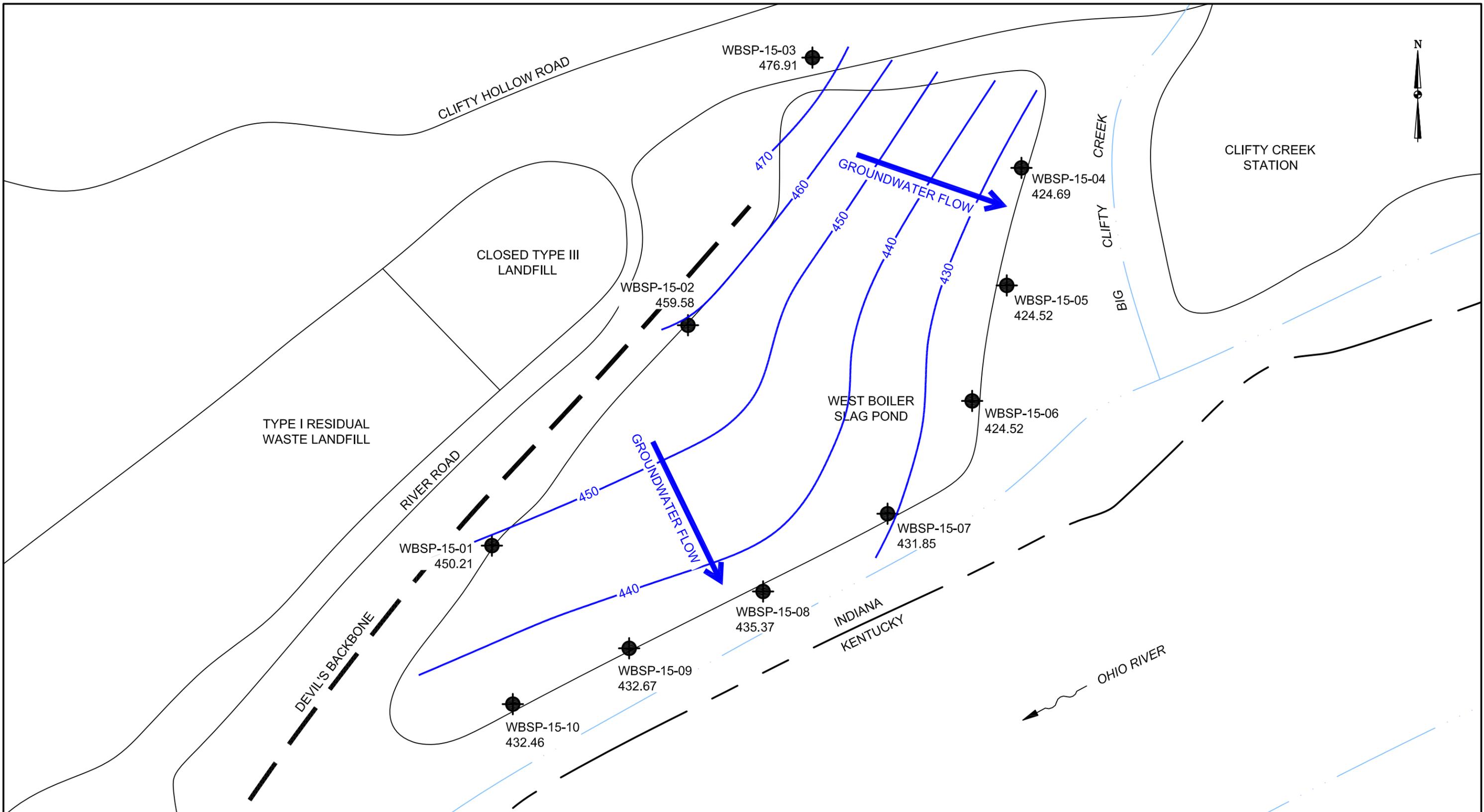


DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG. FILE	2018_IKEC_Clifty_Corrective Action_Appx B_OCT18 b11.dwg
DRAWING SCALE	AS SHOWN

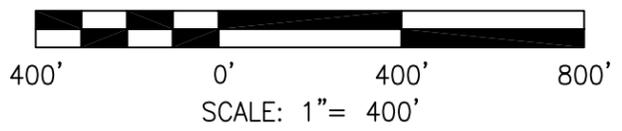


**AGES**  
 Applied Geology And Environmental Science, Inc.  
 2402 Hookstown Grade Road, Suite 200  
 Clinton, PA 15026  
 412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION	
CLIFTY CREEK STATION MADISON, INDIANA TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND - SOUTHWEST END GROUNDWATER LEVELS & FLOW DIRECTION - OCTOBER 2018	
DRAWING NAME	FIGURE B-3
REV.	0



**LEGEND:**  
 MONITORING WELL LOCATION  
 GROUNDWATER FLOW DIRECTION



DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2017114-CLI
DWG. FILE	2018_IKEC_Clifty_Corrective Action_Appx B_OCT18 b11.dwg
DRAWING SCALE	AS SHOWN

2402 Hookstown Grade Road, Suite 200  
 Clinton, PA 15026  
 412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION	
CLIFTY CREEK STATION MADISON, INDIANA WEST BOILER SLAG POND GROUNDWATER LEVELS & FLOW DIRECTION - OCTOBER 2018	
DRAWING NAME	FIGURE B-4
REV.	0

**APPENDIX C**

**APPENDIX III AND APPENDIX IV CONSTITUENTS**

**APPENDIX III AND APPENDIX IV CONSTITUENTS  
 TYPE I RESIDUAL WASTE LANDFILL AND LANDFILL RUNOFF COLLECTION POND  
 AND WEST BOILER SLAG POND  
 CLIFTY CREEK STATION  
 MADISON, INDIANA**

<b>Appendix III Constituents (Detection Monitoring)</b>
<b>Constituent</b>
Boron, B
Calcium, Ca
Chloride, Cl
Fluoride, F
pH (units=SU)
Sulfate, SO4
Total Dissolved Solids (TDS)
<b>Appendix IV Constituents (Assessment Monitoring)</b>
<b>Constituent</b>
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**

**CF-15-04**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.043	0.09 J
Calcium, Ca	mg/L	106	74.2
Chloride, Cl	mg/L	282	50.2
Fluoride, F	mg/L	0.09	0.12
pH	s.u.	10.06	7.76
Sulfate, SO <sub>4</sub>	mg/L	35.2	34.4
Total Dissolved Solids (TDS)	mg/L	788	377
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.1 J
Arsenic, As	ug/L	NA	0.38
Barium, Ba	ug/L	NA	57.5
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.05 U
Chromium, Cr	ug/L	NA	0.2 J
Cobalt, Co	ug/L	NA	0.114
Fluoride, F	mg/L	0.09	0.12
Lithium, Li	mg/L	NA	0.009 J
Lead, Pb	ug/L	NA	0.141
Mercury, Hg	ug/L	NA	0.003 J
Molybdenum, Mo	ug/L	NA	2.54
Radium 226 & 228 (combined)	pCi/L	NA	0.62
Selenium, Se	ug/L	NA	0.2 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**CF-15-05**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.209	0.174
Calcium, Ca	mg/L	103	113
Chloride, Cl	mg/L	31.5	30.2
Fluoride, F	mg/L	0.47	0.48
pH	s.u.	9.56	7.18
Sulfate, SO <sub>4</sub>	mg/L	44.3	40.9
Total Dissolved Solids (TDS)	mg/L	528	502
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.02 J
Arsenic, As	ug/L	NA	0.91
Barium, Ba	ug/L	NA	58.8
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.04 J
Chromium, Cr	ug/L	NA	0.228
Cobalt, Co	ug/L	NA	0.463
Fluoride, F	mg/L	0.47	0.48
Lithium, Li	mg/L	NA	0.01 J
Lead, Pb	ug/L	NA	0.21
Mercury, Hg	ug/L	NA	0.003 J
Molybdenum, Mo	ug/L	NA	2.94
Radium 226 & 228 (combined)	pCi/L	NA	0.484
Selenium, Se	ug/L	NA	0.06 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**CF-15-06**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.16	0.05 J
Calcium, Ca	mg/L	125	184
Chloride, Cl	mg/L	7.76	8.21
Fluoride, F	mg/L	0.2	0.21
pH	s.u.	10.36	7.89
Sulfate, SO <sub>4</sub>	mg/L	112	102
Total Dissolved Solids (TDS)	mg/L	630	696
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.07 J
Arsenic, As	ug/L	NA	1.21
Barium, Ba	ug/L	NA	149
Beryllium, Be	ug/L	NA	0.934
Cadmium, Cd	ug/L	NA	0.3
Chromium, Cr	ug/L	NA	6.81
Cobalt, Co	ug/L	NA	8.27
Fluoride, F	mg/L	0.2	0.21
Lithium, Li	mg/L	NA	0.02 J
Lead, Pb	ug/L	NA	15.7
Mercury, Hg	ug/L	NA	0.006
Molybdenum, Mo	ug/L	NA	3.02
Radium 226 & 228 (combined)	pCi/L	NA	NA
Selenium, Se	ug/L	NA	1.9
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**CF-15-07**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.204	0.112
Calcium, Ca	mg/L	123	168
Chloride, Cl	mg/L	10.6	5.34
Fluoride, F	mg/L	0.2	0.24
pH	s.u.	10.12	7.29
Sulfate, SO4	mg/L	32.7	2.7
Total Dissolved Solids (TDS)	mg/L	548	1240
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.06 J
Arsenic, As	ug/L	NA	6.81
Barium, Ba	ug/L	NA	92.4
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.07
Chromium, Cr	ug/L	NA	0.36
Cobalt, Co	ug/L	NA	2.41
Fluoride, F	mg/L	0.2	0.24
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.336
Mercury, Hg	ug/L	NA	0.004 J
Molybdenum, Mo	ug/L	NA	12.8
Radium 226 & 228 (combined)	pCi/L	NA	0.387
Selenium, Se	ug/L	NA	0.2 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**CF-15-08**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>May-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>				
Boron, B	mg/L	8.5	8.6	11.9
Calcium, Ca	mg/L	123	NA	145
Chloride, Cl	mg/L	14.7	NA	17.4
Fluoride, F	mg/L	0.41	NA	0.41
pH	s.u.	10.21	7.45	7.53
Sulfate, SO4	mg/L	203	NA	257
Total Dissolved Solids (TDS)	mg/L	588	NA	636
<b>Appendix IV Constituents</b>				
Antimony, Sb	ug/L	NA	NA	0.07 J
Arsenic, As	ug/L	NA	NA	0.94
Barium, Ba	ug/L	NA	NA	51.4
Beryllium, Be	ug/L	NA	NA	0.1 U
Cadmium, Cd	ug/L	NA	NA	0.02 J
Chromium, Cr	ug/L	NA	NA	0.385
Cobalt, Co	ug/L	NA	NA	0.547
Fluoride, F	mg/L	0.41	NA	0.41
Lithium, Li	mg/L	NA	NA	0.02 J
Lead, Pb	ug/L	NA	NA	0.457
Mercury, Hg	ug/L	NA	NA	0.004 J
Molybdenum, Mo	ug/L	NA	NA	524
Radium 226 & 228 (combined)	pCi/L	NA	NA	0.437
Selenium, Se	ug/L	NA	NA	0.07 J
Thallium, Tl	ug/L	NA	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**CF-15-09**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>May-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>				
Boron, B	mg/L	5.86	6.1	7.59
Calcium, Ca	mg/L	184	NA	250
Chloride, Cl	mg/L	3.52	NA	3.47
Fluoride, F	mg/L	0.3	NA	0.32
pH	s.u.	10.85	7.09	7.05
Sulfate, SO <sub>4</sub>	mg/L	287	NA	274
Total Dissolved Solids (TDS)	mg/L	710	NA	790
<b>Appendix IV Constituents</b>				
Antimony, Sb	ug/L	NA	NA	0.16
Arsenic, As	ug/L	NA	NA	4.67
Barium, Ba	ug/L	NA	NA	38.2
Beryllium, Be	ug/L	NA	NA	0.261
Cadmium, Cd	ug/L	NA	NA	0.05 J
Chromium, Cr	ug/L	NA	NA	14.9
Cobalt, Co	ug/L	NA	NA	7.45
Fluoride, F	mg/L	0.3	NA	0.32
Lithium, Li	mg/L	NA	NA	0.02 J
Lead, Pb	ug/L	NA	NA	6.25
Mercury, Hg	ug/L	NA	NA	0.007
Molybdenum, Mo	ug/L	NA	NA	85.9
Radium 226 & 228 (combined)	pCi/L	NA	NA	NA
Selenium, Se	ug/L	NA	NA	1.3
Thallium, Tl	ug/L	NA	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-01**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.1	0.134
Calcium, Ca	mg/L	157	164
Chloride, Cl	mg/L	9.45	25.3
Fluoride, F	mg/L	0.27	0.31
pH	s.u.	6.65	6.37
Sulfate, SO4	mg/L	139	146
Total Dissolved Solids (TDS)	mg/L	685	711
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.09 J
Arsenic, As	ug/L	NA	1.52
Barium, Ba	ug/L	NA	25.3
Beryllium, Be	ug/L	NA	0.144
Cadmium, Cd	ug/L	NA	0.03 J
Chromium, Cr	ug/L	NA	4.76
Cobalt, Co	ug/L	NA	2.91
Fluoride, F	mg/L	0.27	0.31
Lithium, Li	mg/L	NA	0.034
Lead, Pb	ug/L	NA	2.63
Mercury, Hg	ug/L	NA	NA
Molybdenum, Mo	ug/L	NA	0.7 J
Radium 226 & 228 (combined)	pCi/L	NA	NA
Selenium, Se	ug/L	NA	0.6
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-02**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	3.98	4.36
Calcium, Ca	mg/L	231	277
Chloride, Cl	mg/L	12.1	11.3
Fluoride, F	mg/L	0.37	0.36
pH	s.u.	7.34	6.64
Sulfate, SO4	mg/L	607	515
Total Dissolved Solids (TDS)	mg/L	1200	1190
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.14
Arsenic, As	ug/L	NA	0.44
Barium, Ba	ug/L	NA	22.6
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.03 J
Chromium, Cr	ug/L	NA	0.788
Cobalt, Co	ug/L	NA	0.081
Fluoride, F	mg/L	0.37	0.36
Lithium, Li	mg/L	NA	0.088
Lead, Pb	ug/L	NA	0.09 J
Mercury, Hg	ug/L	NA	0.002 J
Molybdenum, Mo	ug/L	NA	2.45
Radium 226 & 228 (combined)	pCi/L	NA	0.3588
Selenium, Se	ug/L	NA	0.06 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-03**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.08	0.167
Calcium, Ca	mg/L	66.2	112
Chloride, Cl	mg/L	108	63.8
Fluoride, F	mg/L	0.22	0.26
pH	s.u.	7.05	7.7
Sulfate, SO4	mg/L	59.1	98
Total Dissolved Solids (TDS)	mg/L	402	564
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.08 J
Arsenic, As	ug/L	NA	0.17
Barium, Ba	ug/L	NA	13.1
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.05 U
Chromium, Cr	ug/L	NA	0.1 J
Cobalt, Co	ug/L	NA	0.06
Fluoride, F	mg/L	0.22	0.26
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.09 J
Mercury, Hg	ug/L	NA	0.004 J
Molybdenum, Mo	ug/L	NA	4.56
Radium 226 & 228 (combined)	pCi/L	NA	0.917
Selenium, Se	ug/L	NA	0.4
Thallium, Tl	ug/L	NA	0.5 U

Notes:  
NA = Sample not analyzed for the parameter

**WBSP-15-04**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	4.61	4.59
Calcium, Ca	mg/L	94.1	121
Chloride, Cl	mg/L	63.2	113
Fluoride, F	mg/L	0.19	0.18
pH	s.u.	7.89	8.55
Sulfate, SO4	mg/L	193	205
Total Dissolved Solids (TDS)	mg/L	426	570
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.16
Arsenic, As	ug/L	NA	3.62
Barium, Ba	ug/L	NA	104
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.05 U
Chromium, Cr	ug/L	NA	0.605
Cobalt, Co	ug/L	NA	0.255
Fluoride, F	mg/L	0.19	0.18
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.107
Mercury, Hg	ug/L	NA	0.004 J
Molybdenum, Mo	ug/L	NA	52.6
Radium 226 & 228 (combined)	pCi/L	NA	0.994
Selenium, Se	ug/L	NA	0.1 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-05**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	3.14	3.19
Calcium, Ca	mg/L	123	119
Chloride, Cl	mg/L	62.7	60.2
Fluoride, F	mg/L	0.17	0.16
pH	s.u.	7.02	7.48
Sulfate, SO4	mg/L	240	235
Total Dissolved Solids (TDS)	mg/L	560	562
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.04 J
Arsenic, As	ug/L	NA	3.75
Barium, Ba	ug/L	NA	104
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.01 J
Chromium, Cr	ug/L	NA	0.22
Cobalt, Co	ug/L	NA	1.22
Fluoride, F	mg/L	0.17	0.16
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.131
Mercury, Hg	ug/L	NA	0.003 J
Molybdenum, Mo	ug/L	NA	74.9
Radium 226 & 228 (combined)	pCi/L	NA	1.139
Selenium, Se	ug/L	NA	0.05 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:  
NA = Sample not analyzed for the parameter

**WBSP-15-06**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	2.37	2.81
Calcium, Ca	mg/L	102	111
Chloride, Cl	mg/L	56	80.1
Fluoride, F	mg/L	0.18	0.18
pH	s.u.	7.32	7.3
Sulfate, SO <sub>4</sub>	mg/L	141	216
Total Dissolved Solids (TDS)	mg/L	454	564
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.03 J
Arsenic, As	ug/L	NA	1.51
Barium, Ba	ug/L	NA	55.8
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.1
Chromium, Cr	ug/L	NA	0.305
Cobalt, Co	ug/L	NA	2.48
Fluoride, F	mg/L	0.18	0.18
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.305
Mercury, Hg	ug/L	NA	0.002 J
Molybdenum, Mo	ug/L	NA	70.1
Radium 226 & 228 (combined)	pCi/L	NA	0.652
Selenium, Se	ug/L	NA	0.05 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-07**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.003 J	0.05 J
Calcium, Ca	mg/L	167	176
Chloride, Cl	mg/L	12.9	12.5
Fluoride, F	mg/L	0.37	0.32
pH	s.u.	6.95	6.75
Sulfate, SO <sub>4</sub>	mg/L	2.5	3.9
Total Dissolved Solids (TDS)	mg/L	777	770
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.11
Arsenic, As	ug/L	NA	51.3
Barium, Ba	ug/L	NA	500
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.11
Chromium, Cr	ug/L	NA	0.282
Cobalt, Co	ug/L	NA	2.36
Fluoride, F	mg/L	0.37	0.32
Lithium, Li	mg/L	NA	0.01 J
Lead, Pb	ug/L	NA	0.204
Mercury, Hg	ug/L	NA	0.003 J
Molybdenum, Mo	ug/L	NA	11
Radium 226 & 228 (combined)	pCi/L	NA	1.499
Selenium, Se	ug/L	NA	0.4
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-08**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.005 U	0.132
Calcium, Ca	mg/L	74.6	72.2
Chloride, Cl	mg/L	16.5	16.6
Fluoride, F	mg/L	0.26	0.19
pH	s.u.	7.08	6.35
Sulfate, SO <sub>4</sub>	mg/L	0.2	0.4 U
Total Dissolved Solids (TDS)	mg/L	380	336
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.08 J
Arsenic, As	ug/L	NA	81.3
Barium, Ba	ug/L	NA	356
Beryllium, Be	ug/L	NA	0.03 J
Cadmium, Cd	ug/L	NA	0.01 J
Chromium, Cr	ug/L	NA	0.539
Cobalt, Co	ug/L	NA	1.39
Fluoride, F	mg/L	0.26	0.19
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.346
Mercury, Hg	ug/L	NA	0.003 J
Molybdenum, Mo	ug/L	NA	1 J
Radium 226 & 228 (combined)	pCi/L	NA	1.03
Selenium, Se	ug/L	NA	0.2
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-09**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.054	0.291
Calcium, Ca	mg/L	48.6	56
Chloride, Cl	mg/L	3.35	2.05
Fluoride, F	mg/L	0.22	0.43
pH	s.u.	7.22	6.48
Sulfate, SO4	mg/L	55.3	4.7
Total Dissolved Solids (TDS)	mg/L	221	239
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.03 J
Arsenic, As	ug/L	NA	21.4
Barium, Ba	ug/L	NA	139
Beryllium, Be	ug/L	NA	0.1 U
Cadmium, Cd	ug/L	NA	0.05 U
Chromium, Cr	ug/L	NA	0.2 J
Cobalt, Co	ug/L	NA	0.263
Fluoride, F	mg/L	0.22	0.43
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.09 J
Mercury, Hg	ug/L	NA	0.003 J
Molybdenum, Mo	ug/L	NA	28.4
Radium 226 & 228 (combined)	pCi/L	NA	0.1714
Selenium, Se	ug/L	NA	0.1 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter

**WBSP-15-10**  
**SUMMARY OF 2018 ANALYTICAL RESULTS**  
**Indiana-Kentucky Electric Corporation**  
**Clifty Creek Station**  
**Madison, Indiana**

<b>Parameter</b>	<b>Units</b>	<b>Mar-18</b>	<b>Oct-18</b>
<b>Appendix III Constituents</b>			
Boron, B	mg/L	0.005 U	0.16
Calcium, Ca	mg/L	70.4	78.6
Chloride, Cl	mg/L	24	20.9
Fluoride, F	mg/L	0.28	0.29
pH	s.u.	6.95	6.39
Sulfate, SO <sub>4</sub>	mg/L	44.7	38.8
Total Dissolved Solids (TDS)	mg/L	329	316
<b>Appendix IV Constituents</b>			
Antimony, Sb	ug/L	NA	0.04 J
Arsenic, As	ug/L	NA	9.37
Barium, Ba	ug/L	NA	286
Beryllium, Be	ug/L	NA	0.03 J
Cadmium, Cd	ug/L	NA	0.02 J
Chromium, Cr	ug/L	NA	0.289
Cobalt, Co	ug/L	NA	1.85
Fluoride, F	mg/L	0.28	0.29
Lithium, Li	mg/L	NA	0.03 U
Lead, Pb	ug/L	NA	0.473
Mercury, Hg	ug/L	NA	0.004 J
Molybdenum, Mo	ug/L	NA	12.2
Radium 226 & 228 (combined)	pCi/L	NA	0.625
Selenium, Se	ug/L	NA	0.2 J
Thallium, Tl	ug/L	NA	0.5 U

Notes:

NA = Sample not analyzed for the parameter