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ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
WEST ASH POND
F.B. CULLEY GENERATING STATION
WARRICK COUNTY, INDIANA

by
Haley & Aldrich, Inc.
Greenville, South Carolina

for
Southern Indiana Gas and Electric Company
Evansville, Indiana

File No. 129420
July 2021

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1. Annual Groundwater Monitoring Report Summary

1.1 40 CFR § 257.90(e)(6) SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

1.1.1 40 CFR § 257.90(e)(6)(i) – Status of Monitoring Program at Start of Reporting Period

At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in §257.95;

At the start of the current annual reporting period the West Ash Pond (WAP) was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.2 40 CFR § 257.90(e)(6)(ii) – Status of Monitoring Program at End of Reporting Period

At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;

At the end of the current annual reporting period the WAP was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.3 40 CFR § 257.90(e)(6)(iii) – Statistically Significant Increases

If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to §257.94(e):

1.1.3.1 40 CFR § 257.90(e)(6)(iii)(A)

Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and

The WAP is operating under an assessment monitoring program; therefore, no statistical evaluations were conducted on Appendix III constituents in 2020/2021.

1.1.3.2 40 CFR § 257.90(e)(6)(iii)(B)

Provide the date when the assessment monitoring program was initiated for the CCR unit.

An assessment monitoring program was established on 7 February 2020 for the WAP to meet the requirements of 40 CFR § 257.95. The WAP remained in assessment monitoring in 2020/2021.

1.1.4 40 CFR § 257.90(e)(6)(iv) – Statistically Significant Levels

If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to §257.95(g) include all of the following:

1.1.4.1 40 CFR § 257.90(e)(6)(iv)(A) – Statistically Significant Level Constituents

Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;

Statistical analysis was completed in January 2021 (November 2020 sampling event) as described in § 257.93(h)(2) and statistically significant level (SSL) of lithium and molybdenum were each identified downgradient of the WAP at monitoring well WAP-3S (lithium and molybdenum) and WAP-4S (molybdenum).

1.1.4.2 40 CFR § 257.90(e)(6)(iv)(B) – Initiation of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was initiated for the CCR unit;

Assessment of corrective measures was initiated on 30 October 2020.

1.1.4.3 40 CFR § 257.90(e)(6)(iv)(C) – Assessment of Corrective Measures Public Meeting

Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and

The public meeting has not been held for the assessment of corrective measures for the WAP. Evaluation of site-specific aspects that are necessary to prepare for the public meeting and inform the selection of remedy are in progress.

1.1.4.4 40 CFR § 257.90(e)(6)(iv)(D) – Completion of the Assessment of Corrective Measures

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

The assessment of corrective measures was completed on 26 February 2021 and placed into the facility's Operating Record, posted to the publicly available website, and the notification sent to the state agency.

1.1.5 40 CFR § 257.90(e)(6)(v) – Selection of Remedy

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

The selection of remedy required under § 257.97 is ongoing in 2020/2021 for lithium and molybdenum at the WAP.

1.1.6 40 CFR § 257.90(e)(6)(vi) – Remedial Activities

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

No remedial activities have been initiated in 2020/2021; therefore, no demonstration or certification is applicable for this unit.

1.2 40 CFR § 257.90(a)

Except as provided for in § 257.100 for inactive CCR surface impoundments, all CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under § 257.90 through § 257.98.

The WAP at the F.B. Culley Generating Station (FBC) is subject to the groundwater monitoring and corrective action requirements described under Code of Federal Regulations Title 40 (40 CFR) § 257.90 through § 257.98 (Rule). The WAP located at FBC was previously classified as an inactive surface impoundment as defined by 40 CFR §257.53. The Southern Indiana Gas and Electric Company (SIGECO) filed a Notice of Intent (NOI) to initiate closure of the WAP and placed the NOI in the facility's operating record on 17 December 2015. However, on 5 August 2016, the United States Environmental Protection Agency (USEPA) issued a "Direct Final Rule" effective on 4 October 2016, constituting a vacatur of 40 CFR § 257.100. The Direct Final Rule applies the requirements of existing surface impoundments that had been previously declared inactive. As a result, the WAP had to comply with the groundwater monitoring requirements for existing CCR surface impoundments. The CCR Rule changes extended the deadlines to comply with the groundwater monitoring and corrective action requirements with the initial annual groundwater monitoring and corrective action report being placed in the facilities operating record by 1 August 2019 and annually thereafter.

SIGECO continued to pursue closure of the WAP while complying with the requirements described in § 257.90 through § 257.98. The Indiana Department of Environmental Management (IDEM) issued their approval of Closure/Post-Closure Plan in December 2019 and closure activities were completed in December 2020. As part of IDEM's approval, IDEM requested that additional wells be installed for post-closure monitoring.

This document addresses the requirement for the Owner/Operator to prepare an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) per § 257.90(e).

1.3 40 CFR § 257.90(e) – SUMMARY

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial 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 this subpart, and annually thereafter. For the preceding calendar year, 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. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

As required by §257.100(e)(5)(ii), this Annual Report is to be completed no later than 1 August 2021 due to the partial vacatur ordered by the District of Columbia Circuit Court on 14 June 2016 and the subsequent Direct Final Rule effective 4 October 2016, and within one year of the previous annual report being placed into the facility's operating record. As required, this Annual Report documents the status of the groundwater monitoring and corrective action program for the WAP at FBC and summarizes key actions completed through the current reporting period.

1.3.1 Status of the Groundwater Monitoring Program

As provided in the notification on 12 July 2019, statistically significant increases (SSI) of Appendix III constituents were identified downgradient of the WAP. An evaluation of alternate sources was conducted; however, a successful alternate source demonstration (ASD) was not achieved at that time. As a result, an Assessment Monitoring program was initiated as required by § 257.94(e)(2). Annual and semi-annual groundwater samples were collected as outlined in § 257.95(b) and § 257.95(d)(1) and groundwater protection standards (GWPS) were established as required by § 257.95(d)(2). Statistical analysis was completed on 2 July 2020 as described in § 257.93(h)(2) and statistically significant levels (SSL) of Appendix IV constituents above GWPS (lithium and molybdenum) were identified downgradient of the WAP. As a result, an assessment of corrective measures was initiated as required by § 257.96. A 60-day extension to complete the assessment of corrective measures was required and certified by a professional engineer as required by 257.96(a). Semiannual assessment monitoring is ongoing along with baseline sampling at well locations required by IDEM.

1.3.2 Key Actions Completed

The following key actions were completed in 2020/2021:

- Statistical analysis of assessment monitoring results on 21 January 2021 (November 2020 event) to evaluate potential for SSLs of Appendix IV constituents in groundwater downgradient of the WAP.
- Preparation of the 2019/2020 Annual Report which included the following activities:
  - The 2019/2020 Annual Report was placed in the facility's operating record pursuant to § 257.105(h)(1).
  - Pursuant to § 257.106(h)(1), the notification was sent to the relevant State Director and/or Tribal authority within 30 days of the 2019/2020 Annual Report being placed in the facility's operating record [§ 257.106(d)].
  - Pursuant to § 257.107(h)(1), the 2019/2020 Annual Report was posted to the CCR Website within 30 days of the 2019/2020 Annual Report being placed in the facility's operating record [§ 257.107(d)] and 257.107(h)(1)].

- Assessment monitoring groundwater samples were collected and analyzed in accordance with § 257.95(b) and § 257.95(d)(1).
- Initiated (or continued) evaluation of the nature and extent of Appendix IV SSLs as required by § 257.95(g)(1);
- Installed additional monitoring wells to comply with IDEM's Approval of Closure/Post-Closure Plan.
- Initiated and completed an assessment of corrective measures in accordance with § 257.96;
- The 90-day deadline to complete the assessment of corrective measures was extended an additional 60-days in accordance with § 257.96(a). (Appendix A)
- The assessment of corrective measures was placed in the facility's operating record in accordance with § 257.96(d).

1.3.3 Problems Encountered

Closure activities associated with stormwater management resulted in existing wells WAP-2R and WAP-3 being inaccessible.

1.3.4 Actions to Resolve Problems

Monitoring wells WAP-2R and WAP-3 were properly abandoned and replaced with new wells (WAP-2RR and WAP-3S).

1.3.5 Project Key Activities for Upcoming Year

Key activities to be completed in 2021/2022 include the following:

- Further define the nature and extent of lithium and molybdenum in groundwater downgradient of the WAP.
- Continue semiannual groundwater monitoring in accordance with § 257.95.
- Continue baseline sampling as required by IDEM at new monitoring locations that were also required by IDEM.
- Complete statistical analysis of the semiannual groundwater sampling results as required by § 257.93(h)(2).
- Hold a public meeting with interested and affected parties in accordance with § 257.96(e) to discuss the results of the corrective measures assessment at least 30 days prior to the selection of remedy.
- Prepare semiannual progress reports, as necessary, describing the progress in selecting and designing the remedy as outlined in § 257.97(a).
- As soon as feasible following the public meeting select a remedy that, at a minimum, meets the standards outlined in § 257.97(b).
  - As part of the selected remedy SIGECO will develop a schedule for implementing and completing remedial activities as defined in § 257.97(d) and develop a Corrective Action Groundwater Monitoring Program per § 257.98(a)(1).

1.4 40 CFR § 257.90(e) – INFORMATION

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

1.4.1 40 CFR § 257.90(e)(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;

As required by § 257.90(e)(1), a map showing the location of the WAP, associated upgradient and downgradient wells installed to comply with the Federal CCR Rule, wells installed to assess the nature and extent of Appendix IV SSLs, and monitoring wells required by IDEM are presented as Figure 1.

1.4.2 40 CFR § 257.90(e)(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;

To characterize the horizontal and vertical nature and extent of SSLs at the WAP, four new monitoring wells were installed in the uppermost aquifer downgradient of the WAP. The four new monitoring wells, identified as WAP-3D, WAP-9S, WAP-9I and WAP-9D were completed in the shallow, intermediate and deep zones of the aquifer. Monitoring well WAP-3D was installed to evaluate the vertical extent of Appendix IV SSLs at the western boundary of the unit and the WAP-9 well cluster was installed at the downgradient property line in the direction of flow as required by § 257.95(g)(1)(iii). In addition, four existing wells (WAP-4I, WAP-4D, WAP-5I, and WAP-5D) were added to the monitoring program to monitor the vertical extent of Appendix IV SSLs at the southern boundary of the unit.

Due to closure activities associated with stormwater management at the closed unit, WAP-2R and WAP-3 were decommissioned and replaced with new monitoring wells (WAP-2RR and WAP-3S).

As a requirement of IDEM's Approval of Closure/Post-Closure Plan three additional monitoring well clusters were installed around the WAP. These include the WAP-6S, WAP-6I, WAP-6D, WAP-7S, WAP-7D, WAP-8S, WAP-8I and WAP-8D.

Monitoring well locations are shown on Figure 1 and construction details are provided in Table I.

1.4.3 40 CFR § 257.90(e)(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;

In accordance with § 257.95(b) and § 257.95(d)(1), two independent samples from each background and downgradient monitoring well were collected and analyzed for the original monitoring well network (WAP-1, CCR-AP-7, WAP-2RR, WAP-3S, WAP-4S and WAP-5S). Baseline sampling as required by IDEM under state program requirements is currently being conducted for the WAP-6, WAP-7, and WAP-8. The eight rounds of state baseline sampling are scheduled to be completed in November 2021. Summary tables including the sample names, dates of sample collection, reason for sample collection (detection, assessment, or baseline), and monitoring data obtained for the groundwater monitoring program for the WAP is presented in Tables II, III, and IV of this report. Table II summarizes the assessment monitoring results for the original CCR monitoring network, Table III provides the results obtained to characterize the nature and extent of Appendix IV SSLs, and Table IV includes the state required baseline sampling results at monitoring locations required by IDEM.

1.4.4 40 CFR § 257.90(e)(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 levels); and

Statistical analysis was completed in January 2021 (November 2020 sampling event) as described in § 257.93(h)(2) and the SSLs of lithium and molybdenum continue to be observed downgradient of the WAP consistent with previous results. As a result, the monitoring program did not change and the WAP remained in assessment monitoring.

1.4.5 40 CFR § 257.90(e)(5)

Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

Other information including development of groundwater protection standards, recording groundwater monitoring results in the operating record, and an evaluation of alternate sources was included in previous annual reports.

TABLES

TABLE 1
GROUNDWATER MONITORING WELL LOCATION AND CONSTRUCTION DETAILS
F.B. CULLEY GENERATING STATION - WEST ASH POND
NEWBURGH, INDIANA

	Easting	Northing	Top of Pad Elevation (ft msl)	Top of Casing Elevation (ft msl)	Surface Grout (ft bgs)	Bentonite (ft bgs)	Sand Pack (ft bgs)	Screen Zone (ft bgs)	Screen Length (ft)	Well Radius (in)
Upgradient Wells										
WAP-1	2882824.18	971214.17	403.77	403.39	0 - 22	22 - 24	24 - 36	26 - 36	10	2
CCR-AP-7	2883090.34	970774.64	429.50	434.11	0 - 16	16 - 18	18 - 30	20 - 30	10	2
Downgradient Wells										
(CCR Monitoring Network)										
WAP-2RR	2881499.20	971367.50	391.70	391.74	0 - 42	42 - 44	44 - 56	46 - 56	10	2
WAP-3S	2881252.80	970978.10	388.20	388.47	0 - 55	55 - 57	57 - 70	60 - 70	10	2
WAP-4S	2881333.40	970405.60	384.60	384.61	0 - 31	31 - 33	33 - 45	35 - 45	10	2
WAP-5S	2881521.50	970236.00	384.60	384.68	0 - 26	26 - 28	28 - 40	30 - 40	10	2
(Assessment of Nature & Extent)										
WAP-3D	2881253.20	970975.00	388.20	388.41	0 - 65.5	65.5 - 68	68 - 82.5	72.5 - 82.5	10	2
WAP-4I	2881329.10	970409.20	384.50	384.58	0 - 61	61- 63	63 - 75	65 - 75	10	2
WAP-4D	2881325.40	970412.50	384.50	384.48	0 - 102	102 - 104	104 - 116	106 - 116	10	2
WAP-5I	2881525.00	970232.80	384.70	384.71	0 - 61	61 - 63	63 - 75	65 - 75	10	2
WAP-5D	2881528.80	970229.90	384.60	384.71	0 - 99	99 - 101	101 - 113	103 - 113	10	2
WAP-9S	2881063.86	970693.11	393.00	392.69	0 - 51	51 - 53	53 - 65	55 - 65	10	2
WAP-9I	2881066.94	970697.89	393.20	392.88	0 - 76	76 - 78	78 - 90	80 - 90	10	2
WAP-9D	2881069.75	970701.94	393.10	392.74	0 - 112.5	112.5 - 114.5	114.5 - 126.5	116.5 - 126.5	10	2
(IDEM Approval of Closure/Post-Closure Plan)										
WAP-6S	2881090.90	970688.30	385.90	385.95	0 - 36	36 - 38	38 - 50	40 - 50	10	2
WAP-6I	2881088.20	970683.30	386.10	386.11	0 - 65.5	65.5 - 67.5	67.5 - 80	70 - 80	10	2
WAP-6D	2881092.60	970693.10	386.00	386.06	0 - 101	101 - 103	103 - 115.5	105.5 - 115.5	10	2
WAP-7S	2881363.50	971158.10	389.40	389.55	0 - 45	45 - 47	47 - 60	50 - 60	10	2
WAP-7D	2881365.20	971161.50	389.20	389.25	0 - 64	64 - 66	66 - 78.5	68.5 - 78.5	10	2
WAP-8S	2881317.80	970630.00	384.80	384.90	0 - 35	35 - 37.5	37.5 - 50	40 - 50	10	2
WAP-8I	2881313.40	970633.60	384.70	384.78	0 - 65.5	65.5 - 67.5	67.5 - 80	70 - 80	10	2
WAP-8D	2881309.50	970636.70	384.70	384.72	0 - 92.5	92.5 - 94.5	94.5 - 107	97 - 107	10	2

NOTES:
bgs = below ground surface
ft = feet
in = inches
msl = mean sea level

TABLE II
SUMMARY OF GROUNDWATER QUALITY DATA FROM ORIGINAL
CCR MONITORING NETWORK
WEST ASH POND
F.B. CULLEY GENERATING STATION
NEWBURGH, IN

Location Group	Action Level	Upgradient				Downgradient							
Location Name	Maximum	CCR-AP-7	CCR-AP-7	WAP-1	WAP-1	WAP-2RR	WAP-2RR	WAP-3S	WAP-3S	WAP-4S	WAP-4S	WAP-5S	WAP-5S
Sample Name	Contaminant	CCR-AP-7-20201112	CCR-AP-7-20210507	WAP-1-20201124	WAP-1-20210507	WAP-2R-20201124	WAP-2RR-20210506	WAP-3S-20201124	WAP-3S-20210506	WAP-4S-20201123	WAP-4S-20210505	WAP-5S-20201124	WAP-5S-20210505
Sample Date	Level/ Regional	11/12/2020	05/07/2021	11/24/2020	05/07/2021	11/24/2020	05/06/2021	11/24/2020	05/06/2021	11/23/2020	05/05/2021	11/24/2020	05/05/2021
Lab Sample ID	Screening Level	180-113688-9	180-121360-8	180-114117-1	180-121360-1	180-114117-2	180-121360-2	180-114117-4	180-121360-3	180-114117-8	180-121261-1	180-114117-11	180-121261-4
Detection Monitoring - EPA Appendix III Constituents (mg/L)													
Boron, Total	NA	0.12 U	0.16 U	**0.053 J**	0.08 U	**6.1**	**7.8**	**7**	**9.5**	**13**	**14**	**4.1**	**4.6**
Calcium, Total	NA	**110**	**110**	**190**	**180**	**140**	**150**	**98**	**90**	**310**	**300**	**260**	**240**
Chloride (mg/L)	NA	**29**	**26**	**33**	**35**	**45**	**61**	**41**	**38**	**180**	**150**	**150**	**140**
Fluoride (mg/L)	4	**0.33**	**0.57**	**0.11**	**0.28**	**0.27**	**0.32**	**0.75**	**0.76**	**0.23**	**0.22**	**0.081 J**	**0.1**
Sulfate (mg/L)	NA	**78 J+**	**95**	**320**	**300**	**170**	**230**	**130**	**150**	**520**	**550**	**400**	**430**
pH (lab) (su)	NA	**7.5 J**	**7.4 J**	**7.2 J**	**7.4 J**	**7.1 J**	**7.2 J**	**7.8 J**	**7.7 J**	**7.5 J**	**7.3 J**	**7 J**	**6.9 J**
Total Dissolved Solids (TDS) (mg/L)	NA	**510**	**870**	**960**	**890**	**530**	**690**	**490**	**430**	**1300**	**1300**	**1200**	**1200**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)													
Antimony, Total	0.006	0.002 U	0.002 U	**0.0011 J**	**0.00087 J**	0.002 U	0.002 U	**0.00043 J**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.0062**	**0.00077 J**	**0.025**	**0.014**	**0.0078**	**0.0021**	**0.00091 J**	**0.00097 J**	**0.0049**	**0.0051**	**0.0017**	**0.00061 J**
Barium, Total	2	**0.13**	**0.092**	**0.99**	**0.68**	**0.086**	**0.043**	**0.031**	**0.024**	**0.049**	**0.054**	**0.052**	**0.052**
Beryllium, Total	0.004	0.001 U	0.001 U	**0.00099 J**	**0.00059 J**	**0.00037 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	**0.00033 J**	0.001 U	**0.00053 J**	**0.0004 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	**0.027**	**0.016**	**0.0057**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.006	**0.00021 J**	**0.00076**	**0.012**	**0.0074**	**0.0097**	**0.0032**	**0.0018**	**0.0014**	**0.002**	**0.0018**	**0.0088**	**0.0074**
Fluoride (mg/L)	4	**0.33**	**0.57**	**0.11**	**0.28**	**0.27**	**0.32**	**0.75**	**0.76**	**0.23**	**0.22**	**0.081 J**	**0.1**
Lead, Total	0.015	0.001 U	0.001 U	**0.022**	**0.013**	**0.0056**	**0.0013**	**0.001**	**0.00074 J**	**0.00015 J**	0.001 U	**0.00036 J**	**0.0002 J**
Lithium, Total	0.04	**0.0099**	**0.0091**	**0.021**	**0.014**	**0.041**	**0.032**	**0.087**	**0.085**	0.005 U	0.005 U	0.005 U	0.005 U
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.0011 J**	**0.0019 J**	**0.0017 J**	**0.0014 J**	**0.05**	**0.081**	**1.1**	**1**	**0.5**	**0.48**	**0.00081 J**	**0.00079 J**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	**0.0033 J**	**0.0049 J**	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.001 U	**0.00063 J**	**0.00041 J**	**0.00027 J**	**0.00023 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)													
Radium-226	NA	0.0646 U ± 0.223	**0.239 ± 0.118**	**2.54 ± 1.16**	**0.657 ± 0.268**	0.561 U ± 0.621	**0.188 ± 0.109**	**1.21 ± 0.744**	**0.218 ± 0.137**	0.165 U ± 0.323	0.0924 U ± 0.0939	0.104 U ± 0.3	0.144 U ± 0.109
Radium-228	NA	0.0611 U ± 0.291	0.249 U ± 0.26	**2.20 ± 0.951**	0.549 U ± 0.56	**0.969 ± 0.556**	0.329 U ± 0.308	0.166 U ± 0.614	0.170 U ± 0.431	**1.04 ± 0.432**	0.0864 U ± 0.308	0.305 U ± 0.245	0.217 U ± 0.354
Radium-226 & 228	5	0.126 U ± 0.367	**0.487 J ± 0.286**	**4.74 ± 1.5**	**1.21 J ± 0.621**	**1.53 J ± 0.834**	**0.517 J ± 0.327**	**1.38 J ± 0.965**	0.388 UJ ± 0.452	**1.21 J ± 0.539**	0.179 U ± 0.322	0.409 U ± 0.387	0.361 U ± 0.37
Field Parameters													
Temperature (Deg C)	NA	**16.88**	**15.41**	**16.46**	**25.77**	**15.31**	**16.56**	**16.24**	**17.11**	**16.18**	**17.79**	**16.91**	**18.41**
Dissolved Oxygen, Field (mg/L)	NA	**0.49**	**0.17**	**4.97**	**1.35**	**0**	**0.17**	**0.03**	**0.21**	**0.07**	**0.14**	**0.12**	**0.37**
Conductivity, Field (mS/cm)	NA	**0.98477**	**0.88446**	**1.1407**	**1.4168**	**0.93659**	**1.0508**	**0.66555**	**0.68545**	**1.6846**	**1.7164**	**1.5892**	**1.5749**
ORP, Field (mv)	NA	**-85.4**	**22.6**	**95.8**	**-106**	**40.1**	**51.8**	**28.8**	**17.9**	**-36.1**	**32.9**	**12.3**	**-2.1**
Turbidity, Field (NTU)	NA	**0**	**11.97**	**750.84**	**405.47**	**133.32**	**47.9**	**10.04**	**38.89**	**94.17**	**22.26**	**4.19**	**3.55**
pH, Field (su)	NA	**6.82**	**6.99**	**7.05**	**7.00**	**6.71**	**6.63**	**7.49**	**7.46**	**7.11**	**6.98**	**6.56**	**6.46**

ABBREVIATIONS AND NOTES:

CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
pCi/L: picoCurie per liter.
SU: standard units.
USEPA: United States Environmental Protection Agency.
Results in **bold** are detected.

- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257. https://www.epa.gov/coalash/coal-ash-rule

TABLE III
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS INSTALLED TO ASSESS THE NATURE AND EXTENT OF APPENDIX IV SSLS
WEST ASH POND
F.B. CULLEY GENERATING STATION
NEWBURGH, IN

Location Group	Action Level	Downgradient													
Location Name	Maximum	WAP-3D	WAP-3D	WAP-3D	WAP-3D	WAP-3D	WAP-3D	WAP-4D	WAP-4D	WAP-4D	WAP-4D	WAP-4I	WAP-4I	WAP-4I	WAP-4I
Sample Name	Contaminant	WAP-3D-20201124	WAP-3D-20210114	WAP-3D-20210303	WAP-3D-20210415	BLIND DUPLICATE-20210415	WAP-3D-20210506	WAP-4D-20201124	WAP-4D-20210224	WAP-4D-20210413	WAP-4D-20210505	WAP-4I-20201124	WAP-4I-20210302	WAP-4I-20210413	WAP-4I-20210505
Sample Date	Level/ Regional	11/24/2020	01/14/2021	03/03/2021	04/15/2021	04/15/2021	05/06/2021	11/24/2020	02/24/2021	04/13/2021	05/05/2021	11/24/2020	03/02/2021	04/13/2021	05/05/2021
Lab Sample ID	Screening Level	180-114117-3	180-116163-1	180-117934-4	180-120201-1	180-120201-14	180-121360-4	180-114117-6	180-117674-7	180-120201-3	180-121261-3	180-114117-7	180-117934-1	180-120201-2	180-121261-2
Detection Monitoring - EPA Appendix III Constituents (mg/L)															
Boron, Total	NA	**10**	**6**	**9.4**	**6.5**	**6.5**	**7.5**	**0.067 J**	**0.083**	0.08 U	0.095 U	**0.086**	**0.071 J**	0.08 U	0.084 U
Calcium, Total	NA	**180**	**130**	**180**	**140**	**130**	**150**	**51**	**52**	**45**	**50**	**48**	**40**	**33**	**33**
Chloride (mg/L)	NA	**84**	**60**	**68 J+**	**58**	**58**	**66**	**23**	**21**	**21**	**20**	**25**	1 U	**24**	**24**
Fluoride (mg/L)	4	**0.39**	**0.5**	**0.53**	**0.41**	**0.4**	**0.46**	**0.16**	**0.13**	**0.13**	**0.14**	**0.11**	0.1 U	**0.12**	**0.14**
Sulfate (mg/L)	NA	**400**	**280**	**250 J+**	**300**	**310**	**310**	**36**	**35**	**32**	**34**	**60**	1 U	**41**	**43**
pH (lab) (su)	NA	**7.9 J**	**7.9 J**	**7.8 J**	**7.5 J**	**7.7 J**	**7.9 J**	**7.7 J**	**7.6 J**	**7.5 J**	**7.7 J**	**7.6 J**	**7.5 J**	**7.6 J**	**7.6 J**
Total Dissolved Solids (TDS) (mg/L)	NA	**930**	**660**	**810**	**740**	**750**	**700**	**250**	**240**	**290**	**230**	**270**	**210**	**230**	**200**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)															
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	**0.0019 J**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.00032 J**	**0.0012**	**0.005**	**0.00086 J**	**0.00099 J**	0.001 U	**0.024**	**0.29**	**0.057**	**0.0098**	**0.025**	**0.028**	**0.0059**	**0.0026**
Barium, Total	2	**0.019**	**0.018**	**0.068**	**0.018**	**0.018**	**0.016**	**0.31**	**0.78**	**0.39**	**0.29**	**0.25**	**0.33**	**0.18**	**0.14**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	**0.0003 J**	0.001 U	0.001 U	0.001 U	**0.00033 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	**0.00023 J**	0.001 U	**0.00031 J**	**0.00028 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	**0.0018 J**	0.002 U	0.002 U	0.002 U	0.002 U	**0.0071**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.006	**0.0014**	**0.0028**	**0.0018**	**0.0013**	**0.0015**	**0.00088**	**0.0002 J**	**0.0022**	**0.00034 J**	**0.00016 J**	**0.0017**	**0.004**	**0.00099**	**0.00038 J**
Fluoride (mg/L)	4	**0.39**	**0.5**	**0.53**	**0.41**	**0.4**	**0.46**	**0.16**	**0.13**	**0.13**	**0.14**	**0.11**	0.1 U	**0.12**	**0.14**
Lead, Total	0.015	**0.00025 J**	**0.0028**	**0.0011**	**0.00056 J**	**0.00084 J**	0.001 U	0.001 U	**0.0036**	**0.0003 J**	0.001 U	**0.0003 J**	**0.0016**	**0.00026 J**	0.001 U
Lithium, Total	0.04	**0.083**	**0.078**	**0.077**	**0.092**	**0.088**	**0.092**	0.005 U	**0.0047 J**	0.005 U	0.005 U	**0.0061**	**0.0048 J**	**0.0034 J**	0.005 U
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.47**	**0.52**	**0.51**	**0.47**	**0.46**	**0.47**	**0.0048 J**	**0.0072**	**0.0051**	**0.0053**	**0.0028 J**	**0.0042 J**	**0.0028 J**	**0.0018 J**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	**0.00018 J**	**0.00025 J**	0.001 U	**0.00056 J**	**0.00019 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00037 J**	0.001 U	0.001 U
Radiological (pCi/L)															
Radium-226	NA	0.0438 U ± 0.249	**0.223 ± 0.111**	**0.404 ± 0.145**	0.141 U ± 0.108	0.122 U ± 0.121	0.107 U ± 0.0901	**0.624 ± 0.372**	**3.79 ± 0.629**	**0.738 ± 0.175**	**0.313 ± 0.126**	**1.45 ± 0.521**	**0.802 ± 0.203**	**0.476 ± 0.141**	**0.194 ± 0.105**
Radium-228	NA	0.206 U ± 0.288	0.245 U ± 0.364	0.479 U ± 0.405	0.417 U ± 0.38	0.0643 U ± 0.294	0.155 U ± 0.286	**0.786 ± 0.365**	**2.45 ± 0.676**	0.348 U ± 0.268	0.323 U ± 0.344	**0.702 ± 0.341**	0.809 UJ ± 0.454	0.187 U ± 0.254	0.364 U ± 0.334
Radium-226 & 228	5	0.250 U ± 0.381	0.467 UJ ± 0.381	**0.883 J ± 0.43**	0.557 U ± 0.395	0.186 U ± 0.318	0.262 U ± 0.3	**1.41 ± 0.521**	**6.25 ± 0.923**	**1.09 J ± 0.32**	**0.636 J ± 0.366**	**2.15 ± 0.623**	**1.61 J ± 0.497**	**0.662 J ± 0.291**	**0.558 J ± 0.35**
Field Parameters															
Temperature (Deg C)	NA	**16.24**	**13.03**	**17.06**	**16.9**	**16.9**	**17.28**	**19.57**	**16.03**	**17.43**	**16.16**	**19.58**	**14.65**	**18.78**	**15.51**
Dissolved Oxygen, Field (mg/L)	NA	**0.05**	**1.24**	**0.33**	**0.15**	**0.15**	**0.21**	**0.29**	**0.88**	**0.05**	**0.44**	**1.88**	**0.01**	**0.03**	**0.22**
Conductivity, Field (mS/cm)	NA	**1.2138**	**0.96062**	**1.35**	**0.97687**	**0.97687**	**1.0496**	**0.38343**	**0.39016**	**0.39051**	**0.39636**	**0.39503**	**0.42**	**0.32749**	**0.32042**
ORP, Field (mv)	NA	**23.1**	**135.8**	**-94.3**	**57.3**	**57.3**	**65.6**	**-118.5**	**-91.1**	**-101.4**	**-125.6**	**15.3**	**-8.2**	**-23.5**	**-25.3**
Turbidity, Field (NTU)	NA	**14.1**	**87.23**	**57.31**	**0.14**	**0.14**	**0**	**14.76**	**61.4**	**63.39**	**0.12**	**2.19**	**0**	**9.76**	**0**
pH, Field (su)	NA	**7.58**	**7.48**	**7.06**	**7.68**	**7.68**	**7.66**	**7.46**	**7.59**	**7.42**	**7.4**	**7.25**	**7.32**	**7.33**	**7.31**

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TABLE III
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS INSTALLED TO ASSESS THE NATURE AND EXTENT OF APPENDIX IV SSLS
WEST ASH POND
F.B. CULLEY GENERATING STATION
NEWBURGH, IN

Location Group	Action Level	Downgradient							
Location Name	Maximum	WAP-5D	WAP-5D	WAP-5D	WAP-5D	WAP-5I	WAP-5I	WAP-5I	WAP-5I
Sample Name	Contaminant	WAP-5D-20201123	WAP-5D-20210302	WAP-5D-20210413	WAP-5D-20210507	WAP-5I-20201123	WAP-5I-20210302	WAP-5I-20210413	WAP-5I-20210505
Sample Date	Level/ Regional	11/23/2020	03/02/2021	04/13/2021	05/07/2021	11/23/2020	03/02/2021	04/13/2021	05/05/2021
Lab Sample ID	Screening Level	180-114117-9	180-117934-3	180-120201-5	180-121360-5	180-114117-10	180-117934-2	180-120201-4	180-121261-5
Detection Monitoring - EPA Appendix III Constituents (mg/L)									
Boron, Total	NA	**0.1**	**0.05 J**	0.08 U	0.1 U	**0.093**	**0.056 J**	0.08 U	0.16 U
Calcium, Total	NA	**47**	**47**	**45**	**48**	**49**	**42**	**36**	**38**
Chloride (mg/L)	NA	**20**	**20 J+**	**21**	**21**	**23**	**22 J+**	**23**	**23**
Fluoride (mg/L)	4	**0.092 J**	0.14 U	**0.12**	**0.15**	**0.1**	**0.15 J+**	**0.13**	**0.14**
Sulfate (mg/L)	NA	**42**	**45 J+**	**43**	**43**	**58**	**57 J+**	**44**	**43**
pH (lab) (su)	NA	**7.7 J**	**7.5 J**	**7.7 J**	**8 J**	**7.5 J**	**7.5 J**	**7.6 J**	**7.5 J**
Total Dissolved Solids (TDS) (mg/L)	NA	**220**	**220**	**280**	**240**	**240**	**220**	**310**	**190**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)									
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.041**	**0.015**	**0.014**	**0.01**	**0.0038**	**0.019**	**0.007**	**0.0034**
Barium, Total	2	**0.25**	**0.22**	**0.23**	**0.22**	**0.14**	**0.14**	**0.11**	**0.1**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.006	**0.00028 J**	0.0005 U	**0.00036 J**	0.0005 U	**0.0005**	**0.00099**	**0.00042 J**	**0.00032 J**
Fluoride (mg/L)	4	**0.092 J**	0.14 U	**0.12**	**0.15**	**0.1**	**0.15 J+**	**0.13**	**0.14**
Lead, Total	0.015	**0.00071 J**	**0.00064 J**	**0.00054 J**	0.001 U	0.001 U	**0.0011**	**0.00014 J**	0.001 U
Lithium, Total	0.04	0.005 U	0.005 U	0.005 U	0.005 U	**0.0054**	**0.0042 J**	0.005 U	0.005 U
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.0042 J**	**0.0041 J**	**0.0042 J**	**0.0041 J**	**0.002 J**	**0.0022 J**	**0.0019 J**	**0.0019 J**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)									
Radium-226	NA	**1.79 ± 0.566**	**0.402 ± 0.134**	**0.298 ± 0.117**	**0.516 ± 0.154**	0.321 U ± 0.325	**0.515 ± 0.15**	**0.166 ± 0.091**	0.155 U ± 0.114
Radium-228	NA	**1.20 ± 0.35**	0.705 UJ ± 0.318	0.422 U ± 0.292	0.285 U ± 0.297	0.270 U ± 0.231	0.383 U ± 0.266	0.0941 U ± 0.247	**0.798 ± 0.327**
Radium-226 & 228	5	**2.99 ± 0.665**	1.11 UJ ± 0.345	**0.720 J ± 0.315**	**0.801 J ± 0.335**	**0.591 ± 0.399**	**0.898 J ± 0.305**	0.260 UJ ± 0.263	**0.953 J ± 0.346**
Field Parameters									
Temperature (Deg C)	NA	**18.58**	**16.37**	**17.2**	**16.91**	**20.91**	**16.49**	**17.77**	**15.96**
Dissolved Oxygen, Field (mg/L)	NA	**0.17**	**0.11**	**0.2**	**0.26**	**0.15**	**0**	**0.11**	**0.23**
Conductivity, Field (mS/cm)	NA	**0.35508**	**0.44**	**0.32733**	**0.39333**	**0.35751**	**0.43**	**0.3173**	**0.33079**
ORP, Field (mv)	NA	**-81.9**	**-101.7**	**-12.9**	**-83.2**	**-1.8**	**-21.7**	**16.6**	**-12.9**
Turbidity, Field (NTU)	NA	**25.51**	**0.92**	**1.47**	**0**	**8.28**	**14.58**	**1.53**	**0**
pH, Field (su)	NA	**7.22**	**7.26**	6.99	**7.28**	**7.13**	**7.19**	**7.11**	**7.22**

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mg/L: milligram per liter.
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Results in **bold** are detected.

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  https://www.epa.gov/coalash/coal-ash-rule

TABLE IV
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS INSTALLED TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST-CLOSURE PLAN
WEST ASH POND
F.B. CULLEY GENERATING STATION
NEWBURGH, IN

Location Group	Action Level	Downgradient											
Location Name	Maximum	WAP-6D	WAP-6D	WAP-6D	WAP-6D	WAP-6D	WAP-6D	WAP-6I	WAP-6I	WAP-6I	WAP-6I	WAP-6I	WAP-6I
Sample Name	Contaminant	WAP-6D-20201014	BLIND DUPLICATE-20201014	WAP-6D-20201124	WAP-6D-20210119	WAP-6D-20210414	WAP-6D-20210504	WAP-6I-20201014	WAP-6I-20201124	WAP-6I-20210119	WAP-6I-20210223	WAP-6I-20210414	WAP-6I-20210504
Sample Date	Level/ Regional	10/14/2020	10/14/2020	11/24/2020	01/19/2021	04/14/2021	05/04/2021	10/14/2020	11/24/2020	01/18/2021	02/23/2021	04/14/2021	05/04/2021
Lab Sample ID	Screening Level	240-138296-3	240-138296-4	180-114118-1	180-116381-1	180-120201-8	180-121261-8	240-138296-2	180-114118-2	180-116381-2	180-117674-2	180-120201-7	180-121261-7
Detection Monitoring - EPA Appendix III Constituents (mg/L)													
Boron, Total	NA	**0.051**	**0.05**	**0.095**	0.088 U	0.08 U	0.16 U	**0.098**	**0.15**	0.098 U	**0.097**	0.08 U	0.16 U
Calcium, Total	NA	**40**	**40**	**42**	**41**	**38**	**41**	**41**	**49**	**43**	**45**	**38**	**40**
Chloride (mg/L)	NA	**16**	**16**	**19**	**19**	**22**	**21**	**19**	**23**	**23**	**23**	**24**	**23**
Fluoride (mg/L)	4	**0.14**	**0.14**	**0.14**	**0.13**	**0.14**	**0.15**	**0.15**	**0.12**	**0.14**	**0.15**	**0.14**	**0.16**
Sulfate (mg/L)	NA	**40**	**40**	**42**	**43**	**39**	**40**	**43**	**52**	**59**	**51**	**43**	**43**
pH (lab) (su)	NA	**7.7 J**	**5.5 J**	**7.9 J**	**7.4 J**	**7.8 J**	**7.8 J**	**7.6 J**	**7.4 J**	**7.4 J**	**7.6 J**	**7.7 J**	**7.8 J**
Total Dissolved Solids (TDS) (mg/L)	NA	**200**	**200**	**230**	**220**	**210**	**210**	**210**	**240**	**250**	**230**	**220**	**190**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)													
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.0057**	**0.006**	**0.0048**	**0.0063**	**0.0058**	**0.0055**	**0.0043 J**	**0.0037**	**0.0052**	**0.0067**	**0.0042**	**0.0038**
Barium, Total	2	**0.18**	**0.18**	**0.17**	**0.2**	**0.2**	**0.19**	**0.14**	**0.14**	**0.15**	**0.14**	**0.13**	**0.12**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.001 U	**0.00027 J**	0.001 U	**0.00034 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.006	0.001 U	0.001 U	**0.00019 J**	0.0005 U	**0.00018 J**	0.0005 U	**0.0003 J**	**0.00035 J**	**0.00027 J**	**0.00052**	**0.00026 J**	**0.00024 J**
Fluoride (mg/L)	4	**0.14**	**0.14**	**0.14**	**0.13**	**0.14**	**0.15**	**0.15**	**0.12**	**0.14**	**0.15**	**0.14**	**0.16**
Lead, Total	0.015	0.001 U	0.001 U	0.001 U	0.001 U	**0.00014 J**	0.001 U	0.001 U	0.001 U	**0.00017 J**	**0.00045 J**	0.001 U	0.001 U
Lithium, Total	0.04	**0.0023 J**	**0.0019 J**	**0.0055**	0.005 U	0.005 U	0.005 U	**0.0033 J**	**0.0056**	**0.0048 J**	**0.0051**	**0.0036 J**	**0.0039 J**
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.0023 J**	**0.0022 J**	**0.012**	**0.0027 J**	**0.0023 J**	**0.002 J**	**0.0063**	**0.009**	**0.0068**	**0.0089**	**0.0069**	**0.0063**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	**0.00026 J**	0.001 U	**0.00018 J**	0.001 U	**0.00047 J**	0.001 U	**0.00028 J**	**0.00029 J**	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)													
Radium-226	NA	**0.309 ± 0.196**	0.219 U ± 0.196	0.459 U ± 0.37	**0.460 ± 0.132**	**0.277 ± 0.119**	**0.269 ± 0.119**	**0.361 ± 0.21**	0.172 U ± 0.297	**0.163 ± 0.0847**	**0.242 ± 0.128**	**0.182 ± 0.104**	**0.133 ± 0.0934**
Radium-228	NA	**0.597 ± 0.313**	0.277 U ± 0.304	-0.128 U ± 0.26	0.318 U ± 0.325	0.0892 U ± 0.222	**0.875 ± 0.348**	**0.472 ± 0.287**	**0.528 ± 0.271**	0.00464 U ± 0.249	0.192 U ± 0.258	0.138 U ± 0.268	0.229 U ± 0.291
Radium-226 & 228	5	**0.907 ± 0.369**	0.496 U ± 0.362	0.459 U ± 0.452	**0.779 J ± 0.351**	0.367 UJ ± 0.252	**1.14 ± 0.368**	**0.833 ± 0.356**	**0.700 J ± 0.402**	0.168 UJ ± 0.263	**0.434 J ± 0.288**	0.321 UJ ± 0.287	0.362 UJ ± 0.306
Field Parameters													
Temperature (Deg C)	NA	**24.68**	**24.68**	**15.09**	**17.83**	**17.64**	**18.31**	**17.24**	**18.6**	**16.2**	**16.46**	**18.41**	**18.26**
Dissolved Oxygen, Field (mg/L)	NA	**0.33**	**0.33**	**0.63**	**0.2**	**0.35**	**0.27**	**0.14**	**0.86**	**0.36**	**7.6**	**0.18**	**0.22**
Conductivity, Field (mS/cm)	NA	**0.17372**	**0.17372**	**0.34028**	**0.3899**	**0.32423**	**0.25823**	**0.18813**	**0.39808**	**0.43012**	**0.41158**	**0.35075**	**0.34899**
ORP, Field (mv)	NA	**-127.9**	**-127.9**	**-105.4**	**-50.1**	**-63**	**-107.3**	**-191.9**	**-39.5**	**33**	**62.3**	**-51.7**	**56.5**
Turbidity, Field (NTU)	NA	**0.48**	**0.48**	**17.1**	**0**	**0**	**0**	**0**	**21.097**	**3.57**	**54.86**	**0**	**0**
pH, Field (su)	NA	**7.02**	**7.02**	**7.49**	**7**	**7.23**	**7.76**	**6.98**	**7.41**	**6.79**	**9.32**	**7.3**	**7.08**

ABBREVIATIONS AND NOTES:

CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
pCi/L: picoCurie per liter.
SU: standard units.
USEPA: United States Environmental Protection Agency.
Results in **bold** are detected.

- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257.
https://www.epa.gov/coalash/coal-ash-rule

TABLE IV
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS INSTALLED TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST-CLOSURE PLAN
WEST ASH POND
F.B. CULLEY GENERATING STATION
NEWBURGH, IN

Location Group	Action Level	Downgradient													
Location Name	Maximum	WAP-6S	WAP-6S	WAP-6S	WAP-6S	WAP-6S	WAP-6S	WAP-6S	WAP-6S	WAP-7D	WAP-7D	WAP-7D	WAP-7D	WAP-7D	WAP-7D
Sample Name	Contaminant	WAP-6S-20201014	WAP-6S-20201124	WAP-6S-20210119	WAP-6D-20210223	WAP-6S-20210223	WAP-6S-20210414	WAP-6S-20210504	BLIND DUPLICATE-20210504	WAP-7D-20201201	WAP-7D-20210114	WAP-7D-20210303	BLIND DUPLICATE-20210303	WAP-7D-20210415	WAP-7D-20210506
Sample Date	Level/ Regional	10/14/2020	11/24/2020	01/19/2021	02/23/2021	02/23/2021	04/14/2021	05/04/2021	05/04/2021	12/01/2020	01/14/2021	03/03/2021	03/03/2021	04/15/2021	05/06/2021
Lab Sample ID	Screening Level	240-138296-1	180-114118-3	180-116381-3	180-117674-3	180-117674-1	180-120201-6	180-121261-6	180-121261-12	180-114491-1	180-116163-3	180-117934-6	180-117934-7	180-120201-10	180-121360-7
Detection Monitoring - EPA Appendix III Constituents (mg/L)															
Boron, Total	NA	**1.2**	**2.3**	**2.2**	**0.1**	**3.1**	**2.7**	**2.9**	**2.8**	**14**	**15**	**15**	**15**	**14**	**15**
Calcium, Total	NA	**87**	**89**	**92**	**45**	**110**	**95**	**120**	**120**	**440**	**450**	**440**	**440**	**410**	**450**
Chloride (mg/L)	NA	**31**	**29**	**32**	**19**	**36**	**37**	**36**	**40**	**210 J+**	**220**	**200 J+**	**200 J+**	**200**	**210**
Fluoride (mg/L)	4	**0.48**	**0.49**	**0.41**	**0.29**	**0.43**	**0.44**	**0.45**	**0.48**	**0.41**	**0.49**	**0.57**	**0.57**	**0.36**	**0.43**
Sulfate (mg/L)	NA	**130**	**100**	**120**	**43**	**130**	**130**	**150**	**160**	**1200 J-**	**1200**	**1300 J+**	**1400 J+**	**1100**	**1200**
pH (lab) (su)	NA	**7.4 J**	**7.3 J**	**7.2 J**	**7.7 J**	**7.4 J**	**7.4 J**	**7.6 J**	**6.9 J**	**7.6 J**	**7.5 J**	**7.4 J**	**7.3 J**	**7.8 J**	**7.7 J**
Total Dissolved Solids (TDS) (mg/L)	NA	**450**	**410**	**470**	**220**	**490**	**500**	**540**	**520**	**2200**	**2200**	**2200**	**2200**	**2100**	**2200**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)															
Antimony, Total	0.006	0.002 U	0.002 U	**0.00066 J**	**0.00043 J**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.00092 J**	**0.00083 J**	**0.0046**	**0.0078**	**0.003**	**0.00074 J**	**0.00089 J**	**0.00093 J**	**0.0045**	**0.0044**	**0.0019**	**0.0017**	**0.0018**	**0.0019**
Barium, Total	2	**0.082**	**0.063**	**0.11**	**0.19**	**0.11**	**0.068**	**0.065**	**0.063**	**0.098**	**0.087**	**0.081**	**0.073**	**0.058**	**0.054**
Beryllium, Total	0.004	0.001 U	0.001 U	**0.00049 J**	0.001 U	**0.00021 J**	0.001 U	0.001 U	0.001 U	**0.00018 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U	0.001 U	**0.00023 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	**0.0093**	**0.0035**	**0.0051**	0.002 U	0.002 U	0.002 U	**0.0033**	**0.0027**	0.002 U	**0.0015 J**	0.002 U	0.002 U
Cobalt, Total	0.006	**0.0016**	**0.0014**	**0.0069**	**0.00093**	**0.0037**	**0.0013**	**0.001**	**0.0011**	**0.016**	**0.017**	**0.011**	**0.011**	**0.0078**	**0.0074**
Fluoride (mg/L)	4	**0.48**	**0.49**	**0.41**	**0.29**	**0.43**	**0.44**	**0.45**	**0.48**	**0.41**	**0.49**	**0.57**	**0.57**	**0.36**	**0.43**
Lead, Total	0.015	0.001 U	**0.00046 J**	**0.0062**	**0.0013**	**0.0027**	**0.00034 J**	**0.00014 J**	0.001 U	**0.0035**	**0.0033**	**0.0014**	**0.0014**	**0.00018 J**	0.001 U
Lithium, Total	0.04	**0.0024 J**	**0.0041 J**	**0.011**	**0.005**	**0.0068**	0.005 U	**0.004 J**	**0.0041 J**	**0.06**	**0.061**	**0.071**	**0.071**	**0.06**	**0.067**
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.16**	**0.18**	**0.17**	**0.0029 J**	**0.14**	**0.16**	**0.16**	**0.16**	**0.28**	**0.34**	**0.52**	**0.52**	**0.29**	**0.3**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.001 U	0.001 U	**0.00037 J**	**0.00041 J**	0.001 U	0.001 U	0.001 U	**0.00021 J**	**0.00015 J**	0.001 U	0.001 U	**0.00017 J**	0.001 U
Radiological (pCi/L)															
Radium-226	NA	0.204 U ± 0.156	0.193 U ± 0.311	**0.212 ± 0.133**	**0.293 ± 0.142**	0.150 U ± 0.113	0.0672 U ± 0.0728	**0.162 ± 0.109**	0.101 U ± 0.0893	**0.585 ± 0.331**	**0.620 ± 0.187**	**0.563 ± 0.172**	**0.563 ± 0.176**	**0.470 ± 0.143**	**0.454 ± 0.146**
Radium-228	NA	**0.443 ± 0.244**	0.478 U ± 0.339	0.285 U ± 0.42	**0.797 ± 0.345**	**0.615 ± 0.314**	0.379 U ± 0.284	**0.606 ± 0.332**	0.418 U ± 0.282	0.132 U ± 0.547	0.341 U ± 0.373	0.878 UJ ± 0.425	0.702 UJ ± 0.411	**0.881 ± 0.32**	**0.487 ± 0.3**
Radium-226 & 228	5	**0.647 J ± 0.29**	**0.672 ± 0.46**	0.497 UJ ± 0.441	**1.09 ± 0.373**	**0.765 J ± 0.334**	**0.446 ± 0.293**	**0.768 ± 0.349**	**0.519 ± 0.296**	0.717 UJ ± 0.639	**0.961 J ± 0.417**	1.44 UJ ± 0.458	1.27 UJ ± 0.447	**1.35 ± 0.35**	**0.941 ± 0.334**
Field Parameters															
Temperature (Deg C)	NA	**18.27**	**15.84**	**15**	**18.99**	**16**	**18.46**	**18.75**	**18.75**	**10.3**	**13.29**	**19.24**	**19.24**	**17.06**	**16.73**
Dissolved Oxygen, Field (mg/L)	NA	**0**	**0.05**	**0**	**1.18**	**0.16**	**0.09**	**0.2**	**0.2**	**0.08**	**0.05**	**1.62**	**1.62**	**0.13**	**0.23**
Conductivity, Field (mS/cm)	NA	**0.36342**	**0.64084**	**0.73568**	**0.37063**	**0.86615**	**0.75597**	**0.84196**	**0.84196**	**2.3922**	**2.5415**	**4.02**	**4.02**	**2.0585**	**2.603**
ORP, Field (mv)	NA	**-10.2**	**-7**	**25**	**6**	**26.2**	**19.4**	**40.7**	**40.7**	**30.8**	**122**	**58.5**	**58.5**	**-13.3**	**29.9**
Turbidity, Field (NTU)	NA	**14.46**	**7.89**	**223.33**	**100.73**	**467.76**	**17.65**	**2.33**	**2.33**	**113.87**	**140.21**	**25.26**	**25.26**	**2.5**	**0.22**
pH, Field (su)	NA	**7.17**	**7.18**	**6.84**	**7.47**	**6.89**	**7.01**	**6.79**	**6.79**	**7.32**	**7.46**	**7.19**	**7.19**	**7.27**	**7.11**

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mg/L: milligram per liter.
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https://www.epa.gov/coalash/coal-ash-rule

TABLE IV
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS INSTALLED TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST-CLOSURE PLAN
WEST ASH POND
F.B. CULLEY GENERATING STATION
NEWBURGH, IN

Location Group	Action Level	Downgradient													
Location Name	Maximum	WAP-7S	WAP-7S	WAP-7S	WAP-7S	WAP-7S	WAP-7S	WAP-8D	WAP-8D	WAP-8D	WAP-8D	WAP-8D	WAP-8D	WAP-8I	WAP-8I
Sample Name	Contaminant	WAP-7S-20201123	BLIND DUPLICATE-20201123	WAP-7S-20210114	WAP-7S-20210303	WAP-7S-20210415	WAP-7S-20210506	WAP-8D-20201201	WAP-8D-20210119	BLIND DUPLICATE-20210119	WAP-8D-20210224	WAP-8D-20210414	WAP-8D-20210504	WAP-8I-20201201	WAP-8I-20210119
Sample Date	Level/ Regional	11/23/2020	11/23/2020	01/14/2021	03/03/2021	04/15/2021	05/06/2021	12/01/2020	01/19/2021	01/19/2021	02/24/2021	04/14/2021	05/04/2021	12/01/2020	01/19/2021
Lab Sample ID	Screening Level	180-114118-4	180-114118-5	180-116163-2	180-117934-5	180-120201-9	180-121360-6	180-114491-2	180-116381-4	180-116381-7	180-117674-6	180-120201-13	180-121261-11	180-114491-3	180-116381-5
Detection Monitoring - EPA Appendix III Constituents (mg/L)															
Boron, Total	NA	**16**	**13**	**16**	**5.5**	**14**	**12**	**0.07 J**	0.093 U	0.09 U	**0.089**	0.087 U	0.16 U	**0.12**	0.11 U
Calcium, Total	NA	**310**	**300**	**210**	**78**	**160**	**160**	**39**	**39**	**40**	**45**	**42**	**50**	**45**	**49**
Chloride (mg/L)	NA	**160**	**190**	**110**	**28 J+**	**89**	**85**	**14 J+**	**16**	**16**	**17**	**20**	**20**	**20 J+**	**23**
Fluoride (mg/L)	4	**0.29**	**0.26**	**0.22**	**0.61**	**0.2**	**0.39**	**0.21**	**0.15**	**0.14**	**0.14**	**0.15**	**0.17**	**0.25**	**0.21**
Sulfate (mg/L)	NA	**660**	**510**	**500**	**110 J+**	**410**	**410**	**43 J-**	**51**	**51**	**47**	**51**	**56**	**48 J-**	**61**
pH (lab) (su)	NA	**6.6 J**	**7.8 J**	**9.3 J**	**8.3 J**	**8 J**	**8.4 J**	**7.8 J**	**7.5 J**	**7.5 J**	**7.7 J**	**7.8 J**	**7.4 J**	**7.8 J**	**7.3 J**
Total Dissolved Solids (TDS) (mg/L)	NA	**1600**	**1300**	**960**	**380**	**880**	**840**	**200**	**230**	**180**	**230**	**240**	**220**	**240**	**250**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)															
Antimony, Total	0.006	**0.0008 J**	0.002 U	**0.0011 J**	0.002 U	**0.00058 J**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.014 J**	**0.0052 J**	**0.004**	**0.0016**	**0.0038**	**0.0021**	**0.0025**	**0.0034**	**0.003**	**0.0027**	**0.0031**	**0.0031**	**0.0028**	**0.0038**
Barium, Total	2	**0.17 J**	**0.049 J**	**0.059**	**0.062**	**0.047**	**0.047**	**0.056**	**0.065**	**0.066**	**0.07**	**0.071**	**0.077**	**0.042**	**0.052**
Beryllium, Total	0.004	**0.00023 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00023 J**	0.001 U
Cadmium, Total	0.005	**0.00041 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	**0.0044 J**	0.002 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	**0.0015 J**	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.006	**0.015 J**	**0.002 J**	**0.00046 J**	**0.00086**	**0.00019 J**	**0.00029 J**	0.0005 U	**0.00087**	**0.00068**	**0.00019 J**	0.0005 U	0.0005 U	**0.00051**	**0.00051**
Fluoride (mg/L)	4	**0.29**	**0.26**	**0.22**	**0.61**	**0.2**	**0.39**	**0.21**	**0.15**	**0.14**	**0.14**	**0.15**	**0.17**	**0.25**	**0.21**
Lead, Total	0.015	**0.0046 J**	**0.00025 J**	**0.00034 J**	**0.0005 J**	**0.00019 J**	0.001 U	**0.00036 J**	**0.00096 J**	**0.0009 J**	**0.00043 J**	0.001 U	0.001 U	**0.00014 J**	0.001 U
Lithium, Total	0.04	**0.19 J**	0.005 UJ	**0.16**	**0.1**	**0.17**	**0.13**	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	**0.0039 J**	**0.0036 J**
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.15 J**	**0.5 J**	**0.27**	**0.34**	**0.25**	**0.28**	**0.0013 J**	**0.0014 J**	**0.0009 J**	**0.0013 J**	**0.0013 J**	**0.0013 J**	**0.037**	**0.043**
Selenium, Total	0.05	0.005 U	0.005 U	**0.014**	0.005 U	**0.004 J**	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	**0.0002 J**	0.001 U	0.001 U	0.001 U	**0.00021 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.00055 J**	0.001 U
Radiological (pCi/L)															
Radium-226	NA	0.992 U ± 0.89	0.159 U ± 0.149	**0.186 ± 0.0864**	0.138 U ± 0.105	**0.139 ± 0.0908**	**0.211 ± 0.109**	0.123 U ± 0.124	0.0633 U ± 0.0727	**0.181 ± 0.0998**	**0.215 ± 0.115**	**0.239 ± 0.117**	**0.231 ± 0.127**	0.105 U ± 0.12	**0.147 ± 0.0728**
Radium-228	NA	0.820 U ± 0.613	0.369 U ± 0.359	-0.0470 U ± 0.275	0.673 UJ ± 0.401	**0.390 ± 0.241**	0.419 U ± 0.28	0.308 U ± 0.319	0.326 U ± 0.276	-0.131 U ± 0.352	0.161 U ± 0.192	0.267 U ± 0.227	**0.605 ± 0.318**	-0.153 U ± 0.27	**0.464 ± 0.278**
Radium-226 & 228	5	**1.81 ± 1.08**	0.528 U ± 0.389	0.186 UJ ± 0.288	0.811 UJ ± 0.415	**0.530 ± 0.258**	**0.631 J ± 0.3**	0.431 U ± 0.342	0.390 U ± 0.285	0.181 UJ ± 0.366	**0.376 J ± 0.224**	**0.505 J ± 0.255**	**0.836 ± 0.342**	0.105 U ± 0.295	**0.610 ± 0.287**
Field Parameters															
Temperature (Deg C)	NA	**15.97**	**16.18**	**15.45**	**16.81**	**17.54**	**16.95**	**14.43**	**14.18**	**14.18**	**17.5**	**17.73**	**17.97**	**13.17**	**13.65**
Dissolved Oxygen, Field (mg/L)	NA	**0.03**	**0.07**	**0.15**	**0.02**	**0.15**	**0.29**	**0.12**	**0.29**	**0.29**	**0.03**	**0.28**	**0.22**	**0.06**	**0.17**
Conductivity, Field (mS/cm)	NA	**1.9677**	**1.6846**	**1.3949**	**0.68**	**1.0133**	**1.1925**	**0.25988**	**0.36331**	**0.36331**	**0.3652**	**0.3499**	**0.39372**	**0.34048**	**0.44054**
ORP, Field (mv)	NA	**57.6**	**-36.1**	**123.4**	**24.1**	**-4.3**	**83.7**	**-94**	**-51.1**	**-51.1**	**-133.2**	**-93.1**	**-115.4**	**-55.4**	**-22.2**
Turbidity, Field (NTU)	NA	**276.47**	**94.17**	**9.28**	**0.76**	**0**	**0**	**0**	**11.36**	**11.36**	**14.12**	**0**	**0**	**0**	**0**
pH, Field (su)	NA	**5.7**	**7.11**	**9.08**	**8.23**	**9.14**	**8.21**	**7.54**	**7.15**	**7.15**	**7.52**	**7.29**	**7.21**	**7.45**	**7.08**

ABBREVIATIONS AND NOTES:

CCR: Coal Combustion Residuals.
mg/L: milligram per liter.
pCi/L: picoCurie per liter.
SU: standard units.
USEPA: United States Environmental Protection Agency.
Results in **bold** are detected.

- USEPA. 2016. Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. July 26. 40 CFR Part 257. https://www.epa.gov/coalash/coal-ash-rule

TABLE IV
SUMMARY OF GROUNDWATER QUALITY DATA FOR MONITORING WELLS INSTALLED TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST-CLOSURE PLAN
WEST ASH POND
F.B. CULLEY GENERATING STATION
NEWBURGH, IN

Location Group	Action Level	Downgradient							
Location Name	Maximum	WAP-8I	WAP-8I	WAP-8I	WAP-8S	WAP-8S	WAP-8S	WAP-8S	WAP-8S
Sample Name	Contaminant	WAP-8I-20210224	WAP-8I-20210414	WAP-8I-20210504	WAP-8S-20201201	WAP-8S-20210119	WAP-8S-20210224	WAP-8S-20210414	WAP-8S-20210504
Sample Date	Level/ Regional	02/24/2021	04/14/2021	05/04/2021	12/01/2020	01/19/2021	02/24/2021	04/14/2021	05/04/2021
Lab Sample ID	Screening Level	180-117674-5	180-120201-12	180-121261-10	180-114491-4	180-116381-6	180-117674-4	180-120201-11	180-121261-9
Detection Monitoring - EPA Appendix III Constituents (mg/L)									
Boron, Total	NA	**0.15**	0.1 U	0.16 U	**3**	**2**	**2.6**	**2.2**	**2.3**
Calcium, Total	NA	**52**	**45**	**49**	**120**	**100**	**130**	**110**	**130**
Chloride (mg/L)	NA	**24**	**23**	**22**	**58 J+**	**49**	**63**	**62**	**57**
Fluoride (mg/L)	4	**0.2**	**0.22**	**0.24**	**0.11**	**0.088 J**	**0.099 J**	**0.11**	**0.13**
Sulfate (mg/L)	NA	**57**	**57**	**55**	**220 J-**	**200**	**220**	**200**	**220**
pH (lab) (su)	NA	**8.2 J**	**7.8 J**	**7.7 J**	**8.2 J**	**7.9 J**	**7.9 J**	**7.6 J**	**8 J**
Total Dissolved Solids (TDS) (mg/L)	NA	**270**	**250**	**230**	**620**	**600**	**660**	**590**	**590**
Assessment Monitoring - EPA Appendix IV Constituents (mg/L)									
Antimony, Total	0.006	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic, Total	0.01	**0.0038**	**0.0053**	**0.0044**	**0.012**	**0.01**	**0.013**	**0.013**	**0.016**
Barium, Total	2	**0.055**	**0.057**	**0.053**	**0.18**	**0.16**	**0.2**	**0.18**	**0.2**
Beryllium, Total	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium, Total	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chromium, Total	0.1	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt, Total	0.006	**0.00078**	**0.00051**	**0.00047 J**	**0.00088**	**0.00075**	**0.00066**	**0.00041 J**	**0.00035 J**
Fluoride (mg/L)	4	**0.2**	**0.22**	**0.24**	**0.11**	**0.088 J**	**0.099 J**	**0.11**	**0.13**
Lead, Total	0.015	**0.00045 J**	0.001 U	0.001 U	**0.0007 J**	**0.0007 J**	**0.00051 J**	**0.00016 J**	0.001 U
Lithium, Total	0.04	**0.0036 J**	0.005 U	0.005 U	**0.046**	**0.038**	**0.05**	**0.041**	**0.046**
Mercury, Total	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum, Total	0.1	**0.04**	**0.045**	**0.039**	**0.27**	**0.26**	**0.26**	**0.24**	**0.24**
Selenium, Total	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Thallium, Total	0.002	0.001 U	0.001 U	0.001 U	**0.00024 J**	0.001 U	0.001 U	0.001 U	0.001 U
Radiological (pCi/L)									
Radium-226	NA	0.101 U ± 0.0969	**0.144 ± 0.0999**	**0.188 ± 0.112**	**0.343 ± 0.166**	**0.330 ± 0.122**	**0.416 ± 0.162**	**0.177 ± 0.108**	**0.329 ± 0.135**
Radium-228	NA	0.159 U ± 0.227	0.0765 U ± 0.218	0.222 U ± 0.266	-0.0605 U ± 0.295	**0.668 ± 0.382**	0.410 U ± 0.295	0.216 U ± 0.285	0.248 U ± 0.287
Radium-226 & 228	5	0.260 U ± 0.247	0.220 UJ ± 0.24	0.409 UJ ± 0.289	0.343 UJ ± 0.338	**0.998 ± 0.401**	**0.826 J ± 0.337**	0.394 UJ ± 0.305	**0.577 J ± 0.317**
Field Parameters									
Temperature (Deg C)	NA	**16.71**	**18.55**	**18.79**	**7.89**	**11.58**	**15.56**	**17.71**	**17.85**
Dissolved Oxygen, Field (mg/L)	NA	**0.2**	**0.2**	**0.22**	**0.05**	**0.4**	**0**	**0.1**	**0.19**
Conductivity, Field (mS/cm)	NA	**0.42157**	**0.4067**	**0.41241**	**0.87491**	**0.84275**	**0.93668**	**0.84968**	**0.90545**
ORP, Field (mv)	NA	**-66.8**	**-67.4**	**-75**	**-163.2**	**-32.7**	**-207.7**	**-173.4**	**-174.3**
Turbidity, Field (NTU)	NA	**23.85**	**0**	**0**	**13.65**	**36.55**	**50.76**	**4.55**	**1.02**
pH, Field (su)	NA	**7.11**	**7.23**	**7.14**	**8.16**	**7.87**	**8.06**	**7.91**	**7.76**

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Results in **bold** are detected.

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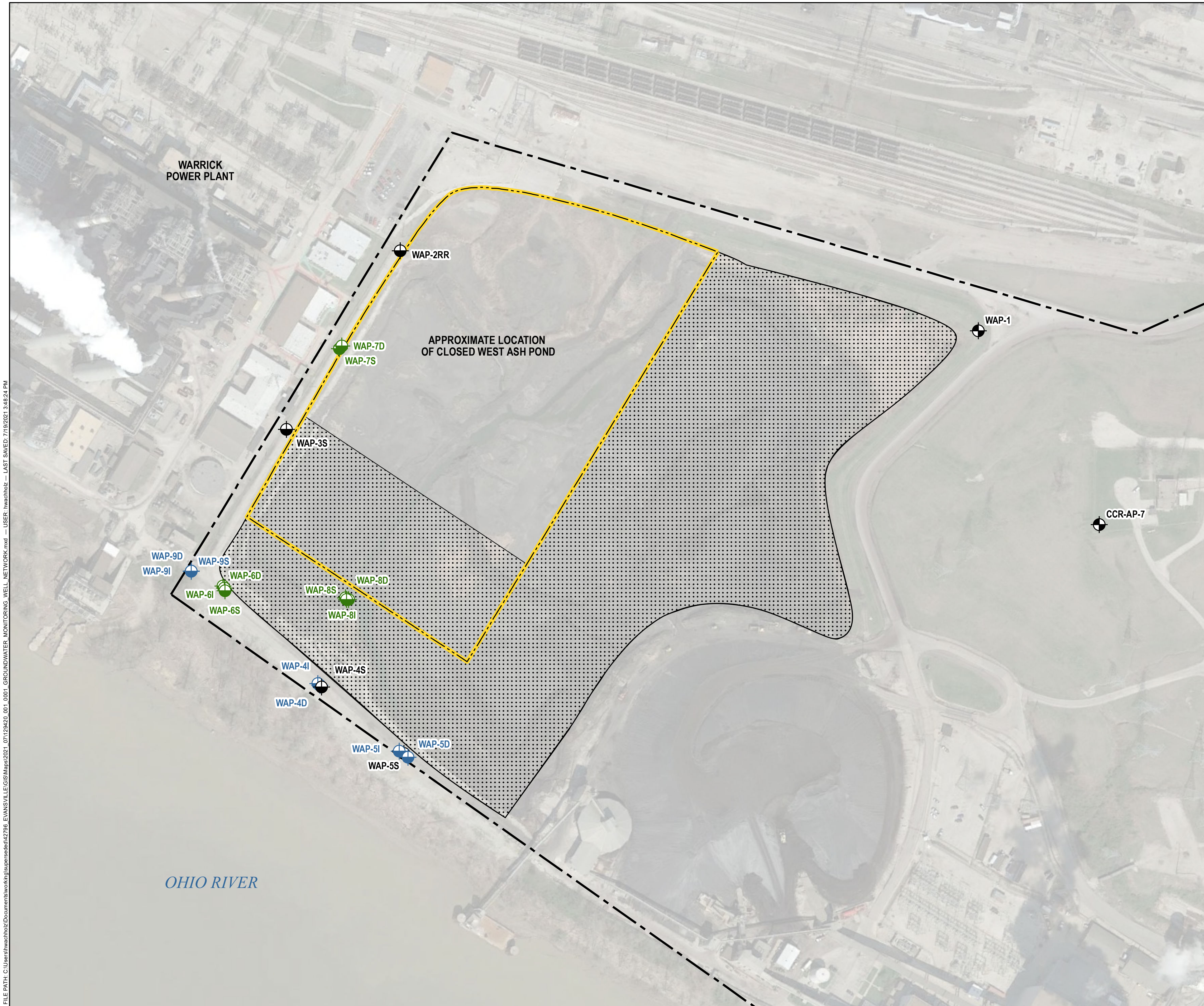
https://www.epa.gov/coalash/coal-ash-rule

FIGURES



LEGEND

- UPGRADIENT CCR COMPLIANCE MONITORING WELL
- DOWNGRADIENT CCR COMPLIANCE MONITORING WELL
- DOWNGRADIENT WELL TO ASSESS NATURE AND EXTENT OF APPENDIX IV SSLs
- DOWNGRADIENT WELL TO COMPLY WITH IDEM APPROVAL OF CLOSURE/POST CLOSURE PLAN
- APPROXIMATE LIMITS OF WEST ASH POND FINAL COVER
- APPROXIMATE LIMITS OF WEST ASH POND CCR REMOVAL
- WEST ASH POND
- APPROXIMATE F.B. CULLEY PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: GOOGLE 2018

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0 230 460
SCALE IN FEET

HALEY ALDRICH

F.B. CULLEY GENERATING STATION
WEST ASH POND
NEWBURGH, INDIANA

GROUNDWATER MONITORING WELL NETWORK

JULY 2021

FIGURE 1

APPENDIX A

60 Day CMA Extension Demonstration

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

MEMORANDUM

December 28, 2020
Project No. 129420-028

SUBJECT: **Demonstration for 60-Day Extension – Corrective Measures Assessment (CMA)**
Southern Indiana Gas and Electric Company (SIGECO)
West Ash Pond
F. B. Culley Generating Station (FBC); Warrick County, Indiana

Pursuant to 40 CFR §257.96(a) (CCR Rule Assessment of Corrective Measures), I certify that SIGECO has demonstrated the need for additional time beyond the period of 90 days to complete the assessment of corrective measures due to site-specific conditions and the evaluation of remedial treatment alternatives in support of an informed CMA process.

In the case of the assessment of corrective measures for the FBC West Ash Pond, the site has complex hydrogeology. Receipt of analytical data by certified laboratories has also been delayed due to the high volume of samples received from utility sites around the country combined with staff shortages associated with the pandemic. In addition, SIGECO is in the process of reviewing possible groundwater remedies and is having ongoing discussions with third-party experts regarding assessment and implementation of steps appropriate for the site in the groundwater treatment and remedy assessment process. Based on these site-specific conditions and related groundwater treatment alternatives evaluations in support of the CMA by SIGECO, the CCR Rule allows for a 60-day extension to complete the CMA process.

This certification as submitted, is to the best of my knowledge, accurate and complete.

Signed:________________________
Certifying Engineer

Print Name:	Steven F. Putrich, P.E.
Indiana License No.:	PE11200566
Title:	CCR Practice Lead, Senior Consulting Engineer
Company:	Haley & Aldrich, Inc.

Professional Engineer's Seal

STEVEN F. PUTRICH
REGISTERED
12/28/2020
NO. PE11200566
STATE OF
INDIANA
PROFESSIONAL ENGINEER