

January 29, 2021

Mr. David M. Heger Senior Counsel AES US Services, LLC One Monument Circle, Suite 701A Indianapolis, Indiana 46204-2901

Re: 2020 CCR Annual Groundwater Monitoring and

Corrective Action Report

Indianapolis Power & Light Company Eagle Valley Generating Station Martinsville, Indiana ATC Project No. 170LF00873

Dear Mr. Heger:

ATC Group Services LLC (ATC) has prepared this 2020 CCR Annual Groundwater Monitoring and Corrective Action Report for the ash pond system at Indianapolis Power & Light Company's (IPL) Eagle Valley Generating Station located outside Martinsville, Morgan County, Indiana. This report has been prepared to comply with reporting requirements described in the United States Environmental Protection Agency's (USEPA) Coal Combustion Residuals (CCR) Rule § 257.90(e). This annual report documents the status of the groundwater monitoring and corrective action program for the ash pond system and includes information required by § 257.90(e)(1) through § 257.90(e)(6).

Federal CCR Rule § 257.90(e)(6) specifies the following:

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following: (i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95; (ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95; (iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e): (A) Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and (B)

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Provide the date when the assessment monitoring program was initiated for the CCR unit. (iv) If it was determined that there was a statistically significant level 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: (A) Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase; (B) Provide the date when the assessment of corrective measures was initiated for the CCR unit; (C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and (D) Provide the date when the assessment of corrective measures was completed for the CCR unit. (v) Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection; and (vi) Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

Overview of 2020 Groundwater Monitoring and Corrective Action

At both the beginning and end of the 2020 reporting period, the CCR units were operating under the Assessment Monitoring Program in § 257.95. Pursuant to 40 CFR 257.94(e)(2), 257.94(e)(3) and 257.95(b), the facility had previously established an Assessment Monitoring Program in accordance with the requirements of § 257.95 on July 16, 2018. Therefore, evaluation of statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e) was not performed.

At the end of the 2020 reporting period, associated with the May 2020 monitoring event as November 2020 sampling data was not finalized in 2020, it was determined that the following Appendix IV constituents were at statistically significant levels (SSLs) above the associated groundwater protection standards (GWPS) pursuant to § 257.95(g). The May 2020 SSLs are as follows:

Arsenic

Shallow: MW-11S

<u>Lithium</u>

Shallow: MW-11S

Intermediate: MW-1I, MW-2I, MW-6I, MW-11I Deep: MW-1D, MW-2D, MW-6D, MW-11D

Molybdenum

Shallow: MW-11S

Intermediate: MW-1I, MW-6I, MW-11I Deep: MW-1D, MW-6D, MW-11D

The above listed May 2020 SSLs are not new constituent SSLs and were previously identified. Therefore, no new SSL notification was required pursuant to § 257.94(e).

The assessment of corrective measures was initiated for the CCR units on April 15, 2019 in response to SSLs of Appendix IV constituents exceeding GWPS. Pursuant to 40 CFR §257.96(a), a demonstration of need for a 60-day extension for the assessment of corrective measures was completed on July 12, 2019. The Corrective Measures Assessment (CMA) Report was completed and placed in the facility operating record on September 13, 2019 and subsequently amended on October 11, 2019. A public meeting was not held for the assessment of corrective measures for the CCR unit in 2020 as nature and extent work is still ongoing at the facility in order to characterize the extent of the contamination plume and further support the CMA. A remedy was not selected pursuant to § 257.97 during the 2020 reporting period. Remedial activities were not initiated pursuant to § 257.98 during the 2020 reporting period.

Federal CCR Rule § 257.90(e) specifies the following:

For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2019, 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).

The following key actions have been completed in 2020 to comply with the CCR Rule:

- Efforts to determine the nature and extent (N&E) of the Appendix IV SSLs continued pursuant to § 257.95(g) including but not limited to initiating off-site installation of additional monitoring equipment discussions, review of groundwater analytical results/data to improve the groundwater sit conceptual model, and modeling to support the CMA.
- Semi-annual assessment monitoring sampling events were conducted in 2020 as required by § 257.95(b) and § 257.95(d)(1). Subsequent SSLs evaluation of the November 2019 and May 2020 data were performed within 90 days of completing the sampling and analysis pursuant to § 257.93(h)(2).
- Semi-Annual Remedy Selection Progress Reports pursuant to § 257.97(a) for the period of September 13, 2019 through March 13, 2020, and for the period of March 14, 2020 through September 12, 2020 were completed and placed in the facility's operating record and posted to IPLs CCR Website.

To report on the activities conducted during the prior calendar year and document compliance with the CCR Rule, the specific requirements listed in § 257.90(e)(1) through § 257.90(e)(5) are provided below in bold/italic type followed by a short narrative addressing how that specific requirement has been met.

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

§ 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;

IPL operates the Eagle Valley Station located approximately four miles north of Martinsville, Indiana. It is located at 4040 Blue Bluff Road. A Site Location Map is provided as Figure 1. A map showing the location of each CCR management unit, associated upgradient and downgradient CCR monitoring wells, and N&E wells installed in 2019, is provided as Figure 2.

§ 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;

The CCR ash pond groundwater monitoring system at the Eagle Valley Station consists of twenty-four (24) monitoring wells: MW-1S, MW-1I, MW-1D, MW-2S, MW-2I, MW-2D, MW-3S, MW-3I, MW-4S, MW-4I, MW-4D, MW-6S, MW-6I, MW-6D, MW-7S, MW-8S, MW-9S, MW-9I, MW-9D, MW-10S, MW-11S, MW-11I, MW-11D, and MW-12S. Monitoring wells MW-4S, MW-4I, MW-4D, MW-8S, MW-9S, MW-9I, and MW-9D represent upgradient/background wells, while the remaining represent downgradient wells. The wells were installed in accordance with the requirements of Federal CCR Rule § 257.91 between September 28, 2015 and March 17, 2016.

In addition to the CCR ash pond groundwater monitoring system, fourteen (14) N&E wells (MW-10I, MW-10D, MW-13S, MW-13I, MW-13D, MW-14S, MW-14I, MW-14D, MW-15S, MW-15I, MW-15D, MW-16S, MW-16I, and MW-16D) were installed between June 9 and July 23, 2019 to characterize the N&E of the release and any relevant site condition that may affect the remedy ultimately selected, as required by § 257.95(g)(1). With the exception of MW-10I and MW-10D (currently utilized as piezometers and not sampled), all N&E wells serve as facility boundary wells pursuant to § 257.95(g)(1)(iii).

Based on further review, it was determined that the MW-13 well nest is located hydraulically upgradient of the facility's ash pond system during normal operations. As such, IPL is currently evaluating utilizing this well nest as future upgradient wells for the ash pond system which includes background sampling.

The location of the CCR monitoring well network and N&E wells are depicted on Figure 2. No monitoring wells were installed or abandoned during the 2020 reporting period.

§ 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;

Table 1 provides a summary of the number of samples collected at each CCR monitoring well and N&E well, sampling dates, and designation of whether samples were required by the detection or assessment monitoring program, or N&E. Groundwater elevation data is provided in Table 2. Assessment monitoring groundwater analytical results for the November 2019 semi-annual sampling event are summarized in Table 3; these results were not finalized by the end of 2019 for inclusion in the associated 2020 Annual Report. Assessment and N&E monitoring groundwater analytical results for the May 2020 semi-annual sampling event are summarized in Table 4. Assessment and N&E monitoring groundwater analytical results for the November 2020 semi-annual sampling event were not finalized in 2020 and are therefore not included with this submittal.

§ 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);

IPL Eagle Valley operated under the assessment monitoring program in accordance with § 257.95. No transition between monitoring programs was conducted in 2020.

During 2020, statistical evaluations of the November 2019 and May 2020 analytical data were performed in order to determine whether there was a SSL of a new Appendix IV constituent detected above the relevant GWPS in accordance with § 257.95(g) and 257.93(h). The evaluations were completed in March 2020 and September 2020, respectively. Based on the evaluations, it was determined that the Appendix IV constituents that exceeded the GWPS include arsenic, lithium, and molybdenum; however, these are the same constituent SSLs previously identified. Since there were no new Appendix IV constituent SSLs identified, an additional notification was not triggered pursuant to 40 CFR 257.95(g).

§ 257.90(e)(5) Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

Table 5 summarizes the groundwater protection standards established in accordance with § 257.95(d)(2) and § 257.95(h) associated with both the November 2019 and May 2020 semi-annual assessment monitoring events.

Projected key activities for the upcoming year include the following:

- Install three (3) N&E nested monitoring wells (shallow, intermediate, deep) on the adjacent properties located south of the Eagle Valley Generating Station to verify the lateral extent of those constituents and if off-site migration occurred.
- Assessment monitoring sampling events in accordance with § 257.95.

- Finalize November 2020 analytical data. Completion of statistical evaluation of November 2020 analytical data to determine whether there is a SSL above GWPS for Appendix IV constituents in accordance with § 257.95(g) and 257.93(h). Perform SSL evaluations of final May 2021 assessment monitoring analytical data.
- Continue background sampling for MW-13 nest well pursuant to § 257.90(b)(iii).
- Continue N&E work pursuant to § 257.95(g).
- Potentially conduct public meeting to discuss the results of the corrective measures assessment at least 30 days prior to the selection of remedy pursuant to § 257.96(e).
- Prepare semi-annual report(s) describing progress in selecting and designing the remedy pursuant to § 257.97(a).
- Following remedy selection, if feasible, prepare and certify final report describing the selected remedy and how it meets the standards specified in § 257.97(b).

Robert J. Durcan

Robert T. Duncan, L.P.G.

Senior Project Geologist

We appreciate the opportunity to assist with IPL's CCR Rule groundwater monitoring program at Eagle Valley Station's ash pond system. Please contact any of the undersigned at 317.849.4990 if you have any questions regarding this report.

Sincerely,

ATC Group Services LLC

Mark E. Breting, Mark E. Breting, L.P.G.

Senior Project Geologist

Copies: Ms. Nysa Hogue

Mr. Thom O'Leary

TABLES

Table 1: Well Sampling Summary
Table 2: Groundwater Elevation Data

Table 3: Summary of Monitoring Results – November 2019

Table 4: Summary of Monitoring Results – May 2020

Table 5: Groundwater Protection Standards Summary – November 2019 and May 2020

Well Sampling Summary Multiunit Ash Pond System Indianapolis Power and Light Company Eagle Valley Generating Station Martinsville, Indiana ATC Project No. 170LF00873

Identification	Date Installed	Upgradient/Background, Downgradient, or Nature & Extent	Number of Samples	Sample Date	Detection or Assessment Monitoring Program
MW-1S	9/29/2015	Downgradient	2	5/5/2020 11/11/2020	Assessment
MW-1I	3/1/2016	Downgradient	2	5/5/2020 11/11/2020	Assessment
MW-1D	10/1/2015	Downgradient	2	5/5/2020 11/11/2020	Assessment
MW-2S	9/28/2015	Downgradient	2	5/8/2020 11/11/2020	Assessment
MW-2I	3/7/2016	Downgradient	2	5/5/2020 11/11/2020	Assessment
MW-2D	3/4/2016	Downgradient	2	5/5/2020 11/11/2020	Assessment
MW-3S	9/28/2015	Downgradient	2	5/5/2020 11/10/2020	Assessment
MW-3I	3/8/2016	Downgradient	2	5/5/2020 11/11/2020	Assessment
MW-4S	10/1/2015	Upgradient/Background	2	5/6/2020 11/10/2020	Assessment
MW-4I	3/11/2016	Upgradient/Background	2	5/6/2020 11/10/2020	Assessment
MW-4D	3/2/2016	Upgradient/Background	2	5/6/2020 11/10/2020	Assessment
MW-6S	10/2/2015	Downgradient	2	5/8/2020 11/19/2020	Assessment
MW-6I	3/17/2016	Downgradient	2	5/8/2020 11/10/2020	Assessment
MW-6D	3/8/2016	Downgradient	2	5/8/2020 11/10/2020	Assessment
MW-7S	10/2/2015	Downgradient	2	5/7/2020 11/11/2020	Assessment
MW-8S	9/29/2015	Upgradient/Background	2	5/7/2020 11/19/2020	Assessment
MW-9S	10/21/2015	Upgradient/Background	2	5/6/2020 11/10/2020	Assessment
MW-9I	3/10/2016	Upgradient/Background	2	5/6/2020 11/10/2020	Assessment
MW-9D	3/10/2016	Upgradient/Background	2	5/6/2020 11/10/2020	Assessment
MW-10S	10/3/2015	Downgradient	2	5/7/2020 11/11/2020	Assessment
MW-10I	7/11/2019	Nature & Extent	0	-	-
MW-10D	7/10/2019	Nature & Extent	0	-	-
MW-11S	3/16/2016	Downgradient	2	5/7/2020 11/12/2020	Assessment
MW-11I	3/16/2016	Downgradient	2	5/7/2020 11/12/2020	Assessment

Well Sampling Summary
Multiunit Ash Pond System
Indianapolis Power and Light Company
Eagle Valley Generating Station
Martinsville, Indiana
ATC Project No. 170LF00873

Identification	Date Installed	Upgradient/Background, Downgradient, or Nature & Extent	Number of Samples	Sample Date	Detection or Assessment Monitoring Program
MW-11D	3/16/2016	Downgradient	2	5/7/2020	Assessment
ווויייייי	3/10/2010	Downgracient	2	11/12/2020	Assessment
MW-12S	3/17/2016	Downgradient	2	5/8/2020	Assessment
10100-125	3/11/2010	Downgradient	2	11/12/2020	Assessificit
MW-13S	7/2/2019	Nature & Extent	2	5/7/2020	Assessment
10100-133	1/2/2019	Nature & Extern	2	11/12/2020	Assessifient
MW-13I	7/1/2019	Nature & Extent	2	5/7/2020	Assessment
10100-131	7/1/2019	Nature & Extern		11/12/2020	Assessifient
MW-13D	7/1/2019	Nature & Extent	2	5/7/2020	Assessment
10100-13D	7/1/2019	Nature & Extern		11/12/2020	Assessifient
MW-14S	7/12/2019	Nature & Extent	2	5/7/2020	Assessment
10100-140	1/12/2019	Nature & Extern		11/13/2020	Assessifient
MW-14I	7/9/2019	Nature & Extent	2	5/8/2020	Assessment
10100-1-1	173/2013	Nature & Extern		11/13/2020	Assessment
MW-14D	7/3/2019	Nature & Extent	2	5/7/2020	Assessment
IVIVV-14D	175/2019	Nature & Extent		11/13/2020	Assessment
MW-15S	7/17/2019	Nature & Extent	2	5/8/2020	Assessment
10100	171172010	Nature & Extern		11/11/2020	71330331110111
MW-15I	7/17/2019	Nature & Extent	2	5/8/2020	Assessment
10100-101	171172013	Nature & Extent		11/11/2020	Assessment
MW-15D	7/16/2019	Nature & Extent	2	5/8/2020	Assessment
WW-13D	1710/2019	Nature & Extern		11/11/2020	Assessment
MW-16S	7/23/2019	Nature & Extent	2	5/7/2020	Assessment
10100	1/25/2015	Nature & Extent		11/11/2020	Assessment
MW-16I	7/22/2019	Nature & Extent	2	5/7/2020	Assessment
10100	112212010	Hataro & Extorn	_	11/11/2020	, 1000001110111
MW-16D	7/22/2019	Nature & Extent	2	5/7/2020	Assessment
Notes	1122/2010	Nature & Extent		11/11/2020	, 100000111011t

Notes

Monitoring wells MW-10I and MW-10D are currently utilized as piezometers for Nature & Extent evaluations; they were not sampled in 2020.

Groundwater Elevation Data Multiunit Ash Pond System

Indianapolis Power and Light Company

Eagle Valley Generating Station, Martinsville, Indiana ATC Project No. 170LF00873

Monitoring Well Location	Gauging Date	TOC Elevation (ft-MSL)	Depth to Water (ft)	Water Elevation (ft-MSL)
MW-1S	5/4/2020	612.93	23.91	589.02
10100-13	11/9/2020	012.93	25.09	587.84
MW-1I	5/4/2020	612.31	22.31	590.00
10100-11	11/9/2020	012.31	24.54	587.77
MW-1D	5/4/2020	612.91	22.94	589.97
IVIVV-1D	11/9/2020	012.91	21.15	591.76
MW-2S	5/4/2020	608.45	17.56	590.89
10100-23	11/9/2020	000.45	19.82	588.63
MW-2I	5/4/2020	608.93	18.07	590.86
IVIVV-Z1	11/9/2020	000.93	20.32	588.61
MW-2D	5/4/2020	608.72	17.84	590.88
IVIVV-ZD	11/9/2020	008.72	20.12	588.60
MW-3S	5/4/2020	610.80	18.78	592.02
10100-33	11/9/2020	010.00	21.41	589.39
MW-3I	5/4/2020	610.76	19.25	591.51
10100-31	11/9/2020	010.70	21.68	589.08
	1/7/2020		16.71	593.23
MW-4S	2/5/2020	609.94	16.01	593.93
10100-43	5/4/2020	009.94	16.58	593.36
	11/9/2020		19.87	590.07
MW-4I	5/4/2020	614.66	21.40	593.26
IVIVV-41	11/9/2020	014.00	24.65	590.01
	1/7/2020		21.59	593.13
MW-4D	2/5/2020	614.72	20.94	593.78
IVIVV-4D	5/4/2020	014.72	21.46	593.26
MW-6S	11/9/2020		24.72	590.00
	1/7/2020		16.69	589.30
	2/5/2020	605.99	14.33	591.66
10100-03	5/4/2020	003.88	15.85	590.14
	11/19/2020		19.54	586.45

Groundwater Elevation Data Multiunit Ash Pond System

Indianapolis Power and Light Company

Eagle Valley Generating Station, Martinsville, Indiana ATC Project No. 170LF00873

Monitoring Well Location	Gauging Date	TOC Elevation (ft-MSL)	Depth to Water (ft)	Water Elevation (ft-MSL)
MW-6I	5/4/2020	606.00	15.89	590.11
IVIVV-OI	11/9/2020	000.00	19.20	586.80
	1/7/2020		15.55	589.30
MW-6D	2/5/2020	604.85	13.18	591.67
IVIVV-OD	5/4/2020	004.65	14.72	590.13
	11/9/2020		18.04	586.81
MW-7S	5/4/2020	616.68	24.78	591.90
10100-75	11/9/2020	010.00	27.91	588.77
MW-8S	5/4/2020	616.67	23.04	593.63
10100-05	11/19/2020	010.07	26.80	589.87
	1/7/2020		24.61	592.91
MW-9S	2/5/2020	617.52	23.85	593.67
10100-95	5/4/2020	017.32	24.59	592.93
	11/9/2020		28.00	589.52
MW-9I	5/4/2020	617.06	24.16	592.90
10100-91	11/9/2020	017.00	27.62	589.44
	1/7/2020		24.46	592.95
MW-9D	2/5/2020	617.41	23.69	593.72
10100-9D	5/4/2020	017.41	24.46	592.95
	11/9/2020		27.95	589.46
	1/7/2020		24.75	588.95
MW-10S	2/5/2020	613.70	23.13	590.57
10100-103	5/4/2020	013.70	24.55	589.15
	11/9/2020		27.60	586.10
MW-10I	5/4/2020	613.68	24.42	589.26
IVIVV - I UI	11/9/2020	013.00	27.50	586.18
MW-10D	1/7/2020		24.53	589.01
	2/5/2020	613.54	22.90	590.64
IVIVV-IUD	5/4/2020	013.54	24.26	589.28
	11/9/2020		27.35	586.19

Groundwater Elevation Data Multiunit Ash Pond System

Indianapolis Power and Light Company Eagle Valley Generating Station, Martinsville, Indiana

ATC Project No. 170LF00873

Monitoring Well Location	Gauging Date	TOC Elevation (ft-MSL)	Depth to Water (ft)	Water Elevation (ft-MSL)
	1/7/2020		37.24	590.05
MW-11S	2/5/2020	627.20	36.03	591.26
10100-113	5/7/2020	627.29	37.58	589.71
	11/9/2020		39.71	587.58
MW-11I	5/4/2020	627.52	38.53	588.99
10100-111	11/9/2020	627.52	39.50	588.02
	1/7/2020		37.49	590.07
MW-11D	2/5/2020	607.56	36.38	591.18
טווי-אואו	5/4/2020	627.56	38.48	589.08
	11/9/2020		39.70	587.86
MM/ 126	5/8/2020	607.26	22.30	584.96
MW-12S	11/9/2020	607.26	20.12	587.14
MW-13S	5/4/2020	606.03	15.87	590.16
10100-133	11/9/2020	000.03	20.15	585.88
MW-13I	5/4/2020	606.21	16.04	590.17
10100-131	11/9/2020	000.21	20.32	585.89
MW-13D	5/4/2020	605.86	15.76	590.10
10100-130	11/9/2020	005.00	20.05	585.81
MW-14S	5/4/2020	607.39	17.78	589.61
10100-143	11/9/2020	007.39	20.40	586.99
MW-14I	5/4/2020	607.34	17.85	589.49
10100-141	11/9/2020	007.34	20.17	587.17
MW-14D	5/4/2020	607.33	17.77	589.56
10100-140	11/9/2020	007.33	20.18	587.15
MW-15S	5/4/2020	607.50	17.59	589.91
1010 - 100	11/9/2020		20.83	586.67
MW-15I	5/4/2020	607.61	17.67	589.94
IVIVV-101	11/9/2020	10.700	20.80	586.81
MW-15D	5/4/2020	607.51	17.69	589.82
10100-100	11/9/2020	007.01	20.77	586.74

Groundwater Elevation Data Multiunit Ash Pond System Indianapolis Power and Light Company

Eagle Valley Generating Station, Martinsville, Indiana ATC Project No. 170LF00873

Monitoring Well Location	Gauging Date	TOC Elevation (ft-MSL)	Depth to Water (ft)	Water Elevation (ft-MSL)
MW-16S	5/4/2020	609.54	18.91	590.63
10100-103	11/9/2020	009.54	21.01	588.53
MW-16I	5/4/2020	609.53	18.88	590.65
10100-101	11/9/2020	009.55	19.97	589.56
MW-16D	5/4/2020	609.60	18.94	590.66
IVIVV-16D	11/9/2020	009.60	21.05	588.55

Notes:

TOC = Top of Casing

ft-MSL = feet above Mean Sea Level

Summary of Monitoring Results - November 2019 Multiunit Ash Pond System Indianapolis Power and Light Company Eagle Valley Generating Station Martinsville, Indiana ATC Project No. 170LF00873

Well ID		MW-1D	MW-1I	MW-1S	MW-2D	MW-2I	MW-2S	MW-3I	MW-3S	MW-4D	MW-4I	MW-4S	MW-6D
Pace Lab ID		50241849003	50241849002	50241849001	50241849006	50241849005	50241849004	50241849008	50241849007	50241849011	50241849010	50241849009	50241849014
Sample Date		11/14/2019	11/14/2019	11/14/2019	11/13/2019	11/13/2019	11/14/2019	11/13/2019	11/13/2019	11/13/2019	11/13/2019	11/13/2019	11/14/2019
Static Water Elevation (ft MSL)		587.75	587.77	587.84	588.81	588.78	588.83	589.57	590.15	591.44	591.44	591.51	586.98
,													
Field Parameters	Units												
Temperature	°C	13.93	13.96	13.81	13.03	13.32	13.97	14.21	18.24	15.12	14.91	15.85	15.60
Dissolved Oxygen, Field	mg/L	0.30	0.06	0.10	0.07	0.05	0.35	0.14	0.04	0.08	0.12	0.07	0.06
Conductivity, Field	uS/cm	821.23	896.36	1284.90	871.21	872.66	1240.90	778.32	728.46	807.12	769.56	3437.70	1244.70
ORP, Field	mV	-46.80	42.40	47.50	-72.70	-4.20	15.10	4.10	-19.90	116.10	129.10	157.70	131.50
pH, Field	Std. Units	7.26	7.24	6.80	7.33	7.36	6.65	7.37	7.26	7.32	7.30	7.44	7.40
Analytical Data													
Antimony, Total	ug/L	<1.0	<1.0	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic, Total	ug/L	3.6	<1	10.5	3.7	<1.0	8.4	<1.0	<1.0	6	13.5	10	<1.0
Barium, Total	ug/L	73.3	57.6	99.2	52.1	65.2	122	51.8	76.5	57.8	84.2	188	63.5
Beryllium, Total	ug/L	NA											
Boron, Total	ug/L	1650	1970	3650	562	313	1020	141	200	158	170	4010	4480
Cadmium, Total	ug/L	NA											
Calcium, Total	ug/L	78100	68500	139000	78000	71800	155000	63500	66600	72700	74600	417000	114000
Chloride	mg/L	105	80.0	62.1	98	98.7	66.6	74.2	67.3	82.9	79.7	357	141
Chromium, Total	ug/L	NA											
Cobalt, Total	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	<1.0	1	<1.0
Fluoride	mg/L	0.37	0.35	0.29	0.33	0.29	0.17	0.3	0.39	0.30	0.38	0.42	0.14
Lead, Total	ug/L	NA											
Lithium, Total	ug/L	90.2	100	115	76.5	78.4	91.9	<20	<20	<20	<20	133	97.3
Mercury	ug/L	NA											
Molybdenum, Total	ug/L	118	109	55.4	93.3	62.2	11.8	78.9	64.2	12.4	12.8	319	175
pH at 25 Degrees C	Std. Units	7.5	7.6	7.2	7.5	7.6	6.9	7.6	7.5	7.6	7.7	7.4	7.5
Selenium, Total	ug/L	<1.0	<1.0	6.9	<1.0	<1.0	11.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	127	98.4	203	86.3	82.8	170	69	65.3	72.3	62.5	1380	229
Thallium, Total	ug/L	NA											
Total Dissolved Solids	mg/L	632	547	797	449	430	817	449	367	428	416	2800	805
Total Radium	pCi/L	0.808	2.12	<0.777	2.09	2.51	1.47	0.915	<0.646	2.63	1.29	0.928	1.76

Notes:

ft MSL: Elevation, feet mean sea level

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uS/cm: microsiemen per centimeter umhos/cm: micromhos per centimeter

NA = Not Analyzed

mV: millivolt

Std. Units: standard units mg/L: milligram per liter

ug/L: microgram per liter

pCi/L: picoCurie per liter

Static water elevation listed for a well may have been collected on a date different than date of well

Summary of Monitoring Results - November 2019 Multiunit Ash Pond System Indianapolis Power and Light Company Eagle Valley Generating Station Martinsville, Indiana ATC Project No. 170LF00873

Well ID		MW-6I	MW-6S	MW-7S	MW-8S	MW-9D	MW-9I	MW-9S	MW-10S	MW-11D	MW-11I	MW-11S	MW-12S
Pace Lab ID		50241849013	50241849012		50241849015	50241849018	50241849017	50241849016		50241849020	50241849019		
Sample Date		11/14/2019	11/13/2019		11/13/2019	11/13/2019	11/13/2019	11/13/2019		11/14/2019	11/14/2019		
Static Water Elevation (ft MSL)		586.92	586.98		591.88	591.09	591.04	591.08		587.57	587.58		
Field Parameters	Units												
Temperature	°C	15.39	15.12		19.47	14.54	14.59	18.86	1	15.44	15.54		
Dissolved Oxygen, Field	mg/L	0.07	2.02		0.13	0.11	0.07	0.27	1	0.10	0.39		
Conductivity, Field	uS/cm	1147.70	1261.30		1796.30	760.69	719.35	2772.00	1	1142.60	1243.40		
ORP, Field	mV	134.60	127.20		-9.80	133.70	139.70	172.90	1	127.60	-16.50		
pH, Field	Std. Units	7.34	7.06		7.09	7.30	7.58	7.11		7.32	7.35		
Analytical Data													
Antimony, Total	ug/L	<1.0	1.5		<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0		
Arsenic, Total	ug/L	<1.0	<1.0		3.3	1.2	<1.0	2.8	1	5.0	1.2		
Barium, Total	ug/L	57.1	122		144	108	70.6	83.8	1	70.4	64.1		
Beryllium, Total	ug/L	NA	NA	DRY WELL	NA	NA	NA	NA	DRY WELL	NA	NA	DRY WELL	DRY WELL
Boron, Total	ug/L	4370	4030	DITI WELL	952	<100	<100	3220	DIVI WELL	5140	6430	DIVI WELL	DITI WELL
Cadmium, Total	ug/L	NA	NA		NA	NA	NA	NA		NA	NA		
Calcium, Total	ug/L	114000	150000		158000	97600	74000	313000		99900	105000		
Chloride	mg/L	78.2	77.5		179	42.0	73.5	277		133	142		
Chromium, Total	ug/L	NA	NA		NA	NA	NA	NA		NA	NA		
Cobalt, Total	ug/L	<1.0	<1.0		<1.0	1.4	1.1	<1		<1.0	<1.0		
Fluoride	mg/L	0.26	0.23		0.28	0.13	0.36	0.41		0.2	0.34		
Lead, Total	ug/L	NA	NA		NA	NA	NA	NA		NA	NA		
Lithium, Total	ug/L	97.8	77.2		28.5	<20	<20	89.8		93	102		
Mercury	ug/L	NA	NA		NA	NA	NA	NA		NA	NA		
Molybdenum, Total	ug/L	186	144		49.1	<10	10.6	152		162	156		
pH at 25 Degrees C	Std. Units	7.4	7.4		7.3	7.5	7.6	7.4		7.5	7.4		
Selenium, Total	ug/L	<1.0	6.9		<1.0	<1.0	<1.0	<1.0]	<1.0	<1.0		
Sulfate	mg/L	229	229		391	35.1	59.8	944]	245	252		
Thallium, Total	ug/L	NA	NA		NA	NA	NA	NA		NA	NA		
Total Dissolved Solids	mg/L	824	805		1170	420	403	1960		789	759		
Total Radium	pCi/L	1.53	0.763		0.743	1.23	0.934	1.03		1.47	1.08	_	

Notes:

ft MSL: Elevation, feet mean sea level

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uS/cm: microsiemen per centimeter umhos/cm: micromhos per centimeter

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Std. Units: standard units mg/L: milligram per liter ug/L: microgram per liter pCi/L: picoCurie per liter

Static water elevation listed for a well may have been collected on a date different than date of well sampling.

Summary of Monitoring Results - May 2020
Multiunit Ash Pond System
Indianapolis Power and Light Company
Eagle Valley Generating Station
Martinsville, Indiana
ATC Project No. 170LF00873

Well ID		MW-1D	MW-1I	MW-1S	MW-2D	MW-2I	MW-2S	MW-3I	MW-3S	MW-4D	MW-4I	MW-4S	MW-6D
Pace Lab ID		50256685003	50256685002	50256685001	50256685004	50256685004	50256749004	50256685007	50256685006	50256685010	50256685009	50256685008	50256749003
Sample Date		5/5/2020	5/5/2020	5/5/2020	5/5/2020	5/5/2020	5/8/2020	5/5/2020	5/5/2020	5/6/2020	5/6/2020	5/6/2020	5/8/2020
Static Water Elevation (ft MSL)		589.97	590.00	589.02	590.88	590.86	590.89	591.51	592.02	593.26	593.26	593.36	590.13
Field Parameters	Units												
Temperature	°C	13.5	13.59	13.38	13.12	13.32	12.88	14.39	16.19	21.84	17.62	12.51	15.5
Dissolved Oxygen, Field	mg/L	0.45	0.19	0.09	0.15	0.14	0.63	0.16	0.06	0.52	1.08	0.24	0.24
Conductivity, Field	uS/cm	713.15	896.89	1372.2	840.53	840.33	1767.3	744.87	1550.2	759.96	814.5	2554.9	1213.1
ORP, Field	mV	-92.3	138.9	152.1	88.5	-20.7	79.1	145	140.1	63.9	4.9	60.7	1.2
pH, Field	Std. Units	7.48	7.43	9.94	7.37	7.44	6.94	7.25	7.06	7.46	7.53	7.39	7.33
Analytical Data													
Antimony, Total	ug/L	<1.0	<1.0	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic, Total	ug/L	1.9	<1.0	5.1	3.5	<1.0	15.0	<1.0	<1.0	8.1	4.8	7.1	<1.0
Barium, Total	ug/L	63.4	55.0	72.0	56.9	60.1	195	56.7	131	62.4	72.5	167	58.6
Beryllium, Total	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Boron, Total	ug/L	1410	2180	3920	392	292	1910	174	400	134	163	2530	4740
Cadmium, Total	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Calcium, Total	ug/L	74500	71600	155000	76600	72700	255000	66200	165000	66900	70100	282000	106000
Chloride	mg/L	96.6	84.3	72.1	87.7	92.9	43.2	82.3	153	76.5	88.3	251	139
Chromium, Total	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Cobalt, Total	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoride	mg/L	0.37	0.35	0.26	0.35	0.31	0.12	0.32	0.33	0.34	0.44	0.55	0.13
Lead, Total	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Lithium, Total	ug/L	94.3	106	124	74.4	77.7	92.6	21.3	24.3	<20	<20	108	99
Mercury	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Molybdenum, Total	ug/L	119	109	39.1	92	64.6	<10	80.3	61.7	13.9	11.8	159	188
pH at 25 Degrees C	Std. Units	7.7	7.8	7.6	7.7	7.9	7.3	7.8	7.7	8	7.9	7.8	7.7
Selenium, Total	ug/L	<1.0	<1.0	9.6	<1.0	<1.0	97.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	101	95.8	267	77.2	79.6	553	63.9	337	57.0	66.5	825	212
Thallium, Total	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	mg/L	517	481	879	440	448	1280	400	942	400	416	1800	734
Total Radium	pCi/L	1.68	1.47	<1.56	2.22	2.26	<1.44	1.64	<1.56	1.27	2.22	1.6	1.35

Notes:

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NA = Not Analyzed

mV: millivolt

Std. Units: standard units mg/L: milligram per liter ug/L: microgram per liter

pCi/L: picoCurie per liter

Static water elevation listed for a well may have been collected on a date different than date of well

Summary of Monitoring Results - May 2020
Multiunit Ash Pond System
Indianapolis Power and Light Company
Eagle Valley Generating Station
Martinsville, Indiana
ATC Project No. 170LF00873

Well ID		MW-6I	MW-6S	MW-7S	MW-8S	MW-9D	MW-9I	MW-9S	MW-10S	MW-11D	MW-11I	MW-11S	MW-12S	MW-13D
Pace Lab ID		50256749001	50256749002	50256685011	50256685012	50256685015	50256685014	50256685013	50256685016	50256685019	50256685018	50256685017	50256749005	50256700003
Sample Date		5/8/2020	5/8/2020	5/7/2020	5/7/2020	5/6/2020	5/6/2020	5/6/2020	5/7/2020	5/7/2020	5/7/2020	5/7/2020	5/8/2020	5/7/2020
Static Water Elevation (ft MSL)		590.11	590.14	591.90	593.63	592.95	592.90	592.93	589.15	589.08	588.99	589.71	584.96	590.10
Field Parameters	Units													
Temperature	°C	15.38	13.58	14.69	19.99	17.52	19.08	15.86	16.37	16.02	16.62	16.88	14.83	14.73
Dissolved Oxygen, Field	mg/L	0.26	2.55	0.23	0.4	0.26	0.56	1.86	0.89	0.22	0.32	2.62	1.41	0.96
Conductivity, Field	uS/cm	1080	1352.2	996.49	992.96	815.74	825.19	2000.5	1698.5	1130.8	1157.5	1252.7	1217.6	698.78
ORP, Field	mV	37.1	42.1	6	-14.4	2.5	89.3	9.2	69.9	85.1	79.7	85.3	136.2	57
pH, Field	Std. Units	7.22	6.87	6.94	7.39	7.23	7.5	7.24	7.18	7.32	7.31	7.12	7.14	7.2
Analytical Data														
Antimony, Total	ug/L	<1.0	1.1	2.5	<1.0	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	1.6	1.4	NA
Arsenic, Total	ug/L	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	1.8	<1.0	5.6	1	108	1.8	NA
Barium, Total	ug/L	52.7	110	63.3	59.8	112	71.3	81.7	93.4	63.8	55.8	84.3	131	NA
Beryllium, Total	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NA
Boron, Total	ug/L	5780	4640	744	410	<100	<100	2020	8460	5070	6140	5400	9320	<100
Cadmium, Total	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA
Calcium, Total	ug/L	109000	168000	145000	110000	111000	58300	227000	199000	93900	96800	131000	126000	96500
Chloride	mg/L	88.9	66.3	27.3	84.3	43.4	92.3	178	108	132	129	98.5	108	43.4
Chromium, Total	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	NA
Cobalt, Total	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
Fluoride	mg/L	0.24	0.17	<0.10	0.31	0.15	0.50	0.43	0.30	0.24	0.40	0.22	0.21	0.11
Lead, Total	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA
Lithium, Total	ug/L	114	79.4	31.2	20.2	<20	<20	61.3	114	94.1	102	111	117	<20
Mercury	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA
Molybdenum, Total	ug/L	207	90.7	42.2	39.1	<10	16.3	111	98.6	176	170	118	50.4	<10
pH at 25 Degrees C	Std. Units	7.7	7.4	7.6	7.9	7.6	7.9	7.6	7.7	7.8	7.8	7.6	7.8	7.8
Selenium, Total	ug/L	<1.0	14.8	19.2	<1.0	<1.0	<1.0	<1.0	12.5	<1.0	<1.0	11.8	41.6	NA
Sulfate	mg/L	201	244	69.1	173	36.8	68.3	607	452	207	231	199	243	44.0
Thallium, Total	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
Total Dissolved Solids	mg/L	673	891	587	612	443	451	1410	1160	678	704	768	783	391
Total Radium	pCi/L	2.04	1.6	0.881	<1.79	1.03	0.927	<1.45	1.32	0.939	1.32	0.95	<1.59	NA

Notes:

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NA = Not Analyzed

mV: millivolt

Std. Units: standard units mg/L: milligram per liter

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Static water elevation listed for a well may have been collected on a date different than date of well

Summary of Monitoring Results - May 2020
Multiunit Ash Pond System
Indianapolis Power and Light Company
Eagle Valley Generating Station
Martinsville, Indiana
ATC Project No. 170LF00873

Well ID		MW-13I	MW-13S	MW-14D	MW-14I	MW-14S	MW-15D	MW-15I	MW-15S	MW-16D	MW-16I	MW-16S
Pace Lab ID		50256700002	50256700001	50256700005	50256747001	50256700004	50256747004	50256747003	50256747002	50256700008	50256700007	50256700006
Sample Date		5/7/2020	5/7/2020	5/7/2020	5/8/2020	5/7/2020	5/8/2020	5/8/2020	5/8/2020	5/7/2020	5/7/2020	5/7/2020
Static Water Elevation (ft MSL)		590.17	590.16	589.56	589.49	589.61	589.82	589.94	589.91	590.66	590.65	590.63
Field Parameters	Units											
Temperature	°C	14.23	12.79	14.23	13.67	12.76	15.06	14.81	12.6	14	14.45	13.28
Dissolved Oxygen, Field	mg/L	3.55	7.44	0.05	0.16	11.03	0.06	0.16	9.96	0.13	0	1.3
Conductivity, Field	uS/cm	675.19	860.96	1412.2	1118.7	593.14	1368.9	1075.6	692.93	859.57	868.59	1042.6
ORP, Field	mV	88.4	107.9	-9.2	120.7	102.1	86.9	91.7	122	-130.2	19.8	110.5
pH, Field	Std. Units	7.2	6.97	7.11	7.15	7.16	7.46	7.45	7.15	7.48	7.38	7.13
Analytical Data												
Antimony, Total	ug/L	NA										
Arsenic, Total	ug/L	NA										
Barium, Total	ug/L	NA										
Beryllium, Total	ug/L	NA										
Boron, Total	ug/L	<100	<100	1320	2490	130	4730	5420	920	650	635	693
Cadmium, Total	ug/L	NA										
Calcium, Total	ug/L	93300	127000	171000	138000	87400	119000	88300	98600	82100	71600	112000
Chloride	mg/L	26.9	40.7	110	73.9	3.7	178	115	15.6	102	103	84.8
Chromium, Total	ug/L	NA										
Cobalt, Total	ug/L	NA										
Fluoride	mg/L	<0.1	<0.1	<0.1	<0.1	0.13	0.23	0.36	0.22	0.38	0.34	0.25
Lead, Total	ug/L	NA										
Lithium, Total	ug/L	<20	<20	36.3	72.5	<20	107	87.3	24.8	86.3	84.8	85.8
Mercury	ug/L	NA										
Molybdenum, Total	ug/L	<10	<10	29.2	88.3	39.6	187	238	38.5	100	100	49.4
pH at 25 Degrees C	Std. Units	7.8	7.5	7.8	7.7	8.0	7.8	7.9	7.8	8.1	8	7.8
Selenium, Total	ug/L	NA										
Sulfate	mg/L	30.4	24.8	412	236	8.4	236	180	21.1	85.1	89	127
Thallium, Total	ug/L	NA										
Total Dissolved Solids	mg/L	381	479	992	751	337	826	634	392	491	487	620
Total Radium	pCi/L	NA										

Notes:

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NA = Not Analyzed

mV: millivolt

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pCi/L: picoCurie per liter

Static water elevation listed for a well may have been collected on a date different than date of well

Groundwater Protection Standards -November 2019 and May 2020 Multiunit Ash Pond System Indianapolis Power and Light Company Eagle Valley Generating Station Martinsville, Indiana ATC Project No. 170LF00873

Parameter	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226/228 Combined
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	pCi/L
Shallow Zone GWPS	6	10	2000	4	5	100	6	4	15	95.5	2	100	50	2	5
Intermediate Zone GWPS	6	10	2000	4	5	100	6	4	15	40	2	100	50	2	5
Deep Zone GWPS	6	12.6	2000	4	5	100	6	4	15	40	2	100	50	2	5

Notes:

ug/L = micrograms per liter (ppb)

mg/L = milligrams per liter (ppm) pCi/L = picoCuries per liter

GWPS = Groundwater Protection Standard

FIGURES

Figure 1: Site Location Map Groundwater Monit

Figure 2: Groundwater Monitoring System – CCR Network Wells and N&E Wells



