

**ORIGINAL**



Your Touchstone Energy® Cooperative 

**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**ELECTRONIC APPLICATION )  
OF BIG RIVERS ELECTRIC CORPORATION )  
FOR APPROVAL OF ITS 2020 ENVIRONMENTAL )  
COMPLIANCE PLAN, AUTHORITY TO RECOVER )  
COSTS THROUGH A REVISED ENVIRONMENTAL )  
SURCHARGE AND TARIFF, THE ISSUANCE OF A )  
CERTIFICATE OF PUBLIC CONVENIENCE AND )  
NECESSITY FOR CERTAIN PROJECTS, AND )  
APPROPRIATE ACCOUNTING AND OTHER RELIEF )**

**Case No.  
2019-00435**

**Response to Commission Staff's  
First Request for Information  
dated March 25, 2020**

**FILED: April 13, 2020**

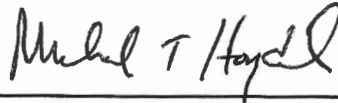
**ORIGINAL**

**BIG RIVERS ELECTRIC CORPORATION**

**ELECTRONIC APPLICATION OF  
BIG RIVERS ELECTRIC CORPORATION  
FOR APPROVAL OF ITS 2020 ENVIRONMENTAL COMPLIANCE PLAN,  
AUTHORITY TO RECOVER COSTS THROUGH A REVISED  
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THE ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND  
NECESSITY FOR CERTAIN PROJECTS,  
AND APPROPRIATE ACCOUNTING AND OTHER RELIEF  
CASE NO. 2019-00435**

**VERIFICATION**


I, Michael T. ("Mike") Hoydick, verify, state, and affirm that the information request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



\_\_\_\_\_  
Michael T. ("Mike") Hoydick

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

SUBSCRIBED AND SWORN TO before me by Michael T. ("Mike") Hoydick  
on this the 13<sup>th</sup> day of April, 2020.



\_\_\_\_\_  
Notary Public, Kentucky State at Large

My Commission Expires

October 31, 2020

**BIG RIVERS ELECTRIC CORPORATION**

**ELECTRONIC APPLICATION OF  
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**VERIFICATION**

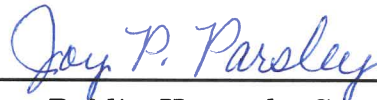
I, Michael T. ("Mike") Pullen, verify, state, and affirm that the information request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Michael T. ("Mike") Pullen

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

SUBSCRIBED AND SWORN TO before me by Michael T. ("Mike") Pullen on this the 13<sup>th</sup> day of April, 2020.



Notary Public, Kentucky State at Large

My Commission Expires \_\_\_\_\_

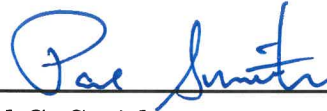
Notary Public, Kentucky State-At-Large  
My Commission Expires: July 10, 2022  
ID: 604480

**BIG RIVERS ELECTRIC CORPORATION**

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**VERIFICATION**

I, Paul G. Smith, verify, state, and affirm that the information request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



\_\_\_\_\_  
Paul G. Smith

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

13<sup>th</sup> SUBSCRIBED AND SWORN TO before me by Paul G. Smith on this the  
\_\_\_\_ day of April, 2020.



\_\_\_\_\_  
Notary Public, Kentucky State at Large

My Commission Expires \_\_\_\_\_

Notary Public, Kentucky State-At-Large  
My Commission Expires: July 10, 2022  
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**VERIFICATION**

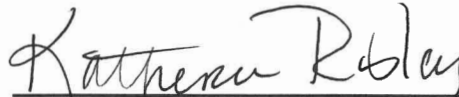
I, Samuel E. ("Sam") Yoder, verify, state, and affirm that the information request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



\_\_\_\_\_  
Samuel E. ("Sam") Yoder

COMMONWEALTH OF KENTUCKY )  
COUNTY OF HENDERSON )

SUBSCRIBED AND SWORN TO before me by Samuel E. ("Sam") Yoder on this the 13<sup>th</sup> day of April, 2020.



\_\_\_\_\_  
Notary Public, Kentucky State at Large

My Commission Expires

October 31, 2020

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1 **Item 1)**      *Refer to the application, pages 32 and 34. Explain the basis for*  
2 *the requested 10-year amortization period for the actual ash pond closure*  
3 *pending to date for Projects 13-1, 13-2, and 13-3.*

4

5 **Response)** Big Rivers seeks to amortize the actual costs it incurs to close the ash  
6 ponds over a 10-year rolling period in order to minimize the impact on its Members'  
7 rates that would otherwise result from a shorter recovery timeframe (e.g., a 3- or 5-  
8 year amortization period), while still allowing Big Rivers to recover its costs in a  
9 timely manner necessary to ensure that it is able to satisfy its financial obligations.  
10 Big Rivers believes the proposed amortization period achieves a fair and reasonable  
11 balance of these interests. Additionally, the requested 10-year amortization period  
12 is consistent with the amortization period previously approved by the Commission

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- 1 for recovery of similar costs associated with ash pond closures included in Kentucky  
2 Utilities Company's 2016 Environmental Compliance Plan.<sup>1</sup>  
3  
4  
5 **Witness)** Paul G. Smith

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<sup>1</sup> See Case No. 2016-00026, *In the Matter of: Application of Kentucky Utilities Company for Certificates of Public Convenience and Necessity and Approval of Its 2016 Compliance Plan for Recovery by Environmental Surcharge* (Ky. P.S.C. Aug. 8, 2016).

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1 **Item 2)** *Refer to the Direct Testimony of Michael T. Pullen (Pullen*  
2 *Testimony), page 20 of 57, lines 6–14. Provide the annual sulfur dioxide (SO<sub>2</sub>)*  
3 *emissions allowance for the Coleman Station and Reid Unit 1, separately.*

4

5 **Response)** Please see the table below for the annual SO<sub>2</sub> allowances for the  
6 Coleman Station and Reid Unit 1.

<b>Big Rivers Electric Corporation Annual SO<sub>2</sub> Emissions Allowances (Tons)</b>		
<b>CSAPR<sup>1</sup> Allowances</b>	<b>Coleman Station</b>	<b>Reid Station</b>
<b>Calendar Year</b>		
2019	3,526	219
2020	0	219
2021+	0	0

7

8

9 **Witness)** Michael T. Pullen

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<sup>1</sup> CSAPR = Cross State Air Pollution Rule.



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- 1 **Item 3)**      *Refer to the Pullen Testimony, page 23 of 57, lines 5–9, regarding*  
2 *the gypsum waste by-product produced as a result of the scrubber process.*
- 3      *a. Based on the operating characteristics of the Coleman flue gas*  
4 *desulfurization (FGD) system and the typical operating*  
5 *characteristics of the Wilson Station, state how much gypsum is*  
6 *expected to be produced by the Wilson Station if it was retrofitted*  
7 *with the Coleman FGD system.*
- 8      *b. State whether the gypsum waste can be considered for beneficial*  
9 *reuse.*
- 10      *c. If the response to Item 3(b) above is yes, state how much revenue*  
11 *BREC can generate from marketing the gypsum by-product.*
- 12      *d. State whether BREC has factored revenues, if any, from the gypsum*  
13 *by-product as part of the operating and maintenance (O&M) costs*  
14 *of the proposed Project 12.*

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1 **Response)**

2 a. Based on generation forecasts, Big Rivers estimates that the Wilson Station  
3 would produce [REDACTED] of gypsum per year if retrofitted with the  
4 Coleman FGD system.

5 b. Yes, the gypsum waste can be considered as beneficial reuse.

6 c. Based upon the location of the Wilson Station and shipping options, Big  
7 Rivers estimates it can generate revenues of [REDACTED] to [REDACTED] by  
8 marketing the gypsum by-product. The price per ton variance is due to how  
9 the gypsum will be handled, loaded, and shipped off site.

10 d. Big Rivers did not include estimated revenues from the sale of gypsum as  
11 part of the projected O&M costs associated with Project 12; however, Big  
12 Rivers did factor gypsum disposal reductions in the variable operating and  
13 maintenance costs for the proposed Project 12 because marketing the  
14 gypsum would eliminate the need to landfill the by-product. If Big Rivers

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1           were to include estimated revenues from the sale of the gypsum and flyash  
2           by-products in the project's non-fuel variable O&M costs, it would increase  
3           the savings associated with reduced non-fuel variable O&M costs from the  
4           estimated [REDACTED] to [REDACTED] through 2035 (based on an estimated  
5           sale price of [REDACTED]).

6  
7  
8 **Witness)**   Michael T. Pullen

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1 **Item 4)**     *Refer to the Pullen Testimony, page 25 of 57, lines 14–16,*  
2 *regarding the evaluation of major pieces of equipment at the Coleman*  
3 *Station to be reused wherever appropriate. Explain whether BREC has*  
4 *performed a comprehensive study to determine whether major components at*  
5 *the Coleman Station can be reused at BREC's other generation facilities. If*  
6 *so, provide a copy of that study.*

7

8 **Response)** Because equipment ratings, sizes, and technologies differ significantly  
9 between the Coleman Station and Big Rivers' other generation facilities, Big Rivers  
10 has not conducted a formal comprehensive study to evaluate the reuse of the Coleman  
11 Station's major components at its other generation facilities (except, of course, at the  
12 Wilson Station as part of the relevant project). Major mechanical components from  
13 Coleman, such as the turbine-generator set, boiler feed pumps, and fans are not  
14 usable at the other generation facilities. However, some electrical equipment, such

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1 as distributed control system components and electrical switchgear, may be reused  
2 at the other generation facilities as spare equipment and replacement parts.

3

4

5 **Witness)** Michael T. Pullen

6

**BIG RIVERS ELECTRIC CORPORATION**

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1 **Item 5)**      *Refer to the Pullen Testimony, page 27 of 57, lines 5–8, regarding*  
2 *the decrease in the Wilson Station's fixed O&M cost and non-fuel variable*  
3 *O&M cost associated with the implementation of Project 12. State the driver*  
4 *of these decreasing costs.*

5

6 **Response)** There are three primary drivers for the decreased fixed O&M cost and  
7 non-fuel variable O&M cost associated with Project 12. The first driver is reduced  
8 maintenance costs associated with the current FGD system, such as weekly cleanings  
9 of the FGD, routine structural and electrical maintenance repairs, duct work  
10 cleaning, and stack cleaning. The second driver for the reduced non-fuel variable  
11 O&M is the production of market-grade gypsum as a byproduct of the new FGD  
12 operation thus eliminating the costs associated with sludge and ash disposal in the  
13 landfill. The final driver is the elimination of certain reagents that are no longer

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1 necessary for the operation of the relocated Coleman FGD as compared to the  
2 operation of the existing FGD.

3

4

5 **Witness)** Michael T. Pullen

6

**BIG RIVERS ELECTRIC CORPORATION**

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1 **Item 6)**      *Refer to the Pullen Testimony, page 28 of 57, lines 5-7. Provide a*  
2 *schedule listing each permit that will be required in connection with Project*  
3 *12 and the time line for obtaining each permit.*

4

5 **Response)** Big Rivers will prepare and submit an application to the Kentucky  
6 Division of Air Quality to modify the Title V permit for the construction activity  
7 associated with Project 12 by August 31, 2020. The issuance of the modified Title V  
8 permit is generally 180 days after submission.

9            Big Rivers will additionally prepare and submit an application to the Kentucky  
10 Division of Water to modify the Kentucky Pollution Discharge Elimination System  
11 (“KPDES”) permit regarding the discharge of wastewater from the replacement FGD  
12 as applicable to the Effluent Limitation Guideline standards. This KPDES permit  
13 application will be submitted by October 31, 2020; agency issuance of the modified  
14 KPDES permit is generally 180 days after submission.



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1           If necessary, a registered permit-by-rule application for the activity of  
2 beneficial reuse of gypsum and flyash will also be submitted by December 1, 2020, to  
3 the Kentucky Division of Waste Management. Agency notification of deemed  
4 registered permit-by-rule is generally 90 days after submission.

5

6

7 **Witness)**   Michael T. Pullen

8

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1 **Item 7)**      *Refer to the Pullen Testimony, page 30 of 57, lines 5–7. Provide*  
2 *the SO<sub>2</sub> emissions efficiency of the Coleman FGD system, and state how much*  
3 *SO<sub>2</sub> the Wilson Station will emit on an annual basis if the station was*  
4 *retrofitted with the Coleman FGD system.*

5

6 **Response)** The Coleman FGD system installed at Wilson Station is modeled to  
7 remove 97% of the inlet SO<sub>2</sub>, which compares favorably to the historical average SO<sub>2</sub>  
8 removal rate of the existing Wilson FGD of 92%. Please see the table on the following  
9 page showing the annual SO<sub>2</sub> emissions for Wilson Station if the station is retrofitted  
10 with the Coleman FGD system.

11

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1

<b>Big Rivers Electric Corporation Wilson Annual SO2 Tons Emitted</b>	
<b>Year</b>	<b>S02 Tons Emitted</b>
2023	
2024	
2025	
2026	
2027	
2028	
2029	
2030	
2031	
2032	
2033	
2034	
2035	

2

3

4 **Witness)** Michael T. Pullen

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1 **Item 8)**      *Refer to the Pullen Testimony, page 32 of 57, lines 16–20. Provide*  
2 *the anticipated closing dates based upon the proposed changes to the*  
3 *Disposal of Coal Combustion Residuals from Electric Utilities Rule (CCR*  
4 *Rule).*

5

6 **Response)** In accordance with provision 40 CFR 257.103(f)(1)(iii) of the proposed  
7 CCR rule published in the Federal Register on December 2, 2019, all surface  
8 impoundments must cease receiving CCR and non-CCR material no later than  
9 October 15, 2023. Pursuant to 40 CFR 257.102(f)(ii) of the final CCR rule dated April  
10 17, 2015, completion of closure activities shall be finalized within five (5) years of  
11 commencing closure. Therefore, the required closing date for the Green Station Ash  
12 Pond is October 15, 2028, based upon the proposed changes to the CCR Rule.  
13 However, Big Rivers' current plan is to complete closure of the Green Station Ash  
14 Pond by November 20, 2026, which is ahead of the proposed regulatory closure date.

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1

2

3 **Witness)** Michael T. Pullen

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**ELECTRONIC APPLICATION OF**  
**BIG RIVERS ELECTRIC CORPORATION**  
**FOR APPROVAL OF ITS 2020 ENVIRONMENTAL COMPLIANCE PLAN,**  
**AUTHORITY TO RECOVER COSTS THROUGH A REVISED**  
**ENVIRONMENTAL SURCHARGE AND TARIFF,**  
**THE ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND**  
**NECESSITY FOR CERTAIN PROJECTS,**  
**AND APPROPRIATE ACCOUNTING AND OTHER RELIEF**  
**CASE NO. 2019-00435**

**Response to Commission Staff's**  
**Initial Request for Information**  
**dated March 25, 2020**

**April 13, 2020**

1 **Item 9)** *Refer to the Pullen Testimony, pages 4–12. Provide an*  
2 *explanation as to the types of modifications that may be required by the*  
3 *Kentucky Division of Waste Management with respect to Project 13-1, the*  
4 *proposed hybrid closure-in-place of the Green Station ash pond. Include in*  
5 *this explanation any cost estimates associated with each potential*  
6 *modification.*

7

8 **Response)** The Kentucky Division of Waste Management (“KDWM”) is currently  
9 working to develop a state rule for surface impoundments closures under 401 KAR  
10 Chapter 46. There is currently no regulatory deadline for KDWM to implement the  
11 Chapter 46 rule and it is unclear whether the Chapter 46 rule, once finalized, will  
12 supersede the federal Coal Combustion Residuals (“CCR”) Rule (40 CFR 257) in part  
13 or in its entirety. Upon review of engineering drawings and specifications, KDWM  
14 may have technical modifications to the design plans for closing the Green Station

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1 ash pond. If required by KDWM, the cost estimate for a complete clean closure,  
2 including the removal of all of the ash currently in the pond, is approximately [REDACTED]  
3 [REDACTED].

4

5

6 **Witness)** Michael T. Pullen

7

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1 **Item 10)** *Refer to the Pullen Testimony, page 37 of 57, regarding the U.S.*  
2 *Court of Appeals for the District of Columbia Circuit's decision in the Util.*  
3 *Solid Waste Activities Grp. (USWAG) v. EPA, 901 F.3d 414 (D.C. Cir. 2018),*  
4 *and the U.S. Environmental Protection Agency's review of the CCR Rule*  
5 *regarding, among other things, the exemption of legacy ponds. State when*  
6 *the EPA is expected to finalize the revisions to the CCR Rule that would*  
7 *include regulation of legacy ponds. Also, state when the Kentucky Division*  
8 *of Waste Management will finalize its regulations that are expected to*  
9 *include the regulation of ash ponds as a special waste facility.*

10

11 **Response)** There is currently no technical deadline for EPA to finalize revisions to  
12 the CCR Rule for regulating legacy ponds, and at this point it remains unclear when  
13 those revisions will take effect. The legacy pond exemption at 40 CFR 257.50(e) was  
14 vacated by the D.C. Circuit Court on August 21, 2018.



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1           Likewise, there is currently no technical deadline for the Kentucky Division of  
2 Waste Management to finalize 401 KAR Chapter 46 for regulating ash ponds. Big  
3 Rivers will continue to monitor legislative and regulatory dockets to determine  
4 applicable changes to state and federal rules.

5

6

7 **Witness)**   Michael T. Pullen

8

**BIG RIVERS ELECTRIC CORPORATION**  
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1 **Item 11)** *Refer to the Pullen Testimony, page 40 of 57, lines 10–12,*  
2 *regarding the dewatering and treatment process. Fully explain how BREC*  
3 *will implement the dewatering and treatment process for the Coleman*  
4 *Station ash ponds.*

5

6 **Response)** The existing Coal Combustion Residuals (“CCR”) ponds at Coleman  
7 Station are designated as the South Pond, Sluice Pond, and North Pond. The South  
8 Pond does not currently contain free water and is covered with vegetation or rock.  
9 Both the Sluice Pond and North Pond currently contain free water.

10 To appropriately address the water in the Coleman Station’s Sluice Pond and  
11 North Pond, it is anticipated Big Rivers’ contractor will begin lowering pond  
12 elevations prior to the construction start dates for each pond. This may be done by  
13 discharging continuously out of the existing Outfalls 002A, 002C, and 007, per the  
14 site’s Kentucky Pollutant Discharge Elimination System (“KPDES”) permit. Once

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1 dewatering of the free water is completed, further dewatering of the CCR material  
2 may take place by use of a long-reach backhoe or other mechanical equipment to  
3 create alternating piles the length of the pond, with channels in between to  
4 accumulate the water percolating from the CCR material. The contractor will likely  
5 need to set up supplemental pumps to remove surface water that cannot be removed  
6 with the in-place discharge system.

7       While it is anticipated that the existing pond water quality would meet the  
8 KPDES permit, construction activities could disrupt the Total Suspended Solids  
9 (“TSS”) levels as the water level drops in the ponds. Therefore, the assumption has  
10 been made that treatment for TSS and pH will be required during this dewatering  
11 stage. It is expected this will be accomplished through the use of a temporary water  
12 treatment system leased for a total of approximately two (2) months during the  
13 closure of the Sluice Pond and the North Pond.

14

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1

2 **Witness)** Michael T. Pullen

3

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**April 13, 2020**

1 **Item 12)** *Refer to the Pullen Testimony, page 46 of 57, lines 5–11. With*  
2 *respect to Phase II of the Wilson landfill, provide the current capacity of the*  
3 *Phase II landfill (in terms of cubic yards of CCR material), and state when*  
4 *the landfill is expected to reach capacity.*

5

6 **Response)** Currently, the remaining capacity of Wilson’s Phase II landfill is 3.5  
7 million cubic yards. The Phase II landfill at Wilson Station is expected to reach full  
8 capacity in 2026 given the existing Wilson FGD operation. However, after the retrofit  
9 of the Coleman FGD, the Wilson landfill life expectancy will exceed the life of the  
10 plant due to the beneficial use of gypsum and flyash thus no longer needing to dispose  
11 of those products in the landfill.

12

13 **Witness)** Michael T. Pullen

14

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1 **Item 13)** *Refer to the Pullen Testimony, Exhibit Pullen-5, pages 6–7 of 7,*  
2 *regarding the reference to “the requirements of the Wilson Phase I landfill*  
3 *Agreed Order (“Agreed Order”).” Explain in detail the reference to the*  
4 *Agreed Order, and provide a copy of this Agreed Order.*

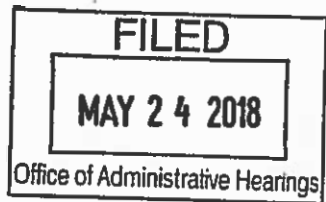
5

6 **Response)** Big Rivers and the Energy and Environment Cabinet are parties to an  
7 Agreed Order filed May 24, 2018. As one of the remedial measures to address landfill  
8 leachate outbreaks at the Wilson Landfill, Big Rivers agreed to construct a leachate  
9 collection and treatment system in compliance with 401 KAR Chapters 45 and 46 and  
10 the Federal Coal Combustion Residuals Rule, 40 CFR § 257. The leachate collection  
11 and treatment system is described in Exhibit 2 of the Agreed Order attached to this  
12 response.

13

14 **Witness)** Michael T. Pullen

D. Cleveland



COMMONWEALTH OF KENTUCKY  
ENERGY AND ENVIRONMENT CABINET  
DIVISION OF WASTE MANAGEMENT  
Permit No.- SW 092-00004  
AI No. 3319  
FILE NO. DWM - 180044

IN RE: D.B. WILSON STATION

BIG RIVERS ELECTRIC CORPORATION  
201 3rd Street  
P.O. Box 24  
Henderson, KY 42420

Facility/Violation Location:  
Big Rivers Electric Corp. – D. B. Wilson Station  
5663 State Route 85  
West Centertown, KY 42328

**AGREED ORDER**

\*\*\*\*\*

WHEREAS, the parties to this Agreed Order, the Energy and Environment Cabinet (hereinafter "Cabinet") and Big Rivers Electric Corporation (hereinafter "BREC"), state:

**STATEMENTS OF FACT**

1. The Cabinet is charged with the statutory duty of enforcing KRS Chapter 224, and the regulations promulgated pursuant thereto.
2. KRS 224.50-760 governs the disposal of special waste, including utility wastes. The Cabinet promulgated 401 KAR Chapter 45 to implement its duty to regulate the disposal of special wastes. 401 KAR 45:160 governs groundwater and surface water monitoring and corrective action at special waste landfills.

3. In 2014 the United States Environmental Protection Agency (EPA) promulgated 40 CFR 257.50 – 257.107 establishing national standards to govern the location, design, construction and operation of landfills and surface impoundments for the disposal of utility wastes known as coal combustion residuals (CCR) (hereinafter “Federal CCR Rule”). As promulgated, the Federal CCR Rule is self-implementing. In 2017, the Cabinet promulgated 401 KAR Chapter 46 to incorporate the federal standards into Kentucky regulations. 401 KAR 46:110 Sections 5 and 8 incorporate inspection, control, assessment, and corrective action requirements set forth in 40 CFR 257.81, 257.84, and 257.90 that apply to surface run-off and unauthorized surface releases from existing CCR landfills. Under the Federal CCR Rule, existing CCR landfills were authorized to continue operation without installing leachate collection systems. 80 Fed. Reg. 21302, 21370 (April 17, 2015).

4. BREC owns and operates D. B. Wilson Station, an electric power generating station located at 5663 State Route 85, West Centertown, Kentucky (the “Facility”). BREC owns and operates a special waste landfill at the Facility that was constructed in two stand-alone phases (Phase I and II) for the disposal of utility wastes including CCR (hereinafter collectively the “Wilson Landfill”). The site has been assigned AI ID No. 3319. To operate the Wilson Landfill the Cabinet’s Division of Waste Management, Solid Waste Branch (DWM), issued BREC Special Waste Permit No. SW 092-00004 pursuant to 401 KAR Chapter 45 for Phase I on March 14, 2005 (hereinafter the “SpW Permit”). The SpW Permit was modified to authorize the construction/operation of Phase II under 401 KAR Chapter 45 on October 8, 2009. Both Phases are covered by Permit No. SW 092-00004.



5. The standards of 401 KAR Chapter 46 and the Federal CCR Rule apply to “existing CCR landfills” as defined at 40 CFR 257.53, independent of 401 KAR Chapter 45 permits. The SpW Permit also continues to apply to the Wilson Landfill at this time.

6. BREC holds Kentucky Pollution Discharge Elimination System (KPDES) Permit No. KY0054836 issued by the Cabinet’s Division of Water (“DOW”) in 2015 (hereinafter “KPDES Permit”) regulating discharges from point sources at the Facility into Waters of the Commonwealth pursuant to 401 KAR 5:055. Outfalls 002, 004, 014, and 015 are controlled by sedimentation ponds and receive CCR landfill runoff from the Wilson Landfill. Outfall 002, 004, 014, and 015 are subject to a water-quality based effluent limitation for total recoverable arsenic, a constituent of CCR leachate, of 340 ug/L.

7. BREC reported a total recoverable arsenic daily maximum discharge of 381 ug/L in excess of its 340 ug/L KPDES Permit limit for Outfall 002 in August of 2016. On November 18, 2016, after reviewing BREC’s KPDES discharge monitoring reports, the Cabinet’s Division of Enforcement issued a Notice of Violation (NOV) for a violation of KRS 224.70-110 for failing to comply with 40 CFR 122.41(a), as adopted by 401 KAR 5:065, Section 2(1), by exceeding KPDES Permit limits for total recoverable arsenic.

8. BREC responded to the November 18, 2016 NOV with a letter dated January 27, 2017 acknowledging receipt of the NOV. BREC noted in the response that remedial measures were implemented to ensure compliance with KPDES permit limits and that the reason for the exceedance was under investigation.

9. From October 3 through October 5, 2016, authorized representatives of DWM conducted an Operations and Maintenance Inspection of the Wilson Landfill and observed leachate outbreaks and leachate flowing in unlined ditches from the landfill toward the sediment

pond at Outfall 002. During a subsequent file review, DWM personnel identified a violation of 401 KAR 30:031 Section 4(1) by “a discharge of pollutants into waters of the Commonwealth, including wetlands, that violate any requirements of KRS Chapter 224, or the surface water standards of 401 KAR Chapter 5 or 8” which was deemed attributable to leachate outbreaks observed during the inspection and the single exceedance of the KPDES permit limit for total recoverable arsenic at Outfall 002.

10. On or about January 3, 2017 the DWM issued BREC a NOV for the violations described in paragraph 9 above. The remedial measure in the NOV requested BREC to submit a Leachate Remediation Plan. DWM also directed BREC to evaluate and address leachate outbreak sources in a Notice of Deficiency dated March 8, 2017, related to BREC’s groundwater assessment plan. BREC responded to the DWM NOV by letter dated February 9, 2017, and stated that it had implemented a chemical treatment plan for the leachate to prevent further exceedances of the KPDES permit limits for total recoverable arsenic. BREC also noted it intended to identify the cause of the leachate outbreak on Phase I of the landfill that was the subject of the NOV after a dry weather pattern returned. BREC stated the chemical treatment had been effective at preventing further KPDES permit limit exceedances.

11. BREC and DWM met on several occasions in 2017 to discuss BREC’s leachate management plans at the Facility. BREC noted that it had implemented procedures for control of leachate outbreaks and was evaluating a different leachate treatment capture system for the Phase I leachate outbreak that is the subject of the NOV’s. BREC revised its run-off plan for leachate that is required by 40 CFR 257.81 and has developed standard operating procedures (“SOPs”) for leachate outbreaks that are intended to ensure compliance with 401 KAR Chapter 45 and 40 CFR 257.81, 257.84(b)(5), and 257.90(d), as incorporated in 401 KAR 46:110.

12. The Cabinet and BREC acknowledge that EPA is in the process of reconsidering the scope and applicability of response requirements for non-groundwater releases from CCR landfills. Any final amendments to those standards will automatically become effective under 401 KAR Chapter 46 due to the federal standards being incorporated by reference, and in such an event the SOPs set forth in this Agreed Order would be subject to change or amendment.

13. CCR landfill leachate outbreaks at Wilson Landfill, if not managed properly, may present a threat to human health and the environment. The Cabinet asserts that improved leachate management is necessary to ensure compliance with surface water standards, as reflected in the Facility's KPDES permit, and to reduce the risk of impacts to groundwater. As set forth herein, the parties have agreed upon remedial measures intended to ensure leachate is managed at the Wilson Landfill in a manner to comply with the facility's KPDES permit, special waste landfill permit, and applicable CCR landfill regulations.

14. To arrive at the terms of this Agreed Order, BREC submitted drafts of the SOPs, the leachate collection and treatment system plans for the Wilson Landfill, and the list of compliance milestones to the Cabinet for review, comment, and approval. The Cabinet reviewed the SOPs and determined the proposed SOPs, plans, and milestones to be acceptable response actions to address operational deficiencies or releases associated with the leachate outbreaks.

15. Based upon the leachate management plan commitments, this Agreed Order resolves the DWM objections identified in paragraph 2)a) of the March 8, 2017 NOD to the Facility's Groundwater Assessment Plan under 401 KAR Chapter 45, as amended on December 21, 2016.

16. Big Rivers neither admits nor denies the violations and assertions of the Cabinet set forth above, but agrees to resolve the NOV's and paragraph 2)a) of the March 8, 2017 Notice

of Deficiency through the development and implementation of remedial measures set forth herein to address any threat or potential threat to human health and the environment associated with management of CCR and leachate at its Facility, to ensure compliance with 401 KAR Chapter 46, and the Federal CCR Rule as incorporated thereby.

**NOW THEREFORE**, in the interest of settling all civil claims and controversies involving the violations and deficiencies described above, the parties hereby consent to the entry of this Agreed Order and agree as follows:

**REMEDIAL MEASURES**

17. BREC shall implement the SOPs set forth in Exhibit 1 to address leachate outbreaks at the Wilson Landfill.

18. BREC shall amend the run-on and run-off control system plan required by 401 KAR 46:110 Section 5 and 40 CFR 257.81(2)(c) for the Wilson Landfill to include the SOPs in Exhibit 1.

19. BREC shall install the leachate collection and treatment system set forth in Exhibit 2 for the leachate outbreak at Phase I of the Wilson Landfill that is the subject of the NOV's in paragraphs 7 and 10, above. BREC shall provide notice to the Director, Division of Enforcement at least five (5) business days prior to beginning the three (3) construction phases designated in Exhibit 2. BREC shall provide notice to the Director, Division of Enforcement of its compliance with the Project Milestones set forth in Exhibit 2, within 15 days of each milestone. Until the new system is operational, BREC shall continue to treat leachate at the source of the outbreak in a sump or tank as its interim remedial measure. BREC may dispose of

sludge from the interim and final wastewater treatment processes with CCR in the special waste landfill consistent with the Bevill Amendment. BREC shall provide DWM test data on the characteristics of the sludge generated in the leachate collection system after it becomes operational.

20. BREC may request an amendment of the accepted leachate collection system plans and compliance milestones set forth in Exhibit 2 in writing sent to Director of the Division of Enforcement at 300 Sower Blvd., 3<sup>rd</sup> Floor, Frankfort, KY 40601. The request shall state the reasons therefore and include any proposed changes to plans and specifications. The Cabinet shall review proposed amendments and may, in whole or part, 1) approve or 2) disapprove and provide comments identifying deficiencies. If granted, the Amended Exhibit(s) shall not affect any provision of this agreed order unless expressly provided for in the amendment. Amendment under this section does not require and amendment request pursuant to paragraph twenty-eight (28) below.

#### **STIPULATED PENALTIES**

21. BREC shall pay the Cabinet a stipulated penalty in the amount of five hundred (\$500), within fifteen (15) days of mailing of written notice from the Cabinet for failure to timely meet any remedial milestones required by Exhibit 2 to this Agreed Order. This penalty is in addition to, and not in lieu of, any other penalty that could be assessed. The Cabinet may, in its discretion, waive stipulated penalties that would otherwise be due.

22. Within fifteen (15) days of receipt of written demand for payment of a stipulated penalty, BREC shall submit payment of the stipulated penalty. The stipulated penalties are in addition to and not in lieu of, any other penalty that could be assessed. The payment of stipulated

penalties shall not alter in any way BREC's obligation to complete the performance of the actions described in this Agreed Order.

23. If BREC believes the request for payment of a stipulated penalty is erroneous or contrary to law, BREC may request a hearing in accordance with KRS 224.10-420(2). The request for hearing does not excuse timely payment of the penalty. If an order is entered pursuant to KRS 224.10-440 that excuses payment, the Cabinet will refund the payment. Failure to make timely payment shall constitute an additional violation.

24. Payment of stipulated penalties shall be by cashier's check, certified check, or money order, made payable to "Kentucky State Treasurer" and sent to the attention of Director, Division of Enforcement, Department for Environmental Protection, 300 Sower Blvd., Frankfort, Kentucky 40601.

#### **MISCELLANEOUS PROVISIONS**

25. This Agreed Order only resolves those violations and deficiencies specifically described above. Other than those matters resolved by entry of this Agreed Order nothing contained herein shall be construed to waive or to limit any remedy or cause of action by the Cabinet based on statutes or regulations under its jurisdiction and BREC reserves its defenses thereto. The Cabinet expressly reserves its right at any time to issue administrative orders and to take any other action it deems necessary that is not inconsistent with this Agreed Order, including the right to order all necessary remedial measures, assess penalties for violations, or recover all response costs incurred, and BREC reserves its/his defenses thereto.

26. This Agreed Order shall not prevent the Cabinet from issuing, reissuing, renewing, modifying, revoking, suspending, denying, terminating, or reopening any permit to

BREC. BREC reserves its defenses thereto, except that BREC shall not use this Agreed Order as a defense to those permitting actions.

27. BREC waives its right to any hearing on the matters resolved herein. However, failure by BREC to comply strictly with any or all of the terms of this Agreed Order shall be grounds for the Cabinet to seek enforcement of this Agreed Order in Franklin Circuit Court and to pursue any other appropriate administrative or judicial action under KRS Chapter 224 and the regulations promulgated pursuant thereto.

28. The Agreed Order may not be amended except by a written order of the Cabinet's Secretary or his designee. BREC may request an amendment by writing the Director of Division of Enforcement at 300 Sower Blvd., Frankfort, Kentucky 40601 and stating the reasons for the request. If granted, the amended Agreed Order shall not affect any provision of this Agreed Order unless expressly provided in the amended Agreed Order. The Cabinet and BREC agree that the obligations of this Agreed Order may be modified by final promulgation of EPA's Federal CCR Rule reconsideration rule setting requirements for addressing surface releases, including leachate management at existing CCR landfills, and agree obligations of this Agreed Order shall be superseded and amended by any such final rule.

29. Unless otherwise stated in this Agreed Order, all submittals required of BREC by this Agreed Order shall be sent to: Director, Division of Enforcement, 300 Sower Blvd., Frankfort, Kentucky 40601.

30. The Cabinet does not, by its consent to the entry of this Agreed Order, warrant or aver in any manner that BREC's complete compliance with this Agreed Order will result in compliance with the provisions of KRS Chapter 224; 401 KAR Chapters 30, 45, and 46; or the Federal CCR Rule. Notwithstanding the Cabinet's review and approval of any plans formulated

pursuant to this Agreed Order, BREC shall remain solely responsible for compliance with the terms of KRS Chapter 224; 401 KAR Chapters 3, 45, and 46; or the Federal CCR Rule, this Agreed Order and any permit and compliance schedule requirements.

31. BREC shall give notice of this Agreed Order to any purchaser, lessee or successor in interest prior to the transfer of ownership and/or operation of any part of its now-existing facility occurring prior to termination of this Agreed Order, shall notify the Cabinet that such notice has been given, and shall follow all statutory and regulatory requirements for a transfer. Whether or not a transfer takes place, BREC shall remain fully responsible for payment of all stipulated penalties and response costs and for performance of all remedial measures identified in this Agreed Order.

32. The Cabinet agrees to allow the performance of the above-listed remedial measures by BREC to satisfy its obligations to the Cabinet generated by the alleged violations and NODs described above.

33. The Cabinet and BREC agree that the remedial measures agreed to herein are facility-specific and designed to comply with the statutes and regulations cited herein. This Agreed Order applies specifically and exclusively to the unique facility referenced herein and is inapplicable to any other site or facility.

34. This Agreed Order shall be of no force and effect unless and until it is entered by the Secretary or his designee as evidenced by his signature thereon.

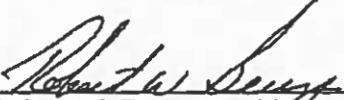
#### **TERMINATION**

35. This Agreed Order shall terminate upon BREC's completion of all requirements described in this Agreed Order. BREC may submit written notice to the Cabinet when it believes all requirements have been performed. The Cabinet will notify BREC in writing of




whether it intends to agree with or object to termination. The Cabinet reserves its right to enforce this Agreed Order, and BREC reserves its right to file a petition for hearing pursuant to KRS 224.10-420(2) contesting the Cabinet's determination.

**AGREED TO BY:**

  
\_\_\_\_\_  
Robert W. Berry, President and CEO  
Big Rivers Electric Corporation


4-9-18  
Date

**HAVE SEEN:**


  
\_\_\_\_\_  
Jack Bender, Attorney for Big Rivers Electric Corporation  
Dinsmore & Shohl LLP

4-9-18  
Date

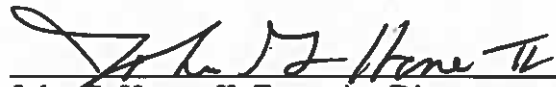
**APPROVAL RECOMMENDED BY:**

  
\_\_\_\_\_  
Jon Maybriar, Director  
Division of Waste Management

5/4/18  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Jeff Cummins, Director  
Division of Enforcement

4/18/18  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
John G. Horne, II, Executive Director  
Office of General Counsel

5/2/2018  
\_\_\_\_\_  
Date

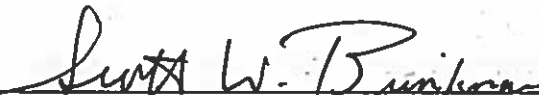
  
\_\_\_\_\_  
R. Bruce Scott, Deputy Commissioner  
Energy and Environment Cabinet

5/18/18  
\_\_\_\_\_  
Date

**ORDER**

Wherefore, the foregoing Agreed Order is entered as the final Order of the Energy and Environment Cabinet this 24<sup>th</sup> day of May, 20 18.

ENERGY AND ENVIRONMENT CABINET

  
\_\_\_\_\_  
SCOTT W. BRINKMAN, SECRETARY of the  
GOVERNOR'S EXECUTIVE CABINET

**CERTIFICATE OF SERVICE**

I hereby certify that a true and accurate copy of the foregoing **AGREED ORDER** was mailed, postage prepaid, to the following this 24<sup>th</sup> day of May, 2018.

Hon. Jack Bender  
Dinsmore & Shohl LLP  
Lexington Financial Center  
250 West Main Street  
Suite 1400  
Lexington, KY 40507

and mailed, messenger to:

Daniel Cleveland  
Office of General Counsel  
300 Sower BLVD, 3<sup>rd</sup> Floor

Jeff Cummins, Director  
Division of Enforcement  
300 Sower BLVD, 3<sup>rd</sup> Floor

Jon Maybriar, Director  
Division of Waste Management  
300 Sower BLVD, 2<sup>nd</sup> Floor

  
\_\_\_\_\_  
DOCKET COORDINATOR

Distribution:  
DWM  
BGD  
SiH

## **Exhibit 1**

### **Leachate Management Standard Operating Procedures**

#### **Wilson Landfill**

##### **Subject: Surface Seep and Leachate Outbreaks Repair**

To ensure compliance with 40 CFR 257 Subpart D and 401 KAR Chapters 45 and 46, the following procedure will be utilized for identification and repair and/or response to surface seeps and leachate outbreaks at the Wilson CCR Landfill.

- An inspection by a qualified person will be conducted once per week to identify any surface seeps and leachate outbreaks at the landfill.
- Identified seeps and leachate outbreaks must be located by Global Positioning Satellite (GPS) or written description of the location in the operating log.
- Identified surface seeps and leachate outbreaks must be quantified as to the amount of standing or flowing water. Measurements or estimates of the impacted area must be included. Other information relevant to remediation of the outbreak or seep shall be included.
- Categorize the surface seep or leachate outbreak into one of three categories:
  - Category 1 - Leachate/seep flow is contained within a drainage ditch and pond system that flows to a KPDES permitted outfall and the outbreak or seep is readily repairable by excavating the impacted area and replacing the cover dirt with compacted clay, cover soil, seed and mulch.
  - Category 2 - Leachate /seep flow is contained within a drainage ditch and pond system that flows to a KPDES permitted outfall but requires more investigation and evaluation prior to any attempt at remediation.
  - Category 3 - Leachate/seep flow is not contained within the KPDES permitted ditch and pond system. Any areas identified must be either routed to the KPDES permitted ditch and pond system or actions must begin immediately to prevent a discharge to a water of the United States by remediating the outbreak or seep. Remediating or mitigating this category of outbreaks and seeps should receive top priority.
- Collect leachate wastewater samples near the source for metals, chlorides, and sulfate analysis. Metals to be analyzed include those in Appendix IV to 40 CFR Part 257 and boron.
- Place categorized information in the operating log.
- Corrective actions for repairable surface seeps and leachate outbreaks must begin as soon as reasonably feasible.
- Remediation areas outside the KPDES permitted ditch and pond system must include the installation of sedimentation controls, such as a silt fence or a capture and treatment system, for impacted areas greater than one acre.

- Cover soil and/or CCR removed during the remediation process must be placed in an active area of the CCR landfill or reused during the remediation of the unit if practicable. Materials reused during remediation may only be reused within the disposal area of the CCR landfill .
- Replacement soil must be compacted, seeded and mulched.
- Environmental Affairs shall evaluate and determine remediation plans for a surface seep/leachate outbreak that is deemed not readily repairable based upon flow and landfill conditions. Until remediation occurs at the source, leachate/seep flow shall be monitored, conveyed to a KPDES permitted outfall, and treated as necessary to ensure compliance with KPDES discharge limits and applicable water quality standards in the receiving stream. The evaluation shall include a consideration of potential impacts of the conveyance of flow on soils, and sampling to monitor any such impacts. Environmental Affairs shall submit all plans developed under this section to the DWM Solid Waste Branch.
- Notice to DWM and DOW
  - Environmental Affairs shall notify the DWM Field Office within 1 business day of identifying a Category 3 seep or leachate outbreak.
  - Environmental Affairs shall notify the DWM Field Office, DOW Surface Water Permits Branch, and the DOW Field Office of planned corrective measures for any identified Category 2 seep or leachate outbreak as soon as feasible after discovery of such a leachate outbreak or seep, but no later than ten (10) days after the discovery.
- Place appropriate documentation on the response in the operating log.

## Exhibit 2

### Leachate Collection and Treatment System

#### Wilson Landfill Phase I

#### **Project Description**

The overall objective of the project is to install a wastewater treatment system for the seep on the east side of the Phase I landfill with elevated levels of arsenic to reduce the concentrations and reliably meet the water quality-based discharge limits of the KPDES permit for the facility. Proposed phases for implementation of the project and the associated activities are described below.

#### **Project Definition**

This initial phase of the project will include the following activities.

**Design Basis Development:** This task involves developing a system design basis through review and analysis of the available data and supplemental sampling to develop a complete characterization of the subject leachate generation.

**Bench-Scale Testing:** This task involves initial screening of feasible arsenic treatment technologies followed by proof-of-concept bench-scale testing to demonstrate effectiveness for arsenic treatment.

**Conceptual Alternatives Evaluation:** The results of the bench-scale testing will be used to further evaluate cost effective arsenic treatment technologies including developing order of magnitude costing to identify an option for potential pilot scale demonstration.

**Pilot Testing:** Pilot testing of the selected technology will be performed to demonstrate long-term effectiveness for arsenic treatment under field conditions and to develop operating parameters and design criteria applicable for design and construction of a full-scale treatment system.

#### **Engineering**

Engineering and design of the arsenic treatment system are included in this phase.

**Preliminary Engineering:** This task includes completing the preliminary engineering design of the selected treatment technology including equipment sizing, and development of process and discipline deliverables to support a FEL-3 ( $\pm 15\%$ ) cost estimate. BREC shall provide designs and specifications developed during this phase to DWM for review. DWM shall provide BREC with any comments on design within 30 days of receipt.

**Detailed Engineering:** During detailed design, the deliverables generated as part of the preliminary engineering are further developed to finalize the design to support development of bid and construction packages, along with a final cost estimate ( $\pm 5\%$ ). BREC shall provide designs and specifications developed during this phase to DWM for review. DWM shall provide BREC with any comments on design within 30 days of receipt.

## **Construction**

Equipment procurement, construction and start-up are included in this phase.

**Equipment Procurement:** This task involves releasing equipment bid packages, evaluating and selecting a vendor and issuing purchase orders for the selected equipment. Procurement schedule is primarily driven by any long-lead items that may be part of the treatment system.

**Construction:** Construction phases include: (1) initial grading and site preparation, (2) foundations and civil work, and (3) installation of equipment, piping, instrumentation and utility connections for the complete system to be ready for start-up, including collection, transport and treatment systems. Prior to commencing construction, BREC shall provide DWM with an anticipated construction schedule that includes an estimated completion date.

**Start-up and Commissioning:** This task includes initial start-up and testing of all equipment and sustained operation of the treatment system to verify target arsenic removal performance is achieved. BREC shall provide DWM with a completion report that includes test parameters and results, any adjustments or alterations made, and any schedules of routine maintenance.

## **Project Milestones**

Key milestone dates anticipated for the project are listed below

Milestone	Date*
Completion of project definition	9 months
Completion of Engineering	13 months**
Treatment System Operation	22 months**

\*: Dates shown as duration from entry of agreed order

**\*\*: Time spent by the Cabinet reviewing plans shall not count against the Project Milestone time**



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**Response to Commission Staff's**  
**Initial Request for Information**  
**dated March 25, 2020**

**April 13, 2020**

1 **Item 14)** *Refer to the Direct Testimony of Paul G. Smith, page 22 of 43,*  
2 *regarding the Wilson FGD system. Provide the net book value of the entire*  
3 *Wilson FGD system as of December 31, 2019.*

4

5 **Response)** The net book value of the entire Wilson FGD system as of December 31,  
6 2019, was \$32.5 million.

7

8

9 **Witness)** Paul G. Smith

10

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1 **Item 15)**    *Refer to the Direct Testimony of Michael T. Hoydick (Hoydick*  
2 *Testimony), pages 4-5 of 13, concerning the performance and maintenance*  
3 *issues related to horizontal FGD systems like the existing Wilson FGD system.*

4        *a. Regarding the performance limitation of the horizontal flow*  
5            *configuration, provide the current industry standard for emission*  
6            *performance for FGD systems.*

7        *b. Other than gypsum scaling and gas flow maldistribution, provide*  
8            *examples of other operational issues that is related to horizontal*  
9            *FGD systems.*

10

11 **Response)**

12        a. As stated in my testimony, horizontal-type FGD systems have not been  
13            offered in utility service since approximately 1990, and the current industry  
14            standard (and that presently offered by Amec Foster Wheeler Industrial

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1 Power Company (“AFWIPC”) for utility applications) reflects the upflow–  
2 style, limestone–based design of the Coleman Station’s FGD. Based on  
3 AFWIPC’s utility industry experience, the emission performance for acid  
4 gas constituents for upflow–style limestone–based Wet Flue Gas  
5 Desulfurization (“WFGD”) systems is as follows:

- 6 Sulfur dioxide (SO<sub>2</sub>) efficiency of 95% - 99%,
- 7 Hydrogen chloride (HCl) removal efficiency of 99%,
- 8 Hydrogen fluoride (HF) removal efficiency of 99%, and
- 9 Oxidized Mercury removal efficiency of 80% - 95%.

10 b. The most significant issue for horizontal flow FGD configurations is poor  
11 gas distribution. Gas flows horizontally though the unit(s) while scrubbing  
12 slurry is mixed vertically. This results in uneven gas flow through the units  
13 which reduces gas / liquid contact and results in lower acid gas  
14 performance. Additionally, poor gas distribution causes areas of high gas

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1 flow which restricts Mist Eliminator performance and causes excessive  
2 pluggage of gypsum in this area of the FGD. When the mist eliminator  
3 plugs, high pressure losses result which requires an outage of the scrubber  
4 unit. These issues are not typically experienced with upflow style WFGD  
5 units as supplied for the Coleman Station.

6 One other issue with horizontal FGDs is that they are not designed  
7 to produce an oxidized gypsum waste product. When these units were  
8 placed in service, this was not a consideration as there was no market for  
9 salable grade gypsum. Modern FGD systems, such as was installed at  
10 Coleman, are specifically designed to produce commercial quality gypsum.

11

12

13 **Witness)** Michael T. Hoydick

14

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1 **Item 16)** *Refer to the Hoydick Testimony, page 11 of 13, lines 6–14,*  
2 *regarding the performance of the Coleman scrubber once it has been*  
3 *retrofitted at the Wilson Station. State whether Amec Foster Wheeler*  
4 *Industrial Power Company has any experience performing this type of*  
5 *retrofit. Also, explain whether the Coleman Station being idled since 2014*  
6 *will have any impact (either positive or negative) on the performance of the*  
7 *Coleman FGD, assuming that BREC is authorized to retrofit the Wilson*  
8 *Station with the Coleman FGD components.*

9

10 **Response)** While Amec Foster Wheeler Industrial Power Company (“AFWIPC”) has  
11 extensive experience with the installation and integration of FGD equipment at new  
12 and existing generation facilities, the relocation/retrofit opportunity presented by Big  
13 Rivers’ Coleman and Wilson stations is unique in AFWIPC’s experience. That said,

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1 AFWIPC is intimately familiar with the relevant technology and confident that this  
2 project can be accomplished successfully as described.

3       As explained by Big Rivers, when the Coleman site was idled in 2014 its FGD  
4 system was well-maintained and in good working order. Big Rivers placed its  
5 equipment in long-term storage consistent with manufacturer recommendations, and  
6 has continued to maintain the Coleman site since that time. Based in part on these  
7 facts, AFWIPC will provide performance guarantees for the relocated FGD that meet  
8 or exceed emission performance guarantees provided for the FGD system as  
9 originally installed at Coleman.

10       Of course, AFWIPC further understands that the existing equipment at  
11 Coleman has approximately 8 years of operating time and will likely have some  
12 degree of equipment wear and tear. With this in mind, the Wilson project execution  
13 plan includes the following considerations to ensure high levels of emission control  
14 by the relocated FGD system.

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- 1           1. Small equipment and high wear items will be replaced with new  
2           equipment based on practicality, costs, and equipment condition.  
3           Examples of this include small pumps, control valves, instrumentation,  
4           and small bore piping.
- 5           2. Equipment critical to stack emission, such as the absorber module itself,  
6           absorber internals, and absorber recycle pumps will each be individually  
7           evaluated, refurbished, modified, or replaced to achieve "as new"  
8           performance of the relocated system.

9  
10

11 **Witness)**   Michael T. Hoydick

12

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1 **Item 17)** *Refer to the Direct Testimony of Samuel E. Yoder Testimony, page*  
2 *8 of 13, regarding the FGD wastewater treatment modifications at the Green*  
3 *Station to meet certain provisions of the CCR Rule and the Steam Electric*  
4 *Power Generating Effluent Guidelines and Standards (ELG Rule). Provide*  
5 *the specific regulation that is referenced with respect to the CCR Rule and*  
6 *ELG Rule.*

7

8 **Response)** The increased wastewater storage is intended to prevent potential  
9 intermittent discharges of thickener overflow that could occur as a result of  
10 maintenance activities or process upsets. If these discharges were not contained and  
11 redirected to the process, they would be subject to the limits 40 C.F.R. §  
12 423.13(g)(1)(i).

13

14 **Witness)** Samuel E. Yoder