



May 25, 2022

Mr. Mike Mizell  
Big Rivers Electric Corporation  
201 3<sup>rd</sup> Street, Henderson, KY 42419

Re: Update to Certification of Statistical Method for Evaluating Groundwater in accordance with 40 CFR §257.93  
D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky  
Agency Interest ID #: 3319  
Activity I.D. #: AIN20140001

Dear Mr. Mizell:

On April 17, 2015 the final rule for the regulation and management of Coal Combustion Residuals (CCR) was published by the United States Environmental Protection Agency (USEPA) in 40 CFR §257 and §261 (herein referred to as the Final Rule). The Final Rule applies to the CCR landfill known as the *Phase II Landfill* that is present at Big Rivers Electric Corporation's (BREC) D.B. Wilson Station. In accordance with 40 CFR §257.93 of the Final Rule, BREC is required to develop a groundwater sampling and analysis program to be implemented at the Phase II Landfill and to identify statistical methods selected to assess groundwater data generated pursuant to the rule.

Per 40 CFR §257.93(f)(6) and 40 CFR §257.105(h)(4), BREC was required to place a certification of the statistical method selection for the Phase II Landfill in the facility operating record by April 17, 2019. BREC prepared the *CCR Landfill Groundwater Monitoring System and Statistical Method Assessment and Certification* on June 28, 2016 with the certification statement for the groundwater statistical method amended on February 1, 2018.

BREC contracted Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to prepare an update to the certification for the statistical methods selected to evaluate groundwater monitoring data at the Phase II Landfill. This updated certification was prepared to address changes in the statistical method/approach and includes a narrative description of the tests to be used for statistical evaluation of the groundwater data and a basis for their suitability. This certification supersedes all previous certifications regarding the selection of statistical methods for evaluating groundwater data at the Phase II Landfill.

#### Selection of Statistical Methods

Burns & McDonnell, in consultation with BREC, has identified appropriate statistical procedures that may be used to compare groundwater data, which has or will be generated in accordance with §257.93 through §257.95, to background conditions at the Phase II Landfill. The selected statistical methods include prediction interval procedures as described in §257.93(f)(3). Interwell prediction interval procedures were selected due to their ability to calculate a



May 25, 2022  
Mr. Mike Mizell  
Page 2

background limit or interval using data generated from upgradient monitoring wells. These methods also facilitate the comparison of a singular data point to this calculated background limit. Statistical analyses will be performed using the computer software package Sanitas™ and in general accordance with USEPA's guidance document titled *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*, dated March 2009. The following presents a step-wise narrative of how statistical evaluation will be performed when using these methods:

1. Validated groundwater data will be compiled into a database that is compatible with the Sanitas™ software package.
2. Upon collection of sufficient background data (minimum 8 data points), background limits for 40 CFR §257 Appendix III and IV constituents will be established using parametric and/or non-parametric procedures. These limits will be determined from data collected from upgradient monitoring well MW-8.
3. The concentrations of 40 CFR §257 Appendix III and IV constituents observed in the downgradient monitoring wells will then be compared to the calculated prediction interval established utilizing data collected at upgradient well MW-8.
4. In the event a constituent concentration observed in a downgradient well is above the respective calculated background limit, it will be considered a statistically significant increase (SSI) above background conditions.
5. For any 40 CFR §257 Appendix IV constituent detected at SSIs above the corresponding background limit, a groundwater protection standard (GWPS) will be established in accordance with 40 CFR §257.95(h).
6. The 40 CFR §257 Appendix IV constituents will be evaluated for statistically significant levels (SSL) over established GWPSs by calculating the lower confidence limit (LCL) at 95% confidence for each constituent/well pair using all monitoring results collected to date. For constituents detected at an SSL above the GWPS, the calculated LCL must be greater than the corresponding GWPS.

BREC reserves the right to adjust the procedures presented above or select a different statistical approach. In the event statistical methods other than prediction interval procedures are used to assess groundwater monitoring data in accordance with §257.93 through 257.95, a subsequent certification will be prepared pursuant to the Final Rule.

#### Limitations of this Certification

This letter has been prepared in accordance with generally accepted environmental engineering practices for groundwater quality assessment and reporting. Conclusions contained herein are Burns & McDonnell's interpretation of readily available information and constitute a

May 25, 2022  
Mr. Mike Mizell  
Page 3

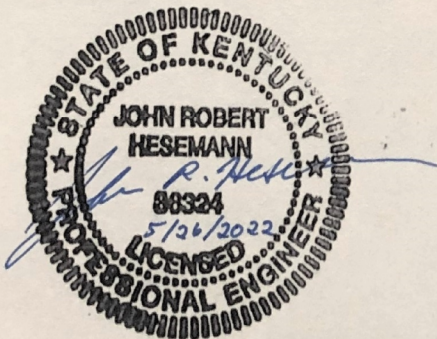
professional opinion based on said information. No other warranty, expressed or implied, is made as to the information included in this document. In the event that others make conclusions and/or recommendations based on data contained herein, such conclusions and/or recommendations are the responsibility of others.

Burns & McDonnell has exercised reasonable skill, care, and diligence in preparation of this letter in accordance with customarily accepted standards of good professional practice in effect at the time this letter was prepared.

### Engineer's Certification

I hereby certify, as a Professional Engineer in the State of Kentucky, that the information in this document was assembled under my direct personal charge. I am a "Qualified Professional Engineer" as defined by 40 C.F.R. § 257.53 by the fact that I have the education, technical knowledge and experience to make the specific technical certifications set forth herein. Subject to the limitations of available data and information discussed herein, this *Update to Certification of Statistical Method for Evaluating Groundwater at D.B. Wilson Station Phase II CCR Landfill* meets the requirements of 40 CFR §257.93(f).

This letter is not intended or represented to be suitable for reuse by BREC or others without specific verification or adaptation by the Engineer.



Mr. John Hesemann, PE  
Kentucky P.E. No 36324  
Burns & McDonnell Engineering Company, Inc. (KY Firm No. 43)