



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

Revision 2: May 24, 2021  
Revision 1: April 17, 2019  
Original: October 17, 2017  
File No. 129778-019

**SUBJECT:** Lawrence Energy Center – Groundwater Monitoring System Certification  
Existing 847 Landfill and inactive Area 2 Pond, Area 3 Pond, and Area 4 Pond  
Evergy Kansas Central, Inc.

Evergy Kansas Central, Inc. (Evergy; f/k/a Westar Energy, Inc.) operates the subject coal combustion residuals (CCR) management units referred to as the 847 Landfill (active), and Area 2 Pond (inactive), Area 3 Pond (inactive), and Area 4 Pond (inactive; collectively, inactive Ash Ponds) at the Lawrence Energy Center (LEC) located in Lawrence, Kansas. These CCR units are considered subject to the CCR Rule since they were either active or identified as inactive with a notification of intent to close as of the effective and/or applicable dates of the CCR Rule.

This document addresses the requirements of § 257.91 *Groundwater Monitoring Systems*, specifically § 257.91(f), of the U.S. Environmental Protection Agency's (USEPA) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, Code of Federal Regulations Title 40 (40 CFR) Part 257 (CCR Rule) effective October 19, 2015, and subsequent rulemaking revisions. In addition, this document revision provides narratives outlining the basis for the design and geospatial arrangements of the CCR well monitoring networks based on site-specific conditions, established hydrogeologic principles, and industry practice, with consideration for the geometry and physical characteristics of and material contents within the CCR unit(s) being monitored.

Evergy has determined, based upon Haley & Aldrich, Inc.'s recommendations, that a multi-unit groundwater monitoring system is preferred for the inactive Ash Ponds as allowed pursuant to § 257.91(d). This multi-unit monitoring system is as capable of detecting monitored constituents passing the combined unit waste boundary as individual groundwater monitoring systems.

The single-unit groundwater monitoring system at the 847 Landfill and the multi-unit groundwater monitoring system at the inactive Ash Ponds have been designed to include at least a minimum of one upgradient and three downgradient monitoring wells pursuant to § 257.91(c). The design and construction information for the 847 Landfill monitoring well network was reviewed and approved by the Kansas Department of Health and Environment (KDHE) on July 5, 2016 per applicable Kansas solid waste rules. In 2020, Evergy submitted a revised sampling and analysis plan, which included the groundwater monitoring system design for both the 847 Landfill and Ash Ponds, to KDHE for review under KDHE permit 0847 and applicable Kansas solid waste rules. Finding that the monitoring systems and associated sampling plan were adequate to monitor the groundwater associated with these units, KDHE approved the updated sampling and analysis plan on September 4, 2020. Table 1 below presents the wells in each of the groundwater monitoring systems as certified herein. This certification has been prepared based upon information available in the facility Operating Record pursuant to § 257.91(e)(1).

**Table 1 – CCR Unit Groundwater Monitoring Well Networks**

CCR UNIT	Upgradient Monitoring Wells		Downgradient Monitoring Wells				
847 Landfill	MW-32	MW-35	MW-31R		MW-33		MW-34
inactive Ash Ponds	MW-37		MW-38	MW-39	MW-40	MW-K	MW-L

**847 LANDFILL CCR MONITORING SYSTEM**

The 847 Landfill monitoring network includes two upgradient and three downgradient monitoring wells. Prior to the certification of the current monitoring system, two upgradient monitoring wells were installed and sampled at the unit, which assisted in defining the groundwater flow direction and evaluating water quality in the uppermost aquifer. Upgradient monitoring well MW-35 is not used for groundwater contours as it is located near MW-32 but screened in a deeper section of the uppermost aquifer to monitor water quality at the base of the aquifer. The minimum number of downgradient monitoring wells is appropriate for this unit based on the size of the unit and the consistent groundwater flow direction observed during the baseline sampling events which confirmed that the downgradient monitoring wells were located to sufficiently detect groundwater constituents in the uppermost aquifer passing the waste boundary of the unit. This system has more than the minimum upgradient wells require by the CCR Rule.

**INACTIVE ASH PONDS CCR MONITORING SYSTEM**

The inactive Ash Ponds multi-unit monitoring network as originally designed includes one upgradient and five downgradient monitoring wells. Two downgradient monitoring wells (MW-K and MW-L) were present at the Site prior to the installation of the remaining monitoring wells and were included in the monitoring network to provide additional downgradient water quality and potentiometric (groundwater elevation) observations. The minimum number of upgradient monitoring wells is appropriate for this unit based on the size of the unit and the consistent groundwater flow direction observed during the baseline sampling events. This multi-unit system has more than the minimum downgradient wells required by the CCR Rule.

**CERTIFICATION STATEMENT**

Pursuant to 40 CFR Chapter I Subchapter I Part 257 Subpart D §257.91(f), I certify that the groundwater monitoring systems for the subject units have been designed and constructed to meet the requirements of § 257.91. The certification submitted is, to the best of my knowledge, accurate and complete.

Signed:   
 Certifying Engineer

Print Name: Steven F. Putrich, P.E.  
 Kansas License No.: PE24363  
 Title: Principal Consultant  
 Company: Haley & Aldrich, Inc.



Signed:   
 Professional Geologist

Print Name: Mark D. Nicholls, P.G.  
 Kansas License No.: 881  
 Title: Lead Hydrogeologist  
 Company: Haley & Aldrich, Inc.



Revision No.	Date	Notes
0	October 17, 2017	Original
1	April 17, 2019	Revised to include the inactive Ash Ponds in subject certification.
2	May 24, 2021	Provide additional information supporting the rationale for the originally certified CCR monitoring well networks at 847 Landfill and the inactive Ash Ponds.