



# Post-Closure Plan Lawrence Energy Center CCR Landfill Kansas Industrial Landfill Permit #0847

Prepared for:  
Evergy Kansas Central, Inc.  
Lawrence Energy Center  
Lawrence, Kansas

Prepared by:  
Evergy Environmental Services (Revision 2)

Revision 0 – October 2016  
Revision 1 – March 2018  
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## Plan Review/Amendment Log §257.104(d)(3)

Date of Review	Reviewer Name	Amendment Required (YES/NO)	Sections Amended and Reason
October 2016 (Revision 0)	CB&I Environmental & Infrastructure, Inc.	N/A	Original
March 2018 (Revision 1)	Aptim Environmental & Infrastructure Inc.	Yes	Report amended to reflect planned redesign.
May 26, 2021 (Revision 2)	Jay Martin (Evergy, Inc.)	No	Update new company name & contact info, improve alignment with other Evergy post-closure plans, remove CCR rule table, remove unit design & history info, add monitor well inspections, remove figures & recordkeeping/ notification/ internet requirement section, add mowing & inspection frequency, access control requirements, and various minor clarifications.

## 1.0 INTRODUCTION

Evergy Kansas Central, Inc. (Evergy) has prepared the following Post-Closure Plan (Plan) for the CCR Landfill, Kansas Industrial Permit No. 0847 (Unit) located at the Lawrence Energy Center (LEC) in Lawrence, Kansas. LEC is a coal-fired power plant that has been in operation since 1952.

The Landfill has been deemed to be a regulated coal combustion residuals (CCR) unit by the United States Environmental Protection Agency (USEPA) through the Disposal of Coal Combustion Residuals from Electric Utilities Final Rule (CCR Rule) 40 CFR §257 and §261.

This Plan details the post-closure requirements outlined in §257.104, for CCR units closed in place. The criteria for conducting the post-closure care of the Unit are detailed in Section 2.0. Post-closure care processes have been established to control, minimize, and eliminate infiltration of liquids into waste and release of leachate.

## 2.0 REGULATORY OVERVIEW OF CCR POST-CLOSURE PLAN REQUIREMENTS

On April 17, 2015, USEPA published the CCR Rule under Subtitle D of the Resource Conservation and Recovery Act (RCRA) as 40 CFR Parts §257 and §261. The purpose of the CCR Rule is to regulate the management of CCR in regulated units for landfill and surface impoundments.

Section 257.104(d) of the CCR Rule requires owners or operators of CCR Landfills and surface impoundments to prepare a written Post-Closure Plan describing the monitoring and maintenance activities, contact personnel during the post-closure care period, and the planned use of the unit during post-closure care period. The following citations from the CCR Rule are applicable for the Unit as discussed in this Plan:

§257.104(d)(1) stipulates:

*“The owner or operator of a CCR unit must prepare a written post-closure plan that includes, at a minimum, the information specified in paragraphs (d)(1)(i) through (iii) of this section*

- (i) A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed;*
- (ii) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period; and*
- (iii) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart...”*

An outline of the post-closure care maintenance requirements is described in §257.104(b) which stipulates:

*“Following the closure of the CCR unit, the owner or operator must conduct post-closure care for the CCR unit, which must consist of at least the following:*

- 1. Maintaining the integrity and effectiveness of the final cover system including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover*
- 2. If the CCR unit is subject to the design criteria under §257.70, maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of §257.70; and*
- 3. Maintaining the groundwater monitoring system and monitoring groundwater in accordance with the requirements of §257.90 through §257.98”*

This Plan has prepared in accordance with the requirements of the CCR Rule and includes a written certification in Section 9.0 from a qualified Profession Engineer in the State of Kansas.

### 3.0 UNIT OVERVIEW

Evergy owns and operates the waste management units at LEC in Lawrence, Kansas in Douglas County. LEC is located in Section 14, Township 12 South, Range 19 East in Lawrence, KS. The Unit is bounded to the north by the Kansas River, the Burlington Northern and Santa Fe Railway along the north and east, industrial buildings to the west, and prairies, industrial buildings, and residential housing to the south.

Evergy was previously granted an Industrial Landfill Permit (Permit No. 0847) at LEC by the Kansas Department of Health and Environment – Bureau of Waste management (KDHE-BWM), in accordance with Kansas Statutes Annotated (KSA) 65-3407. KDHE modified the solid waste permit, per K.A.R. 28-29-6a, in response to the CCR Rule to include all on-site CCR waste materials management units as disposal areas under the existing solid waste permit for LEC. The current Industrial Landfill Permit was approved on October 15, 2015.

Bottom ash, fly ash, economizer ash, and flue gas desulfurization material (CCR material) are disposed of within the Unit. The closure of the Unit will be accomplished by leaving the CCR material in place and covering the CCR material with an engineered cap. The final cover design and construction of the Unit is designed to meet 40 CFR §257.102(d) and is discussed in the closure plan for the unit.

#### **4.0 POST-CLOSURE OVERVIEW AND PLANNED USE (§257.104(d)(1)(iii))**

This Plan applies to the proposed site end use for the Unit. The currently proposed end use of the Unit is a natural area of passive open space that will not disturb the integrity of the final cover cap. No waste will remain exposed after completion of the Landfill closure. The Landfill entrance/exit gate will remain locked after closure unless needed for landfill or other site maintenance. The Landfill will be closed to the public. Post-closure use of the Unit property will not disturb the integrity of the final cover, containment systems, or the functioning of the monitoring systems, unless necessary to comply with the CCR Rule. Any other disturbance, such as removal of CCR for beneficial use, is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, or other components of the containment system, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer and a notification will be provided to the KDHE-BWM, that the demonstration has been placed in the operating record and on the Evergy publicly accessible internet site.

## **5.0 MONITORING AND MAINTENANCE ACTIVITIES [§257.104(d)(1)(i) & §257.104(b)]**

Post-closure care will be performed for a minimum period of 30 years in accordance with §257.104(c). Post-closure activities include environmental monitoring and maintenance.

### **5.1 Inspection and Monitoring Activities (§257.104(b)(1))**

As part of the post-closure care phase for the Unit, periodic inspections will be completed. Initially, inspections will continue to be completed no less frequently than a seven-day interval. Inspection frequency will be reduced as final cover conditions are found to be stable and depending on the need for periodic maintenance. It is anticipated that the routine inspections will eventually revert to quarterly or semi-annual inspections.

The inspections of the closed Unit will be conducted by Evergy personnel or their designee(s). The purpose of the visual inspections during the post-closure care phase will be to detect any damage, distress, or malfunctions to the Unit final cover, cover soils, vegetation, monitor wells and stormwater management systems for the Unit. Any issues found will be corrected as part of maintenance activities discussed in Section 5.2 with the goal of maintaining the integrity of the Unit and its monitoring systems.

The established CCR groundwater monitoring network will be utilized, inspected, and maintained during the post-closure care period to maintain groundwater monitoring in accordance with §257.90 through §257.98.

### **5.2 Final Cover System Maintenance and Repair Plan (§257.104(b)(1))**

Minimal CCR material consolidation is anticipated due to material dewatering, the physical characteristics of the bottom ash, fly ash, economizer ash, and flue gas desulfurization material deposited, the CCR material being vibrated/compacted during placement and because most settlement will have occurred shortly after placement. Regrading and repair of the final cover soil may be required in the event that future non-uniform settlement or erosion is observed to be impacting the functional design and/or operation of the Unit and surrounding areas.

Maintenance of the final cover will include periodic mowing as needed but not less than once per year of the vegetative cover and reseeding as necessary. The grass will be maintained at such a level as to facilitate inspections and maintain health of the desirable vegetation. This will help to discourage the inhabitation of burrowing animals. The topsoil layer on the final cover system will be inspected, low areas filled in with appropriate soil, regraded, and seeded if significant erosion occurs. Control of public access to the Unit will also assist in maintenance of final cover by helping to prevent cover damage by utilizing an appropriate combination of site security, fencing, lockable gates, and/or site surface water features.

Routine maintenance of the cap and diversion ditches include periodic control of sediment and vegetation. Repair of surface water channels, if needed, will typically be performed by bringing in equipment such as excavators, dump trucks, loaders, dozers, and/or scrapers. Materials such as silt fence, straw bales, and soil will be used as needed to implement short-term repairs while waiting for permanent repairs. By controlling site access and maintaining the system of stormwater controls, erosion and damage to the final cover system will be minimized.



### **5.3 Leachate Collection System Maintenance and Removal (§257.104(b)(2))**

The landfill has a leachate collection and removal system. The leachate collection pipes can be cleaned and maintained as necessary. The leachate collection and management system will be routinely inspected for evidence of clogging and need for repair. Any observed damage or deficiencies will be repaired following detection.

## **6.0 NOTICE OF COMPLETION OF POST-CLOSURE CARE (§257.104(e))**

Evergy will complete a Notice of Completion of Post-Closure Care Period within 60 days of completion of post-closure of the Unit. The notification will include the certification by a registered professional engineer as required by §257.104(e).

**7.0 KEY CONTACT INFORMATION (§257.104(d)(1)(ii))**

Name: Environmental Services Department

Address: Evergy  
818 South Kansas Avenue  
Topeka, Kansas 66601

Alternate:  
PO Box 418679  
Kansas City, MO 64141-9679

E-mail Address: EvergyCCR@evergy.com

Phone Number: 888-471-5275  
Alternate:  
(800) 383-1183

## **8.0 PROCEDURES FOR PLAN ASSESSMENTS AND AMENDMENTS (§257.104(d)(3))**

The Plan will be amended if there is a situation as stated in §257.104(d)(3)(i-iii). The Plan will be amended 60 days prior to a planned change of the LEC facility or Unit, or no later than 60 days after an unanticipated event that would necessitate a revision and no later than 30 days after an unanticipated event after post-closure care activities have commenced.

Any amended Plan will be certified by a registered professional engineer and will be placed in LEC's facility operating record as required per §257.105(i)(12). Amended Plans will supersede and replace any prior versions. Availability of an amended Plan will be noticed to the State Director per §257.106(i) and posted to the publicly accessible internet site per §257.107(i).

**9.0 PROFESSIONAL ENGINEER CERTIFICATION (§257.104(d)(4))**

The undersigned registered professional engineer is familiar with the requirements of §257.104 of the CCR Rule and has visited and examined this Unit or has supervised examination of this Unit by appropriately qualified personnel. The undersigned registered professional engineer attests that this CCR Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and meets the requirements of §257.104, and that this Plan is adequate for LEC's facility. This certification was prepared as required by §257.104(d)(4).

Name of Professional Engineer: W. Jay Martin

Company: Evergy

Professional Engineer Seal:

