



Your Touchstone Energy® Cooperative 

D.B. Wilson CCR Landfill

Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule CCR Landfill 2016 Annual Inspection Report

January 10, 2017

Prepared By:



Project ID: 160122C

Big Rivers Electric Corporation
Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
CCR Landfill 2016 Annual Inspection Report

CCR Landfill Information

Name: D.B. Wilson CCR Landfill
Operator: D.B. Wilson Generating Station
Address: 5663 State Route 85 West
Centertown, KY 42328

Qualified Professional Engineer

Name: David A. Lamb
Company: Associated Engineers, Inc.
Kentucky P.E. Number: 17822

Regulatory Applicability

Per 40 CFR §257.84(b), annual inspections by a qualified professional engineer must ensure that the design, construction, operation, and maintenance of the CCR landfill is consistent with recognized and generally accepted good engineering standards.

Annual inspections of any CCR landfill must include, at a minimum: (1) a review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and results of previous annual inspections); and (2) a visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

Additionally, following each annual inspection, the qualified professional engineer must prepare an inspection report which documents the following: (1) any changes in geometry of the structure since the previous annual inspection, (2) the approximate volume of CCR at the time of the inspection, (3) any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and (4) any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

Inspection Description

This is the second annual inspection report for the D.B. Wilson CCR Landfill pursuant to the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule which became effective April 17, 2015. The inspection was conducted on November 17, 2016 by Tim Brown P.E. and Matthew Lile of Associated Engineers, Inc. of Madisonville, Kentucky. Weekly (7-day) inspections conducted by Big Rivers Electric Corporation are kept in the facility operating record.

The inspection consisted of a visual assessment of the landfill and associated drainage control features; and began on the north side of the landfill. The inspection noted generally: areas of erosion, some extending from the top of the slope to the bottom; some bare areas and irregular grading; sparse vegetation on shaley cover areas; and longitudinal tracking from equipment. The upper bench and top areas had been recently covered and equipment tracking below these areas was prevalent. The top covered area contained some small depressions, and a slight lip that could block drainage was visible along the north edge.

The east side of the landfill is in various phases of soil cover and vegetation. Continuing around the corner from the north face, the northeast and central portions of the east face are mostly covered and vegetated with the upper benches having been most recently covered. Lower slopes along the north end of the east side (particularly the northeast corner) have considerable rills and gullies and are not vegetated. A drainage ditch has been developed at the slope toe to direct seepage towards the primary drainage ditch to the sediment control structure to the north. Newly vegetated areas support good grass stands but some rills were visible where soil appears thin or contains rocks. The southern portion of the east face is in various stages of being covered and is not vegetated. Generally, the east side of the landfill is stable where covered and vegetated but there are significant areas of erosion on upper slopes and benches in areas having poor, sparse or no vegetation; some seepage occurs along the lower slope and toe. It appears that recently covered areas have been seeded and mulched but considerable equipment tracking is visible on these areas. Many of the storm water collection box grates need to be adjusted to promote inflow and/or adjacent ground erosion needs to be repaired. There are several areas along the lower partial bench in the mid-section of the east slope where seepage from finished slopes has caused erosion extending downslope from the seeps. Current grading will allow ponding of water in some of the bench flowlines and in longitudinal depressions made by tractor and mower tires. Sediment and CCR material have accumulated around some of the storm water collection inlets. Some small animal burrowing and tracking are visible sporadically across the east landfill face. Some areas of erosion extend from the top of the slope to the slope bottom. Areas that were recently covered on the south end of the east slope have not been graded. An area of the landfill extending from the toe of the east face towards the power line corridor has been regraded to promote drainage. Sporadic small piles of rip rap are scattered along benches and at seep locations. An area of recently placed cover material on the upper bench

will block drainage from an adjacent area of uncovered CCR material and cause ponding of water on the bench and needs to be addressed.

The west side of the landfill is fairly well managed and temporary cover has been placed on a large part of the southern portion of this area. Where CCR material placement is active or placed material has not been covered, there are numerous rills. A berm constructed of CCR material runs along a portion of the west side to direct surface drainage to sediment control. Significant erosion is visible on covered out slopes adjacent to a sediment control structure located to the west.

The south face of the landfill is covered and vegetated. The vegetation is thin, the soil is rocky and erosion rills are present on the slope. The toe of the slope is bordered by a gravel access road to the south.

The majority of CCR material placement was visible on the central (current top) and west side of the landfill.

Inspection Report Specifications

(i) CCR Landfill Geometry

The D.B. Wilson CCR Landfill is used for the placement of coal combustion residual material; currently fly ash, bottom ash and related material. The landfill is raised above adjacent ground to a maximum elevation of approximately 525 feet above mean sea level. The original ground surface within the landfill footprint was irregular and the predominant features were the headwaters of Elk Creek and small stream valleys draining south. Other small tributaries drained west towards the Green River and north towards the Rough River.

Changes to the landfill geometry since the previous (2015) annual inspection include regrading along the toe of the east slope of the landfill to promote drainage; and the continued placement of additional CCR and cover material on the landfill.

(ii) CCR Landfill Volume

The total volume of CCR material contained in the D.B. Wilson CCR Landfill at the time of inspection is approximately 2.2 million cubic yards. This volume was calculated from available flight derived baseline topography compared to October 2016 flight derived topographic contours.

(iii) CCR Landfill Structural, Operational, and Safety Items

Noted Deficiencies

1. Some saturated areas occur along the east side of the landfill and may potentially contribute to instability of the slope toe.
2. An area of recently placed cover material on the upper bench will block drainage from an adjacent area of uncovered CCR material and cause ponding of water on the bench.

(iv) CCR Landfill Changes

A change to the D.B. Wilson CCR Landfill since the previous (2015) annual inspection that may have the potential to affect the stability or operation of the CCR unit is regrading along the toe of the east slope of the landfill to promote drainage. The slope at the time of inspection appeared stable.



Flight Date: October 23, 2016

BIG RIVERS ELECTRIC CORPORATION

D.B. Wilson CCR Landfill
2016 Annual Inspection Aerial Photo

Project Number:	16-0122C
Date:	12/12/2016
Scale:	NOT TO SCALE
Drawn By:	A.E.I.



2740 North Main St. • Madisonville, KY 42431
Phone: (270) 821-7732 • Fax: (270) 821-7789
www.associatedengineers.com


BREC Final Rule CCR Landfill 2016 Annual Inspection Checklist

Operator: D.B. Wilson Generating Station				Weather: Clear	
CCR Landfill: D.B. Wilson				Temperature (Degrees F): 75 (average)	
Date: November 17, 2016				Inspector/Qualified Person: Tim Brown P.E. & Matthew Lile (AEI)	
ITEM	STATUS			OBSERVATIONS	
	YES	NO	N/A		
1 CONDITION OF INACTIVE AREA					
Access road deterioration (potholes, rutting, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Any erosion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Some surficial erosion/rills in cover material & perimeter ditch (north side)	
Longitudinal cracks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimal surficial cracking from dry conditions	
Transverse cracks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimal surficial cracking from dry conditions	
Visual depressions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Some low areas in bench flowlines & ruts/ tracking from equipment & mower tires	
Visual settlement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Bulging or slumping	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Surficial scarp in cover material (east side second bench)	
Any drainage features obstructed or damaged	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Catch basin grades/soil settlement around basins & flowline obstructions	
Are drainage features flowing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Is seepage present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Some seepage present on east side toe and lower slopes/benches	
Is seepage or discharge carrying sediment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Adequate vegetative cover	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Some bare areas & invasive species monocultures	
Are trees growing on the slope	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Are there any animal burrows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sporadic small animal burrows; primarily rodent	
Any stone deterioration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Adequate riprap/slope protection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Debris or trash present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Is there exposed CCR material	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Isolated areas	
2 CONDITION OF ACTIVE AREA					
Access road deterioration (potholes, rutting, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Any erosion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Any cracks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Any slides	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Visual depressions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimal depressions due to incomplete grading	

		STATUS			OBSERVATIONS
		YES	NO	N/A	
	Visual settlement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Bulging or slumping	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Any drainage features obstructed or damaged	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Is seepage present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Is seepage or discharge carrying sediment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Debris or trash present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3	LINER AND LEACHATE COLLECTION SYSTEM				
	Are liners intact and being installed correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Is the leachate collection operating correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Is the leachate collection pond/storage functioning correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Is there any slope/bank erosion on pond	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Are there any animal burrows on pond	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Is the spillway functioning and discharging correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	RUN-ON/RUNOFF-CONTROLS				
	Are run-on/runoff controls in place	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are run-on/runoff controls functioning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are run-on/runoff controls effective	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are run-on runoff controls being maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Signs of seepage or wetness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Sediment transport or deposition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DEFICIENCIES AND MAINTENANCE ITEMS					
<ol style="list-style-type: none"> 1. Some saturated areas occur along the east side of the landfill and may potentially contribute to instability of the slope toe. 2. An area of recently placed cover material on the upper bench will block drainage from an adjacent area of uncovered CCR material and cause ponding of water on the bench. 					

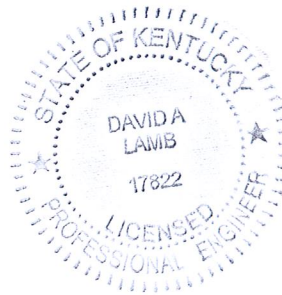
**Professional Engineer Certification [Per 40 CFR §257.84(b)]
D.B. Wilson CCR Landfill
Annual Inspections by a Qualified Professional Engineer**

I hereby certify that myself or an agent under my review has prepared this Annual Inspection Report (Report), and being familiar with the provisions of the final rule to regulate the disposal of coal combustion residuals (CCR) as solid waste under subtitle D of the Resource Conservation and Recovery Act (RCRA), attest that this Report has been prepared in accordance with good engineering practices and meets the intent of 40 CFR Part 257.84(b). To the best of my knowledge and belief, the information contained in this Report is true, complete, and accurate.



David A. Lamb P.E.

State of Kentucky License No. 17822



Date: 1-11-2017