

**2016**

**J. M. Stuart Station  
Landfill No. 9 Annual Inspection**

EPA Permit to Install: 06-1179, 06-1452, and  
06-4248

The Dayton Power & Light Company



**Prepared by:**  
**John Hendrix, PE**  
**The Dayton Power & Light Company**

**Date: December 21, 2016**

## **Purpose**

I have conducted the following annual inspection in compliance of the Federal CCR Rule, 40 CFR Part 257.

### **Statement of Qualifications**

I am a practicing Civil/Geotechnical Engineer registered with the State of Ohio employed by the Dayton Power & Light Company. I am experienced in the design, maintenance and operation of landfills.

## **Review of Landfill Documentation [§ 257.84(b)(1)(i)]**

### **Design, History, and Operation of the Facility**

Landfill No. 9 was originally permitted and constructed in 1984. An expansion was permitted in 1986 and another in 1995 under Ohio EPA Division of Surface water.

Permanent side slopes at the facility are 3:1 slope with a 20-foot wide bench for every 20 feet of vertical rise. The liner is two feet of compacted clay with a permeability of  $1 \times 10^{-7}$  or lower. Drainage media consists of a minimum of one foot of bottom ash. The bottom is sloped to the south where the leachate is intercepted by a perimeter drain which is outleted approximately every 100 feet.

Fly ash, the primary disposal material, is moisture conditioned and compacted to 90% maximum dry density. Inactive areas are covered with temporary cover. All areas, except one small disposal area and a bottom ash stockpile, were covered with temporary or permanent cover.

A perimeter ditch collects storm water, contact water and leachate and conveys them to the Stormwater-Leachate Retention Pond on the south side of the facility. Paved gutter was added to portions of the perimeter ditch in 2015 and early 2016.

### **Periodic Inspections**

A thorough review of weekly facility inspections was conducted. These periodic inspections indicated issues with slope erosion in limited areas during the early part of 2016. Reports indicate that repairs were made during the summer of 2016.

## **Visual Inspection of Landfill [§ 257.84(b)(1)(ii)]**

Landfill No. 9 is in good structural condition. Work on the perimeter ditch adjacent to the east and south cells noted in the 2015 annual inspection report had been completed. Modification to the storm water-leachate retention pond was also complete. A modification was completed to the perimeter ditch near the northwest corner of the landfill to meet the CCR Rule run-on/run-off requirements. Many erosion repairs were made in 2016. Vegetative cover in these areas was established but should be monitored through the next year.

Active filling was limited to plant CCR material generated from housekeeping activities and bottom ash. No ponded fly ash was placed in this landfill in 2016.

The runoff and runoff control systems are in good condition. The leachate collection system is in good condition.

### **Changes in Geometry [§ 257.84(b)(2)(i)]**

There were no changes to slopes in the form of slides, sloughs or bulges or other indication of deformation or other indicators of instability.

### **Volume of CCR [§ 257.84(b)(2)(ii)]**

Landfill 9 contains approximately 15.4 million cubic yards of CCR material.

**Structural Weakness [§ 257.84(b)(2)(iii)]**

No indication was found of an actual or potential structural weakness of the CCR unit or any existing condition that was disrupting or had the potential to disrupt the operation and safety of the CCR unit and appurtenant structures.

**Other Changes [§ 257.84(b)(2)(iv)]**

No changes were found to the CCR unit which could affect the stability or operation of the structure since the previous annual inspection.

# Appendix A

## CCR Rule Requirements for Landfill Inspections

### §257.84 Inspection requirements for CCR landfills.

- (a) *Inspections by a qualified person.*
  - (1) All CCR landfills and any lateral expansion of a CCR landfill must be examined by a qualified person as follows:
    - (i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit; and
    - (ii) The results of the inspection by a qualified person must be recorded in the facility's operating record as required by §257.105(g)(8).
  - (2) *Timeframes for inspections by a qualified person—*
    - (i) *Existing CCR landfills.* The owner or operator of the CCR unit must initiate the inspections required under paragraph (a) of this section no later than October 19, 2015.
    - (ii) *New CCR landfills and any lateral expansion of a CCR landfill.* The owner or operator of the CCR unit must initiate the inspections required under paragraph (a) of this section upon initial receipt of CCR by the CCR unit.
- (b) *Annual inspections by a qualified professional engineer.*
  - (1) Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:
    - (i) 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
    - (ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.
  - (2) *Inspection report.* The qualified professional engineer must prepare a report following each inspection that addresses the following:
    - (i) Any changes in geometry of the structure since the previous annual inspection;
    - (ii) The approximate volume of CCR contained in the unit at the time of the inspection;
    - (iii) 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
    - (iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.
  - (3) *Timeframes for conducting the initial inspection—*
    - (i) *Existing CCR landfills.* The owner or operator of the CCR unit must complete the initial inspection required by paragraphs (b)(1) and (2) of this section no later than January 19, 2016.
    - (ii) *New CCR landfills and any lateral expansion of a CCR landfill.* The owner or operator of the CCR unit must complete the initial annual inspection required by paragraphs (b)(1) and (2) of this section no later than 14 months following the date of initial receipt of CCR in the CCR unit.
  - (4) *Frequency of inspections.* The owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. For purposes of this section, the owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by §257.105(g)(9).

- (5) If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.
- (c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in §257.105(g), the notification requirements specified in §257.106(g), and the internet requirements specified in §257.107(g).

[80 FR 21468, Apr. 17, 2015, as amended at 80 FR 37992, July 2, 2015]

## **Appendix B**

### **Reference Documents Reviewed**

- ❖ Landfill permits
- ❖ 2016 weekly inspection reports
- ❖ 2015 J. M. Stuart Station Landfill No. 9 Annual Inspection Report, DP&L
- ❖ Landfill 9 Runon-Runoff Control Plan, Haley & Aldrich, 2016
- ❖ Landfill 9 Post Closure Plan, Haley & Aldrich, 2016
- ❖ Drawings
  - 300-46 1009A
  - 300-46 1106
  - 300-46 1107
  - 300-46 1108
  - 300-46 1151
  - 300-46 1159
  - 300-46 1160
  - 300-46 1161
  - 300-46 1162
  - 300-46 1163
  - 300-46 1164
  - 300-46 1165
  - 300-46 1166
  - 300-46 1167
  - 300-46 1168
  - 300-46 1170 SH 1 THROUGH 14

**Appendix C**  
**Inspection Check List**

## Landfill Field Inspection Report

**LANDFILL ANNUAL FIELD INSPECTION FORM**

Unit Name: Landfill No. 9

Facility Name: J.M. Stuart Station

Permits: 06-1179, 06-1452, 06-4248

CCR Unit

**ACTION**

Bottom Liner Material: Compacted clay < 1X10E-7 Thickness: 24 inches

Leachate Drainage Media: Bottom ash Thickness: 12 inches

Cover Material: Compacted clay < 1X10E-7 Thickness: 24 inches

Vegetative Cover Material: 6 inches

Other details:

Inspection Date(s): November 16 & 17, 2016

Weather/Surface Conditions During Inspection: clear, temperature near 50F, no recent precipitation

NONE  
 MONITOR  
 MAINTENANCE  
 ENGINEER

**PERMANENT COVER** Gradient: Horizontal: 3 Vertical: 1 (est. meas.)

**VEGETATION**

Trees:

DESCRIPTION AND LOCATION:

Brush:

DESCRIPTION AND LOCATION:

Ground Cover:

DESCRIPTION: Grass

CONDITION: Cover is good with few broadleaf species. Recently seeded areas generally have a thick stand of grass with little broad leaf species. Some areas need a more dense cover. Over seed in thin areas and continue frequent mowing.

**EROSION**

DESCRIPTION AND LOCATION:

No significant erosion was observed.

**INSTABILITIES: (SLIDES, CRACKS, BULGES, etc.)**

SLIDES/SLOUGHS:

DESCRIPTION AND LOCATION:

CRACKS:

DESCRIPTION AND LOCATION:

BULGES

DESCRIPTION AND LOCATION:

OTHER

DESCRIPTION AND LOCATION:

**SEEPAGE/WET AREA**

DESCRIPTION AND LOCATION:

**MONITORING INSTRUMENTATION:**

DESCRIPTION: Groundwater monitoring wells are located outside of the landfill perimeter.

CONDITION: Good condition.

**OTHER (rodent burrows, ruts, etc.)**

DESCRIPTION AND LOCATION:

	ACTION			
	NONE	MONITOR	MAINTENANCE	ENGINEER
DESCRIPTION AND LOCATION:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION AND LOCATION:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION AND LOCATION:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>HYDRAULIC STRUCTURES</b>				
<b>LEACHATE DRAINS</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: Leachate drains outlet approximately every 100 feet along the southern portion of the landfill.				
CONDITION: Leachate drains are open and in good condition.				
<b>BENCH DRAINS</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: 24" diameter pipe with inlets on each bench. Material varies.				
CONDITION: Good, voids noted in the 2015 inspection had been repaired.				
OBSTRUCTION NOTED: ( <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO) DESCRIBE IF YES:				
<b>PERIMETER DITCH</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: Clay lined ditch with grass cover with concrete gutters in heavier flow areas.				
CONDITION: Concrete gutters noted in the 2015 report had been completed. Modification had been made to the perimeter ditch on the north east area of the landfill based on recommendations from Haley & Aldrich.				
SEEPAGE NOTED: ( <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO) DESCRIBE IF YES:				
<b>WATER COLLECTION POND</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: 26 acre clay lined incised pond with stone shoreline protection. Finger dikes provided to lengthen water flow path.				
CONDITION: Good condition.				
EROSION NOTED: ( <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO) DESCRIBE IF YES:				
<b>INLET</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: Concrete apron transitioning to riprap.				
CONDITION: Good condition.				
OBSTRUCTION NOTED: ( <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO) DESCRIBE IF YES:				
<b>FOREBAY</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: Large forebay area.				
CONDITION: Little material accumulation.				
<b>OUTLET STRUCTURE:</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: Concrete structure with floating skimmer and valving to control discharge flow.				
CONDITION: Good condition.				
OBSTRUCTION NOTED: ( <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO) DESCRIBE IF YES:				
<b>CONDUIT</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: 14" fused SDR 17, HDPE pipe.				
CONDITION: New				
<b>DISCHARGE STRUCTURE:</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DESCRIPTION: Riprap lined outlet area				

CONDITION: Good condition.

NONE  
ACTION  
MONITOR  
MAINTENANCE  
ENGINEER

## **Appendix D**

### **CCR Unit Maintenance Recommendations**

1. Over-seed areas with less than dense grass cover.

### **Continued Monitoring**

1. Monitor areas repaired and/or seeded to ensure that good grass cover is established.