



## **2019 Annual Landfill Inspection**

### ***R.M. Heskett Station Coal Ash Landfill***

Prepared for  
Montana-Dakota Utilities Company

January 2020

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## Certifications

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR 257 Subp. D, attest that this Annual Landfill Inspection report has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR §257.84.



Thomas J. Radue  
Barr Engineering Co.  
ND Registration Number PE-3632

Dated this 8<sup>th</sup> day of January, 2020

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## 1.0 Introduction

Montana-Dakota Utilities Co. (MDU) operates the R.M. Heskett Station (Heskett) in Mandan, North Dakota. MDU operates two coal-fired boilers at Heskett, resulting in production of coal combustion residuals (CCR). CCR management is subject to Federal Standards for Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments per 40 CFR 257 Subpart D (CCR Rule). MDU currently hauls dry CCR material from the Heskett plant to the on-site landfill. Under 40 CFR §257.84, CCR landfills are subject to annual inspections by a qualified professional engineer (QPE). This report documents the fifth annual landfill inspection performed by Thomas J. Radue, P.E. on September 26, 2019 (with follow-up by Monty Johnson on October 4 and October 7, 2019) as required by the CCR Rule. Other annual inspection duties, including a review of the available information regarding the status and condition of the CCR unit and storage capacity evaluations, were performed prior and following the on-site inspection.

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## **2.0 Review of Existing Information**

A review of existing information was performed to confirm that the design, construction, operation and maintenance of the landfill is consistent with recognized and generally accepted good engineering standards.

### **2.1 Results of Weekly Inspections**

Weekly inspection reports from December 29, 2018 through December 20, 2019 were reviewed as part of this annual inspection. No deficiencies were found.

### **2.2 Results of Previous Annual Inspections**

The annual inspection performed in September 2018 was reviewed as part of this annual inspection. No deficiencies were noted in the 2018 annual inspection and therefore there were no follow-up inspection items to consider in 2019.

## 3.0 Structural Integrity and Operational Review

The on-site inspection performed on September 26, 2019 and thereafter identified no visual signs of distress or malfunction at the landfill. The inspections consisted of on-foot inspection of the perimeter embankments, the active landfill face, final covered areas, and the evaporation pond. Visual inspection items and results are summarized in the following table:

**Table 3-1 Summary of Visual Inspection**

Item	Visual Inspection Description	Visibly Observed (Yes/No)	Notes
1	Proper placement of waste	Yes	Waste contained within active landfill limits.
2	Adequate slope stability and erosion control	Yes – Except as Noted	No significant erosion identified. Recommend upgrading erosion control at north end of culvert located at northwest corner of leachate evaporation pond.
3	Run-on and Run-off controls properly functioning	Yes	Surface water controls appeared adequate.
4	Surface water percolation minimized	Yes	No surface water ponding or excessive leachate generation observed.
5	Liner systems properly operated and maintained	Yes	Liner system in good condition at time of inspection.
6	Leachate collection systems properly operated and maintained	Yes – Except as Noted	Leachate evaporation pond perimeter road impassible during times of high precipitation. Recommend establishing vegetated road surface or re-establishing gravel road surface.
7	Water quality monitoring systems maintained and operating	Yes	Existing monitoring wells were accessible and appeared to be in good condition.
8	Dust adequately controlled	Yes	No dust issues present at time of inspection.
9	Landfill geometry consistent with facility plan	Yes	No geometry changes observed.
10	Animal burrows absent or of no significance	Yes	No burrows of significance identified.
11	Adequate vegetation density and vegetation maintenance	Yes – Except as Noted	Vegetation appeared well established and well maintained. Minor erosion feature at southwest corner of Phase 1 Cover area. Observe area in Spring 2020 to confirm condition is acceptable and not worsening.
12	Debris controlled or absent	Yes	No debris present.

No appearances of an actual or potential structural weakness of the landfill, and no conditions that are disrupting or have the potential to disrupt the operation and safety of the landfill were observed during the inspection. Furthermore, no other changes to the landfill design, maintenance, or operations were observed that could affect the stability or operation of the landfill.

## 4.0 Volume of CCR Contained

A topographic survey of the landfill was performed in November 2019 as the basis for calculating volumes of CCR contained in the CCR unit and capacity remaining. The following table summarizes the volume of CCR contained in the landfill:

**Table 4-1 Volume of CCR Contained in Landfill**

<b>Slot/Cell</b>	<b>Approximate Permitted Design CCR Capacity (cy)</b>	<b>Current CCR Capacity Consumed (cy)</b>	<b>Approximate Remaining CCR Capacity (cy)</b>	<b>Status of Slot/Cell</b>
Slots 1-5	700k	700k	0	Closed
Slots 6-10	1,150k	1,086k	64k	Slots 6 & 7 Closed, Slot 8 Partially Closed, Slots 9 & 10 Active
Cells 1-8	1,420k	48k	1,372k	Entered Vertical Expansion Space to Construct Phase 1 Cover in 2019