



2017 Annual Landfill Inspection

Coyote Station - Blue Pit

Beulah, North Dakota

Prepared for
Otter Tail Power Company

November 2017

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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 Otter Tail Power Company's Coyote Station, Blue Pit landfill design, construction, operation, and maintenance are consistent with recognized and generally accepted good engineering standards, including consideration of applicable industry standards and the requirements of 40 CFR §257.84.



Scott F. Korom, PE 3835
Barr Engineering Co.
North Dakota Registration Number PE-3835

Dated this 8th day of November, 2017



Scott F. Korom

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1.0 Introduction

Otter Tail Power Company (OTP) operates the Coyote Station (Coyote), in Beulah, North Dakota. Coyote is a coal-fired electrical generator that results 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). CCR material from Coyote is placed in Blue Pit, the on-site landfill, for disposal.

Blue Pit is required to meet the CCR Rule for landfills, and is therefore subject to annual inspections by a qualified professional engineer. This report includes the information required by § 257.84 (b) Annual inspections by a qualified professional engineer and documents the annual inspection performed by Scott F. Korom, PE, on September 6, 2017, as required by the CCR Rule.

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. No deficiencies were found and the existing information reviewed is described in following subsections.

2.1 Previous Annual Landfill Inspections

The 2015 Annual Landfill Inspection Report (Barr Engineering Co. [Barr], January 2016), and the 2016 Annual Landfill Inspection Report (Barr, November 2017) are located at OTP's CCR website (<http://www.ccr-cs.net/blue-pit-sp-182/>). Both reports stated that existing site information was reviewed, a site inspection was completed, and no deficiencies were found.

2.2 Weekly Inspections

Weekly inspection reports from October 20, 2016, through October 31, 2017 were reviewed for this report. All but one of the weekly inspections were done by Mr. Justin Sailer, Plant Engineer. The inspection reports were dated at intervals not exceeding seven days and no significant problems in the design, construction, operation, and maintenance of Blue Pit were noted.

The October 20, 2016, report recorded that Barr Engineering was onsite "Tuesday" (October 18, 2016) for the annual inspection.

The February 8, 2017, report recorded that 1,000 lbs. of insulation bags were hauled out to Blue Pit on February 2, 2017.

The March 8, 2017, report recorded that 1,000 lbs. of insulation and baghouse filter bags were hauled out to Blue Pit on March 2, 2017.

The August 15, 2017, report recorded that the Blue Pit cap was mowed by Mercer County "last Friday" (August 11, 2017).

The September 12, 2017, report recorded that Barr Engineering was onsite "last Wednesday" (September 6, 2017) for the annual inspection and North Dakota Department of Health was onsite "last Thursday" (September 7, 2017) for the quarterly inspection.

The September 16, 2017, report recorded that seeding was completed the previous week on the partial cap over Sequence #6.

Otherwise, nothing noteworthy was documented on the weekly inspection reports provided by OTP.

3.0 Structural Integrity and Operational Review

An on-site inspection was done on September 6, 2017, to visually identify signs of distress or malfunction of the CCR Unit. No deficiencies were found and the results of the inspection are included in the following subsections.

3.1 Visual Inspection of Blue Pit Landfill

Inspection consisted of on-foot inspection of perimeter berms and embankments, the active landfill face, and final covered areas. Visual inspection items and results are summarized in the following table:

Table 3-1 Summary of Visual Inspection

Item	Visual Inspection Description	Consistent With Good Engineering Standards (Yes/No)	Notes
1	Proper placement of waste	Yes	None.
2	Adequate slope stability and erosion control	Yes	None.
3	Run-on and run-off controls properly functioning	Yes	None.
4	Surface water percolation minimized	Yes	None.
5	Liner systems properly operated and maintained	Yes	None.
6	Contact water systems properly operated and maintained	Yes	None.
7	Water quality monitoring systems maintained and operating	Yes	None.
8	Dust adequately controlled	Yes	None.
9	Geometry of landfill is unchanged from previous inspection.	Yes	Except for the new cover noted in Section 3.2 below, there was no evidence of any change in the geometry of the landfill.
10	Animal burrows absent or of no significance	Yes	Animal burrows were evident in a small area of the cover; filling them was recommended.
11	Adequate vegetation density and vegetation maintenance	Yes	New cover had not been seeded at the time of inspection; however, the September 16, 2017, weekly inspection report noted that seeding occurred the prior week. For the rest of the cover, vegetation appeared well established and well maintained at time of inspection.
12	Debris controlled or absent	Yes	None.

3.2 Other Changes

Final cover of about 10 acres was added since the previous inspection. Details on the closure performance standards are provided the 2017 Amendment to Closure Plan (<http://www.ccr-cs.net/blue-pit-sp-182/>). No other changes to the CCR Unit design, maintenance, or operations that could affect the stability or operation of the CCR Unit were observed during of the annual inspection.

4.0 Volume of CCR Contained

The 2015 Annual Landfill Inspection Report stated that a topographic survey of the landfill was completed on December 2, 2015. The most recent survey was completed on July 28, 2016. The volume of CCR added between these two surveys was calculated to be 90,460 cy. The average rate of landfill capacity consumed between the two surveys is 378.5 cy/day. Using this rate, the estimated capacity used since the previous inspection (October 18, 2016) through the most recent inspection (September 6, 2017) is 120,000 cy. Therefore the estimated total capacity used is 2,830,000 cy (2016 Annual Landfill Inspection Report capacity consumed value [Table 4-1] of 2,710,000 cy + 120,000 cy). The approximate permitted design CCR capacity has not changed since the 2016 Annual Landfill Inspection Report.

Table 4-1 Volume of CCR Contained in Landfill

Approximate Permitted Design CCR Capacity (cy) ¹	Current CCR Capacity Consumed (cy)	Status of Active Cell
As 5,853,000	2,830,000	Sequence 5: Final closure Sequence 6: Partial closure

¹ Based on the 2013 Blue Pit Facility Permit Renewal, SP-182, for landfill sequences 4 through 10.