

2022 Annual Inspection Report

for Compliance with the Coal
Combustion Residuals Rule
(40 CFR Part 257)

Pawnee Station – East Landfill

*14940 Morgan County Road 24
Brush, Colorado 80723*

January 15, 2023



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Appendix A:

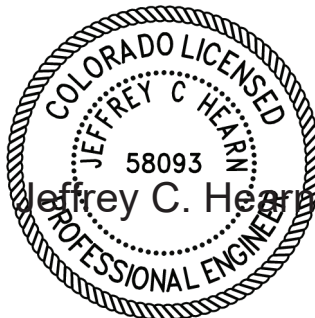
- Landfill Site Map Figure 1

Certification

Pawnee Station - CCR Unit 2022 Annual Inspection for Compliance with the Federal Coal Combustion Residuals Rule

I hereby certify that the East Landfill, a Coal Combustion Residuals (CCR) unit at Pawnee Station meets the inspection and operation standards specified in 40 CFR Part 257.84(b) of the Federal CCR Rule. The Pawnee Station is owned by the Public Service Company of Colorado (PSCo), an Xcel Energy Company.

I am duly licensed Professional Engineer under the laws of the State of Colorado.



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License renewal date October 31, 2024

1 Introduction

On April 17, 2015 the U.S. Environmental Protection Agency (EPA) published regulations under Subtitle D of the Resources Conservation and Control Act (RCRA) meant to control the safe disposal of coal combustion residuals (CCR) generated by coal fired electric utilities. The rule defines a set of requirements for the disposal and handling of CCR within CCR units (defined as either landfills or surface impoundments). As specified in 40 CFR 257.84(b), *“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.”* Pawnee Station has two CCR landfills subject to the inspection requirements: the North CCR Landfill and the East CCR Landfill. The scope of this report covers only the East CCR Landfill; the North CCR Landfill inspection is documented in a separate report.

This is the 2022 annual inspection report for the Pawnee East CCR Landfill. This report must be completed and placed into the facility operating record no later than January 15, 2023.

The requirements of the annual inspection include:

- A review of available information regarding the status and condition of the CCR unit - §257.84 (B)(1)(i),
- A visual inspection of the CCR unit to identify signs of distress or malfunction - §257.84 (B)(1)(ii),
- An inspection report that includes the following:
 - Changes in geometry since the last inspection - §257.84 (B)(2)(i)
 - Approximate volume of CCR in unit at time of inspection - §257.84 (B)(2)(ii)
 - Appearance of actual or potential structural weakness of the CCR unit - §257.84 (B)(2)(iii)
 - Any other changes which may have affected the stability or operation of the CCR unit since the last inspection - §257.84 (B)(2)(iv)

2 Site Inspection

In accordance with §257.84(b)(ii) a site inspection of the Pawnee East CCR Landfill was conducted on November 22, 2022. The inspection was conducted by Jeffrey C. (Chad) Hearn, a Colorado Professional Engineer of HDR Engineering Inc., and Richard Ferguson, an Xcel Energy Environmental Analyst at the Pawnee Station. Review of the associated paperwork and inspection reports was conducted by Chad Hearn and Richard Ferguson.

The East CCR Landfill was constructed in 2018 and began receiving CCR in July of 2019. The landfill’s liner and leachate collection systems were designed to be compliant with the CCR Rule. The landfill was constructed in the footprint of a former incised surface impoundment that was previously closed by removal of all waste and liner material. The base grade of the East

Landfill is at the bottom of the former impoundment which is approximately 20 feet below surrounding grades. The landfill is permitted to take receipt of CCR and lime sludge from the raw water treatment process. Lime sludge may be placed in the landfill directly or may be blended with fly ash prior to placement.

The weather during the site visit was mostly sunny with temperatures ranging from 45 to 55 degrees Fahrenheit. The site was free of snow cover.

3 Review of Available Information

Numerous documents pertaining to the site operation and structural integrity were reviewed including:

1. The current approved Engineering Design and Operation Plan (EDOP) document, dated December 2017 and developed by HDR. The EDOP was modified during 2022 and is currently under review by the Colorado Department of Public Health and Environment.
2. Available Weekly CCR Landfill Inspection Forms (per Section 257.84(a)).
3. Topographic survey performed on August 1, 2022 by Ecomaterial Technologies. This topographic survey covered the East Landfill only within the perimeter road.

Review of the above documents did not contain any indications of operation, safety, or structural concerns regarding the East CCR landfill.

4 Visual Inspection

Chad Hearn, escorted by Richard Ferguson, completed a site inspection, observing the perimeter of the landfill, the internal landfill cut slopes and the leachate collection equipment. As the CCR Rule pertains only to the CCR landfill itself, this report does not address existing soil stockpiles or earthwork outside of the landfill area.

The site inspection included an evaluation of the following CCR landfill features:

1. Interior landfill and exterior landfill perimeter road side slopes;
2. Access roads;
3. North and Southeast Stormwater Ponds;
4. Active CCR fill area (CCR disposal, spreading, compaction), and;
5. Leachate Collection System.

The following are the findings of the site inspection:

- Side slopes were in good condition. It was evident there was recent cover (within the last few months) placed on the northwest, north, and northeast side slopes after reaching current grades on the top deck of the landfill. The recent covered side slopes should continue to be monitored and if any rilling occurs it should be repaired as needed.
- Placement of CCR and fly ash-lime sludge mixture is done over 18-inch lifts on the working surface area. After placement and initial compaction, the lifts are proof-rolled using a fully loaded articulating dump truck. Soft areas that are identified during the proof-roll are supplemented with additional fly ash to achieve a more favorable moisture content, and then the proof-roll is repeated. The fly ash-lime mixture was observed as stable during the inspection. The moisture content of the lime sludge appears to be ideal for mixing with fly ash to increase the strength of the fill.
- Fill operations within most of the working surface area rose approximately 10-feet above waste grades from August 2021. No indications of stability concerns were detected.
- The landfill access road showed no signs of operational or structural concern.
- Perimeter roads showed no signs of operational or structural concern.
- Components of the leachate collection system that could be visually inspected showed no signs of degradation. The system was reportedly functioning properly. Previously, leachate collection was pumped to the adjacent Evaporation Pond D. This pond was closed in 2022 and as part of that closure the leachate collection system has been modified to direct leachate to the lined Pond B on the north side of the property. This change is documented in the revised EDOP referenced above.
- Wind-blown CCR was not observed during dumping operations.
- In the previous annual inspection report, it was noted that the Southeast Stormwater Pond (located outside the footprint of the East CCR Landfill) that collects non-contact stormwater run-off from the landfill has had recurring issues of soil erosion along its interior western side-slope that required maintenance. To prevent recurring erosion, Xcel Energy previously widened the rip rap channel to collect run-off from the area of the road that was causing erosion and made repairs to the rip rap dissipation pad at the bottom of the inlet channel. No instability or erosion conditions of concern were observed during this year's inspection. The effectiveness of erosion control measures implemented in this area should continue to be monitored and if repairs continue to be required, a more robust erosion control measure should be considered.

5 Changes in Geometry

The Federal CCR Rule requires that site geometry changes be identified since the last inspection. Between September 2021 and August 2022, the top of waste grades increased by approximately 10-feet across the working area of the landfill (i.e., the top deck). The access road up to the working area of the landfill extended to the south-southeast as the landfill surface elevation increased. Fill operations have been consistent with the approved EDOP. The slope of the working area was similar to the prior year with a gradual decrease in elevation from north to south at about a 1.2 percent grade.

6 Approximate CCR Volume

PSCo began placing CCR in the East CCR Landfill in July of 2019. The estimated total combined volume of CCR in the East CCR Landfill as of November 2021 was 437,200 CY. From December 2021 through November 2022, an estimated 158,000 CY of material has been placed in the landfill, which includes a total of 136,700 CY of CCR, for a total in place waste volume of approximately 595,200 CY.

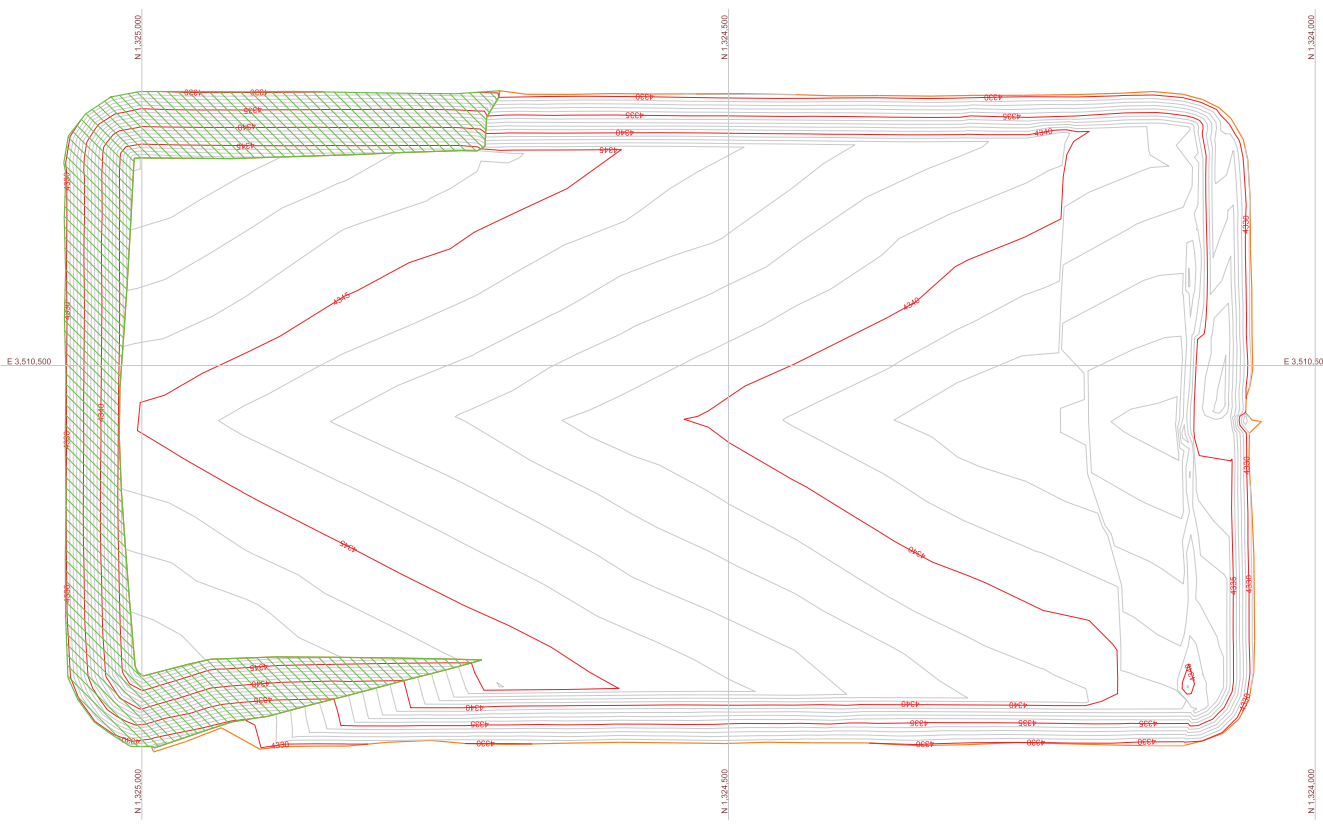
7 Appearance of Structural Weakness

Based on the site inspection, no apparent or potential structural weaknesses were observed. Monitoring for erosion and potential structural weakness should continue, repairs should be completed as needed.

8 Changes Affecting Stability or Operation

There were no observed or reported operation changes that are anticipated to impact the site's near-term or long-term stability. No areas of erosion were observed that had the potential to lead to long term stability concerns. There were no new stability concerns observed or reported at the time of inspection.

Appendix A – Facility Survey



445 — EXISTING TOP OF ASH 07/30/2021 - 1' INTERVAL
INTERMEDIATE COVER - 1.27 Acres
FFCP - 1.27 Acres
NOTES:
1. AS-BUILT SURVEY PERFORMED ON 08/01/2022

Sheet 1 of 2
Scale 1" = 50'

2022 Survey East Landfill
Pawnee Solid Waste Management Facility
Morgan County, Colorado

Xcel Energy
Brush, Colorado

Eco Material Technologies
1715 N. Jackson St.
Brush, CO 80723

Surveyed remaining volume for East Landfill
as of 08/01/2022 - 356,861 cu. yds.