



2026 Annual Landfill Inspection

Osage Power Plant Legacy Surface Impoundment



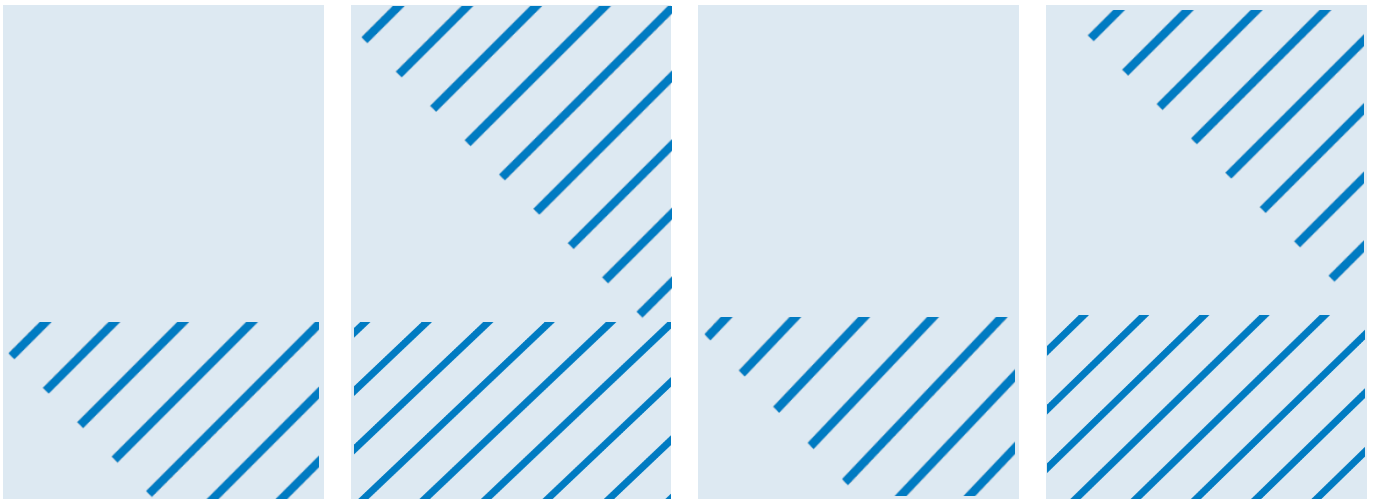
Prepared for:
Black Hills Power

Prepared by:
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August 2026

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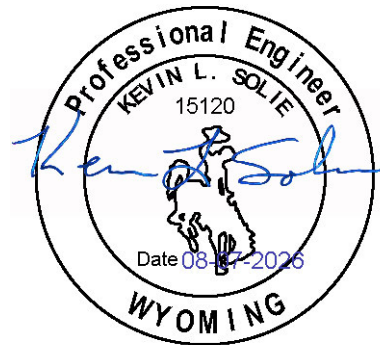
Certification

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR Part 257 Subpart 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 § 257.83. I further certify that I am a duly Licensed Professional Engineer under the laws of the State of Wyoming and that I have professional experience with surface impoundment design, operation, monitoring and closure.

The services performed by Barr for this Project have been conducted in a manner consistent with the level of skill and care ordinarily exercised by other members of the profession currently practicing in this area. No other warranty, expressed or implied, is made.



Kevin L. Solie
Barr Engineering Co.
Wyoming PE-15120



August 7, 2026
Date



2026 Annual Legacy Impoundment Inspection

August 2026



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1 Introduction

In accordance with 40 CFR § 257.83(b)(2), the purpose of this document is to fulfill the requirements for an Annual Inspection Report prepared by a Qualified Professional Engineer (QPE) to ensure the design, construction, operation, and maintenance of the closed Black Hills Power (BHP) Osage Power Plant (Osage) Legacy Surface Impoundment is consistent with recognized and generally accepted good engineering standards.

Based on the date Osage ceased providing power to electric transmission systems, it is considered an “inactive facility” under the 2024 Coal Combustion Residual (CCR) Legacy Rule and appears to fall under Legacy Rule regulation. Owners of Legacy surface impoundments were required to make an applicability determination and prepare an applicability report, indicating whether or not the unit is subject to the Legacy Rule. After evaluating the data acquired during the course of the Osage field investigation, it was determined that some portions (limited in both area and volume) of the surface impoundment footprint appear to contain both CCRs and liquids and, consequently, the CCR unit appears to meet the definition of a legacy surface impoundment (based on 2024 CCR Legacy Rule). EPA is considering updates to the CCR Rule that may affect the regulatory status of the unit.

Barr Engineering Co. (Barr) prepared a final Legacy Rule Applicability Report (Barr, 2026) for the Legacy surface impoundment at Osage on May 8, 2026, and BHP ceased operating under the Legacy Rule applicability extension provisions. The Barr applicability determination may be reevaluated based on proposed or future regulatory decisions.

This report documents the annual inspection performed by Kevin L. Solie, WY P.E. No. 15120, on July 28, 2026. Mr. Solie was accompanied during the inspection by Mr. Shane Gasvoda, Principal Environmental Professional, Wyodak Resources Development Corporation. Other annual inspection activities, including review of available information regarding the status and condition of the CCR unit and storage capacity evaluations, were completed before and after the on-site inspection.

2 Review of Existing Information

2.1 Facility File Review

Black Hills Power (BHP) owns and previously operated Osage Power Plant (Osage), a coal-fired electrical generating station located near Osage, Wyoming. The now-decommissioned facility included three 11.5-megawatt steam turbine generation units that were put into service between 1948 and 1952. Black Hills Energy suspended operations at Osage in October 2010 and retired the facility March 21, 2014; the powerhouse was subsequently demolished. Based on a review of publicly available data from the US Energy Information Administration (EIA), Osage has not provided power to the “grid” since well before 2015. No other power generating operations occur at the site and it appears no power has been provided to transmission or distribution systems after October 19, 2015. Accordingly, Osage is classified as an “inactive facility” under the CCR Rule.

During facility operation, CCRs from the plant were placed into surface impoundments located to the south and east of the generating station. Osage Fly Ash #1 (also referred to as the Old Ash Landfill) is located east of the former generating station and appears to have operated until approximately 1993. In 1993, a permit was issued by Wyoming Department of Environmental Quality (WYDEQ) for Osage Fly Ash #2 (also referred to as the New Ash Landfill), located south and east of the former generating station. While both units appeared to have been operated as surface impoundments (CCRs were conveyed to the disposal units via a water-slurry pipeline from the power plant), both units were permitted as industrial waste landfills by Wyoming Department of Environmental Quality (WYDEQ).

The footprint of Osage Fly Ash #1 (OFA1) is approximately 6.5 acres, while Osage Fly Ash #2 (OFA2) occupies approximately 45 acres. The units have been closed and reclaimed in accordance with WYDEQ requirements, including the installation of a cover system comprised of a two-foot-thick layer of compacted soil and an additional six inches of topsoil. The cover system was graded to promote runoff and has been revegetated with native grasses. Based on historic permit drawings, the elevation of the base of OFA2 ranges from approximately 4305 to 4320 feet. The elevation of the top of the closure system is approximately 4330 to 4340 feet. Accordingly, CCR thicknesses are typically on the order of 20 to 35 feet for OFA2. CCR thickness for OFA1 is not precisely known but is assumed to be similar to OFA2. For purposes of this report, OFA1 and OFA 2 are considered to be a single unit. The site is currently used as wildlife habitat.

A review of existing records for the facility confirms the design and construction of the engineered cover system for the CCR unit was generally consistent with recognized and accepted good engineering standards.

2.2 Results of Weekly Inspections

During 2026, qualified individuals (staff from Black Hills Power, Gillette, WY) conducted weekly inspections of the CCR unit for any appearance of actual or potential structural weakness and other conditions which were disrupting or had the potential to disrupt the operation or safety of the CCR unit. Appearances of structural weakness may include but are not limited to: (1) signs of piping and other internal erosion; (2) transverse, longitudinal, and desiccation cracking; (3) slides, bulges, boils, sloughs, scarps, sinkholes, or depressions; (4) animal burrows; (5) excessive or lacking vegetative cover; and (6) slope erosion. Weekly inspection reports from May 29, 2026, through July 24, 2026, were reviewed as part of this annual inspection effort, and no deficiencies were found. A review of the weekly inspection

reports for the Osage Legacy Surface Impoundment indicated no signs of actual or potential structural weakness or other adverse conditions as described above.

2.3 Results of Previous Annual Inspections

As the facility recently came under regulation via the CCR Legacy Rule, no previous annual QPE inspections have been performed. Future annual reports will include the review of previous reports.

3 Onsite Inspection and Operational Review

An on-site inspection was completed on July 28, 2026, by Kevin L. Solie, WY PE No. 15120, to visually identify signs of distress or malfunction of the closed surface impoundment. Mr. Solie was accompanied by Mr. Shane Gasvoda, Principal Environmental Professional, Wyodak Resources Development Corp. The inspection consisted of an examination of the perimeter embankments, access control measures, signage, final cover condition, and piezometers. All areas were readily accessible, allowing the unhindered observation of the ground surface. The site is closed and does not operate as a surface impoundment.

Based on the visual inspection of the CCR unit on July 28, 2026, and a review of available facility records, the following points are addressed:

- i. This is the first annual QPE inspection report; as such, there are no previous inspection reports for review. Closure of the site occurred in the mid-2010s, and based on a review of air photos, there have been no observable changes in the geometry of the impounding structure.
- ii. Instrumentation: Piezometers were installed inside the surface impoundment perimeter as part of the Legacy Field Investigation. Piezometer water level measurements were last taken on July 24, 2026.
- iii. The maximum recorded reading since the previous annual inspection: The impoundment was closed with an engineered cover system and does not contain standing water. Based on borings at the site, CCRs in the closed surface impoundment range from approximately 2.5 to 37 feet in thickness and generally show no liquids, except in isolated areas. Limited field investigation (piezometer) measurements appear to indicate a maximum liquid depth of approximately 17.5 feet above the base of the ash.
- iv. The approximate minimum depth of impounded water and CCR since the previous annual inspection: The majority of the surface impoundment has been dewatered and shows no evidence of impounded water (0 feet in most locations).
- v. The approximate maximum depth of impounded water and CCR since the previous annual inspection: The impoundment was closed with an engineered cover system and does not contain standing water. While there is no surface expression of impounded water, it appears up to 17.5 feet of CCRs at the base of the impoundment may seasonally contain water.
- vi. The depth and elevation of the impounded water and CCR: Available data are limited; however, based on piezometer readings taken April 29, 2026, it appears 13.9 feet of CCRs may contain water, corresponding to a water elevation of 4325.9 feet amsl.
- vii. The remaining storage capacity: Zero. The surface impoundment is closed and does not accept waste.
- viii. The approximate volume of the impounded water and CCR: The closed surface impoundment contains approximately 1,600,000 cubic yards of CCRs, but only a small portion of the impoundment appears to contain both CCRs and liquids.

- ix. There are no appearances of an actual or potential structural weakness of the impoundment, nor are there any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the surface impoundment and appurtenant structures.
- x. There are no other changes that may affect the stability or operation of the impounding structure since the previous annual inspection.

3.1 Visual Inspection of CCR Unit

The closed surface impoundment was visually inspected for structural weakness, including an on-foot inspection of impoundment embankments. Visual inspection items and results are summarized in the following table:

Table 3-1 Summary of Visual Inspection

Item	Structural Weakness Description	Visibly Present/Deficient (Yes/No)	Notes
1	Excessive, turbid, or sediment-laden seepage	N/A	The unit is closed and does not contain standing water.
2	Signs of piping and other internal erosion	No	No piping observed.
3	Transverse, longitudinal, and desiccation cracking	Yes	An isolated interior area showed some cracking, possibly due to differential settlement.
4	Slides, bulges, boils, sloughs, scarps, sinkholes, or depressions	No	No structural weaknesses identified.
5	Changes in geometry of impounding structure	No	No geometry changes observed.
6	Damage to liner systems	N/A	Site is closed with no liner visible.
7	Abnormally high or low pool levels	N/A	The unit is closed and does not contain standing water.
8	Animal burrows	No	No burrows of significance observed.
9	Excessive or lacking vegetative cover	No	Vegetation appeared uniformly well-established and well-maintained on the cover system and perimeter embankments.
10	Slope erosion	No	No significant erosion observed.
11	Debris	N/A	The unit is closed and does not contain standing water. No debris is present.

3.2 Visual Inspection of Hydraulic Structures

No hydraulic structures were observed at the site.

3.3 Other Changes

The unit is closed and does not contain standing water. No other changes to the surface impoundment design, maintenance, or operations were observed that could affect the stability or operation of the impounding structure.

4 Summary and Conclusions

The annual inspection revealed no appearance of actual or potential structural weakness of the CCR unit. No signs of distress or malfunction of the CCR unit were observed during the inspection and no changes have occurred that affect the stability or operation of the facility. The design, construction, operation and maintenance of the facility are consistent with recognized and generally accepted good engineering standards and industry practices.

An isolated area of the cover system showed minor cracking, possibly due to differential settlement. The cracking was observed in the interior of the surface impoundment and poses no threat to the structural stability of the closed unit. BHP should consider repairing the crack when convenient. No other corrective measures are recommended for the Osage Legacy Surface Impoundment.

5 References

Barr, 2026. Coal Combustion Residual Legacy Rule Applicability Report, Osage Power Plant, Osage, Wyoming, May 2026.

Attachment A

Photolog



Subject: Sign located at entrance to facility

Location: Osage Power Plant, Osage, WY

Date: July 28, 2026

Comments: Access is controlled by a locking gate, fences, and natural barriers.



Subject: Vegetation on cover system

Location: Osage Power Plant, Osage, WY

Date: July 28, 2026

Comments: Vegetation across the site appears uniform and in good condition for the season.



Subject: View along western edge of impoundment

Location: Osage Power Plant, Osage, WY

Date: July 28, 2026

Comments: Western berm has highest elevation above native ground surface and appears to be in good condition.



Subject: Isolated area with crack in cover system

Location: Osage Power Plant, Osage, WY

Date: July 28, 2026

Comments: Crack possibly caused by differential settlement. Appears to be in area where CCR (on left side of photo) abuts an interior berm (higher area to right).