

CCR Rule – Closure and Post-Closure Care §257.102(b) – Written Closure Plan

Naughton Power Plant North Ash Pond

Prepared by:



Prepared for:



Naughton Power Plant

Amendment 1
March 2023

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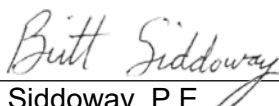
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PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify, as a Professional Engineer in the State of Wyoming, that the information in this document was assembled under my direct supervisory control. This report is not intended or represented to be suitable for reuse by PacifiCorp or others without specific verification or adaptation by the Engineer.

I hereby certify as a Professional Engineer in the State of Wyoming that this report has been prepared in accordance with and meets the requirements of 40 Code of Federal Regulations §257.102(b). The Naughton Power Plant North Ash Pond meets the closure requirements for the written closure plan.



Britt Siddoway, P.E.

3/29/2023

Date



RECORD OF REVISIONS

Amendment Number	Date	Revision Made (description)	By Whom
0	May 2021	Initial Issue	WET
1	March 2023	Amended to meet the closure requirements of §257.102(c)	WET

1 INTRODUCTION

This Closure Plan has been amended to describe the activities required for closure of the North Ash Pond (NAP), a Coal Combustion Residuals (CCR) surface impoundment, at the Naughton Power Plant. The Naughton Power Plant is located approximately four (4) miles southwest of Kemmerer, Wyoming (**Appendix B - Figure 1**).

The Closure Plan is written to comply with the Code of Federal Regulations (CFR) §257 (CCR Rule), section 102(b). The Closure Plan has been amended to reflect the intent of the Naughton Power Plant to complete closure-by-removal in accordance with the performance standards set forth in 40 CFR 257.102(c).

1.1 PURPOSE AND SCOPE

The purpose of this document is to provide a written closure plan for NAP in accordance with the regulatory requirements of the CCR Rule (CFR § 257.102(b)). The plan provides a description of the closure activities which will include the removal of CCR in accordance with §257.102(c).

1.2 REPORT ORGANIZATION

The required plan elements as defined in CFR § 257.102(b) and their location within the Closure Plan are described below:

- § 257.102(b)(i) – Narrative description of CCR unit closure. (Section 3 of the Plan)
- § 257.102(b)(ii) – Closure by removal of CCR. (Section 3 of this Plan)
- § 257.102(b)(iii) – Closure in place. (Not Applicable)
- § 257.102(b)(iv) – Estimate of maximum inventory of onsite CCR. (Section 3, Table 2)
- § 257.102(b)(v) – Estimate CCR unit area requiring a final cover. (Not Applicable)
- § 257.102(b)(vi) – Schedule for completing all activities. (Section 5)

2 PROJECT BACKGROUND

The NAP was constructed in 1974, and expanded in 1976, 1981, 1987 and 1994. It is an unlined 123-acre CCR Surface Impoundment that received sluiced bottom ash and fly ash, produced from the coal-fired boiler for Unit 3, which ceased burning coal on January 30, 2019 (**Appendix B - Figure 1**). The NAP is estimated to have a maximum CCR volume of approximately 2,600,000 cubic yards.

The NAP continued to receive non-CCR liquids from roof drains, plant drains, treated water from sanitary waste treatment system and non-CCR contact wastewater. The non-CCR waste stream ceased discharge to NAP on April 9, 2021.

The NAP contains one dike (**Appendix B - Figure 2**), the Intermediate Dike, which separates the NAP from a retired clearwater pond (Lake Arambel) that ceased receiving decant water from the

NAP January 2019. The NAP has a surface area of approximately 123 acres and a maximum water storage capacity of 2,580 acre-feet (842 million gallons).

3 AMENDED CLOSURE PLAN

The following sections provide an overview of the amended closure activities for the NAP. The activities have been developed in accordance with §257.102(c) and are outlined below:

- Develop closure performance standards (**Section 3.1**).
- Assess closure details (**Section 3.2**).
- Dewater NAP through natural and enhanced evaporation (**Section 3.3**).
- Remove CCR for beneficial use (**Section 3.4**).
- Sample soils for constituents specified in 40 CFR §257.95(h) for Ground Water Protection Standard (GWPS) (**Section 3.5**).

3.1 CLOSURE PERFORMANCE STANDARDS

Table 1 presents the criteria required for closure by removal of CCR from a CCR Unit. The NAP amended closure design must meet these minimum criteria.

Table 1. Criteria for Closure by Removal of CCR

Regulation Reference	Description of Requirement	Amended Closure Plan
40 CFR §257.102(c)	An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to § 257.95(h) for constituents listed in appendix IV to this part.	The Naughton Power Plant will remove CCR from the NAP for beneficial use. Constituent concentrations throughout the unit and any areas affected by releases will be removed and groundwater will be monitored to ensure concentrations do not exceed established standards.
40 CFR §257.95(h)	The owner or operator of the CCR unit must establish a groundwater protection standard for each constituent in appendix IV to this part detected in the groundwater	The Naughton Power Plant has established groundwater protection standards for the NAP. The monitoring network is certified and has been placed into the facility's operating record.

40 CFR Appendix IV	<p style="text-align: center;">Constituents for Assessment Monitoring</p> <ol style="list-style-type: none"> 1. Antimony 2. Arsenic 3. Barium 4. Beryllium 5. Cadmium 6. Chromium 7. Cobalt 8. Fluoride 9. Lead 10. Lithium 11. Mercury 12. Molybdenum 13. Selenium 14. Thallium 15. Radium 226 and 228 combined 	<p>The Naughton Power Plant annually monitors the site's groundwater monitoring network. Groundwater monitoring and corrective action reports are prepared annually and posted to the facility's record.</p>
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3.2 CLOSURE DETAILS

The NAP contains approximately 1,910 acre-feet of water and approximately 2,600,000 cubic yards of CCR to be removed as of March 2023. Table 2 below summarizes the details:

Table 2. NAP Closure Plan Details

Water Elevation (feet AMSL)	Remaining Water		Estimated Volume of CCR for Removal (cubic yards)
	Acre-Ft	Million Gallons	
6,897.38	1,910	622	2,600,000

3.3 DEWATERING

The NAP ceased receipt of non-CCR inflows including Naughton Power Plant process flows and up-stream stormwater runoff as of April 9, 2021.

Elevation data observations from April 2021 to March 2022 indicate the average drawdown rate of the NAP was 292,000 gallons per day (0.292 MGD). Based on this drawdown rate, the NAP is expected to be substantially dewatered by January of 2028. Current dewatering activities include natural evaporation from the remaining water surface within the NAP and enhanced evaporation from a sprinkler system located within the NAP used for dust control of the ash fan.

Final dewatering of the ash and removal of residual groundwater is expected to begin in 2028 and be complete by 2029. Any ash deposits observed once substantial dewatering is complete will be allowed to dry sufficiently until the areas can be entered by low pressure earth moving equipment for removal. The drying process may need to be enhanced using mechanical methods such as spreading out the ash materials to speed up drying, or construction of trenches in the pond bottom to facilitate pumping or drainage of residual water. Ash will need to dry sufficiently to support

access to and removal of CCR. The CCR will be considered dewatered when it meets the paint filter test for free liquid prior to removal.

3.4 REMOVAL FOR BENEFECIAL USE

Removal of CCR from the NAP will be for beneficial use. The bottom and fly ash deposits within the NAP will be removed during normal construction seasons, annually. Rates of removal will vary seasonally and will depend on weather and economic conditions.

3.5 SOIL SAMPLING

After removal of CCR, the native soils will be sampled to delineate the extent and concentrations of any of the constituents identified in **Table 1**. Soils will be tested on a systematic grid after the CCR removal is complete. A typical grid density is shown in **Appendix B - Figure 3**. A sampling and analysis plan will be developed as a stand-alone plan and will include the subgrade soil sampling plan and sampling grid density.

In order to determine if the soil has been impacted by contaminants of potential concern (COPC), it is necessary to determine a soil screening limit (SSL) for the COPC's. The Naughton Power plant will determine the appropriate SSL using either naturally occurring background concentrations, a combination of background concentrations and published soil leaching data, or site-specific leaching analysis results. If these data show that the remaining concentration in soil will not cause an impact to groundwater, the information will be documented in a final report and additional excavation will not be necessary. The calculated SSL's will ultimately determine if the soil is impacted and whether additional excavation of the native soils is necessary.

3.6 STATE PERMITTING REQUIREMENTS

The Naughton Power Plant will obtain a closure permit from the Wyoming Department of Environmental Quality – Solid Waste Division in accordance with Chapter 18: Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments

4 GROUNDWATER MONITORING

PacifiCorp is continuing to perform long-term groundwater monitoring at the site in accordance with WDEQ and federal CCR requirements. The Annual Groundwater Monitoring and Corrective Action Report was last updated for NAP in 2022. An alternate source demonstration has been prepared for two Appendix III constituents, pH and sulfate, in monitoring wells NAP-2 and NAP-3. The alternate source is FGD Pond 2, another CCR unit located north and hydraulically upgradient of the NAP. FGD Pond 2 is undergoing groundwater corrective action to address these impacts.

5 CLOSURE SCHEDULE

Dewatering measures are on-going and will continue through the first quarter (Q1) of 2028. Final dewatering is expected to be complete by Q1 of 2029. The excavation of visibly impacted soils, if encountered, is projected to take six months. The native soils will be sampled and assessed for COPC's to ensure compliance with §257.102(c). Groundwater monitoring concentrations are

expected to achieve groundwater protection standards for all Appendix IV constituents after removal and decontamination activities are complete. The closure schedule Gantt chart (**Appendix A**) summarizes the closure tasks and expected completion dates.

6 EXTENSIONS OF CLOSURE TIMEFRAMES

The closure schedule presented in this written closure plan may be extended or otherwise modified in accordance with §257.102(f)(2) as closure of the NAP progresses. Any future demonstrations will be completed and placed into the facility's operating record in accordance with the maximum time extension requirements of §257.102(f)(2)(ii)(B).


Appendix A – Closure Schedule


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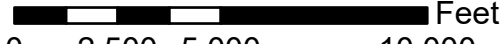
Appendix B – Figures





Legend

 North Ash Pond Permit Boundary



 Feet

0 2,500 5,000 10,000

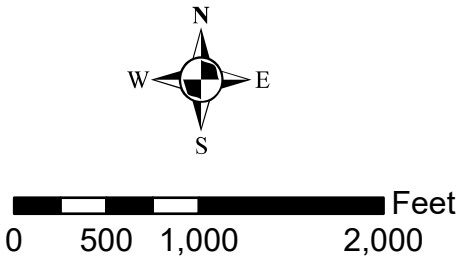



NAUGHTON POWER PLANT	
North Ash Pond Site Vicinity Map	
Job#: PAC-NAUNAP-M099	FIGURE 1
Date: 3/15/2023	
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Legend

North Ash Pond Permit Boundary





NAUGHTON POWER PLANT

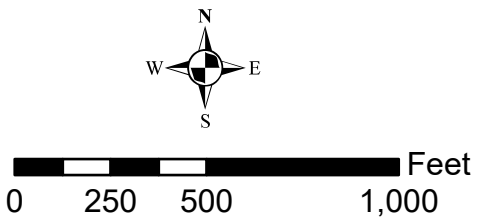
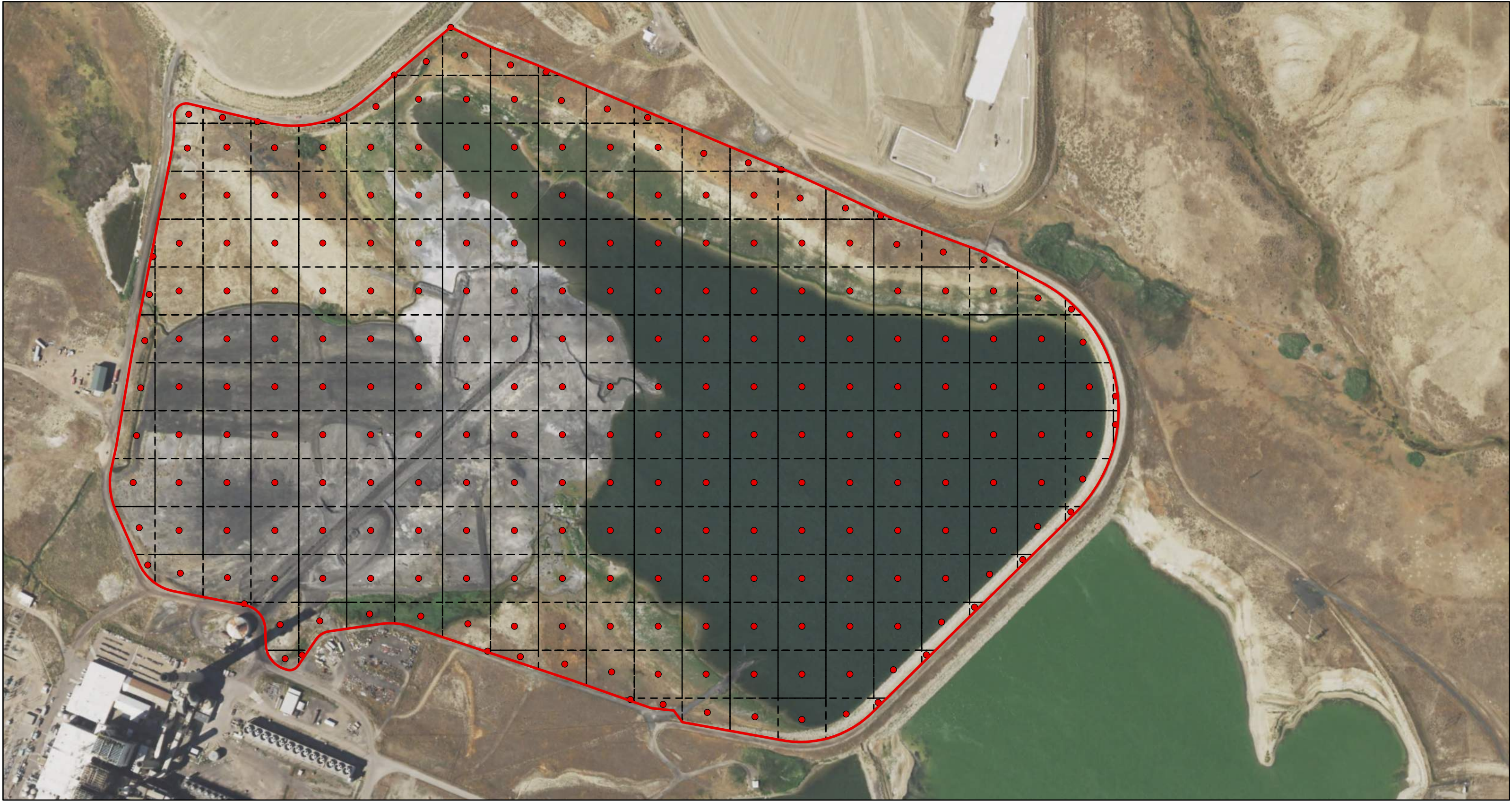
North Ash Pond Layout

Job#: PAC-NAUNAP-M099

Date: 3/15/2023

FIGURE 2

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NAUGHTON POWER PLANT

North Ash Pond
Sampling Locations

Job#: PAC-NAUNAP-M099

Date: 3/15/2023

FIGURE 3

Path: M:\PERC_CCR2020_CCR_Sampling\DJ\DJ_BoronSOconcentration3.aprx