



CCR Landfill Closure Plan Hunter Power Plant



PacifiCorp, Hunter Power Plant

Coal Combustion Residual Landfill

Revision 3
January 2017

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Prepared for

PacifiCorp, Hunter Power Plant
Coal Combustion Residual Landfill
Castle Dale, Utah

Revision 3
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Prepared by

URS
Salt Lake City, Utah

INDEX AND CERTIFICATION

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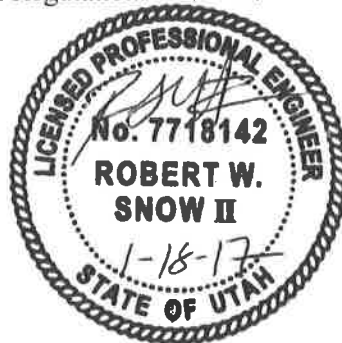
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Certification

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

I hereby certify, as a Professional Engineer in the State of Utah that the CCR Landfill Closure Plan provided herein meets the requirements of 40 Code of Federal Regulations 257.102.



Robert Snow, P.E. (UT #7718142)

Date: 1/18/17

Robert Snow
License Number 7718142

My license renewal date is March 31, 2017

Pages or sheets covered by this seal: As noted above.

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
CCR	coal combustion residual
UAC	Utah Administrative Code
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

This Closure Plan describes the steps necessary to close the coal combustion residuals (CCR) Landfill at the Hunter Power Plant in compliance with United States Environmental Protection Agency (USEPA) regulations for CCR (USEPA 2015, Disposal of Coal Combustion Residuals from Electric Utilities – 40 CFR §257, Federal Register 80, no. 74, April 17, 2015, hereinafter referred to as the “Rule”).

Additionally, this plan fulfills the requirements of Utah Administrative Code (UAC) R315-319-102(b) (UAC, 2016). This plan is based on design requirements as specified in the CCR Landfill Operations Manual (PacifiCorp, 2016).

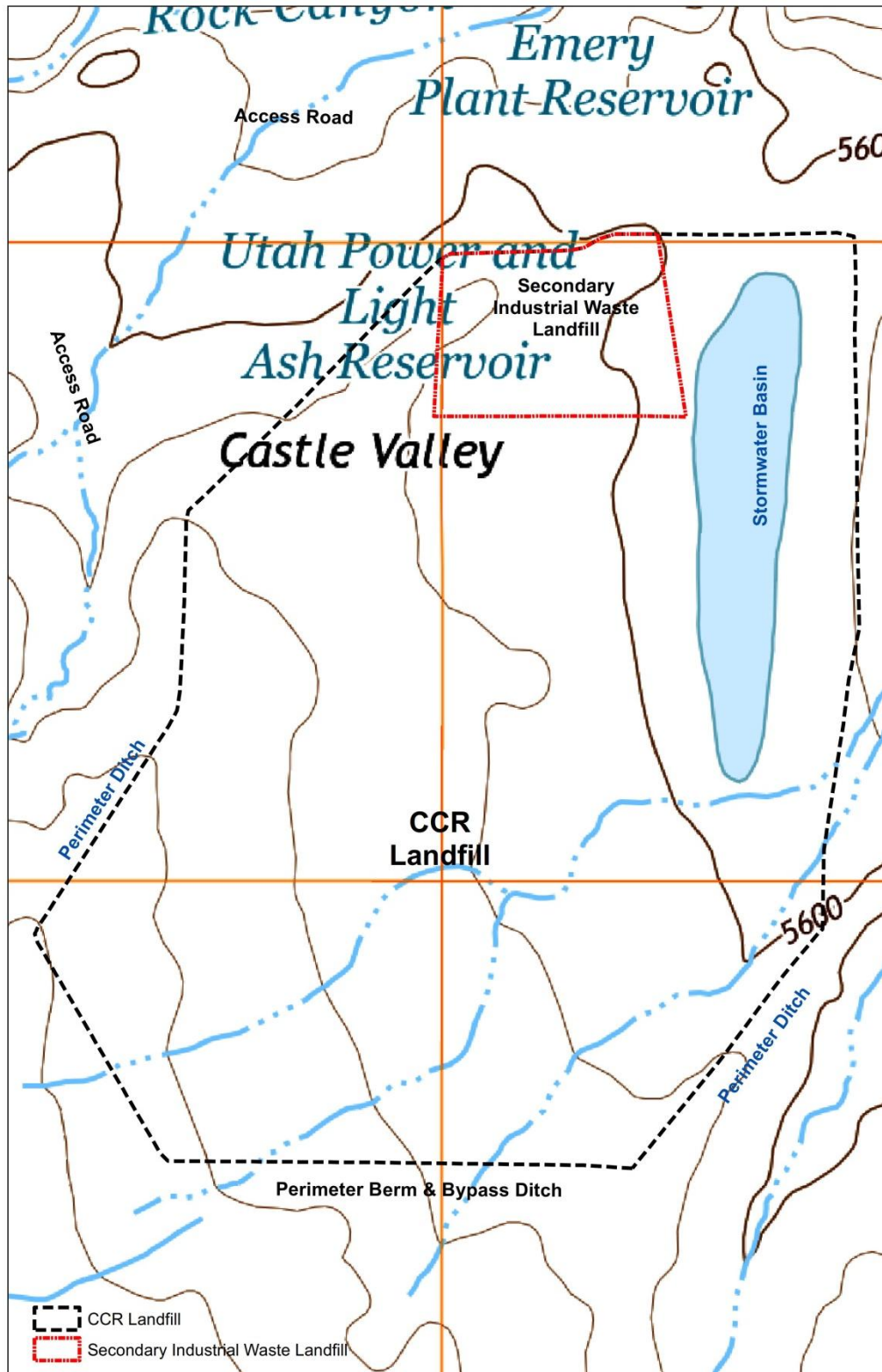
1.1 Background

The Hunter Power Plant is a coal-fired power generation facility located 2.5 miles south of Castle Dale, Utah. The CCR landfill occupies approximately 230 acres southeast of the power plant, as shown in Figure 1-1. The CCR landfill will be closed in place incrementally during operation with complete closure occurring with the closure of the Hunter Plant (estimated 2042). The anticipated capacity at final closure is estimated at 44.5 million cubic yards. The maximum area the landfill ever requiring a final cover is 230 acres. Figure 1-2 includes an overview of the landfill and its horizontal extents.

Figure 1-1. General Power Plant and CCR Landfill Location Map
(image created using *GoogleEarth Pro* and its partners, copyright protected)



Figure 1-2. Hunter Power Plant CCR Landfill Site Overview



2.0 CCR LANDFILL CLOSURE

2.1 CCR and Embankment Grading

The closure design includes the placement of CCR materials to the final grade elevations and slopes shown on the design documents such that limited regrading of the top surface and embankments will be required at final closure. The slopes and elevations are designed to facilitate stormwater runoff and minimize soil erosion. The embankment side slopes are designed and constructed at a 4:1 horizontal:vertical (H:V) slope, with two 20-foot-wide intermediate benches at elevation 5,700 feet and 5,750 feet above mean sea level to convey drainage and allow access to side slopes of the landfill. The intermediate benches and temporary benches allow intermediate closure of the side slopes. Three haul roads provide permanent access and drainage features and are incorporated into the cover system.

2.2 Cover System

The cover system consists of a 24-inch evapotranspiration bedding layer, overlain by a 6-inch topsoil layer and will be installed incrementally during operation. The system overlays the CCR side slopes and top surface, with the exception of rock drainage features and roadways.

The additional layers above the CCR requirements (including bedding, drain, and fill layers) were added during the design of the cover system due to site specific conditions to ensure the cover operates as intended.

2.3 Stormwater Controls and Erosion Protection

Stormwater controls and erosion protections for the Hunter Plant CCR landfill are described in the Run-on and Run-off Control Plan found at <http://www.berkshirehathawayenergyco.com/ccr/ppw.html>. Stormwater controls are designed such that modification is not necessary at the time of closure because ongoing inspection and maintenance of the controls will preserve the original design, condition, and function. The ditches and drainage features will also be lined with an evapotranspiration layer, but will have riprap cover instead of topsoil.

2.4 Access Roads

Three access roads will extend from the existing road system near the base of the landfill to the top of the constructed interim and finish elevations. During construction they will serve as haul roads, and after as service roads. Two haul roads enter from the west and generally extend around the north and south facing embankments, and one haul road enters from the north and extends up the east facing embankment. The haul roads will be constructed incrementally over the life of the landfill with a bottom-ash wearing

course. These roads will be integral to the final cover system and will be used for long-term monitoring and maintenance of the landfill. The roads will be capped with an evapotranspiration layer, but will have road base instead of topsoil to allow use after closure. The roads will be maintained as required during and following closure.

2.5 Closure Schedule

As the landfill is operated, the side slopes will be closed incrementally to temporary benches as described in the Hunter CCR Landfill Operations Manual. When final closure occurs in approximately 2042, the remaining side slopes and top surface will be closed. If final closure occurs in 2042 the total surface to be covered would be approximately 65 acres and about 10,000 feet of roadway including the Industrial, North, and South Haul roads. Figure 2-1 includes a rough schedule for closure of the landfill. As per §257.102(f)(1)(i) and UAC R315-319-102(1)(i), the landfill must be closed within six months of commencing landfill closure. If there are factors beyond the facilities control, including excess settlement, the facility will follow §257.102(f)(2) and UAC R315-319-102(f)(2) for extension of the closure timeframe.

Figure 2-1. Hunter CCR Landfill Closure Preliminary Schedule

	MONTH											
	1		2		3		4		5		6	
Receipt of Last Waste	█											
Install Evapotranspiration Layer	█	█	█	█	█	█						
Install Drain Layer			█	█	█	█						
Install Fill & Topsoil					█	█	█	█	█	█		
Seeding							█	█	█	█	█	
Close Roadways							█	█	█	█	█	█
Landfill Closed												█

3.0 REFERENCES

PacifiCorp, 2016. CCR Landfill Operations Manual. PacifiCorp Electric Operations, Hunter Power Plant, Castle Dale, Utah, 2016.

URS, 2015c, "Run-on and Run-off Control Systems Plan," December 2015.

<http://www.berkshirehathawayenergyco.com/ccr/ppw.html>

U.S. Environmental Protection Agency, 2015. Disposal of Coal Combustion Residuals from Electric Utilities – 40 CFR §257. Federal Register 80, No. 74, April 17, 2015.

Utah Administrative Code (UAC), 2016. R315-319. Coal Combustion Residuals Requirements, December 1, 2016.

URS
756 E. Winchester St. Suite 400
Salt Lake City, UT 84107
O 801-904-4000
F 801-904-4100