

## **Post-Closure Plan**

Closed CCR Surface Impoundment

40 CFR 257.104(d)

Revision 3

## **Asbury Power Plant**

21133 Uphill Road

Asbury, Missouri 64832

October 17, 2016

Revised June 13, 2023

## **Prepared For:**

The Empire District Electric Company

A Liberty Utilities Company

602 S. Joplin Avenue

Joplin, Missouri 64801



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## 1.0 INTRODUCTION

*257.104(d) Written post-closure plan—(1) Content of the plan. The owner or operator of a CCR unit must prepare a written post-closure plan that includes, at a minimum, the information specified in paragraphs (d)(1)(i) through (iii) of this section.*

40 CFR 257.104(d) of the CCR Rule requires the development of written Post-Closure Plan. The CCR rule requires the owner or operator of the CCR unit to conduct post-closure care for 30 years. The Empire District Electric Company's Asbury Power Plant has one CCR Surface Impoundment. The site occupies the north half of Section 17, Township 30 North, and Range 33 West on the Asbury 7.5-Minute Quadrangle Map as seen in **Figure 1**.

The post-closure plan has been amended to reflect the final closure of the CCR Surface Impoundment completed on January 23, 2023. A copy of the Notification of Closure of CCR Surface Impoundment is attached.

## 2.0 PLAN CERTIFICATION 257.102(B)(4)

The undersigned Professional Engineer (P.E.) is familiar with the requirements of 40 CFR Part 257. The attached CCR Post-Closure Plan for the existing CCR Surface Impoundment at the Asbury Power Plant has been prepared in accordance with the requirements of 257.104(d), Initial Written Post-Closure Plan.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Lindsey R. Henry, PE

Date: \_\_\_\_\_

June 13, 2023

Registration Number: E-21592

State: Missouri

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### 3.0 MONITORING AND MAINTENANCE

*257.104(d)(i) A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed.*

The CCR Surface Impoundment that serves the Asbury Power Plant is approximately 106.4 acres. The CCR Surface Impoundment was subdivided into three (3) operational Ponds, identified as the Lower Pond, Upper Pond, and South Pond. The Lower Pond, Upper Pond, and South Pond were separated by interior earthen berms and could be hydraulically separated from one another for operational purposes. The CCR Surface Impoundment will be closed by leaving the CCR in place.

The date of completion of the final closure of the CCR Surface Impoundment was January 23, 2023. The facility has officially transitioned to Post-Closure care on this date. This Post-Closure Plan is for the entire CCR Surface Impoundment.

#### 3.1 Final Cover Maintenance

Asbury chose to utilize an alternative final cover system. An Alternative Final Cover System Demonstration was completed December 21, 2021 for the Empire District Electric Company's CCR Surface Impoundment at the Asbury Power Plant. The Alternative Final Cover System Demonstration was completed in compliance with 40 CFR 257.102(d)(3)(ii) and certified by a professional engineer in compliance with 40 CFR 257.102(d)(3)(iii) of the EPA CCR Rule. This Demonstration was placed in the facility's operating record.

The chosen final cover system was the ClosureTurf system. ClosureTurf is a patented, three component system that is EPA Subtitle D compliant landfill that is specifically designed to address and solve soil erosion, slope integrity, installation and maintenance cost control, EPA regulation compliance, and longevity of structure and appearance. The anticipated design life of ClosureTurf is 100 years. ClosureTurf consists of the following components, top to bottom.

- Specialized sand infill
- Engineered artificial turf
- Flexible geomembrane liner (FML)
- Prepared CCR subgrade

The final cover system will be maintained, and repairs completed to maintain the integrity and effectiveness of the final cover system. The final cover system should be inspected to determine if any settlement, subsidence, and erosion has occurred.

In accordance with ClosureTurf Post-Closure Care Manual the facility will make Annual inspections. ClosureTurf maintenance includes correcting any identified areas of exposed geotextile backing during the prior inspection intervals. Areas of concern should be corrected at a frequency of at least every 5 years.

Annual visual inspections will be completed by physically walking the surface of the ClosureTurf installation and documenting observed issues. The personnel will use the following list to note when an issue should be documented:

- Differential settlement (to the extent of grade reversal or ponding of water),
- Exposed geotextile backing,
- Exposed geomembrane,
- Damage to engineered turf fibers in high traffic access areas,
- Significant sand migration and drainage channel ballast materials, and
- Physical damage from equipment or animals.

### **3.2 Groundwater Monitoring System**

The Groundwater Monitoring System will be properly maintained and monitored as required by 257.90 and 257.98. If any well or the entire system is no longer in use it should be properly abandoned. Groundwater should be monitored in accordance with current regulatory requirements.

### **4.0 POST-CLOSURE CONTACT**

*257.104(d)(ii) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period.*

The Post-Closure Contact is below:

Director of Energy Supply Services  
The Empire District Company  
602 S Joplin Avenue  
PO Box 127  
Joplin, MO 64802  
(417)625-5100  
environmental.ccr@empiredistrict.com

### **5.0 POST-CLOSURE PROPERTY USE**

*257.104(d)(iii) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart. Any other disturbance is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer, and notification shall be provided to the State Director that the demonstration has been placed in the operating record and on the owners or operator's publicly accessible Internet site.*

The CCR Surface Impoundment closed CCR in place and will require post-closure care as outlined in this plan. At this time this area will be maintained as an open area.

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## 6.0 NOTIFICATION

*257.104(d)(2) Deadline to prepare the initial written post-closure plan—(i) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written post-closure plan consistent with the requirements specified in paragraph (d)(1) of this section.*

*257.104(d)(2)(iii) The owner or operator has completed the written post-closure plan when the plan, including the certification required by paragraph (d)(4) of this section, has been placed in the facility's operating record as required by § 257.105(i)(4).*

Empire posted the initial written Post-Closure Plan to their website within 30 days of October 17, 2016. Empire will post this amended written Post-Closure Plan to their website within 30 days. In addition, the State Director will be notified of the completion of this amended plan and subsequent placement on the website.

## 7.0 POST-CLOSURE PLAN AMENDMENT

*257.104(d)(3) Amendment of a written post-closure plan. (i) The owner or operator may amend the initial or any subsequent written post-closure plan developed pursuant to paragraph (d)(1) of this section at any time.*

*257.104(d)(3)(ii) The owner or operator must amend the written closure plan whenever:*  
*(A) There is a change in the operation of the CCR unit that would substantially affect the written post-closure plan in effect; or*  
*(B) After post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.*

*257.104(d)(3)(iii) The owner or operator must amend the written post-closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written post-closure plan. If a written post-closure plan is revised after post-closure activities have commenced for a CCR unit, the owner or operator must amend the written post-closure plan no later than 30 days following the triggering event.*

The Post-Closure Plan will be amended should there be a change in Post-Closure use of the CCR unit that would have a substantial impact to the current Post-Closure Plan. These amendments will be completed as required by 257.104(d)(3)(iii).

## 8.0 CERTIFICATION

*257.104(d)(4) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post-closure plan meets the requirements of this section.*

This Post-Closure Plan has been certified in Section 2.0 of this report. Any amendments to the original Post-Closure Plan will also be certified by a qualified professional engineer.

## 9.0 COMPLETION OF POST-CLOSURE

*257.104(e) Notification of completion of post-closure care period. No later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit must prepare a notification verifying that post-closure care has been completed. The notification must include the certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the closure plan specified in paragraph (d) of this section and the requirements of this section. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 257.105(i)(13).*

*257.104(f) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 257.105(i), the notification requirements specified in 257.106(i), and the Internet requirements specified in 257.107(i).*

Empire will prepare a Notification of Completion of the Post-Closure Care Period in accordance with the requirements of 257.104(e). Empire will post the completion of the Post-Closure Care Period to their website as required by 257.107(i). In addition, the State Director will be notified of the completion of this plan and subsequent placement on the website.

## 10.0 AMENDMENTS

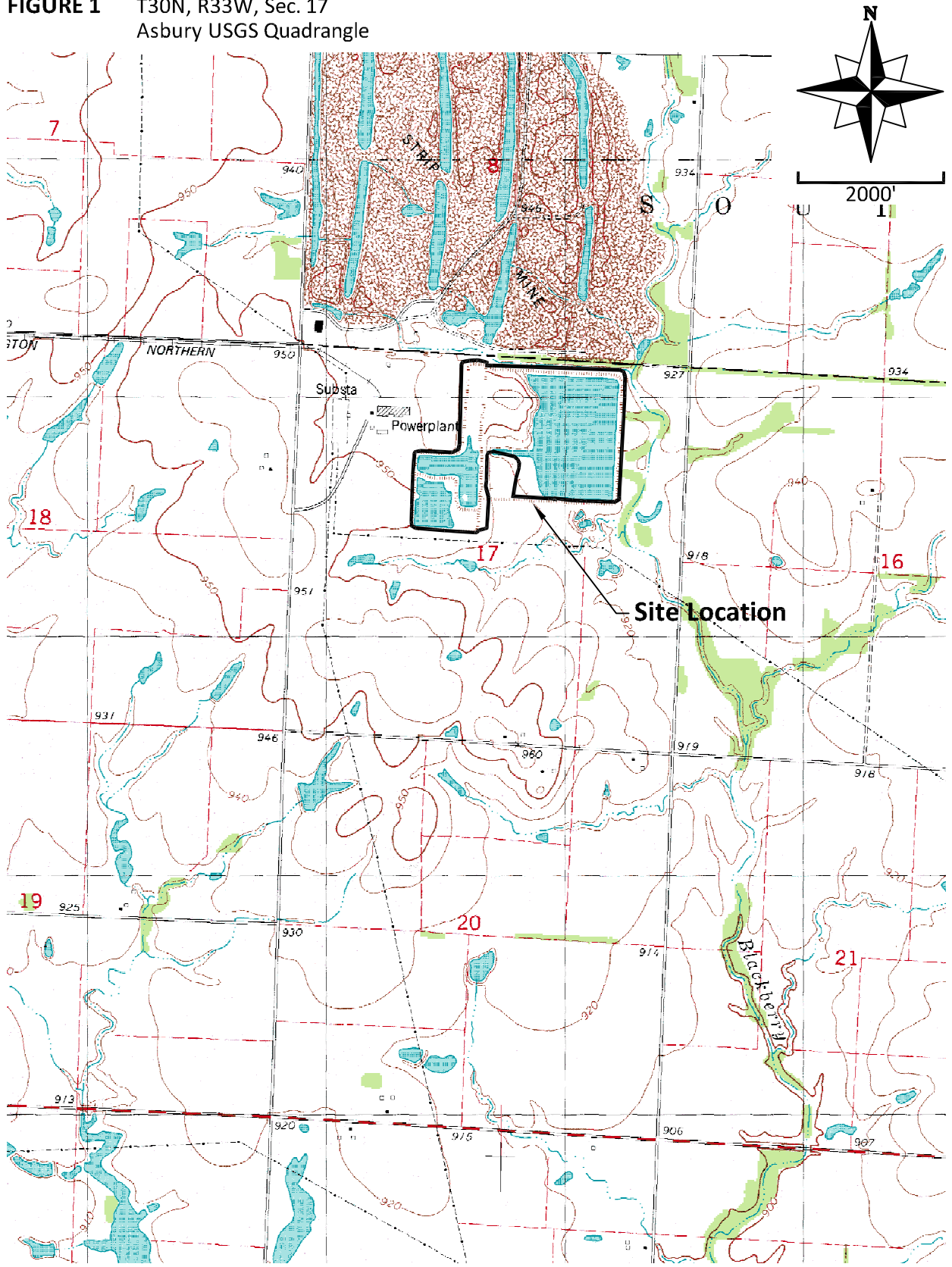
*257.104(d)(3)(i) The owner or operator may amend the initial and any subsequent written closure plan developed pursuant to paragraph (d)(1) of this section at any time.*

Asbury may amend the Post-Closure Plan in the future as provided by 257.104(d)(3)(i).

## FIGURES



**FIGURE 1** T30N, R33W, Sec. 17  
Asbury USGS Quadrangle



**NOTIFICATION OF CLOSURE**

February 21, 2023

The Empire District Electric Company  
A Liberty Utilities Company  
602 South Joplin Street  
PO Box 127  
Joplin, MO 64802-0127

**Re: Notification of Closure of CCR Surface Impoundment**  
EPA CCR Rule Section 40 CFR 257.102 (f)  
Empire District Electric Company – Asbury Power Plant  
Asbury, Missouri

2009 E. McCarty St.  
Suite 2

Jefferson City, MO 65101

voice: 573.636.9454

fax: 573.761.4200

1350 E. Kingsley St.

Suite E

Springfield, MO 65804

voice: 417.886.9200

fax: 417.886.9876

www.mecpc.com

**To Whom it May Concern:**

The Empire District Electric Company, Asbury Power Plant has one Coal Combustion Residuals (CCR) Impoundment. The site occupies the north half of Section 17, Township 30 North, and Range 33 West on the Asbury 7.5-Minute Quadrangle Map. The following provides Notification of Closure of the CCR Impoundment located at Asbury Power Plant. This letter serves as certification that the facility is in compliance with 40 CFR 257.102(f)(3) of the EPA CCR Rule.

**40 CFR 257.102(f)(3)**

*Upon completion, the owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying that closure has been completed in accordance with the closure plan specified in paragraph (b) of this section and the requirements of this section.*

We have reviewed the information contained in the Construction Quality Assurance (CQA) Report completed by Palmerton & Parrish, Inc. dated February 2, 2023 and other records to determine that the closure construction meets or exceeds that requirements of 40 CFR 257.102(d).

Empire provided a Notification of Intent to Close the CCR Impoundment on April 11, 2021. Acceptance of Substantial Completion for the Asbury Coal Combustion Residuals Impoundment Closure Construction was issued January 23, 2023.

This certification has been prepared by a qualified professional engineer and placed in the facility's operating record as required by 40 CFR 257.102(h).

**40 CFR 257.102(h)**

*Within 30 days of completion of closure of the CCR unit, the owner or operator must prepare a notification of closure of a CCR unit. The notification must include the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority as required*

*by § 257.102(f)(3). The owner or operator has completed the notification when it has been placed in the facility's operating record as required by § 257.105(i)(8).*

**CERTIFICATION 257.102 (h)**

The undersigned Professional Engineer (P.E.) is familiar with the requirements of 40 CFR Part 257. The above serves as Notification of Closure the CCR Impoundment for the Empire District Electric Company, Asbury Power Plant. I hereby certify that the facility is in compliance with 40 CFR 257.102h) and all information has been placed in the Operating Record. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by § 257.105(i)(7).

Signature:



Name: Lindsey R. Henry, PE

Date: February 21, 2023

Registration Number: E-21592

State: Missouri

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