

City Water, Light & Power

CCR Impoundments – Lakeside and Dallman Ash Ponds

Springfield, Sangamon County, Illinois

Final Closure Plan for Coal Combustion Residuals Surface Impoundments

February 2022



Submitted to:

Illinois Environmental Protection Agency
Bureau of Water
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Springfield, Illinois



Prepared for:

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FIGURES

Figure 1: Site Map

Figure 2: CWLP Coal Combustion Residuals Surface Impoundments

1. INTRODUCTION

City Water, Light and Power (CWLP) owns and operates two ash ponds which are defined as coal combustion residuals (CCR) surface impoundments. The impoundments include both the Lakeside and Dallman Ash Ponds and are being closed as a multi-unit system pursuant to Section 845.750. The plans and specifications for the installation of the final cover system along with the Construction Quality Assurance Plan are provided in Attachment 8 to the Closure Construction Application. This Final Closure Plan has been prepared pursuant to Section 845.720(b).

2. FACILITY DESCRIPTION

The impoundments are located north and east of the former Lakeside Power Generating Station and Dallman Power Generating Station in the Eastern ½ of Section 12, Township 15 North, Range 5 West, in Springfield, Illinois (see Figure 1). The former Lakeside Power Generating Station and Dallman Power Generating Station are situated on the northwestern bank of Lake Springfield in Springfield, Illinois. The Lakeside Ash Pond is immediately north of Spaulding Dam at the northern end of Lake Springfield (see Figure 2). The Dallman Ash Pond is immediately northwest of the Lakeside Ash Pond. Placed into service prior to 1958, the Lakeside Ash Pond is primarily a diked embankment with an in situ soil liner. The Lakeside Ash Pond consists of four separate ponds (i.e., three lime softening ponds and a settling pond) totaling approximately 35.0 acres. The Lakeside Ash Pond ceased receiving ash in 2009. The Dallman Ash Pond was placed into service in approximately 1976 and is also a diked embankment with an in situ soil liner. The Dallman Ash Pond is approximately 34.5 acres in area.

3. FINAL CLOSURE PLAN

The closure for Lakeside Ash Pond and the Dallman Ash Pond will be accomplished by leaving CCR in place pursuant to Section 845.750. The closure of both ponds will contain the following elements:

- Drainage/dewatering of ash ponds
- Stabilization of CCR
- Structural fill, if necessary
- Final cover system

Details of these items are discussed in the following sections. This plan may be revised at any time as allowed under 35 IAC Part 845.720 (b)(3). Amendments to this plan will be required if and when any significant changes occur to the operation of the CCR units that would substantially affect this plan, or unanticipated events necessitate a revision of this plan. This plan must be amended at least 60 days prior to a planned change in operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise this closure plan.

Design and construction details (Plans and Specifications/Construction Quality Assurance Plan) are provided in Attachment 8 of the Closure Construction Application. The information contained below has been compiled pursuant to Section 845.720(b)(3).

3.1 Drainage/Dewatering

Free liquids will be removed from the ash ponds by utilizing existing pumping structures that will remove the liquids to an existing clarification pond, located to the south of the Dallman Ash Pond.

Water will eventually be discharged by permitted NPDES Outfall 004. The dewatering will be monitored for effectiveness and other methods employed to complete the process if determined to be necessary. Vegetation existing inside the pond limits will be removed during this process.

3.2 CCR Material Stabilization

After free liquids and vegetation are removed from the ash ponds, CCR materials within the inactive Ash Ponds will be stabilized by grading and compacting to minimize the probability of future impoundment of water or sediment due to settlement. Grading and compacting the CCR materials will also enhance slope stability to minimize the potential movement of the final cover system.

3.3 Final Grading Design

Grading design plans have been developed, but will likely be amended during the final engineering design to accommodate the final quantity of material stored in the ash ponds. Final top slopes will include a minimum slope of three to five percent to promote surface drainage. Structural fill may be added above the CCR material to provide sufficient slope for the final cover system. A final grading design will be implemented that accommodates the anticipated amount of settling and/or subsidence of the CCR materials, as well as any structural fill placed in the CCR units.

It must be noted that additional CCR and non-CCR material may be needed to attain proper final elevations during grading prior to placement of the 40 mil LDPE cover. This could occur after the impoundments have ceased accepting CCR during regular operation of the power station. Acceptance of CCR and non-CCR material under these conditions does not imply the impoundments are active.

3.4 Stormwater Management

Post-closure infiltration of liquids into the waste will be minimized by directing stormwater through a system of drainage ditches. Drainage ditches will be built between the inner slope of the outer berms of the impoundments and the outer slope of the final cover. Stormwater will exit the ditches through culverts and letdowns built into the outer berms and discharge into the Sugar Creek. However, any stormwater which occurs in active construction areas where CCR may be in contact with the stormwater will be directed to the impoundment areas.

3.5 Final Cover Placement

The final grades of CCR material and structural fill, if used, will be covered by a 40 mil geosynthetic membrane layer, which will be topped with a geocomposite drainage layer. In terms of hydraulic flux, the geosynthetic layer will be equivalent or superior to a three-foot layer of soil with a hydraulic conductivity of 1×10^{-7} cm/sec and withstand the normal stresses imposed by the waste stabilization process. Roots, cobbles, debris, organic, and other deleterious material that may cause damage to the geosynthetic membrane will be removed from the CCR and/or soil material prior to placement of the geosynthetic membrane layer.

A soil protective layer containing a minimum of 36 inches of soil capable of sustaining plant growth will overlie the low permeable layer. The soil used for the protective layer should not be compacted and should be the best onsite readily available soil for supporting vegetation. Shallow-rooted grasses and legumes should be used to establish a vegetative growth for erosion control. The

mixture of grasses and legumes selected must be amenable to the soil quality and thickness, slopes, moisture, and climatological conditions that exist without the need for continued maintenance.

Lime, fertilizer, and any other appropriate soil amendments, may be incorporated into the erosion layer at application rates determined from composite soil tests of the area to be seeded. Mulch consisting of straw, yard waste compost, jute, and/or wood excelsior may be used as necessary to hold the seed in place and conserve moisture. A professional knowledgeable in vegetation establishment will be consulted for determining the specific seed mixtures to be sown, suitable soil amendments, and application rates based upon specific seasonal conditions at the time of placement.

The finished surface of the final cover shall be surveyed on a spacing that shall not exceed 100 feet in any ordinate direction. Numerical testing tolerances shall be governed by standard significant digit and rounding as warranted. Acceptable standards for isolated nonconformances shall be the significant digit less 1/10 corrected for decimal place. However, at no time shall the allowable survey tolerances of the low permeability layer and final protective layers be such that the final protective layer be less than three-feet thick. This survey and acceptance criteria shall apply to protective layers of the final cover system, with allowance for the minimum three-foot difference between their surfaces. Installation and testing of all final cover components will be performed in accordance with the Construction Quality Assurance Plan.

4. CCR INVENTORY ESTIMATES

The maximum inventory of CCR ever on site for the active life of the Lakeside Ash Pond is estimated to be equivalent to the current inventory of CCR in that unit. According to CWLP personnel, the Lakeside Ash Pond currently has an approximate impounded CCR volume of 1,080,000 cubic yards with a maximum capacity of approximately 1,330,000 cubic yards. Therefore, premature closure or closure near the end of regulatory life of the facility will be essentially the same. There is no need to provide a separate premature closure plan.

The storage capacity for the Dallman Ash Pond is approximately 1,500,000 cubic yards. The Dallman Ash Pond currently has an approximate impounded CCR volume of 978,000 cubic yards, approximately 28,000 cubic yards of which is piled up above the normal water elevation that is being dried out for beneficial reuse. The maximum inventory of CCR ever on site for the active life would not exceed the 1,500,000 cubic yard storage capacity.

5. FINAL COVER AREA

It is assumed that the entire area of the ash ponds represents the largest area that will require a final cover system, as described in Section 2.3 of this report. Under these assumptions, the Lakeside Ash Pond will require a final cover system of approximately 35 acres, and the Dallman Ash Pond will require a final cover system of approximately 34.5 acres.

6. CLOSURE SCHEDULE

Closure of each Ash Pond will occur when the CCR unit ceases to receive CCR and Non-CCR wastes. Currently the impoundments will cease accepting CCR and non-CCR wastes in late 2023. Closure has been initiated under 845.730 once CWLP has stopped placing waste in the CCR

surface impoundments and has submitted a construction permit application to the Agency. In the event the closer date is revised, the schedule for closure activities will vary accordingly.

The closure process will commence no later than 30 days after the date on which the CCR unit receives the known final receipt of CCR or non-CCR wastes, or removes the final volume of CCR from the CCR unit for the purpose of beneficial use. If the final receipt of CCR or non-CCR wastes is not known, then the closure process must still commence if the CCR unit has not received CCR or non-CCR wastes, or has not had CCR material removed from it for a duration of two years, unless it can be demonstrated that the idle unit will resume to receive or remove CCR materials in the foreseeable future.

The general sequence and timing of closure activities identified below will be applied to the closure of each Ash Pond as follows upon receipt of a construction permit from the Agency:

Season 1 – Initiation of the closure process

- Final engineering design
- Dewatering of CCR materials
- Remove existing vegetation
- Initial grading and compaction of CCR materials

Season 2 – Beginning one year after initiation of closure process

- Complete grading of CCR materials
- Add and grade structural fill, if necessary
- Construction of final cover system

Season 3 – Beginning two years after initiation of closure process

- Complete construction of final cover system, if necessary

7. NOTICES AND REPORTS

7.1 Closure Notices

In accordance with 35 IAC Parts 845.730(d), and 845.760(f), the following closure documentation will be completed and placed in the CWLP's CCR operating record and on the CWLP website:

- Notification of Intent to Close (Due on the date of the initiation of closure)
- Notification of Completion of Closure (30 days after completion of closure activities)
 - Will include a certified Construction Acceptance Report

7.2 Construction Acceptance Report

Both the Operator and a Professional Engineer (Engineer) must certify that closure is in accordance with the closure plan. Therefore, the Engineer should be designated at the outset of the closure process so that all aspects of the closure can be overseen. The Engineer will need to spend sufficient time on site to ensure adequate cover quality and thickness as well as proper completion of the other tasks. Furthermore, the Engineer will conduct testing to meet the requirements of the final cover design. The Engineer's services will include the preparation of plan sheets showing the final conditions at the closed site.

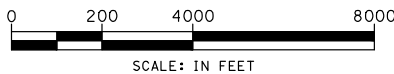
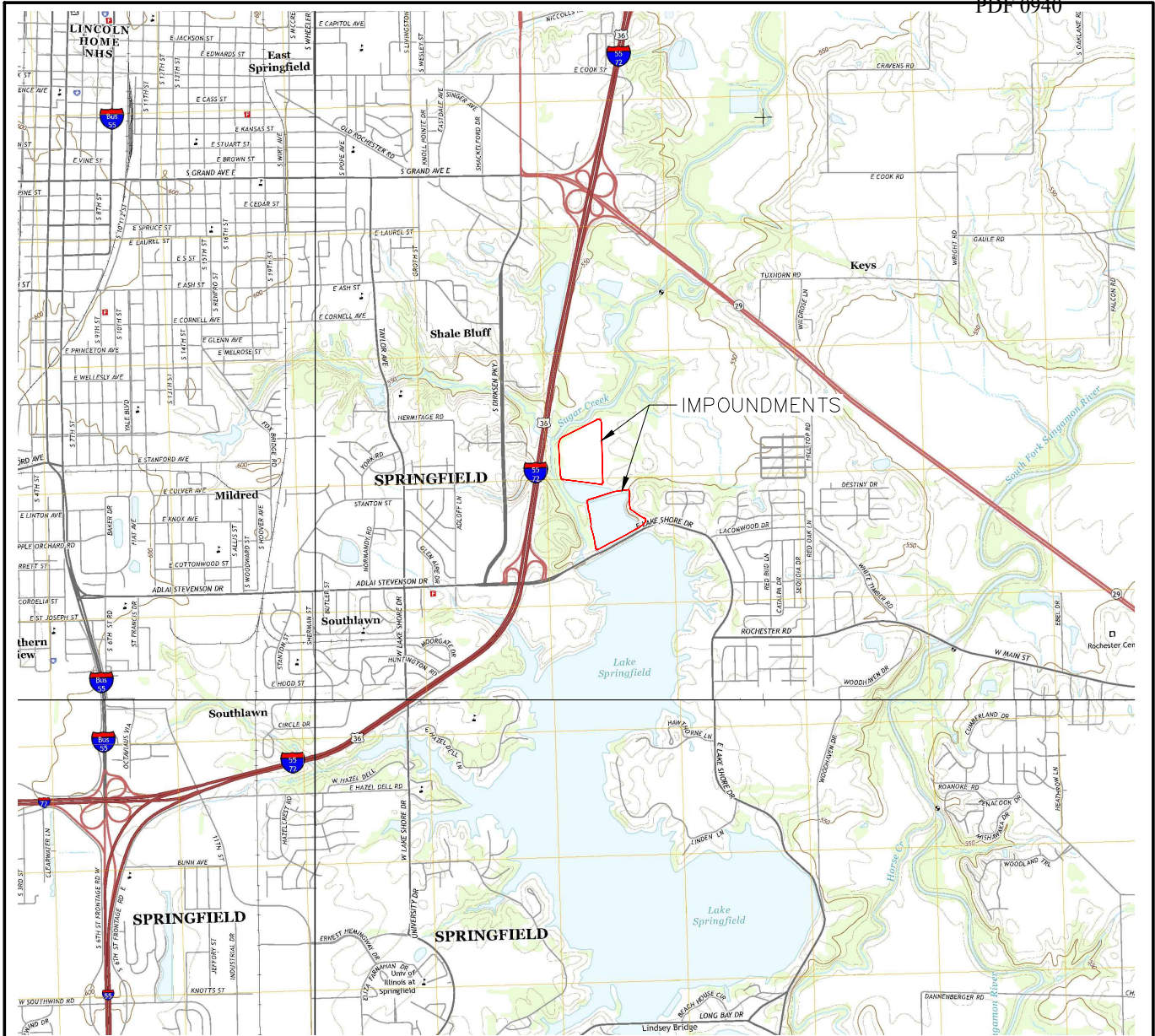
7.3 Deed Notations

Following the closure of all units, the owner or operator will record a notation on the deed to the property, or some other instrument that is normally examined during title search. Within 30 days of the deed notation, a notification that the notation has been recorded and a copy will be placed in the operating record, and posted on the CWLP's website. The notation on the deed will in perpetuity notify any potential purchaser of the property that the land has been used as a CCR unit and its use is restricted under 35 IAC Part 845.760(h).


8. STATEMENT

This Final Closure Plan for Coal Combustion Residuals Surface Impoundments was completed for CWLP by Andrews Engineering, Inc. in accordance with the requirements under 35 IAC Part 845.750

FIGURES



NOTE:
BACKGROUND IMAGE COURTESY OF
UNITED STATES GEOLOGICAL SURVEY.



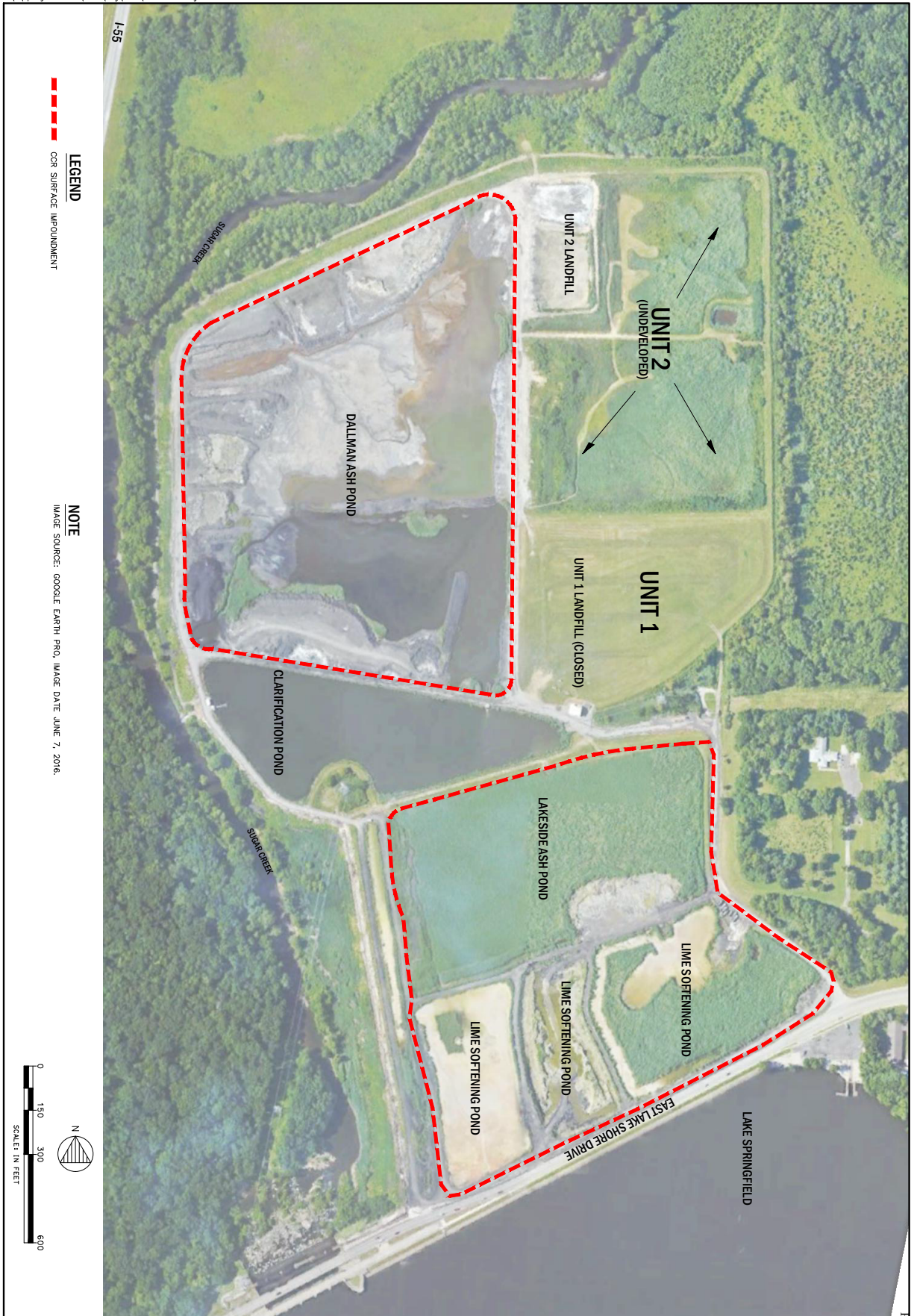
**ANDREWS
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APPROVED BY: BJH DESIGNED BY: BJH DRAWN BY: MPN

SITE LOCATION

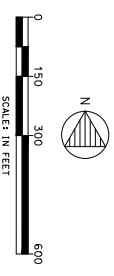
PLANS PREPARED FOR
CITY, WATER, LIGHT & POWER
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: JULY 2021
PROJECT ID: 200387/0026
SHEET NUMBER: FIGURE 1



LEGEND
 --- COR SURFACE IMPOUNDMENT

NOTE
 IMAGE SOURCE: GOOGLE EARTH PRO, IMAGE DATE: JUNE 7, 2016.



DATE: JULY 2021
 PROJECT NO: 200357/008
 SHEET NUMBER:
FIG. 2

SITE DETAILS
 PLANS PREPARED FOR
 CITY, WATER, LIGHT AND POWER
 SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

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NO.	DATE	REVISION DESCRIPTION	BY