



VIA EMAIL

March 05, 2018

Mr. Jeffrey Maxted
Alliant Energy – Lead Environmental Specialist
4902 North Biltmore Lane
Madison, WI 53718-2148

**Re: Liner Design Criteria for CCR Surface Impoundments - §257.71(a) and §257.100(a)
Alliant Energy – Interstate Power and Light Company
Sutherland Generating Station
Marshalltown, Iowa**

Dear Mr. Maxted;

Hard Hat Services (HHS) assessed the liner design criteria for the coal combustion residuals (CCR) surface impoundments located at the Interstate Power and Light Company (IPL) Sutherland Generating Station (SGS) in Marshalltown, Iowa.

Background Information

In accordance with the requirements set forth in §257.71(a) and §257.100(a) of the CCR Rule, an owner or operator of an inactive CCR surface impoundment must document whether the CCR unit was constructed with a liner that meets, at a minimum, one of the following three categories:

- i. A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec,
- ii. A composite liner that meets the requirements of §257.70(b) - A composite liner must consist of two components; the upper component consisting of, at a minimum, a 30-mil geomembrane liner, and the lower component consisting of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. Geomembrane liner components consisting of high density polyethylene must be at least 60-mil thick. The geomembrane liner or upper liner component must be installed in direct and uniform contact with the compacted soil or lower liner component. The composite liner must meet the requirements specified in §257.70 (b)(1) through (4).
- iii. An alternative composite liner that meets the requirements of §257.70(c). An alternative composite liner shall meet the following requirements:

- An alternative composite liner must consist of two components; the upper component consisting of, at a minimum, a 30-mil geomembrane liner, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. Geomembrane liner components consisting of high density polyethylene must be at least 60-mil thick. If the lower component of the alternative liner is compacted soil, the geomembrane liner must be installed in direct and uniform contact with the compacted soil.
- The owner or operator must obtain certification from a qualified professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil must be determined using recognized and generally accepted methods.
- The alternative composite liner must meet the requirements specified in §257.70 (b)(1) through (4).

Facility Specific Information

The IPL SGS is located at 3001 East Main Street Road, Marshalltown, IA 50158-0537. Within the main facility, SGS ceased burning coal in 2012 and natural gas generating operations as of June 22, 2017. The external combustion turbines continue operations and will be associated with the Marshalltown Generating Station.

The CCR surface impoundments at SGS have not received CCR on or after October 19, 2015. Figure 1 provides both a topographic map and an aerial of the SGS facility location, with the approximate property boundary of the facility identified. SGS has four CCR surface impoundments, which are identified as follows:

- Inactive, incised CCR surface impoundment: SGS North Primary Pond
- Inactive, incised CCR surface impoundment: SGS South Primary Pond
- Inactive CCR surface impoundment: SGS Main Ash Pond
- Inactive CCR surface impoundment: SGS Polishing Pond

Liner Determination

After review of the reasonably and readily available documentation, the following CCR Units were determined to not meet the requirements of §257.71(a)(1)(i), (ii), or (iii):

- SGS North Primary Pond
- SGS South Primary Pond
- SGS Main Ash Pond
- SGS Polishing Pond

Qualified Professional Engineer Certification

The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer attesting that the documentation as to whether a CCR unit meets the requirements 40 CFR 257.71(a) is accurate.

To meet the requirements of 40 CFR 257.71(b), I Mark W. Loerop hereby certify that I am a licensed Professional Engineer in the State of Iowa; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in 40 CFR 257.71(a).



By: *Mark W. Loerop*
Name: MARK LOEROP
Date: MARCH 5, 2018

cc: Tony Morse, Alliant Energy

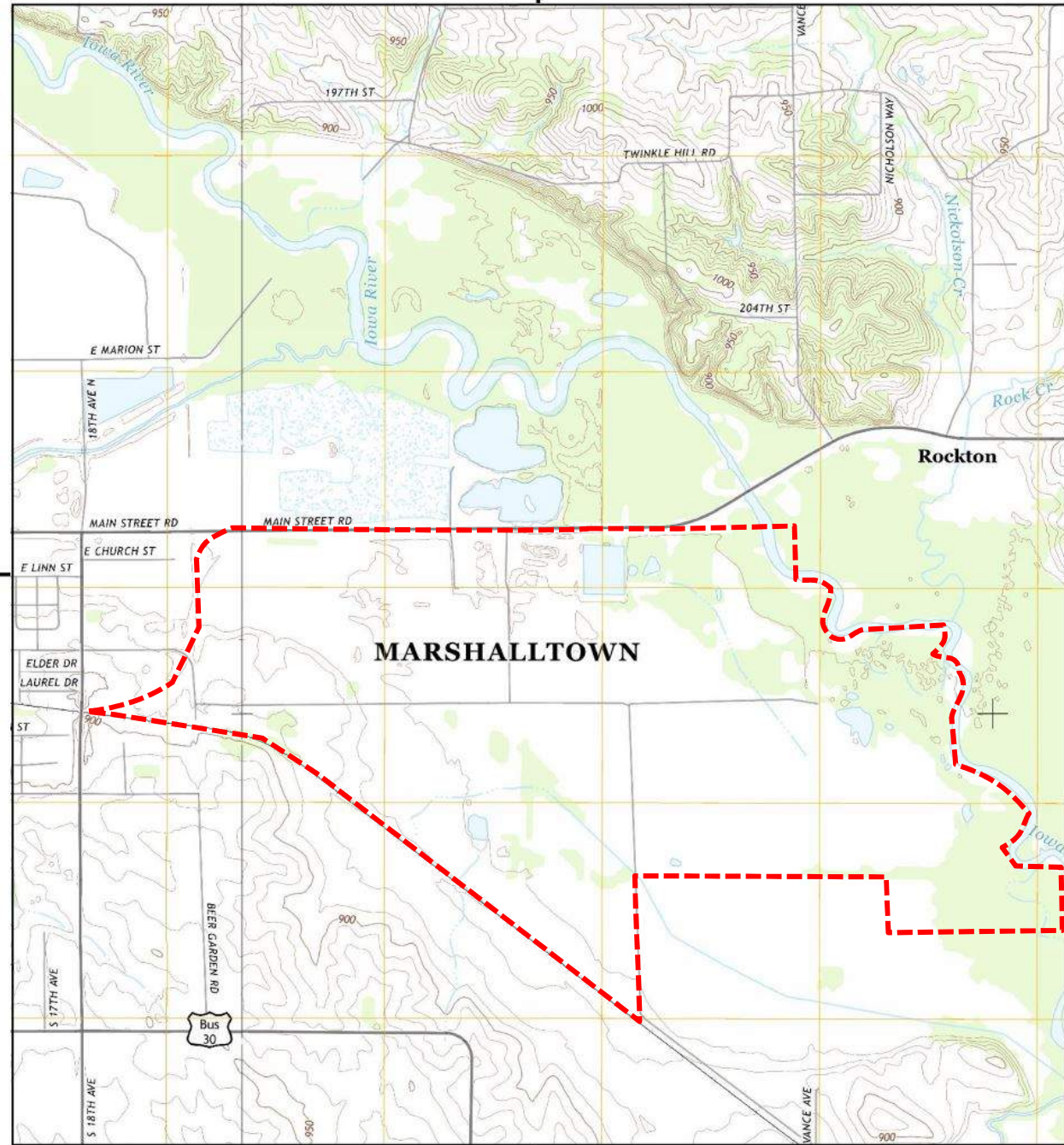
att: Figure 1 – Site Location
Figure 2 – Storm Water Routing

MWL/mwl/CTS
C:\Egnyte\Shared\Projects\154 - Alliant Energy\154.018 - CCR Projects\016 - SGS CCR Compliance Reports\Liner Determination Letter\SGS Liner Design Criteria - FINAL.doc

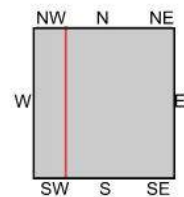


Historical Topo Map

2013



This report includes information from the following map sheet(s).



TP, Le Grand, 2013, 7.5-minute
W, Marshalltown, 2013, 7.5-minute

SITE NAME: Sutherland Generating Station
ADDRESS: 3001 East Main Street Road
Marshalltown, IA 50158
CLIENT: Environmental Site Assessors



Historical Aerial Photo



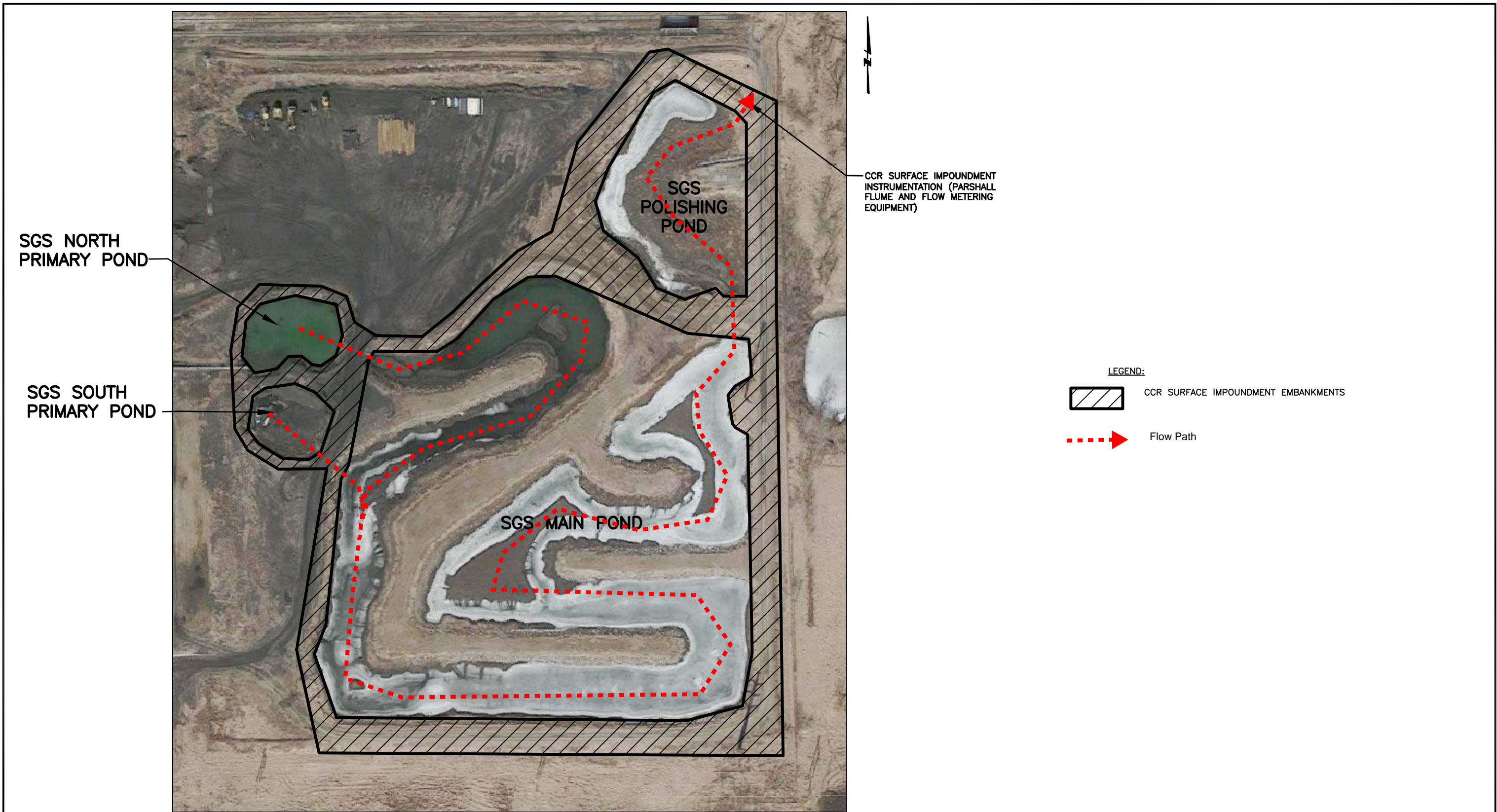
--- Approximate Property Boundary



HARD HAT SERVICESTM
Engineering, Construction and Management Solutions

Site Location
Sutherland Generating Station
Interstate Power and Light Company

Drawing
Figure 1
Date
1/22/2018



SGS NORTH PRIMARY POND, SGS SOUTH PRIMARY POND, SGS MAIN POND, SGS POLISHING POND
 AERIAL PHOTOGRAPH
 NOT TO SCALE

NOTICE
 THIS DRAWING IS THE PROPERTY
 OF HARD HAT SERVICES AND IS
 NOT TO BE REPRODUCED,
 CHANGED, OR COPIED IN ANY FORM
 OR MANNER WITHOUT PRIOR
 WRITTEN PERMISSION. ALL RIGHTS
 RESERVED.

REV	DATE	BY	DESCRIPTION
△			
△			
△	2-28-17	CTS	SITE-SPECIFIC I&M PLAN, VERSION 3.0 - REVISION 0.0
△	10-14-15	CTS	SITE-SPECIFIC I&M PLAN, VERSION 2.0 - REVISION 0.0



SCALE:	AS SHOWN
DATE:	2-28-17
DRAWN BY:	JFD
CHKD BY:	CTS
APRVD BY:	MWL

CLIENT / LOCATION
ALLIANT ENERGY-INTERSTATE POWER AND LIGHT COMPANY SUTHERLAND GENERATING STATION MARSHALLTOWN, IOWA

DRAWING DESCRIPTION
SITE-SPECIFIC I&M PLAN CCR SURFACE IMPOUNDMENTS (INACTIVE) - SGS NORTH PRIMARY POND, SGS SOUTH PRIMARY POND, SGS MAIN POND, SGS POLISHING POND

JOB	154.018.015.005
SHT.	FIGURE 2
DWG.	154.018.015.005-D2