

LEAK LOCATION SERVICES, INC.

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March 21, 2011

Mr. Craig Holthaus
Otto Baum Company, Inc.
866 N. Main Street
Morton, IL 61550

Email: craigholthaus@ottobaum.com

Subject: Report for "Geomembrane Leak Location Survey of the Metal Cleaning Basin at the Midwest Generation Powerton Plant in Pekin, Illinois";
LLSI Project 1337A

Dear Mr. Holthaus:

On March 17, of 2011, John Ortiz, of Leak Location Services, Inc. (LLSI) conducted a geomembrane leak location survey on the floor area of the Metal Cleaning Basin at the Midwest Generation Powerton Plant in Pekin, Illinois. The Metal Basin has a single 60-mil geomembrane over a 16-oz non-woven geotextile. The geomembrane was covered with a 12-oz non-woven geotextile, 12-inch cushion layer and 6-inch warning layer. The Pond had an approximate survey area of 42,000 square feet. This report documents the results of the survey. The appendix contains the details of the survey.

One leak was found during the survey. A 3-inch diameter puncture was located approximately 265 feet from the south toe line and approximately 25 feet from the east toe line. The leak was exposed and documented for repair. However, due to standing water, the leak could not be electrically isolated. Additional measurements could not be taken to determine if any additional leaks existed in the near vicinity. Figure 1 shows the surveyed area and approximate location of the leak. The leak location survey was performed in accordance with the ASTM Standard D7007.

If there are any questions regarding the leak location survey or this report, please contact us at (210) 408-1241. We appreciate this opportunity to have been of service on this important project.

Approved by:



Glenn T. Darilek
Principal Engineer

Very truly yours,



John Ortiz
Project Manager



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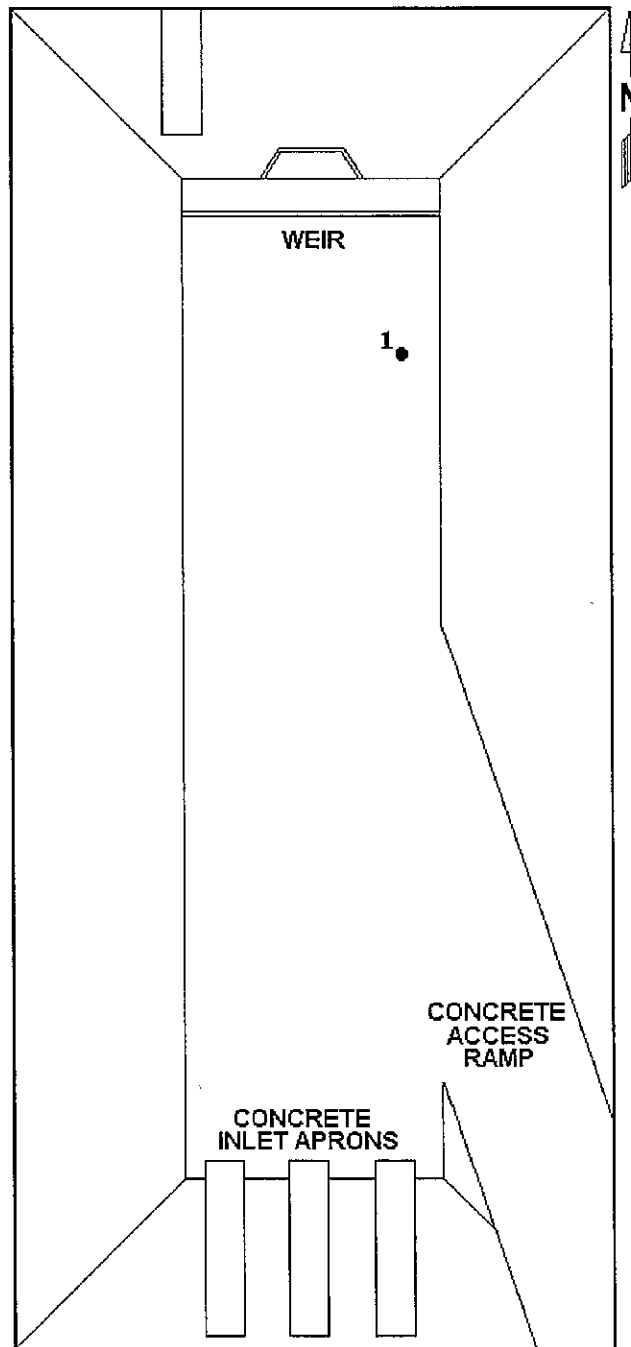


FIGURE 1. APPROXIMATE LOCATIONS OF LEAKS FOUND
IN METAL CLEANING BASIN

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APPENDIX

SURVEY DETAILS

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I. DESCRIPTION OF THE SURVEY SITE

The Metal Cleaning Basin contains a concrete access ramp, four concrete inlet aprons and a weir. The concrete access ramp and three of the concrete inlet aprons could not be isolated because of standing water. Only the floor area was surveyed.

Facility Name - Midwest Generation Powerton Power Station
Location - Pekin, Illinois
Survey Area - Approximately 42,000 square feet
Depth - Approximately 20 feet
Slopes - 3:1

II. SURVEY PARAMETERS

Date(s) - March 17, 2011
Climate - Cool
Geomembrane - 60-mil HDPE geomembrane
Layering - From the top down, a 6-inch warning layer of gravel, 12-inch cushion layer of sand, 12-oz non-woven geotextile, a single 60-mil geomembrane and a 16-oz non-woven geotextile
Specific Conditions of Survey - Standing water, approximately 3-inches above the geomembrane at leak 1
Leak Detection Sensitivity Setting - 6 mm leak detection at an average distance of 10 feet
Operator - John Ortiz

III. LEAK LOCATION METHOD

A. Principles of the Electrical Leak Location Method

The electrical leak location method is to impress a high DC voltage across the geomembrane and measure the resulting potential gradients on or in the conducting material on the geomembrane. Leaks are indicated by a characteristic pattern in the potential measurements caused by electrical current flowing through the leaks.

B. Surveys with Earth Materials on the Geomembrane

A high voltage isolated DC power supply is used to impress a voltage across the geomembrane using one electrode placed in the earth material on top of geomembrane and a

second electrode placed in the electrically conducting material located under the geomembrane. The leak survey is conducted by making potential gradient measurements on the moist earth material using a dipole probe using non-polarizing electrodes. These measurements were made along parallel survey lines. A portable digital data logger is used to collect the data. The data is then downloaded into a portable computer for display, plotting, and analysis. When a leak signal is detected, manual measurements are made to accurately locate the leak position between the survey lines. The locations of the leaks are marked for excavation.

C. Equipment

The leak location power supply provides an excitation signal of approximately 340 volts DC. The data acquisition system has an input resistance greater than 50 megohms and measures signals as low as 1 millivolt with an accuracy of about 1 millivolt.

D. Results of Artificial Leak Tests and Calibration Tests

Type of Test Leak - Artificial per D7007

Diameter - 6.4 mm

Depth - 18 inches under earth materials, on top of 12-oz non-woven geotextile

Date	Time	Operator	Recorder	Distance from Leak	Noise (N)	Signal + Noise (S + N)	(S + N) / N
3/17/11	11:20	J. Ortiz	6	-10 feet	48	1140	24
				10 feet		1112	23
3/17/11	14:00	J. Ortiz	6	-5 feet	48	1632	34
				5 feet		2216	46

