L'ANSE WARDEN ELECTRIC COMPANY, LLC
PO Box 695 29639 Willow Road
White Pine, Michigan 49971

Work Plan for Short-Term Storm Water Characterization Study
L'Anse Warden Electric Company, LLC
Fuel Aggregation Facility

In response to a 26 May 2016 letter from the Michigan Department of Environmental Quality (MDEQ), L'Anse Warden Electric Company, LLC (LWEC) has developed this Short-Term Storm Water Characterization Study (STSWCS) to quantify the quality of storm water discharges from LWEC's Fuel Aggregation Facility (FAF).

1.0 INTRODUCTION

LWEC's FAF is on approximately seven acres of leased land located at 17696 US Highway 41 (US-41) in L'Anse, Michigan. The FAF, which is operated independently by a contractor, aggregates and processes scrap wood for delivery to the Generating Station. Refer to **Figure 1** for the location of the Generating Station and FAF and **Figure 2** for a Site Map of the FAF. Woodchips and fines and bark are delivered by truck. Wood chips include primarily hardwood species that are received or processed into uniform chips at the aggregation facility. Wood chips also include waste products from the sawmill industry. Some softwoods are also included under the wood chip classification. Softwood used as structural lumber that is free from bark and has not been painted or treated in any manner is included in this category. Fines/bark are waste products from the lumber and paper mill industries. Fines/bark normally consist of sawdust fines collected during the production process, and tree bark removed during the production process. Processed untreated scrap wood is off-loaded from semi-trailers via truck dumper, outdoors onto gravel surface. A front end loader then moves the processed wood chips to the outdoor storage pile or directly to the loading bin for the pneumatic conveying system down to the Generating Station.

Unprocessed railroad ties usually arrive via railroad car or via truck from a separate off-site sorting and storage area leased by a contractor. In the past ground railroad ties have also been received via truck and railroad car. Only creosote-treated railroad ties are brought to the FAF for grinding. The aggregation contractor sorts, grinds, and screens the ties prior to delivering the material to the Generating Station. Grinding operations are conducted outdoors using a portable wood grinder. Processed (ground) railroad ties are discharged onto a concrete pad. The processed ties are then moved by front end loader to the processed railroad ties storage building for short-term storage or directly to the loading bin for the pneumatic conveying system down to the Generating Station. Processing also includes the removal of metal and other foreign objects, where applicable.

Previously, pentachlorophenol treated railroad ties were also accepted at the FAF and stored under tarpaulin cover until processed. Similar to ground creosote-treated railroad ties, the ground pentachlorophenol railroad ties were moved off the concrete pad by front end loader to the processed railroad ties storage building for short-term storage or directly to the loading bin for the pneumatic conveying system down to the Generating Station.

The FAF roadways and majority of the surface areas are not paved.

Wood chips, processed railroad ties, and wood fines and bark are generally temporarily stored at the FAF prior to delivery to the Generating Station. On occasion wood chips and processed wood may be loaded directly into haul trucks for delivery to the Generating Station if the pneumatic conveyor is out of service.

The list of significant materials that could impact storm water runoff from the FAF and their sources includes:

- Particulates
  - Gravel parking lot and roadways at the FAF;
  - Woodchips, fines, bark, and ground railroad ties;
  - Scrap metal removed during wood processing;
  - On site soils from mobile equipment, trucks, and vehicles;
  - General refuse/trash/solid waste; and,
  - Off-site (uphill) sources of runoff (adjacent wood yard and highway).
- Creosote
  - Railroad tie storage and processing; and,
  - Off-site sources of runoff (adjacent active railroad lines).
- Pentachlorophenol
  - Railroad tie storage and processing.
- Hydraulic Fluid
  - Truck dumper.
- Diesel fuel
  - Above ground storage of fuel;
  - Mobile equipment; and,
  - Off-site (uphill) sources of runoff (adjacent wood yard, highway, and railroad equipment).
- Lubricants
  - Stored indoors in the maintenance shop;
  - Equipment oil reservoirs; and,
  - Off-site (uphill) sources of runoff (adjacent wood yard, highway, and railroad equipment).

2.0 DESCRIPTION OF THE STORM WATER OUTFALLS

The FAF has two drainage areas and storm water is currently discharged from two outfalls in compliance with Certificate of Coverage (COC) number MIS310650. A Storm Water Pollution Prevention Plan (SWPPP) developed for the FAF is used to control significant materials so that storm water discharges will not cause a violation of the Water Quality Standards.

FAF Outfall 001 receives drainage from the gravel roadways and wood storage areas of the FAF, the fuel loading bin, conveyor, and blower building for the pneumatic conveyor. Outfall 001 also receives storm water from the Verso Corporation (Verso) Log Storage Areas, scrap tie storage area on Verso leased property, property leased to Verso from CertainTeed, and the Canadian National Railway siding, all of which are off-site and not part of the FAF but contribute storm water to the

FAF. This storm water is ultimately conveyed to CertainTeed Outfall 007 via a ditch line extending along the southern boundary of the railroad line to a culvert system at the junction of the railroad tracks and CertainTeed's western access road, then northwesterly in a ditch to a culvert discharging into Keweenaw Bay of Lake Superior.

FAF Outfall 002 receives drainage from the Highway U.S. 41 culvert and ditch via a buried pipeline to an infiltration area west of the FAF loading bin and wood conveyor, a buried pipeline from the truck dumper area, and the surface runoff from the railroad tie processing area. This extended infiltration area exists along the western portion of the FAF.

Drainage from the roof of the processed railroad tie storage building and gravel roadways areas located in the southern half of the facility flow to vegetated areas along the western property limits. Any excess storm water runoff from this infiltration area discharges to the ditch line along the southern boundary of the railroad tracks and ultimately CertainTeed Outfall 007.

As noted above, the FAF Outfalls receive a significant portion of their flow from off-site properties and discharge onto land owned by CertainTeed, which is understood to have its own SWPPP requirements.

3.0 CHEMICAL STORM WATER MONITORING

One grab sample will be collected per Outfall (FAF Outfall 001 and FAF Outfall 002) with observable flow resulting from storm events that meet MDEQ requirements. These requirements include:

- A storm event that is greater than 0.1 inches of rainfall and causes a discharge; and,
- The event must be at least 72 hours from the previous measurable (greater than 0.1 inch) storm event.

Samples will be collected by a LWEC or contracted certified industrial storm water operator.

Quantitative data will be reported for each grab sample which will be collected during the first 30 minutes of the discharge. Additional samples may be collected during a discharge event as necessary to represent the discharge, including collection of storm water discharging onto the FAF from off-site sources.

The following climactic and physical conditions will be recorded as part of each sampling event:

- Storm date and duration (in hours);
- Rainfall measurement or estimate (in inches) of the storm which generated the sampling event;
- Duration (in days) between the storm sampled (at least 72 hours since the previous measurable storm event) and the end of the previous measureable (greater than 0.1 inches of rainfall) storm;
- Visual observations; and,
- Estimated total volume of discharged storm water (in gallons) for the subject storm event.

At the time samples are collected, each Outfall will be inspected for visual indications of storm water pollution such as odor, turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits and documented.

All sampling equipment will either be disposable pre-cleaned equipment or will be decontaminated prior to and after each use.

A standard rain gauge will be setup at the FAF to provide rainfall measurements to the nearest tenth of an inch.

Collected samples will be submitted to White Water Associates, Inc. (WWA) in Amasa, Michigan, which partners with several national laboratories as needed. WWA has the following certifications:

- State of Michigan, Department of Environmental Quality Full Certification for Drinking Water Inorganic Chemistry - #9306
- State of Michigan, Department of Environmental Quality Full Certification for Drinking Water Microbiology – #9306
- State of Wisconsin, Department of Natural Resources NR149 Certification for Environmental Sample Analysis - #999971280
- US Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) for Environmental Testing - #65802
- ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories

Samples will be analyzed for the following parameters which may be present in storm water:

Parameter	Method	Preservative	MDL (mg/L)	RL (mg/L)
Oil and Grease	EPA 1664A	Ice, 4°C	2	5
Total Suspended Solids	SM 2540D	Ice, 4°C	1	1
Pentachlorophenol	EPA 625	Ice, 4°C	0.0032	0.02
Phenol Derivatives				
2-Methyl-phenol	EPA 625	Ice, 4°C	0.00025	0.002
3 & 4 Methylphenol	EPA 625	Ice, 4°C	0.00025	0.002
2,4,5-Trichlorophenol	EPA 625	Ice, 4°C	0.0018	0.01
2,4,6-Trichlorophenol	EPA 625	Ice, 4°C	0.0011	0.005

Notes:
°C = Degrees Celsius
mg/L = Milligrams per liter
EPA = United States Environmental Protection Agency
MDL = Method Detection Limit
RL = Reporting Limit
SM = Standard Method

Method detection limits will be in accordance with 40 Code of Federal Regulations (CFR) Part 136, Appendix B and the published methods. Samples will be collected, preserved, handled, and analyzed in accordance with methods approved under 40 CFR Part 136.

Three (3) discrete sampling events will be conducted during the period between MDEQ approval of this STSWCS and October 2016, dependent upon precipitation events or other factors such as adverse weather conditions. Adverse weather conditions that may prevent sample collection include high winds, electrical storms, extended dry periods, or any condition that creates inaccessibility or poses a danger to personnel. Sampling will only be conducted during LWEC's normal business hours.

4.0 REPORTING

Results of the chemical analyses, recorded climactic and physical conditions, and observations will be incorporated into a letter format report with supporting data tables for delivery to MDEQ. The report will include all representative discharge samples collected during the study period. It is LWEC's intent to complete the study by November 1, 2016 with submittal of the results by December 1, 2016. If adverse weather conditions or other factors impact this schedule LWEC will notify MDEQ to establish an alternate completion date

FIGURES

Aerial Imagery Source: ESRI World Imagery Map Service / NAIP2014

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FIGURE 1

FACILITY LOCATIONS MAP

L'Anse Warden Electric Company, LLC.
L'Anse, Baraga County, Michigan

DATE	DRAWN BY	DESIGNED BY	PROJECT NO.
5/9/2016	KRB	JBC	L2600001

Date Saved: 5/9/2016 12:08:46 PM
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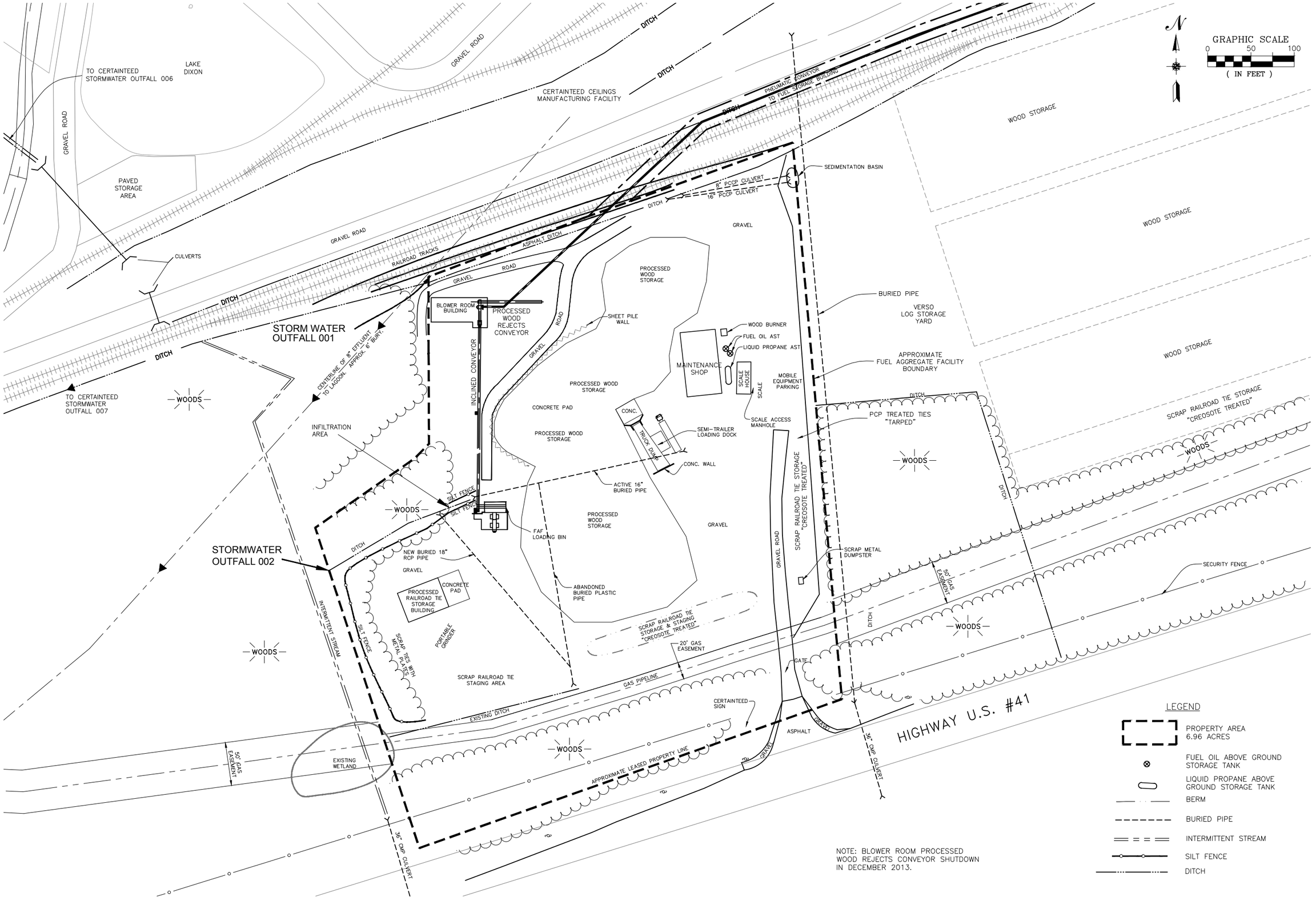

NOTE: BLOWER ROOM PROCESSED WOOD REJECTS CONVEYOR SHUTDOWN IN DECEMBER 2013.

COLEMAN ENGINEERING COMPANY
635 CIRCLE DRIVE – IRON MOUNTAIN, MICHIGAN 49801 (906) 774-3440
200 EAST AYER STREET – IRONWOOD, MICHIGAN 49938 (906) 932-5048

L'ANSE WARDEN ELECTRIC COMPANY L.L.C.
FUEL AGGREGATE FACILITY SITE MAP
L'ANSE, MI

SCALE	AS SHOWN
DATE	5-13-14
10295_LWEC_SITE.DWG	
CAD PROJECT	CAD10295-WPEP LWEC SWPP
JOB NUMBER	10295-D
MRK/JA/GDH	
CHECKED	DS
APPROVED	
CEC	
DATE	9/24/12

DRAWING NO. 2