SITE ASSESSMENT REPORT FOR THE CALUMET AND HECLA POWER PLANT SITE LAKE LINDEN, HOUGHTON COUNTY, MICHIGAN

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V Emergency Response Branch
801 Garfield Avenue, No. 229
Traverse City, MI 49686

Prepared by:

WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

Date Prepared	December 7, 2010
Technical Direction Document No.	S05-0001-1003-030
Contract No.	EP-S5-06-04
Document Control No.	988-2A-AHLZ
WESTON START Project Manager	Daniel M. Capone
Telephone No.	517-381-5932
U.S. EPA On-Scene Coordinator	Ralph Dollhopf

SITE ASSESSMENT REPORT FOR THE
CALUMET AND HECLA POWER PLANT SITE
LAKE LINDEN, HOUGHTON COUNTY, MICHIGAN

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V Emergency Response Branch
801 Garfield Avenue, No. 229
Traverse City, MI 49686

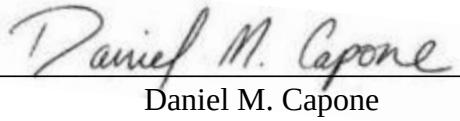
Prepared by:

WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

December 7, 2010

Prepared by  Date 12-7-10

Daniel Liebau
WESTON START Project Lead

Reviewed and
Approved by  Date 12-7-10

Daniel M. Capone
WESTON START Project Manager

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

LIST OF ABBREVIATIONS AND ACRONYMS

µg/kg	Microgram per kilogram
µg/L	Microgram per liter
µR per hour	Micro Roentgen per hour
ABS	Activity-based sampling
ACM	Asbestos-containing material
ACWM	Asbestos-containing waste material
ATV	All-terrain vehicle
BEA	Baseline environmental assessment
C&H	Calumet and Hecla
CEC	Coleman Engineering Company
CFR	*Code of Federal Regulations*
COC	Chemical of concern
EDR	Environmental Data Resources, Inc.
ESA	Environmental site assessment
f/cc	Fiber per cubic centimeter
ft^2	Square foot
GPS	Global Positioning System
ISO	International Organization for Standardization
MDNRE	Michigan Department of Natural Resources and Environment
mg/kg	Milligram per kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NESHAP	National Emission Standards for Hazardous Air Pollutants
NIOSH	National Institute of Occupational Safety and Health
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated biphenyls
PCM	Phase Contrast Microscopy
PEL	Permissible Exposure Limit
PLM	Polarized Light Microscopy
ppm	Part per million
RACM	Regulated asbestos-containing material

LIST OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

RAT	Rapid Assessment Tool
RDCC	Residential Direct Contact Criteria
s/cc	Structure per cubic centimeter
SA	Site assessment
START	Superfund Technical Assessment and Response Team
TEM	Transmission Electron Microscopy
TriMatrix	TriMatrix Laboratories, Inc.
TSCA	Toxic Substances Control Act
TSI	Thermal system insulation
U.S. EPA	United States Environmental Protection Agency
VSP	Visual Sampling Plan
WESTON	Weston Solutions, Inc.
XRF	X-ray fluorescence
yd^3	Cubic yard

1. INTRODUCTION

Under Technical Direction Document No. S05-0001-1003-030, the United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to perform a site assessment (SA) at the Calumet and Hecla (C&H) Power Plant Site in Lake Linden, Houghton County, Michigan (the Site). Specifically, the U.S. EPA requested that WESTON START prepare the necessary planning documents, including a health and safety plan; review historical documents; assist with site reconnaissance and screening activities; assist in the collection of soil and water samples; assist in the performance of an asbestos survey; and evaluate threats to human health and the environment posed by Site-related conditions. In addition to conducting a preliminary reconnaissance at the Site, WESTON START assisted with SA activities from May 16 through 18 2010, and June 16 through 18, 2010, under the direction of U.S. EPA On-Scene Coordinator (OSC), Mr. Ralph Dollhopf.

This SA Report is organized into the following sections:

- **Introduction –** Provides a brief description of the objectives and scope of SA activities;
- **Site Background** – Details the Site description, physical features, historical background, and potential chemicals of concern (COC) based on the Site history;
- **Site Assessment Activities –** Discusses the preliminary site reconnaissance and field screening methods and sampling activities used during the SA;
- **Field Screening and Analytical Results –** Discusses the results of field screening and laboratory analysis of samples collected during the SA;
- **Threats to Human Health and the Environment –** Identifies Site-related conditions that warrant a removal action under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP);
- **Conclusions –** Summarizes SA findings based on the SA results; and
- **References –** Lists references used to prepare this report.

2. SITE BACKGROUND

This section discusses the Site description, background, and potential COCs.

2.1 SITE DESCRIPTION

The Site does not have a physical address but is located south of the Village of Lake Linden, along Highway M-26 in Torch Lake Township, Houghton County, Michigan (**Figure 2-1**). The Site coordinates are latitude 47.185316 and longitude -88.413945, and lies in the southeast quarter of Section 6 and in the northeast quarter of Section 7, Township 55 North, Range 32 West. The Site's Houghton County Property Tax Identification Numbers are 31-014-306-004-00 (northern portion) and 31-014-307-004-00 (southern portion).

The Site is accessible from Highway M-26 and is bounded to the east by Torch Lake; to the north by the Houghton County Historical Museum, a public park, and a marina (historically part of the industrial complex); to the south by residential properties; and to the west by Highway M-26. The Site is contiguous with the Torch Lake Superfund Site Operational Unit No. 1, which was established to address deposits of mine waste or "tailings." The Site is not nor has ever been part of the Torch Lake Superfund Site.

The property encompasses approximately 14 acres and contains one building - the former C&H Power Plant building. The exterior of the building is dilapidated, and historical file information indicates that local citations have been issued for "Dangerous Conditions" at the Site. In addition, the Site contains foundations and floors from buildings no longer present at the Site that present various physical hazards related to terrain and subsurface conduits. Remnants of the following former buildings are still present at the Site: boiler house, still house, filters house, Hecla stamp mill, and two former pump houses. In addition, the Site contains former rock bins and bermed rubble and debris piles. **Figure 2-2** shows the current features and the historical building locations.

The topography of the Site is relatively flat, with building foundations and debris scattered at various locations. In addition to above grade structures, tunnels, piping, and subsurface conduits have been observed between the building footprints and the rubble. A steep sloping grade is

present along the eastern Site boundary at Torch Lake. The elevation of Torch Lake is approximately 20 feet lower than the ground surface on the main portion of the Site.

Groundwater flow in the Site area is unknown. However, based on the proximity of the Site to Torch Lake, groundwater is presumed to flow east toward Torch Lake.

2.2 SITE BACKGROUND

Site background information was obtained from the following sources (see **Section 7** for full citations):

- Michigan Department of Natural Resources and Environment (MDNRE) files, including communications and documentation related to the Site (MDNRE 2010)
- Phase 2 Environmental Site Assessment (ESA) report (Coleman Engineering Company [CEC] 1999a)
- Phase 1 ESA report (CEC 1999b)
- Baseline Environmental Assessment (BEA) report (CEC 2000)
- Review of drawings and records from the Michigan Technological University Archives and Copper Country Historical Collections (Bossun 1931; McIntosh and Burgan 1931)
- Written historical accounts in a book titled *Red Metal – The Calumet and Hecla Story* (Benedict 1952)
- Aerial photographs and Sanborn Fire Insurance Maps obtained from Environmental Data Resources, Inc. (EDR)

The Site is the former location of a large industrial complex that crushed or "stamped" rock from nearby copper mines. The copper ore was recovered by the stamping process, and the fine waste rock (stamp sands and tailings) was discharged to Torch Lake. Stamping operations began at the Site in 1868.

The Site historically contained several primary buildings that included a power plant, a centrally located boiler house, and the Hecla stamp mill along the waterfront. Only the power plant building is currently present at the Site. Smaller buildings located north of the power plant and boiler house included a filter house and a still house. These buildings are no longer present at the Site, but their foundations still exist **(Figure 2-2)**.

The C&H Power Plant was established in 1905 to meet the electrical demands of the evolving industrial complex and mining operations. The power plant was one of two electrical generating stations that operated in parallel and supplied electricity throughout the region. By 1931, the power plant was connected to the electrical grid through transformers and eight outgoing feeders that exited the west side of the building overhead.

In approximately 1915, C&H began reclaiming stamp sand and constructed two regrinder plants (No. 1 and No. 2), a flotation plant, a leaching plant, and a distillation plant. Most of these facilities reportedly were located on the adjacent property northeast of the Site. Sand reclamation operations at the property were terminated in approximately 1968.

Based on available information, Mr. Rudolph G. Kump transferred the Site to Mr. Louis Meneguzzo on December 17, 1998, through a Quit Claim Deed. On February 16, 2000, Mr. Meneguzzo transferred the Site to MENINC, Incorporated, a Michigan Corporation, through a Quit Claim Deed. **Attachment A** includes historical property information obtained from EDR.

2.3 POTENTIAL COCs

Based on the historical operations at the Site, a variety of COCs potentially are present in soil and groundwater beneath the Site. As a result of the stamping operations, inorganic COCs likely are present. In addition, operations associated with the power plant suggest that oils and lubricant, possibly containing polychlorinated biphenyls (PCB), may have been used at the Site. In addition, asbestos also historically was used at the Site as an insulator and fire retardant.

Based on known Site activities, a list of COCs was established to characterize conditions both inside and outside of the power plant building. The potential COCs evaluated as part of the SA activities at the Site include the following:

- **Soil:** selected inorganic COCs that include the following:
  - Aluminum
  - Antimony
  - Arsenic
  - Barium
  - Beryllium
  - Cadmium
  - Calcium
  - Chromium
  - Cobalt
  - Copper
  - Iron
  - Lead

  - Magnesium
  - Manganese
  - Mercury
  - Nickel
  - Potassium
  - Silver
  - Sodium
  - Thallium
  - Vanadium
  - Zinc

- **Soil and water:** PCBs
- **Soil, water, and air:** Asbestos as bulk material

Soil, water, and ambient air were considered relevant sample media relating to the potential transport and migration of COCs from the Site.

3. SITE ASSESSMENT ACTIVITIES

The SA activities were conducted in three phases. First, a preliminary site reconnaissance was conducted on April 15, 2010. An asbestos survey was subsequently conducted from May 17 through 19, 2010, to assess the presence of bulk asbestos as well as to conduct a preliminary evaluation of ambient air conditions both in the power plant building and in the surrounding area. After the receipt of asbestos analytical results, a focused SA was conducted from June 16 through 18, 2010.

WESTON START personnel supported the preliminary site reconnaissance and each subsequent phase of the SA activities. U.S. EPA OSC Dollhopf provided direction and guidance for the planning of each phase of the SA and coordinated the implementation of on-site activities. In general, the SA included the following tasks:

- Visual assessment of Site features, structures, and exposed debris or materials
- Asbestos survey, including the collection of bulk samples, the collection of soil samples, and the performance of activity-based sampling (ABS) of air
- X-ray fluorescence (XRF) analyzer screening of soil for metals
- Gamma radiation survey to screen for radiological contaminants
- Soil and water sample collection for laboratory analysis for potential COCs

Attachment B provides photographic documentation of Site conditions and SA activities. The following sections provide a detailed summary of the preliminary site reconnaissance and field screening and sampling activities conducted for the SA.

3.1 PRELIMINARY SITE RECONNAISSANCE

Prior to the initiation of the SA, WESTON START, Ms. Amy Keranen of the MDNRE, and U.S. EPA OSC Mr. Ralph Dollhopf completed a preliminary site reconnaissance with the property owner. Representatives from the Village of Lake Linden were also present. The preliminary site reconnaissance was conducted on April 15, 2010, to assist in the coordination and implementation of SA activities. In general, the preliminary site reconnaissance was conducted

to obtain relevant information about the Site and potential human and environmental receptors, evaluate planning logistics, and conduct a preliminarily evaluation of Site conditions.

During this Site visit, all electrical power and natural gas had been shut off at the Site. Debris was observed outside the power plant building that predominantly consisted of household debris, commercial appliances, metal drums, building debris, and industrial by-products (such as coal, slag, and cinders). The interior of the power plant building was covered with a veneer of dust and contained debris. Dilapidated asphaltic roofing materials and Pyrobar® block littered the floor of the building. The power plant building was dilapidated and featured openings in the concrete floor ranging in size from several square feet (ft^2) to 900 ft^2. The basement of the building was flooded and contained debris that included drums (both floating and sunken), metal piping, concrete, wooden timbers, and similar building materials.

In addition to debris and waste materials, the Site contained numerous foundations from historical buildings as discussed in Section 2.1. The Site also contained two rudimentary access roads composed of cinders, slag, and coal, which were present on approximately half of the property. Two access roads generally crossed the Site; one from the southwest to the northeast, and the second from the southeast to the northwest. Locked gates were located at the northwest and northeast corners of the Site. A berm consisting of building debris and similar materials from the Site was present along the northern and western Site boundaries presumably to prohibit unauthorized access to the Site.

Trespassers were observed during the Site visit entering the power plant building and hand digging along the shoreline of Torch Lake, presumably searching for historical artifacts and copper debris. In addition, human and biological receptors are present at the Site based on the observation of foot traffic, ATV traffic, and animals in the vicinity of the Site. An open surface water channel was observed flowing along the west and south sides of the Site.

3.2 FIELD SCREENING AND SAMPLING ACTIVITIES

After the preliminary site reconnaissance, an investigative approach was developed and a Site Assessment Work Plan (April 30, 2010) was developed and submitted to the OSC. Two separate field screening and sampling events were planned at the Site. The first event consisted of an

asbestos survey to identify potential hazards associated known historical asbestos use at the Site and to establish baseline conditions for workers at the Site. An Asbestos Survey Work Plan (May 12, 2010) was prepared which detailed the planned activities to be conducted during the asbestos survey. The second event expanded the SA to include an initial assessment, field screening and sampling of surface soil at the Site and water from inside the basement of the power plant building. A Field Sampling Plan was developed and submitted to the OSC (May 11, 2010) which detailed the site-specific data collection activities and associated quality assurance/quality control (QA/QC) measures to be followed during implementation of the SA activities. The following sections provide a detailed account of the investigative strategies and exploratory methods used during each event.

3.2.1 Asbestos Survey (May 2010)

An asbestos survey was conducted to determine the presence of asbestos within building materials, debris, soil, and air at the C&H Power Plant Site. This asbestos survey of the power plant building was conducted in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) at Title 40 of the *Code of Federal Regulations* (CFR), Part 61, Section 145(a), "Applicability." NESHAP requires the owner or operator of a facility to thoroughly inspect the facility where the demolition will occur for the presence of asbestos. NESHAP (40 CFR, Section 145 [c] "Procedures for asbestos emission control," Subsection 1) also states that the owner or operator of a demolition activity shall remove all regulated asbestos-containing materials (ACM) from the facility being demolished before any activity begins that could break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal.

The asbestos survey involved bulk asbestos sampling, ABS of air, and surface soil sampling as discussed below.

3.2.1.1 Bulk Asbestos Sampling

Interior and exterior bulk asbestos sampling was conducted inside and outside the power plant building as summarized below.

Interior Bulk Asbestos Sampling

During the interior bulk asbestos survey, 42 bulk samples of suspected ACM were collected from inside the power plant building on May 18, 2010. **Figure 3-1** shows the bulk asbestos sampling locations inside the power plant building. Fourteen separate homogenous areas were identified within the power plant building. These areas were individually classified as suspected asbestos materials uniform in composition, color, and texture. **Table 1** describes each homogenous, lists the samples collected from each area, provides a description of each sample, and presents the results of the asbestos analysis for each sample. The asbestos survey was limited to areas above the finished concrete grade floor (i.e. did not include building basement).

The asbestos survey scope of work for the interior of the power plant building included the identification of all suspected ACMs, collection of an appropriate number of representative bulk samples of each suspected ACM, classification of the friability of each suspected ACM, and recommendation of appropriate response action(s). The interior asbestos survey included the collection and assessment of suspected ACM building materials throughout the power plant building.

Each bulk sample of visually identified suspect asbestos containing building material (ACBM) was placed into a sealable plastic bag and labeled with site-specific nomenclature. WESTON START assessed each suspect ACM sample to determine its friability and probability of friability resulting from normal demolition practices. Each suspected ACM sample was classified as Category I Non-friable ACM, Category II Non-friable ACM, asbestos-containing waste material (ACWM), or regulated asbestos-containing material (RACM).

On May 21, 2010, all 42 bulk samples were shipped to Reservoirs Environmental, Inc., in Denver, Colorado, under chain of custody. Laboratory analysis of all bulk samples was conducted in accordance with U.S. EPA Method 600/R-93/116, Polarized Light Microscopy (PLM). Analytical results are discussed in **Section 4.1.1**.

Exterior Bulk Asbestos Sampling

During the exterior bulk asbestos survey on May 19, 2010, 26 bulk samples of suspected ACM were collected from areas outside the power plant building. **Figure 3-2** shows the bulk asbestos sampling locations outside the power plant building. Nine different suspected ACMs were identified in the open areas outside the power plant building. **Table 2** provides a summary of each of the samples collected from outside the power plant building, provides a description of each identified suspect ACM, and presents the results of the asbestos analysis for each sample.

The asbestos survey scope of work for the open areas at the Site included the identification of all suspected ACMs, collection of an appropriate number of representative bulk samples of each suspected ACM, classification of the friability of each suspected ACM, and recommendation of appropriate response action(s). The exterior asbestos survey was limited to the collection and assessment of suspected ACM building materials on the surface of the debris piles and the surface soil. No intrusive work was conducted to identify buried suspect ACM or to determine the vertical extent of asbestos contamination within demolition debris or surface soil.

Each bulk sample of visually identified suspect ACM was placed into a sealable plastic bag and labeled with site-specific nomenclature. WESTON START assessed each suspected ACM sample to determine its friability and probability of friability resulting from normal demolition practices. Each suspect ACM sample was classified as Category I Non-friable ACM, Category II Non-friable ACM, ACWM, or RACM.

On May 21, 2010, all 26 exterior bulk samples were shipped to Reservoirs Environmental, Inc., in Denver, Colorado, under chain of custody. Laboratory analysis of all bulk samples was conducted in accordance with U.S. EPA Method 600/R-93/116, PLM. Analytical results are discussed in **Section 4.1.1**.

3.2.1.2 ABS

Interior and exterior ABS of air was conducted inside and outside the power plant building as summarized below.

Interior ABS

ABS of air was conducted on May 19, 2010, as part of the asbestos survey inside the power plant building. ABS of air was conducted while WESTON START personnel agitated surface debris inside the power plant building with a rake to simulate the presence of workers and construction activities within the building. Stationary and personal air samples were collected during the interior ABS to determine the presence and concentration of asbestos inside and outside the building activity. The purpose of the ABS was to provide airborne asbestos data to determine the level of protection for future potential work to be conducted inside the power plant building. A target air volume for each air sample was 4,000 liters for an analytical sensitivity of 0.0001 structures per cubic centimeter (s/cc).

Four stationary air samples were collected during the ABS activity over a period of 8 hours. All four air samples were analyzed in accordance with the International Organization for Standardization (ISO) 10312 Method – direct transfer Transmission Electron Microscopy (TEM) method. **Figure 3-1** shows the locations of the interior air sampling equipment, and **Table 3** provides a summary of the interior ABS samples collected and presents the analytical results. Interior ABS samples included the following:

- ASB-AMB-1 – Interior on the north side of the power plant building
- ASB-AMB-2 – Interior on the south side of the power plant building
- ASB-AMB-3 – Exterior on the north side of the power plant building
- ASB-AMB-4 – Exterior on the south side of the power plant building

Two personal air samples (ASB-PER-1 and ASB-PER-2) were also collected during the ABS activity over the same 8-hour period. **Table 4** provides a summary of these samples and the analytical results. These two air samples were analyzed in accordance with the National Institute of Occupational Safety and Health (NIOSH) 7400 method – Phase Contrast Microscopy (PCM).

The ABS activity was generic and included raking of the debris for 30 minutes every hour during the duration of the air sampling activity. ABS activities simulated exposure conditions for potential future work inside the power plant building prior to demolition as well as for

unauthorized personnel walking through the building. Areas and debris disturbed during the ABS activity did not include the disturbance of any known or suspected ACM.

Visible dust emissions were generated during the ABS activity. The windows and doors of the power plant building were closed during the ABS activity. However, some windows were broken or damaged, and gaps and holes were present in the building exterior (sides and roof). There was no general direction for air flow inside the power plant, but observations of visible emissions during the ABS indicated that air inside the power plant was influenced by wind outside of the building. Analytical results are discussed in **Section 4.1.2.**

Exterior ABS

Similar to ABS activities conducted inside the power plant building, ABS in open areas outside the power plant building was conducted on May 20, 2010, as part of the asbestos survey. ABS air samples and personal air samples were collected over a period of 8 hours while WESTON START personnel agitated the surface soil with a rake in an area southeast of the power plant building where transite fragments were observed. High-volume air samplers were placed upwind, downwind, and within the ABS area. **Figure 3-3** shows the location of the exterior ABS air sampling array. The purpose of the ABS was to provide airborne asbestos data to determine the level of protection for future work conducted on open areas at the Site. A target air volume for each air sample was 4,000 liters for an analytical sensitivity of 0.0001 s/cc.

Three stationary air samples were collected during the exterior ABS activity. All three air samples were analyzed in accordance with the ISO 10312 Method – direct transfer TEM method. **Table 3** provides a summary of the exterior ABS samples collected and presents the analytical results. Exterior ABS samples included the following:

- ASB-AMB-5 – Located outside and downwind of the ABS area
- ASB-AMB-6 – Located within the ABS area
- ASB-AMB-7 – Located outside and upwind of the ABS area

WESTON START attempted to collected another sample, ASB-AMB-8, from within the ABS area, but the high-volume air sample pump stopped running during the ABS activity. Therefore, this sample was not submitted to the laboratory for analysis.

Two personal air samples (ASB-PER-3 and ASB-PER-4) also were collected during the ABS activity. **Table 4** provides a summary of these samples and the analytical results These two air samples were analyzed in accordance with the NIOSH 7400 method – PCM.

The ABS activity was generic and included raking of the debris for 30 minutes every hour during the duration of the air sampling activity. ABS activities simulated exposure conductions for potential future work inside the power plant building prior to demolition as well as for unauthorized personnel walking through the building. Areas and debris disturbed during the ABS activity did not include the disturbance of any known or suspected ACM.

The ABS activity was generic and included raking the surface soil for 30 minutes every hour during the duration of the air sampling activity. ABS activities simulated future work activities at the Site. Areas and debris which were disturbed during the ABS activity included the disturbance of suspected ACM. Analytical results are discussed in **Section 4.1.2**.

3.2.1.3 Surface Soil Sampling

Five surface soil samples were collected during the asbestos survey. Each surface soil sample was collected as a nine-point composite sample. **Figure 3-3** shows the surface soil sampling locations, and **Table 5** lists the surface soil sample descriptions and analytical results. Surface soil samples included the following.

- **ASB-SL-01 -** One composite surface soil sample was collected from the entrance parking area. This surface soil sample was collected because fragments of transite were observed near the parking area to the north and northeast. However, no visible suspect ACM was observed in the parking lot area. This surface soil sample was collected to determine the presence of asbestos in a potentially designated safe or non-contaminated area.

- **ASB-SL-02 -** One composite surface soil sample was collected from an open area south-southeast of the power plant building just north of the parking lot area. This surface soil sample was collected because numerous fragments of transite were observed in this area.

Visible fragments of transite were not included in this soil sample. This sample was collected to determine if transite fragments have impacted surrounding surface soil.

- **ASB-SL-03 -** One composite surface soil sample was collected from one of the access roads oriented from north to south at the Site. This surface soil sample was collected because numerous fragments of transite were observed on the road, and evidence was observed that unauthorized personnel rode all-terrain vehicles (ATV) on this portion of the Site. Visible fragments of transite were not included in this soil sample. This sample was collected to determine if transite fragments have impacted surrounding surface soil.

- **ASB-SL-04 -** One composite surface soil sample was collected from within the footprint of the demolished filter house building northeast of the power plant building. Historical documents indicate that this building was used to store asbestos. Visible suspected ACM observed in this area was not included in this soil sample

- **ASB-SL-05 -** One composite surface soil sample was collected from one of the earthen berms along the northern Site boundary. Although no visible suspected ACM was observed on the surface of these earthen berms, a surface soil sample was collected to determine the presence of asbestos.

Analytical results of asbestos surface soil samples are discussed in **Section 4.1.3.**

3.2.2 Field Screening and Sampling (June 2010)

The findings of the asbestos survey contributed to the development of second phase of the SA activities, which included surface soil screening for radiation and metals, and the collection of biased soil and water samples from selected areas of the Site.

3.2.2.1 Surface Soil Screening

On June 16, 2010, WESTON START mobilized to the Site to perform the focused SA activities. A sampling grid was established over the Site, and the grid was screened using the U.S. EPA's Rapid Assessment Tool (RAT) software. The RAT software assigns Global Positioning System (GPS) coordinates to real-time data and allows for the evaluation of field data as the data are generated. The grid sampling design was developed using the Visual Sampling Plan (VSP) software to establish screening locations.

An Innov-X (Model 2000) XRF instrument was linked to the RAT software and used to screen soil for metals at each established grid node. Similarly, a Ludlum Model 2241 radiation meter

equipped with gamma radiation detector, Model 44-2, was linked to the RAT software to screen soil for radiation anomalies.

Synchronization of the Ludlum instrument with the RAT software failed despite attempts to establish a connection. Readings from the Ludlum instrument were manually entered into the RAT software at each grid node, but a continuous gamma survey was not conducted.

All XRF and gamma field screening grid nodes were located using a Garmin sub-meter GPS device. WESTON START and U.S. EPA collected 54 XRF screening locations (grid nodes) identified as XRF-1 through XRF-54. WESTON START and U.S. EPA collected gamma radiation data from 55 screening locations (grid nodes) identified as 1 through 55. **Tables 6** and **7**, respectively list each XRF and gamma radiation screening location, and **Figure 3-4** depicts the screening locations established by VSP. Results of the soil screening activities are discussed in **Sections 4.2.1** (XRF Screening) and **4.2.2** (gamma radiation screening).

3.2.2.2 Soil Sampling

Historical documents indicate that transformers were present along the western side of the power plant building. During the Site visit, concrete pads were observed in the wooded area west of the power plant building. The concrete pads may have been used to support transformers outside of the building. WESTON START used a hand auger to install shallow borings near the concrete pads. Six shallow soil samples (CH-S-1-061810 through CH-S-6 -061810) were collected from the borings and analyzed by TriMatrix Laboratories, Inc. (TriMatrix), in Grand Rapids, Michigan, for PCBs. **Table 8** lists the soil samples collected, and **Figure 3-5** shows the soil sampling locations. Analytical results are discussed in **Section 4.2.3**.

In addition to PCB analyses, seven biased surface soil samples (CH-S-7-061710 through CH-S-12-061710, and CH-S-13-061710 which was a duplicate sample) were collected from selected screening locations (grid nodes) based on XRF screening results and analyzed by TriMatrix for total metals. **Table 9** lists the soil samples collected, and **Figure 3-5** shows the soil sampling locations.

Prior to being shipped, the sample containers were tightly sealed and immediately packed upright on ice in coolers. Appropriate laboratory chain-of-custody forms were completed for all samples. Sample coolers were securely taped shut prior to transport to prevent tampering or loss of samples. Samples were shipped to TriMatrix by overnight courier. Analytical results are discussed in **Section 4.2.3.**

3.2.2.3 Water Sampling

Historical sampling results from the flooded basement of the power plant building indicate that PCBs were present in the water. WESTON START collected eight water samples (CH-W-1-061610 through CH-W-8-061810) from various openings in the concrete floor of the power plant building using a peristaltic pump and disposable tubing. Multiple locations were selected to ensure that samples were collected from the entire building footprint in case the water in the basement was not hydraulically connected. Samples were analyzed for PCBs only. **Table 10** lists the samples collected, and **Figure 3-6** shows the sampling locations. Analytical results are discussed in **Section 4.2.4.**

Sample tubing was inserted into the basement water up to several feet below the surface. The peristaltic pump was activated, and the appropriate sample jars were filled. Disposable tubing and personal protective equipment were disposed of between each sampling location.

Prior to being shipped, the sample containers were tightly sealed and immediately packed upright on ice in coolers. Appropriate laboratory chain-of-custody forms were completed for all samples. Sample coolers were securely taped shut prior to transport to prevent tampering or loss of samples. Samples were shipped to the TriMatrix by overnight courier.

4. FIELD SCREENING AND ANALYTICAL RESULTS

The following sections discuss the asbestos survey and field screening and sampling results.

4.1 ASBESTOS SURVEY (MAY 2010)

This section discusses the bulk asbestos, ABS and asbestos surface soil sampling results.

4.1.1 Bulk Asbestos Sampling Results

As discussed in Section 3.2.1, a total of 42 bulk samples of suspected ACM were collected from inside the power plant building during the asbestos survey. An additional 26 bulk samples were collected from suspected ACM located outside the power plant building. The following sections summarize the findings and the laboratory analytical results. **Attachment C** provides the laboratory analytical reports of the results.

4.1.1.1 Interior Bulk Asbestos Sampling

Fourteen separate homogenous areas of ACM were identified inside the power plant building and sampled. Samples from 8 of these 14 homogeneous areas tested positive for asbestos (greater than 1 percent). The interior asbestos survey was limited to areas above the finished concrete grade floor.

Of the eight areas that tested positive for asbestos, one area (HA-6) was classified as Category I Non-friable ACM and therefore will not require removal prior to the demolition of the power plant building. ACM in each of the seven other areas (HA-1, HA-8, HA-9, and HA-11 through HA-14) will require removal prior to demolition. Materials from two of these areas (HA-8 and HA-12) were classified as RACM. Materials from four of these areas (HA-1, HA-9, HA-11, and HA-14) were classified as Category II Non-friable ACM. The material in one area (HA-13) was classified as ACWM. Materials in these seven areas are classified as friable or could be rendered friable during normal demolition activities and therefore require removal before any demolition activities. ACMs to be removed prior to demolition of the power plant building include the following:

- Surface wall plaster in the northwest corner office (samples ASB-BLK-1 through ASB-BLK-3)
- Electrical insulation east of the transformer room (sample ASB-BLK-29)
- Transite located on the mezzanine (sample ASB-BLK-30)
- Fire brick located at the south end of the power plant building (samples ASB-BLK-32 through ASB-BLK-34)
- Duct insulation at the south end of the power plant building (samples ASB-BLK-35 through ASB-BLK-37)
- Miscellaneous ACWM debris inside the south end of the power plant building (samples ASB-BLK-38 through ASB-BLK-40) and
- Demolished coal silo debris inside and outside the south end of the power plant building (samples ASB-BLK-41 and ASB-BLK-42)

Figure 3-1 shows the bulk asbestos sampling locations inside the power plant building. **Table 1** summarizes the analytical results for the samples and recommendations for each material sampled inside the power plant building.

Significant sample analytical results and recommendations are discussed below, followed by general recommendations.

Asphaltic Roofing Material

Asphaltic roofing material (HA-6 samples ASB-BLK-15 through ASB-BLK-19) tested positive for asbestos (greater than 1 percent asbestos). However, this building material was classified as damaged but non-friable, or a Category I Non-friable ACM. Although this material tested positive for asbestos, it may remain intact during normal demolition of the power plant building. If this material is left intact during the demolition, the landfill receiving the demolition debris must be notified that the debris contains Category I Non-friable ACM. Category I ACM can remain intact during demolition of the power plant building based on the assumptions that the building will be razed under "normal demolition activities" and the building debris will be disposed of in a landfill. The recommendation to leave the Category I Non-friable ACM intact

during demolition may change if the demolition debris is not disposed of in a landfill or is recycled, reused, or otherwise disposed of.

Fire Brick

Fire brick (samples ASB-BLK-32 through ASB-BLK-34) located at the south end of the power plant building tested positive for asbestos (greater than 1 percent asbestos). The fire brick sampled was located on the surface of the main floor of the power plant building. However, fire brick from the boiler remains intact below the main concrete floor. The portion of the boiler (or furnace) above the main concrete floor was previously demolished and removed from inside the power plant building. As a result of the removal of the upper portion of the boiler (or furnace), asbestos-containing fire brick below the main concrete floor would be exposed during demolition of the power plant building. The fire brick below the main concrete floor should be removed before demolition of the power plant building in order to prevent cross-contamination of non-ACM building debris.

Miscellaneous ACWM Debris

Bulk samples ASB-BLK-38 through ASB-BLK-40 collected from a debris pile inside the southeast portion of the power plant building near the collapsed coal silo tested positive for asbestos (greater than 1 percent asbestos). The bulk samples consisted of debris (coal, dirt, debris, cinders, etc.) rather than actual building materials. This debris pile was sampled because it is located near other suspected ACBM (fire brick, duct insulation, and "asbestos clad" coal silo material). Laboratory analytical results indicate that the debris has been impacted by asbestos, and the material is classified as ACWM. The debris should be removed before demolition of the power plant building.

Demolished Coal Silo Debris

Samples ASB-BLK-41 and ASB-BLK-42 collected from a former coal silo that collapsed in the southeast corner of the power plant building tested positive for asbestos (greater than 1 percent asbestos). Historical documents identify the presence of an "asbestos clad" material on the coal silo. The composition of this "asbestos clad" ACM is described as a thick, reinforced wallpaper.

Debris from the coal silo is present inside and outside of the power plant building. The coal silo ACM and ACWM outside the power plant building should be removed before demolition of the building in order to prevent cross-contamination of non-ACM building debris.

General Recommendations

Open pits and trenches observed inside the power plant building contained suspect ACM and ACWM. Preventative measures should be taken to minimize the demolition debris from entering these subsurface areas during demolition of the power plant building. An additional site visit and sample collection activity is required to determine the presence and assess the condition of suspected ACM and potential ACWM below grade (inside the power plant building basement) once these subsurface areas can be accessed.

4.1.1.2 Exterior Bulk Asbestos Sampling

A total of 26 bulk samples of suspected ACM were collected from outside the power plant building during the asbestos survey. Fourteen suspect ACMs were identified in the open areas of the Site based on sampling results, including the results for six samples classified as Category I Non-friable ACM that will require disposal as ACM but will not require special handling during removal. The remaining suspected ACM includes thermal system insulation (TSI) and transite that will require removal as ACM. The TSI and transite were each sampled at four different locations across the Site, and materials at each location were classified as RACM (TSI) and Category II Non-friable ACM (transite).

The following suspect ACMs tested positive for asbestos (greater than 1 percent asbestos):

- Suspect TSI (samples ASB-BLK-44, ASB-BLK-49, ASB-BLK-51, and ASB-BLK-61)
- Transite (cementitious material - samples ASB-BLK-45, ASB-BLK-53, ASB-BLK-62, and ASB-BLK-68)
- Other ACMs, including gaskets (samples ASB-BLK-43 and ASB-BLK-54), asphaltic roofing material (samples ASB-BLK-52 and ASB-BLK-59), miscellaneous (unidentified) material (sample ASB-BLK-55), and black tar on bricks (sample ASB-BLK-67)

Figure 3-2 shows the bulk asbestos sampling locations outside the power plant building. **Table 2** summarizes the analytical results for the samples and provides recommendations for each material sampled outside the power plant building.

Each type of suspect ACM that tested positive for asbestos and recommendations for removal are discussed below, followed by general recommendations.

TSI

Of the suspect ACMs that tested positive for asbestos, the TSI material was the only friable ACM. All four bulk TSI samples (ASB-BLK-44, ASB-BLK-49, ASB-BLK-51, and ASB-BLK-61) tested positive for asbestos (greater than 1 percent asbestos). The TSI sampling locations and observations are summarized below.

- Bulk samples ASB-BLK-44 and ASB-BLK-49 were collected from debris piles along the east portion of the Site. Approximately six small, isolated TSI debris piles were observed in this area.
- Bulk sample ASB-BLK-51 was collected from the building foundation in the northeast portion of the Site. Approximately two dozen small, isolated TSI debris piles were observed on and near the building foundation in this area.
- Bulk sample ASB-BLK-61 was collected from debris piles within the footprint of the former filter house (asbestos storage) building on the north portion of the Site. Only one small, isolated TSI debris pile was observed within the footprint of this building.

The TSI should be disposed of as RACM in a landfill approved to accept RACM.

Transite

All four bulk transite samples (ASB-BLK-45, ASB-BLK-53, ASB-BLK-62, and ASB-BLK-68) tested positive for asbestos. The transite material was not friable but may be rendered friable during normal demolition or heavy equipment removal operations. Although numerous transite fragments (approximately 200 individual fragments) were observed on the surface in areas along the eastern, southern, and central portions of the Site, only four bulk samples were collected. The transite could be rendered friable during heavy equipment operations and therefore requires removal before any demolition or excavation activities.

Other ACMs

Other suspect ACM samples that tested positive for asbestos included the following:

- Gaskets (samples ASB-BLK-43 and ASB-BLK-54)
- Asphaltic roofing material (samples ASB-BLK-52 and ASB-BLK-59)
- Miscellaneous material (sample ASB-BLK-55)
- Tar on bricks (sample ASB-BLK-67)

These ACMs were classified as damaged but non-friable, or Category I Non-friable ACM. Although this material tested positive for asbestos, these materials are non-friable and will not become friable during demolition and heavy equipment removal operations. Therefore, this material will not impact surrounding soil or create an airborne hazard during demolition or heavy equipment removal operations. However, the removal and disposal of these materials requires notification to the landfill prior to disposal.

General Recommendations

The ACMs in the open areas of the Site that tested positive for asbestos require removal and disposal as RACM in a landfill approved to accept RACM. Debris piles and soil near the ACMs require removal and disposal as ACWM in a landfill licensed to accept RACM.

4.1.2 ABS Results

The purpose of the ABS was to provide airborne asbestos data to determine the level of protection for future work conducted at the Site. The following sections summarize the findings and the laboratory analytical results. **Attachment C** provides the laboratory analytical reports of the results.

4.1.2.1 Interior ABS

As discussed in Section 3.2.1.2, the following four stationary air samples were collected during the interior ABS activity:

- ASB-AMB-1 – Interior on the north side of the power plant building

- ASB-AMB-2 – Interior on the south side of the power plant building
- ASB-AMB-3 – Exterior on the north side of the power plant building
- ASB-AMB-4 – Exterior on the south side of the power plant building

Figure 3-1 shows the approximate locations of the interior air sampling equipment, and **Table 3** summarizes the interior ABS TEM ambient air sampling results. All four air samples were analyzed in accordance with the ISO 10312 Method – direct transfer TEM method. Laboratory analytical results indicated that the asbestos results for samples ASB-AMB-1 and ASB-AMB-2 (inside the power plant building) were significantly higher than results for samples ASB-AMB-3 and ASB-AMB-4 (outside the power plant building). The two samples from inside the building contained 51 and 30 asbestos structures, or 4.2E-01 and 2.9E-02 s/cc. The two samples from outside the building contained 0 and 1 asbestos structures, or 0.0E+00 and 8.5E-04 s/cc. These results indicate that airborne asbestos contamination is likely during any future work inside the power plant building and appropriate personal protective equipment should be utilized by workers.

Table 4 summarizes the laboratory analytical results for the personal air samples (ASB-PER-1 and ASB-PER-2) collected inside the power plant building during the ABS activity. The sample results were 0.042 and 0.013 fiber per cubic centimeter (f/cc). These fiber concentrations do not exceed the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of 0.1 f/cc.

4.1.2.2 Exterior ABS

As discussed in Section 3.2.1.2, the following three stationary air samples were collected during the exterior ABS activity:

- ASB-AMB-5 – Located outside and downwind of the ABS area
- ASB-AMB-6 – Located within the ABS area
- ASB-AMB-7 – Located outside and upwind of the ABS area

Figure 3-2 shows the approximate locations of the exterior air sampling equipment, and **Table 3** summarizes the exterior ABS TEM ambient air sampling results. All three air samples were

analyzed in accordance with the ISO 10312 Method – direct transfer TEM method. Laboratory analytical results indicated that the asbestos result for sample ASB-AMB-6 (inside the ABS area) was significantly higher than results for samples ASB-AMB-5 and ASB-AMB-7 (outside the ABS area). Sample SB-AMB-6 contained 54 asbestos structures, or 1.1E-01 s/cc. The other two samples contained 3 and 6 asbestos structures, or 2.5E-03 and 5.5E-03 s/cc. The analytical results indicate that airborne asbestos contamination is likely during future removal work at the site and appropriate personal protective equipment should be utilized by workers.

Two personal air samples (ASB-PER-3 and ASB-PER-4) were also collected during the ABS activity. These two air samples were analyzed in accordance with NIOSH 7400 method – PCM. **Table 4** summarizes the laboratory analytical results for the personal air samples (ASB-PER-3 and ASB-PER-4) collected from the intentionally disturbed area. The samples were overloaded with debris and could not be analyzed for asbestos fibers.

4.1.3 Surface Soil Sampling Results

As discussed in Section 3.2.1.3, five surface soil samples were collected during the asbestos survey. Each surface soil sample was collected as a nine-point composite sample. **Figure 3-3** shows the surface soil asbestos sampling locations, and **Table 5** summarizes the following analytical results:

- **ASB-SL-01 -** Less than 0.1 percent asbestos.
- **ASB-SL-02 -** Less than 0.1 percent asbestos.
- **ASB-SL-03 -** Less than 0.1 percent asbestos.
- **ASB-SL-04 -** Asbestos not detected even though asbestos was observed in the sample; no asbestos observed during 1,000-point point count of the sample either
- **ASB-SL-05 -** Less than 0.1 percent asbestos.

Asbestos was detected in the soil samples. However, the percentage of asbestos detected was below the 0.1 percent detection limit. These results indicate that asbestos contamination in site soils, while not prevalent at high levels, is present and may pose a threat to human health or the environment. Additional site assessment activities (ABS) should be conducted in areas where

visible ACM was not observed (such as the parking area, earthen berms, and cinder slag coal area) to determine if these areas present a threat to human health.

4.2 FIELD SCREENING AND SAMPLING RESULTS (JUNE 2010)

Field screening and sampling activities were conducted at the Site between June 16 and 18, 2010. As discussed in Section 3.2.2, a total of 55 grid nodes were established at the Site to collect unbiased soil screening data. Both XRF screening for inorganic constituents and gamma radiation screening were conducted on the grid. Soil samples were collected along the western side of the power plant building and analyzed for PCBs. In addition, biased surface soil samples were collected from selected grid nodes and analyzed for metals. Finally, water samples from the basement of the power plant building were collected and analyzed for PCBs. **Attachment C** provides the laboratory analytical reports of results.

The following subsections summarize the XRF screening results, the gamma radiation screening results, and the laboratory soil and water sampling results..

4.2.1 XRF Screening Results

Table 6 summarizes the XRF screening results. The XRF screening results were compared to the MDNRE Part 201 Residential Direct Contact Criteria (RDCC) to evaluate potential risks associated with exposure to surface soil at the Site. The RDCC was selected as relevant criteria based on the proposed future development of the property, which reportedly would be mixed commercial and residential use. Screening results for locations that exceeded the RDCC for specific inorganic COCs are summarized below.

- **Antimony –** The RDCC for antimony is 180 milligram per kilogram (mg/kg). **Figure 4-1** shows the XRF screening location where antimony results exceeded the RDCC and the estimated area of antimony impact in surface soil. The antimony concentration at the following grid node exceeded the RDCC:
  - XRF-25: 217 mg/kg
- **Arsenic –** The RDCC for arsenic is 7.6 mg/kg. **Figure 4-2** shows the XRF screening locations where arsenic results exceeded the RDCC and the estimated area of arsenic impact in surface soil. The arsenic concentrations at the following grid node locations exceeded the RDCC:

- XRF-22: 26 mg/kg
- XRF-24: 70 mg/kg
- XRF-26: 51 mg/kg
- XRF-28: 114 mg/kg
- XRF-31: 19 mg/kg
- XRF-34: 83 mg/kg
- XRF-54: 51 mg/kg

- **Copper –** The RDCC for copper is 20,000 mg/kg. **Figure 4-3** shows the XRF screening locations where copper results exceeded the RDCC and the estimated area of copper impact in surface soil. The copper concentrations at the following grid node locations exceeded the RDCC:

  - XRF-12: 22,898 mg/kg
  - XRF-25: 26,954 mg/kg
  - XRF-39: 24,658 mg/kg

- **Iron –** The RDCC for iron is 160,000 mg/kg. **Figure 4-4** shows the XRF screening locations where iron results exceeded the RDCC and the estimated area of iron impact in surface soil. The iron concentrations at the following grid node locations exceeded the RDCC:

  - XRF-5: 219,617 mg/kg
  - XRF-28: 299,168 mg/kg
  - XRF-46: 219,882 mg/kg
  - XRF-53: 208,231 mg/kg
  - XRF-54: 160,001 mg/kg

- **Lead -** The RDCC for lead is 400 mg/kg. **Figure 4-5** shows the XRF screening locations where lead results exceeded the RDCC and the estimated area of lead impact in surface soil. The lead concentrations at the following grid node locations exceeded the RDCC:

  - XRF-14: 607 mg/kg
  - XRF-24: 412 mg/kg
  - XRF-25: 21,425 mg/kg
  - XRF-28: 1,998 mg/kg
  - XRF-29: 858 mg/kg
  - XRF-30: 790 mg/kg
  - XRF-35: 453 mg/kg
  - XRF-53: 1,069 mg/kg
  - XRF-54: 499 mg/kg

XRF screening results indicate that arsenic and lead are the predominant inorganic contaminants present in surface soil at the Site. Therefore, arsenic and lead concentrations should be considered as indicators of potential contaminant "hot spots" for further investigation during any

additional phases of SA activities. **Figure 4-6** provides a composite depiction of the area where each of the above-referenced COCs exceeded the RDCC. Based on the composite XRF screening results, most exceedances are located in the central portion of the Site, generally extending east from the power plant building to the shoreline. Smaller areas of copper, iron, and lead where sample results exceeded the RDCC also are located centrally along the northern and southern Site boundaries.

4.2.2 Gamma Radiation Screening Results

Table 7 summarizes the Gamma radiation screening results. Background gamma radiation levels in the vicinity of the marina northeast of the Site were measured at approximately 10 micro Roentgen per hour (µR per hour). Background radiation levels vary depending on location and are typically below 10 µR per hour. Background radiation is naturally occurring radiation that is always present and includes high-energy gamma rays from the sun and outer space and alpha, beta, gamma radiation emitted from elements in the earth. The background radiation measurement of 10 µR per hour observed at the Lake Linden area is not considered extraordinary.

Radiation measurements collected during the screening activities ranged from 6 to 27 µR per hour. None of the readings measured at the Site exceed three times the background level, which is used as a "rule of thumb" indicator of elevated radiation levels. The non-occupational dose limit set by the government is 100,000 µR per hour per year above the background level per year.

Based on the gamma radiation screening performed at the Site, a significant radiation emission source was not identified.

4.2.3 Laboratory Soil Sampling Results

On June 17 and 18, 2010, WESTON START personnel collected 13 soil samples from the Site. Six shallow soil samples (CH-S-1-061810 through CH-S-6-061810) were analyzed for PCBs, and seven biased surface soil samples (CH-S-7-061710 through CH-S-12-061710, and CH-S-13-061710 which was a duplicate sample) were analyzed for inorganic contaminants at selected

screening locations (grid nodes) based on XRF screening results. The following subsections summarize the results of laboratory analytical testing.

4.2.3.1 Shallow Soil Samples – PCB Analyses

As summarized in Section 3.2.2.2, WESTON START used a hand auger to install shallow borings near former transformer pads along the western side of the power plant building. Shallow soil samples (CH-S-1-061810 through CH-S-6-061810) were collected from the borings and analyzed for PCBs. **Table 8** summarizes the laboratory analytical results for the soil samples analyzed for PCBs. PCBs were detected in the following two samples:

- CH-S-2-061810 – Aroclor-1260 at 9.1 micrograms per kilogram (µg/kg)
- CH-S-6-061810 – Aroclor-1260 at 41 µg/kg

The federal Toxic Substances Control Act (TSCA) establishes the standards for managing materials containing PCBs. The applicability of these standards to the Site is summarized from 40 CFR, Part 761, Subpart D, below.

> "Any person responsible for PCB waste at as-found concentrations ≥50 parts per million (ppm) that was either placed in a land disposal facility, spilled, or otherwise released into the environment prior to April 18, 1978, regardless of the concentration of the spill or release…where the concentration of the spill or release was ≥50 ppm but <500 ppm, must dispose of the waste as follows:"

Based on the excerpt above and the concentrations of PCBs detected in soil samples from the Site, the TSCA rules are not applicable. Therefore, the alternative Part 201 RDCC of 4 mg/kg was used to assess PCB soil contamination. In either case, the detected concentrations of total PCBs in soil were significantly less than both the federal and state cleanup criteria.

4.2.3.2 Surface Soil Samples – Inorganic COC Analyses

WESTON START evaluated the XRF screening results and selected screening locations (grid nodes) for soil sample collection and analysis for inorganic COCs. **Table 9** summarizes the laboratory analytical results for the samples analyzed for inorganic COCs (metals). Inorganic COCs were detected in each of the surface soil samples (CH-S-7-061710 through CH-S-13-061710) as summarized below.

- **CH-S-7-061710 (XRF-25) –** This sample was collected from along the eastern Site boundary near the shoreline of Torch Lake. Twenty-two inorganic COCs were detected in the sample. The following COCs were detected at concentrations exceeding the RDCC:
  - Aluminum: 54,000 mg/kg
  - Antimony: 540 mg/kg
  - Copper: 33,000 mg/kg
  - Lead: 70,000 mg/kg

- **CH-S-8-061710 (XRF-37) –** This sample was collected from approximately 100 feet east of the northeast corner of the power plant building. All of the inorganic COCs were detected in the sample, but only the arsenic concentration exceeded its RDCC as follows:
  - Arsenic: 10 mg/kg

- **CH-S-9-061710 (XRF-14) –** This sample was collected along the Site's northern boundary. Twenty-two inorganic COCs were detected in the sample. The following COCs were detected at concentrations exceeding the RDCC:
  - Antimony: 510 mg/kg
  - Arsenic: 17 mg/kg
  - Copper: 110,000 mg/kg
  - Lead: 12,000 mg/kg

- **CH-S-10-061710 (XRF-28) –** This sample was collected from along the eastern Site boundary near the shoreline of Torch Lake. All of the inorganic COCs were detected in the sample. The following COCs were detected at concentrations exceeding the RDCC:
  - Arsenic: 88 mg/kg
  - Iron: 200,000 mg/kg
  - Lead: 1,700 mg/kg

- **CH-S-11-061710 (XRF-39) –** This sample was collected from the north-central portion of the Site south of the former still house. All of the inorganic COCs were detected in the sample. The following COCs were detected at concentrations exceeding the RDCC:
  - Arsenic: 15 mg/kg

  - Copper: 60,000 mg/kg

- **CH-S-12-061710 (XRF-30) –** This sample was collected from the south-central portion of the Site east of the power plant building along the gravel road. All of the inorganic COCs were detected in the sample, but only the arsenic concentration exceeded its RDCC as follows:
  - Arsenic: 34 mg/kg

- **CH-S-13-061710 (XRF-37)** – This sample was a duplicate of sample CH-S-8-061710. All of the inorganic COCs were detected in the sample, but only the arsenic concentration exceeded its RDCC as follows:
  - Arsenic: 14 mg/kg

Figures 4-7 through 4-11 show the sampling locations where laboratory analytical results exceeded the RDCC for antimony, arsenic, copper, iron, and lead, respectively.

4.2.4 Laboratory Water Sampling Results

Between June 16 and 18, 2010, WESTON START collected eight water samples from the interior substructures of the power plant building. WESTON START collected water samples from various openings in the concrete floor of the power plant building using a peristaltic pump and disposable tubing. Multiple locations (CH-W-1-061610 through CH-W-8-061810) were selected to ensure that samples were collected from the entire building footprint in case the water in the basement was not hydraulically connected. Samples were analyzed for PCBs only. **Table** 10 summarizes the laboratory analytical data for the water samples. PCBs were detected in two of the samples as follows:

- CH-W-2-061610 – Aroclor-1254 at 0.18 microgram per liter (µg/L)
- CH-W-3-061610 – Aroclor-1254 at 0.078 µg/L

The total concentrations of PCBs in each sample did not exceed the MDNRE Part 201 Groundwater Contact Criteria.

5. THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

Factors to be considered in determining the appropriateness of a potential removal action at a Site are defined in the NCP at 40 CFR 300.415(b)(2). A summary of the factors applicable to the Site is presented below.

- **Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances or pollutants or contaminants**

  WESTON START identified widespread bulk ACM contamination within the power plant building and across the Site. In addition to bulk ACM, asbestos fibers were detected in surface soil and air samples collected from the Site.

  Based on analytical results, Category I Non-friable ACM, Category II Non-friable ACM, RACM, and ACWM are present at the Site at greater than 1 percent asbestos.

  During the SA activities, site access was unrestricted because of a lack of fencing around the Site perimeter. Trespassers were observed during the Site visit entering the power plant building and hand digging along the shoreline of Torch Lake, presumably searching for historical artifacts and copper debris.

  Inorganic COCs (including lead, arsenic, copper, iron and antimony) and ACMs at the Site pose immediate threats to human health and the environment based on factors that should be considered when evaluating potential future actions at the Site. Human and biological receptors are present at the Site based on the observation of foot traffic, ATV traffic, and animals in the vicinity of the Site. Further, potential receptors outside of the Site could be exposed to Site-related contaminants through the erosion of surface soil by both weather and animal and human traffic in the area. These mechanisms could transport soil from the Site and increase the potential for exposure outside the Site.

- **Actual or potential contamination of drinking water supplies or sensitive ecosystems**

  The flooded basement in the power plant building is a potential contaminant source to groundwater beneath the Site. Reportedly, water levels within the building are affected by seasonal changes. In addition, Torch Lake borders the Site to the East and is presumed to be connected to groundwater.

  Both historical and current analytical results from water and sediment samples collected from the basement of the power plant building indicate that PCB contamination is present. Drums and other potentially submerged containers have also been observed in the basement of the power plant building. The dilapidated condition of the building will continue to allow precipitation to enter the building and result in the potential release of contaminants.

  Surface soil at the Site is contaminated with inorganic COCs and ACM. Runoff from the Site is unmanaged. During rain events and spring snow melt, contaminated soil and debris from the Site may be transported to both Torch Lake and surrounding properties. Further, an open surface water channel was observed flowing along the west and south

sides of the Site. This channel presents another possible contaminant migration pathway that could impact surface waters of the state and sensitive ecosystems.

- **Hazardous substances or pollutants or contaminants in drums, totes, containers, or other bulk storage containers that may pose a threat of release**

  Large openings were observed in the concrete floor ranging in size from several ft^2 to 900 ft^2. During the SA activities, the basement of the building was flooded and contained debris that included drums (both floating and sunken), metal piping, concrete, wooden timbers, and similar building materials. Further deterioration of the drums and piping could allow additional quantities of hazardous substances to migrate to the environment. Analytical results confirm the presence of PCBs in water samples collected from the basement of the power plant building. Unrestricted Site access could result in trespassers causing accidental or intentional release of hazardous materials or contacting hazardous materials. The close proximity of the Site to residences and other vulnerable areas greatly increases potential threats to human health and environment if a release were to occur.

- **High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.**

  Inorganic COCs (including lead, arsenic, copper, iron and antimony) and ACMs in surface soils at the Site pose immediate threats to human health and the environment. The SA findings suggest that much of the debris and demolition waste primarily is located in the central portion of the Site extending east from the power plant building to the shoreline of Torch Lake. Construction debris (fire brick and transite) and metals contaminated soil are in direct contact with the waters of Torch Lake. As mentioned previously, human and biological receptors are present at the Site. Further, potential receptors outside of the Site could be exposed to Site-related contaminants through the erosion of surface soil by both weather and animal and human traffic in the area. These mechanisms could transport soil from the Site and increase the potential for exposure outside the Site.

- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released**

  Houghton County has an average annual snowfall of approximately 200 inches per year. Seasonal snowmelt results in the erosion and transport of surface soil. In addition, the Site is located along the shoreline of Torch Lake and is unprotected from winds blowing off the lake. Weather conditions, especially the erosive forces of wind and water, will continue to contribute to the deterioration of the power plant building and the potential migration of contaminated surface soil at the Site.

- **Threat of fire or explosion**

  Even though all electrical power and natural gas has been shut off at the Site, the threat of fire or explosion is moderate because of unrestricted Site access and potential trespassing. As temperatures decrease in autumn and winter, the potential increases for trespassers to enter on-site buildings and start fires for warmth. A fire could produce toxic gases, irritants, contaminated fire-water runoff, and result in the migration of asbestos contamination.

- **The availability of other appropriate federal or state response mechanisms to respond to the release**

  The MDNRE requested U.S. EPA assistance in performing an SA, which documents the need for federal involvement to address imminent endangerment posed by the Site.

- **Other situations or factors that may pose threats to public health or welfare of the United States or the environment**

  Physical hazards were observed at the Site. During the Site visit, the exterior of the power plant building was dilapidated. Historical file information indicates that local citations have been issued for "Dangerous Conditions" at the Site. The continued degradation of the power plant building could result in the destruction and dispersion of Category I Non-friable ACM, primarily in the form of asphaltic roofing material. Further, structural concerns related to the power plant building will continue to prevent access to submerged portions of the building's basement until the building is razed.

  In addition, multiple foundations and floors were observed across the Site. The remnants of a former boiler house, still house, filter house, and Hecla stamp mill at the Site present various physical hazards related to terrain and subsurface conduits beneath the former buildings. To date, these substructures have not been investigated because of more immediate threats associated with documented surface contamination at the Site. However, these substructures also pose threats from the migration of hazardous substances through erosion, transport, and deposition as discussed above.

6. CONCLUSIONS

The SA activities were conducted in three phases. First, a preliminary site reconnaissance was conducted on April 15, 2010, with the property owner. Historical and other Site-related documents also were reviewed. Subsequently, an asbestos survey was conducted from May 17 through 19, 2010, to assess the presence of bulk asbestos as well as to conduct a preliminarily evaluation of ambient air conditions both in the power plant building and in the surrounding area. After the receipt of asbestos analytical results, a focused SA was conducted from June 16 through 18, 2010. SA activities included XRF screening of soil and debris for metals, a gamma radiation survey, limited soil sampling for PCBs and inorganic COCs, and the collection of water samples from the power plant building basement for PCB analysis.

The asbestos survey inside the power plant building identified seven different ACMs that require removal prior to the demolition of the building. Moreover, the condition and friability of some of these identified ACMs has resulted in the migration of asbestos fibers throughout the inside of the building based on the conditions summarized below.

- There is no documentation regarding historical removal of ACM inside the power plant building.
- Some of the damaged ACM identified during the asbestos survey is friable.
- Asbestos fibers were detected in air samples collected during the ABS activity inside the power plant building.
- Although the ACMs are inside the building, the building roof and exterior walls are deteriorated, so these ACMs are somewhat exposed to the environment (wind, rain, etc.).

Based on the conditions discussed above, the power plant building should be decontaminated after the specified ACM and ACWM have been removed but before its demolition.

In addition, friable and damaged ACM in surface soil and open areas of the Site require proper removal and disposal in order to prevent a threat to human health and the environment. The asbestos survey in the open areas of the Site identified nine different ACMs in surface soil, building foundations, and debris piles. Laboratory analytical results indicate that all of these ACMs contained greater than 1 percent asbestos. Friable TSI (RACM), transite (Category II Non-friable ACM), and miscellaneous materials (Category I Non-friable ACM) are present. The

weathering of these exposed ACMs as well as how these ACMs were deposited indicate that surface soil has been impacted by asbestos. In addition, composite surface soil sample results indicate the presence of asbestos. Therefore, impacted surface soil should be classified as ACWM.

An ACWM removal activity is required for any detectable asbestos fibers documented in the bulk samples collected. This determination is based on the following definition of ACWM in 40 CFR, Part 61, Subpart 61.141 (NESHAP Revision; Final Rule): "As applied to demolition and renovation operations, this term also includes regulated ACM waste and materials contaminated with asbestos including disposable equipment and clothing."

RACM, Category II Non-friable ACM, and ACWM from the Site must be disposed of at a landfill operated in accordance with 40 CFR, Part 61.154, or to a U.S. EPA-approved site that converts asbestos waste to non-asbestos material in accordance with 40 CFR, Part 61.155.

SA results also indicate that soil primarily east of the power plant building to the shore of Torch Lake contains arsenic, antimony, copper, iron, and lead at concentrations exceeding the MDNRE Part 201 RDCC.

Figure 6-1 shows the findings of the asbestos survey and the soil screening and sampling results. The findings suggest that much of the debris and demolition waste primarily is located in the central portion of the Site extending east from the power plant building to the shore of Torch Lake.

Although the lateral extent of ACM and soil contamination has been determined, the vertical extent of the contamination has not been evaluated. Further, additional ABS should be conducted in on-site areas where visible ACM was not observed. Risk-based analysis should be conducted of ABS air sample data for on- and off-site receptors to determine if unacceptable concentrations of airborne asbestos fibers would be generated during power plant building demolition. This additional ABS will also help determine if a removal action is warranted in on-site areas that include, but are not limited to, the parking area, the earthen berms, and areas containing cinders, slag, or coal.

Inorganic COC and ACM contamination at the Site poses immediate threats to human health and the environment based on factors that should be considered when evaluating potential future actions at the Site. Human and biological receptors are present at the Site based on the observation of foot traffic, ATV traffic, and animals in the vicinity of the Site during the Site visit. Further, potential receptors outside of the Site could be exposed to Site-related contaminants through the erosion of surface soil by both weather and animal and human traffic in the area. These mechanisms could transport soil from the Site and increase the potential for exposure outside the Site.

Follow-up activities for the Site should include securing the Site to prevent trespassers from entering the Site and to significantly reduce or eliminate the threat of exposure, release to the environment, and off-site migration of hazardous substances.

Based on the soil screening results and laboratory analytical data, WESTON START has developed a preliminary volume estimate that would include the removal of approximately 1 foot of contaminated soil and debris from the ground surface at the Site. Soil contaminated with inorganic COCs at concentrations that exceed the Part 201 RDCC and ACM cover an area of approximately 255,135 ft^2. A removal action to a depth of 1 foot in this area would result in the excavation of approximately 9,450 cubic yards (yd^3) of contaminated soil and debris, or approximately 15,120 tons. In addition, preliminary estimates related to the abatement of asbestos within the power plant building (including the coal silo) include approximately 150 yd^3 of ACM and ACWM. These estimates are approximate and do not include surface vegetation, tree stumps, and former building components (floors and foundations) that may require removal for excavation purposes.

7. REFERENCES

Benedict, C. Harry. 1952. *Red Metal – The Calumet and Hecla Story.* Ann Arbor, Michigan. University of Michigan Press.

Bosson, Frederick. 1931. "Electric Power Distribution." *Company Newsletter*. Calumet and Hecla Consolidated Copper Company. October.

Coleman Engineering Company (CEC). 1999a. "Phase 2 ESA." January.

CEC. 1999b. "Phase 1 ESA." July.

CEC. 2000. "BEA." March.

McIntosh, Robert, and A.L. Burgan. 1931. "Electric Power Generation." *Company Newsletter*. Calumet and Hecla Consolidated Copper Company. October.

Michigan Department of Natural Resources and Environment (MDNRE). 2010. Various Communications and Documentation for the C&H Power Plant Site. Remediation and Redevelopment Division.

TABLES

Table 1
Asbestos Bulk Samples from Inside Power Plant - May 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Sample No.	HA Designation	Sampling Location	Sample Description	Condition	Friable	Asbestos Mineral	Percent Asbestos	NESHAP Category	Removal Prior to Demolition
ASB-BLK-1	HA-1	Inside Power House - NW corner office	Surface - wall plaster	Damaged	No	Chrysotile	4	Category II	Yes
ASB-BLK-2			Surface - wall plaster	Damaged	No	Chrysotile	3		
ASB-BLK-3			Surface - wall plaster	Damaged	No	Chrysotile	3		
ASB-BLK-4	HA-2	Inside Power House - NW corner office	12"x12" ceiling tile	Damaged	Yes	NA	ND	NA	No
ASB-BLK-5			12"x12" ceiling tile	Damaged	Yes	NA	ND		
ASB-BLK-6	HA-3	Inside Power House - NW corner office	Green Paint	Damaged	No	NA	ND	NA	No
			Cellulose wall board	Damaged	No	NA	ND		
ASB-BLK-7			Green Paint	Damaged	No	NA	ND		
			Cellulose wall board	Damaged	No	NA	ND		
ASB-BLK-8	HA-4	Inside Power House - NW corner office	Green Paint	Damaged	Yes	NA	ND	NA	No
			Fiber Board	Damaged	Yes	NA	ND		
ASB-BLK-9			Green Paint	Damaged	Yes	NA	ND		
			Fiber Board	Damaged	Yes	NA	ND		
ASB-BLK-10	HA-5	Inside Power House - throughout	Pyrobar ceiling material	Damaged	Yes	NA	ND	NA	No
ASB-BLK-11			Pyrobar ceiling material	Damaged	Yes	NA	ND		
ASB-BLK-12			Pyrobar ceiling material	Damaged	Yes	NA	ND		
ASB-BLK-13			Pyrobar ceiling material	Damaged	Yes	NA	ND		
ASB-BLK-14			Pyrobar ceiling material	Damaged	Yes	NA	ND		
ASB-BLK-15	HA-6	Inside Power House - throughout	Asphaltic Roofing Material	Damaged	No	NA	ND	Category I	No
ASB-BLK-16			Asphaltic Roofing Material	Damaged	No	Chrysotile	8		
			Asphaltic Roofing Material	Damaged	No	NA	ND		
ASB-BLK-17			Asphaltic Roofing Material	Damaged	No	Chrysotile	10		
			Asphaltic Roofing Material	Damaged	No	NA	ND		
ASB-BLK-18			Asphaltic Roofing Material	Damaged	No	NA	ND		
ASB-BLK-19			Asphaltic Roofing Material	Damaged	No	Chrysotile	6		
			Asphaltic Roofing Material	Damaged	No	NA	ND		
ASB-BLK-20	HA-7	Inside Power House - throughout	Exterior wall surfacing material	Damaged	No	NA	ND	NA	No
			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-21			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-22			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-23			Exterior wall surfacing material	Damaged	No	NA	ND		
			Exterior wall surfacing material	Damaged	No	NA	ND		
			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-24			Exterior wall surfacing material	Damaged	No	NA	ND		
			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-25			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-26			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-27			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-28			Exterior wall surfacing material	Damaged	No	NA	ND		
ASB-BLK-29	HA-8	Inside Power House - East of Transformer Bay	Electrical insulation	Damaged	Yes	Chrysotile	70	RACM	Yes
ASB-BLK-30	HA-9	Inside Power House - on Mezzanine	Transite	Not damaged	No	Chrysotile	15	Category II	Yes
ASB-BLK-31	HA-10	Inside Power House - on Mezzanine	Electrical Circuit Board - slate	Damaged	No	NA	ND	NA	No
ASB-BLK-32	HA-11	Inside Power House	Fire Brick	Not damaged	No	Chrysotile	4	Category II	Yes
			Fire Brick	Not damaged	No	NA	ND		
ASB-BLK-33			Fire Brick	Not damaged	No	Chrysotile	5		
			Fire Brick	Not damaged	No	NA	ND		
ASB-BLK-34			Fire Brick	Not damaged	No	NA	ND		
ASB-BLK-35	HA-12	Inside Boiler House	Residual duct insulation	Damaged	Yes	Chrysotile	6	RACM	Yes
ASB-BLK-36			Residual duct insulation	Damaged	Yes	Chrysotile	5		
ASB-BLK-37			Residual duct insulation	Damaged	Yes	Chrysotile	12		
ASB-BLK-38	HA-13	Inside Power House - Near Coal Silo	Miscellaneous Debris	Damaged	Yes	Chrysotile	5	ACWM	Yes
ASB-BLK-39			Miscellaneous Debris	Damaged	Yes	Chrysotile	5		
ASB-BLK-40			Miscellaneous Debris	Damaged	Yes	Chrysotile	8		
ASB-BLK-41	HA-14	Inside Power House - Coal Silo Wrap	Reinforced exterior wrapping	Damaged	Yes	Chrysotile	20	Category II	Yes
ASB-BLK-42			Reinforced exterior wrapping	Damaged	Yes	Chrysotile	15		

Notes:

ACM = Asbestos Containing Material

ACWM = Asbestos containing waste material (see 40 Code of Federal Regulations (CFR) 61.141 Definitions)

Category I = means ACM packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1% asbestos as determined using methods specified in Appendix E, subpart E, 40 CFR 763, section 1, PLM. (see 40 CFR 61.141 Definitions)

Category II = any material, excluding Category I nonfriable ACM, containing more than 1% asbestos as determined using methods specified in Appendix E, subpart E, 40 CFR 763, section 1, PLM that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (see 40 CFR 61.141 Definitions)

HA = Homogeneous Area

NA = Not Applicable

NESHAP = National Emissions Standards for Hazardous Air Pollutants

ND = Non detect

PLM = Polarized Light

RACM = Regulated asbestos containing material (see 40 CFR 61.141 Definitions)

Table 2
Asbestos Bulk Samples from Outside Power Plant - May 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Sample No.	Sample Description	Condition	Friable	Asbestos Mineral	Percent Asbestos	NESHAP Category	Requires Removal as ACM	Requires Disposal as ACM
ASB-BLK-43	Gasket	Damaged	No	Chrysotile	90	Category I	NA	Yes
ASB-BLK-44	Suspect TSI - White, fibrous material	Damaged	Yes	Chrysotile	10	RACM	Yes	NA
				Amosite	20			
ASB-BLK-45	Transite - Gray fibrous cementitious material	Damaged	No	Chrysotile	12	Category II	Yes	NA
ASB-BLK-46	Black tar on brick	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-47	Red fire brick - brown ceramic material	Damaged	No	NA	ND	NA	NA	NA
	Red fire brick - white granular material			NA	ND			
ASB-BLK-48	Yellow Fire Brick	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-49	Suspect TSI - White, fibrous material	Damaged	Yes	Chrysotile	40	RACM	Yes	NA
ASB-BLK-50	Black, re-enforced mat	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-51	Suspect TSI - White, fibrous material - black fibrous tar	Damaged	Yes	NA	ND	RACM	Yes	NA
	Suspect TSI - White, fibrous material - plaster & debris			Chrysotile	35			
ASB-BLK-52	Asphaltic Roofing Material - white fibrous material	Damaged	No	Chrysotile	70	Category I	NA	Yes
	Asphaltic Roofing Material - fibrous tar			Chrysotile	10			
	Asphaltic Roofing Material - black tar			NA	ND			
	Asphaltic Roofing Material - fibrous tar			NA	ND			
ASB-BLK-53	Transite - Gray fibrous cementitious material	Damaged	No	Chrysotile	15	Category II	Yes	NA
ASB-BLK-54	Gasket	Damaged	No	Chrysotile	85	Category I	NA	Yes
ASB-BLK-55	Miscellaneous gray/white fibrous material	Damaged	No	Chrysotile	55	Category I	NA	Yes
ASB-BLK-56	Black, re-enforced mat	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-57	Brown Fire Brick	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-58	White Fire Brick	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-59	Asphaltic Roofing Material - white fibrous material	Damaged	No	Chrysotile	70	Category I	NA	Yes
	Asphaltic Roofing Material - black tar			NA	ND			
	Asphaltic Roofing Material - black fibrous tar			NA	ND			
ASB-BLK-60	White plaster	Damaged	Yes	NA	ND	NA	NA	NA
ASB-BLK-61	Suspect TSI - White, fibrous material	Damaged	Yes	Chrysotile	60	RACM	Yes	NA
				Amosite	10			
ASB-BLK-62	Transite - Gray fibrous cementitious material	Damaged	No	Chrysotile	15	Category II	Yes	NA
ASB-BLK-63	White cementitious surfacing (plaster) material	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-64	Asphaltic Roofing Material - black tar	Damaged	No	NA	ND	NA	NA	NA
	Asphaltic Roofing Material - black fibrous tar			NA	ND			
ASB-BLK-65	White cementitious surfacing (plaster) material	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-66	White cementitious surfacing (plaster) material	Damaged	No	NA	ND	NA	NA	NA
ASB-BLK-67	Black tar on brick	Damaged	No	Chrysotile	8	Category I	NA	Yes
	Black tar on brick			NA	ND			
	Black tar on brick - fibrous tar			NA	ND			
ASB-BLK-68	Transite - Gray fibrous cementitious material	Damaged	No	Chrysotile	15	Category II	Yes	NA

Notes:

% = percent

ACM = Asbestos Containing Material

ACWM = Asbestos containing waste material (see 40 CFR 61.141 Definitions)

Category I = means ACM packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1% asbestos as determined using methods specified in Appendix E, subpart E, 40 CFR 763, section 1, PLM. (see 40 CFR 61.141 Definitions)

Category II = any material, excluding Category I nonfriable ACM, containing more than 1% asbestos as determined using methods specified in Appendix E, subpart E, 40 CFR 763, section 1, PLM that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (see 40 CFR 61.141 Definitions)

CFR = Code of Federal Regulations

NA = Not Applicable

ND = Non detect

PLM = Polarized Light Microscopy

RACM = Regulated asbestos containing material (see 40 CFR 61.141 Definitions)

Requires Disposal as ACM = Surface debris which tested positive for asbestos and requires notification for solid waste disposal as asbestos.

Requires Removal as ACM = Surface debris which tested positive for asbestos and is a threat to human health. Requires disposal as RACM in a licensed asbestos landfill.

TSI = Thermal system insulation

Table 3
Activity-Based Sampling TEM Ambient Air Samples - May 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Sample No.	ABS Activity	Sampling Location	Total TEM-EPASM		PCME		AHERA		BCPS (2003)	
			Total Asbestos Structures	Total Asbestos Air Concentration (s/cc)	Total Asbestos Structures	Total Asbestos Air Concentration (s/cc)	Total Asbestos Structures	Total Asbestos Air Concentration (s/cc)	Total Asbestos Structures	Total Asbestos Air Concentration (s/cc)
ASB-AMB-1	Inside Powerhouse	Inside Powerhouse - South Side	51	4.2E-01	0	0.0E+00	50	4.1E-01	0	0.0E+00
ASB-AMB-2		Inside Powerhouse - North Side	30	2.9E-02	5	4.9E-03	28	2.7E-02	1	9.8E-04
ASB-AMB-3		Outside Powerhouse - North Side	0	0.0E+00	0	0.0E+00	0	0.0E+00	0	0.0E+00
ASB-AMB-4		Outside Powerhouse - South Side	1	8.5E-04	0	0.0E+00	1	8.5E-04	0	0.0E+00
ASB-AMB-5	Outside Powerhouse	Downwind of ABS Area	3	2.5E-03	0	0.0E+00	3	2.5E-03	0	0.0E+00
ASB-AMB-6		Within ABS Area	54	1.1E-01	0	0.0E+00	53	1.1E-01	0	0.0E+00
ASB-AMB-7		Upwind of ABS Area	6	5.5E-03	2	1.8E-03	5	4.6E-03	0	0.0E+00
ASB-AMB-FB	Field Blank	Field Blank	0	Blank	0	Blank	0	Blank	0	Blank

Notes:
ABS = Activity based sampling
AHERA = Asbestos Hazard Emergency Response Act (Apply to all fibers only: L > or = 0.5 um, AR > or = 5)
BCPS = Berman Crump Structures (Apply to all structures where Total column > 0; L > 10 um, W < or = 0.4 um)
EPASM = Environmental Protection Agency Standard Method (Apply to fibers only. L > or = 0.5 um, AR > or + 0.3 um)
PCME = Phase Contract Microscopy Equivalent (Apply to all structures Total column . 0: L . 5 um, W > or = 0.25 um, AR = 3)
s/cc = structures (asbestos) per cubic centimeter
TEM = Transmission Electron Microscope
um = Micron

Table 4
Activity-Based Sampling PCM Personal Air Samples - May 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Sample No.	ABS Activity	Sample Description	Fiber Concentration (f/cc)	OSHA PEL (f/cc)
ASB-PER-1	Raking Inside Powerhouse	Personal Air Sample Inside Power Plant	0.042	0.1
ASB-PER-2			0.013	0.1
ASB-PER-3	Raking Outside Powerhouse	Personal Air Sample Outside Power Plant	Overloaded	0.1
ASB-PER-4			Overloaded	0.1
ASB-PER-FB	Field Blank	Field Blank	Field Blank	NA

Notes:
f/cc = Fibers per cubic centimeter
NA = Not Applicable
OSHA = Occupational Safety and Health Administration
Overloaded = Rejected due to loose debris
PEL = Permissible Exposure Limits
PCM = Phase Contrast Microscopy

Table 5
Asbestos Surface Soil Samples - May 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Sample No.	Sampling Location	Percent Asbestos
ASB-SL-01	Site entrance - Parking Area (South of the Power House)	<0.1
ASB-SL-02	Transite Area - SSE of the Power House	<0.1
ASB-SL-03	Transite along ATV gravel road	<0.1
ASB-SL-04	Historical Asbestos Storage Building	ND*
ASB-SL-05	Earthern Berm	<0.1

Notes:
< = Less than
* = The original visual estimation analysis detected trace chrysotile, but the 1,000 point count was non detect
ATV = All Terrain Vehicle
ND = Non Detect

Table 6
Summary of XRF Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	XRF-1	XRF-2	XRF-3	XRF-4	XRF-5	XRF-6	XRF-7	XRF-8	Part 201 RDCC
	Sampling Date	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-1	XRF-2	XRF-3	XRF-4	XRF-5	XRF-6	XRF-7	XRF-8	
	Unit	Results								
Metals										
Antimony	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**180**
Arsenic	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**7.6**
Barium	mg/kg	<LOD	2,480	<LOD	1,351	<LOD	<LOD	<LOD	<LOD	**37,000**
Cadmium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**550**
Chromium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**790,000**
Cobalt	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Copper	mg/kg	338	104	224	1,019	229	405	816	14,970	**20,000**
Iron	mg/kg	2,329	26,080	11,370	22,961	**219,617**	10,045	74,723	38,659	**160,000**
Lead	mg/kg	32	<LOD	39	203	<LOD	42	<LOD	100	**400**
Manganese	mg/kg	<LOD	<LOD	<LOD	279	<LOD	105	836	403	**25,000**
Mercury	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**160**
Nickel	mg/kg	<LOD	82	<LOD	<LOD	<LOD	<LOD	114	<LOD	**4,000**
Selenium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Silver	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,500**
Zinc	mg/kg	587	41	54	435	<LOD	49	96	286	**170,000**

Notes:
MDNRE = Michigan Department of Natural Resources and Environment
Results in **bold** exceed the MDNRE Part 201 Residential Direct Contact Criteria
<LOD = Less than limit of detection
mg/kg = Milligrams per kilogram
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
ppm = parts per million
XRF = X-Ray Fluorescence

Table 6
Summary of XRF Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	XRF-9	XRF-10	XRF-11	XRF-12	XRF-13	XRF-14	XRF-15	XRF-16	Part 201 RDCC
	Sampling Date	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-9	XRF-10	XRF-11	XRF-12	XRF-13	XRF-14	XRF-15	XRF-16	
	Unit	Results								
Metals										
Antimony	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**180**
Arsenic	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**7.6**
Barium	mg/kg	3,414	<LOD	<LOD	<LOD	<LOD	3,285	<LOD	<LOD	**37,000**
Cadmium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**550**
Chromium	mg/kg	239	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**790,000**
Cobalt	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	204	**2,600**
Copper	mg/kg	19,023	7,994	2,166	**22,898**	2,566	14,432	3,741	4,515	**20,000**
Iron	mg/kg	45,324	128,273	37,829	15,574	18,638	65,010	16,445	13,040	**160,000**
Lead	mg/kg	198	352	101	103	89	**607**	113	127	**400**
Manganese	mg/kg	445	659	183	805	323	968	280	240	**25,000**
Mercury	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**160**
Nickel	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	133	<LOD	<LOD	**4,000**
Selenium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Silver	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,500**
Zinc	mg/kg	310	311	107	383	75	1,821	179	133	**170,000**

Notes:
MDNRE = Michigan Department of Natural Resources and Environment
Results in **bold** exceed the MDNRE Part 201 Residential Direct Contact Criteria
<LOD = Less than limit of detection
mg/kg = Milligrams per kilogram
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
ppm = parts per million
XRF = X-Ray Fluorescence

Table 6
Summary of XRF Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	XRF-17	XRF-18	XRF-19	XRF-20	XRF-21	XRF-22	XRF-23	XRF-24	Part 201 RDCC
	Sampling Date	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-17	XRF-18	XRF-19	XRF-20	XRF-21	XRF-22	XRF-23	XRF-24	
	Unit	Results								
Metals										
Antimony	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**180**
Arsenic	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	**26**	<LOD	**70**	**7.6**
Barium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**37,000**
Cadmium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**550**
Chromium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**790,000**
Cobalt	mg/kg	<LOD	<LOD	176	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Copper	mg/kg	2,849	145	3,322	203	3,880	3,477	554	3,348	**20,000**
Iron	mg/kg	35,563	1,986	8,952	5,261	98,268	41,554	3,598	30,775	**160,000**
Lead	mg/kg	162	18	119	13	203	117	106	**412**	**400**
Manganese	mg/kg	314	61	176	196	627	<LOD	139	787	**25,000**
Mercury	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**160**
Nickel	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**4,000**
Selenium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Silver	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,500**
Zinc	mg/kg	226	404	360	93	143	145	804	468	**170,000**

Notes:
MDNRE = Michigan Department of Natural Resources and Environment
Results in **bold** exceed the MDNRE Part 201 Residential Direct Contact Criteria
<LOD = Less than limit of detection
mg/kg = Milligrams per kilogram
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
ppm = parts per million
XRF = X-Ray Fluorescence

Table 6
Summary of XRF Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	XRF-25	XRF-26	XRF-27	XRF-28	XRF-29	XRF-30	XRF-31	XRF-32	Part 201 RDCC
	Sampling Date	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-25	XRF-26	XRF-27	XRF-28	XRF-29	XRF-30	XRF-31	XRF-32	
	Unit	Results								
Metals										
Antimony	mg/kg	**217**	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**180**
Arsenic	mg/kg	<LOD	**51**	<LOD	**114**	<LOD	<LOD	**19**	<LOD	**7.6**
Barium	mg/kg	25,511	3,095	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**37,000**
Cadmium	mg/kg	156	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**550**
Chromium	mg/kg	530	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**790,000**
Cobalt	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Copper	mg/kg	**26,954**	5,499	349	15,069	2,014	4,220	1,038	182	**20,000**
Iron	mg/kg	106,856	63,601	2,503	**299,168**	39,917	42,516	35,409	43,473	**160,000**
Lead	mg/kg	**21,425**	101	32	**1,998**	**858**	**790**	62	65	**400**
Manganese	mg/kg	1,037	260	180	2,369	303	299	232	<LOD	**25,000**
Mercury	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**160**
Nickel	mg/kg	360	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**4,000**
Selenium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Silver	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,500**
Zinc	mg/kg	35,850	101	684	712	49	181	60	23	**170,000**

Notes:
MDNRE = Michigan Department of Natural Resources and Environment
Results in **bold** exceed the MDNRE Part 201 Residential Direct Contact Criteria
<LOD = Less than limit of detection
mg/kg = Milligrams per kilogram
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
ppm = parts per million
XRF = X-Ray Fluorescence

Table 6
Summary of XRF Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	XRF-33	XRF-34	XRF-35	XRF-36	XRF-37	XRF-38	XRF-39	XRF-40	Part 201 RDCC
	Sampling Date	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-33	XRF-34	XRF-35	XRF-36	XRF-37	XRF-38	XRF-39	XRF-40	
	Unit	Results								
Metals										
Antimony	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**180**
Arsenic	mg/kg	<LOD	**83**	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**7.6**
Barium	mg/kg	<LOD	<LOD	3,260	<LOD	<LOD	<LOD	<LOD	<LOD	**37,000**
Cadmium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**550**
Chromium	mg/kg	<LOD	<LOD	514	<LOD	<LOD	<LOD	<LOD	<LOD	**790,000**
Cobalt	mg/kg	<LOD	<LOD	<LOD	191	<LOD	<LOD	<LOD	<LOD	**2,600**
Copper	mg/kg	1,452	1,165	898	711	11,417	878	**24,658**	981	**20,000**
Iron	mg/kg	24,436	28,727	146,868	13,820	47,081	16,039	63,786	18,904	**160,000**
Lead	mg/kg	54	365	**453**	117	149	117	91	72	**400**
Manganese	mg/kg	286	932	680	241	606	192	307	257	**25,000**
Mercury	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**160**
Nickel	mg/kg	<LOD	<LOD	<LOD	<LOD	142	<LOD	<LOD	<LOD	**4,000**
Selenium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Silver	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,500**
Zinc	mg/kg	83	317	248	110	318	102	639	69	**170,000**

Notes:
MDNRE = Michigan Department of Natural Resources and Environment
Results in **bold** exceed the MDNRE Part 201 Residential Direct Contact Criteria
<LOD = Less than limit of detection
mg/kg = Milligrams per kilogram
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
ppm = parts per million
XRF = X-Ray Fluorescence

Table 6
Summary of XRF Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	XRF-41	XRF-42	XRF-43	XRF-44	XRF-45	XRF-46	XRF-47	XRF-48	Part 201 RDCC
	Sampling Date	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	6/17/2010	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-41	XRF-42	XRF-43	XRF-44	XRF-45	XRF-46	XRF-47	XRF-48	
	Unit	Results								
Metals										
Antimony	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**180**
Arsenic	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**7.6**
Barium	mg/kg	1,579	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**37,000**
Cadmium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**550**
Chromium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**790,000**
Cobalt	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Copper	mg/kg	774	69	518	572	2,433	594	1,540	4,425	**20,000**
Iron	mg/kg	23,863	6,609	51,572	46,935	132,002	**219,882**	44,431	26,401	**160,000**
Lead	mg/kg	60	<LOD	20	39	46	93	62	78	**400**
Manganese	mg/kg	239	204	627	<LOD	<LOD	428	495	338	**25,000**
Mercury	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**160**
Nickel	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	89	<LOD	**4,000**
Selenium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Silver	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,500**
Zinc	mg/kg	87	166	96	128	115	194	105	156	**170,000**

Notes:
MDNRE = Michigan Department of Natural Resources and Environment
Results in **bold** exceed the MDNRE Part 201 Residential Direct Contact Criteria
<LOD = Less than limit of detection
mg/kg = Milligrams per kilogram
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
ppm = parts per million
XRF = X-Ray Fluorescence

Table 6
Summary of XRF Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	XRF-49	XRF-50	XRF-51	XRF-52	XRF-53	XRF-54	Part 201 RDCC
	Sampling Date	6/17/2010	6/17/2010	6/17/2010	6/17/2010	9/23/2009	9/23/2009	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-49	XRF-50	XRF-51	XRF-52	XRF-53	XRF-54	
	Unit	Results						
Metals								
Antimony	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**180**
Arsenic	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	**51**	**7.6**
Barium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**37,000**
Cadmium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**550**
Chromium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**790,000**
Cobalt	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Copper	mg/kg	1,051	759	331	1,214	19,043	9,186	**20,000**
Iron	mg/kg	14,409	16,423	25,656	57,591	**208,231**	**160,001**	**160,000**
Lead	mg/kg	15	39	36	169	**1,069**	**499**	**400**
Manganese	mg/kg	273	219	374	325	805	<LOD	**25,000**
Mercury	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**160**
Nickel	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**4,000**
Selenium	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	**2,600**
Silver	mg/kg	<LOD	<LOD	<LOD	<LOD	1,230	<LOD	**2,500**
Zinc	mg/kg	<LOD	39	49	188	666	342	**170,000**

Notes:
MDNRE = Michigan Department of Natural Resources and Environment
Results in **bold** exceed the MDNRE Part 201 Residential Direct Contact Criteria
<LOD = Less than limit of detection
mg/kg = Milligrams per kilogram
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
ppm = parts per million
XRF = X-Ray Fluorescence

Table 7
Summary of Gamma Radiation Screening Results - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Location	Reading (uR/h)
1	11
2	17
3	20
4	11
5	15
6	15
7	9
8	12
9	21
10	13
11	13
12	8
13	9
14	9
15	10
16	9
17	10
18	11
19	11
20	10
21	15
22	13
23	15
24	13
25	8
26	17
27	13
28	6
29	15
30	20
31	15
32	13
33	13
34	13
35	10
37	9
38	27
39	13
40	10
41	25
47	14
48	13
49	11
51	10
52	14
53	23
54	8
55*	20

Note:
*Location 55 does not have a corresponding x-ray fluorescence reading. The location was taken on the northeast corner of the power plant building.
uR/h = microRoentgen per hour

Table 8
Analytical Results of Soil Samples - PCBs - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	CH-S-1-061810	CH-S-2-061810	CH-S-3-061810	CH-S-4-061810	CH-S-5-061810	CH-S-6-061810	Part 201 RDCC
	Sampling Date	6/18/10	6/18/10	06/18/10	06/18/10	6/18/10	6/18/10	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	CH-S-1-061810	CH-S-2-061810	CH-S-3-061810	CH-S-4-061810	CH-S-5-061810	CH-S-6-061810	
	Unit	Result						
PCBs								
Aroclor-1016	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
Aroclor-1221	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
Aroclor-1232	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
Aroclor-1242	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
Aroclor-1248	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
Aroclor-1254	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
Aroclor-1260	mg/kg-dry	<0.120 U	0.0091 J	<0.140 U	<0.120 U	<0.110 U	0.041 J	--
Aroclor-1262	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
Aroclor-1268	mg/kg-dry	<0.120 U	<0.120 U	<0.140 U	<0.120 U	<0.110 U	<0.110 U	--
PCBs Total	mg/kg-dry	<1.08	0.0091 J	<1.260	<1.080	<0.990	0.041 J	**4.0 T**

Notes:
-- = Not listed in MDNRE Part 201 Tables
< = Less than listed reporting limit
µg/kg = Micrograms per kilogram
J = Results were between the method detection limit and reporting limit
Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria
PCBs = Polychlorinated Biphenyls
Results in shaded boxes exceed the MDNRE Part 201 Residential Direct Contact Criteria.
T = Part 201 cleanup standards derived from TSCA, subpart D clean up standards.
U = Less than limit of detection

Table 9
Analytical Results of Soil Samples - Metals - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	CH-S-7-061710	CH-S-8-061710	CH-S-9-061710	CH-S-10-061710	CH-S-11-061710	CH-S-12-061710	CH-S-13-061710	Part 201 RDCC
	Sampling Date	6/17/10	06/17/10	06/17/10	06/17/10	06/17/10	06/17/10	06/17/10	
	Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sampling Location	XRF-25	XRF-37	XRF-14	XRF-28	XRF-39	XRF-30	XRF-37	
	Unit	Result							
Metals									
Aluminum	mg/kg-dry	**54,000**	11,000	36,000	8,900	11,000	7,600	11,000	**50,000 DD**
Antimony	mg/kg-dry	**540**	2.7	**510**	20	34	3.5	3.3	**180**
Arsenic	mg/kg-dry	1.5	**10**	**17**	**88**	**15**	**34**	**14**	**7.6**
Barium	mg/kg-dry	17,000	77	2,400	190	110	190	110	**37,000**
Beryllium	mg/kg-dry	2.5	0.68	3.3	0.86	1.0	1.2	0.80	**410**
Cadmium	mg/kg-dry	120	0.89	180	1.7	4.1	0.65	0.99	**550**
Calcium	mg/kg-dry	17,000	9,800	2,900	11,000	10,000	4,700	11,000	--
Chromium	mg/kg-dry	79	21	55	59	23	17	23	**790,000**
Cobalt	mg/kg-dry	20	12	23	25	15	7.6	13	**2,600**
Copper	mg/kg-dry	**33,000**	11,000	**110,000**	14,000	**60,000**	4,000	15,000	**20,000**
Iron	mg/kg-dry	140,000	29,000	150,000	**200,000**	41,000	37,000	28,000	**160,000**
Lead	mg/kg-dry	**70,000**	140	**12,000**	**1,700**	260	320	190	**400**
Magnesium	mg/kg-dry	10,000	8,400	5,900	7,400	11,000	4,800	8,900	**1,000,000 D**
Manganese	mg/kg-dry	1,000	350	13,000	2,000	380	240	350	**25,000**
Mercury	mg/kg-dry	1.4	0.35	0.66	1.8	0.31	0.22	0.51	**160**
Nickel	mg/kg-dry	360	50	240	35	58	23	50	**4,000**
Potassium	mg/kg-dry	600	390	200	200	220	250	370	--
Selenium	mg/kg-dry	1.1	0.60	3.5	0.72	0.44	3.2	0.78	**2,600**
Silver	mg/kg-dry	220	1.4	45	14	1.7	1.2	1.1	**2,500**
Sodium	mg/kg-dry	180	190	140	180	310	130	240	**1,000,000 D**
Thallium	mg/kg-dry	<50 U	0.18	<5.0 U	0.16	0.12	0.60	0.19	**35**
Vanadium	mg/kg-dry	2.1	36	23	44	38	28	36	**750**
Zinc	mg/kg-dry	23,000	340	25,000	860	1,300	110	500	**170,000**

Notes:

Shaded results exceed the MDNRE Part 201 Residential Direct Contact Criteria

-- = Not listed in MDEQ Part 201 Tables

< = Less than listed reporting limit

D = Calculated criterion exceeds 100%, hence it is reduced to 1,000,000,000 parts-per-billion

DD = Hazardous substance causes developmental effects. RDCC are protective of both prenatal and postnatal exposure

J = Results were between the method detection limit and reporting limit

mg/kg = Milligrams per kilogram

Part 201-RDCC = MDNRE Part 201 Residential Direct Contact Criteria

Results in shaded boxes exceed the MDNRE Part 201 Residential Direct Contact Criteria

U = Less than limit of detection

Table 10
Analytical Results of Water Samples - PCBs - June 2010
C&H Power Plant Site
Lake Linden, Houghton County, Michigan

Parameter	Sample No.	CH-W-1-061610	CH-W-2-061610	CH-W-3-061610	CH-W-4-061610	CH-W-5-061610	CH-W-6-061810	CH-W-7-061810	CH-W-8-061810	Part 201 Groundwater Contact Criteria
	Sampling Date	6/16/10	6/16/10	06/16/10	06/16/10	06/16/10	06/18/10	06/18/10	06/18/10	
	Sample Matrix	Water	Water	Water	Water	Water	Water	Water	Water	
	Sampling Location	CH-W-1-061610	CH-W-2-061610	CH-W-3-061610	CH-W-4-061610	CH-W-5-061610	CH-W-6-061810	CH-W-7-061810	CH-W-8-061810	
	Unit	Result								
PCBs										
Aroclor-1016	µg/L	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1221	µg/L	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1232	µg/L	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1242	µg/L	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1248	µg/L	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1254	µg/L	<0.1 U	0.18	0.078 J	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1260	µg/L	<0.1 U	<0.1 J	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1262	µg/L	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
Aroclor-1268	µg/L	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	<0.1 U	--
PCBs Total	µg/L	<0.9	0.18	0.078 J	<0.9	<0.9	<0.9	<0.9	<0.9	**3.3 AA**

Notes:
-- = Not listed in MDNRE Part 201 Tables
< = Less than listed reporting limit
µg/L = Micrograms per liter
AA = Comparison of these criteria may take into account an evaluation of whether the hazardous substances are adsorbed to particulates rather than dissolved in water and whether filtered groundwater samples were used to evaluate groundwater.
MDNRE = Michigan Department of Natural Resources and Environment
J = results were between the method detection limit and reporting limit
Part 201 - RDCC = DNRE Part 201 Residential Direct Contact Criteria
PCBs = Polychlorinated Biphenyls
Results in shaded boxes exceed the MDNRE Part 201 Residential Direct Contact Criteria
T = Part 201 cleanup standards derived from TSCA, subpart D clean up standards
U = Less than limit of detection

FIGURES

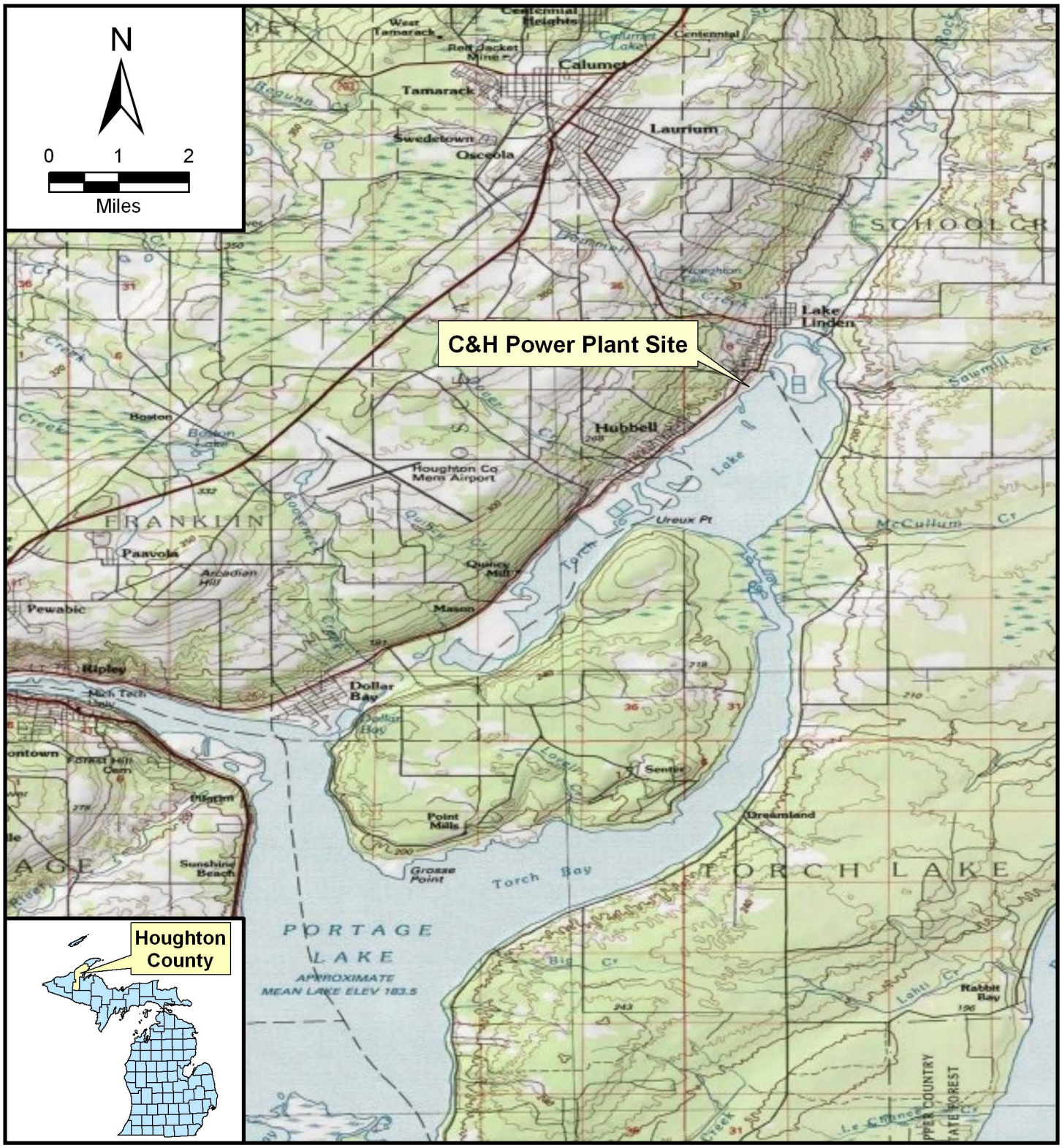


Figure 2-1

Prepared for: **U.S. EPA REGION V** Contract No: EP-S5-06-04 TDD No.: S05-0001-1003-030 DCN: 988-2A-AHLZ	Prepared by: **WESTON SOLUTIONS, INC.** 600 E. Lakeshore Dr., Ste 200 Houghton, MI 49931	**SITE LOCATION MAP** C & H POWER PLANT SITE LAKE LINDEN, HOUGHTON CO., MICHIGAN Created: July 2010

PAL P:\Current\WES1006\GIS\Maps\Site_Location.mxd

Orthophotograph taken 2005

Legend

- Historical Buildings
- Berms
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Site_Layout_Map.mxd

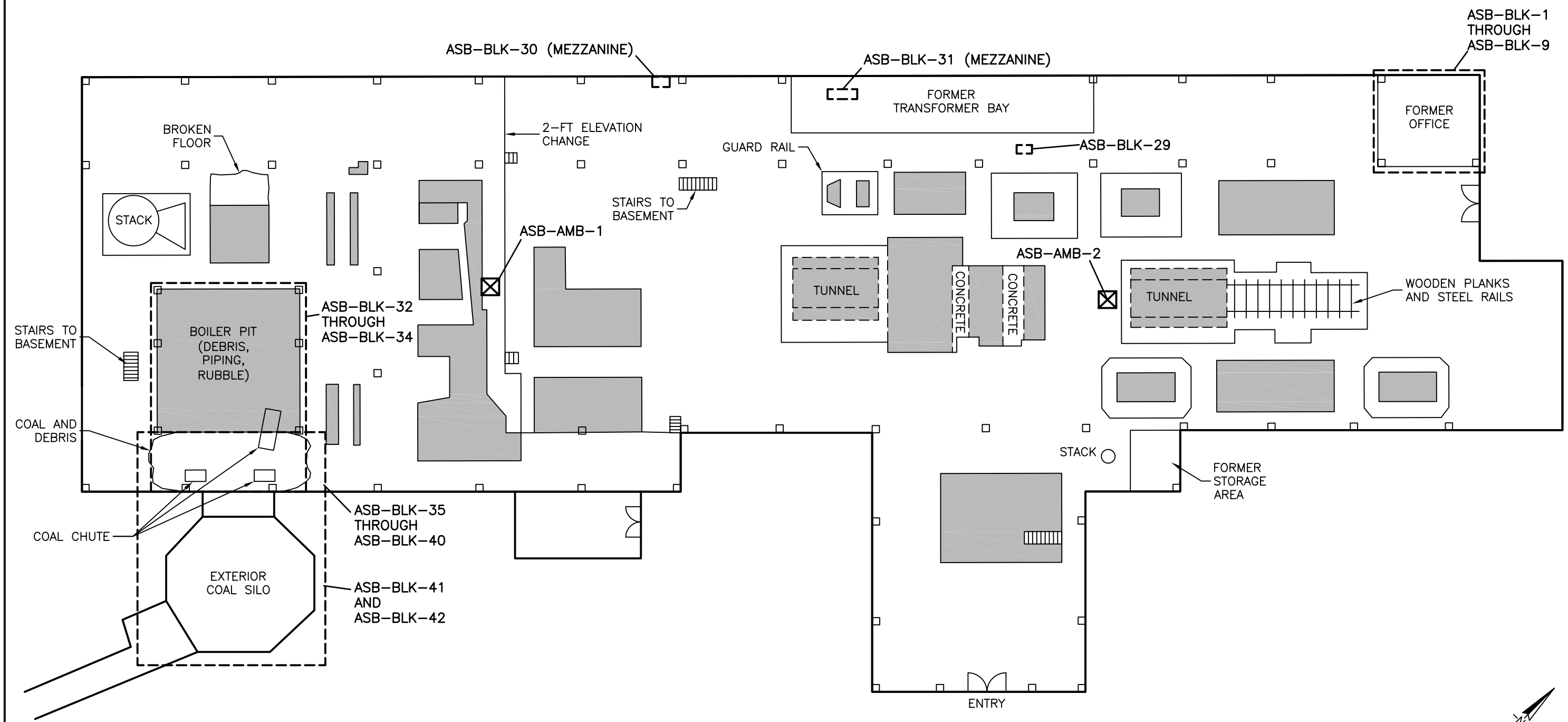
Figure 2-2

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

SITE LAYOUT MAP
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010



LEGEND

- UNPROTECTED OPENING
- STRUCTURAL I–BEAM
- ESTIMATED SAMPLING AREA
- APPROXIMATE LOCATION OF AIR SAMPLING MEDIA

NOTE:
ASB–BLK–10 THROUGH ASB–BLK–28 COLLECTED THROUGHOUT INSIDE OF BUILDING. REFER TO TABLE 1 FOR SAMPLE DESCRIPTIONS AND ANALYTICAL RESULTS

SOURCE:
CALUMET AND HECLA, INC. "C & H MILLS BRANCH", BY ASSOCIATED FACTORY MUTUAL FIRE INSURANCE COS., DATED OCT. 4 1954 AND WESTON FIELD MEASUREMENTS.

0 20'
SCALE

FIGURE 3–1

WESTON SOLUTIONS®
600 East Lake Shore Dr.
Suite 200
Houghton, Michigan
49931

INTERIOR AIR SAMPLING ARRAY AND BULK ASBESTOS SAMPLING LOCATIONS – MAY 2010

C & H POWER PLANT SITE
Lake Linden, Houghton County, Michigan

J:\CAD93\000\05610.dwg, 10/20/2010 4:20:35 PM

Orthophotograph taken 2005

Legend

- Sample Location
- Observed Asbestos Area
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Exterior_Bulk_Asbestos_Sampl_Locs.mxd

Figure 3-2

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

EXTERIOR BULK ASBESTOS SAMPLING LOCATIONS - MAY 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005

Legend

- Air Sampler
- Approximate Soil Sample Collection Area
- Observed Asbestos Area
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Exterior_Air_Sampling_Asbestos_Soil.mxd

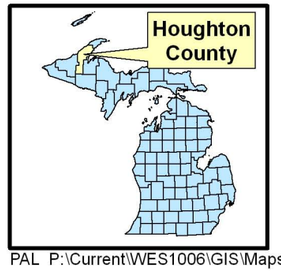
Figure 3-3

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

EXTERIOR AIR SAMPLING ARRAY AND ASBESTOS SOIL SAMPLING LOCATIONS - MAY 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN
Created: July 2010

Orthophotograph taken 2005



Legend

- XRF Screening Locations
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\XRF_Locations.mxd

Figure 3-4

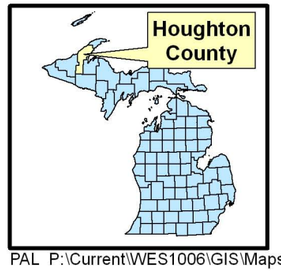
Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

SOIL SCREENING GRID LOCATIONS
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005



Legend

- Soil Analytical Sample Location
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Lab_Locations.mxd

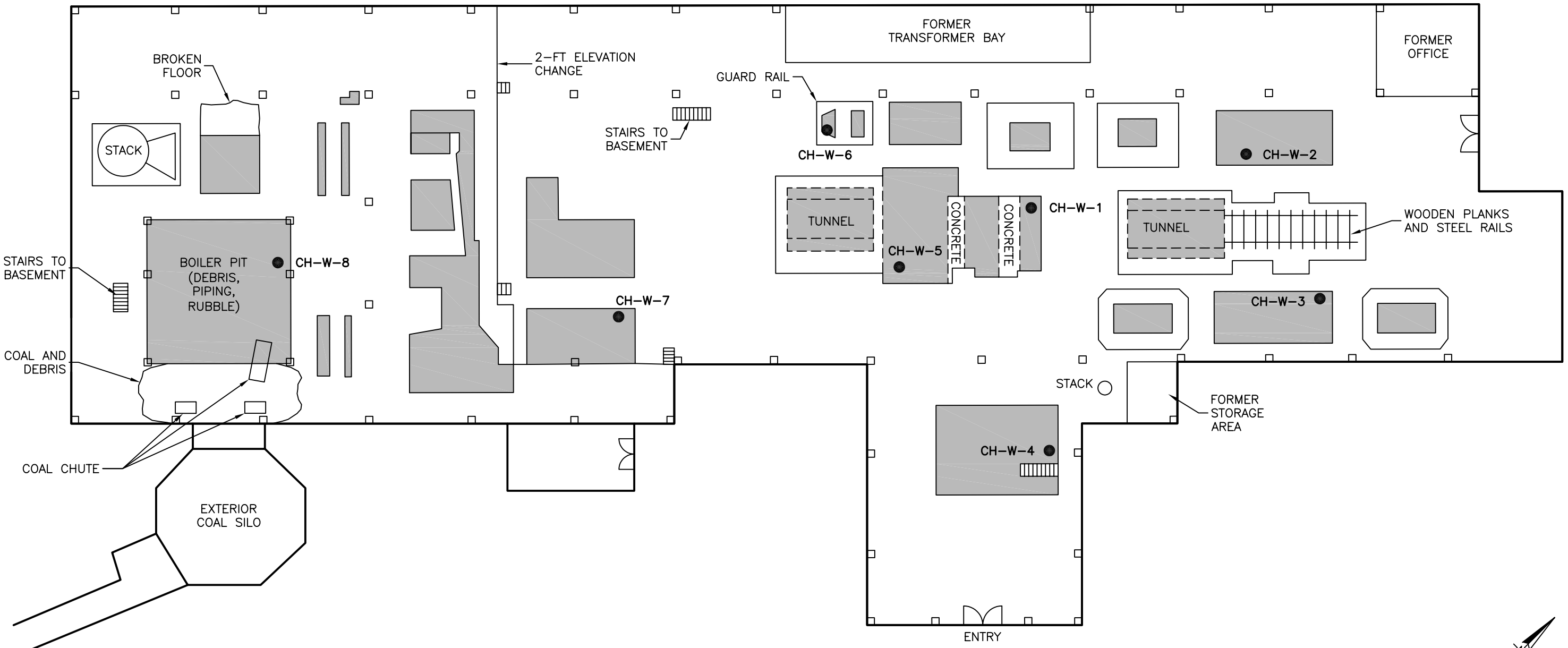
Figure 3-5

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

SOIL SAMPLING LOCATIONS - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010



LEGEND

- UNPROTECTED OPENING
- CH–W–8 WATER SAMPLE LOCATION
- STRUCTURAL I–BEAM

SOURCE:
CALUMET AND HECLA, INC. "C & H MILLS BRANCH", BY ASSOCIATED FACTORY MUTUAL FIRE INSURANCE COS., DATED OCT. 4 1954 AND WESTON FIELD MEASUREMENTS.

FIGURE 3–6

WESTON SOLUTIONS®
600 East Lake Shore Dr.
Suite 200
Houghton, Michigan
49931

INTERIOR WATER SAMPLING LOCATIONS

C & H POWER PLANT SITE
Lake Linden, Houghton County, Michigan

Orthophotograph taken 2005

Note: -1111.1 = below the method limit of detection. This value is not recorded by the XRF instrument. The only detected antimony value was 217 ppm.

PAL P:\Current\WES1006\GIS\Maps\XRF_Antimony.mxd

Figure 4-1

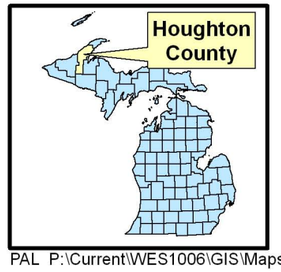
Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

XRF SCREENING RESULTS - ANTIMONY - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005



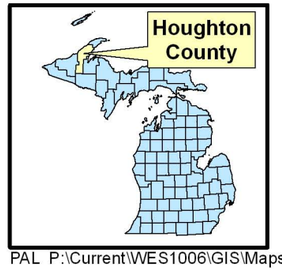
Note: -1111.1 = below the method limit of detection. This value is not recorded by the XRF instrument. The lowest detected arsenic value was 19 ppm.

PAL P:\Current\WES1006\GIS\Maps\XRF_Arsenic_Contours.mxd

Figure 4-2

Prepared for: **U.S. EPA REGION V** Contract No: EP-S5-06-04 TDD No.: S05-0001-1003-030 DCN: 988-2A-AHLZ	Prepared by: **WESTON SOLUTIONS, INC.** 600 East Lakeshore Drive, Suite 200 Houghton, MI 49931	**XRF SCREENING RESULTS - ARSENIC - JUNE 2010** C & H POWER PLANT SITE LAKE LINDEN, HOUGHTON CO., MICHIGAN Created: July 2010

Orthophotograph taken 2005



PAL P:\Current\WES1006\GIS\Maps\XRF_Copper_Contours.mxd

Figure 4-3

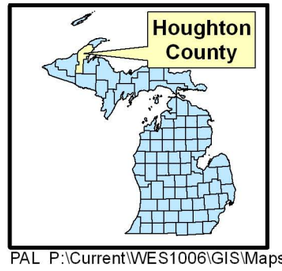
Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

XRF SCREENING RESULTS - COPPER - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005



PAL P:\Current\WES1006\GIS\Maps\XRF_Iron_Contours.mxd

Figure 4-4

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

XRF SCREENING RESULTS - IRON - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005

Note: -1111.1 = below the method limit of detection. This value is not recorded by the XRF instrument. The lowest detected lead value was 13 ppm.

PAL P:\Current\WES1006\GIS\Maps\XRF_Lead_Contours_V2.mxd

Figure 4-5

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

XRF SCREENING RESULTS - LEAD - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

N

0 75 150

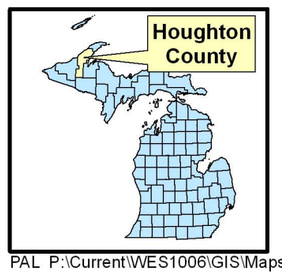
Feet

Legend

Estimated RDCC Exceedance Areas by Analyte

- Antimony (>180 ppm)
- Arsenic (>7.6 ppm)
- Copper (>20,000 ppm)
- Iron (>160,000 ppm)
- Lead (>400 ppm)
- Approximate Property Boundary

Orthophotograph taken 2005



Note: RDCC = MDNRE Part 201 Residential Direct Contact Criteria.
The method limit of detection for arsenic may be higher than 7.6 ppm; however, it is not recorded by the XRF.
The lowest detected arsenic value was 19 ppm.

Figure 4-6

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

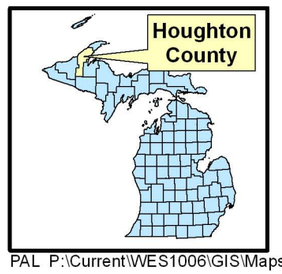
Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

COMPOSITE XRF SCREENING RESULTS GREATER THAN CRITERIA - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

PAL P:\Current\WES1006\GIS\Maps\Cummulative_Exceedances.mxd

Orthophotograph taken 2005



Legend

Antimony (ppm)

- Less than method limit of detection
- Less than MDNRE Part 201 RDCC (criteria = 180 ppm)
- Greater than MDNRE Part 201 RDCC Criteria
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Lab_Antimony.mxd

Figure 4-7

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

LABORATORY ANALYTICAL RESULTS - ANTIMONY - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005

Legend

Arsenic (ppm)

- Less than method limit of detection
- Less than MDNRE Part 201 RDCC (criteria = 7.6 ppm)
- Greater than MDNRE Part 201 RDCC
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Lab_Arsenic.mxd

Figure 4-8

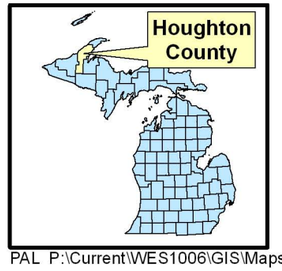
Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

LABORATORY ANALYTICAL RESULTS - ARSENIC - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005



Legend

Copper (ppm)

- Less than method limit of detection
- Less than MDEQ Part 201 RDCC (criteria = 20,000 ppm)
- Greater than MDNRE Part 201 RDCC
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Lab_Copper.mxd

Figure 4-9

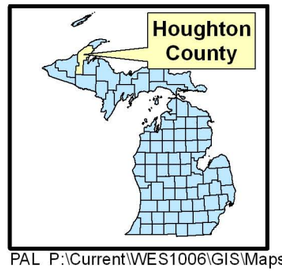
Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

LABORATORY ANALYTICAL RESULTS - COPPER - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005



Legend

Iron (ppm)

- Less than method limit of detection
- Less than MDEQ Part 201 RDCC (criteria = 160,000 ppm)
- Greater than MDNRE Part 201 RDCC
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Lab_Iron.mxd

Figure 4-10

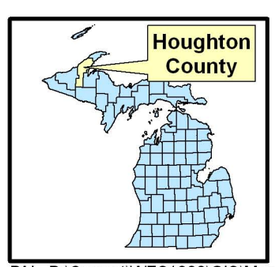
Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

LABORATORY ANALYTICAL RESULTS - IRON - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005



Legend

Lead (ppm)

- Less than method limit of detection
- Less than MDNRE Part 201 RDCC (criteria = 400 ppm)
- Greater than MDNRE Part 201 RDCC
- Approximate Property Boundary

PAL P:\Current\WES1006\GIS\Maps\Lab_Lead.mxd

Figure 4-11

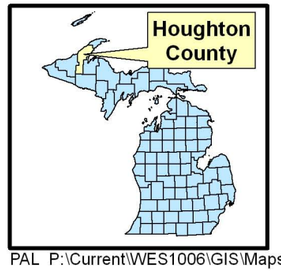
Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

LABORATORY ANALYTICAL RESULTS - LEAD - JUNE 2010
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN

Created: July 2010

Orthophotograph taken 2005



PAL P:\Current\WES1006\GIS\Maps\Asbestos_Metals_Overlay.mxd

Figure 6-1

Prepared for:
U.S. EPA REGION V
Contract No: EP-S5-06-04
TDD No.: S05-0001-1003-030
DCN: 988-2A-AHLZ

Prepared by:
WESTON SOLUTIONS, INC.
600 East Lakeshore Drive, Suite 200
Houghton, MI 49931

COMPOSITE SOILS GREATER THAN CRITERIA AND OBSERVED ASBESTOS AREAS
C & H POWER PLANT SITE
LAKE LINDEN, HOUGHTON CO., MICHIGAN
Created: July 2010

ATTACHMENT A
ENVIRONMENTAL DATA RESOURCES, INC., INFORMATION

Calumet Hecla Power Plant
5371 M-26
Lake Linden, MI 49945

Inquiry Number: 2735439.2s
April 02, 2010

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

5371 M-26
LAKE LINDEN, MI 49945

COORDINATES

Latitude (North):	47.185300 - 47° 11' 7.1''
Longitude (West):	88.413600 - 88° 24' 49.0''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	392899.9
UTM Y (Meters):	5226507.0
Elevation:	618 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	47088-B4 LAURIUM, MI
Most Recent Revision:	1975

AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year:	2005
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

Proposed NPL---------- Proposed National Priority List Sites

NPL LIENS ---- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---- Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ---- Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ---- CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ---- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---- RCRA - Large Quantity Generators
RCRA-SQG ---- RCRA - Small Quantity Generators
RCRA-CESQG ---- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---- Engineering Controls Sites List
US INST CONTROL ---- Sites with Institutional Controls

Federal ERNS list

ERNS ---- Emergency Response Notification System

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---- Solid Waste Facilities Database

State and tribal leaking storage tank lists

INDIAN LUST ---- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ---- Underground Storage Tank Facility List
AST ---- Aboveground Tanks
INDIAN UST ---- Underground Storage Tanks on Indian Land
FEMA UST ---- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing

EXECUTIVE SUMMARY

State and tribal Brownfields sites

BROWNFIELDS ---------- Brownfields and UST Site Database

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI ---------- Open Dump Inventory
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
HIST LF ---------- Inactive Solid Waste Facilities
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---------- Clandestine Drug Labs
DEL SHWS ---------- Delisted List of Contaminated Sites
CDL ---------- Clandestine Drug Lab Listing
US HIST CDL ---------- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---------- CERCLA Lien Information
LUCIS ---------- Land Use Control Information System
LIENS ---------- Lien List

Records of Emergency Release Reports

HMIRS ---------- Hazardous Materials Information Reporting System
SPILLS ---------- Pollution Emergency Alerting System

Other Ascertainable Records

RCRA-NonGen ---------- RCRA - Non Generators
DOT OPS ---------- Incident and Accident Data
DOD ---------- Department of Defense Sites
FUDS ---------- Formerly Used Defense Sites
CONSENT ---------- Superfund (CERCLA) Consent Decrees
ROD ---------- Records Of Decision
UMTRA ---------- Uranium Mill Tailings Sites
MINES ---------- Mines Master Index File
TRIS ---------- Toxic Chemical Release Inventory System
TSCA ---------- Toxic Substances Control Act
FTTS ---------- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS ---------- FIFRA/TSCA Tracking System Administrative Case Listing
SSTS ---------- Section 7 Tracking Systems
ICIS ---------- Integrated Compliance Information System
PADS ---------- PCB Activity Database System

MLTS Material Licensing Tracking System
RADINFO Radiation Information Database
FINDS Facility Index System/Facility Registry System
RAATS RCRA Administrative Action Tracking System
UIC Underground Injection Wells Database
DRYCLEANERS Drycleaning Establishments
NPDES List of Active NPDES Permits
AIRS Permit and Emissions Inventory Data
INDIAN RESERV Indian Reservations
SCRD DRYCLEANERS State Coalition for Remediation of Drycleaners Listing
COAL ASH EPA Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER PCB Transformer Registration Database
COAL ASH Coal Ash Disposal Sites
COAL ASH DOE Sleam-Electric Plan Operation Data
FINANCIAL ASSURANCE Financial Assurance Information Listing

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: Also known as Superfund, the National Priority List database is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA.

A review of the NPL list, as provided by EDR, and dated 12/01/2009 has revealed that there is 1 NPL site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TORCH LAKE	***STE RTE 26 N OF QUINCY***	***0 - 1/8 (0.000 mi.)***	***0***	***7***

EXECUTIVE SUMMARY

State- and tribal - equivalent CERCLIS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environmental Quality's' Contaminated Sites List on Diskette With Address.

A review of the SHWS list, as provided by EDR, and dated 02/01/2010 has revealed that there is 1 SHWS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TORCH LAKE	***STE RTE 26 N OF QUINCY***	***0 - 1/8 (0.000 mi.)***	***0***	***7***
Facility Status: Remedial Action In progress				

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Quality's Leaking Underground Storage Tank (LUST) Database.

A review of the LUST list, as provided by EDR, and dated 02/22/2010 has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAKE LINDEN 76	***319 CALUMET AVENUE***	***NNE 1/4 - 1/2 (0.289 mi.)***	***A2***	***8***
Facility Status: Open				
Facility Status: Open				
VILLAGE OF LAKE LINDEN	***401 CALUMET ST***	***NNE 1/4 - 1/2 (0.325 mi.)***	***A3***	***9***
Facility Status: Open				

State and tribal institutional control / engineering control registries

AUL: A listing of sites with institutional and/or engineering controls in place.

A review of the AUL list, as provided by EDR, and dated 01/04/2010 has revealed that there is 1 AUL site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VILLAGE OF LAKE LINDEN	***401 CALUMET ST***	***NNE 1/4 - 1/2 (0.325 mi.)***	***A3***	***9***

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

BEA: Baseline Environmental Assessment.

A review of the BEA list, as provided by EDR, and dated 03/01/2010 has revealed that there are 2 BEA

sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MEMORY LANE SITE	110-112 CALUMET STREET	NNE 1/8 - 1/4 (0.190 mi.)	1	8
LAKE LINDEN 76	***319 CALUMET AVENUE***	***NNE 1/4 - 1/2 (0.289 mi.)***	***A2***	***8***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
GAY STAMPSANDS	SHWS
C&H POWER PLANT - MENEGUZZO	SHWS
LAKE LINDEN BEACH	SHWS
BELKOWSKI WELL	SHWS
GAY DUMP (SHERMAN TOWNSHIP)	HIST LF
VACANT LOTS	LUST, UST
SAWMILL	UST
FORMER POWER STATION	BEA

OVERVIEW MAP - 2735439.2s

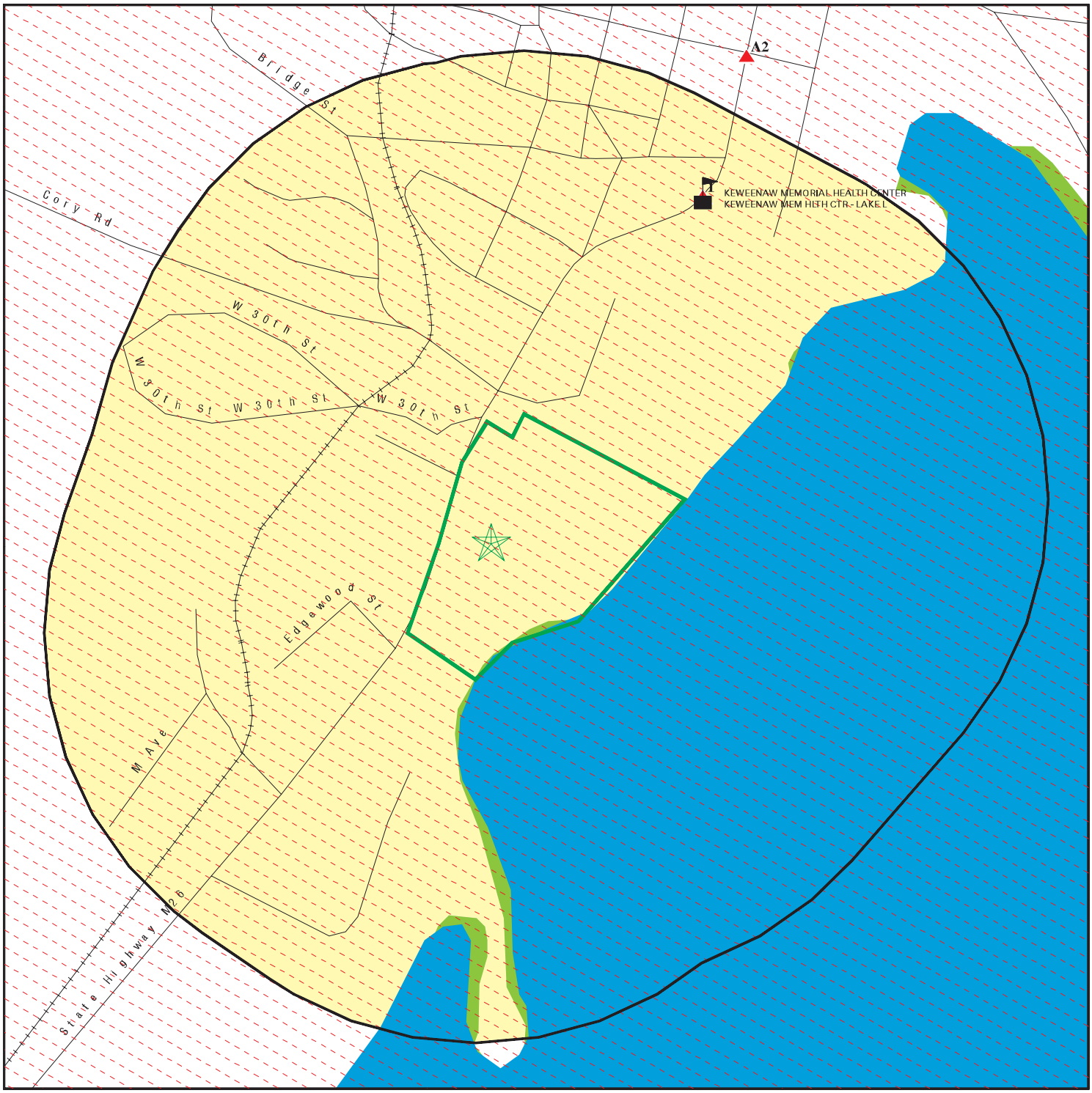
0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Calumet Hecla Power Plant ADDRESS: 5371 M-26 Lake Linden MI 49945 LAT/LONG: 47.1853 / 88.4136	CLIENT: Weston Solutions, Inc. CONTACT: Dan Liebau INQUIRY #: 2735439.2s DATE: April 02, 2010 12:40 pm

DETAIL MAP - 2735439.2s



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Manufactured Gas Plants
Sensitive Receptors
National Priority List Sites
Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA
Oil & Gas pipelines
National Wetland Inventory
State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Calumet Hecla Power Plant ADDRESS: 5371 M-26 Lake Linden MI 49945 LAT/LONG: 47.1853 / 88.4136	CLIENT: Weston Solutions, Inc. CONTACT: Dan Liebau INQUIRY #: 2735439.2s DATE: April 02, 2010 12:40 pm

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL		1.000	1	0	0	0	NR	1
Proposed NPL		1.000	0	0	0	0	NR	0
NPL LIENS		TP	NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL		1.000	0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS		0.500	0	0	0	NR	NR	0
FEDERAL FACILITY		1.000	0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP		0.500	0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS		1.000	0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF		0.500	0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG		0.250	0	0	NR	NR	NR	0
RCRA-SQG		0.250	0	0	NR	NR	NR	0
RCRA-CESQG		0.250	0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
Federal ERNS list								
ERNS		TP	NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
SHWS		1.000	1	0	0	0	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF		0.500	0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST		0.500	0	0	2	NR	NR	2
INDIAN LUST		0.500	0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST		0.250	0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
AST		0.250	0	0	NR	NR	NR	0
INDIAN UST		0.250	0	0	NR	NR	NR	0
FEMA UST		0.250	0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
AUL		0.500	0	0	1	NR	NR	1
State and tribal voluntary cleanup sites								
INDIAN VCP		0.500	0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS		0.500	0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI		0.500	0	0	0	NR	NR	0
DEBRIS REGION 9		0.500	0	0	0	NR	NR	0
HIST LF		0.500	0	0	0	NR	NR	0
INDIAN ODI		0.500	0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL		TP	NR	NR	NR	NR	NR	0
DEL SHWS		1.000	0	0	0	0	NR	0
CDL		TP	NR	NR	NR	NR	NR	0
US HIST CDL		TP	NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2		TP	NR	NR	NR	NR	NR	0
LUCIS		0.500	0	0	0	NR	NR	0
LIENS		TP	NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS		TP	NR	NR	NR	NR	NR	0
SPILLS		TP	NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen		0.250	0	0	NR	NR	NR	0
DOT OPS		TP	NR	NR	NR	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MINES		0.250	0	0	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
HIST FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
RADINFO		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
UIC		TP	NR	NR	NR	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
NPDES		TP	NR	NR	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
BEA		0.500	0	1	1	NR	NR	2
INDIAN RESERV		1.000	0	0	0	0	NR	0
SCRD DRYCLEANERS		0.500	0	0	0	NR	NR	0
COAL ASH EPA		0.500	0	0	0	NR	NR	0
PCB TRANSFORMER		TP	NR	NR	NR	NR	NR	0
COAL ASH		0.500	0	0	0	NR	NR	0
COAL ASH DOE		TP	NR	NR	NR	NR	NR	0
FINANCIAL ASSURANCE		TP	NR	NR	NR	NR	NR	0
EDR PROPRIETARY RECORDS								
EDR Proprietary Records								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

NPL Region
< 1/8
1 ft.

TORCH LAKE
STE RTE 26 N OF QUINCY MILLS
HOUGHTON, MI 49931

NPL
FINDS
SHWS

EDR ID Number: 1000169512
EPA ID Number: N/A

FINDS:

Registry ID: 110009292336

Environmental Interest/Information System

US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES) is an federal online database for Brownfields Grantees to electronically submit data directly to EPA.

TARGETED BROWNSFIELDS ASSESSMENTS

CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

SHWS:

Facility ID: 31000003
Facility Status: Remedial Action In progress
Source: Copper Ores
SAM Score: 32
SAM Score Date: 8/13/1990
Township: 55N
Range: 32W
Section: Not reported
Quarter: Not reported
Quarter/Quarter: Not reported
Pollutants: Cu; PCE; TCE; VC; cis-1,2 DCE; Xanthate

1
NNE
1/8-1/4
0.190 mi.
1004 ft.

MEMORY LANE SITE — **BEA** — **S104909756**
110-112 CALUMET STREET — **N/A**
LAKE LINDEN, MI

Relative:
Higher

Actual:
621 ft.

BEA:

Secondary Address:	Not reported
BEA Number:	56
District:	Upper Peninsula
Date Received:	12/5/1997
Submitter Name:	Keweenaw Memorial Medical Center
Petition Determination:	No Request
Petition Disclosure:	0
Category:	No Hazardous Substance(s)
Determination 20107A:	No Request
Reviewer:	keranena
Division Assigned:	Storage Tank Division

A2
NNE
1/4-1/2
0.289 mi.
1528 ft.

LAKE LINDEN 76 — **LUST** — **S106676350**
319 CALUMET AVENUE — **BEA** — **N/A**
LAKE LINDEN, MI 49945

Site 1 of 2 in cluster A

Relative:
Higher

Actual:
620 ft.

LUST:

Facility ID:	00003727
Source:	STATE OF MICHIGAN
Owner Name:	Gas Station Properties LLC
Owner Address:	PO Box 492
Owner City,St,Zip:	Dollar Bay, MI 49922
Owner Contact:	Not reported
Owner Phone:	(906) 483-4008
Country:	USA
District:	Upper Peninsula Dist. Office
Site Name:	Keweenaw Konvenience
Latitude:	47.1919550000
Longitude:	-88.4089890000
Date of Collection:	21-10-2003
Method of Collection:	GPS Code Meas. Standard Positioning Service SA Off
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Leak Number:	C-0528-03
Release Date:	Dec 22 2003
Substance Released:	Gasoline
Release Status:	Open
Release Closed Date:	Not reported
Leak Number:	C-0533-04
Release Date:	Apr 29 2004
Substance Released:	Gasoline,Other
Release Status:	Open
Release Closed Date:	Not reported

BEA:

Secondary Address:	Not reported

LAKE LINDEN 76 (Continued) **S106676350**

BEA Number: 299
District: Upper Peninsula
Date Received: 10/20/2004 12:59:00 AM
Submitter Name: Gas Station Properties, LLC
Petition Determination: Affirmed
Petition Disclosure: 1
Category: Same Hazardous Substance(s)
Determination 20107A: No Request
Reviewer: parkj
Division Assigned: Storage Tank Division

A3 **VILLAGE OF LAKE LINDEN** **LUST U000254389**
NNE **401 CALUMET ST** **UST N/A**
1/4-1/2 **LAKE LINDEN, MI 49945** **AUL**
0.325 mi.
1718 ft. **Site 2 of 2 in cluster A**

Relative: Higher

Actual: 619 ft.

LUST:
Facility ID: 00000353
Source: STATE OF MICHIGAN
Owner Name: Village Of Lake Linden
Owner Address: 401 Calumet St
Owner City,St,Zip: Lake Linden, MI 49945-1022
Owner Contact: Not reported
Owner Phone: (906) 296-9911
Country: USA
District: Upper Peninsula Dist. Office
Site Name: Lake Linden, Village Of
Latitude: 47.1921750000
Longitude: -88.4085760000
Date of Collection: 21-10-2003
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)

Leak Number: C-0855-94
Release Date: Aug 8 1994
Substance Released: Gasoline,Diesel
Release Status: Open
Release Closed Date: Not reported

UST:
Facility ID: 00000353
Facility Type: CLOSED
Latitude: 47.1921750000
Longitude: -88.4085760000
Owner Name: Village Of Lake Linden
Owner Address: 401 Calumet St
Owner City,St,Zip: Lake Linden, MI 49945-1022
Owner Country: USA
Owner Contact: Not reported
Owner Phone: (906) 296-9911
Contact: SUSAN A HARALSON
Contact Phone: (906) 296-9911
Date of Collection: 21-10-2003

VILLAGE OF LAKE LINDEN (Continued) **U000254389**

Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	GPS Code Meas. Standard Positioning Service SA Off

Tank ID:	2
Tank Status:	**Removed from Ground**
Capacity:	500
Install Date:	Mar 11 1974
Product:	Diesel
Remove Date:	Aug 8 1994
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Constr Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	1
Tank Status:	**Removed from Ground**
Capacity:	1000
Install Date:	Mar 11 1974
Product:	Gasoline
Remove Date:	Aug 8 1994
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Constr Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	3
Tank Status:	**Removed from Ground**
Capacity:	500
Install Date:	Mar 11 1978
Product:	Gasoline
Remove Date:	Aug 8 1994
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Constr Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	Phantom
Tank Status:	**Non-Registered Tank**
Capacity:	Not reported
Install Date:	Not reported
Product:	Unknown
Remove Date:	Not reported
Tank Release Detection:	Not reported

VILLAGE OF LAKE LINDEN (Continued) **U000254389**

Pipe Realease Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Constr Material: Not reported
Impressed Device: No

AUL:

Status:	Filed
Site Name:	Not reported
Property:	Torch Lake Superfund Site
Land Use Restriction Type:	RC
Program Type:	Part 201
Program Support Assigned User:	Not reported
Program Support Assigned Date:	Not reported
Legal Description Of Property:	All property falling within Government Lots 3 & 4
Based On The Deq Ref #:	11120106018
MDEQ Reference Number:	RC-RRD-201-06-018
Property Or Description Restricted Area:	All property falling within Government Lots 3 & 4
Lead Division:	RRD
File Name Of Hyperlinked Legal Doc:	U:\\Kermit\\11120106018.pdf
Mapped Polygon S Area In Acres:	19.75
Mapped Polygon S Area In Square Miles:	0.03
Date Data Entry Started:	3/7/2007 00:00:00
Date Data Entry Finished:	3/7/2007 00:00:00
Individual Or Staff Assoc With The Mapping:	Phillip Wilkins
Program Used To Map Restricted Features:	ArcGIS 9.1
Map Comments:	Mapped using Stamp Mill Plats of Government Lots 3 & 4
Comment:	Request received on 6/14/2006 Kermit Student
Date Legal Paperwork Stamped/Filed/Register Of Deeds:	3/31/1994 00:00:00
Commercial I Land Use Restriction:	0
Commercial Ii Land Use Restriction:	0
Commercial Iii Land Use Restriction:	0
Commercial Iv Land Use Restriction:	0
Industrial Land Use Restriction:	0
Residential Land Use Restriction:	0
Recreational Land Use Restriction:	0
Multiple Land-Use Restrictions:	0
Site Specific Restrictions:	0
Groundwater Consumption Restrictions:	0
Groundwater Contact Restrictions:	0
Special Well Construction Requirements:	0
Special Building Restrictions:	0
Excavation And Soil Movement Restrictions:	0
Soil Movement Requirements:	0
There Is A Restriction On All Construction:	0
Monitoring Well Protected, No Tampering Or Removal:	0
There Is An Exposure Barrier In Place:	1
There Is A Health And Safety Plan:	0
There Is A Permanent Marker On The Site:	0

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
GAY	S100344414	GAY DUMP (SHERMAN TOWNSHIP)	SIDE OF CO RD 1 & 4 MI N GAY	49945	HIST LF
GAY	S106131738	GAY STAMPSANDS	WATERFRONT	49945	SHWS
LAKE LINDEN	S109952132	C&H POWER PLANT - MENEGUZZO	HWY 26	49945	SHWS
LAKE LINDEN	U003321307	SAWMILL	HWY 26	49945	UST
LAKE LINDEN	U003325674	VACANT LOTS	100 BLOCK OF CALUMET	49945	LUST, UST
LAKE LINDEN	S109149898	LAKE LINDEN BEACH	HILTUNEN ST	49945	SHWS
LAKE LINDEN	S110126633	BELKOWSKI WELL	29030 RHEAULT ROAD	49945	SHWS
LAKE LINDEN	S104910233	FORMER POWER STATION	26 STREET	49945	BEA

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 01/14/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 04/02/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 01/14/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 04/02/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 05/31/2010
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 01/14/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 04/02/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 06/30/2009
Date Data Arrived at EDR: 08/11/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 41

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/30/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of NPL and Base Realighnment & Closure sites found in the CERCLIS database where FERRO is involved in cleanup projects.

Date of Government Version: 06/23/2009
Date Data Arrived at EDR: 01/15/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/15/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/23/2009
Date Data Arrived at EDR: 09/02/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 19

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 03/11/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/11/2009
Date Data Arrived at EDR: 12/29/2009
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 43

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/15/2010
Next Scheduled EDR Contact: 05/31/2010
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 01/13/2010
Date Data Arrived at EDR: 01/15/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 02/19/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 01/13/2010
Date Data Arrived at EDR: 01/15/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 02/19/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 01/13/2010
Date Data Arrived at EDR: 01/15/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 02/19/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 01/13/2010
Date Data Arrived at EDR: 01/15/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 02/19/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/09/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/09/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 01/22/2010
Date Made Active in Reports: 02/11/2010
Number of Days to Update: 20

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/15/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Contaminated Sites

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 02/01/2010
Date Data Arrived at EDR: 02/03/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 23

Source: Department of Environmental Quality
Telephone: 517-373-9541
Last EDR Contact: 02/03/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Semi-Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facilities Database

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/03/2010
Date Data Arrived at EDR: 02/04/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 517-335-4035
Last EDR Contact: 02/02/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Sites
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 02/22/2010
Date Data Arrived at EDR: 02/24/2010
Date Made Active in Reports: 03/23/2010
Number of Days to Update: 27
Source: Department of Environmental Quality
Telephone: 517-373-9837
Last EDR Contact: 04/01/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/24/2009
Date Data Arrived at EDR: 11/25/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 21
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/07/2009
Date Data Arrived at EDR: 12/09/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 7
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Semi-Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/02/2010
Date Data Arrived at EDR: 02/03/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 15
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/12/2009
Date Data Arrived at EDR: 11/12/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 34
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/24/2009
Date Data Arrived at EDR: 05/20/2009
Date Made Active in Reports: 06/17/2009
Number of Days to Update: 28

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 15

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Underground Storage Tank Facility List
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 02/22/2010
Date Data Arrived at EDR: 02/24/2010
Date Made Active in Reports: 03/17/2010
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 517-335-4035
Last EDR Contact: 04/01/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: Annually

AST: Aboveground Tanks
Registered Aboveground Storage Tanks.

Date of Government Version: 11/30/2009
Date Data Arrived at EDR: 12/08/2009
Date Made Active in Reports: 12/30/2009
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 517-373-8168
Last EDR Contact: 02/23/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: No Update Planned

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 15

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/01/2008
Date Data Arrived at EDR: 12/30/2008
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 76

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/19/2009
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 03/16/2009
Number of Days to Update: 25

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/12/2009
Date Data Arrived at EDR: 11/20/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 26

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/07/2009
Date Data Arrived at EDR: 12/09/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 7

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/02/2010
Date Data Arrived at EDR: 02/03/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 15

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 02/17/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 02/08/2010
Date Data Arrived at EDR: 02/09/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 9

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2009
Date Data Arrived at EDR: 11/05/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 41

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 10/29/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 48

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/18/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

AUL: Engineering and Institutional Controls
A listing of sites with institutional and/or engineering controls in place.

Date of Government Version: 01/04/2010
Date Data Arrived at EDR: 01/05/2010
Date Made Active in Reports: 01/27/2010
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 517-373-4828
Last EDR Contact: 03/08/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 04/02/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 01/05/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields and USTfield Site Database
All state funded Part 201 and 213 sites, as well as LUST sites that have been redeveloped by private entities using the BEA process. Be aware that this is not a list of all of the potential brownfield sites in Michigan.

Date of Government Version: 02/12/2010
Date Data Arrived at EDR: 02/12/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 14

Source: Department of Environmental Quality
Telephone: 517-373-4805
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

BROWNFIELDS 2: Brownfields Building and Land Site Locations
A listing of brownfield building and land site locations. The listing is a collaborative effort of Michigan Economic Development Corporation, Michigan Economic Developers Association, Detrot Edison, Detroit Area Commercial Board of Realtors

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 05/01/2007
Number of Days to Update: 21

Source: Economic Development Corporation
Telephone: 888-522-0103
Last EDR Contact: 03/08/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 10/01/2009
Date Data Arrived at EDR: 11/04/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/23/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 03/22/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Varies

HIST LF: Inactive Solid Waste Facilities

The database contains historical information and is no longer updated.

Date of Government Version: 03/01/1997
Date Data Arrived at EDR: 02/28/2003
Date Made Active in Reports: 03/06/2003
Number of Days to Update: 6

Source: Department of Environmental Quality
Telephone: 517-335-4034
Last EDR Contact: 02/28/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 02/08/2010
Next Scheduled EDR Contact: 05/24/2010
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/19/2009
Date Data Arrived at EDR: 12/29/2009
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 43

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 12/14/2009
Next Scheduled EDR Contact: 03/22/2010
Data Release Frequency: Quarterly

DEL SHWS: Delisted List of Contaminated Sites

Sites that have been delisted or deleted from the List of Contaminated Sites. The available documentation for the site does not support it's listing or the site no longer meets criteria specified in rules.

Date of Government Version: 02/04/2010
Date Data Arrived at EDR: 02/04/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 517-373-9541
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab locations.

Date of Government Version: 10/20/2008
Date Data Arrived at EDR: 11/18/2008
Date Made Active in Reports: 11/21/2008
Number of Days to Update: 3

Source: Department of Community Health
Telephone: 517-373-3740
Last EDR Contact: 02/02/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 11/03/2009
Date Data Arrived at EDR: 11/05/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 03/17/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: Varies

LIENS: Lien List

An Environmental Lien is a charge, security, or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon a property, including (but not limited to) liens imposed pursuant to CERCLA 42 USC * 9607(1) and similar state or local laws. In other words: a lien placed upon a property's title due to an environmental condition

Date of Government Version: 01/05/2010
Date Data Arrived at EDR: 01/29/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 28

Source: Department of Environmental Quality
Telephone: 517-373-9837
Last EDR Contact: 01/27/2010
Next Scheduled EDR Contact: 05/10/2010
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 01/06/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 35

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/06/2010
Next Scheduled EDR Contact: 04/12/2010
Data Release Frequency: Annually

PEAS: Pollution Emergency Alerting System

Environmental pollution emergencies reported to the Department of Environmental Quality such as tanker accidents, pipeline breaks, and release of reportable quantities of hazardous substances.

Date of Government Version: 12/08/2009
Date Data Arrived at EDR: 03/12/2010
Date Made Active in Reports: 03/23/2010
Number of Days to Update: 11

Source: Department of Environmental Quality
Telephone: 517-373-8427
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 01/13/2010
Date Data Arrived at EDR: 01/15/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 02/19/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 10/13/2009
Date Data Arrived at EDR: 11/10/2009
Date Made Active in Reports: 12/16/2009
Number of Days to Update: 36

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/09/2010
Next Scheduled EDR Contact: 05/24/2010
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 01/19/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/30/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 62

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/18/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 08/03/2009
Date Data Arrived at EDR: 10/27/2009
Date Made Active in Reports: 11/09/2009
Number of Days to Update: 13

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/05/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/01/2009
Date Data Arrived at EDR: 12/15/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 35

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 04/02/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 01/05/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 05/08/2009
Number of Days to Update: 1

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 01/21/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/17/2009
Date Data Arrived at EDR: 12/08/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 42

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/10/2010
Next Scheduled EDR Contact: 06/21/2010
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 01/13/2010
Date Made Active in Reports: 02/18/2010
Number of Days to Update: 36

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 03/02/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/30/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 01/06/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/10/2009
Date Data Arrived at EDR: 11/18/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 62
Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 03/29/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/01/2009
Date Data Arrived at EDR: 10/21/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 41
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 02/16/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/24/2009
Date Data Arrived at EDR: 12/31/2009
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 41
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/12/2010
Date Data Arrived at EDR: 01/13/2010
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/13/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/19/2009
Date Data Arrived at EDR: 10/22/2009
Date Made Active in Reports: 12/01/2009
Number of Days to Update: 40

Source: EPA
Telephone: (312) 353-2000
Last EDR Contact: 03/15/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 02/19/2009
Date Made Active in Reports: 05/22/2009
Number of Days to Update: 92

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/25/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: Biennially

UIC: Underground Injection Wells Database

A listing of underground injection well locations. The UIC Program is responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal.

Date of Government Version: 02/02/2010
Date Data Arrived at EDR: 03/03/2010
Date Made Active in Reports: 03/23/2010
Number of Days to Update: 20

Source: Department of Environmental Quality
Telephone: 517-241-1515
Last EDR Contact: 02/01/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

DRYCLEANERS: Drycleaning Establishments

A listing of drycleaning facilities in Michigan.

Date of Government Version: 01/26/2010
Date Data Arrived at EDR: 02/05/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 21

Source: Department of Environmental Quality
Telephone: 517-335-4586
Last EDR Contact: 01/25/2010
Next Scheduled EDR Contact: 05/10/2010
Data Release Frequency: Varies

NPDES: List of Active NPDES Permits

General information regarding NPDES (National Pollutant Discharge Elimination System) permits and NPDES Storm Water permits.

Date of Government Version: 01/12/2010
Date Data Arrived at EDR: 01/13/2010
Date Made Active in Reports: 01/27/2010
Number of Days to Update: 14

Source: Department of Environmental Quality
Telephone: 517-241-1300
Last EDR Contact: 01/13/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Varies

AIRS: Permit and Emissions Inventory Data

Permit and emissions inventory data.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 10/09/2009
Date Made Active in Reports: 11/17/2009
Number of Days to Update: 39

Source: Department of Environmental Quality
Telephone: 517-373-7074
Last EDR Contact: 04/02/2010
Next Scheduled EDR Contact: 07/12/2010
Data Release Frequency: Varies

BEA: BASELINE ENVIRONMENTAL ASSESSMENT DATABASE

A Baseline Environmental Assessment (BEA) allows people to purchase or begin operating at a facility without being held liable for existing contamination. BEAs are used to gather enough information about the property being transferred so that existing contamination can be distinguished from any new releases that might occur after the new owner or operator takes over the property.

Date of Government Version: 03/01/2010
Date Data Arrived at EDR: 03/02/2010
Date Made Active in Reports: 03/23/2010
Number of Days to Update: 21

Source: DEPT. OF ENVIRONMENTAL QUALITY
Telephone: 517-373-9541
Last EDR Contact: 02/23/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: Semi-Annually

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/19/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 11/16/2009
Date Data Arrived at EDR: 11/16/2009
Date Made Active in Reports: 01/19/2010
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/08/2010
Next Scheduled EDR Contact: 05/10/2010
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/19/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: N/A

FINANCIAL ASSURANCE: Financial Assurance Information Listing

Financial assurance information.

Date of Government Version: 01/28/2010
Date Data Arrived at EDR: 02/03/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 23

Source: Department of Environmental Quality
Telephone: 517-335-6610
Last EDR Contact: 01/11/2010
Next Scheduled EDR Contact: 04/19/2010
Data Release Frequency: Varies

FINANCIAL ASSURANCE 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/03/2010
Date Data Arrived at EDR: 02/04/2010
Date Made Active in Reports: 02/26/2010
Number of Days to Update: 22

Source: Department of Environmental Quality
Telephone: 517-335-4034
Last EDR Contact: 02/02/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 11/09/2009
Date Data Arrived at EDR: 12/18/2009
Date Made Active in Reports: 02/10/2010
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/16/2010
Next Scheduled EDR Contact: 06/28/2010
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 01/01/2008
Date Data Arrived at EDR: 02/18/2009
Date Made Active in Reports: 05/29/2009
Number of Days to Update: 100

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/24/2010
Next Scheduled EDR Contact: 05/17/2010
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/27/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Varies

COAL ASH: Coal Ash Disposal Sites
Coal fired power plants in Southeast Michigan that have coal ash handling on site.

Date of Government Version: 01/25/2010
Date Data Arrived at EDR: 01/25/2010
Date Made Active in Reports: 01/27/2010
Number of Days to Update: 2

Source: Department of Environmental Quality
Telephone: 586-753-3754
Last EDR Contact: 01/11/2010
Next Scheduled EDR Contact: 04/26/2010
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2007
Date Data Arrived at EDR: 08/26/2009
Date Made Active in Reports: 09/11/2009
Number of Days to Update: 16

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 03/02/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 01/20/2010
Date Made Active in Reports: 02/05/2010
Number of Days to Update: 16

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/20/2010
Next Scheduled EDR Contact: 05/03/2010
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/04/2010
Date Data Arrived at EDR: 02/11/2010
Date Made Active in Reports: 03/17/2010
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/11/2010
Next Scheduled EDR Contact: 05/24/2010
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 12/01/2009
Date Made Active in Reports: 12/14/2009
Number of Days to Update: 13

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 02/23/2010
Next Scheduled EDR Contact: 06/07/2010
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 11/03/2009
Date Data Arrived at EDR: 02/12/2010
Date Made Active in Reports: 02/22/2010
Number of Days to Update: 10

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/01/2010
Next Scheduled EDR Contact: 06/14/2010
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 07/17/2009
Date Made Active in Reports: 08/10/2009
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/22/2010
Next Scheduled EDR Contact: 07/05/2010
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care Centers, Group & Family Homes
Source: Bureau of REgulatory Services
Telephone: 517-373-8300

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Department of Natural Resources
Telephone: 517-241-2254

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CALUMET HECLA POWER PLANT
5371 M-26
LAKE LINDEN, MI 49945

TARGET PROPERTY COORDINATES

Latitude (North):	47.18530 - 47° 11' 7.1''
Longitude (West):	88.4136 - 88° 24' 48.9''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	392899.9
UTM Y (Meters):	5226507.0
Elevation:	618 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	47088-B4 LAURIUM, MI
Most Recent Revision:	1975

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

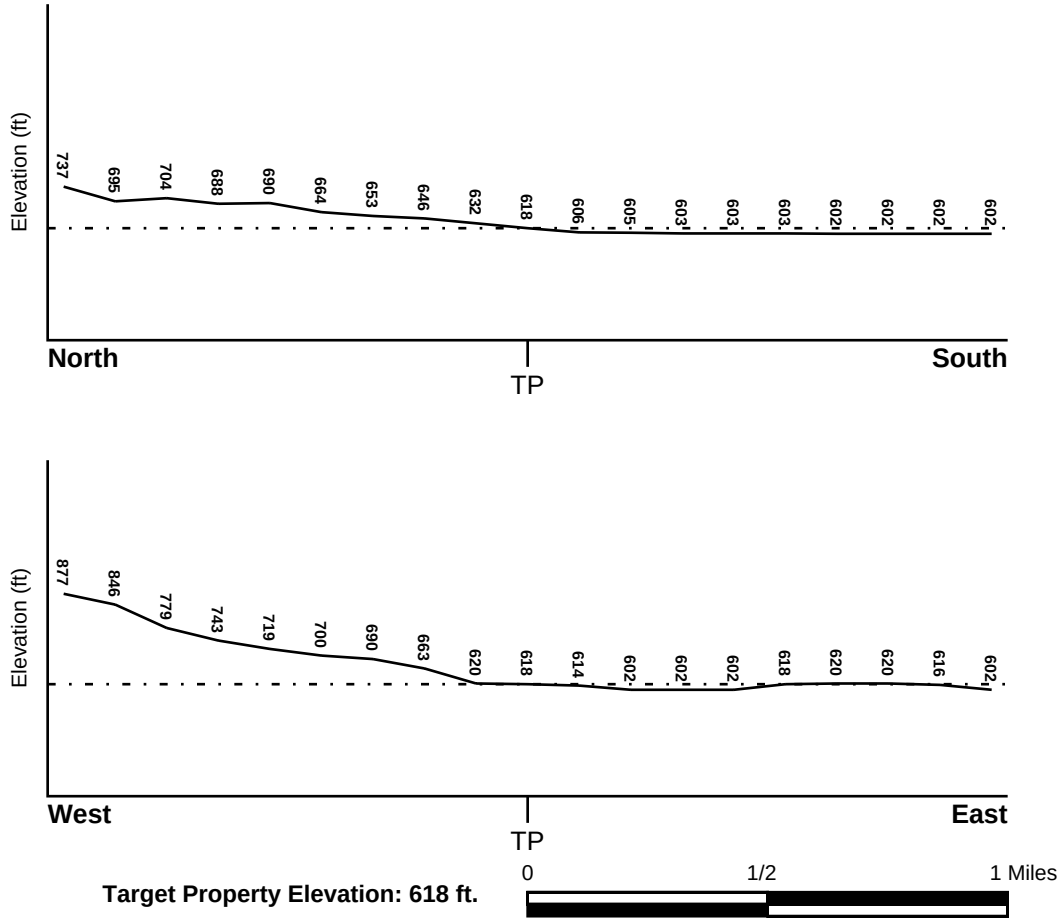
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ESE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
HOUGHTON, MI	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
LAURIUM	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

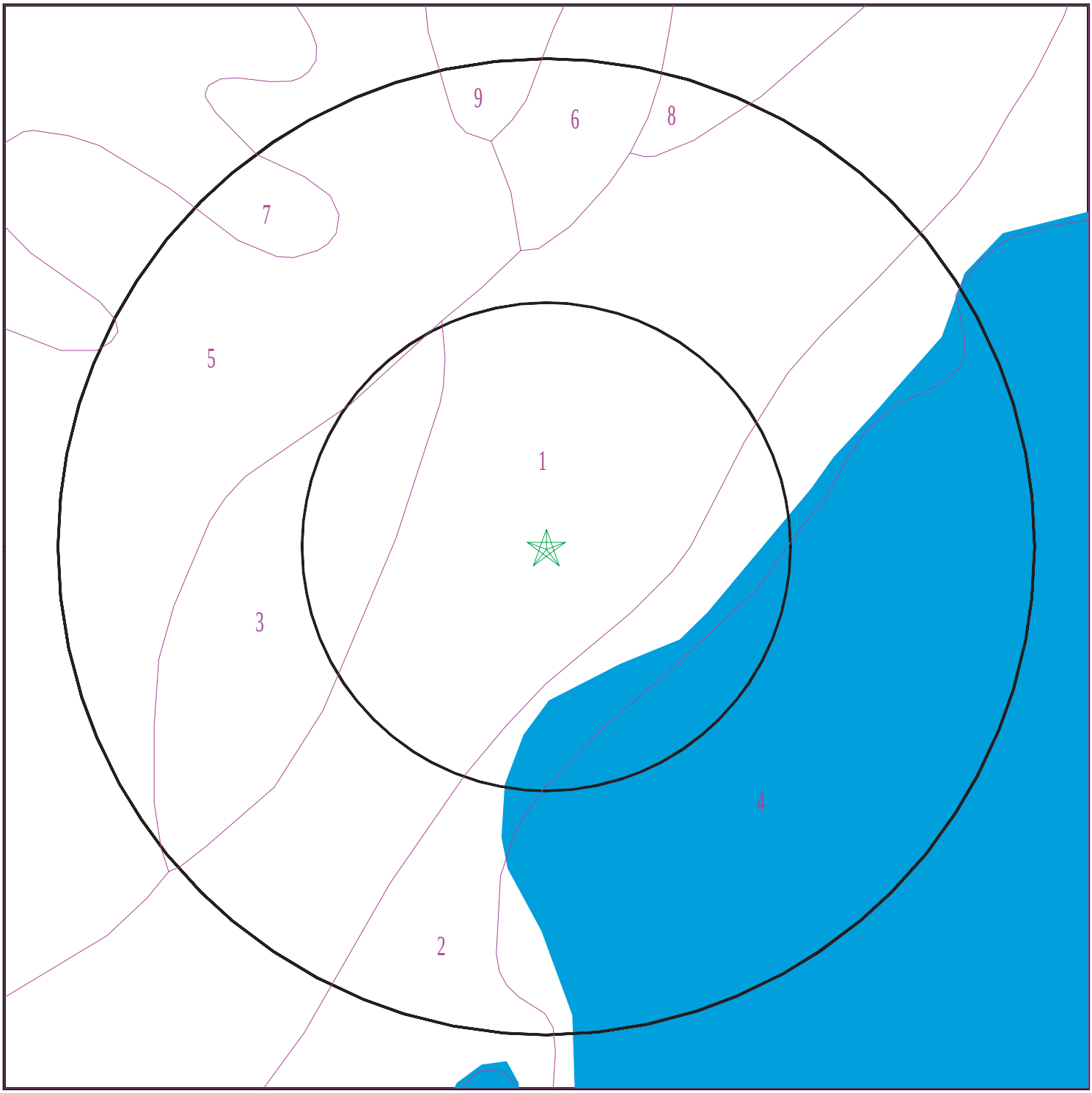
Era:	Precambrian
System:	Precambrian
Series:	Z Sedimentary rocks
Code:	Z *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 2735439.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Calumet Hecla Power Plant	CLIENT:	Weston Solutions, Inc.
ADDRESS:	5371 M-26	CONTACT:	Dan Liebau
	Lake Linden MI 49945	INQUIRY #:	2735439.2s
LAT/LONG:	47.1853 / 88.4136	DATE:	April 02, 2010 12:40 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Udorthents

Soil Surface Texture: variable

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	variable	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 2

Soil Component Name: Dumps, stamp sand

Soil Surface Texture: variable

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 3

Soil Component Name: Kalkaska

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	3 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.5 Min: 4.5
2	3 inches	27 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.5 Min: 4.5
3	27 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 6.5 Min: 4.5

Soil Map ID: 4

Soil Component Name: Water

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 5

Soil Component Name: Munising

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	11 inches	25 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
3	25 inches	48 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
4	48 inches	59 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6

Soil Map ID: 6

Soil Component Name: Urban land

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 7

Soil Component Name: Munising

Soil Surface Texture: loamy fine sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 76 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
2	11 inches	25 inches	fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
3	25 inches	48 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
4	48 inches	59 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6.5 Min: 5.6

Soil Map ID: 8

Soil Component Name:	Urban land
Soil Surface Texture:	loamy fine sand
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	
Hydric Status: Unknown	
Corrosion Potential - Uncoated Steel:	Not Reported
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

No Layer Information available.

Soil Map ID: 9

Soil Component Name:	Urban land
Soil Surface Texture:	loamy fine sand
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	
Hydric Status: Unknown	
Corrosion Potential - Uncoated Steel:	Not Reported
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

No Layer Information available.

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	MI0003720	1/2 - 1 Mile NNE

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	MI20094497	1/2 - 1 Mile SSW
3	MI20094454	1/2 - 1 Mile WSW

PHYSICAL SETTING SOURCE MAP - 2735439.2s

- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Calumet Hecla Power Plant	CLIENT:	Weston Solutions, Inc.
ADDRESS:	5371 M-26 Lake Linden MI 49945	CONTACT:	Dan Liebau
LAT/LONG:	47.1853 / 88.4136	INQUIRY #:	2735439.2s
		DATE:	April 02, 2010 12:40 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database | EDR ID Number

1
SSW
1/2 - 1 Mile
Lower

MI WELLS **MI20094497**

Wellid:	31000001256	Import id:	Not Reported
County:	Houghton	Township:	Torch Lake
Town range:	55N 32W	Section:	7
Owner name:	LAKE LINDEN WATER AND SEWER AU		
Well addr:	Not Reported		
Well depth:	172		
Well type:	Irrigation		
Wssn:	0		
Well num:	Not Reported	Driller id:	1722
Const date:	1979-07-11 00:00:00.000	Case type:	Unknown
Case dia:	5		
Case depth:	169		
Screen frm:	169		
Screen to:	172		
Swl:	16		
Test depth:	57		
Test hours:	2		
Test rate:	15	Test methd:	Unknown
Grouted:	0	Pmp cpcity:	20
Latitude:	47.177593		
Longitude:	-88.421104		
Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	617	Elev dif:	617
Elev miv:	617	Aq code:	Drift Well
Aq flag:	Not Reported	Pct aq:	2
Pct aq d:	2	Pct aq r:	0
Pct maq:	10	Pct maq d:	10
Pct maq r:	0	Pct cm:	10
Pct cm d:	10	Pct cm r:	0
Pct pcm:	3	Pct pcm d:	3
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	-1
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	28	A pct aq:	11
A pct maq:	61	A pct pcm:	18
A pct cm:	11	A pct na:	0
A thickns2:	156	A pct aq2:	2
A pct maq2:	11	A pct pcm2:	3
A pct cm2:	11	A pct na2:	73
A hit swl:	F	A hit top:	F
A hit rock:	F	A sc lith1:	Sand
A sc lmod1:	Fine	A sc lmaq1:	AQ
A sc lpct1:	100	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	0
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	100

Pct aq 2:	0	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	100	Pct aq 3:	0
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	100
Pct aq 4:	0	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	100	Pct aq 5:	0
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	100
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	100	Pct aq 7:	0
Pct maq 7:	24	Pct cm 7:	56
Pct pcm 7:	0	Pct na 7:	20
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0
Within sec:	Y	Loc match:	Y
Aq code 1:	Not Reported		
Hit swl:	Not Reported		
Athk2:	0		
Horiz Conduct:	0		
Vert Conduct:	0		
T2:	0		
D50plek:	0		

2
NNE
1/2 - 1 Mile
Higher

FRDS PWS **MI0003720**

PWS ID:	MI0003720		
Date Initiated:	Not Reported	Date Deactivated:	Not Reported
PWS Name:	LAKE LINDEN VILLAGE OF LAKE LINDEN VILLAGE HALL 401 CALUMET ST LAKE LINDEN, MI 49945		
Addressee / Facility:	Not Reported		
Facility Latitude:	47 11 39	Facility Longitude:	088 24 25
City Served:	Not Reported		
Treatment Class:	Mixed (treated and untreated)	Population:	1203

Violations information not reported.

ENFORCEMENT INFORMATION:

Truedate:	03/31/2009	Pwsid:	MI0003720
Pwsname:	LAKE LINDEN		
Retpopsrvd:	1203	Pwstypecod:	C
Vioid:	4000901	Contaminant:	7000
Viol. Type:	CCR Complete Failure to Report		
Complperbe:	7/1/2001 0:00:00		
Complperen:	6/12/2002 0:00:00	Enfdate:	6/12/2002 0:00:00
Enf action:	State Compliance Achieved		
Violmeasur:	Not Reported		

System Name:	LAKE LINDEN		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2001 0:00:00 - 6/12/2002 0:00:00		
Violation ID:	4000901		
Enforcement Date:	6/12/2002 0:00:00	Enf. Action:	State Compliance Achieved

System Name:	LAKE LINDEN		
Violation Type:	CCR Complete Failure to Report		
Contaminant:	7000		
Compliance Period:	7/1/2001 0:00:00 - 6/12/2002 0:00:00		
Violation ID:	4000901		
Enforcement Date:	6/12/2002 0:00:00	Enf. Action:	State Compliance Achieved

CONTACT INFORMATION:

Name:	LAKE LINDEN	Population:	1203
Contact:	POIRIER, ROBERT	Phone:	Not Reported
Address:	401 Calumet Street		
Address 2:	LAKE LINDEN MI, 49 906-2		

3
WSW
1/2 - 1 Mile
Higher

MI WELLS **MI20094454**

Wellid:	31000001213	Import id:	Not Reported
County:	Houghton	Township:	Torch Lake
Town range:	53N 32W	Section:	12
Owner name:	PETER VANEREM		
Well addr:	RTE 1 BOX 159		
Well depth:	192		
Well type:	Household		
Wssn:	0		
Well num:	Not Reported	Driller id:	1722
Const date:	1995-11-07 00:00:00.000	Case type:	Steel
Case dia:	6		
Case depth:	25		
Screen frm:	0		
Screen to:	0		
Swl:	135		
Test depth:	180		
Test hours:	1		
Test rate:	7	Test methd:	Test Pump
Grouted:	1	Pmp cpcity:	10
Latitude:	47.181919		
Longitude:	-88.431294		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Methd coll:	Interpolation-Map		
Elevation:	0		
Elev methd:	DEM30M	Depth flag:	Not Reported
Elev flag:	Elevation < DEMmin or Elevation > DEMmax		
Swl flag:	Not Reported		
Elev dem:	820	Elev dif:	820
Elev miv:	820	Aq code:	Rock Well
Aq flag:	Not Reported	Pct aq:	93
Pct aq d:	0	Pct aq r:	100
Pct maq:	0	Pct maq d:	0
Pct maq r:	0	Pct cm:	0
Pct cm d:	0	Pct cm r:	0
Pct pcm:	7	Pct pcm d:	100
Pct pcm r:	0	Pct na:	0
Pct na d:	0	Pct na r:	0
Pct flag:	Not Reported	Rock top:	14
D r type:	Not Reported	Spc cpcity:	0
A thicknes:	0	A pct aq:	0
A pct maq:	0	A pct pcm:	0
A pct cm:	0	A pct na:	0
A thickns2:	0	A pct aq2:	0
A pct maq2:	0	A pct pcm2:	0
A pct cm2:	0	A pct na2:	0
A hit swl:	F	A hit top:	F
A hit rock:	F	A sc lith1:	Not Reported
A sc lmod1:	Not Reported	A sc lmaq1:	Not Reported
A sc lpct1:	0	A sc lith2:	Not Reported
A sc lmod2:	Not Reported	A sc lmaq2:	Not Reported
A sc lpct2:	0	Pct aq 1:	0
Pct maq 1:	0	Pct cm 1:	0
Pct pcm 1:	0	Pct na 1:	0
Pct aq 2:	0	Pct maq 2:	0
Pct cm 2:	0	Pct pcm 2:	0
Pct na 2:	0	Pct aq 3:	0
Pct maq 3:	0	Pct cm 3:	0
Pct pcm 3:	0	Pct na 3:	0
Pct aq 4:	0	Pct maq 4:	0
Pct cm 4:	0	Pct pcm 4:	0
Pct na 4:	0	Pct aq 5:	0
Pct maq 5:	0	Pct cm 5:	0
Pct pcm 5:	0	Pct na 5:	0
Pct aq 6:	0	Pct maq 6:	0
Pct cm 6:	0	Pct pcm 6:	0
Pct na 6:	0	Pct aq 7:	0
Pct maq 7:	0	Pct cm 7:	0
Pct pcm 7:	0	Pct na 7:	0
Pct aq 8:	0	Pct maq 8:	0
Pct cm 8:	0	Pct pcm 8:	0
Pct na 8:	0	Pct aq 9:	0
Pct maq 9:	0	Pct cm 9:	0
Pct pcm 9:	0	Pct na 9:	0
Pct aq 10:	0	Pct maq 10:	0
Pct cm 10:	0	Pct pcm 10:	0
Pct na 10:	0	Pct aq 11:	0
Pct maq 11:	0	Pct cm 11:	0
Pct pcm 11:	0	Pct na 11:	0
Pct aq 12:	0	Pct maq 12:	0
Pct cm 12:	0	Pct pcm 12:	0
Pct na 12:	0	Pct aq 13:	0
Pct maq 13:	0	Pct cm 13:	0
Pct pcm 13:	0	Pct na 13:	0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Within sec:	N	Loc match:	Y
Aq code 1:	Not Reported		
Hit swl:	Not Reported		
Athk2:	0		
Horiz Conduct:	0		
Vert Conduct:	0		
T2:	0		
D50plek:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: MI Radon

Radon Test Results

Test Type	Zip	Floor	Stop Date	Can 1 Res pCi/L	Can 1 Error	Can 2 Res pCi/L	Can 2 Error
Geographic	49945		4/25/88	1.0	21.0%		
Random	49945	0	4/23/87	LT 0.5			
Random	49945	0	12/5/87	0.5	43.0%		

State Database: MI Radon

Radon Test Results

Zip	Less than sign	Pci/L
49945		0.90
49945	<	0.30
49945		0.80
49945		21.30
49945		1.20
49945		2.80
49945	<	0.30
49945		5.80
49945		1.90
49945	<	0.30
49945		1.10
49945		3.50
49945		1.60
49945		4.90
49945		3.50
49945	<	0.30
49945		0.50
49945	<	0.30
49945		0.90
49945		0.60
49945		1.20
49945		0.40
49945	<	0.30
49945		0.70
49945		1.90
49945		1.20
49945		4.10
49945	<	0.30
49945		0.60
49945	<	0.30
49945		0.80
49945		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

		0.60
49945	<	0.30
49945	<	0.30
49945		0.90
49945		2.50
49945	<	0.30
49945	<	0.30
49945		1.20
49945	<	0.30
49945		1.80
49945	<	0.30
49945	<	0.30
49945		0.50
49945		0.50
49945	<	0.30
49945		3.00
49945		2.60
49945		2.80
49945		0.60
49945		2.20
49945		0.50
49945	<	0.30
49945		1.10
49945		0.50
49945		0.80
49945		0.50
49945		0.80
49945		0.50
49945		0.80
49945		2.40
49945	<	0.30
49945		1.20
49945	<	0.30
49945	<	0.30
49945	<	0.30
49945		0.50
49945		0.70
49945		3.00
49945		5.90
49945		1.30
49945	<	0.30
49945		8.70
49945		0.90
49945	<	0.30
49945		0.40
49945		2.20
49945	<	0.30
49945		1.60
49945	<	0.30
49945		2.40
49945	<	0.30
49945		0.80
49945		1.20

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for HOUGHTON County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 49945

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	Not Reported	Not Reported	Not Reported	Not Reported
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.450 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2009 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Department of Natural Resources
Telephone: 517-241-2254

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Data
Source: Department of Environmental Quality
Telephone: 517-335-9218

OTHER STATE DATABASE INFORMATION

Michigan Oil and Gas Wells
Source: Michigan Department of Natural Resources
Locations of oil and gas wells are compiled from permit records on file at the Geological Survey Division (GSD), Michigan Department of Natural Resources.

RADON

State Database: MI Radon
Source: Department of Environmental Quality
Telephone: 517-335-9551
Radon Test Results

Michigan Radon Test Results
Source: Department of Environmental Quality
Telephone: 517-335-8037
These results are from test kits distributed by the local health departments and used by Michigan residents. There is no way of knowing whether the devices were used properly, whether there are duplicates (or repeat verification) test (i.e., more than one sample per home), etc.

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

STREET AND ADDRESS INFORMATION

Calumet * Hecla Power Plant
5371 M-26
Lake Linden, MI 49945

Inquiry Number: 2735439.3
April 02, 2010

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

4/02/10

Site Name:
Calumet * Hecla Power Plant
5371 M-26
Lake Linden, MI 49945

EDR Inquiry # 2735439.3

Client Name:
Weston Solutions, Inc.
2501 Jolly Road
Okemos, MI 48864

Contact: Dan Liebau

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Weston Solutions, Inc. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, State, Zip: Lake Linden, MI 49945
Cross Street:
P.O. # 20405.016.001.0988.00
Project: C&H Power Plant
Certification # CD21-478A-A144

Maps Provided:

1954	1893
1935	
1928	
1917	
1908	
1900	

Sanborn® Library search results
Certification # CD21-478A-A144

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

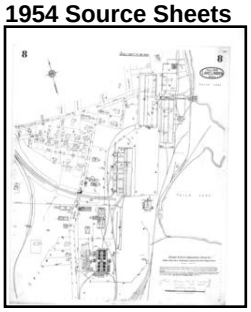
Limited Permission To Make Copies

Weston Solutions, Inc. (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Sanborn Sheet Thumbnails

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1954 Source Sheets



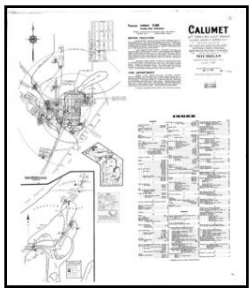
Volume 1, Sheet 8

1935 Source Sheets

Volume 1, Sheet 8

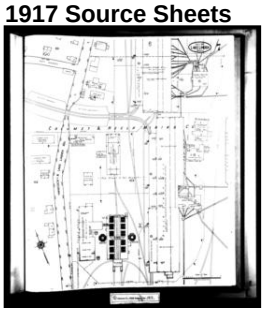
1928 Source Sheets

Volume 1, Sheet 8

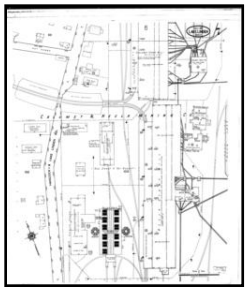


Volume 1, Sheet 1

1917 Source Sheets

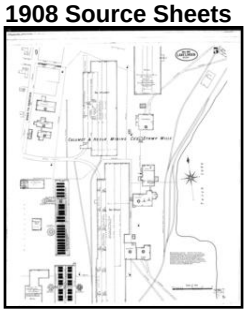


Volume 1, Sheet 7

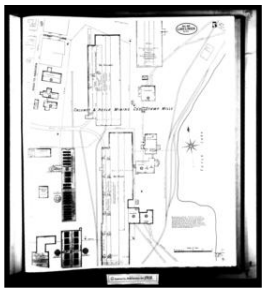


Volume 1, Sheet 7

1908 Source Sheets

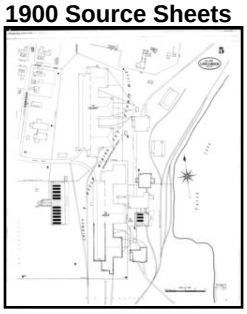


Volume 1, Sheet 5



Volume 1, Sheet 5

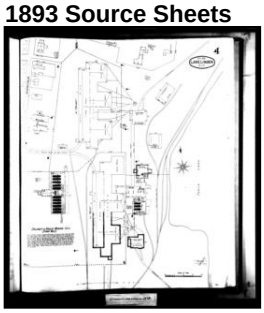
1900 Source Sheets



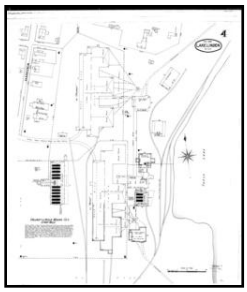
Volume 1, Sheet 5

Volume 1, Sheet 5

1893 Source Sheets

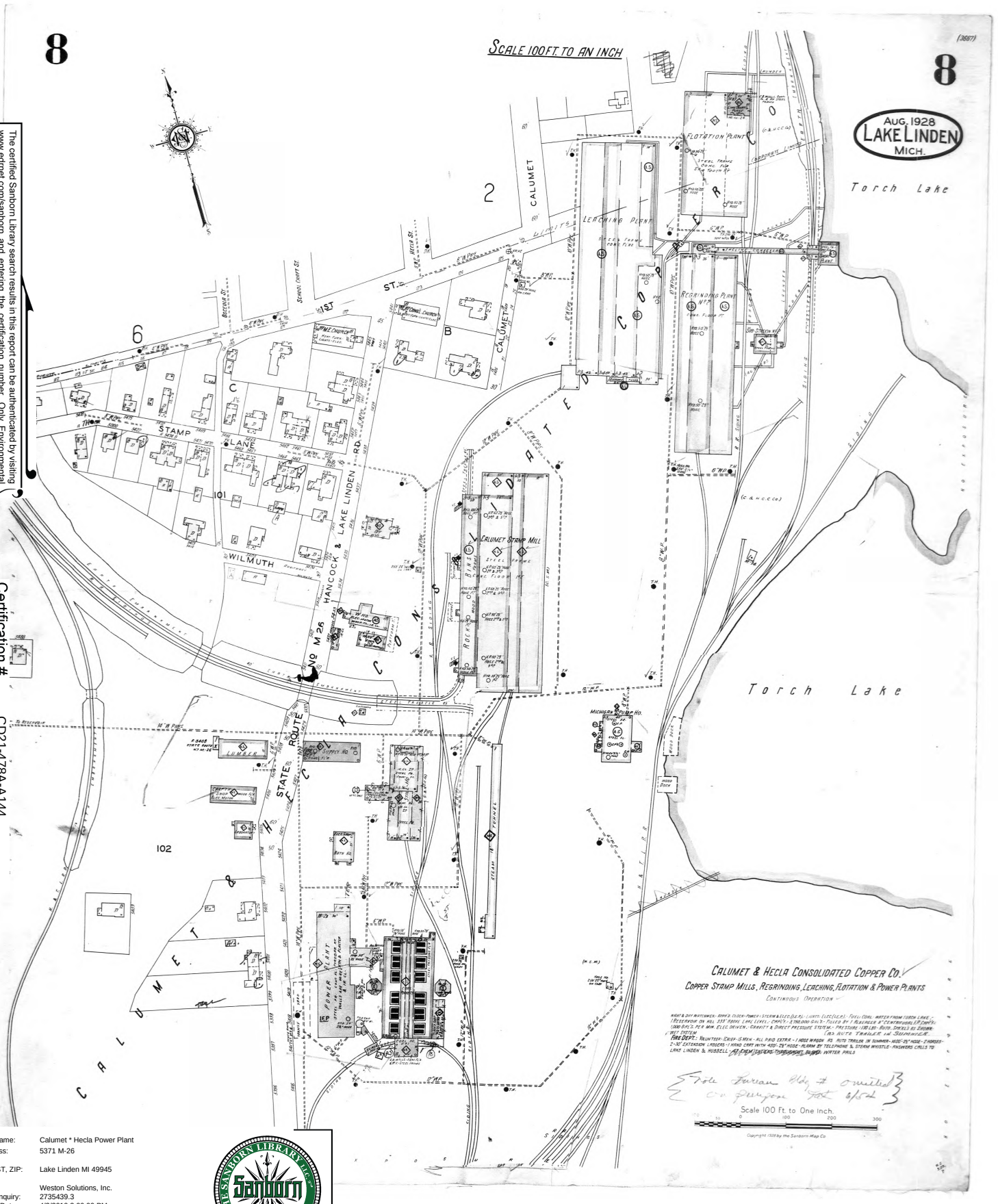


Volume 1, Sheet 4



Volume 1, Sheet 4

1954 Certified Sanborn Map



Certification # CD21-478A-A144

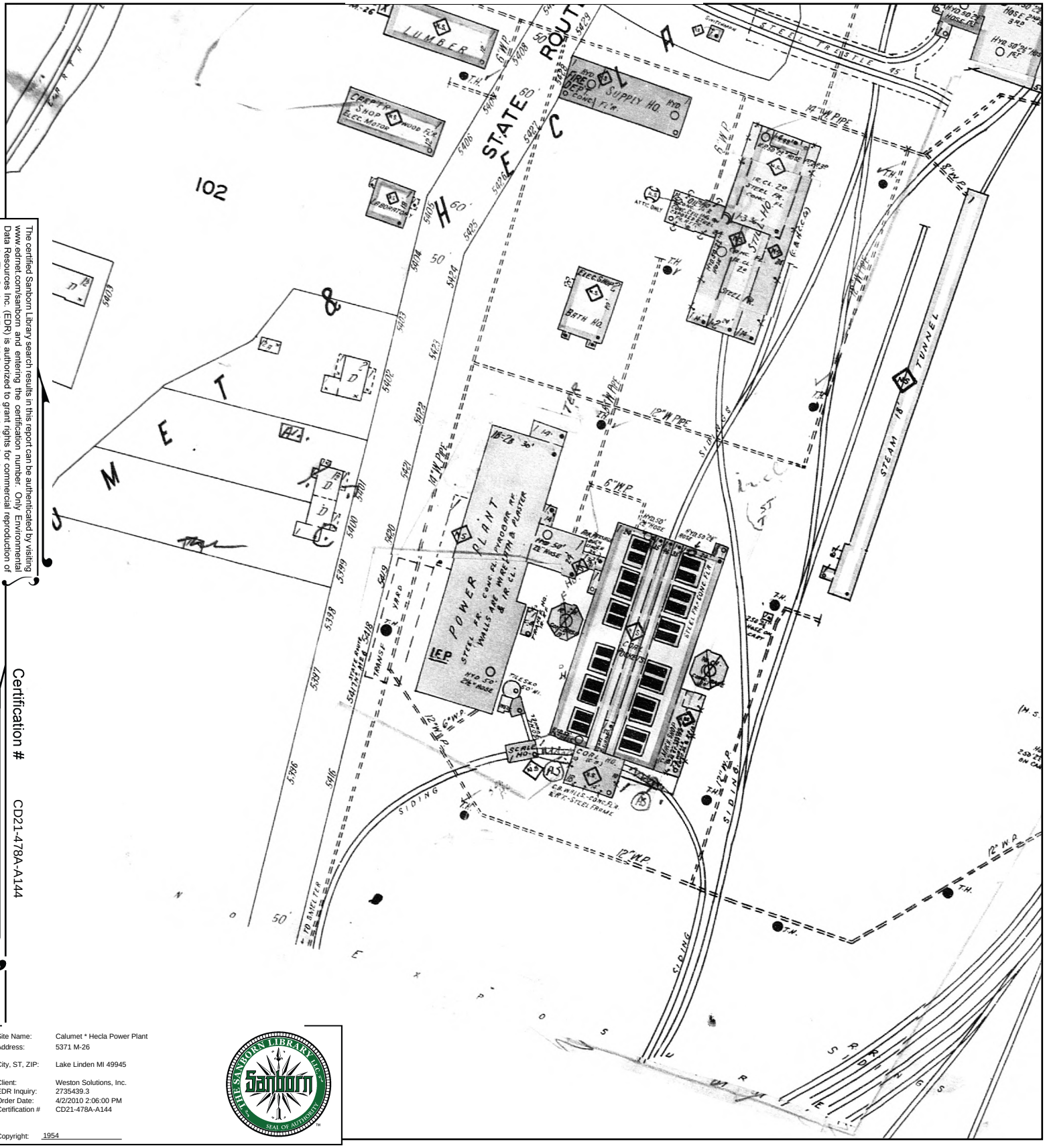
Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26

City, ST, ZIP: Lake Linden MI 49945

Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification # CD21-478A-A144

Copyright: 1954

1954 Certified Sanborn Map



The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # CD21-478A-A144

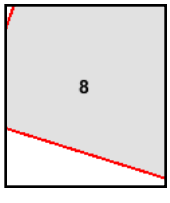
Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, ST, ZIP: Lake Linden MI 49945

Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification # CD21-478A-A144

Copyright: 1954

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).

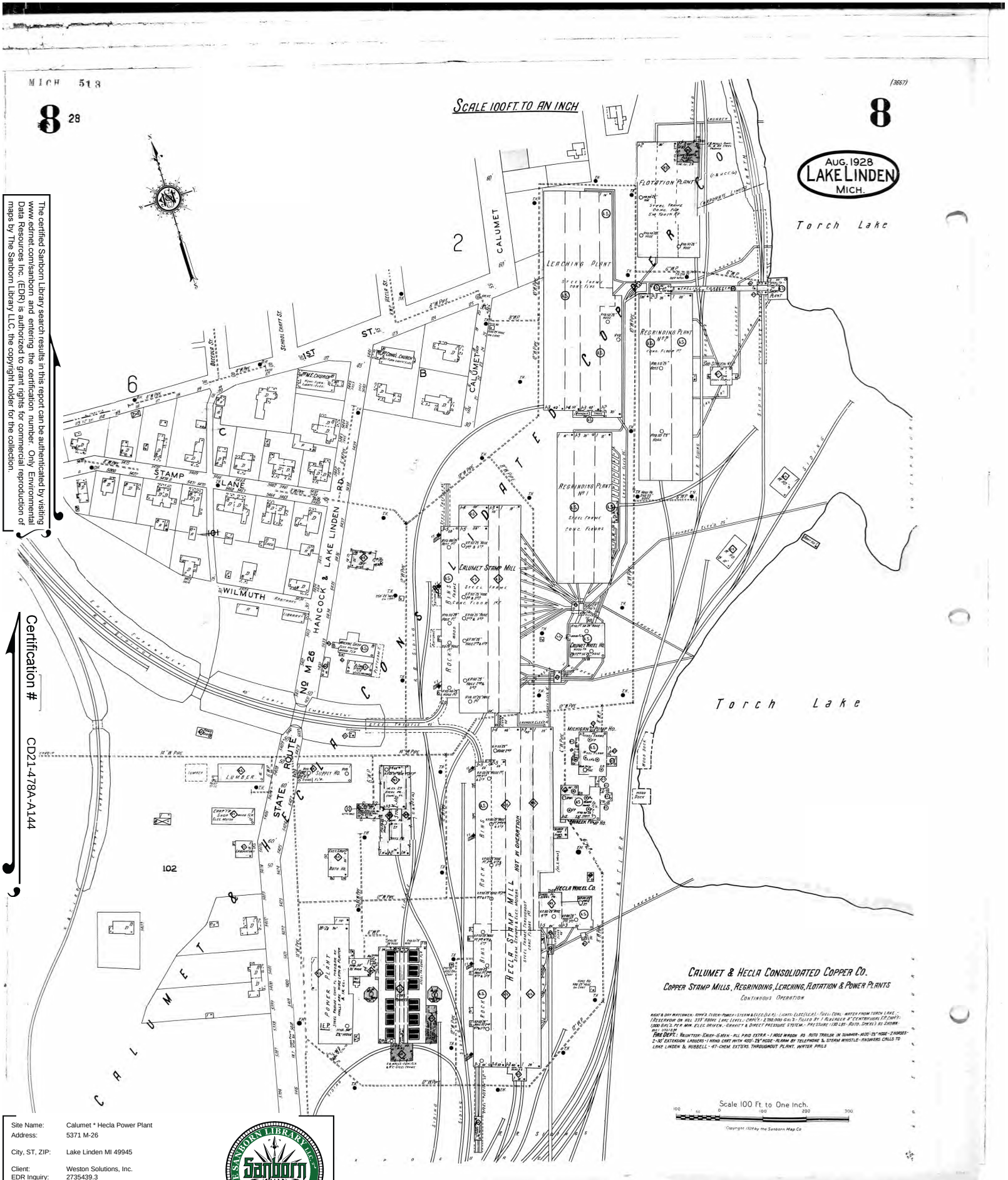
0 Feet 150 300 600



Volume 1, Sheet 8

N

1935 Certified Sanborn Map

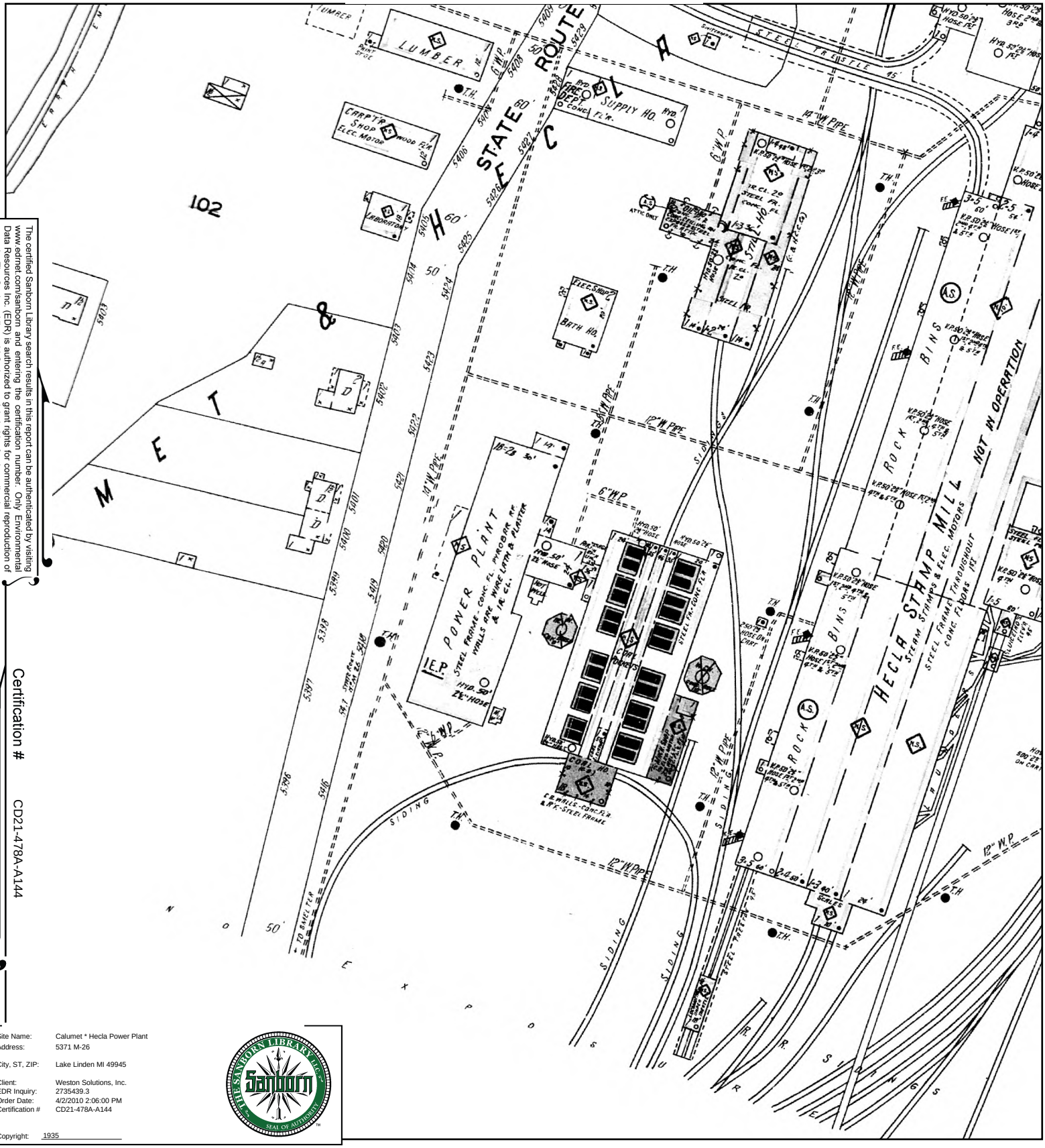


Certification # CD21-478A-A144

Site Name:	Calumet * Hecla Power Plant
Address:	5371 M-26
City, ST, ZIP:	Lake Linden MI 49945
Client:	Weston Solutions, Inc.
EDR Inquiry:	2735439.3
Order Date:	4/2/2010 2:06:00 PM
Certification #	CD21-478A-A144

Copyright: 1935

1935 Certified Sanborn Map



Certification # CD21-478A-A144

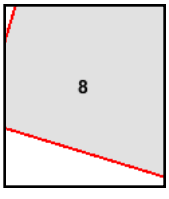
Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, ST, ZIP: Lake Linden MI 49945

Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification # CD21-478A-A144

Copyright: 1935

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).

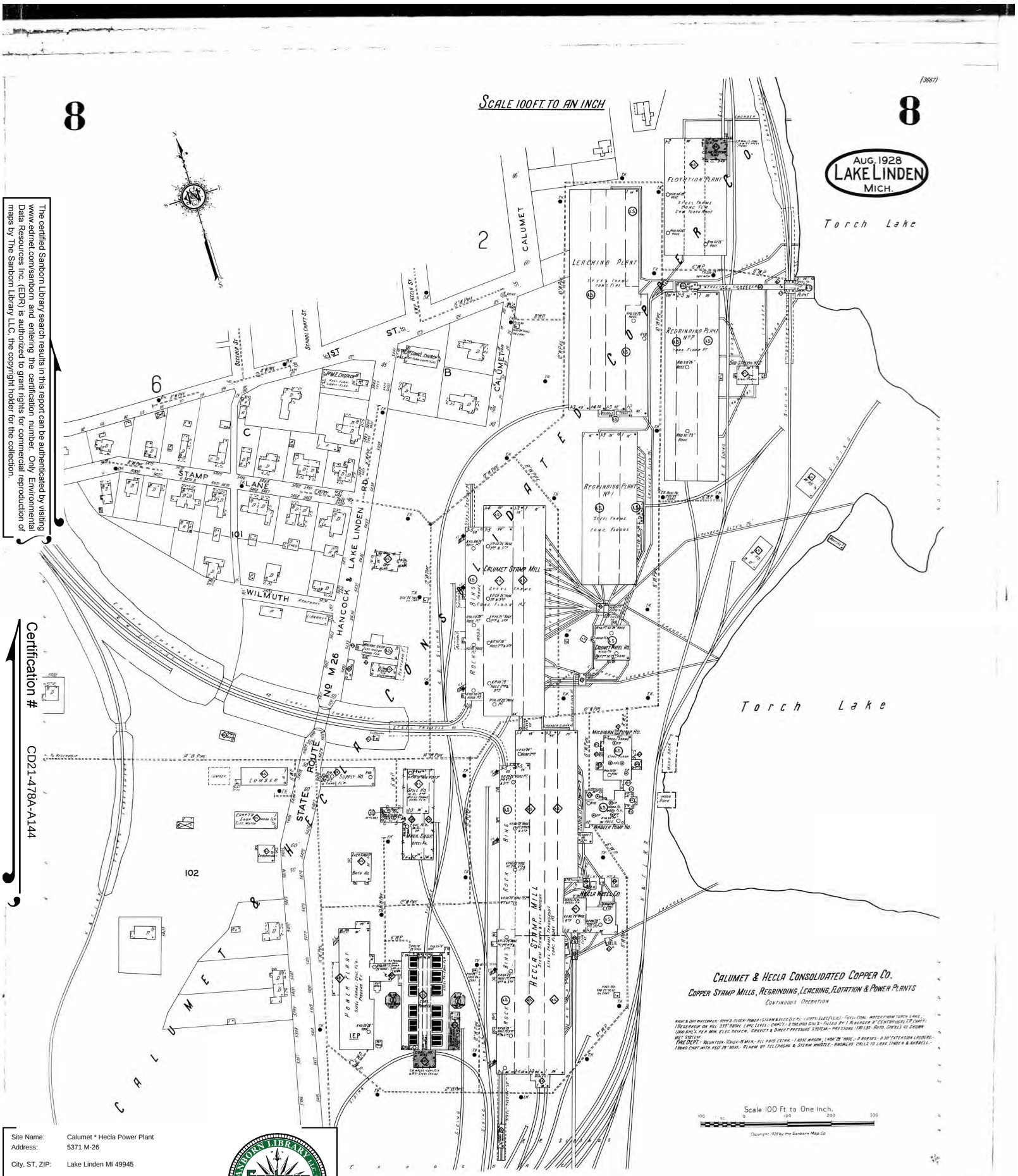
0 Feet 150 300 600



Volume 1, Sheet 8

N

1928 Certified Sanborn Map



The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

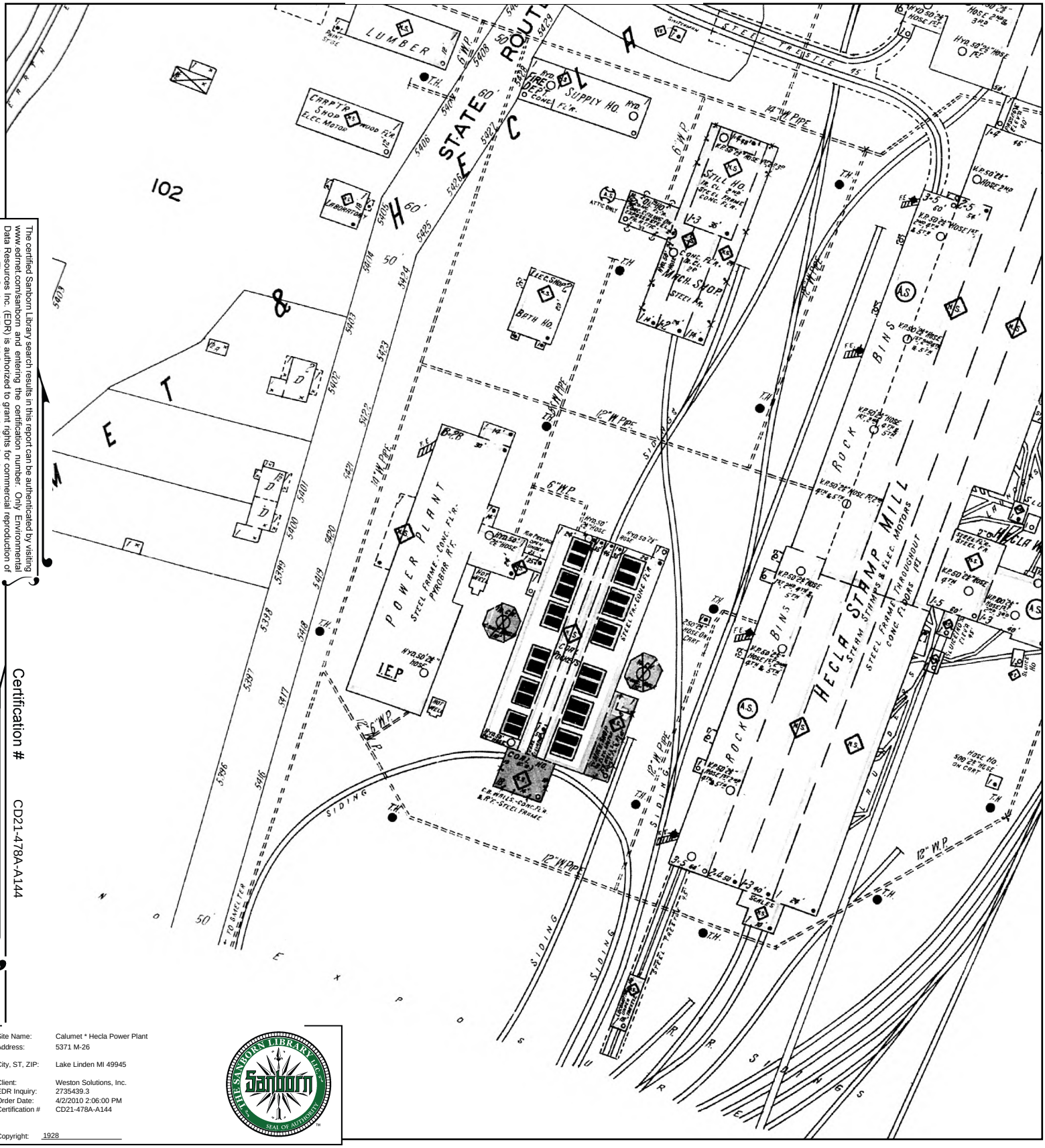
Certification # CD21-478A-A144

Site Name:	Calumet * Hecla Power Plant
Address:	5371 M-26
City, ST, ZIP:	Lake Linden MI 49945
Client:	Weston Solutions, Inc.
EDR Inquiry:	2735439.3
Order Date:	4/2/2010 2:06:00 PM
Certification #	CD21-478A-A144

Copyright: 1928

THE SANBORN LIBRARY LLC Sanborn SEAL OF AUTHENTICITY

1928 Certified Sanborn Map



The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # CD21-478A-A144

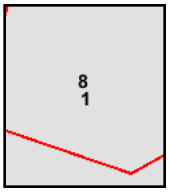
Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, ST, ZIP: Lake Linden MI 49945

Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification #: CD21-478A-A144

Copyright: 1928

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).

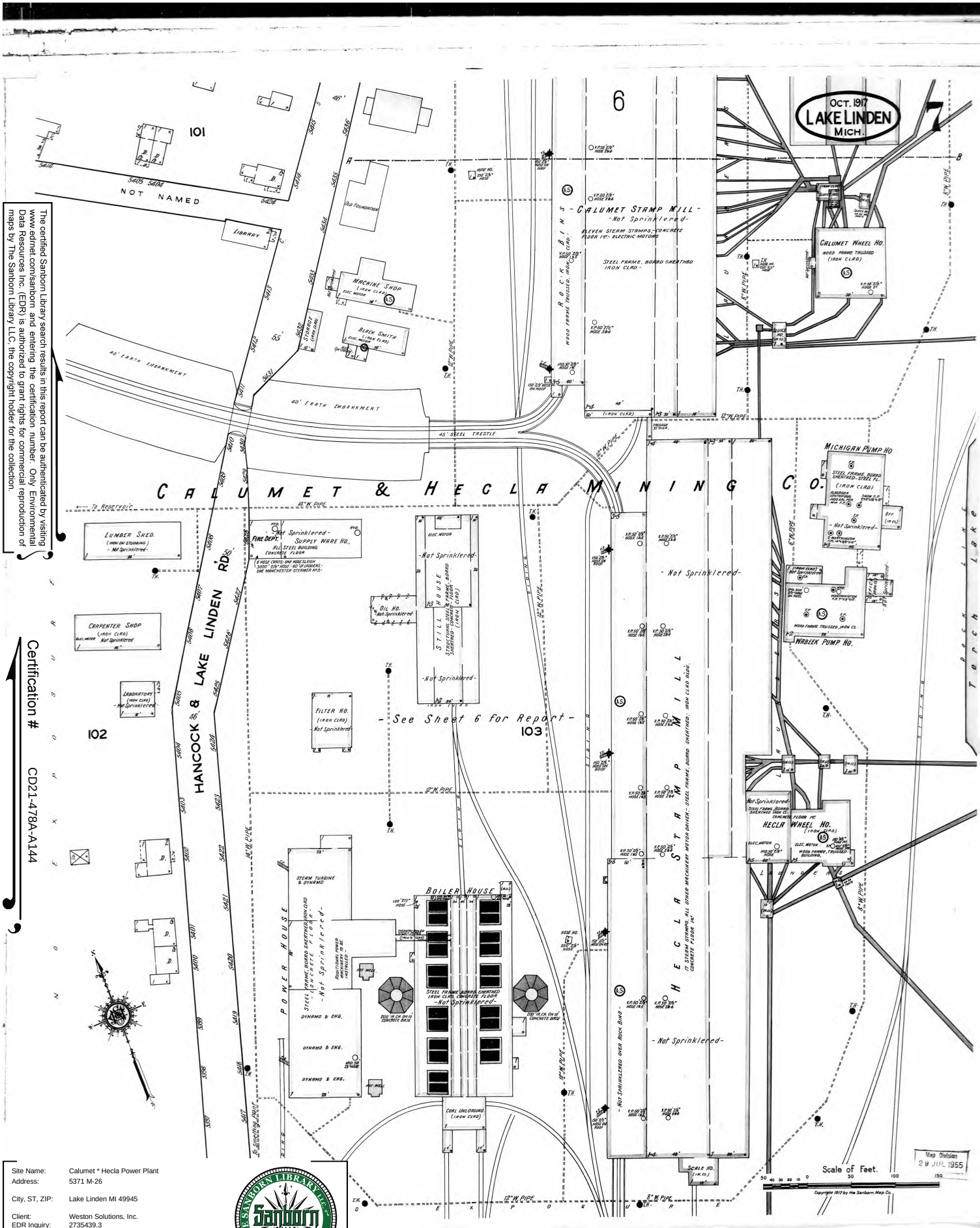
0 Feet 150 300 600



Volume 1, Sheet 8
Volume 1, Sheet 1

N

1917 Certified Sanborn Map



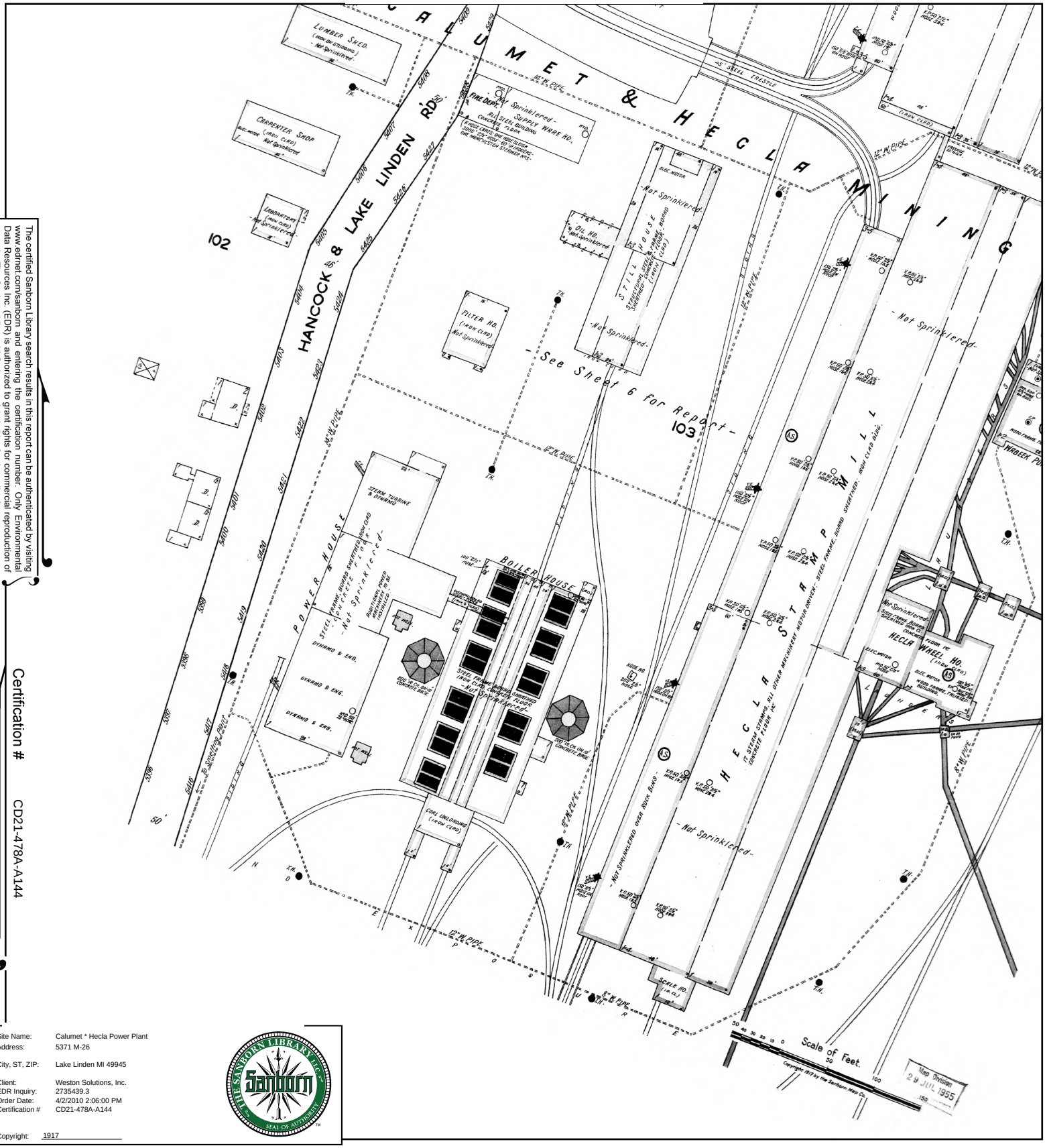
The certified Sanborn Library search results in this report can be authenticated by visiting www.ednet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # CD21-478A-A144

Site Name:	Calumet * Hecla Power Plant
Address:	5371 M-26
City, ST, ZIP:	Lake Linden MI 49945
Client:	Weston Solutions, Inc.
EDR Inquiry:	2735439.3
Order Date:	4/2/2010 2:06:00 PM
Certification #	CD21-478A-A144

Copyright: 1917

1917 Certified Sanborn Map



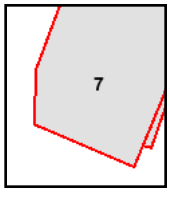
Certification # CD21-478A-A144

Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, ST, ZIP: Lake Linden MI 49945

Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification # CD21-478A-A144

Copyright: 1917

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



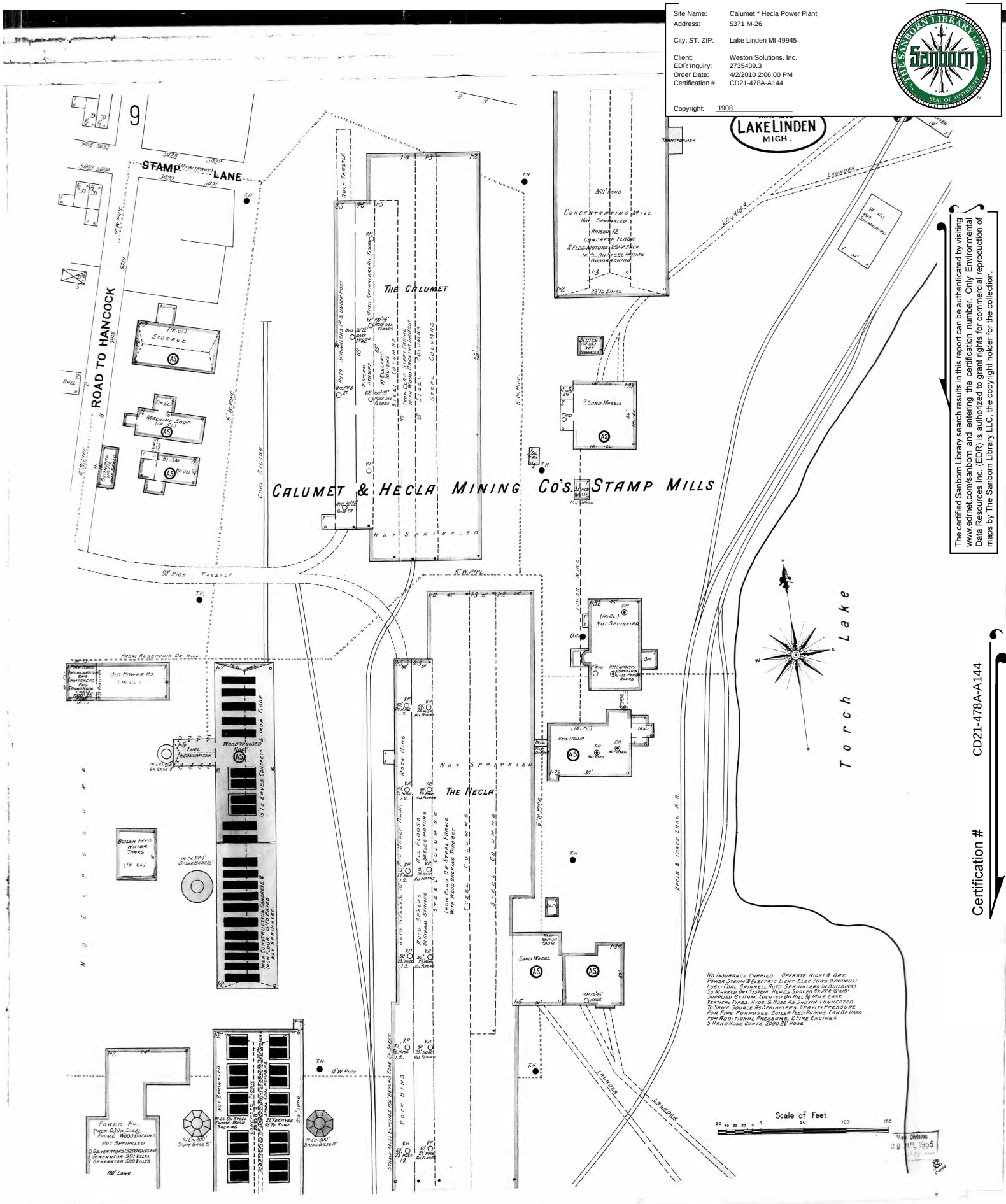
Volume 1, Sheet 7
Volume 1, Sheet 7

0 Feet 150 300 600

N

1908 Certified Sanborn Map

Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, ST, ZIP: Lake Linden MI 49945
Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification # CD21-478A-A144
Copyright: 1908



1908 Certified Sanborn Map

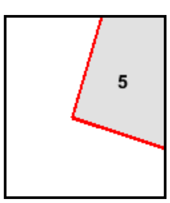
The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # CD21-478A-A144

Site Name:	Calumet * Hecla Power Plant
Address:	5371 M-26
City, ST, ZIP:	Lake Linden MI 49945
Client:	Weston Solutions, Inc.
EDR Inquiry:	2735439.3
Order Date:	4/2/2010 2:06:00 PM
Certification #	CD21-478A-A144
Copyright:	1908

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).

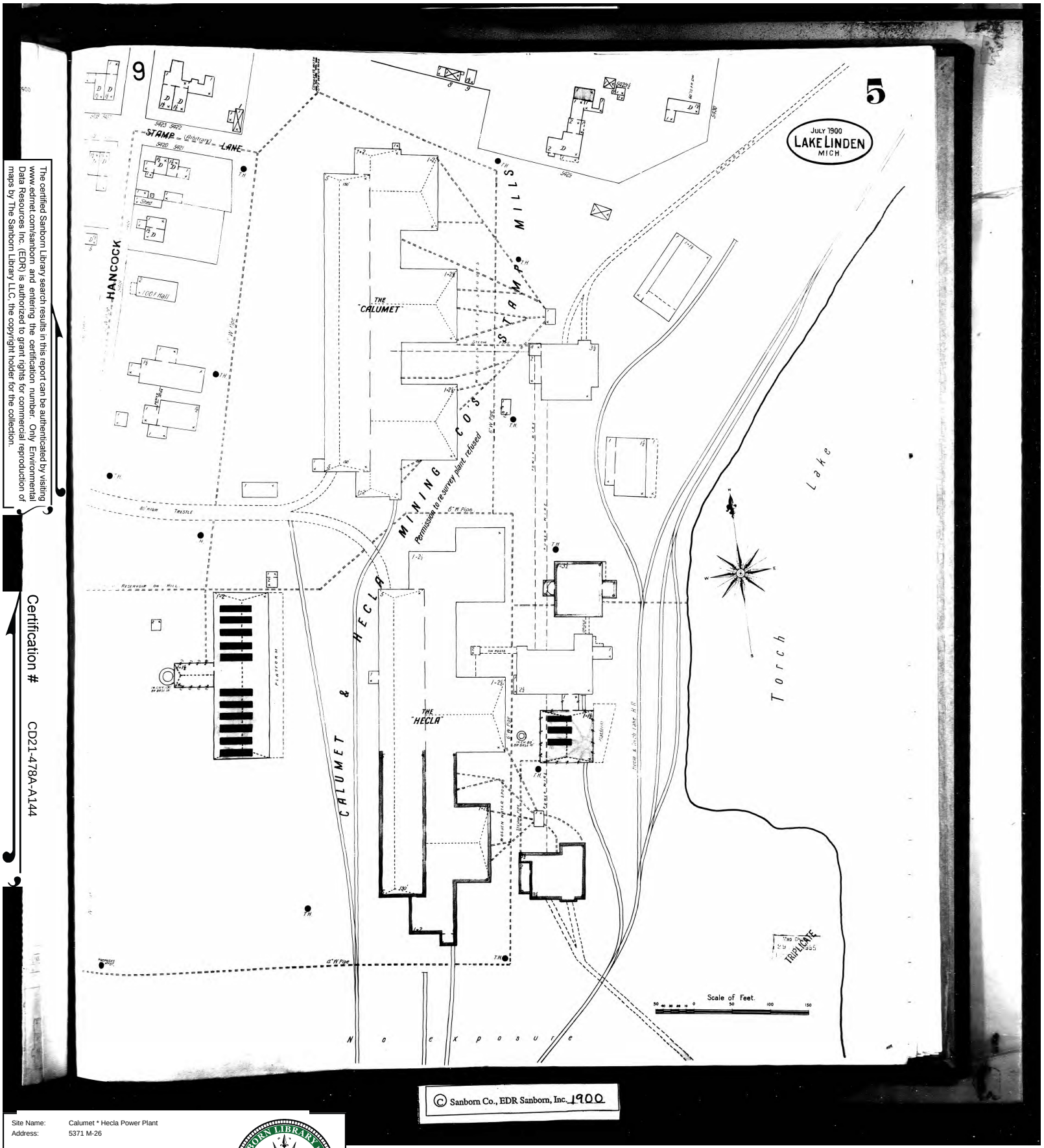
0 Feet 150 300 600



Volume 1, Sheet 5
Volume 1, Sheet 5

N

1900 Certified Sanborn Map

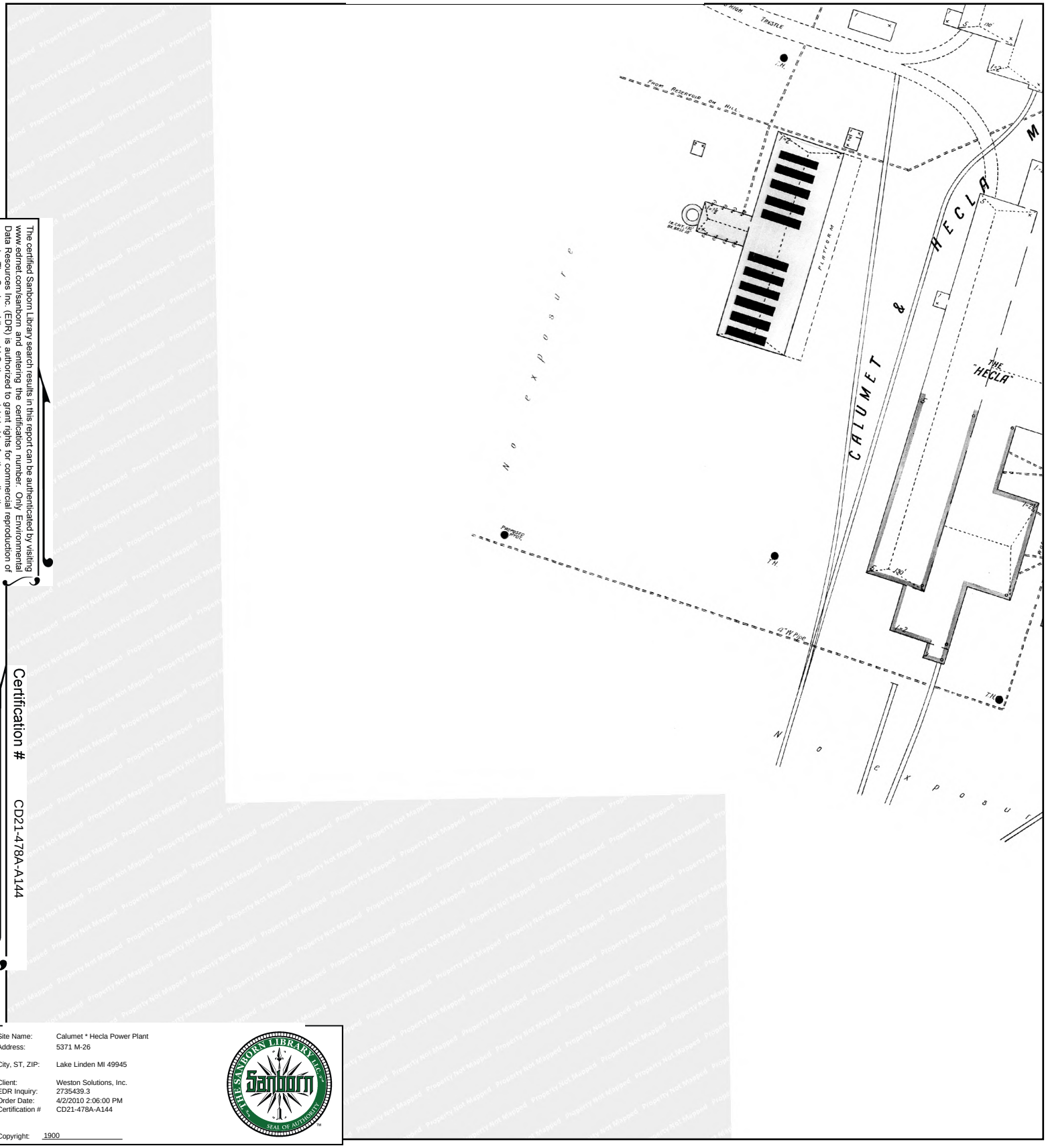


Certification # CD21-478A-A144

Site Name:	Calumet * Hecla Power Plant
Address:	5371 M-26
City, ST, ZIP:	Lake Linden MI 49945
Client:	Weston Solutions, Inc.
EDR Inquiry:	2735439.3
Order Date:	4/2/2010 2:06:00 PM
Certification #	CD21-478A-A144

Copyright: 1900

1900 Certified Sanborn Map



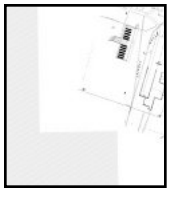
Certification # CD21-478A-A144

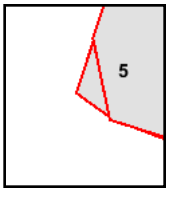
Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, ST, ZIP: Lake Linden MI 49945

Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification # CD21-478A-A144

Copyright: 1900

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).



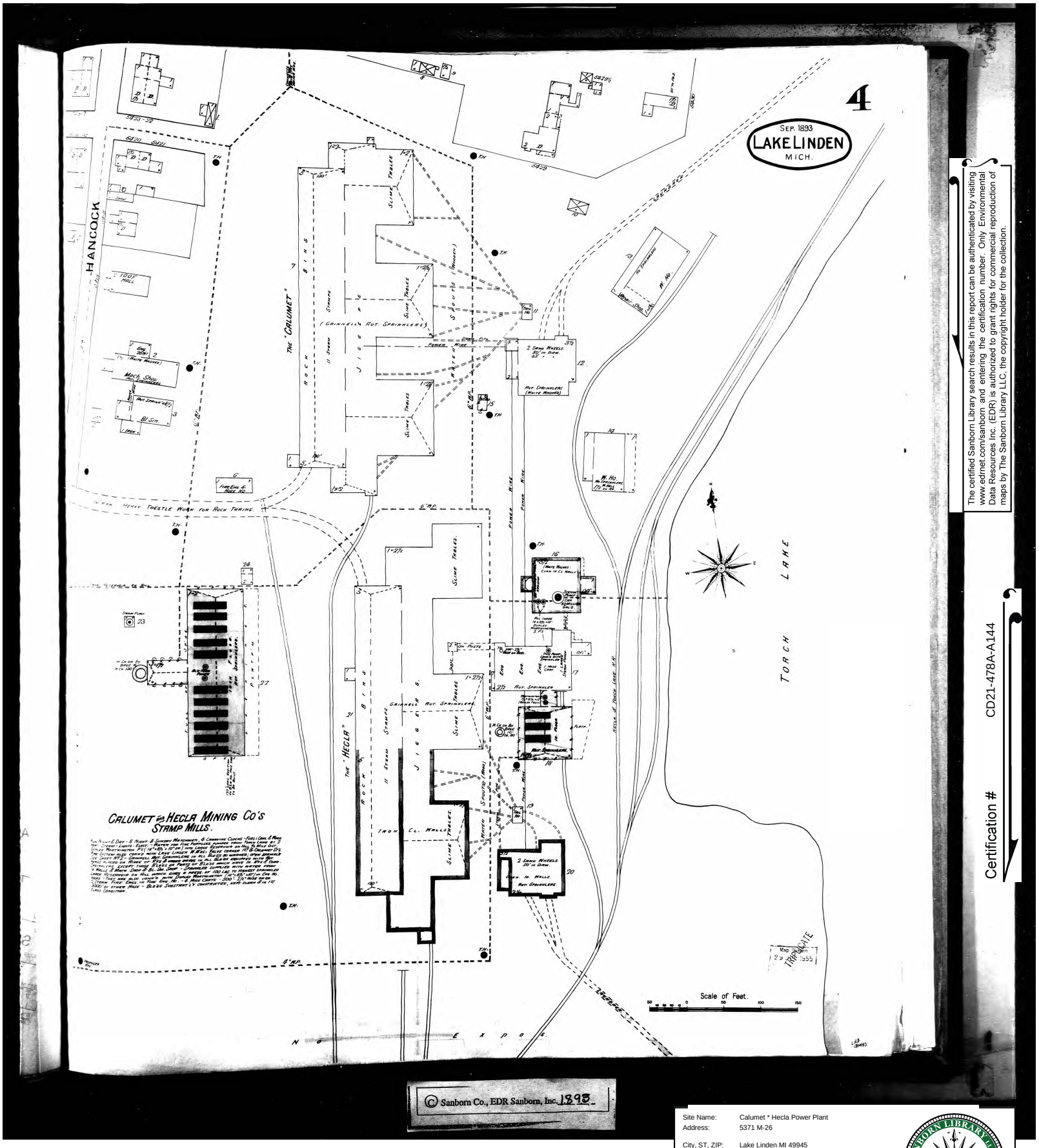


Volume 1, Sheet 5
Volume 1, Sheet 5

0 Feet 150 300 600

N

1893 Certified Sanborn Map

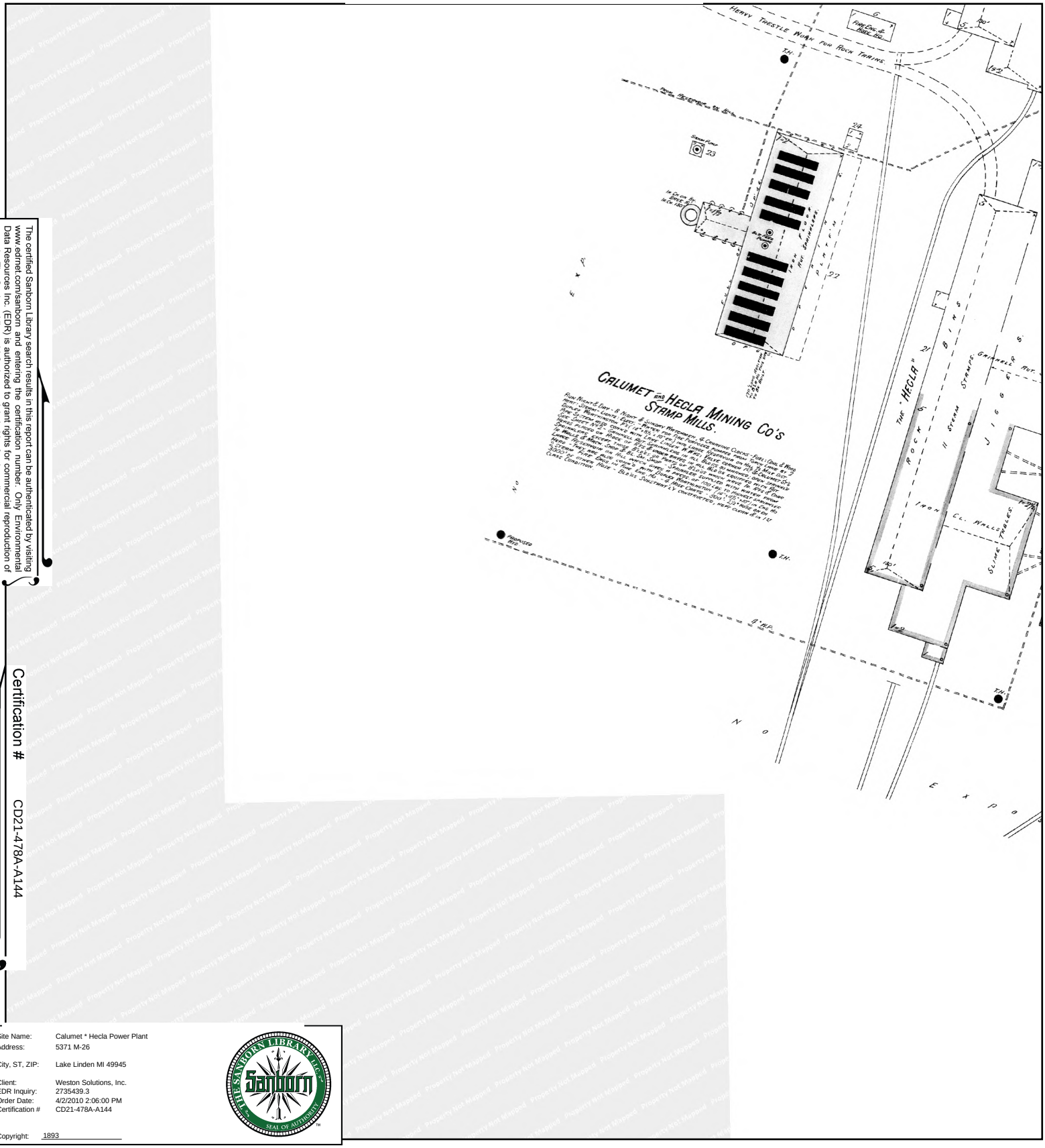


Certification # CD21-478A-A144

Site Name:	Calumet * Hecla Power Plant
Address:	5371 M-26
City, ST, ZIP:	Lake Linden MI 49945
Client:	Weston Solutions, Inc.
EDR Inquiry:	2735439.3
Order Date:	4/2/2010 2:06:00 PM
Certification #	CD21-478A-A144

Copyright: 1893

1893 Certified Sanborn Map



Certification # CD21-478A-A144

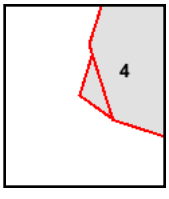
Site Name: Calumet * Hecla Power Plant
Address: 5371 M-26
City, ST, ZIP: Lake Linden MI 49945

Client: Weston Solutions, Inc.
EDR Inquiry: 2735439.3
Order Date: 4/2/2010 2:06:00 PM
Certification # CD21-478A-A144

Copyright: 1893

This Certified Sanborn Map combines the following sheets (thumbnails on page 3).

0 Feet 150 300 600



Volume 1, Sheet 4
Volume 1, Sheet 4

N

Calumet * Hecla Power Plant
5371 M-26
Lake Linden, MI 49945

Inquiry Number: 2735439.4
April 02, 2010

The EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

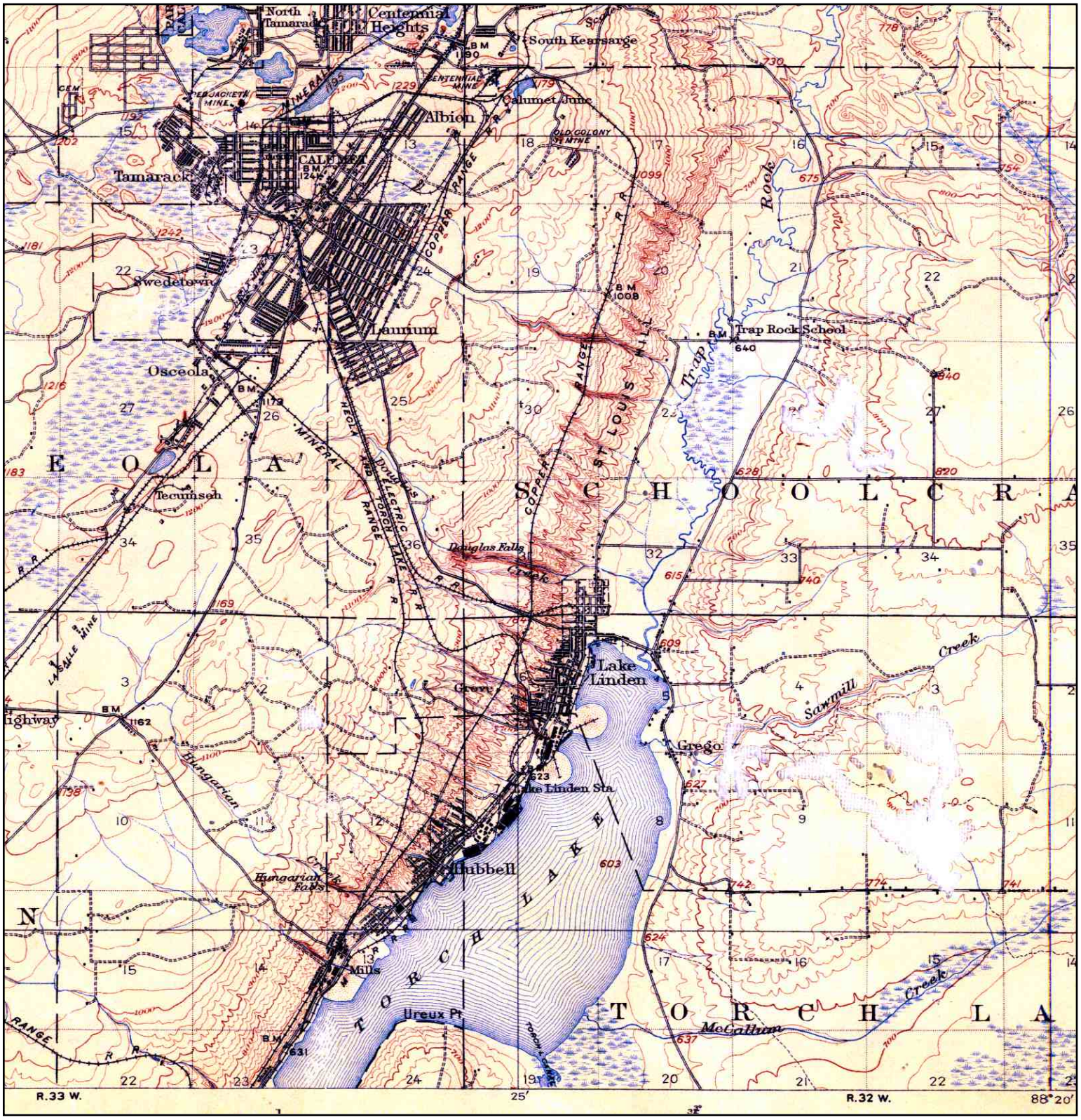
440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

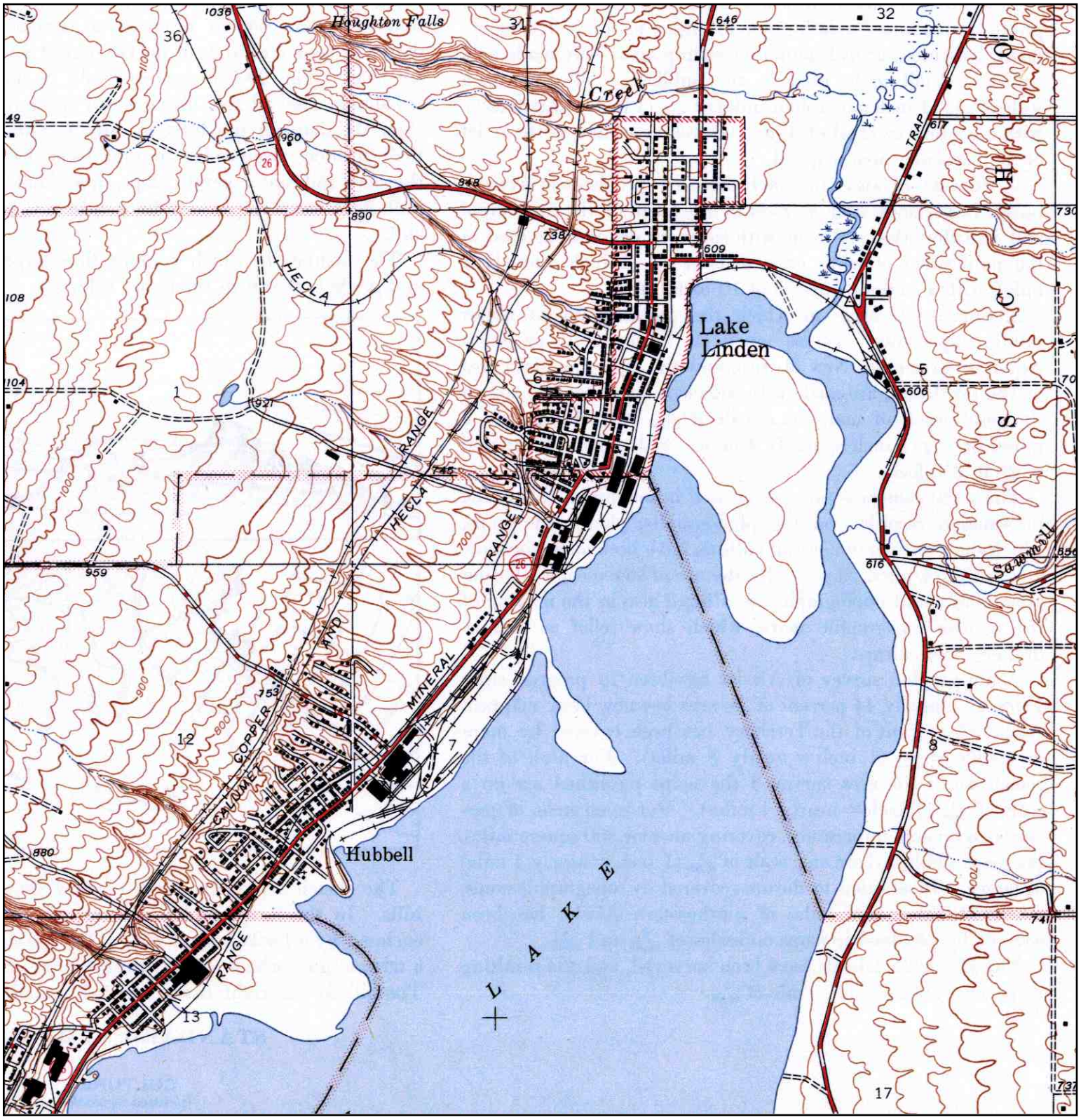
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



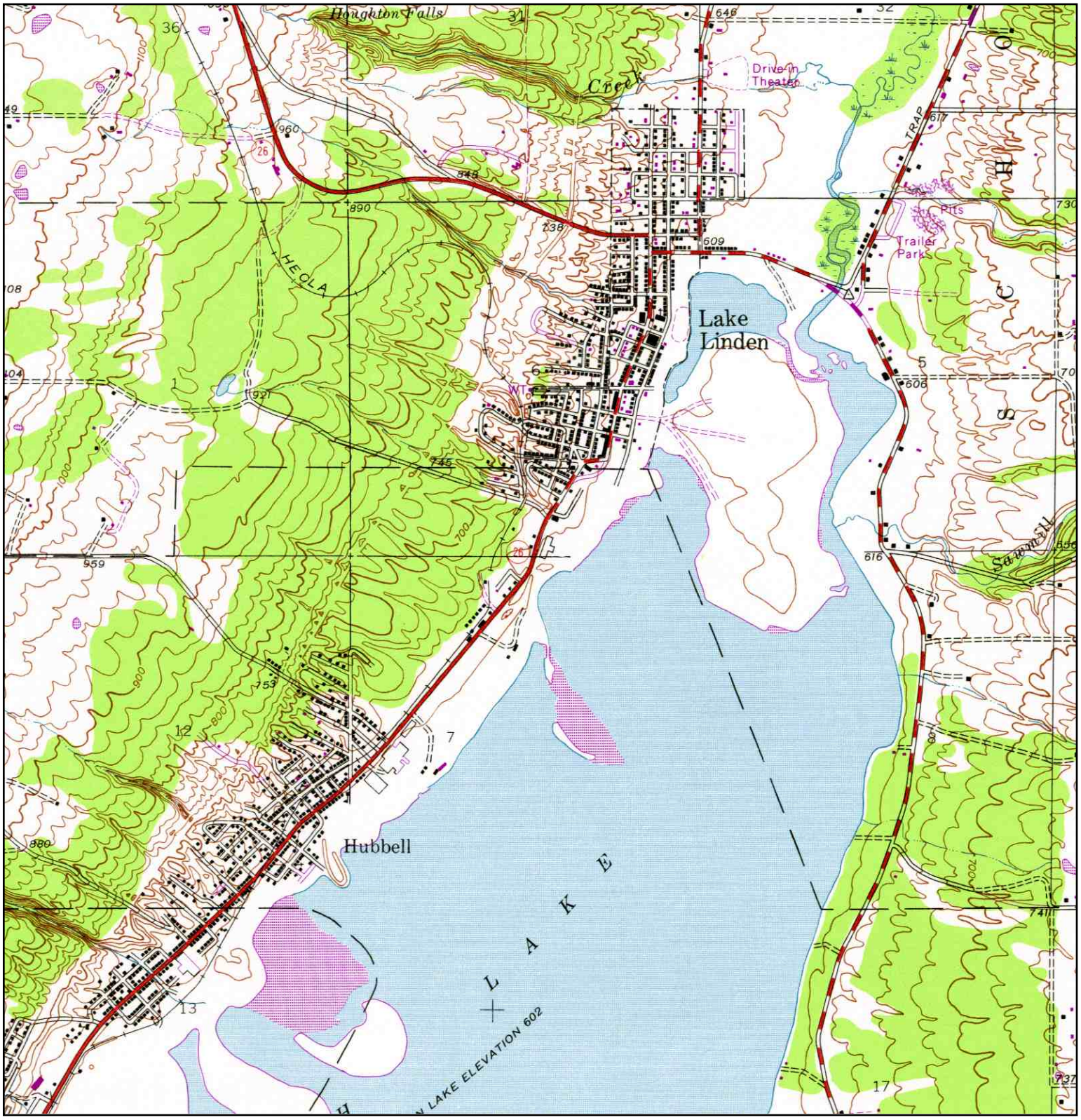
N	TARGET QUAD NAME: CALUMET MAP YEAR: 1911 SERIES: 15 SCALE: 1:62500	SITE NAME: Calumet * Hecla Power Plant ADDRESS: 5371 M-26 Lake Linden, MI 49945 LAT/LONG: 47.1853 / 88.4136	CLIENT: Weston Solutions, Inc. CONTACT: Dan Liebau INQUIRY#: 2735439.4 RESEARCH DATE: 04/02/2010

Historical Topographic Map



N	TARGET QUAD NAME: LAURIUM MAP YEAR: 1948 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Calumet * Hecla Power Plant ADDRESS: 5371 M-26 Lake Linden, MI 49945 LAT/LONG: 47.1853 / 88.4136	CLIENT: Weston Solutions, Inc. CONTACT: Dan Liebau INQUIRY#: 2735439.4 RESEARCH DATE: 04/02/2010

Historical Topographic Map



N	TARGET QUAD NAME: LAURIUM MAP YEAR: 1975 PHOTOREVISED FROM:1946 SERIES: 7.5 SCALE: 1:24000	SITE NAME: Calumet * Hecla Power Plant ADDRESS: 5371 M-26 Lake Linden, MI 49945 LAT/LONG: 47.1853 / 88.4136	CLIENT: Weston Solutions, Inc. CONTACT: Dan Liebau INQUIRY#: 2735439.4 RESEARCH DATE: 04/02/2010

Calumet * Hecla Power Plant
5371 M-26
Lake Linden, MI 49945

Inquiry Number: 2735439.5
April 06, 2010

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography April 06, 2010

Target Property:

5371 M-26

Lake Linden, MI 49945

Year	***Scale***	***Details***	***Source***
1939	Aerial Photograph. Scale: 1"=500'	Flight Year: 1939 Photo Not Available - Image missing from collection	AAA
1954	Aerial Photograph. Scale: 1"=500'	Flight Year: 1954	PMA
1963	Aerial Photograph. Scale: 1"=500'	Flight Year: 1963	USFS
1983	Aerial Photograph. Scale: 1"=600'	Flight Year: 1983	NHAP
1992	Aerial Photograph. Scale: 1"=600'	Flight Year: 1992	NAPP
2005	Aerial Photograph. 1" = 604'	Flight Year: 2005	EDR

INQUIRY #: 2735439.5

YEAR: 1954

= 500'

N

EDR Environmental Data Resources Inc

INQUIRY #: 2735439.5

YEAR: 1963

= 500'

N

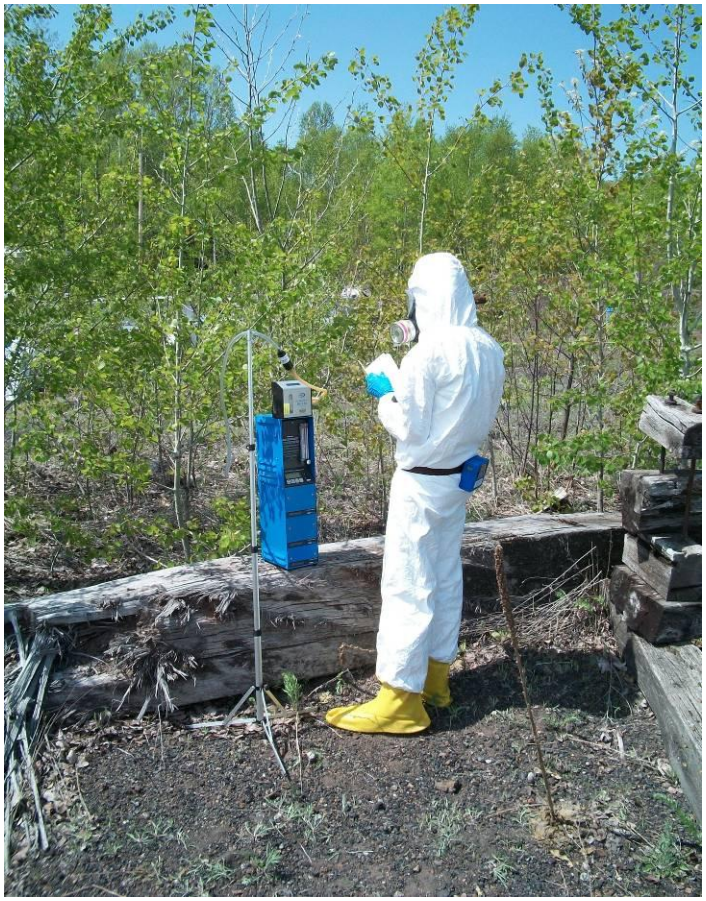
EDR Environmental Data Resources Inc


INQUIRY #: 2735439.5
YEAR: 1983
= 600'
N
EDR Environmental Data Resources Inc


INQUIRY #: 2735439.5
YEAR: 1992
= 600'
N


INQUIRY #: 2735439.5
YEAR: 2005
= 604'
N
EDR Environmental Data Resources Inc

ATTACHMENT B
PHOTOGRAPHIC DOCUMENTATION



Site: C&H Power Plant
Photo Number: 1 **Date:** May 2010
Direction: North **Photographer:** D. Liebau
Subject: Monitoring sampler flow rates during exterior air sampling.

Site: C&H Power Plant
Photo Number: 2 **Date:** May 2010
Direction: East **Photographer:** J. Nutini
Subject: Exterior activity based sampling.

Site: C&H Power Plant
Photo Number: 3 **Date:** May 2010
Direction: - **Photographer:** A. Kiel
Subject: Transite observed southeast of the power plant building.

Site: C&H Power Plant
Photo Number: 4 **Date:** May 2010
Direction: - **Photographer:** A. Kiel
Subject: Gasket (ASB-BLK-43).

Site: C&H Power Plant
Photo Number: 5 **Date:** May 2010
Direction: - **Photographer:** A. Kiel
Subject: Fire brick (ASB-BLK-48).

Site: C&H Power Plant
Photo Number: 6 **Date:** May 2010
Direction: - **Photographer:** A. Kiel
Subject: Thermal insulation (ASB-BLK-61).

Site: C&H Power Plant
Photo Number: 7 **Date:** May 2010
Direction: South **Photographer:** A. Kiel
Subject: Interior activity based sampling.

Site: C&H Power Plant
Photo Number: 8 **Date:** May 2010
Direction: North **Photographer:** A. Kiel
Subject: Homogenous area 8.

Site: C&H Power Plant
Photo Number: 9 **Date:** May 2010
Direction: North **Photographer:** A. Kiel
Subject: Homogenous area 9.

Site: C&H Power Plant
Photo Number: 10 **Date:** May 2010
Direction: East **Photographer:** A. Kiel
Subject: Homogenous area 11.

Site: C&H Power Plant
Photo Number: 11 **Date:** May 2010
Direction: North **Photographer:** A. Kiel
Subject: Homogenous area 13.

ATTACHMENT C
LABORATORY ANALYTICAL REPORTS

REI LAB **Reservoirs Environmental, Inc.**

June 10, 2010

Laboratory Code:	**RES**
Subcontract Number:	**NA**
Laboratory Report:	**RES 191913-1**
Project # / P.O. #	**20405.016.0988.00**
Project Description:	**C & H Power Plant Site**

Lisa Graczyk
Weston Solutions Inc.
600 East Lakeshore Dr., Suite 200
Houghton MI 49931

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 191913-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr
President

Analyst(s): _____
Paul D. LoScalzo Wenlong Liu
Michael Scales Rich Wegrzyn
Anita Bridges James Venendaal
Adam Kinch Louis A. Church Jr.
Robert R. Workman Jr.

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
					Mineral	Visual Estimate (%)		
ASB-BLK-1	EM 576698	A	White plaster w/ green & yellow paint	100	**Chrysotile**	**4**	6	90
ASB-BLK-2	EM 576699	A	White plaster w/ green & yellow paint	100	**Chrysotile**	**3**	3	94
ASB-BLK-3	EM 576700	A	White plaster w/ green/multi-colored paint	100	**Chrysotile**	**3**	3	94
ASB-BLK-4	EM 576701	A	Brown fibrous material w/ white paint	100		**ND**	95	5
ASB-BLK-5	EM 576702	A	Brown fibrous material w/ white paint	100		**ND**	95	5
ASB-BLK-6	EM 576703	A	Green paint	8		**ND**	0	100
		B	Brown fiberboard	92		**ND**	95	5
ASB-BLK-7	EM 576704	A	Green paint	8		**ND**	0	100
		B	Brown fiberboard	92		**ND**	95	5
ASB-BLK-8	EM 576705	A	Green paint	5		**ND**	0	100
		B	Gray fibrous material	95		**ND**	95	5
ASB-BLK-9	EM 576706	A	Green paint	5		**ND**	0	100
		B	Gray fibrous material	95		**ND**	95	5
ASB-BLK-10	EM 576707	A	White plaster	100		**ND**	5	95
ASB-BLK-11	EM 576708	A	White plaster	100		**ND**	6	94
ASB-BLK-12	EM 576709	A	White plaster	100		**ND**	8	92

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
ASB-BLK-13	EM 576710	A	White plaster	100		**ND**	4	96
ASB-BLK-14	EM 576711	A	White plaster	100		**ND**	8	92
ASB-BLK-15	EM 576712	A	Black tar w/ black fibrous tar	100		**ND**	35	65
ASB-BLK-16	EM 576713	A	Black tar w/ silver paint	10	**Chrysotile**	**8**	0	92
		B	Black tar w/ black fibrous tar	90		**ND**	30	70
ASB-BLK-17	EM 576714	A	Black tar w/ black fibrous tar	20		**ND**	40	60
		B	Black tar w/ white fibrous woven material & silver paint	80	**Chrysotile**	**10**	30	60
ASB-BLK-18	EM 576715	A	Black tar w/ black fibrous tar	100		**ND**	40	60
ASB-BLK-19	EM 576716	A	White fibrous woven material w/ silver paint & black tar	20	**Chrysotile**	**6**	64	30
		B	Black tar w/ black fibrous tar	80		**ND**	40	60
ASB-BLK-20	EM 576717	A	White compound w/ gray paint	8		**ND**	0	100
		B	Gray granular plaster	92		**ND**	0	100
ASB-BLK-21	EM 576718	A	Gray/white granular plaster	100		**ND**	2	98
ASB-BLK-22	EM 576719	A	White granular plaster	100		**ND**	TR	100

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
ASB-BLK-23	EM 576720	A	Green paint	3		**ND**	0	100
		B	Black tar	3		**ND**	6	94
		C	Gray/white granular plaster	94		**ND**	TR	100
ASB-BLK-24	EM 576721	A	Blue/multi-colored paint	1		**ND**	0	100
		B	Gray/white granular plaster	99		**ND**	0	100
ASB-BLK-25	EM 576722	A	Gray/white granular plaster	100		**ND**	0	100
ASB-BLK-26	EM 576723	A	Gray granular plaster	100		**ND**	0	100
ASB-BLK-27	EM 576724	A	Gray granular plaster w/ white paint	100		**ND**	1	99
ASB-BLK-28	EM 576725	A	Gray/white granular plaster	100		**ND**	1	99
ASB-BLK-29	EM 576726	A	White fibrous woven material	100	**Chrysotile**	**70**	15	15
ASB-BLK-30	EM 576727	A	Gray fibrous cementitious material	100	**Chrysotile**	**15**	0	85
ASB-BLK-31	EM 576728	A	Gray slate	100		**ND**	0	100
ASB-BLK-32	EM 576729	A	Gray granular material	5	**Chrysotile**	**4**	0	96
		B	Yellow ceramic material	95		**ND**	0	100
ASB-BLK-33	EM 576730	A	Tan/multi-colored debris	TR	**Chrysotile**	**5**	0	95
		B	Yellow ceramic material	100		**ND**	0	100

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content		Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
					Mineral	Visual Estimate (%)		
ASB-BLK-34	EM 576731	A	Yellow ceramic material	100		**ND**	0	100
ASB-BLK-35	EM 576732	A	Tan/gray fibrous material	100	**Chrysotile**	**6**	75	19
ASB-BLK-36	EM 576733	A	Gray fibrous material w/ brown rust	100	**Chrysotile**	**5**	80	15
ASB-BLK-37	EM 576734	A	Brown/multi-colored fibrous debris	100	**Chrysotile**	**12**	18	70
ASB-BLK-38	EM 576735	A	Brown/multi-colored fibrous debris	100	**Chrysotile**	**5**	40	55
ASB-BLK-39	EM 576736	A	Black/multi-colored fibrous debris	100	**Chrysotile**	**5**	20	75
ASB-BLK-40	EM 576737	A	Black/multi-colored fibrous debris	100	**Chrysotile**	**8**	62	30
ASB-BLK-41	EM 576738	A	Gray resinous material w/ white fibrous woven material	100	**Chrysotile**	**20**	40	40
ASB-BLK-42	EM 576739	A	Gray resinous material w/ white fibrous woven material	100	**Chrysotile**	**15**	60	25
ASB-BLK-DUP1	EM 576740	A	White compound w/ green paint	5		**ND**	0	100
		B	Gray granular plaster	95		**ND**	0	100
ASB-BLK-DUP2	EM 576741	A	Gray fibrous cementitious material	100	**Chrysotile**	**15**	0	85
ASB-BLK-43	EM 576742	A	White fibrous woven material	100	**Chrysotile**	**90**	0	10

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
ASB-BLK-44	EM 576743	A	White/gray fibrous plaster	100	**Chrysotile** **Amosite**	**10** **20**	0	70
ASB-BLK-45	EM 576744	A	Gray fibrous cementitious material	100	**Chrysotile**	**12**	0	88
ASB-BLK-46	EM 576745	A	White/black ceramic material	100		**ND**	0	100
ASB-BLK-47	EM 576746	A	Brown ceramic material	7		**ND**	0	100
		B	White granular ceramic material	93		**ND**	0	100
ASB-BLK-48	EM 576747	A	White ceramic material	100		**ND**	0	100
ASB-BLK-49	EM 576748	A	White/gray fibrous plaster	100	**Chrysotile**	**40**	0	60
ASB-BLK-50	EM 576749	A	White fibrous woven material w/ gray dust	100		**ND**	90	10
ASB-BLK-51	EM 576750	A	Black fibrous tar	10		**ND**	40	60
		B	White fibrous plaster w/ multi-colored debris	90	**Chrysotile**	**35**	0	65
ASB-BLK-52	EM 576751	A	White fibrous material	5	**Chrysotile**	**70**	0	30
		B	Black fibrous tar	10	**Chrysotile**	**10**	0	90
		C	Black tar	40		**ND**	0	100
		D	Black fibrous tar	45		**ND**	60	40

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
ASB-BLK-53	EM 576752	A	Gray fibrous cementitious material	100	**Chrysotile**	**15**	0	85
ASB-BLK-54	EM 576753	A	White fibrous woven material	100	**Chrysotile**	**85**	5	10
ASB-BLK-55	EM 576754	A	Gray fibrous gasket	100	**Chrysotile**	**55**	0	45
ASB-BLK-56	EM 576755	A	White fibrous woven material	100		**ND**	98	2
ASB-BLK-57	EM 576756	A	Grayish-brown ceramic material	100		**ND**	0	100
ASB-BLK-58	EM 576757	A	Yellow ceramic material	100		**ND**	0	100
ASB-BLK-59	EM 576758	A	White fibrous material	3	**Chrysotile**	**70**	0	30
		B	Black tar	47		**ND**	0	100
		C	Black fibrous tar	50		**ND**	60	40
ASB-BLK-60	EM 576759	A	White plaster	100		**ND**	TR	100
ASB-BLK-61	EM 576760	A	White fibrous material	100	**Chrysotile**	**60**	0	30
					Amosite	**10**		
ASB-BLK-62	EM 576761	A	Gray fibrous cementitious material	100	**Chrysotile**	**15**	0	85
ASB-BLK-63	EM 576762	A	Gray granular plaster	100		**ND**	0	100
ASB-BLK-64	EM 576763	A	Black tar	40		**ND**	0	100
		B	Black fibrous tar	60		**ND**	60	40

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
ASB-BLK-65	EM 576764	A	Gray granular plaster	100		**ND**	0	100
ASB-BLK-66	EM 576765	A	Tan granular plaster	100		**ND**	0	100
ASB-BLK-67	EM 576766	A	Black tar	10	**Chrysotile**	**8**	0	92
		B	Black tar	30		**ND**	0	100
		C	Black fibrous tar	60		**ND**	60	40
ASB-BLK-68	EM 576767	A	Gray fibrous cementitious material	100	**Chrysotile**	**15**	0	85
ASB-BLK-DUP3	EM 576768	A	Gray fibrous cementitious material	100	**Chrysotile**	**12**	0	88
ASB-BLK-DUP4	EM 576769	A	Black fibrous tar	20		**ND**	60	40
		B	White fibrous plaster w/ multi-colored debris	80	**Chrysotile**	**40**	TR	60
ASB-BLK-DUP5	EM 576770	A	White plaster	100		**ND**	0	100
ASB-BLK-DUP6	EM 576771	A	Gray granular plaster	100		**ND**	0	100
ASB-BLK	EM 576772		Not Analyzed - Sample Not Submitted					

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 191913-1**
Client: **Weston Solutions Inc.**
Client Project Number / P.O.: **20405.016.0988.00**
Client Project Description: **C & H Power Plant Site**
Date Samples Received: **May 24, 2010**
Analysis Type: **PLM, Short Report & CARB 435**
Turnaround: **3-5 Day**
Date Analyzed: **May 29, 2010**

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
ASB-SL-01	EM 576773	A	Black soil	100	**Chrysotile** ***1000 Pt. Pt. Ct.***	**TR** ***<0.1***	TR	100
ASB-SL-02	EM 576774	A	Black soil	100	**Chrysotile** ***1000 Pt. Pt. Ct.***	**TR** ***<0.1***	TR	100
ASB-SL-03	EM 576775	A	Black soil	100	**Chrysotile** ***1000 Pt. Pt. Ct.***	**TR** ***<0.1***	TR	100
ASB-SL-04	EM 576776	A	Black soil	100	**Chrysotile** ***1000 Pt. Pt. Ct.***	**TR** ***ND***	TR	100
ASB-SL-05	EM 576777	A	Black soil	100	**Chrysotile** ***1000 Pt. Pt. Ct.***	**TR** ***<0.1***	TR	100

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

RESERVOIRS ENVIRONMENTAL, INC.

AIHA Certificate of Accreditation #480, Lab ID 101533

TABLE : PCM NIOSH 7400 FIBER COUNT ANALYSIS

RES Job Number:	**RES 191913-1**
Client:	**Weston Solutions Inc.**
Client Project Number / P.O.:	**20405.016.0988.00**
Client Project Description:	**C & H Power Plant Site**
Date Samples Received:	**May 24, 2010**
Analysis Type:	**PCM 7400 A, Issue 2**
Turnaround:	**3-5 Day**
Date Samples Analyzed:	**May 28, 2010**

Client ID Number	Lab ID Number	Air Volume Sampled (L)	Fields Analyzed	Fiber Count	Reporting Limit (F/mm^2)	Fiber Density (F/mm^2)	Reporting Limit (F/cc)	Fiber Concentration (F/cc)
ASB-PER-1	EM 576778	960.1	100	82	7.01	104.46	0.003	0.042
ASB-PER-2	EM 576779	957.7	100	25	7.01	31.85	0.003	0.013
ASB-PER-3	EM 576784	891.8	0	NA		Rejected due to loose debris		
ASB-PER-4	EM 576785	889.2	0	NA		Rejected due to loose debris		
ASB-PER-FB	EM 576786	0	100	0	----	BRL	----	----

* Unless otherwise stated sample analyses have been blank corrected.

Laboratory Quarterly Coefficient Variation (CV) by Fiber Count Range - January 1, 2010 - March 31, 2010

5-20 CV = 0.29 >20-50 CV = 0.21 >50-100 = 0.13

CBR = Cannot Be Read
BRL = Below Reporting Limit

_____
Data QA

Due Date: 5-27-10

Due Time: 9:45

RES 191913

Page ___ of ___

REI LAB Reservoirs Environmental, Inc.

5801 Logan St. Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4275 • Toll Free :866 RESI-ENV

SUBMITTED BY:	INVOICE TO: (IF DIFFERENT)	CONTACT INFORMATION:
Company: WESTON SOLUTIONS	Company: Andy	Contact: LISA GRACZYK / Contact: DAN LIEBAU
Address: 1600 EAST LAKESHORE DR. SUITE 200 HOUGHTON, MI 49931	Address: 216 409 0821	Phone: (312) 424-3339 / Phone: (906) 482-2361
		Fax: (312) 424-3330 / Fax: (906) 482-7745
		Cell/pager: / Cell/pager: (906) 370-0524
Project Number and/or P.O. #: 20405.016.0988.00		Final Data Deliverable Email Address: daniel.liebau@westonsolutions.com
Project Description/Location: C&H POWER PLANT SITE		

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm

PLM / PCM / TEM ___ RUSH (Same Day) ___ PRIORITY (Next Day) ✓ STANDARD (Rush PCM = 2hr, TEM = 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Metal(s) / Dust ___ RUSH ___ 24 hr. ___ 3-5 Day

RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___ 10 day ****Prior notification is required for RUSH turnarounds.****

Organics ___ 24 hr. ___ 3 day ___ 5 Day

****Analysis turnarounds are subject to laboratory sample volume and are not guaranteed. You will be notifited if delays are expected. Additional fees apply for afterhours and holidays for all analysis types.****

Special Instructions: _____

REQUESTED ANALYSIS

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Drinking Water = DW	
Waste Water = WW	
Other = O	

****ASTM E1792 approved wipe media only****

LAB NOTES:

Andy - I4 prep ok 5/28/10 - AH

Contact Lisa about extra 603, ND 6/3/10

Client sample ID number (Sample ID's must be unique)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER -	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
1 ASB-BLK-1	X								B	1	5/18/10	1009	576698
2 ASB-BLK-2	X								B	1		1011	99
3 ASB-BLK-3	X								B	1		1012	700
4 ASB-BLK-4	X								B	1		1016	1
5 ASB-BLK-5	X								B	1		1018	2
6 ASB-BLK-6	X								B	1		1020	3
7 ASB-BLK-7	X								B	1		1022	4
8 ASB-BLK-8	X								B	1		1024	5
9 ASB-BLK-9	X								B	1		1027	6
10 ASB-BLK-10	X								B	1		1033	7
11 ASB-BLK-11	X								B	1		1036	8
12 ASB-BLK-12	X								B	1		1038	9
13 ASB-BLK-13	X								B	1		1040	710

Number of samples received: 92 (Additiional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: SHIPPED VIA FEDEX Date/Time: 5/21/10 1600

Laboratory Use Only

Received By: Date/Time: 5/24/10 0945 Carrier: FedEx

Sample Condition: On Ice Y/N Sealed Y/N Intact Y/N

Temp. (F°) _____

Results:	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date	Time	Initials
	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date	Time	Initials

Backup #: 7986 8681 7409 & 7986 8681 9465

Reservoirs Environmental, Inc.
5801 Logan St. Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4275 • Toll Free :866 RESI-ENV

RES Job # 12913

Submitted by:

Client sample ID number (Sample ID's must be unque)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER -	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
14 ASB-BLK-14	X								B	1	5/18/10	1042	576711
15 ASB-BLK-15	X								B	1		1044	1 2
16 ASB-BLK-16	X								B	1		1045	1 3
17 ASB-BLK-17	X								B	1		1047	1 4
18 ASB-BLK-18	X								B	1		1048	1 5
19 ASB-BLK-19	X								B	1		1049	1 6
20 ASB-BLK-20	X								B	1		1051	1 7
21 ASB-BLK-21	X								B	1		1052	1 8
22 ASB-BLK-22	X								B	1		1054	1 9
23 ASB-BLK-23	X								B	1		1055	2 0
24 ASB-BLK-24	X								B	1		1056	2 1
25 ASB-BLK-25	X								B	1		1058	2 2
26 ASB-BLK-26	X								B	1		1100	2 3
27 ASB-BLK-27	X								B	1		1102	2 4
28 ASB-BLK-28	X								B	1		1105	2 5
29 ASB-BLK-29	X								B	1		1114	2 6
30 ASB-BLK-30	X								B	1		1116	2 7
31 ASB-BLK-31	X								B	1		1120	2 8
32 ASB-BLK-32	X								B	1		1125	2 9
33 ASB-BLK-33	X								B	1		1127	3 0
34 ASB-BLK-34	X								B	1		1129	3 1
35 ASB-BLK-35	X								B	1		1133	3 2
36 ASB-BLK-36	X								B	1		1136	3 3
37 ASB-BLK-37	X								B	1		1138	3 4
38 ASB-BLK-38	X								B	1		1139	3 5
39 ASB-BLK-39	X								B	1		1140	3 6
40 ASB-BLK-40	X								B	1		1142	3 7
41 ASB-BLK-41	X								B	1		1144	3 8
42 ASB-BLK-42	X								B	1		1146	3 9
43 ASB-BLK-DUP1	X								B	1			4 0
44 ASB-BLK-DUP2	X								B	1			4 1

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Drinking Water = DW	
Waste Water = WW	
Other = O	

ASTM E1792 approved wipe media only

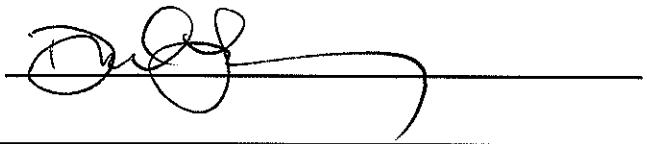
LAB NOTES:

Reservoirs Environmental, Inc.

5801 Logan St. Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4275 • Toll Free :866 RESI-ENV

RES Job # 19193

Submitted by:



Client sample ID number (Sample ID's must be unique)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER -	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
45 ASB-BLK-43	X								B	1	5/19/10	1040	576742
46 ASB-BLK-44	X								B	1		1044	43
47 ASB-BLK-45	X								B	1		1047	44
48 ASB-BLK-46	X								B	1		1052	45
49 ASB-BLK-47	X								B	1		1056	46
50 ASB-BLK-48	X								B	1		1057	47
51 ASB-BLK-49	X								B	1		1059	48
52 ASB-BLK-50	X								B	1		1150	49
53 ASB-BLK-51	X								B	1		1159	50
54 ASB-BLK-52	X								B	1		1202	51
55 ASB-BLK-53	X								B	1		1206	52
56 ASB-BLK-54	X								B	1		1209	53
57 ASB-BLK-55	X								B	1		1211	54
58 ASB-BLK-56	X								B	1		1214	55
59 ASB-BLK-57	X								B	1		1251	56
60 ASB-BLK-58	X								B	1		1252	57
61 ASB-BLK-59	X								B	1		1255	58
62 ASB-BLK-60	X								B	1		1303	59
63 ASB-BLK-61	X								B	1		1304	60
64 ASB-BLK-62	X								B	1		1305	61
65 ASB-BLK-63	X								B	1		1306	62
66 ASB-BLK-64	X								B	1		1450	63
67 ASB-BLK-65	X								B	1		1456	64
68 ASB-BLK-66	X								B	1		1457	65
69 ASB-BLK-67	X								B	1		1458	66
70 ASB-BLK-68	X								B	1		1502	67
71 ASB-BLK-DUP 3	X								B	1			68
72 ASB-BLK-DUP 4	X								B	1		—	69
73 ASB-BLK-DUP 5	X								B	1		—	70
74 ASB-BLK-DUP 6	X								B	1		—	71
75 ~~ASB-BLK-~~ DL													72

EM 576772

Sample not submitted in error

REQUESTED ANALYSIS

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Drinking Water = DW	
Waste Water = WW	
Other = O	

ASTM E1792 approved wipe media only

LAB NOTES:

Reservoirs Environmental, Inc.

5801 Logan St. Denver, CO 80216 • Ph: 303 964-1986 • Fax 303-477-4275 • Toll Free :866 RESI-ENV

RES Job # 10913

Submitted by:

Client sample ID number (Sample ID's must be unique)	PLM - Short report, Long report, Point Count	TEM - AHERA, Level II, 7402, (ISO), +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER - CARB 435 + 6009/2 - 93/116 PLM A.S. 0.1%	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	EM Number (Laboratory Use Only)
76 ASB-SL-01	X						X		B	1	5/19/10	1546	576773
77 ASB-SL-02	X	KC					X		B	1		1554	774
78 ASB-SL-03	X	OSHA Per Ryan Railwest					X		B	1		1558	775
79 ASB-SL-04	X	Grace Lyle					X		B	1		1605	776
80 ASB-SL-05	X						X		B	1		1609	777
81 ASB-PER-1			X					960.1	A	1	5/19/10		778
82 ASB-PER-2			X					957.7	A	1			779
83 ASB-AMB-1		X						3842.8	A	1			780
84 ASB-AMB-2		X						2752.9	A	1			781
85 ASB-AMB-3		X					4140.6	~~4115~~ A11 5/25	A	1			782
86 ASB-AMB-4		X						4122.3	A	1			783
87 ASB-PER-3			X					891.8	A	1	5/20/10		784
88 ASB-PER-4			X					889.2	A	1			785
89 ASB-PER-FB			X				Ø	~~4224.2~~	A	1			786
90 ASB-AMB-5		X						4224.2	A	1			787
91 ASB-AMB-6		X			A11 5/25/10			2597.5	A	1			788
92 ASB-AMB-7		X					4211.0	~~4210.~~	A	1			789
93 ASB-AMB-FB		X						Ø	A	1			790
94													
95													
96													
97													
98													
99													
100													
101													
102													
103													
104													
105													
106													

VALID MATRIX CODES

Air = A	Bulk = B
Dust = D	Paint = P
Soil = S	Wipe = W
Drinking Water = DW	
Waste Water = WW	
Other = O	

ASTM E1792 approved wipe media only

LAB NOTES:

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-1	**Lab Sample Number**	576780	**Effective filter area (mm ^{2})**	346
				F-factor	5.00E-01
Media	Air	**Preparation**	Indirect - Ashed	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	2
Air Volume (L)	3842.8	**Analysis Date**	6/16/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	8.2E-03
Stopping Rule(s):	GO = 10, Structures = 50, Sensitivity = 1.00E-02				

Number of Structures with Fatal Data Entry Errors 0

Desired Confidence Interval (%): 90

(Structures with fatal errors are excluded from calculations below)

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	51	2.3E+03	4.2E-01	3.3E-01 - 5.3E-01
Total Chrysotile (CH)	49	2.2E+03	4.0E-01	3.1E-01 - 5.1E-01
Total Amphibole	2	9.1E+01	1.6E-02	2.9E-03 - 5.2E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
anthophyllite (AN)	2	9.1E+01	1.6E-02	2.9E-03 - 5.2E-02
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
AHERA (d) Structures				
Total Asbestos	50	2.3E+03	4.1E-01	3.2E-01 - 5.2E-01
Total Chrysotile (CH)	49	2.2E+03	4.0E-01	3.1E-01 - 5.1E-01
Total Amphibole	1	4.5E+01	8.2E-03	4.2E-04 - 3.9E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
anthophyllite (AN)	1	4.5E+01	8.2E-03	4.2E-04 - 3.9E-02
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-02

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-2	**Lab Sample Number**	576781	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	Air	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	13
Air Volume (L)	2752.9	**Analysis Date**	5/28/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	9.8E-04
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	30	2.1E+02	2.9E-02	2.1E-02 - 4.0E-02
Total Chrysotile (CH)	15	1.0E+02	1.5E-02	9.0E-03 - 2.3E-02
Total Amphibole	15	1.0E+02	1.5E-02	9.0E-03 - 2.3E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
amosite (AM)	2	1.4E+01	2.0E-03	3.5E-04 - 6.2E-03
anthophyllite (AN)	13	9.1E+01	1.3E-02	7.5E-03 - 2.0E-02
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
PCM Equivalent Structures (PCME)				
Total Asbestos	5	3.5E+01	4.9E-03	1.9E-03 - 1.0E-02
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Total Amphibole	5	3.5E+01	4.9E-03	1.9E-03 - 1.0E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
amosite (AM)	1	7.0E+00	9.8E-04	5.0E-05 - 4.6E-03
anthophyllite (AN)	4	2.8E+01	3.9E-03	1.3E-03 - 9.0E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
AHERA (d) Structures				
Total Asbestos	28	2.0E+02	2.7E-02	1.9E-02 - 3.8E-02
Total Chrysotile (CH)	14	9.8E+01	1.4E-02	8.3E-03 - 2.1E-02
Total Amphibole	14	9.8E+01	1.4E-02	8.3E-03 - 2.1E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
amosite (AM)	2	1.4E+01	2.0E-03	3.5E-04 - 6.2E-03
anthophyllite (AN)	12	8.4E+01	1.2E-02	6.8E-03 - 1.9E-02
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Berman Crump (2003) Structures				
Total Asbestos	1	7.0E+00	9.8E-04	5.0E-05 - 4.6E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Total Amphibole	1	7.0E+00	9.8E-04	5.0E-05 - 4.6E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
amosite (AM)	1	7.0E+00	9.8E-04	5.0E-05 - 4.6E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.9E-03

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-3	**Lab Sample Number**	576782	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	Air	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	10
Air Volume (L)	4140.6	**Analysis Date**	6/2/2010		
QA Sample Type	RP	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	8.5E-04
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
AHERA (d) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-3	**Lab Sample Number**	576782	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	Air	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	10
Air Volume (L)	4140.6	**Analysis Date**	6/3/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	8.5E-04
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
AHERA (d) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-4	**Lab Sample Number**	576783	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	Air	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	10
Air Volume (L)	4122.3	**Analysis Date**	6/2/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	8.5E-04
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	1	9.1E+00	8.5E-04	4.4E-05 - 4.0E-03
Total Chrysotile (CH)	1	9.1E+00	8.5E-04	4.4E-05 - 4.0E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	3	2.7E+01	2.5E-03	6.9E-04 - 6.6E-03
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	1	9.1E+00	8.5E-04	4.4E-05 - 4.0E-03
AHERA (d) Structures				
Total Asbestos	1	9.1E+00	8.5E-04	4.4E-05 - 4.0E-03
Total Chrysotile (CH)	1	9.1E+00	8.5E-04	4.4E-05 - 4.0E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	3	2.7E+01	2.5E-03	6.9E-04 - 6.6E-03
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-5	**Lab Sample Number**	576787	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	Air	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	10
Air Volume (L)	4224.2	**Analysis Date**	6/2/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	8.3E-04
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	3	2.7E+01	2.5E-03	6.8E-04 - 6.4E-03
Total Chrysotile (CH)	3	2.7E+01	2.5E-03	6.8E-04 - 6.4E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
AHERA (d) Structures				
Total Asbestos	3	2.7E+01	2.5E-03	6.8E-04 - 6.4E-03
Total Chrysotile (CH)	3	2.7E+01	2.5E-03	6.8E-04 - 6.4E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.5E-03

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-6	**Lab Sample Number**	576788	**Effective filter area (mm ^{2})**	346
				F-factor	5.00E-01
Media	Air	**Preparation**	Indirect - Ashed	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	12
Air Volume (L)	2597.5	**Analysis Date**	6/2/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	2.0E-03
Stopping Rule(s):	GO = 10, Structures = 50, Sensitivity = 1.00E-02				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	54	4.1E+02	1.1E-01	8.6E-02 - 1.4E-01
Total Chrysotile (CH)	52	3.9E+02	1.0E-01	8.2E-02 - 1.3E-01
Total Amphibole	2	1.5E+01	4.0E-03	7.2E-04 - 1.3E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
amosite (AM)	2	1.5E+01	4.0E-03	7.2E-04 - 1.3E-02
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
AHERA (d) Structures				
Total Asbestos	53	4.0E+02	1.1E-01	8.4E-02 - 1.3E-01
Total Chrysotile (CH)	51	3.9E+02	1.0E-01	8.0E-02 - 1.3E-01
Total Amphibole	2	1.5E+01	4.0E-03	7.2E-04 - 1.3E-02
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
amosite (AM)	2	1.5E+01	4.0E-03	7.2E-04 - 1.3E-02
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 6.0E-03

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-7	**Lab Sample Number**	576789	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	Air	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Sample	**Sample Status**	Analyzed	**# GOs counted**	9
Air Volume (L)	4211	**Analysis Date**	6/3/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	9.2E-04
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

Desired Confidence Interval (%): 90

(Structures with fatal errors are excluded from calculations below)

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	6	6.1E+01	5.5E-03	2.4E-03 - 1.1E-02
Total Chrysotile (CH)	5	5.1E+01	4.6E-03	1.8E-03 - 9.7E-03
Total Amphibole	1	1.0E+01	9.2E-04	4.7E-05 - 4.4E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
amosite (AM)	1	1.0E+01	9.2E-04	4.7E-05 - 4.4E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
PCM Equivalent Structures (PCME)				
Total Asbestos	2	2.0E+01	1.8E-03	3.3E-04 - 5.8E-03
Total Chrysotile (CH)	1	1.0E+01	9.2E-04	4.7E-05 - 4.4E-03
Total Amphibole	1	1.0E+01	9.2E-04	4.7E-05 - 4.4E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
amosite (AM)	1	1.0E+01	9.2E-04	4.7E-05 - 4.4E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
AHERA (d) Structures				
Total Asbestos	5	5.1E+01	4.6E-03	1.8E-03 - 9.7E-03
Total Chrysotile (CH)	4	4.0E+01	3.7E-03	1.3E-03 - 8.5E-03
Total Amphibole	1	1.0E+01	9.2E-04	4.7E-05 - 4.4E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
amosite (AM)	1	1.0E+01	9.2E-04	4.7E-05 - 4.4E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Total Chrysotile (CH)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Total Amphibole	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
actinolite (AC)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
amosite (AM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
anthophyllite (AN)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
crocidolite (CR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
tremolite (TR)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Libby amphibole (LA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other amphibole (OA)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
other mineral class (OM)	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Amosite	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03
Solid Soln: Trem-Act	0	0.0E+00	0.0E+00	0.0E+00 - 2.8E-03

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	ASB-AMB-FE	**Lab Sample Number**	576790	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	Air	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Field Blank	**Sample Status**	Analyzed	**# GOs counted**	10
Air Volume (L)		**Analysis Date**	6/3/2010		
QA Sample Type	Not QC	**Method SOP**	ISO 10312	**Sensitivity (1/cc)**	blank
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)	Air Conc (c) (s/cc)	90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank
AHERA (d) Structures				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

C & H Power Plant Site [20405.016.0988.00]

version 8-
DRAFT

National Asbestos Data Entry Spreadsheet (NADES) for Air & Dust Analysis by Superfund TEM

ANALYTICAL REPORT

SAMPLE/ANALYSIS INFORMATION				ANALYSIS PARAMETERS	
Field Sample Number	0	**Lab Sample Number**	Lab Blank	**Effective filter area (mm ^{2})**	385
				F-factor	1.00E+00
Media	N/A	**Preparation**	Direct	**Grid opening area (mm ^{2})**	0.0110
Sample Type	Lab QC	**Sample Status**	Analyzed	**# GOs counted**	11
		Analysis Date	6/3/2010		
QA Sample Type	LB	**Method SOP**	ISO 10312	**Sensitivity (--)**	blank
Stopping Rule(s):	GO = n/a, Structures = n/a, Sensitivity = n/a				

Number of Structures with Fatal Data Entry Errors 0

(Structures with fatal errors are excluded from calculations below)

Desired Confidence Interval (%): 90

Mineral Class	Number of Structures (a)	Loading on Filter (b) (s/mm^2)		90% Confidence Interval
Total TEM-EPASM Structures				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank
PCM Equivalent Structures (PCME)				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank
AHERA (d) Structures				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank
Berman Crump (2003) Structures				
Total Asbestos	0	0.0E+00	blank	blank - blank
Total Chrysotile (CH)	0	0.0E+00	blank	blank - blank
Total Amphibole	0	0.0E+00	blank	blank - blank
actinolite (AC)	0	0.0E+00	blank	blank - blank
amosite (AM)	0	0.0E+00	blank	blank - blank
anthophyllite (AN)	0	0.0E+00	blank	blank - blank
crocidolite (CR)	0	0.0E+00	blank	blank - blank
tremolite (TR)	0	0.0E+00	blank	blank - blank
Libby amphibole (LA)	0	0.0E+00	blank	blank - blank
other amphibole (OA)	0	0.0E+00	blank	blank - blank
other mineral class (OM)	0	0.0E+00	blank	blank - blank
Solid Soln: Amosite	0	0.0E+00	blank	blank - blank
Solid Soln: Trem-Act	0	0.0E+00	blank	blank - blank

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 3

No restrictions for other structure types.

Binning Rule Description:

Apply to all structures where Total column > 0:

L > 5um, W ≥ 0.25um, AR ≥ 3

Binning Rule Description:

Apply to fibers (F) only:
L ≥ 0.5um, AR ≥ 5

No restrictions for other structure types.

Most "secondary" structures (structures that are part of a primary complex structure) are excluded.

Binning Rule Description:

Apply to all structures where Total column > 0:
L > 10um, W ≤ 0.4um

(a) Based on countable structures only

(b) Loading on Filter (s/mm ^{2}) = N structures / (GOs Counted * GO Area)

(c) Air Concentration (s/cc) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Air Volume * 1000)
Dust Loading (s/cm2) = (N structures * EFA) / (GOs Counted * GO Area * F-factor * Dust Collection Area)

(d) Yamate results are expected to be similar to AHERA, but use of AHERA for Yamate may be biased low due to the exclusion of structures <0.5um.

June 29, 2010

Weston Solutions, Inc. - Illinois
Attn: Ms. Lisa Graczyk/Dynamac
20 North Wacker Drive, Suite 1210
Chicago, IL 60606

Project: C & H Power Plant SA, Lake Linden, MI

Dear Ms. Lisa Graczyk/Dynamac,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
1006340	06/19/2010	CHPP0610

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Lisa M. Harvey
Project Chemist

Enclosures(s)

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-1-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-01**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Unit:	mg/kg dry	Prepared:	06/23/10 By: BJH
Dilution Factor:	1	Analyzed:	06/23/10 By: MSZ
QC Batch:	1006164	Analytical Batch:	0F24016
Percent Solids:	86		

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.12U	0.12	0.0093
11104-28-2	PCB-1221	0.12U	0.12	0.0073
11141-16-5	PCB-1232	0.12U	0.12	0.011
53469-21-9	PCB-1242	0.12U	0.12	0.0063
12672-29-6	PCB-1248	0.12U	0.12	0.0059
11097-69-1	PCB-1254	0.12U	0.12	0.0079
11096-82-5	PCB-1260	0.12U	0.12	0.0064
37324-23-5	PCB-1262	0.12U	0.12	0.0074
11100-14-4	PCB-1268	0.12U	0.12	0.0044

Surrogates:	*% Recovery*	*Control Limits*
Decachlorobiphenyl	78	*48-136*
Tetrachloro-m-xylene	70	*61-123*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-1-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-01**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**86**	0.1	0.1	%	1	USEPA-3550B	06/23/10 14:00	CLB	1006222

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-2-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-02**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Unit:	mg/kg dry	Prepared:	06/23/10 By: BJH
Dilution Factor:	1	Analyzed:	06/23/10 By: MSZ
QC Batch:	1006164	Analytical Batch:	0F24016
Percent Solids:	86		

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.12U	0.12	0.0093
11104-28-2	PCB-1221	0.12U	0.12	0.0073
11141-16-5	PCB-1232	0.12U	0.12	0.011
53469-21-9	PCB-1242	0.12U	0.12	0.0063
12672-29-6	PCB-1248	0.12U	0.12	0.0059
11097-69-1	PCB-1254	0.12U	0.12	0.0079
11096-82-5	PCB-1260	**0.0091J**	0.12	0.0064
37324-23-5	PCB-1262	0.12U	0.12	0.0075
11100-14-4	PCB-1268	0.12U	0.12	0.0044

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	85	*48-136*
Tetrachloro-m-xylene	73	*61-123*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-2-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-02**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**86**	0.1	0.1	%	1	USEPA-3550B	06/23/10 14:00	CLB	1006222

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-3-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-03**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Unit:	mg/kg dry	Prepared:	06/23/10 By: BJH
Dilution Factor:	1	Analyzed:	06/23/10 By: MSZ
QC Batch:	1006164	Analytical Batch:	0F24016
Percent Solids:	74		

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.14U	0.14	0.011
11104-28-2	PCB-1221	0.14U	0.14	0.0085
11141-16-5	PCB-1232	0.14U	0.14	0.013
53469-21-9	PCB-1242	0.14U	0.14	0.0073
12672-29-6	PCB-1248	0.14U	0.14	0.0069
11097-69-1	PCB-1254	0.14U	0.14	0.0092
11096-82-5	PCB-1260	0.14U	0.14	0.0074
37324-23-5	PCB-1262	0.14U	0.14	0.0086
11100-14-4	PCB-1268	0.14U	0.14	0.0051

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	90	*48-136*
Tetrachloro-m-xylene	103	*61-123*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-3-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-03**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**74**	0.1	0.1	%	1	USEPA-3550B	06/23/10 14:00	CLB	1006222

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-4-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-04**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Unit:	mg/kg dry	Prepared:	06/23/10 By: BJH
Dilution Factor:	1	Analyzed:	06/23/10 By: MSZ
QC Batch:	1006164	Analytical Batch:	0F24016
Percent Solids:	84		

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.12U	0.12	0.0095
11104-28-2	PCB-1221	0.12U	0.12	0.0075
11141-16-5	PCB-1232	0.12U	0.12	0.012
53469-21-9	PCB-1242	0.12U	0.12	0.0064
12672-29-6	PCB-1248	0.12U	0.12	0.0061
11097-69-1	PCB-1254	0.12U	0.12	0.0081
11096-82-5	PCB-1260	0.12U	0.12	0.0065
37324-23-5	PCB-1262	0.12U	0.12	0.0076
11100-14-4	PCB-1268	0.12U	0.12	0.0045

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	88	*48-136*
Tetrachloro-m-xylene	107	*61-123*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-4-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-04**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**84**	0.1	0.1	%	1	USEPA-3550B	06/23/10 14:00	CLB	1006222

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-5-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-05**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Unit:	mg/kg dry	Prepared:	06/23/10 By: BJH
Dilution Factor:	1	Analyzed:	06/23/10 By: MSZ
QC Batch:	1006164	Analytical Batch:	0F24016
Percent Solids:	90		

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.11U	0.11	0.0089
11104-28-2	PCB-1221	0.11U	0.11	0.0070
11141-16-5	PCB-1232	0.11U	0.11	0.011
53469-21-9	PCB-1242	0.11U	0.11	0.0060
12672-29-6	PCB-1248	0.11U	0.11	0.0057
11097-69-1	PCB-1254	0.11U	0.11	0.0076
11096-82-5	PCB-1260	0.11U	0.11	0.0061
37324-23-5	PCB-1262	0.11U	0.11	0.0071
11100-14-4	PCB-1268	0.11U	0.11	0.0042

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	87	*48-136*
Tetrachloro-m-xylene	95	*61-123*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-5-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-05**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**90**	0.1	0.1	%	1	USEPA-3550B	06/23/10 14:00	CLB	1006222

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-6-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-06**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Unit:	mg/kg dry	Prepared:	06/23/10 By: BJH
Dilution Factor:	1	Analyzed:	06/23/10 By: MSZ
QC Batch:	1006164	Analytical Batch:	0F24016
Percent Solids:	91		

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.11U	0.11	0.0088
11104-28-2	PCB-1221	0.11U	0.11	0.0069
11141-16-5	PCB-1232	0.11U	0.11	0.011
53469-21-9	PCB-1242	0.11U	0.11	0.0059
12672-29-6	PCB-1248	0.11U	0.11	0.0056
11097-69-1	PCB-1254	0.11U	0.11	0.0075
11096-82-5	PCB-1260	**0.041J**	0.11	0.0061
37324-23-5	PCB-1262	0.11U	0.11	0.0071
11100-14-4	PCB-1268	0.11U	0.11	0.0042

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	91	*48-136*
Tetrachloro-m-xylene	74	*61-123*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-6-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-06**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**91**	0.1	0.1	%	1	USEPA-3550B	06/23/10 14:00	CLB	1006222

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-1-061610**	Sampled:	06/16/10 00:00
Lab Sample ID:	**1006340-07**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	0.10U	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	85	*52-139*
Tetrachloro-m-xylene	78	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-3-061610**	Sampled:	06/16/10 00:00
Lab Sample ID:	**1006340-08**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	**0.078J**	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	88	*52-139*
Tetrachloro-m-xylene	81	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-6-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-09**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	0.10U	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	85	*52-139*
Tetrachloro-m-xylene	88	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-7-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-10**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	0.10U	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	94	*52-139*
Tetrachloro-m-xylene	92	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-8-061810**	Sampled:	06/18/10 00:00
Lab Sample ID:	**1006340-11**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	0.10U	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	85	*52-139*
Tetrachloro-m-xylene	77	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-4-061610**	Sampled:	06/16/10 00:00
Lab Sample ID:	**1006340-12**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	0.10U	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	88	*52-139*
Tetrachloro-m-xylene	74	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-7-061710**	Sampled:	06/17/10 00:00
Lab Sample ID:	**1006340-13**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Percent Solids:	n/a		

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result		RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Aluminum	**54000**		1900	500	mg/kg dry wt.	200	USEPA-6010C	06/28/10 10:41	KLV	1006240
*Antimony	**540**		4.0	1.8	mg/kg dry wt.	40	USEPA-6020A	06/28/10 17:45	DSC	1006300
*Arsenic	**1.5**		0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:03	MSM	1006241
*Barium	**17000**		100	21	mg/kg dry wt.	1000	USEPA-6020A	06/24/10 15:15	MSM	1006241
Beryllium	**2.5**		0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:03	MSM	1006241
*Cadmium	**120**		0.25	0.055	mg/kg dry wt.	5	USEPA-6020A	06/24/10 15:51	MSM	1006241
*Calcium	**17000**		470	64	mg/kg dry wt.	10	USEPA-6010C	06/28/10 10:58	KLV	1006240
*Chromium	**79**		1.0	0.28	mg/kg dry wt.	5	USEPA-6020A	06/25/10 13:14	MSM	1006241
*Cobalt	**20**		0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:03	MSM	1006241
*Copper	**33000**		200	160	mg/kg dry wt.	2000	USEPA-6020A	06/28/10 13:05	DSC	1006241
*Iron	**140000**		9400	870	mg/kg dry wt.	2000	USEPA-6010C	06/28/10 10:31	KLV	1006240
*Lead	**70000**		200	110	mg/kg dry wt.	2000	USEPA-6020A	06/28/10 13:05	DSC	1006241
*Magnesium	**10000**		470	46	mg/kg dry wt.	10	USEPA-6010C	06/28/10 10:58	KLV	1006240
*Manganese	**1000**		9.4	2.3	mg/kg dry wt.	10	USEPA-6010C	06/28/10 10:58	KLV	1006240
*Mercury	**1.4**		0.50	0.16	mg/kg dry wt.	10	USEPA-7471A	06/29/10 11:47	DSC	1006352
*Nickel	**360**		9.4	8.9	mg/kg dry wt.	10	USEPA-6010C	06/28/10 10:58	KLV	1006240
*Selenium	**1.1**		0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	06/25/10 11:54	MSM	1006241
*Potassium	**600**		47	6.8	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:09	KLV	1006240
*Silver	**220**		0.50	0.11	mg/kg dry wt.	10	USEPA-6020A	06/24/10 15:26	MSM	1006241
Sodium	**180**		47	4.9	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:09	KLV	1006240
*Thallium	50	U	50	16	mg/kg dry wt.	1000	USEPA-6020A	06/24/10 15:04	MSM	1006241
*Vanadium	**2.1**		0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:03	MSM	1006241
*Zinc	**23000**		1000	460	mg/kg dry wt.	1000	USEPA-6020A	06/25/10 13:06	MSM	1006241

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-8-061710**	Sampled:	06/17/10 00:00
Lab Sample ID:	**1006340-14**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Percent Solids:	n/a		

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	**11000**	10	2.7	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:34	KLV	1006240
Antimony	**2.7**	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	06/28/10 15:34	DSC	1006300
Arsenic	**10**	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
Barium	**77**	0.50	0.10	mg/kg dry wt.	5	USEPA-6020A	06/24/10 16:12	MSM	1006241
Beryllium	**0.68**	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
Cadmium	**0.89**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
Calcium	**9800**	50	6.8	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:34	KLV	1006240
Chromium	**21**	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
Cobalt	**12**	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
***Copper**	**11000**	50	39	mg/kg dry wt.	500	USEPA-6020A	06/28/10 13:12	DSC	1006241
Iron	**29000**	500	47	mg/kg dry wt.	100	USEPA-6010C	06/28/10 08:45	KLV	1006240
Lead	**140**	0.50	0.27	mg/kg dry wt.	5	USEPA-6020A	06/28/10 13:30	DSC	1006241
Magnesium	**8400**	50	4.9	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:34	KLV	1006240
Manganese	**350**	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:34	KLV	1006240
Mercury	**0.35**	0.050	0.016	mg/kg dry wt.	1	USEPA-7471A	06/29/10 09:32	DSC	1006352
Nickel	**50**	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:34	KLV	1006240
Potassium	**390**	50	7.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:34	KLV	1006240
Selenium	**0.60**	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	06/25/10 12:29	MSM	1006241
Silver	**1.4**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
Sodium	**190**	50	5.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:34	KLV	1006240
Thallium	**0.18**	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
Vanadium	**36**	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:22	MSM	1006241
***Zinc**	**340**	20	9.3	mg/kg dry wt.	20	USEPA-6020A	06/24/10 16:09	MSM	1006241

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-9-061710**	Sampled:	06/17/10 00:00
Lab Sample ID:	**1006340-15**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Percent Solids:	n/a		

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result		RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	**36000**		9.1	2.5	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:38	KLV	1006240
Antimony	**510**		4.0	1.8	mg/kg dry wt.	40	USEPA-6020A	06/28/10 18:00	DSC	1006300
Arsenic	**17**		0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:26	MSM	1006241
Barium	**2400**		10	2.1	mg/kg dry wt.	100	USEPA-6020A	06/24/10 17:35	MSM	1006241
Beryllium	**3.3**		0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:26	MSM	1006241
Cadmium	**180**		0.25	0.055	mg/kg dry wt.	5	USEPA-6020A	06/24/10 17:39	MSM	1006241
Calcium	**2900**		46	6.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:38	KLV	1006240
Chromium	**55**		1.0	0.28	mg/kg dry wt.	5	USEPA-6020A	06/24/10 17:39	MSM	1006241
Cobalt	**23**		0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:26	MSM	1006241
***Copper**	**110000**		400	310	mg/kg dry wt.	4000	USEPA-6020A	06/28/10 13:54	DSC	1006241
Iron	**150000**		460	43	mg/kg dry wt.	100	USEPA-6010C	06/28/10 08:48	KLV	1006240
Lead	**12000**		40	21	mg/kg dry wt.	400	USEPA-6020A	06/28/10 13:56	DSC	1006241
Magnesium	**5900**		46	4.5	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:38	KLV	1006240
Manganese	**13000**		91	22	mg/kg dry wt.	100	USEPA-6010C	06/28/10 08:48	KLV	1006240
Mercury	**0.66**		0.050	0.016	mg/kg dry wt.	1	USEPA-7471A	06/29/10 09:37	DSC	1006352
Nickel	**240**		0.91	0.87	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:38	KLV	1006240
Potassium	**200**		46	6.6	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:38	KLV	1006240
Selenium	**3.5**		0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	06/25/10 12:31	MSM	1006241
Silver	**45**		0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:26	MSM	1006241
Sodium	**140**		46	4.8	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:38	KLV	1006240
*Thallium	5.0	U	5.0	1.6	mg/kg dry wt.	100	USEPA-6020A	06/24/10 17:35	MSM	1006241
Vanadium	**23**		0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:26	MSM	1006241
***Zinc**	**25000**		1000	460	mg/kg dry wt.	1000	USEPA-6020A	06/24/10 17:32	MSM	1006241

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-10-061710**	Sampled:	06/17/10 00:00
Lab Sample ID:	**1006340-16**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Percent Solids:	n/a		

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	**8900**	10	2.7	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:42	KLV	1006240
Antimony	**20**	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	06/28/10 17:23	DSC	1006300
Arsenic	**88**	0.92	0.36	mg/kg dry wt.	10	USEPA-6020A	06/24/10 16:41	MSM	1006241
Barium	**190**	0.92	0.19	mg/kg dry wt.	10	USEPA-6020A	06/24/10 16:41	MSM	1006241
Beryllium	**0.86**	0.092	0.028	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:30	MSM	1006241
Cadmium	**1.7**	0.046	0.010	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:30	MSM	1006241
Calcium	**11000**	50	6.8	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:42	KLV	1006240
***Chromium**	**59**	1.8	0.52	mg/kg dry wt.	10	USEPA-6020A	06/24/10 16:41	MSM	1006241
***Cobalt**	**25**	0.92	0.074	mg/kg dry wt.	10	USEPA-6020A	06/24/10 16:41	MSM	1006241
***Copper**	**14000**	46	36	mg/kg dry wt.	500	USEPA-6020A	06/28/10 13:16	DSC	1006241
Iron	**200000**	500	47	mg/kg dry wt.	100	USEPA-6010C	06/28/10 08:52	KLV	1006240
Lead	**1700**	4.6	2.5	mg/kg dry wt.	50	USEPA-6020A	06/28/10 13:34	DSC	1006241
Magnesium	**7400**	50	4.9	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:42	KLV	1006240
Manganese	**2000**	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:42	KLV	1006240
Mercury	**1.8**	0.50	0.16	mg/kg dry wt.	10	USEPA-7471A	06/29/10 11:52	DSC	1006352
Nickel	**35**	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:42	KLV	1006240
Potassium	**200**	50	7.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:42	KLV	1006240
***Selenium**	**0.72**	0.37	0.16	mg/kg dry wt.	2	USEPA-6020A	06/25/10 13:36	MSM	1006241
Silver	**14**	0.046	0.010	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:30	MSM	1006241
Sodium	**180**	50	5.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:42	KLV	1006240
Thallium	**0.16**	0.046	0.015	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:30	MSM	1006241
***Vanadium**	**44**	0.92	0.36	mg/kg dry wt.	10	USEPA-6020A	06/24/10 16:41	MSM	1006241
***Zinc**	**860**	46	21	mg/kg dry wt.	50	USEPA-6020A	06/24/10 16:38	MSM	1006241

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-11-061710**	Sampled:	06/17/10 00:00
Lab Sample ID:	**1006340-17**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Percent Solids:	n/a		

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	**11000**	10	2.7	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:46	KLV	1006240
Antimony	**34**	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	06/28/10 15:48	DSC	1006300
Arsenic	**15**	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
Barium	**110**	0.50	0.10	mg/kg dry wt.	5	USEPA-6020A	06/24/10 16:52	MSM	1006241
Beryllium	**1.0**	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
Cadmium	**4.1**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
Calcium	**10000**	50	6.8	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:46	KLV	1006240
Chromium	**23**	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
Cobalt	**15**	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
***Copper**	**60000**	200	160	mg/kg dry wt.	2000	USEPA-6020A	06/28/10 13:19	DSC	1006241
Iron	**41000**	500	47	mg/kg dry wt.	100	USEPA-6010C	06/28/10 08:55	KLV	1006240
Lead	**260**	1.0	0.54	mg/kg dry wt.	10	USEPA-6020A	06/28/10 13:58	DSC	1006241
Magnesium	**11000**	50	4.9	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:46	KLV	1006240
Manganese	**380**	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:46	KLV	1006240
Mercury	**0.31**	0.050	0.016	mg/kg dry wt.	1	USEPA-7471A	06/29/10 09:44	DSC	1006352
Nickel	**58**	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:46	KLV	1006240
Selenium	**0.44**	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	06/25/10 12:36	MSM	1006241
Potassium	**220**	50	7.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:46	KLV	1006240
Silver	**1.7**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
Sodium	**310**	50	5.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:46	KLV	1006240
Thallium	**0.12**	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
Vanadium	**38**	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:34	MSM	1006241
***Zinc**	**1300**	50	23	mg/kg dry wt.	50	USEPA-6020A	06/24/10 16:49	MSM	1006241

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-12-061710**	Sampled:	06/17/10 00:00
Lab Sample ID:	**1006340-18**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Percent Solids:	n/a		

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	**7600**	10	2.7	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:49	KLV	1006240
Antimony	**3.5**	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	06/28/10 15:51	DSC	1006300
Arsenic	**34**	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
Barium	**190**	0.50	0.10	mg/kg dry wt.	5	USEPA-6020A	06/24/10 16:56	MSM	1006241
Beryllium	**1.2**	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
Cadmium	**0.65**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
Calcium	**4700**	50	6.8	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:49	KLV	1006240
Chromium	**17**	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
Cobalt	**7.6**	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
***Copper**	**4000**	20	16	mg/kg dry wt.	200	USEPA-6020A	06/28/10 13:27	DSC	1006241
Iron	**37000**	500	47	mg/kg dry wt.	100	USEPA-6010C	06/28/10 08:58	KLV	1006240
Lead	**320**	2.0	1.1	mg/kg dry wt.	20	USEPA-6020A	06/28/10 13:38	DSC	1006241
Magnesium	**4800**	50	4.9	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:49	KLV	1006240
Manganese	**240**	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:49	KLV	1006240
Mercury	**0.22**	0.050	0.016	mg/kg dry wt.	1	USEPA-7471A	06/29/10 09:49	DSC	1006352
Nickel	**23**	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:49	KLV	1006240
Potassium	**250**	50	7.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:49	KLV	1006240
Selenium	**3.2**	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	06/25/10 12:39	MSM	1006241
Silver	**1.2**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
Sodium	**130**	50	5.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:49	KLV	1006240
Thallium	**0.60**	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
Vanadium	**28**	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:38	MSM	1006241
***Zinc**	**110**	5.0	2.3	mg/kg dry wt.	5	USEPA-6020A	06/24/10 16:56	MSM	1006241

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-S-13-061710**	Sampled:	06/17/10 00:00
Lab Sample ID:	**1006340-19**	Sampled By:	J. Nutini
Matrix:	Soil	Received:	06/19/10 09:00
Percent Solids:	n/a		

Total Metals by EPA 6000/7000 Series Methods

Analyte	Analytical Result	RL	MDL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Aluminum	**11000**	10	2.7	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:53	KLV	1006240
Antimony	**3.3**	0.10	0.045	mg/kg dry wt.	1	USEPA-6020A	06/28/10 15:53	DSC	1006300
Arsenic	**14**	0.10	0.039	mg/kg dry wt.	1	USEPA-6020A	06/25/10 12:42	MSM	1006241
Barium	**110**	0.50	0.10	mg/kg dry wt.	5	USEPA-6020A	06/24/10 17:03	MSM	1006241
Beryllium	**0.80**	0.10	0.031	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:56	MSM	1006241
Cadmium	**0.99**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:56	MSM	1006241
Calcium	**11000**	50	6.8	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:53	KLV	1006240
Chromium	**23**	0.20	0.057	mg/kg dry wt.	1	USEPA-6020A	06/25/10 12:42	MSM	1006241
Cobalt	**13**	0.10	0.0080	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:56	MSM	1006241
***Copper**	**15000**	50	39	mg/kg dry wt.	500	USEPA-6020A	06/28/10 13:21	DSC	1006241
Iron	**28000**	500	47	mg/kg dry wt.	100	USEPA-6010C	06/28/10 09:08	KLV	1006240
Lead	**190**	0.50	0.27	mg/kg dry wt.	5	USEPA-6020A	06/28/10 13:41	DSC	1006241
Magnesium	**8900**	50	4.9	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:53	KLV	1006240
Manganese	**350**	1.0	0.24	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:53	KLV	1006240
Mercury	**0.51**	0.050	0.016	mg/kg dry wt.	1	USEPA-7471A	06/29/10 10:13	DSC	1006352
Nickel	**50**	1.0	0.95	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:53	KLV	1006240
Potassium	**370**	50	7.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:53	KLV	1006240
Selenium	**0.78**	0.20	0.088	mg/kg dry wt.	1	USEPA-6020A	06/25/10 12:42	MSM	1006241
Silver	**1.1**	0.050	0.011	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:56	MSM	1006241
Sodium	**240**	50	5.2	mg/kg dry wt.	1	USEPA-6010C	06/28/10 11:53	KLV	1006240
Thallium	**0.19**	0.050	0.016	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:56	MSM	1006241
Vanadium	**36**	0.10	0.040	mg/kg dry wt.	1	USEPA-6020A	06/24/10 14:56	MSM	1006241
***Zinc**	**500**	20	9.3	mg/kg dry wt.	20	USEPA-6020A	06/24/10 16:59	MSM	1006241

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-2-061610**	Sampled:	06/16/10 00:00
Lab Sample ID:	**1006340-20**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	**0.18**	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	78	*52-139*
Tetrachloro-m-xylene	89	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Weston Solutions, Inc. - Illinois**	Work Order:	**1006340**
Project:	C & H Power Plant SA, Lake Linden, MI	Description:	CHPP0610
Client Sample ID:	**CH-W-5-061610**	Sampled:	06/16/10 00:00
Lab Sample ID:	**1006340-21**	Sampled By:	J. Nutini
Matrix:	Water	Received:	06/19/10 09:00
Unit:	ug/L	Prepared:	06/23/10 By: KCS
Dilution Factor:	1	Analyzed:	06/24/10 By: MSZ
QC Batch:	1006203	Analytical Batch:	0F28083

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

CAS Number	Analyte	Analytical Result	RL	MDL
12674-11-2	PCB-1016	0.10U	0.10	0.043
11104-28-2	PCB-1221	0.10U	0.10	0.037
11141-16-5	PCB-1232	0.10U	0.10	0.025
53469-21-9	PCB-1242	0.10U	0.10	0.036
12672-29-6	PCB-1248	0.10U	0.10	0.048
11097-69-1	PCB-1254	0.10U	0.10	0.035
11096-82-5	PCB-1260	0.10U	0.10	0.054
37324-23-5	PCB-1262	0.10U	0.10	0.036
11100-14-4	PCB-1268	0.10U	0.10	0.031

Surrogates:	***% Recovery***	***Control Limits***
Decachlorobiphenyl	82	*52-139*
Tetrachloro-m-xylene	86	*26-118*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Polychlorinated Biphenyls (PCBs) by EPA Method 8082

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
QC Batch: 1006164 3550B Sonication Extraction/USEPA-8082									
Method Blank					Analyzed:	06/23/2010	By: MSZ		
Unit: mg/kg wet					Analytical Batch:	0F24027			
PCB-1016			0.10 U					0.10	0.0080
PCB-1221			0.10 U					0.10	0.0063
PCB-1232			0.10 U					0.10	0.0098
PCB-1242			0.10 U					0.10	0.0054
PCB-1248			0.10 U					0.10	0.0051
PCB-1254			0.10 U					0.10	0.0068
PCB-1260			0.10 U					0.10	0.0055
PCB-1262			0.10 U					0.10	0.0064
PCB-1268			0.10 U					0.10	0.0038
Surrogates:									
Decachlorobiphenyl				*95*	*48-136*				
Tetrachloro-m-xylene				*108*	*61-123*				
Laboratory Control Sample					Analyzed:	06/23/2010	By: MSZ		
Unit: mg/kg wet					Analytical Batch:	0F24027			
PCB-1254		0.167	**0.168**	100	71-133		30	0.10	0.0068
Surrogates:									
Decachlorobiphenyl				*87*	*48-136*				
Tetrachloro-m-xylene				*100*	*61-123*				
Matrix Spike 1006340-03 CH-S-3-061810					Analyzed:	06/23/2010	By: MSZ		
Unit: mg/kg dry					Analytical Batch:	0F24016			
PCB-1254	0.14 U	0.227	**0.231**	102	47-148		30	0.14	0.0092
Surrogates:									
Decachlorobiphenyl				*84*	*48-136*				
Tetrachloro-m-xylene				*90*	*61-123*				
Matrix Spike Duplicate 1006340-03 CH-S-3-061810					Analyzed:	06/23/2010	By: MSZ		
Unit: mg/kg dry					Analytical Batch:	0F24016			
PCB-1254	0.14 U	0.226	**0.229**	101	47-148	0.8	30	0.14	0.0092
Surrogates:									
Decachlorobiphenyl				*84*	*48-136*				
Tetrachloro-m-xylene				*91*	*61-123*				
QC Batch: 1006203 3510C Liquid-Liquid Extraction/USEPA-8082									
Method Blank					Analyzed:	06/24/2010	By: MSZ		
Unit: ug/L					Analytical Batch:	0F24016			
PCB-1016			0.10 U					0.10	0.043

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Polychlorinated Biphenyls (PCBs) by EPA Method 8082 (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
QC Batch: 1006203 (Continued) 3510C Liquid-Liquid Extraction/USEPA-8082									
Method Blank (Continued)					Analyzed:	06/24/2010	By: MSZ		
Unit: ug/L					Analytical Batch:	0F24016			
PCB-1221			0.10 U					0.10	0.037
PCB-1232			0.10 U					0.10	0.025
PCB-1242			0.10 U					0.10	0.036
PCB-1248			0.10 U					0.10	0.048
PCB-1254			0.10 U					0.10	0.035
PCB-1260			0.10 U					0.10	0.054
PCB-1262			0.10 U					0.10	0.036
PCB-1268			0.10 U					0.10	0.031
Surrogates:									
Decachlorobiphenyl				*84*	*52-139*				
Tetrachloro-m-xylene				*57*	*26-118*				
Laboratory Control Sample					Analyzed:	06/24/2010	By: MSZ		
Unit: ug/L					Analytical Batch:	0F24016			
PCB-1254		1.00	**1.02**	102	76-121		30	0.10	0.035
Surrogates:									
Decachlorobiphenyl				*90*	*52-139*				
Tetrachloro-m-xylene				*76*	*26-118*				
Laboratory Control Sample Duplicate					Analyzed:	06/24/2010	By: MSZ		
Unit: ug/L					Analytical Batch:	0F25011			
PCB-1254		1.00	**1.03**	103	76-121	0.8	30	0.10	0.035
Surrogates:									
Decachlorobiphenyl				*86*	*52-139*				
Tetrachloro-m-xylene				*63*	*26-118*				

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Total Metals by EPA 6000/7000 Series Methods

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
Analyte: Aluminum/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)							Analyzed: 06/28/2010		By: KLV	
Method Blank			10 U	mg/kg dry wt.					10	2.7
Laboratory Control Sample		125	**117**	mg/kg dry wt.	93	80-120		20	10	2.7
Analyte: Antimony/USEPA-6020A										
QC Batch: 1006300 (3050B Digestion)							Analyzed: 06/28/2010		By: DSC	
Method Blank			0.10 U	mg/kg dry wt.					0.10	0.045
Laboratory Control Sample		20.0	**21.3**	mg/kg dry wt.	107	80-120		20	0.10	0.045
Analyte: Arsenic/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			0.10 U	mg/kg dry wt.					0.10	0.039
Laboratory Control Sample		20.0	**22.2**	mg/kg dry wt.	111	80-120		20	0.10	0.039
1006340-13 [CH-S-7-061710]										
Matrix Spike	1.45	18.3	**1.57**	mg/kg dry wt.	**0.6**	75-125		20	0.092	0.036
Matrix Spike Duplicate	1.45	19.8	**2.21**	mg/kg dry wt.	**4**	75-125	**34**	20	0.10	0.039
Analyte: Barium/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			0.10 U	mg/kg dry wt.					0.10	0.021
Laboratory Control Sample		20.0	**22.8**	mg/kg dry wt.	114	80-120		20	0.10	0.021
Analyte: Beryllium/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			0.10 U	mg/kg dry wt.					0.10	0.031
Laboratory Control Sample		20.0	**22.4**	mg/kg dry wt.	112	80-120		20	0.10	0.031
1006340-13 [CH-S-7-061710]										
Matrix Spike	2.53	18.3	**23.2**	mg/kg dry wt.	113	75-125		20	0.092	0.028
Matrix Spike Duplicate	2.53	19.8	**22.3**	mg/kg dry wt.	100	75-125	4	20	0.10	0.031
Analyte: Cadmium/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			0.050 U	mg/kg dry wt.					0.050	0.011

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Total Metals by EPA 6000/7000 Series Methods (Continued)

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
Analyte: Cadmium/USEPA-6020A (Continued)										
QC Batch: 1006241 (Continued) (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Laboratory Control Sample		20.0	**21.7**	mg/kg dry wt.	109	80-120		20	0.050	0.011
Analyte: Calcium/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)							Analyzed: 06/28/2010		By: KLV	
Method Blank			**9.1 J**	mg/kg dry wt.					50	6.8
Laboratory Control Sample		1250	**1240**	mg/kg dry wt.	99	80-120		20	50	6.8
1006340-13 [CH-S-7-061710]										
Matrix Spike	16700	1220	**15500**	mg/kg dry wt.	**0**	75-125		20	50	6.8
Matrix Spike Duplicate	16700	1200	**13700**	mg/kg dry wt.	**0**	75-125	12	20	50	6.8
Analyte: Chromium/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			**0.090 J**	mg/kg dry wt.					0.20	0.057
Laboratory Control Sample		20.0	**22.8**	mg/kg dry wt.	114	80-120		20	0.20	0.057
Analyte: Cobalt/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			0.10 U	mg/kg dry wt.					0.10	0.0080
Laboratory Control Sample		20.0	**22.7**	mg/kg dry wt.	114	80-120		20	0.10	0.0080
1006340-13 [CH-S-7-061710]										
Matrix Spike	19.7	18.3	**32.5**	mg/kg dry wt.	**70**	75-125		20	0.092	0.0073
Matrix Spike Duplicate	19.7	19.8	**30.9**	mg/kg dry wt.	**57**	75-125	5	20	0.10	0.0080
Analyte: Copper/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/25/2010		By: MSM	
Method Blank			**0.11**	mg/kg dry wt.					0.10	0.078
Laboratory Control Sample		20.0	**21.9**	mg/kg dry wt.	110	80-120		20	0.10	0.078
Analyte: Iron/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)							Analyzed: 06/28/2010		By: KLV	
Method Blank			5.0 U	mg/kg dry wt.					5.0	0.47

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Total Metals by EPA 6000/7000 Series Methods (Continued)

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
Analyte: Iron/USEPA-6010C (Continued)										
QC Batch: 1006240 (Continued) (3050B Digestion)								Analyzed: 06/28/2010	By: KLV	
Laboratory Control Sample		25.0	**24.3**	mg/kg dry wt.	97	80-120		20	5.0	0.47
Analyte: Lead/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)								Analyzed: 06/28/2010	By: DSC	
Method Blank			0.10 U	mg/kg dry wt.					0.10	0.054
Laboratory Control Sample		20.0	**20.2**	mg/kg dry wt.	101	80-120		20	0.10	0.054
Analyte: Magnesium/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)								Analyzed: 06/28/2010	By: KLV	
Method Blank			50 U	mg/kg dry wt.					50	4.9
Laboratory Control Sample		1250	**1210**	mg/kg dry wt.	97	80-120		20	50	4.9
1006340-13 [CH-S-7-061710]										
Matrix Spike	10300	1220	**11100**	mg/kg dry wt.	**68**	75-125		20	50	4.9
Matrix Spike Duplicate	10300	1200	**9030**	mg/kg dry wt.	**0**	75-125	**21**	20	50	4.9
Analyte: Manganese/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)								Analyzed: 06/28/2010	By: KLV	
Method Blank			1.0 U	mg/kg dry wt.					1.0	
Laboratory Control Sample		25.0	**24.8**	mg/kg dry wt.	99	80-120			1.0	
1006340-13 [CH-S-7-061710]										
Matrix Spike	1020	24.4	**999**	mg/kg dry wt.	**0**	75-125			1.0	
Matrix Spike Duplicate	1020	24.0	**733**	mg/kg dry wt.	**0**	75-125	**31**	20	1.0	
Analyte: Mercury/USEPA-7471A										
QC Batch: 1006352 (7471A Mercury Digestion)								Analyzed: 06/29/2010	By: DSC	
Method Blank			0.050 U	mg/kg dry wt.					0.050	0.016
Laboratory Control Sample		0.333	**0.323**	mg/kg dry wt.	97	80-120		20	0.050	0.016
Analyte: Nickel/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)								Analyzed: 06/28/2010	By: KLV	
Method Blank			1.0 U	mg/kg dry wt.					1.0	0.95

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Total Metals by EPA 6000/7000 Series Methods (Continued)

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
Analyte: Nickel/USEPA-6010C (Continued)										
QC Batch: 1006240 (Continued) (3050B Digestion)								Analyzed: 06/28/2010	By: KLV	
Laboratory Control Sample		25.0	**24.5**	mg/kg dry wt.	98	80-120		20	1.0	0.95
1006340-13 [CH-S-7-061710]										
Matrix Spike	357	24.4	**359**	mg/kg dry wt.	**11**	75-125		20	1.0	0.95
Matrix Spike Duplicate	357	24.0	**421**	mg/kg dry wt.	**268**	75-125	16	20	1.0	0.95
Analyte: Potassium/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)								Analyzed: 06/28/2010	By: KLV	
Method Blank			50 U	mg/kg dry wt.					50	7.2
Laboratory Control Sample		1250	**1210**	mg/kg dry wt.	97	80-120		20	50	7.2
1006340-13 [CH-S-7-061710]										
Matrix Spike	595	1220	**1680**	mg/kg dry wt.	89	75-125		20	50	7.2
Matrix Spike Duplicate	595	1200	**1460**	mg/kg dry wt.	**72**	75-125	14	20	50	7.2
Analyte: Selenium/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)								Analyzed: 06/25/2010	By: MSM	
Method Blank			0.20 U	mg/kg dry wt.					0.20	0.088
Laboratory Control Sample		20.0	**20.9**	mg/kg dry wt.	105	80-120		20	0.20	0.088
1006340-13 [CH-S-7-061710]										
Matrix Spike	1.11	18.3	**1.49**	mg/kg dry wt.	**2**	75-125		20	0.18	0.081
Matrix Spike Duplicate	1.11	19.8	**1.95**	mg/kg dry wt.	**4**	75-125	**27**	20	0.20	0.088
Analyte: Silver/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)								Analyzed: 06/24/2010	By: MSM	
Method Blank			0.050 U	mg/kg dry wt.					0.050	0.011
Laboratory Control Sample		20.0	**21.9**	mg/kg dry wt.	109	80-120		20	0.050	0.011
Analyte: Sodium/USEPA-6010C										
QC Batch: 1006240 (3050B Digestion)								Analyzed: 06/28/2010	By: KLV	
Method Blank			50 U	mg/kg dry wt.					50	5.2

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Total Metals by EPA 6000/7000 Series Methods (Continued)

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
Analyte: Sodium/USEPA-6010C (Continued)										
QC Batch: 1006240 (Continued) (3050B Digestion)							Analyzed: 06/28/2010		By: KLV	
Laboratory Control Sample		1250	**1220**	mg/kg dry wt.	97	80-120		20	50	5.2
1006340-13 [CH-S-7-061710]										
Matrix Spike	184	1220	**1360**	mg/kg dry wt.	96	75-125		20	50	5.2
Matrix Spike Duplicate	184	1200	**1200**	mg/kg dry wt.	84	75-125	13	20	50	5.2
Analyte: Thallium/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			0.050 U	mg/kg dry wt.					0.050	0.016
Laboratory Control Sample		20.0	**22.6**	mg/kg dry wt.	113	80-120		20	0.050	0.016
1006340-13 [CH-S-7-061710]										
Matrix Spike	<RLU	18.3	**17.9 J**	mg/kg dry wt.	97	75-125		20	46	15
Matrix Spike Duplicate	<RLU	19.8	**17.8 J**	mg/kg dry wt.	90	75-125	0.3	20	50	16
Analyte: Vanadium/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			**0.044 J**	mg/kg dry wt.					0.10	0.040
Laboratory Control Sample		20.0	**22.8**	mg/kg dry wt.	114	80-120		20	0.10	0.040
1006340-13 [CH-S-7-061710]										
Matrix Spike	2.07	18.3	**22.3**	mg/kg dry wt.	110	75-125		20	0.092	0.036
Matrix Spike Duplicate	2.07	19.8	**23.8**	mg/kg dry wt.	110	75-125	6	20	0.10	0.040
Analyte: Zinc/USEPA-6020A										
QC Batch: 1006241 (3050B Digestion)							Analyzed: 06/24/2010		By: MSM	
Method Blank			**1.8**	mg/kg dry wt.					1.0	0.46
Laboratory Control Sample		20.0	**22.4**	mg/kg dry wt.	112	80-120		20	1.0	0.46

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Physical / Chemical Parameters by EPA / APHA / ASTM Methods

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL	MDL
Analyte: Percent Solids/USEPA-3550B										
QC Batch: 1006222 (Method-Specific Preparation)							Analyzed: 06/23/2010		By: CLB	
Method Blank			0.1 U	%					0.1	0.1
1006340-01 [CH-S-1-061810]										
Duplicate	86		**87**	%			1	20	0.1	0.1

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

STATEMENT OF DATA QUALIFICATIONS

Total Metals by EPA 6000/7000 Series Methods

Qualification: The analyte concentration in the associated MB was greater than or equal to the RL. The positive sample result, which was greater than 5 times the MB value, is not considered estimated.

Analysis: USEPA-6020A

Sample/Analyte:		
1006340-13	CH-S-7-061710	Copper
1006340-13	CH-S-7-061710	Zinc
1006340-14	CH-S-8-061710	Copper
1006340-14	CH-S-8-061710	Zinc
1006340-15	CH-S-9-061710	Copper
1006340-15	CH-S-9-061710	Zinc
1006340-16	CH-S-10-061710	Copper
1006340-16	CH-S-10-061710	Zinc
1006340-17	CH-S-11-061710	Copper
1006340-17	CH-S-11-061710	Zinc
1006340-18	CH-S-12-061710	Copper
1006340-18	CH-S-12-061710	Zinc
1006340-19	CH-S-13-061710	Copper
1006340-19	CH-S-13-061710	Zinc

Qualification: The % difference in results between the sample and a serial dilution of the sample exceeded the control limit. Sample matrix interference is suspected and the reported result is considered estimated.

Analysis: USEPA-6020A

Sample/Analyte:		
1006340-13	CH-S-7-061710	Barium
1006340-13	CH-S-7-061710	Zinc

Qualification: The post-digestion spike recovery for this sample was outside the control limit. Sample matrix interference is suspected and the reported result must be considered as estimated.

Analysis: USEPA-6020A

Sample/Analyte:		
1006340-13	CH-S-7-061710	Selenium

Qualification: This analyte was not present in this sample at a concentration greater than 100 times the MDL, therefore serial dilution is not required.

Analysis: USEPA-6020A

Sample/Analyte:		
1006340-13	CH-S-7-061710	Selenium
1006340-13	CH-S-7-061710	Vanadium

Qualification: The MS and/or MSD recovery was outside the control limit. The non-spiked sample result is considered estimated.

Analysis: USEPA-6020A

Sample/Analyte:		
1006340-13	CH-S-7-061710	Arsenic
1006340-13	CH-S-7-061710	Cobalt
1006340-13	CH-S-7-061710	Selenium

Qualification: The RPD between the MS and MSD results exceeded the control limit. The non-spiked sample result is considered estimated.

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

STATEMENT OF DATA QUALIFICATIONS

Total Metals by EPA 6000/7000 Series Methods (Continued)

Qualification: The RPD between the MS and MSD results exceeded the control limit. The non-spiked sample result is considered estimated.

Analysis: USEPA-6010C

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Magnesium
	1006340-13	CH-S-7-061710	Manganese

Analysis: USEPA-6020A

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Arsenic
	1006340-13	CH-S-7-061710	Selenium

Qualification: The MS and/or MSD recovery was outside the control limit. The non-spiked sample concentration for the same analyte was greater than or equal to 4 times the spiked amount; the non-spiked sample result is not qualified.

Analysis: USEPA-6010C

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Calcium
	1006340-13	CH-S-7-061710	Magnesium
	1006340-13	CH-S-7-061710	Manganese
	1006340-13	CH-S-7-061710	Nickel

Qualification: The MS or MSD recovery, but not both, was outside the control limit. The RPD is within the control limit. The unspiked sample result is not qualified.

Analysis: USEPA-6010C

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Potassium

Qualification: Matrix QC results are not available due to sample dilution.

Analysis: USEPA-6010C

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Aluminum
	1006340-13	CH-S-7-061710	Iron

Analysis: USEPA-6020A

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Antimony
	1006340-13	CH-S-7-061710	Barium
	1006340-13	CH-S-7-061710	Cadmium
	1006340-13	CH-S-7-061710	Chromium
	1006340-13	CH-S-7-061710	Copper
	1006340-13	CH-S-7-061710	Lead
	1006340-13	CH-S-7-061710	Silver
	1006340-13	CH-S-7-061710	Zinc

Analysis: USEPA-7471A

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Mercury

Qualification: Due to sample matrix-related Internal Standard failure, the sample was reanalyzed at dilution. The RL for this analyte has been elevated.

Analysis: USEPA-6020A

Sample/Analyte:			
	1006340-13	CH-S-7-061710	Thallium
	1006340-15	CH-S-9-061710	Thallium

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

STATEMENT OF DATA QUALIFICATIONS

Total Metals by EPA 6000/7000 Series Methods (Continued)

Qualification: Due to sample matrix-related Internal Standard failure, the sample was reanalyzed at dilution. The RL for this analyte has been elevated.

Analysis: USEPA-6020A

Sample/Analyte:		
1006340-16	CH-S-10-061710	Chromium
1006340-16	CH-S-10-061710	Cobalt
1006340-16	CH-S-10-061710	Selenium
1006340-16	CH-S-10-061710	Vanadium

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No. 134061

Pg. 1 of 4

For Lab Use Only

Cart: 7
VOA Rack/Tray: —
Receipt Log No.: 23-6
Project Chemist: MH
Work Order No.: 1006340

Client Name: USEPA / Weston
Address: 4000 E. Lakeshore Dr. Ste 200
City, State Zip: Houghton, MI 49931
Phone/Fax: 906 482-2362
Email: daniel.liebau@westonsolutions.com

Project Name: CHPP
Client Project No. / P.O. No.:
Invoice To: ☐ Client ☐ Other (comments)
Contact/Report To:

Analyses Requested: PCB-9 aroclors (water); TAL Metals; PCB (soil)

Container Type (corresponds to Container Packing List): 2 17 17

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Schedule	Matrix Code	Sample Number		Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Number of Containers Submitted	Total	Sample Comments
D	SO	01	1	CH-S-1-061810	2	6-18-10			X	S	1 X (1)	(1)	
		02	2	CH-S-2-061810					X	S	1 X (1)	(1)	
		03	3	CH-S-3-061810 ✓					X	S	1 X (1)	(1)	
		04	4	CH-S-4-061810					X	S	1 X (1)	(1)	
		05	5	CH-S-5-061810					X	S	1 X (1)	(1)	
		06	6	CH-S-6-061810					X	S	1 X	(1)	
A	W	07	7	CH-W-1-061610		6-16-10			X	W	(1) X 1	(1)	
A	W	08	8	CH-W-3-061610					X	W	(1) X 1	(1)	
see COC 134062			9	CH-W-MSMSD					X	W	(2) X 2	(1)	1 Broken Container
			10										

Cooler ID: 2532 (1745 struck, LR 6/19/10)

Sampled By (print): J. Nutini
Sampler's Signature: [signature]
Company: Weston

How Shipped? Hand ___ Carrier FedEx
Tracking No.

Comments: "X" I marked the COC based on the tests listed on the sample jars. —MH 6.21.10 (MH 6.21.10)

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
[signature]	6/18/10	1330						
1. Received By	**Date**	**Time**	**2. Received By**	**Date**	**Time**	**3. Received For Lab By**	**Date**	**Time**
						[signature] Romeyn	6/19/10	0900

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

2-4 ~~7-4~~ LL 6/19/10

TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No. 134059

Pg. 1 of 2

For Lab Use Only
Cart: 7
VOA Rack/Tray:
Receipt Log No.: 23-6
Project Chemist: MH
Work Order No.: 1006340

U. EPA / Weston

Client Name: 1600 E. Lakeshore Dr. Ste 200
Address:
City, State Zip: Houghton, MI 49931
Phone/Fax: 906-482-2362
Email: daniel.liebau@westonsolutions.com

Project Name: CHPP
Client Project No. / P.O. No.:
Invoice To: ☑ Client ☐ Other (comments)
Contact/Report To:

Analyses Requested: PCBs - 9 aroclors; TAL Metals

Container Type (corresponds to Container Packing List): 2 | 17

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Number of Containers Submitted	Total	Sample Comments
				1945								
A	W	09	1 CH-W-6-061810	1	6/18/10			X	W	1X	1	
|	|	10	2 CH-W-7-061810	|	|	|		X	W	1X	1	
|	|	11	3 CH-W-8-061810	|	|	|		X	W	1X	1	
RCVD Broken			4 CH-W-4-061610		6-16-10			X	W	1	X	RCVD Broken - LMH
A	W	12	5 CH-W-DUP (CH-W-4) ← log in as	|	|	|		X	W	1X	1	Dup of CH-W-4 - LMH
B	SO	13	6 CH-S-7-061810 JM	|	6-18-10 JM	|		X	S	1X	1	
B	|	14	7 CH-S-8-061810 JM	|	|	|		X	S	1X	1	
B	|	15	8 CH-S-9-061810 JM	|	|	|		X	S	1X	1	
B	|	16	9 CH-S-10-061810 JM	|	|	|		X	S	1X	1	
B	|	17	10 CH-S-11-061810 JM	↓	↓	↓		X	S	1X	1	

Sampled By (print): J. Nutini
Sampler's Signature: [signature]
Company: Weston

How Shipped? Hand ___ Carrier Fedex
Tracking No.:

1. Relinquished By: [signature] Date 6/18/10 Time 1330
1. Received By: [signature] Date Time

2. Relinquished By: Date Time
2. Received By: Date Time

3. Relinquished By: Date Time
3. Received For Lab By: [signature] Date 6/19/10 Time 0900

Comments: Please contact Lisa Grayek w/ any questions about analyses.

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

3/4 ~~2-4~~ LR 6/19/10

TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No. 134060

Pg. 2 of 2

For Lab Use Only
Cart: 7
VOA Rack/Tray: —
Receipt Log No.: 23-6
Project Chemist: LMH
Work Order No.:

Client Name: USEPA/Weston
Address: 600 E. Lakeshore Dr. Ste 200
City, State Zip: Houghton, MI 49931
Phone/Fax: 906-482-2362
Email: daniel.liebau@westonsolutions.com

Project Name: CHPP
Client Project No. / P.O. No.:
Invoice To: ☑ Client ☐ Other (comments)
Contact/Report To:

Analyses Requested: Metals (7AL)

Container Type (corresponds to Container Packing List): 17

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Number of Containers Submitted	Total	Sample Comments
B	SO	18	CH-S-12-061810 (JJN)	1	6/18/10 (17)			X	S	1X	(1)	
B	SO	19	CH-S-13-061810 (JJN)	↓	↓			X	S	1X	(1)	

Sampled By (print): J. Nutini
Sampler's Signature: [signature]
Company: Weston

How Shipped? Hand ___ Carrier Fedex
Tracking No.:

Comments: Same as Page 1 of 2.

	Relinquished By	Date	Time	Received By	Date	Time
1	[signature]	6/18/10	1330	[signature]		
2						
3				Received For Lab By: [signature]	6/19/10	0900

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

4/4

TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No. 134062

Pg. 1 of 1

For Lab Use Only
Cart 7
VOA Rack/Tray
Receipt Log No.
Project Chemist VMH
Work Order No. 1006340

Client Name: USEPA/Weston
Address: 600 E. Lakeshore Dr. Ste. 200
City, State Zip: Houghton, MI 49931
Phone/Fax: 906-482-2362
Email: Janice.Liebau@westonsolutions.com

Project Name: CHPP
Client Project No. / P.O. No.
Invoice To: ☐ Client ☐ Other (comments)
Contact/Report To

Analyses Requested

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

Container Type (corresponds to Container Packing List): 2
Number of Containers Submitted

Schedule	Matrix Code	Sample Number	Field Sample ID	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix		Total	Sample Comments
				1715								
A	W	20	1 CH-W-2-061610	3	6/16/10			X	W	1*	1	
C	W	21	2 CH-W-5-061610	↓	↓			X	W	1*	2	+ MS/MSD - Unfiltered from COC 134061
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

Sampled By (print): J. Nutini
Sampler's Signature
Company: Weston

How Shipped? Hand ___ Carrier Fedex
Tracking No.

Comments

1. Relinquished By	Date	Time	2. Relinquished By	Date	Time	3. Relinquished By	Date	Time
	6/18/10	1330						
1. Received By	Date	Time	2. Received By	Date	Time	3. Received For Lab By	Date	Time
							6/19/10	0900

WHITE COPY - REPORT YELLOW COPY - LABORATORY PINK COPY - FIELD

SAMPLE RECEIVING / LOG-IN CHECKLIST

TRIMATRIX LABORATORIES

Client: USEPA / Weston | Work Order #: New / Add To: 1006340
Receipt Record Page/Line #: 23-6 | Project Chemist: SMH | Sample #s: 01-21

Recorded by (initials/date): LR 6/19/10

☑ Cooler ☐ Box ☐ Other ____ | Qty Received: 3

Thermometer Used: ☑ IR Gun (#202) ☐ Digital Thermometer (#54) ☐ Other (#____) | ☐ See Additional Cooler Information Form

Cooler #	2532	1745	1015	
Time	1033	1037	1040	
Custody Seals:	☐ None ☑ Present / Intact ☐ Present / Not Intact	☐ None ☑ Present / Intact ☐ Present / Not Intact	☐ None ☑ Present / Intact ☐ Present / Not Intact	☐ None ☐ Present / Intact ☐ Present / Not Intact
Coolant Location:	Dispersed / Top / (Middle) / Bottom	Dispersed / Top / (Middle) / Bottom	Dispersed / Top / (Middle) / Bottom	Dispersed / Top / Middle / Bottom
Coolant/Temperature Taken Via:	☐ Loose Ice / Avg 2-3 containers ☑ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ■ None / Avg 2-3 containers	☐ Loose Ice / Avg 2-3 containers ☑ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ■ None / Avg 2-3 containers	☐ Loose Ice / Avg 2-3 containers ☑ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ■ None / Avg 2-3 containers	☐ Loose Ice / Avg 2-3 containers ☐ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ■ None / Avg 2-3 containers
Alternate Temperature Taken Via:	☑ Temperature Blank (TB) ☐ 1 Container	☐ Temperature Blank (TB) ☐ 1 Container	☑ Temperature Blank (TB) ☐ 1 Container	☐ Temperature Blank (TB) ☐ 1 Container
Recorded °C / Correction Factor °C / Actual °C				
Temp Blank:	— / 12.9	/	— / 9.4	/
TB location: (Representative) / Not Representative			(Representative) / Not Representative	Representative / Not Representative
1	9.7 / — / 9.7	10.6 / — / 10.6	10.6 / — / 10.6	/
2	9.2 / — / 9.2	11.2 / — / 11.2	10.2 / — / 10.2	/
3	10.2 / — / 10.2	11.3 / — / 11.3	/	/
Average °C	9.7	11.0	10.4	
☐ Cooler ID on COC?				
☐ VOC Trip Blank received?				

If any shaded areas checked, complete Sample Receiving Non-Conformance Form

Paperwork Received

☐ No COC Received

N/A	Yes	No	
	☑	☐	Chain of Custody record(s)?
	☐		If No, COC Initiated By ____
	☑		Rec'd for Lab Signed/Date/Time?
☐	☑	☐	Shipping document?
☑	☐		Other ____

COC ID #s

☐ TriMatrix 134061, 134059, 134060, 134062

☐ Other (Name or ID#) ____

Check COC for Accuracy

☐ No analysis requested

Yes	No	
☑	■	Sample ID matches COC?
☑	■	Sample Date and Time matches COC?
☑		Container type completed on COC?
☑	■	All container types indicated are received?

Sample Condition Summary

☐ Non-TriMatrix containers, see Notes

N/A	Yes	No	
	■	☐	Broken containers/lids?
		☑	Missing or incomplete labels?
		☑	Illegible information on labels?
		☑	Low volume received?
		☑	Inappropriate containers received?
☑		☐	VOC vials / TOX containers have headspace?
☑		☐	Extra sample locations / containers not listed on COC?

Check Sample Preservation

N/A	Yes	No	
	☐	■	Average sample temperature ≤6° C?
☑	☐		Completed Sample Preservation Verification Form?
☑	☐	■	Samples preserved correctly?
☑	☐		If "No", added orange tag?
☑	☐		Received pre-preserved VOC soils?

☐ MeOH ☐ Na_2SO_4

Check for Short Hold-Time Prep/Analyses

☐ Bacteriological
☐ Air Bags
☐ EnCores / Methanol Pre-Preserved
☐ Formaldehyde/Aldehyde
☐ Green-tagged containers
☐ Yellow/White-tagged 1L ambers (SV Prep-Lab)

AFTER HOURS ONLY:
COPIES OF COC TO LAB AREA(S)
☑ NONE RECEIVED
☐ RECEIVED, COCs TO LAB(S)

Notes

☐ Trip Blank received ☐ Trip Blank not listed on COC
☐ No COC received, Proj. Chemist reviewed (Init/Date) ____
☐ No analysis requested, Proj. Chemist completed (Init/Date) ____

Cooler Received (Date/Time)	Paperwork Delivered (Date/Time)	≤1 Hour Goal Met?
6/19/10 LR	6/19/10 LR	(Yes) / No

TRIMATRIX LABORATORIES

SAMPLE RECEIVING NON-CONFORMANCE REPORT

Client: Weston
Receipt Log #: 23-4
Completed By (initials/date): LR 6/19/10
Work Order #: 1006340
Project Chemist: MH

List non-conformance issues associated with this work order in the chart below/left. Identify discrepancies between the COC and sample tags in the chart below/right. Add comments as needed.

COC ID #	Line #	Type of Problem: Discrepancy	Missing Container	Broken Container	Label Missing / Incomplete	Label Illegible	Low Volume	Inappropriate Container	Headspace	Not Listed on COC	Preservation	COC: Sample Field ID	Date Sampled	Time Sampled	Container Type	Qty	Sample Tag: Sample Field ID	Date Sampled	Time Sampled	Container Type	Qty	Line Item Comments
134061	9			✓												2	★ CH-W-MS/MSD	6/16	–	2	1	Broken container
134059	4			✓							✓					1	CH-W-4-060610	6/16/10	–	2	1	Broken lid lost all ★★ Sample

General Comments:
Temps = 9.7°C
11.0°C
10.4°C

★ CH-W-MS/MSD COC WITH CH-W-5 WE DON'T HAVE ENOUGH FOR 3 ONLY 2 JARS AVAILABLE

★★ CH-W-Dup IS THE SAME AS CH-W-4 [redacted] (PER DAN @ WESTON)

Project Chemist (initials/date): MH 6.21.10