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**TRANSMITTAL LETTER**

TO: MDEQ Environmental Response Division  
1990 US 41 South  
Marquette, MI 49855

DATE: 11/13/01	PROJECT NO: 003-21426
ATTENTION:	
RE: Baseline Environmental Assessment	
Tamarack Stamp Mill	
Osceola Township, MI	

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 If checked, please acknowledge receipt of enclosures

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1	11/08/2001		Baseline Environmental Assessment



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COPY TO: Mr. Dave Wiitanen, Supervisor      
\_\_\_\_\_

SIGNED: Melanie Needham  
Melanie Needham

**BASELINE ENVIRONMENTAL ASSESSMENT  
OF  
TAMARACK STAMP MILL IN OSCEOLA TOWNSHIP  
PORTIONS OF SECTION 13, T55N, R33W  
OSCEOLA TOWNSHIP, HOUGHTON COUNTY, MICHIGAN**



**BASELINE ENVIRONMENTAL ASSESSMENT  
OF THE  
AHMEEK (TAMARACK CITY) STAMP MILL  
IN  
PORTIONS OF SECTION 13, T55N, R33W  
OSCEOLA TOWNSHIP, HOUGHTON COUNTY, MICHIGAN**

Prepared For:

Osceola Township  
Mr. Dave Wiitanen, Supervisor  
P.O. Box 437  
Dollar Bay, Michigan 49922

Prepared By:

U.P. Engineers & Architects, Inc.  
100 Portage Street  
Houghton, Michigan 49931

November 8, 2001

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- C. Laboratory Analytical Reports



FOR DEQ USE ONLY  
BEA Disclosure # B200100243MA

DISCLOSURE OF A BASELINE ENVIRONMENTAL ASSESSMENT  
(FORM EQP4446(REV.3/99))

(Under the authority of Part 201, 1994 Act 451, as amended, and the Rules promulgated thereunder)



DO NOT use this form for requesting a Baseline Environmental Assessment ("BEA") adequacy determination OR if the property is not a facility, OR if the BEA was complete before the effective date of the BEA rules. Please answer the following questions as completely as possible.

Name and address of submitter\*  
(individual or legal entity):

Osceola Township  
P.O. Box 437  
Dollar Bay, MI 49922

Status relative to the property:

Former Current Prospective  
Owner\*     
Operator\*

Address/location of property where  
BEA was conducted:

Ahmeek (Tamarack City) Stamp Mill  
Section 13, T55N, R33W  
Osceola Township, Michigan

County: Houghton

Provide the property tax identification number(s) or, if applicable, the ward and item number(s) for the property identified in the BEA. Required pursuant to Rule 907.

31-009-161-001-00, 31-009-160-004-00, 31-009-156-001-00, and 31-009-155-001-00.

Contact person: Mr. Dave Wiitanen, Township Supervisor

Telephone #: (906) 482-8578

If the address of the person seeking liability protection above is different from the address that should be used to correspond with the contact person, please provide the contact person's address:

Same Address

Check the appropriate response to each of the following questions.

1. Is it known that the source of contamination at the property is primarily from any of the following?

- A leaking underground storage tank (UST) regulated under Part 213, 1994 PA 451, as amended. YES  NO
- A licensed landfill or solid waste management facility. YES  NO
- A licensed hazardous waste treatment, storage, or disposal facility. YES  NO
- Oil and gas development related activities. YES  NO

The source of the release that resulted in this property becoming a "facility" will determine which DEQ division will maintain a file regarding this BEA.

2. Based on the Part 201 Rules, this BEA is a:

- Category N
- Category D
- Category S

3. Is the property at which the BEA was conducted a "facility"\* as defined by Section 20101? If the answer to this question is NO, do not submit the BEA to the DEQ.

YES  NO

4. Was the BEA conducted\* prior to or within 45 days after the date of purchase\*, occupancy, or foreclosure of the property, whichever is earliest, and completed\* not more than 15 days after the date required by Section 20126(1)(c) or Rule 299.5903(8)? If the answer to either portion of this question is no, you are ineligible for an exemption from liability based on the BEA. YES  NO
5. Is the BEA being disclosed to the DEQ no later than 8 months after the earliest of the date of purchase, occupancy, or foreclosure? All disclosures pursuant to Rule 919(3) must be submitted to the DEQ no later than 8 months after the earliest of the date of purchase, occupancy, or foreclosure. YES  NO
6. Are any USTs or abandoned or discarded containers identified in the BEA? If yes, this information must be provided on Form EQP4476. YES  NO
7. Does this BEA rely on an isolation zone or an engineering control that requires an affidavit pursuant to Rule 299.5909(3) or 299.5909(4)? If yes, a completed affidavit, Form EQP4479, must be attached or the BEA will not be considered complete. YES  NO

With my signature below, I certify that the enclosed BEA and all related materials are complete and accurate to the best of my knowledge and belief. I understand that intentionally submitting false information to the DEQ is a felony and may result in fines up to \$25,000 for each violation.


Signature of Submitter: Mary Ann Wiitanen 11-8-01  
 (Person legally authorized to bind the person seeking liability protection) Date

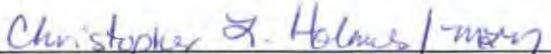
Name (Typed or Printed) Mr. Dave Wiitanen MW  
 Title Township Supervisor

## 1.0 IDENTIFICATION OF AUTHOR AND DATE OF BEA COMPLETION

This Baseline Environmental Assessment for the Ahmeek (Tamarack City) Stamp Mill subject property in Osceola Township, Michigan was conducted on October 19, 2001 and completed on November 8, 2001. The person with the primary responsibility for data interpretation and technical conclusions was William F. Griffin, Ph.D., P.E. The person with primary responsibility for data collection and assembly was Christopher L. Holmes, E.I.T.

### SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

  
William F. Griffin, Ph.D., P.E.  
Project Manager

  
Christopher L. Holmes, E.I.T.  
Environmental Engineer

## 2.0 INTRODUCTION

U.P. Engineers & Architects, Inc. (UPEA) was retained by Osceola Township, Dave Wiitanen Supervisor, to perform a Baseline Environmental Assessment (BEA) of the Ahmeek (Tamarack) Stamp Mill located in portions of the Southwest  $\frac{1}{4}$  of the Northwest  $\frac{1}{4}$  of the Northeast  $\frac{1}{4}$  of Section 13, Township 55 North, Range 33 West, Osceola Township, Houghton County, Michigan. The project location is shown in Figure 1. The mill was properly known as the Ahmeek Stamp Mill. The property was donated and purchased from Superior Crafts Inc., and herein called the subject property. Title to the subject property, was acquired by Osceola Township on September 10, 2001.

This BEA has been performed to evaluate the environmental conditions of the site. The BEA has been performed in accordance with the requirements of the "Instructions for Preparing and Disclosing Baseline Environmental Assessments and Section 7a Compliance Analyses to the Michigan Department of Environmental Quality and for Requesting Optional Determinations", dated March 11, 1999. The purpose of the work described in this report was to investigate the environmental conditions in accordance with the requirements for a Category N BEA.

Historically, the subject property was associated with the mining industry, particularly the stamp mill process. The stamping mill was one part of the process used to separate native copper from the host rock.

UPEA collected five soil samples on October 19, 2001. Soil analytical results show concentrations of multiple chemicals exceed Part 201 Generic Residential Cleanup Criteria (GRCC). Therefore, the subject property meets the definition of a Facility as defined in Section 1 (1)(o) of Part 201, Environmental Remediation, of the National Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended. Soil contamination was identified exceeding Part 201 Generic Residential Direct Contact, Groundwater/Surface Water Interface Protection, and Drinking Water Protection Criteria for

multiple chemicals.

The scope of work to prepare this Category N BEA included general definition of possible contamination in surface soils on the subject property and conclusions as to the likelihood that other hazardous substances are also present on the subject property, in general conformance with ASTM Standard E 1527-2000, Phase I Environmental Site Assessment (ESA).

### **3.0 PROPERTY DESCRIPTION AND INTENDED HAZARDOUS SUBSTANCE USE**

#### **3.1 Property Description**

The subject property is located in the Southwest Quarter of the Northwest Quarter of the Northeast Quarter of Section 13, Township 55 North, Range 33 West, Osceola Township, Houghton County, Michigan. Figure 1 is a project location map, which shows the property relative to nearby roadways and surface water bodies. A legal description of the subject property is included on the property deeds contained in Appendix A. Figure 2 is a scaled map of the subject property. The taxpayer identification numbers for the subject property are 31-009-161-001-00; 31-009-160-004-00; 31-009-156-001-00, and 31-009-155-001-00. The subject property is comprised of 34 parcels, which encompasses a total area of approximately 4.2 acres.

The site is bounded to the north by Highway M-26, to the east by residential property, to the south by undeveloped parcels of land, and to the west by additional residential property. A BEA has not been previously submitted for the subject property.

The subject site includes both unpaved and paved areas. The site slopes slightly to the southeast. Water and sewer services are not currently present at the site, however, the services are present in the surrounding residential areas. Currently, the site contains the concrete rubble of the stamp mill structure and associated activities on-site. Photographs of the site are included in Appendix B. Locations of the photographs are shown on Figure 4.

#### **3.2 Intended Hazardous Substance Use**

The purchaser of the subject property, Osceola Township, will not be using any significant quantities of hazardous substances at the subject property. According to Dave Wiitanen, the township supervisor, the site will be used as an historical interpretive park. None of the planned activities will require the use of significant quantities of hazardous substances. This is the basis for being able to distinguish existing contamination from a new release.



## 4.0 KNOWN CONTAMINATION

The site has been shown to contain benzo(a)pyrene, carbazole, fluoranthene, phenanthrene, total arsenic, total barium, total cadmium, total chromium, total copper, total lead, total mercury, total nickel, total selenium, total silver, and total zinc in the soil, with concentrations greater than Part 201 Generic Residential Cleanup Criteria, as listed in the Part 201 Generic Cleanup Criteria and Screening Levels, June 7, 2000. No groundwater samples were collected on-site. The following sections describe the methods and results related to the soil investigation. This investigation was limited and was intended to provide a general baseline for environmental conditions in the soil.

### 4.1 Methods of Investigation

UPEA conducted an environmental investigation of the subject property on October 19, 2001. The investigation for the subject parcel included an evaluation of the surface soils and above ground structures at the site.

UPEA collected five soil samples on October 19, 2001. Five soil samples, identified as: Stack, Concrete Floor, Door Jam, Track Turn, and SS Pile were collected via a hand auger and sampling spoon. The following discussion is a summary of the soil boring locations. Soil boring locations are illustrated on Figure 3.

The soil sample labeled "Stack" was collected from the area believed to have contained one of the old smoke stacks. The stack sample was collected from within an apparent ring foundation located in Block 10, Lots 8 or 9. The "Concrete Floor" sample contained soils collected off a concrete slab positioned at the surrounding ground level. The concrete floor sample was collected northeast of the stack sample in Block 10, Lots 7 or 8. The soil boring labeled "Door Jam", was collected from the base of a doorway on the south side of the southernmost concrete support structures remaining on-site. The Door jam was collected from Block 6, Lots 3 or 4. The soil boring labeled "Track Turn" was collected from the area surrounding what appeared to be a small turntable utilized to turn small tram cars, or their equivalent. The Track Turn sample was collected southeast of the door jam sample in Block 6, Lot 4. The soil sample labeled "SS Pile" was collected from a stamp sand pile dumped on the northeast side of the property. The SS Pile sample was collected from Block 11, lot 7. The sample locations are shown in Figure 3.

Soil samples were collected with a stainless steel spoon from the top six inches of soil, where available. Samples collected from the concrete floor and door jam were collected from 0-3" below ground surface, due to restricting layers (concrete). The metal spoon was cleaned and washed with Trisodium phosphate soap after each sample was collected to eliminate cross contamination from one sample to the next.

Soil samples collected from all location areas were submitted to the laboratory for chemical analysis. Sampling locations were selected based on visual staining or olfactory indications of contamination and/or professional judgment of the project engineer. Chain of custody protocol was followed from time of sample collection through laboratory analysis of samples. The selected laboratory was Brighton Analytical, LLC, of Brighton, Michigan. Laboratory analytical data reports are included in Appendix C.

The following is a summary of chemicals that were analyzed in each sample.

- Halogenated and Aromatic Volatile Organics: Tracks and Door Jam.
- Semi-Volatile Organics: Tracks and Door Jam.
- Michigan Metals and nickel (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc): Tracks, Stacks, Concrete Floor, Door Jam, Track Turn, and SS Pile (all collected samples).
- PNAs: Stack, Concrete Floor, Track Turn, and SS Pile.
- PCBs: Door Jam.

#### **4.2 Subsurface Conditions**

Because all soil samples were taken from no more than six to eight inches below the existing ground surface, no specific subsurface conditions were investigated.

#### **4.3 Laboratory Analytical Results**

Five soil samples were collected at the site and submitted for further chemical analysis. Laboratory analytical data reports have been included as Appendix C. All soil samples had concentrations of chemicals of concern (COC) that exceeded Part 201 Generic Residential Cleanup Criteria. The six soil samples had chemical concentrations that exceeded Part 201 Generic Residential Direct Contact, Drinking Water Protection, and Groundwater Surface Water Interface Protection Criteria. Table 1 is a summary of soil analytical results exceeding Part 201 Generic Residential Cleanup Criteria. Also included in Table 1 is the Chemical Abstract Service (CAS) number and applicable Part 201 GRCC for each chemical detected above Part 201 GRCC.

As noted in Table 1, the Stack soil sample had concentrations of arsenic, barium, chromium, copper, lead, and selenium that exceeded Part 201 Drinking Water Protection, Groundwater Surface Water Interface Protection or Direct Contact Criteria. The Concrete Floor soil sample had concentrations of arsenic, barium, chromium, copper, lead, mercury, nickel, selenium, zinc, benzo(a)pyrene, fluoranthene, and phenanthrene that exceeded Part 201 Drinking Water Protection, Groundwater Surface Water Interface Protection or Direct Contact Criteria. The Door Jam soil sample had concentrations of arsenic, barium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, benzo(a)pyrene, carbazole, fluoranthene, and phenanthrene that exceeded Part 201 Drinking Water Protection, Groundwater Surface Water Interface Protection or Direct Contact Criteria. The Track Turn soil sample had concentrations of arsenic, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, benzo(a)pyrene, and phenanthrene that exceeded Part 201 Drinking Water Protection, Groundwater Surface Water Interface Protection or Direct Contact Criteria. The SS Pile soil sample had concentrations of chromium, copper, nickel, and selenium that exceeded Part 201 Groundwater Surface Water Interface Protection Criteria.

The basis for concluding that the subject site is a facility is because of the presence of chemical concentrations in excess of Part 201 Generic Residential Cleanup Criteria. Therefore, the subject property meets the definition of a "facility" as defined in Section 1(1)(O) of Part 201 of Public Act 451 of 1994, as amended.

Other hazardous substances present at concentrations above the detection limits but below Part 201 GRCC are included in Table 2.

#### 4.4 Discarded or Abandoned Containers

There were no abandoned or discarded containers, above ground storage tanks, or underground storage tanks observed or reported on the subject property.

#### 4.5 Locations of Known Soil Contamination

The following areas on the site have been identified as being contaminated above Part 201 Generic Residential Cleanup Criteria.

Contaminated soils were identified at all sample locations. Sample locations are illustrated on Figure 3 and were discussed in Section 4.1. Soils in these areas have been contaminated with hazardous substances with concentrations exceeding Part 201 GRCC. Photos of the sample locations can be found in Appendix B.

#### 4.6 Basis for Conclusion that Subject Property is a Facility

The basis for concluding that the <sup>?</sup>subject property is a facility is the presence of hazardous chemicals in soil and groundwater samples at concentrations in excess of Part 201 Generic Residential Cleanup Criteria. As outlined in Section 4.5, concentrations of chemicals in all soil samples exceeded Generic Residential Direct Contact, Drinking Water Protection and/or Groundwater Surface Water Interface Protection Criteria. Therefore the subject property meets the definition of a "facility" as defined in Section 1(1)(o) of Part 201 of Public Act 451 of 1994, as amended.

### 5.0 LIKELIHOOD OF OTHER CONTAMINATION

A Phase I Environmental Site Assessment (ESA) was conducted in substantial conformance with ASTM Standard Practice E1527-2000. This section summarizes the findings of the Phase I ESA.

#### 5.1 Site History

Sources of information included a review of Sanborn Insurance maps and a drawing obtained at the Michigan Technological University archives titled "The Native Copper Mining Era of the Keweenaw Copper Country, Lodes and Mining Locations, 1846-1968" by Tauno Kilpela.

The Ahmeek Mill, located in Tamarack City began production in 1910. The mill was owned by the Ahmeek Mining Company and was used to process native copper ore from the Ahmeek Mine. The Ahmeek Mine was located farther up the peninsula to the northeast. Ores were transported to the stamp mill by rail.

The 1908 Sanborn map showed the area later occupied by the Ahmeek Stamp Mill was then occupied by four dwellings. The surrounding area consisted of residential dwellings as well, except for a limber mill located on adjacent land to the south.

The 1917 Sanborn map shows the Ahmeek mill in place. A pump house with a steam turbine was present in the 5<sup>th</sup> Street right-of-way at the end of Spruce Street. The lumber mill was still present, however, it was not in operation. A lumber warehouse and carpenter shop were present across the south ends of lots 7, 8, 9, and 10, of Block 5. The

surrounding area was still residential.

The 1928 Sanborn map shows a transformer house located to the southwest of the pump house noted in the 1917 map. This is located in lot 7 of Block 10.

The 1928 map, updated to 1935, shows the addition of a power house the north of the pump house. A boiler house was also present farther to the southwest of the pump house. An apparent smoke stack was present adjacent to the boiler house at the southeast corner of lot 9, Block 10. Two brick storage houses and an electric shop are present on lots 3, 4, 5, and 10 of Block 5.

## **5.2 Environmental Record Review**

UPEA conducted an environmental database search of the subject property and neighboring sites to determine which sites are on state or federal environmental databases. A copy of the Radius Map is included as Figure 5. The environmental database search radius covered the minimum distances outlined in Section 7.2.1 of ASTM Standard E 1527-2000.

The following sections discuss the specific findings of this environmental database record review.

### National Priority List (NPL)

The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. The results of the UPEA search identified one active or delisted NPL site within a one-mile radius of the subject property. The Torch Lake Superfund site is a listed NPL site and includes adjacent property to the south. This site is listed because of trace and heavy metals in soils on the site. The soils consist largely of the crushed waste rock by-product from the stamp mill.

### Comprehensive Environmental Response Compensation, and Liability Information List (CERCLIS)

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies, and private persons. Results of the UPEA search identified one CERCLIS site within a ½ mile radius of the subject property. Torch Lake is the only listed CERCLIS site within ½ mile.

### Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Information System (RCRIS) database includes information on sites that generate, transport, store, treat, and/or dispose of hazardous wastes as defined by the Resource Conservation and Recovery Act (RCRA). UPEA's search identified two RCRIS sites within one mile of the subject property. Peninsula Copper Industries and Kevin's Body Shop, both of Hubbell, are within one mile of the property.

Part 201 (Environmental Remediation) of Michigan's Natural Resources and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended:

Michigan's Department of Environmental Quality (MDEQ) Environmental Response Division has developed a list of all facilities of environmental contamination, which are not leaking underground storage tank (LUST) facilities. UPEA's search of this database identified one regulated Part 201 facilities within one mile of the subject property. Torch Lake is a listed site having copper ores as a source and copper, xanthate, and creosote as pollutants.

Leaking Underground Storage Tank Regulations (Part 213 of Act 451 of 1994, as Amended):

The MDEQ's Storage Tank Division regulates all LUST facilities in Michigan, and has developed a list of open and closed LUST sites. UPEA's search of this database identified one regulated LUST facility within ½ mile of the subject property. Kramer Service, located at 709 Duncan Avenue, Hubbell is listed as an open LUST site.

Michigan Underground Storage Tank Regulations (Part 211 of Act 451 of 1994, as Amended)

The MDEQ's Storage Tank Division also regulates active UST facilities with USTs present on their property. A list of sites with current USTs is available from the MDEQ. Sites which formerly had USTs on their properties, but which were removed, are also on this list. UPEA's search of this database identified three regulated UST facilities adjacent to the subject site or within ½ mile of the subject property. Kramer Service is listed as having 2 removed USTs and 2 active USTs. Hubbell Station is listed as having 2 active USTs, while Ernies Service has 2 removed USTs on the list.

Former Manufactured Gas (Coal Gas) Sites:

No former manufactured gas (coal gas) sites were identified within ¼ mile of the subject site based on EDR's search of Real Property Scan, Inc.

Other Databases

As required by ASTM Standard E 1527-2000, the following additional databases were searched, but no sites were found within the minimum search distances recommended in this standard.

- Federal Emergency Response Notification System (ERNS)
- State Hazardous Waste Sites (SHWS)
- State Solid Waste Facilities/Landfills

**5.3 Information from the Site Reconnaissance and Interview**

During the site reconnaissance, the property was observed for indications of actual or possible environmental impacts. Visual indications of potential environmental impacts were present throughout the subject property. Stained soils, tires, and many other miscellaneous household trash items were found at various locations throughout the property.

Since the property was once an industrial site, environmental impacts associated with the mining industry were observed.

In summary, the *Recognized Environmental Conditions*, discovered and/or observed at the subject property included contaminated soils associated with the mining industry.

## **6.0 FINDINGS AND CONCLUSIONS**

This Baseline Environmental Assessment, which was conducted at the subject property, was conducted as part of a property transaction for Osceola Township, Michigan. Osceola Township, acquired the subject property on September 10, 2001 and will use this property for an historical interpretive park. The subject property is a facility as defined under Section 20101(1)(o) of Part 201 of the NREPA which defines a facility as "any area, place, or property where a hazardous substance in excess of the concentrations which satisfy the requirements of Section 20120(1)(a) ... has been released, deposited, disposed of, or otherwise comes to be located."

This Baseline Environmental Assessment for the subject property in Osceola Township, Houghton County, Michigan documented that the concentrations of multiple chemicals in all soil samples exceeded Part 201 Generic Residential Cleanup Criteria. These results are fully detailed in Section 4.0 of this report.

There will be no significant hazardous substance use at the subject property. This is the basis for being able to distinguish existing contamination from a new release.

## FIGURES



SITE LOCATION

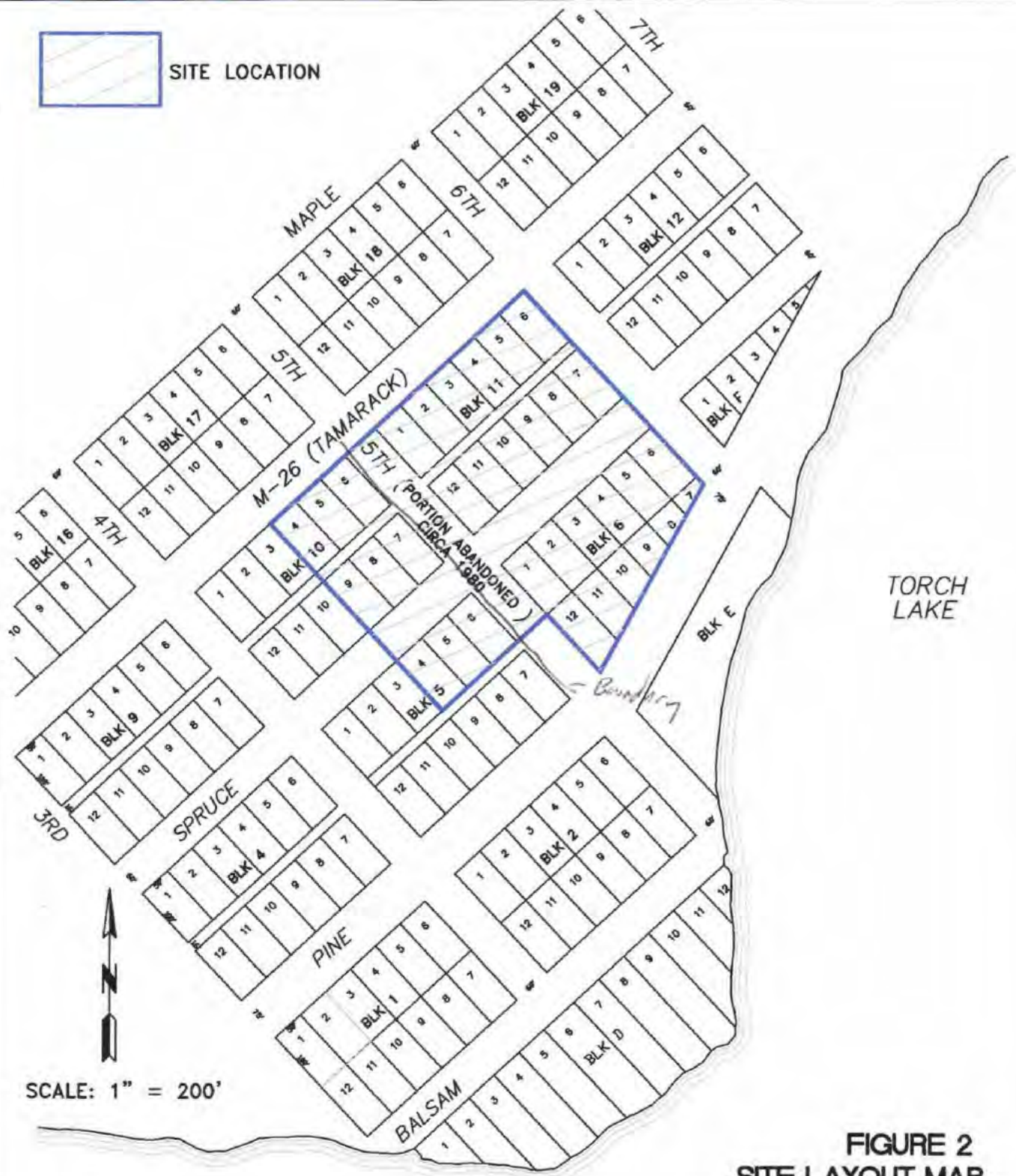


FIGURE 2  
SITE LAYOUT MAP



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OSCEOLA TOWNSHIP  
TAMARACK STAMP MILL  
HOUGHTON COUNTY, MICHIGAN

DRAWN BY: GH

DATE: 11/08/01

JOB No.: 003-21426

DWG. NAME: FIG345

DESIGNED BY: WG





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**OSCEOLA TOWNSHIP**  
**TAMARACK STAMP MILL**  
**HOUGHTON COUNTY, MICHIGAN**

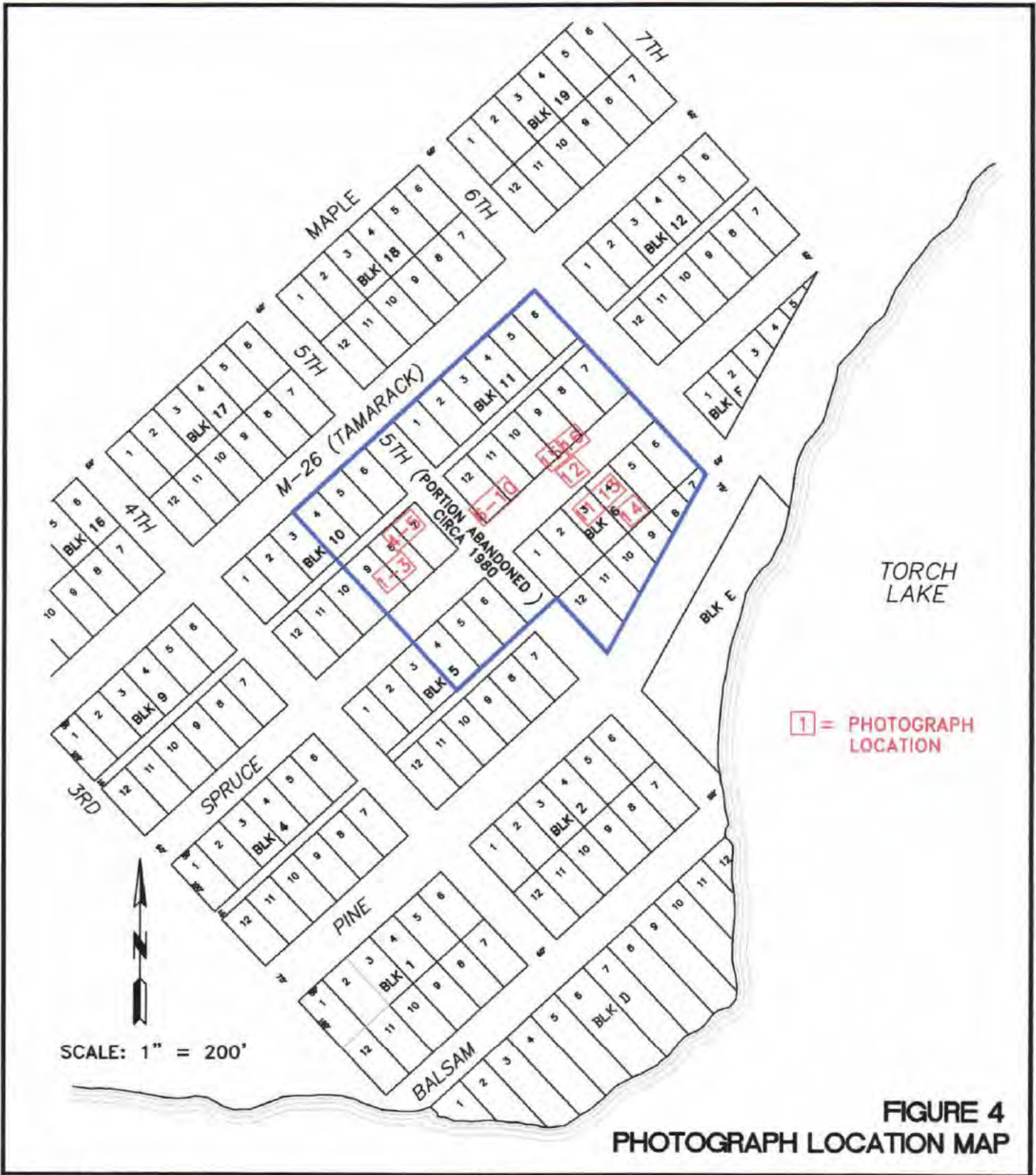
DRAWN BY: GH

DATE: 11/08/01

JOB No.: 003-21426

DWG. NAME: FIG345

DESIGNED BY: WG



**FIGURE 4  
PHOTOGRAPH LOCATION MAP**



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**OSCEOLA TOWNSHIP  
TAMARACK STAMP MILL  
HOUGHTON COUNTY, MICHIGAN**

DRAWN BY: GH	DATE: 11/08/01	JOB No.: 003-21426	DWG. NAME: FIG345	DESIGNED BY: WG
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## **TABLES**

**Table 1**  
**Soil Analytical Results Exceeding Part 201 Generic Residential Cleanup Criteria**  
**Tamarack Stamp Mill in Osceola Township**  
**Samples Collected on October 19, 2001**

Analyte	Chemical Abstract Service Number	Soil Cleanup Criteria Exposure Pathway	Soil Cleanup Criteria Level (ug/Kg)	1	2	3	4	5
				Reported Concentration Stack (ug/Kg)	Reported Concentration Concrete Floor (ug/Kg)	Reported Concentration Door Jam (ug/Kg)	Reported Concentration Track Turn (ug/Kg)	Reported Concentration SS Pile (ug/Kg)
Total Arsenic	7440382	DC	6,600	<b>470,000</b>	<b>86,000</b>	<b>210,000</b>	<b>48,000</b>	
Total Barium	7440393	GSIP	140,000	<b>150,000</b>	<b>270,000</b>	<b>190,000</b>		
Total Chromium	18540299	GSIP	18,000	<b>49,000</b>	<b>47,000</b>	<b>31,000</b>	<b>140,000</b>	<b>38,000</b>
Total Copper	7440508	GSIP	32,000	<b>180,000</b>	<b>2,600,000</b>	<b>240,000,000</b>	<b>35,000,000</b>	<b>1,200,000</b>
Total Lead	7439921	DWP & GSIP	21,000	<b>22,000</b>	<b>1,900,000</b>	<b>700,000</b>	<b>430,000</b>	
Total Mercury	7439976	GSIP	130		<b>1,100</b>	<b>160</b>	<b>250</b>	
Total Nickel	7440020	GSIP	30,000		<b>59,000</b>	<b>48,000</b>	<b>69,000</b>	<b>40,000</b>
Total Selenium	7782492	GSIP	410	<b>37,000</b>	<b>3,000</b>	<b>1,700</b>	<b>710</b>	<b>500</b>
Total Silver	7440224	GSIP	1,000			<b>38,000</b>	<b>7,500</b>	
Total Zinc	7440666	GSIP	65,000		<b>750,000</b>	<b>410,000</b>	<b>210,000</b>	
Benzo(a)pyrene	50328	DC	2,000		<b>7,000</b>	<b>9,600</b>	<b>2,900</b>	
Carbazole	86748	GSIP	1,100			<b>2,500</b>		
Fluoranthene	206440	GSIP	5,500		<b>8,300</b>	<b>15,000</b>		
Phenanthrene	85018	GSIP	2,300		<b>2,600</b>	<b>10,000</b>	<b>2,500</b>	

**NOTES:** DWP Drinking Water Protection Criteria  
 GSIP Groundwater Surface Water Interface Protection Criteria  
 DC Direct Contact Criteria

**2,600** Values in bold text exceed Part 201 Generic Residential Cleanup C

Handwritten notes on a yellow sticky note, listing analytes and their corresponding values in ug/Kg:

- Zinc: 170,000,000
- Selenium: 130,000,000
- Mercury: 20,000,000
- Lead: 100,000,000
- Copper: 13,000,000
- Cobalt: 13,000,000
- Chromium: 330,000,000
- Barium: 370,000,000
- As: 720,000
- DC

**Table 1**  
**Soil Analytical Results Exceeding Part 201 Generic Residential Cleanup Criteria**  
**Tamarack Stamp Mill in Osceola Township**  
**Samples Collected on October 19, 2001**

Analyte	Chemical Abstract Service Number	Soil Cleanup Criteria Exposure Pathway	Soil Cleanup Criteria Level (ug/Kg)	1	2	3	4	5
				Reported Concentration Stack (ug/Kg)	Reported Concentration Concrete Floor (ug/Kg)	Reported Concentration Door Jam (ug/Kg)	Reported Concentration Track Turn (ug/Kg)	Reported Concentration SS Pile (ug/Kg)
Total Arsenic	7440382	DC	6,600	<b>470,000</b>	<b>86,000</b>	<b>210,000</b>	<b>48,000</b>	
Total Barium	7440393	GSIP	140,000	<b>150,000</b>	<b>270,000</b>	<b>190,000</b>		
Total Chromium	18540299	GSIP	18,000	<b>49,000</b>	<b>47,000</b>	<b>31,000</b>	<b>140,000</b>	<b>38,000</b>
Total Copper	7440508	GSIP	32,000	<b>180,000</b>	<b>2,600,000</b>	<b>240,000,000</b>	<b>35,000,000</b>	<b>1,200,000</b>
Total Lead	7439921	DWP & GSIP	21,000	<b>22,000</b>	<b>1,900,000</b>	<b>700,000</b>	<b>430,000</b>	
Total Mercury	7439976	GSIP	130		<b>1,100</b>	<b>160</b>	<b>250</b>	
Total Nickel	7440020	GSIP	30,000		<b>59,000</b>	<b>48,000</b>	<b>69,000</b>	<b>40,000</b>
Total Selenium	7782492	GSIP	410	<b>37,000</b>	<b>3,000</b>	<b>1,700</b>	<b>710</b>	<b>500</b>
Total Silver	7440224	GSIP	1,000			<b>38,000</b>	<b>7,500</b>	
Total Zinc	7440666	GSIP	65,000		<b>750,000</b>	<b>410,000</b>	<b>210,000</b>	
Benzo(a)pyrene	50328	DC	2,000		<b>7,000</b>	<b>9,600</b>	<b>2,900</b>	
Carbazole	86748	GSIP	1,100			<b>2,500</b>		
Fluoranthene	206440	GSIP	5,500		<b>8,300</b>	<b>15,000</b>		
Phenanthrene	85018	GSIP	2,300		<b>2,600</b>	<b>10,000</b>	<b>2,500</b>	

**NOTES:** DWP Drinking Water Protection Criteria  
 GSIP Groundwater Surface Water Interface Protection Criteria  
 DC Direct Contact Criteria  
**2,600** Values in bold text exceed Part 201 Generic Residential Cleanup C

Handwritten notes on a yellow sticky note, listing analytes and their corresponding values from the table:

- Zinc: 170,000,000
- Selenium: 130,000,000
- Mercury: 20,000,000
- Lead: 100,000,000
- Copper: 13,000,000
- Cobalt: 13,000,000
- Chromium: 330,000,000
- Barium: 370,000,000
- As: 720,000
- DC

**Table 2**  
**Summary of Soil Sample Analytical Detections**  
**Tamarack Stamp Mill in Osceola Township**  
**Samples collected on October 19, 2001**

Analyte	Chemical Abstract Service Number	Soil Cleanup Criteria Exposure Pathway	Soil Cleanup Criteria Level (ug/Kg)	Reported	Reported	Reported	Reported	Reported
				Concentration Stack (ug/Kg)	Concentration Concrete Floor (ug/Kg)	Concentration Door Jam (ug/Kg)	Concentration Track Turn (ug/Kg)	Concentration SS Pile (ug/Kg)
Total Arsenic	7440382	DC	6,600	<b>470,000</b>	<b>86,000</b>	<b>210,000</b>	<b>48,000</b>	3,800
Total Barium	7440393	GSIP	140,000	<b>150,000</b>	<b>270,000</b>	<b>190,000</b>	92,000	11,000
Total Cadmium	7440439	GSIP	1,600	140	1,400	720	610	280
Total Chromium	18540299	GSIP	18,000	<b>49,000</b>	<b>47,000</b>	<b>31,000</b>	<b>140,000</b>	<b>38,000</b>
Total Copper	7440508	GSIP	32,000	<b>180,000</b>	<b>2,600,000</b>	<b>240,000,000</b>	<b>35,000,000</b>	<b>1,200,000</b>
Total Lead	7439921	DWP & GSIP	21,000	<b>22,000</b>	<b>1,900,000</b>	<b>700,000</b>	<b>430,000</b>	11,000
Total Mercury	7439976	GSIP	130		<b>1,100</b>	<b>160</b>	<b>250</b>	
Total Nickel	7440020	GSIP	30,000	6,400	<b>59,000</b>	<b>48,000</b>	<b>69,000</b>	<b>40,000</b>
Total Selenium	7782492	GSIP	410	<b>37,000</b>	<b>3,000</b>	<b>1,700</b>	<b>710</b>	<b>500</b>
Total Silver	7440224	GSIP	1,000		920	<b>38,000</b>	<b>7,500</b>	
Total Zinc	7440666	GSIP	65,000	3,600	<b>750,000</b>	<b>410,000</b>	<b>210,000</b>	82
Acenaphthene	83329	GSIP	4,400					
Acenaphthylene	208968	DWP	5,900			2,400		
Anthracene	120127	DWP & GC	41,000		670			
Benzo(a)anthracene	56553	DC	20,000		5,100	5,100	1,800	
Benzo(a)pyrene	50328	DC	2,000		<b>7,000</b>	<b>9,600</b>	<b>2,900</b>	
Benzo(b)fluoranthene	205992	DC	20,000		8,000	12,000	4,600	
Benzo(g,h,i)perylene	191242	DC	2,500,000		2,800	5,400	1,600	
Benzo(k)fluoranthene	207089	DC	200,000		7,200	12,000	4,000	
Carbazole	86748	GSIP	1,100			<b>2,500</b>		
Chrysene	218019	DC	2,000,000		5,300	8,400	2,500	
Dibenzofuran	132649	GSIP	1,700					
Fluoranthene	206440	GSIP	5,500		<b>8,300</b>	<b>15,000</b>	4,000	
Fluorene	86737	GSIP	5,300					
Indeno(1,2,3-cd)pyrene	193395	DC	20,000		3,000	5,700	1,500	
2-Methylnaphthalene	91576	DWP	57,000		630			
Naphthalene	91203	GSIP	870		450			
Phenanthrene	85018	GSIP	2,300		<b>2,600</b>	<b>10,000</b>	<b>2,500</b>	
Pyrene	129000	DWP & GC	480,000		10,000	18,000	5,100	
Toluene	108883	GSIP	2,800					
Xylenes	1330207	GSIP	700					

**NOTES:** DWP Drinking Water Protection Criteria  
GSIP Groundwater Surface Water Interface Protection Criteria  
DC Direct Contact Criteria

450 Result is above detection limit  
**2,600** Values in bold text exceed Part 201 Generic Residential Cleanup Criteria

APPENDIX A

Property Deeds

QUIT CLAIM DEED

The Grantor, SUPERIOR CRAFTS INC., a Michigan Corporation of US-41, Mohawk Michigan 49950, by its authorized agent James Patrick,

Quit claims to: OSCEOLA TOWNSHIP, a municipal corporation of P.O. Box 437 Dollar Bay, Michigan 49922.

The following described premises situated in the Township of Osceola, Count of Houghton, and State of Michigan:

Parcel #1: Entire Block 6 and Entire Block 11 of the Plat of Tamara City, Osceola Township, Houghton County, Michigan, according to th recorded plat thereof, said plat being recorded in Plat Cabinet 1, Foli #27, Houghton County, Michigan.

Subject to all exceptions, reservations, restrictions, liens an conditions, of record including any reservation of minerals, mining an development rights, and further excepting liens for current year taxe not yet due and payable, and including the rights of the public and o any governmental unit in any part thereof taken, used or deeded fo street, road, highway or railroad.

Exempt from revenue pursuant to MCL 207.505(5)(a) and 207.526(6)(a).

For the sum of: (\$0) Zero Dollars.

Dated this 10TH day of SEPTEMBER, 2001.

Signed in Presence of:

Kathleen A. Seppala  
Kathleen A. Seppala

Betty J. Wickley  
Betty J. Wickley

Superior Crafts, Inc. by its  
authorized agent:

James Patrick  
James Patrick

STATE OF MICHIGAN )  
                                  ) ss.  
County of Houghton)

The foregoing instrument was acknowledged before me this 10TH day of SEPTEMBER, 2001 by James Patrick for and behalf o Superior Crafts, Inc.

Peter M. Wickley  
Peter M. Wickley  
Notary Public  
County of Houghton  
State of Michigan  
My Commission Expires: 12/30/02

Drafted By:  
GOODMAN & MAKINEN, PC  
Attorneys at Law  
100 Quincy Street  
Hancock, MI 49930



QUIT CLAIM DEED

The Grantor, SUPERIOR CRAFTS INC., a Michigan Corporation of US-41, Mohawk, Michigan 49950, by its authorized agent James Patrick,

Quit claims to: TOWNSHIP OF OSCEOLA, a municipal corporation of P.O. Box 437, Dollar Bay, Michigan 49922.

The following described premises situated in the Township of Osceola, County of Houghton, and State of Michigan:

Parcel #2: Lots 4, 5, 6, 7, 8, and 9, Block 10; and Lots 4, 5, and 6, Block 5 of the Plat of Tamarac City, Osceola Township, Houghton County, Michigan, according to the recorded plat thereof, said plat being recorded in Plat Cabinet 1, Folio #27, Houghton County, Michigan.

Subject to all exceptions, reservations, restrictions, liens and conditions, of record including any reservation of minerals, mining and development rights, and further excepting liens for current year taxes not yet due and payable, and including the rights of the public and of any governmental unit in any part thereof taken, used or deeded for street, road, highway or railroad.

For the sum of: (\$5000.00) Five Thousand Dollars.

Dated this 10TH day of SEPTEMBER, 2001.

Signed in Presence of:

Superior Crafts, Inc. by its  
authorized agent:

Kathleen A. Seppala  
Kathleen A. Seppala

James Patrick  
James Patrick

Betty J. Wickley  
Betty J. Wickley

STATE OF MICHIGAN )  
                          )ss.  
County of Houghton)

The foregoing instrument was acknowledged before me this  
10TH day of SEPTEMBER, 2001 by James Patrick for and behalf of Superior Crafts, Inc.

Peter M. Wickley  
Peter M. Wickley  
Notary Public  
County of Houghton  
State of Michigan  
My Commission Expires: 12/30/02

Drafted By:  
GOODMAN & MAKINEN, PC  
Attorneys at Law  
100 Quincy Street  
Hancock, MI 49930

APPENDIX B

**Site Photographs**  
(Taken October 19, 2001)

## PHOTOGRAPH LOG

1. Photo was taken facing northwest. The photo shows the old stack location.
2. Photo was taken facing southeast. The photo shows the old stack location.
3. Photo was taken facing northwest. The photo shows the stack sample location.
4. Photo was taken facing northwest. The photo shows the concrete floor sample location.
5. Photo was taken facing northwest. The photo shows the concrete floor location.
6. Photo was taken facing southeast. The photo shows debris (tires, satellite dish, mattresses) piled on-site.
7. Photo was taken facing southeast. The photo shows more debris (lawn chair, tires, bed frame).
8. Photo was taken facing east. The photo shows an old Television dumped on-site.
9. Photo was taken facing west. The photo shows old tires and a satellite dish, along with other debris on-site.
10. Photo was taken facing south. The photo shows an old mattress located on-site.
11. Photo was taken facing west. The photo shows the door jam location.
12. Photo was taken facing north. The photo shows staining on top of concrete structures which remain on-site.
13. Photo was taken facing west. The photo shows door jam sampling location.
14. Photo was taken facing northeast. The photo shows the track turn location and sampling point.
15. Photo was taken facing north. The photo shows additional staining on the side of a concrete structure on-site.
16. Photo was taken facing north. The photo shows staining on the side of a concrete structure on-site.



1. Photo shows old stack location (looking northwest).



2. Photo shows old stack location (looking southeast).



3. Photo shows stack sample location (looking northwest).



4. Photo shows concrete floor sample location (looking northwest).



5. Photo shows concrete floor location (looking northwest).



6. Photo shows debris (tires, satellite dish, mattresses) piled on site (looking southeast).



7. Photo show pile of debris (lawn chair, tires, bed frame)



8. Photo shows old TV set (looking east)



9. Photo shows tires and satellite dish along with other debris (looking west)



10. Photo shows old mattress and other debris (looking south)





11. Photo shows door jam sample location (looking west)



12. Photo shows staining on top of concrete structures (looking north)



13. Photo shows door jam sampling location (looking northwest)



14. Photo shows turn track sampling location (looking northeast)



15. Photo shows staining on the side of concrete structure (looking north)



16. Photo shows staining on the side of concrete structure (looking north)

APPENDIX C

LABORATORY ANALYTICAL DATA REPORTS



Brighton Analytical, L.L.C.

2105 Pless Drive

Brighton, Michigan 48116

Phone: (810) 229-7575 FAX: (810) 229-8650

TM

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06673

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Concrete Floor

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
<b>Total Metal Analysis</b>						
Total Arsenic	86	mg/Kg	0.10	SW846 6020	GW	10/23/01
Total Barium	270	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Cadmium	1.4	mg/Kg	0.05	SW846 6020	GW	10/23/01
Total Chromium	47	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Copper	2600	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Lead	1900	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Mercury	1.1	mg/Kg	0.10	SW846 7471	DL	10/22/01
Total Nickel	59	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Selenium	3.0	mg/Kg	0.20	SW846 6020	GW	10/23/01
Total Silver	0.92	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Zinc	750	mg/Kg	1.0	SW846 6020	GW	10/23/01
Metal Soil (digestion)	Digested			3050	PR	10/22/01
Mercury (digestion)	Digested			7470/7471	DL	10/22/01
<b>PNA Analysis</b>						
Acenaphthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Acenaphthylene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Anthracene	670	ug/Kg	330	SW846 8270	RG	10/24/01



Brighton Analytical, L.L.C.

2105 Pless Drive

Brighton, Michigan 48116

Phone: (810) 229-7575 FAX: (810) 229-8650

TM

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06673

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Concrete Floor

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Benzo(a)anthracene	5100	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(a)pyrene	7000	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(b)fluoranthene	8000	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(g,h,i)perylene	2800	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(k)fluoranthene	7200	ug/Kg	330	SW846 8270	RG	10/24/01
Chrysene	5300	ug/Kg	330	SW846 8270	RG	10/24/01
Dibenzo(a,h)anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Fluoranthene	8300	ug/Kg	330	SW846 8270	RG	10/24/01
Fluorene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Indeno(1,2,3-cd)pyrene	3000	ug/Kg	330	SW846 8270	RG	10/24/01
2-Methylnaphthalene	630	ug/Kg	330	SW846 8270	RG	10/24/01
Naphthalene	450	ug/Kg	330	SW846 8270	RG	10/24/01
Phenanthrene	2600	ug/Kg	330	SW846 8270	RG	10/24/01
Pyrene	10000	ug/Kg	330	SW846 8270	RG	10/24/01
PNA GC/MS (extraction)	Extracted			3510/3550	AE	10/22/01
%Solid	72.4	%		EPA 160.3	GW	10/22/01



Brighton Analytical, L.L.C.  
 2105 Pless Drive  
 Brighton, Michigan 48116  
 Phone: (810) 229-7575 FAX: (810) 229-8650

TM

To: UP Engineers & Architects, Inc.  
 100 Portage Street  
 Houghton, MI 49931

Sample Date: 10/19/01  
 Submit Date: 10/20/01  
 Report Date: 10/31/01

BA Report Number: 53677  
 BA Sample ID: AX06673

Project Name: Osceola Township  
 Project Number: 003-21426  
 Sample ID: Concrete Floor

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
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All soil results based on dry weight.

DL=Detection Limit as recommended by MDEQ

Released by:   
 Date: 10/31/01



Brighton Analytical, L.L.C.

2105 Pless Drive

Brighton, Michigan 48116

Phone: (810) 229-7575 FAX: (810) 229-8650

TM

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06674

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Door Jam

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
<b>Total Metal Analysis</b>						
Total Arsenic	210	mg/Kg	0.10	SW846 6020	GW	10/23/01
Total Barium	190	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Cadmium	0.72	mg/Kg	0.05	SW846 6020	GW	10/23/01
Total Chromium	31	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Copper	240000	mg/Kg	1.0	SW846 6020	GW	10/29/01
Total Lead	700	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Mercury	0.16	mg/Kg	0.10	SW846 7471	DL	10/22/01
Total Nickel	48	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Selenium	1.7	mg/Kg	0.20	SW846 6020	GW	10/23/01
Total Silver	38	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Zinc	410	mg/Kg	1.0	SW846 6020	GW	10/23/01
Metal Soil (digestion)	Digested			3050	PR	10/22/01
Mercury (digestion)	Digested			7470/7471	DL	10/22/01
<b>PCB Analysis</b>						
ARO 1016	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
ARO 1221	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
ARO 1232	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01





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To: UP Engineers & Architects, Inc.  
 100 Portage Street  
 Houghton, MI 49931

Sample Date: 10/19/01  
 Submit Date: 10/20/01  
 Report Date: 10/31/01

BA Report Number: 53677  
 BA Sample ID: AX06674

Project Name: Osceola Township  
 Project Number: 003-21426  
 Sample ID: Door Jam

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
ARO 1242	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
ARO 1248	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
ARO 1254	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
ARO 1260	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
ARO 1262	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
ARO 1268	Not detected	ug/Kg	330	SW846 8082	BY	10/23/01
PCB (extraction)	Extracted			3510/3550	AE	10/22/01
<b>Semi-Volatile Analysis</b>						
Acenaphthene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Acenaphthylene	2400	ug/Kg	1320	SW846 8270	RG	10/29/01
Anthracene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Benzo(a)anthracene	5100	ug/Kg	1320	SW846 8270	RG	10/29/01
Benzo(a)pyrene	9600	ug/Kg	1320	SW846 8270	RG	10/29/01
Benzo(b)fluoranthene	12000	ug/Kg	1320	SW846 8270	RG	10/29/01
Benzo(g,h,i)perylene	5400	ug/Kg	1320	SW846 8270	RG	10/29/01
Benzo(k)fluoranthene	12000	ug/Kg	1320	SW846 8270	RG	10/29/01
Benzoic acid	Not detected	ug/Kg	13200	SW846 8270	RG	10/29/01
Benzyl alcohol	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Bis(2-chloroethoxy)methane	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01



TM

Brighton Analytical, L.L.C.
2105 Pless Drive
Brighton, Michigan 48116
Phone: (810) 229-7575 FAX: (810) 229-8650

To: UP Engineers & Architects, Inc.
100 Portage Street
Houghton, MI 49931

Sample Date: 10/19/01
Submit Date: 10/20/01
Report Date: 10/31/01

BA Report Number: 53677
BA Sample ID: AX06674

Project Name: Osceola Township
Project Number: 003-21426
Sample ID: Door Jam

Table with 7 columns: Parameters, Results, Units, DL, Method Reference, Analyst, Analysis Date. Lists various chemical compounds and their detection status.

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06674

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Door Jam

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
2,6-Dichlorophenol	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Diethylphthalate	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
2,4-Dimethylphenol	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Dimethylphthalate	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
4,6-Dinitro-2-methylphenol	Not detected	ug/Kg	6800	SW846 8270	RG	10/29/01
2,4-Dinitrophenol	Not detected	ug/Kg	6800	SW846 8270	RG	10/29/01
2,4-Dinitrotoluene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
2,6-Dinitrotoluene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
1,2-Diphenylhydrazine	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Fluoranthene	15000	ug/Kg	1320	SW846 8270	RG	10/29/01
Fluorene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Hexachlorobenzene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Hexachlorobutadiene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Hexachlorocyclopentadiene	Not detected	ug/Kg	800	SW846 8270	RG	10/29/01
Hexachloroethane	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Indeno(1,2,3-cd)pyrene	5700	ug/Kg	1320	SW846 8270	RG	10/29/01
Isophorone	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
2-Methylnaphthalene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
2-Methylphenol (o-Cresol)	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
3&4Methylphenol(m&p-Cresol)	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01



Brighton Analytical, L.L.C.

2105 Pless Drive

Brighton, Michigan 48116

Phone: (810) 229-7575 FAX: (810) 229-8650

TM

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06674

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Door Jam

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
N-Nitrosodi-n-propylamine	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
N-Nitrosodimethylamine	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
N-Nitrosophenylamine	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Naphthalene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
2-Nitroaniline	Not detected	ug/Kg	6800	SW846 8270	RG	10/29/01
3-Nitroaniline	Not detected	ug/Kg	6800	SW846 8270	RG	10/29/01
4-Nitroaniline	Not detected	ug/Kg	6800	SW846 8270	RG	10/29/01
Nitrobenzene	Not detected	ug/Kg	800	SW846 8270	RG	10/29/01
2-Nitrophenol	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
4-Nitrophenol	Not detected	ug/Kg	6800	SW846 8270	RG	10/29/01
Pentachlorophenol	Not detected	ug/Kg	3200	SW846 8270	RG	10/29/01
Phenanthrene	10000	ug/Kg	1320	SW846 8270	RG	10/29/01
Phenol	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
Pyrene	18000	ug/Kg	1320	SW846 8270	RG	10/29/01
1,2,4-Trichlorobenzene	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
2,4,5-Trichlorophenol	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
2,4,6-Trichlorophenol	Not detected	ug/Kg	1320	SW846 8270	RG	10/29/01
BNA (extraction)	Extracted			3510/3550	MB	10/29/01



TM

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Brighton, Michigan 48116
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To: UP Engineers & Architects, Inc.
100 Portage Street
Houghton, MI 49931

Sample Date: 10/19/01
Submit Date: 10/20/01
Report Date: 10/31/01

BA Report Number: 53677
BA Sample ID: AX06674

Project Name: Osceola Township
Project Number: 003-21426
Sample ID: Door Jam

Table with 7 columns: Parameters, Results, Units, DL, Method Reference, Analyst, Analysis Date. Contains data for Volatile Analysis (Methanol Preserved) including Acetone, Acrylonitrile, Benzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, 2-Butanone, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, 1,2-Dibromo-3-Chloropropane, and Dibromochloromethane.



TM

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100 Portage Street
Houghton, MI 49931

Sample Date: 10/19/01
Submit Date: 10/20/01
Report Date: 10/31/01

BA Report Number: 53677
BA Sample ID: AX06674

Project Name: Osceola Township
Project Number: 003-21426
Sample ID: Door Jam

Table with 7 columns: Parameters, Results, Units, DL, Method Reference, Analyst, Analysis Date. Lists various chemical compounds and their detection status.



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 100 Portage Street  
 Houghton, MI 49931

Sample Date: 10/19/01  
 Submit Date: 10/20/01  
 Report Date: 10/31/01

BA Report Number: 53677  
 BA Sample ID: AX06674

Project Name: Osceola Township  
 Project Number: 003-21426  
 Sample ID: Door Jam

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
n-Butylbenzene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
n-Propylbenzene	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Naphthalene	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
Styrene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
1,1,1,2-Tetrachloroethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,1,2,2-Tetrachloroethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Tetrachloroethene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Toluene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
trans-1,2-Dichloroethene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
trans-1,3-Dichloropropene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
trans-1,4-Dichloro-2-butene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
1,2,3-Trichlorobenzene	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
1,2,4-Trichlorobenzene	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
1,1,1-Trichloroethane	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
1,1,2-Trichloroethane	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Trichloroethene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Trichlorofluoromethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,2,3-Trichloropropane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,2,4-Trimethylbenzene	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,3,5-Trimethylbenzene	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01



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100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06674

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Door Jam

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Vinyl chloride	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Xylenes	Not detected	ug/Kg	150	SW846 8260	JH	10/23/01
EPA Method 5035 Methanol Preserv	Extracted			EPA 5035	UPE	10/19/01
%Solid	88.3	%		EPA 160.3	GW	10/22/01

All soil results based on dry weight.

DL=Detection Limit as recommended by MDEQ

Released by:

Date:

*J. H. Keizer*  
10/31/01





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Brighton, Michigan 48116

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TM

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06675

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Track Turn

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
<b>Total Metal Analysis</b>						
Total Arsenic	48	mg/Kg	0.10	SW846 6020	GW	10/23/01
Total Barium	92	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Cadmium	0.61	mg/Kg	0.05	SW846 6020	GW	10/23/01
Total Chromium	140	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Copper	35000	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Lead	430	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Mercury	0.25	mg/Kg	0.10	SW846 7471	DL	10/22/01
Total Nickel	69	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Selenium	0.71	mg/Kg	0.20	SW846 6020	GW	10/23/01
Total Silver	7.5	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Zinc	210	mg/Kg	1.0	SW846 6020	GW	10/23/01
Metal Soil (digestion)	Digested			3050	PR	10/22/01
Mercury (digestion)	Digested			7470/7471	DL	10/22/01
<b>PNA Analysis</b>						
Acenaphthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Acenaphthylene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01



Brighton Analytical, L.L.C.

2105 Pless Drive

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TM

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06675

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Track Turn

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Benzo(a)anthracene	1800	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(a)pyrene	2900	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(b)fluoranthene	4600	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(g,h,i)perylene	1600	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(k)fluoranthene	4000	ug/Kg	330	SW846 8270	RG	10/24/01
Chrysene	2500	ug/Kg	330	SW846 8270	RG	10/24/01
Dibenzo(a,h)anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Fluoranthene	4000	ug/Kg	330	SW846 8270	RG	10/24/01
Fluorene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Indeno(1,2,3-cd)pyrene	1500	ug/Kg	330	SW846 8270	RG	10/24/01
2-Methylnaphthalene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Naphthalene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Phenanthrene	2500	ug/Kg	330	SW846 8270	RG	10/24/01
Pyrene	5100	ug/Kg	330	SW846 8270	RG	10/24/01
PNA GC/MS (extraction)	Extracted			3510/3550	AE	10/22/01
%Solid	89.8	%		EPA 160.3	GW	10/22/01



TM

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To: UP Engineers & Architects, Inc.  
100 Portage Street  
Houghton, MI 49931

Sample Date: 10/19/01  
Submit Date: 10/20/01  
Report Date: 10/31/01


BA Report Number: 53677  
BA Sample ID: AX06675

Project Name: Osceola Township  
Project Number: 003-21426  
Sample ID: Track Turn

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
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All soil results based on dry weight.

DL=Detection Limit as recommended by MDEQ

Released by:   
Date: 10/31/01



TM

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2105 Pless Drive
Brighton, Michigan 48116
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To: UP Engineers & Architects, Inc.
100 Portage Street
Houghton, MI 49931

Sample Date: 10/19/01
Submit Date: 10/20/01
Report Date: 10/31/01

BA Report Number: 53677
BA Sample ID: AX06676

Project Name: Osceola Township
Project Number: 003-21426
Sample ID: SS Pile

Table with 7 columns: Parameters, Results, Units, DL, Method Reference, Analyst, Analysis Date. Rows include Total Metal Analysis (Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc), Metal Soil (digestion), Mercury (digestion), and PNA Analysis (Acenaphthene, Acenaphthylene, Anthracene).



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TM

To: UP Engineers & Architects, Inc.

100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06676

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: SS Pile

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Benzo(a)anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(a)pyrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(b)fluoranthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(g,h,i)perylene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(k)fluoranthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Chrysene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Dibenzo(a,h)anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Fluoranthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Fluorene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Indeno(1,2,3-cd)pyrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
2-Methylnaphthalene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Naphthalene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Phenanthrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Pyrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
PNA GC/MS (extraction)	Extracted			3510/3550	AE	10/22/01
%Solid	96.1	%		EPA 160.3	GW	10/22/01



TM

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2105 Pless Drive  
Brighton, Michigan 48116  
Phone: (810) 229-7575 FAX: (810) 229-8650

To: UP Engineers & Architects, Inc.  
100 Portage Street  
Houghton, MI 49931

Sample Date: 10/19/01  
Submit Date: 10/20/01  
Report Date: 10/31/01

BA Report Number: 53677  
BA Sample ID: AX06676

Project Name: Osceola Township  
Project Number: 003-21426  
Sample ID: SS Pile

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
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All soil results based on dry weight.

DL=Detection Limit as recommended by MDEQ

Released by: J. Kenney  
Date: 10/31/01

53617



U.P. ENGINEERS & ARCHITECTS, INC.

100 PORTAGE STREET  
HOUGHTON, MI 49931  
(906) 482-4810  
(906) 482-9799 (FAX)

ENGINEERS ARCHITECTS PLANNERS ENVIRONMENTAL

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJ. NO.  
003-21426

PROJECT NAME: Osceola Township  
PROJECT PROFESSIONAL: Chris Holmes

SAMPLERS: (SIGNATURE)

NO. OF CONTAINERS	ANALYSIS TYPE REQUIRED										REMARKS FIELD PARAMETERS
	PAH'S	Volatiles	Semi-volatile	PCB'S	Metals (LD + NY)	SPRINKLER	40	STATS			

I.D. NO.	DATE	TIME	COMP.	GRAB	STATION & LOCATION
6671	10/19	3:30 PM	X	X	Trachs
72	10/19	3:45 PM	X	X	Stack
73	10/19	3:50 PM	X	X	Concrete Flow
74	10/19	4:00 PM	X	X	Door Jam
75	10/19	4:10 PM	X	X	Trach Turn
76	10/19	4:15 PM	X	X	SS Pile

S	X	X	X	X																
	X			X																
	X			X																
	X	X	X	X	X															
	X			X																
	X			X																

METHANOL  
EPA 5035  
②  
UP

LABORATORY:

VIA UPS

Relinquished by 	Date 10/19/19	Time 5:00 PM	Received by 	Date 10/20	Time 9:30	Received by	
Relinquished by	Date	Time	Received by	Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by Laboratory				



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100 Portage Street

Houghton, MI 49931

Sample Date: 10/19/01

Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06671

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Tracks

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
<b>Total Metal Analysis</b>						
Total Arsenic	20	mg/Kg	0.10	SW846 6020	GW	10/23/01
Total Barium	81	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Cadmium	0.67	mg/Kg	0.05	SW846 6020	GW	10/23/01
Total Chromium	17	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Copper	6800	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Lead	200	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Mercury	0.14	mg/Kg	0.10	SW846 7471	DL	10/22/01
Total Nickel	23	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Selenium	2.9	mg/Kg	0.20	SW846 6020	GW	10/23/01
Total Silver	2.2	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Zinc	180	mg/Kg	1.0	SW846 6020	GW	10/23/01
Metal Soil (digestion)	Digested			3050	PR	10/22/01
Mercury (digestion)	Digested			7470/7471	DL	10/22/01
<b>Semi-Volatile Analysis</b>						
Acenaphthene	370	ug/Kg	330	SW846 8270	RG	10/29/01
Acenaphthylene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Anthracene	1600	ug/Kg	330	SW846 8270	RG	10/29/01





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 100 Portage Street  
 Houghton, MI 49931

Sample Date: 10/19/01  
 Submit Date: 10/20/01  
 Report Date: 10/31/01

BA Report Number: 53677  
 BA Sample ID: AX06671

Project Name: Osceola Township  
 Project Number: 003-21426  
 Sample ID: Tracks

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Benzo(a)anthracene	5900	ug/Kg	330	SW846 8270	RG	10/29/01
Benzo(a)pyrene	5600	ug/Kg	330	SW846 8270	RG	10/29/01
Benzo(b)fluoranthene	5700	ug/Kg	330	SW846 8270	RG	10/29/01
Benzo(g,h,i)perylene	1900	ug/Kg	330	SW846 8270	RG	10/29/01
Benzo(k)fluoranthene	5800	ug/Kg	330	SW846 8270	RG	10/29/01
Benzoic acid	Not detected	ug/Kg	3300	SW846 8270	RG	10/29/01
Benzyl alcohol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Bis(2-chloroethoxy)methane	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Bis(2-chloroethyl)ether	Not detected	ug/Kg	100	SW846 8270	RG	10/29/01
Bis(2-chloroisopropyl)ether	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Bis(2-ethylhexyl)phthalate	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
4-Bromophenyl phenyl ether	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Butyl benzyl phthalate	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Carbazole	1100	ug/Kg	330	SW846 8270	RG	10/29/01
4-Chloro-3-methylphenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
4-Chloroaniline	Not detected	ug/Kg	1300	SW846 8270	RG	10/29/01
2-Chloronaphthalene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2-Chlorophenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
4-Chlorophenyl phenyl ether	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Chrysene	6100	ug/Kg	330	SW846 8270	RG	10/29/01



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 Submit Date: 10/20/01  
 Report Date: 10/31/01

BA Report Number: 53677  
 BA Sample ID: AX06671

Project Name: Osceola Township  
 Project Number: 003-21426  
 Sample ID: Tracks

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Di-n-butylphthalate	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Di-n-octylphthalate	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Dibenzo(a,h)anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Dibenzofuran	440	ug/Kg	330	SW846 8270	RG	10/29/01
1,2-Dichlorobenzene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
1,3-Dichlorobenzene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
1,4-Dichlorobenzene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2,4-Dichlorophenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2,6-Dichlorophenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Diethylphthalate	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2,4-Dimethylphenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Dimethylphthalate	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
4,6-Dinitro-2-methylphenol	Not detected	ug/Kg	1700	SW846 8270	RG	10/29/01
2,4-Dinitrophenol	Not detected	ug/Kg	1700	SW846 8270	RG	10/29/01
2,4-Dinitrotoluene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2,6-Dinitrotoluene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
1,2-Diphenylhydrazine	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Fluoranthene	13000	ug/Kg	330	SW846 8270	RG	10/29/01
Fluorene	420	ug/Kg	330	SW846 8270	RG	10/29/01
Hexachlorobenzene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01



Brighton Analytical, L.L.C.  
 2105 Pless Drive  
 Brighton, Michigan 48116  
 Phone: (810) 229-7575 FAX: (810) 229-8650

TM

To: UP Engineers & Architects, Inc.  
 100 Portage Street  
 Houghton, MI 49931

Sample Date: 10/19/01  
 Submit Date: 10/20/01  
 Report Date: 10/31/01

BA Report Number: 53677  
 BA Sample ID: AX06671

Project Name: Osceola Township  
 Project Number: 003-21426  
 Sample ID: Tracks

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Hexachlorobutadiene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Hexachlorocyclopentadiene	Not detected	ug/Kg	200	SW846 8270	RG	10/29/01
Hexachloroethane	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Indeno(1,2,3-cd)pyrene	1800	ug/Kg	330	SW846 8270	RG	10/29/01
Isophorone	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2-Methylnaphthalene	570	ug/Kg	330	SW846 8270	RG	10/29/01
2-Methylphenol (o-Cresol)	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
3&4Methylphenol(m&p-Cresol)	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
N-Nitrosodi-n-propylamine	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
N-Nitrosodimethylamine	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
N-Nitrosophenylamine	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Naphthalene	490	ug/Kg	330	SW846 8270	RG	10/29/01
2-Nitroaniline	Not detected	ug/Kg	1700	SW846 8270	RG	10/29/01
3-Nitroaniline	Not detected	ug/Kg	1700	SW846 8270	RG	10/29/01
4-Nitroaniline	Not detected	ug/Kg	1700	SW846 8270	RG	10/29/01
Nitrobenzene	Not detected	ug/Kg	200	SW846 8270	RG	10/29/01
2-Nitrophenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
4-Nitrophenol	Not detected	ug/Kg	1700	SW846 8270	RG	10/29/01
Pentachlorophenol	Not detected	ug/Kg	800	SW846 8270	RG	10/29/01
Phenanthrene	6400	ug/Kg	330	SW846 8270	RG	10/29/01



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Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Phenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
Pyrene	12000	ug/Kg	330	SW846 8270	RG	10/29/01
1,2,4-Trichlorobenzene	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2,4,5-Trichlorophenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
2,4,6-Trichlorophenol	Not detected	ug/Kg	330	SW846 8270	RG	10/29/01
BNA (extraction)	Extracted			3510/3550	MB	10/29/01
<b>Volatile Analysis(Methanol Preserved)</b>						
Acetone	Not detected	ug/Kg	750	SW846 8260	JH	10/23/01
Acrylonitrile	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
Benzene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Bromochloromethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Bromodichloromethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Bromoform	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Bromomethane(Methyl bromide)	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
2-Butanone (MEK)	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
Carbon disulfide	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
Carbon tetrachloride	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Chlorobenzene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Chloroethane	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01



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Project Name: Osceola Township
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Table with 7 columns: Parameters, Results, Units, DL, Method Reference, Analyst, Analysis Date. Rows list various chemical compounds like Chloroform, Dichloroethene, etc., with their respective detection status and analysis dates.



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BA Report Number: 53677  
 BA Sample ID: AX06671

Project Name: Osceola Township  
 Project Number: 003-21426  
 Sample ID: Tracks

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Isopropylbenzene	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Methyl iodide	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Methyl(tert)butyl ether(MTBE)	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
4-Methyl-2-pentanone(MIBK)	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
Methylene chloride	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
2-Methylnaphthalene	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
n-Butylbenzene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
n-Propylbenzene	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Naphthalene	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
Styrene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
1,1,1,2-Tetrachloroethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,1,2,2-Tetrachloroethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Tetrachloroethene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Toluene	98	ug/Kg	50	SW846 8260	JH	10/23/01
trans-1,2-Dichloroethene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
trans-1,3-Dichloropropene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
trans-1,4-Dichloro-2-butene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
1,2,3-Trichlorobenzene	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
1,2,4-Trichlorobenzene	Not detected	ug/Kg	250	SW846 8260	JH	10/23/01
1,1,1-Trichloroethane	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01



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Report Date: 10/31/01

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Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Tracks

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
1,1,2-Trichloroethane	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Trichloroethene	Not detected	ug/Kg	50	SW846 8260	JH	10/23/01
Trichlorofluoromethane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,2,3-Trichloropropane	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,2,4-Trimethylbenzene	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
1,3,5-Trimethylbenzene	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Vinyl chloride	Not detected	ug/Kg	100	SW846 8260	JH	10/23/01
Xylenes	260	ug/Kg	150	SW846 8260	JH	10/23/01
EPA Method 5035 Methanol Preserv	Extracted			EPA 5035	UPE	10/19/01
%Solid	81.2	%		EPA 160.3	GW	10/22/01



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Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Tracks

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
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All soil results based on dry weight.

DL=Detection Limit as recommended by MDEQ

Released by:

Date:

*[Signature]*  
10/31/01





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BA Report Number: 53677

BA Sample ID: AX06672

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Stack

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
<b>Total Metal Analysis</b>						
Total Arsenic	470	mg/Kg	0.10	SW846 6020	GW	10/23/01
Total Barium	150	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Cadmium	0.14	mg/Kg	0.05	SW846 6020	GW	10/23/01
Total Chromium	49	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Copper	180	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Lead	22	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Mercury	Not detected	mg/Kg	0.10	SW846 7471	DL	10/22/01
Total Nickel	6.4	mg/Kg	1.0	SW846 6020	GW	10/23/01
Total Selenium	37	mg/Kg	0.20	SW846 6020	GW	10/23/01
Total Silver	Not detected	mg/Kg	0.50	SW846 6020	GW	10/23/01
Total Zinc	3.6	mg/Kg	1.0	SW846 6020	GW	10/23/01
Metal Soil (digestion)	Digested			3050	PR	10/22/01
Mercury (digestion)	Digested			7470/7471	DL	10/22/01
<b>PNA Analysis</b>						
Acenaphthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Acenaphthylene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01



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Submit Date: 10/20/01

Report Date: 10/31/01

BA Report Number: 53677

BA Sample ID: AX06672

Project Name: Osceola Township

Project Number: 003-21426

Sample ID: Stack

Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
Benzo(a)anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(a)pyrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(b)fluoranthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(g,h,i)perylene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Benzo(k)fluoranthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Chrysene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Dibenzo(a,h)anthracene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Fluoranthene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Fluorene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Indeno(1,2,3-cd)pyrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
2-Methylnaphthalene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Naphthalene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Phenanthrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
Pyrene	Not detected	ug/Kg	330	SW846 8270	RG	10/24/01
PNA GC/MS (extraction)	Extracted			3510/3550	AE	10/22/01
%Solid	79.9	%		EPA 160.3	GW	10/22/01



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Parameters	Results	Units	DL	Method Reference	Analyst	Analysis Date
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All soil results based on dry weight.

DL=Detection Limit as recommended by MDEQ

Released by:   
 Date: 10/31/01