

**STH 64/East
Second Street
Lincoln County**

**Phase 2 ESA -
Cleaners of Merrill**

**City of Merrill/
WisDOT**

January 1999

Report for City of
Merrill/WisDOT

Phase 2 Environmental Site Assessment

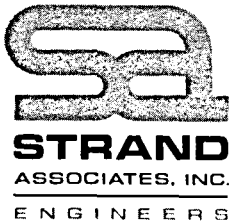
**STH 64/East Second Street
Cleaners of Merrill
ID 9996-03-00**

Prepared by:

STRAND ASSOCIATES, INC.
Excellence in Engineering Since 1946
910 West Wingra Drive
Madison, WI 53715

February 1999





910 West Wingra Drive
Madison, Wisconsin 53715
Phone: (608) 251-4843
Fax: (608) 251-8655

February 1, 1999

Mr. Al Peterson
Wisconsin Department of Transportation
District 7
P O Box 777
Rhinelander, WI 54501

Re: Phase 2 Environmental Site Assessment
Cleaners of Merrill
STH 64/ East Second Street - Merrill, WI
I.D. 9996-03-00

Dear Al,

Enclosed is a copy of the Phase 2 Environmental Site Assessment (ESA) Report for the referenced site at 219 East Second Street in Merrill. The site is located along the project limits from station 1+ 320 to 1+ 336. No additional permanent right-of-way (R/W) will be acquired from the parcel. The site was identified for investigation following Phase 1 review for the project.

Laboratory analyses identified toluene soil contamination at a concentration exceeding the toluene NR 720 Residual Contaminant Level (RCL). Additionally, tetrachloroethene (PCE) groundwater contamination was detected at a concentration exceeding the PCE NR 140 Enforcement Standard (ES).

It is our understanding that the contaminated soil will need to be classified as a "Special Waste" and handled appropriately if encountered during construction. In addition, because of the anticipated excavation depth for utility line replacement and the dewatering activities, contaminated groundwater pumped from the trenches would also require special handling and disposal or treatment.

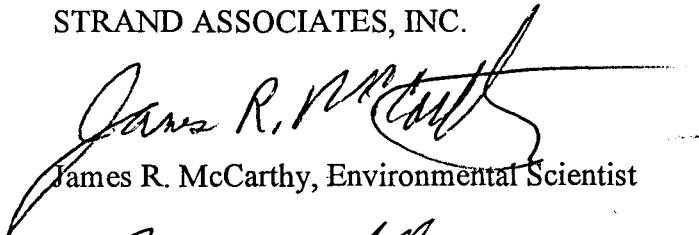
Based on the findings of this report, the history of the site, and the use of dry-cleaning solvents petroleum use/storage at the Cleaners of Merrill site, Phase 2.5 investigation near the site is recommended to identify the contamination source area, extent, and magnitude.

Mr. Al Peterson
Page 2
February 1, 1999


We are forwarding copies of the report to the DNR and property owner in accordance with the WisDOT Facilities Development Manual.

Sincerely,

STRAND ASSOCIATES, INC.



James R. McCarthy, Environmental Scientist



Luke T. Helleman, P.G.

Enclosures

cc: Chuck Pierotti, City of Merrill (w/enclosure)
Marina Benoy, WDNR, Rhinelander (w/enclosure)
Mr. Gary Schuster, Cleaners of Merrill (w/enclosure)

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Merrill/WisDOT

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ES.01 PURPOSE AND SCOPE

Strand Associates, Inc. conducted a Phase 2 Environmental Site Assessment (ESA) of the Cleaners of Merrill site on November 4, 1998 for the City of Merrill and District 7 of the Wisconsin Department of Transportation (WisDOT) for Project I.D. 9996-03-00. The site is located at 219 East Second Street in the City of Merrill, Lincoln County, Wisconsin.

The purpose of the assessment was to investigate the city right-of-way (R/W) adjacent to the site where excavation activities for road and utility construction will be performed. Strand conducted the assessment to determine the presence of solvent and/or petroleum contamination which could result in environmental responsibility for the City of Merrill. The assessment included the following scope of services: construction and abandonment of two soil borings; collection and field-screening of soil samples; collection of one groundwater sample; laboratory analysis of soil samples for gasoline range organics (GRO) and volatile organic compounds (VOCs); and analysis of the groundwater sample for VOCs.

A Phase 1 Reconnaissance and Record Search by Strand Associates, Inc. in May 1998 identified the site for further investigation because of the common use of solvents in the dry-cleaning business, site UST registration information, and planned work in the area. A dry-cleaning facility has operated at this site for 27 years. The site formerly maintained an AST that contained dry-cleaning fluid. Also, records indicate that a 510-gallon leaded gasoline UST exists at this address.

The Cleaners of Merrill site is located along the south side of East Second Street from proposed road design station 1 + 320 to 1 + 336. The City plan for the East Second Street project at this site includes acquisition of a temporary limited easement (TLE), road excavation to an approximate depth of 4 feet below ground surface (BGS), and road reconstruction. Storm sewer will be replaced along the south side of East Second Street to a depth of approximately 6 feet BGS. Sanitary sewer will be replaced in the center of the road and will involve construction depths of approximately 13 feet BGS. Additionally, water main at an approximate depth of 6 feet BGS will be replaced along the north side of East Second Street.

ES.02 RESULTS AND DISCUSSION

Subsurface investigation at the site indicated that the soils consist predominately of fine to medium sand with varying amounts of small cobbles and some gravel. Asphalt, concrete grindings, and crushed brick were observed in the upper two feet of the borings, confirming statements that the asphalt road is constructed over concrete and brick road base. Boring SB-8 was advanced to a depth of 12 feet below ground surface (BGS) while boring SB-7 was advanced to 16 feet. Attempts to extract soil samples from the 10 to 16 foot depth were unsuccessful due to a collapsing borehole. The collapsing borehole also prevented the installation of a temporary well to collect groundwater in soil boring SB-7. Groundwater was encountered at an approximate depth of 11 feet BGS in soil boring SB-8 and a groundwater sample was collected.

No elevated soil headspace screening results were detected in the field using a photoionization detector (PID). No obvious odors or visual signs of contamination were identified. The soil samples from borings SB-7, 10 to 12 feet BGS, and SB-8 at 2 to 4 feet BGS contained concentrations of tetrachloroethene (PCE) at 39 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and 440 $\mu\text{g}/\text{kg}$ respectively. The soil sample from boring SB-7 at 10 to 12 feet BGS contained a concentration of toluene at 3100 $\mu\text{g}/\text{kg}$, exceeding the NR 720 Residual Contaminant Level (RCL) of 1500 $\mu\text{g}/\text{kg}$. Soil boring SB-8 had detections of toluene below the RCL at both the 2 to 4 foot and 10 to 12 foot depths (71 and 110 $\mu\text{g}/\text{kg}$, respectively). All four soil samples analyzed had detections of methylene chloride, presumably as a lab contaminant. There were no detections of other VOCs or GRO, in the soil samples analyzed.

The groundwater sample collected from soil boring SB-8 was analyzed for VOCs. A PCE concentration of 7.8 $\mu\text{g}/\text{L}$ was detected in the sample, exceeding NR 140 Enforcement Standard (ES) of 5 $\mu\text{g}/\text{L}$. There were no detections of other VOCs in the groundwater sample.

ES.03 CONCLUSIONS AND RECOMMENDATIONS

Road construction in this area will be to approximately 4 feet BGS. Earthwork for utility replacements will involve excavations to an approximate maximum depth of 13 feet BGS. Groundwater was encountered at an approximate depth of 11 feet BGS in the borings. PCE and toluene were detected in three of the four soil samples analyzed. The RCL for toluene was exceeded at SB-7 in the soil sample from the 10 to 12 feet BGS. Contaminated groundwater was also identified at soil boring SB-8 where a PCE concentration of 7.8 $\mu\text{g}/\text{L}$ was detected, exceeding the NR 140 ES of 5.0 $\mu\text{g}/\text{L}$.

The site is recommended for Phase 2.5 investigation based on the laboratory-analytical results, field observations, and the current knowledge of preliminary construction plans at the Cleaners of Merrill site.

Both soil and groundwater contamination levels detected during the Phase 2 investigation exceeded standards (ESs and RCLs). Soil and groundwater wastes that are excavated during construction or pumped from a trench during dewatering would be considered a "Special Waste" if the material contains even "low" concentrations of petroleum or solvent contamination. Phase 2 investigation results indicate that soil with petroleum or solvent contamination will be excavated from East Second Street for road and utility line construction. Results also indicate that dewatering will be needed during utility line construction and that the groundwater near SB-8 is impacted with PCE at levels exceeding the NR 140 ES.

Because both soil RCL and groundwater ES exceedances have been identified and because of the extent of the contamination is not known, a Phase 2.5 investigation is warranted at this site.

SECTION 1
INTRODUCTION

1.01 PURPOSE AND SCOPE

This report presents the findings of a Phase 2 Environmental Site Assessment (ESA) of the Cleaners of Merrill site at 219 East Second Street, west of the intersection of East Second Street and Blaine Street in downtown Merrill, WI. The site is located along the south side of East Second Street from proposed design station 1 + 320 to 1 + 336. The environmental concern at the site is the past and present use of dry-cleaning chemicals and the history of an underground storage tank (UST) at this address.

Strand completed a report, "Phase 1 Hazardous Materials Review" (Reconnaissance and Record Search) for the corridor dated May 1998. For more information on the subject site, please refer to the referenced report for the City of Merrill and Wisconsin Department of Transportation (WisDOT), Project I.D. 9996-03-00, STH 64/East Second Street, from Polk to Mill Streets, Lincoln County, Wisconsin.

Based upon the known design work at the time of this review, the proposed utility replacements, review of available information in the Phase 1 report, and review of the 1954 Sanborn map, the scope of this Phase 2 ESA included the following:

- Construction and abandonment of two soil borings (SB-7 and SB-8) to a maximum depth of 16 feet below ground surface (BGS).
- Collection and field-screening of soil samples with a photoionization detector (PID).
- Laboratory analysis of two soil samples from each boring for gasoline range organics (GRO) and volatile organic compounds (VOCs).
- Collection and analysis of one groundwater sample from boring SB-8 for VOCs.

This assessment was conducted in accordance with WisDOT Facilities Development Manual Procedure No. 21-35-10, Environmental Documents, Reports and Permits, Contaminated Site Assessment & Remediation, Phase 2 - Environmental Sampling.

The findings of the Phase 2 ESA and recommendations are provided in the following sections.

1.02 ABBREVIATIONS

The following abbreviations and terms are used in this report:

BGS	-	below ground surface
DNR	-	Wisconsin Department of Natural Resources
ESA	-	environmental site assessment
ES	-	enforcement standard
eV	-	electron volt
GRO	-	gasoline range organics
LOD	-	limit of detection
mg/kg	-	milligram per kilogram
PAL	-	preventive action limit
PID	-	photoionization detector
ppm	-	parts per million
PVOC	-	petroleum volatile organic compound
RCL	-	NR 720 Residual Contaminant Level
R/W	-	right-of-way
STH	-	state trunk highway
TLE	-	temporary limited easement
TOV	-	total organic vapors
μg/kg	-	micrograms per kilogram (approximately ppb if dry weight basis)
μg/L	-	microgram per liter
USGS	-	United States Geologic Survey
UST	-	underground storage tank
WisDOT	-	Wisconsin Department of Transportation

1.03 GENERAL SITE INFORMATION

Site Owner: Cleaners of Merrill
 219 East Second Street
 Merrill, WI 54452
 Contact: Mr. Gary Schuster
 (715) 536-4094

Site Address: 219 East Second Street
 (Southwest of the intersection of Blaine and East Second Streets)
 Merrill, WI 54452

DNR Site I.D. #: Not applicable

PECFA Eligible: Not applicable

Note: Applicability to DNR Dry Cleaning Rule not investigated.

**City/WisDOT
Consultant:**

Strand Associates
910 West Wingra Drive
Madison, WI 53715
Contact: Mr. Andrew Craven, P.E.
Mr. Luke Hellermann, P.G.
Phone: (608) 251-4843

**DNR Project
Manager:**

Department of Natural Resources
107 Sutcliffe Avenue
P.O. Box 818
Rhineland, WI 54501
Contact: Marina Benoy
Phone: (715) 362-7616

Client:

City of Merrill
1004 East First Street
Merrill, WI 54452
Contact: Chuck Pierotti, P.E.
(715) 536-2311

WisDOT - Dist. 7, Rhineland
P.O. Box 777
Hanson Lake Road
Rhineland, WI 54501
Contact: Al Peterson, P.E.
(715) 362-3490

**Drilling
Subcontractor:**

Maxim Technologies - with SGS as subcontractor
Soil Geoprobe Consultants (SGS)
W4490 Pope Road
Merrill, WI 54452
Contact: Mr. Pete Wegner
Phone: (800) 261-2803

**Analytical
Laboratory:**

EN CHEM, Inc.
525 Science Drive
Madison, WI 53711
Contact: Ms. Elizabeth Graf
Phone: (608) 232-3300

SECTION 2
SITE DESCRIPTION

2.01 SITE LOCATION

The Cleaners of Merrill site is located at 219 East Second Street. The property covers approximately 50 feet of frontage on East Second Street west of the intersection of Blaine Street. This corresponds to the SE 1/4 of the SE 1/4 of Section 11, T31N, R6E, City of Merrill, Lincoln County Wisconsin. See the site location map provided as Figure 2.01-1 and the USGS Topographic Map provided in Appendix A. The site is located along the south side of East Second Street from design station 1 + 320 to 1 + 336.

The site is situated in a mixed zoning area of downtown Merrill. Commercial buildings/office fronts and residential houses and apartments exist on the south side of Second Street while residential parcels exist to the north and farther west. The parcel is bordered to the east by a vacant former business (labeled as dairy on the 1954 Sanborn) and Blaine Street with residences and businesses beyond, to the south by businesses/warehouses, and to the west by an alley and office buildings and residences. The boring locations and other site features are shown on the site plan, Figure 2.01-2.

2.02 SITE HISTORY

According to the Phase 1 Review conducted by Strand dated May 1998, the site was identified for Phase 2 investigations because of the use of dry-cleaning chemicals at the site, the registration of a UST at the site, and road and utility work in the area.

A dry-cleaning facility has operated at this site for 27 years. The site also formerly maintained an AST that contained dry-cleaning fluid, and records indicate that a 510-gallon leaded gasoline UST exists at this address (presumed to be in the basement). Records list the UST as residential and installed in 1980 with the last inspection in 1986. The 1998 UST records list the address as 219 East Second Street with the owner listed as Harold Dahlke. Harold Dahlke is the former owner of the site. Utility upgrades at the site include storm sewer, sanitary sewer, and water main. A Phase 2 investigation was recommended because of the potential for encountering solvent or petroleum-contaminated soils or groundwater.

Review of Sanborn Fire Insurance Maps confirmed the developed use of the site for the period of review dating back to 1954. The map did not designate site use, but did label the property to the east as dairy. A copy of the Sanborn Map is provided in Appendix A.

2.03 CITY OF MERRILL/WisDOT PRELIMINARY PLANS FOR SITE USE

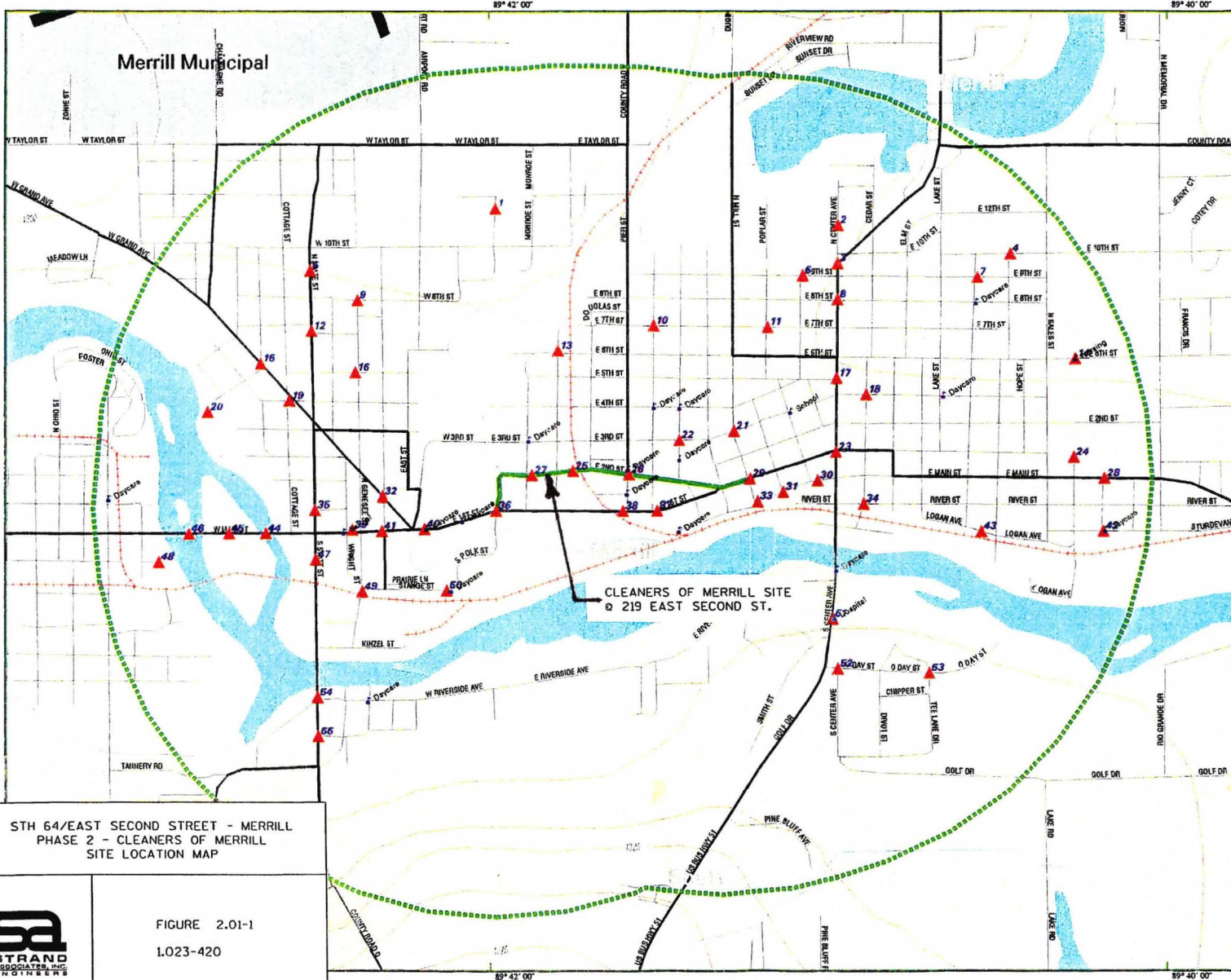
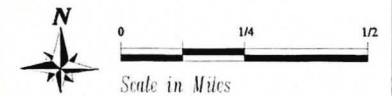
The City plan for the East Second Street project at this site does not include acquiring permanent R/W. However, the planned activities for this area include acquisition of a temporary limited easement (TLE) and excavation for road reconstruction to an approximate depth of 4 BGS. The Cleaners of Merrill site is located along the south side of East Second

Merrill Municipal

City of Merrill

Legend

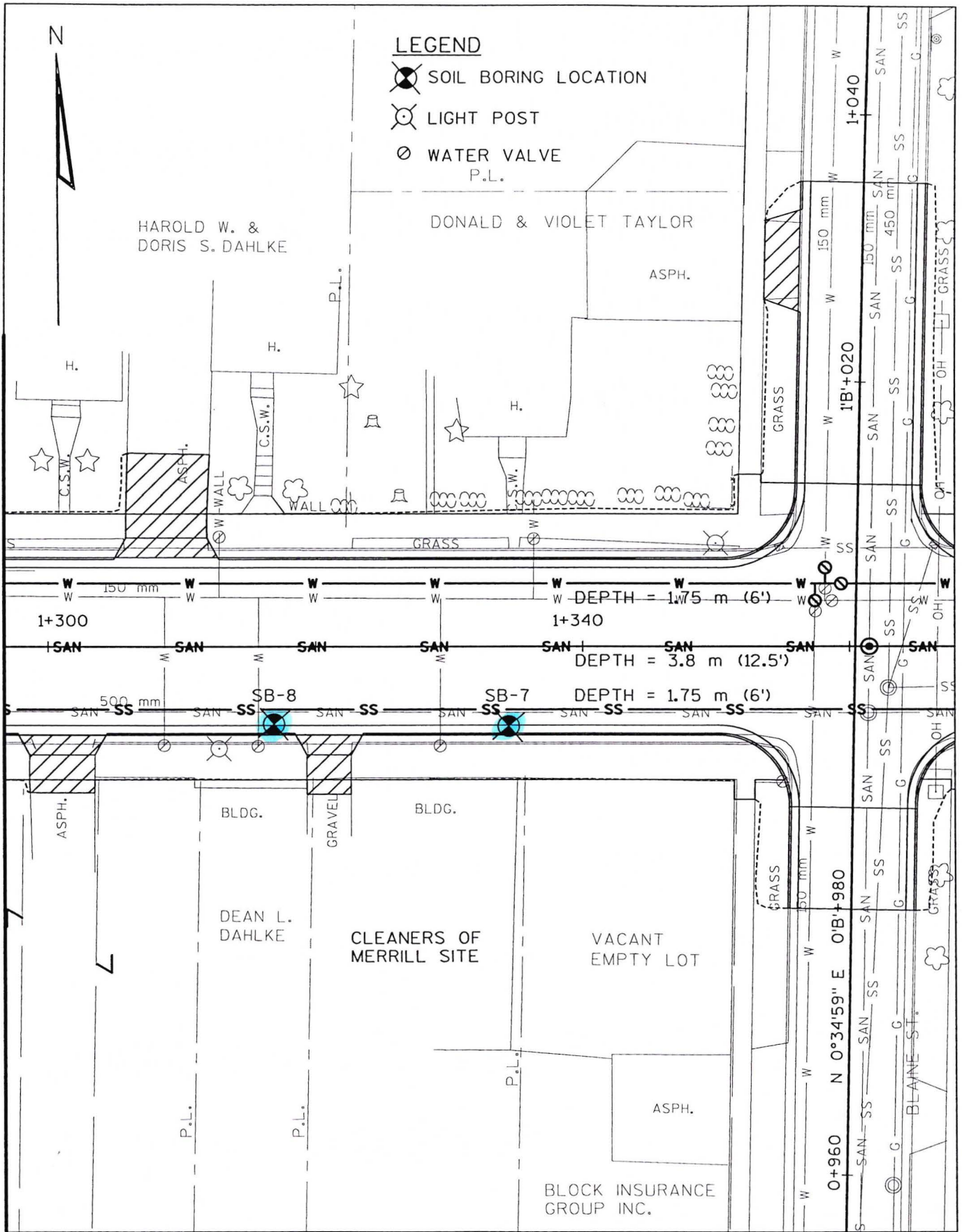
- Listed Sites
- Earthquake Epicenters (Magnitude 5 or greater)
- Study Area Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites



STH 64/EAST SECOND STREET - MERRILL
PHASE 2 - CLEANERS OF MERRILL
SITE LOCATION MAP



FIGURE 2.01-1
1.023-420



LEGEND

- SOIL BORING LOCATION
- LIGHT POST
- WATER VALVE
P.L.

FIGURE 2.01-2

STH 64/EAST SECOND STREET - MERRILL
CLEANERS OF MERRILL
PHASE 2 SITE PLAN



Street from proposed road design station 1 + 320 to 1 + 336. Storm sewer will be replaced along the south side of East Second Street to an approximate depth of 6 feet BGS. Sanitary sewer will be replaced in the center of the road and will involve construction depths of approximately 13 feet BGS. Additionally, water main at an approximate depth of 6 feet BGS will be replaced along the north side of East Second Street. Curb and gutter along East Second Street will also be replaced. The location of upgraded facilities is shown on Figure 2.01-2. New/upgraded sanitary and storm sewer will be installed in new locations while water main will be installed in the same location.

2.04 REGIONAL SOIL CONDITIONS AND GROUNDWATER FLOW

The City of Merrill is located in the Northern Highlands, in the northern half of the Central Wisconsin River Basin. The soils in the project area are generally sandy soils or silty sands associated with the river corridors/outwash plains that create boundaries in the city. Both the Wisconsin and Prairie Rivers dissect the city. The Wisconsin and Prairie Rivers join approximately 1000 feet south of the site and flow east and then southerly. The Prairie River is located west and north of the site and city, and the Wisconsin River forms the southern boundary of the city. It would appear groundwater flow might be south in this portion of town, but groundwater flow direction was not determined as part of this investigation.

The area of the site/roadway and surrounding land in this area is level, and soils have moderate (surface) to high (deeper in the profile) permeability, estimated at 0.8 to 5 inches an hour. The Lincoln County Soil Survey shows soils in the area as the Padus Series, which are well-drained soils formed in loamy deposits and in the underlying sand and gravel.

Sandy, glacial outwash soils in the area are typically about 50 feet thick and overlie Precambrian crystalline bedrock of either igneous or metamorphic origin. The seasonal high water table for the project areas is not known. Other Phase 2 investigations have found groundwater levels as high as 7 feet BGS in some areas. These same reports have reported groundwater flow to be northwest at other locations on East Second Street. One such site is the Stillman's Service Site at 601 E. Second. The regional groundwater flow direction has not been determined.

SECTION 3
SAMPLING RESULTS

3.01 OBSERVATIONS

Geoprobe borings were constructed by Soil Geoprobe Services (SGS) on November 4, 1998. Continuous soil samples were collected at two boring locations. Boring SB-7 was advanced to 16 feet BGS in attempts to extract soil samples, but the borehole kept collapsing below the 10- to 12-foot depth because of large cobbles, gravel and loose sand. Boring SB-8 was advanced to a depth of 12 feet BGS. Groundwater was encountered at an approximate depth of 11 feet BGS, and a groundwater sample was collected. A summary of site investigation procedures is included in Appendix B, and soil boring logs and abandonment forms are provided in Appendix C.

Soils encountered during construction of the two borings consisted of approximately 0 to 2 feet of mixed roadway materials such as asphalt (3 to 4 inches), concrete (6 to 12 inches), basecourse and/or gravel (6 to 12 inches). Subsurface investigation below two feet indicated that the soils consist predominately of fine to medium sand with varying amounts of small cobbles and gravel. Cinders and/or veins of black streaking were observed in the upper four feet.

The borings were located west of the southwest corner of the intersection of Blaine and East Second Streets along the western frontage of 219 East Second Street and properties west. The borings were in the city R/W near the south curb at locations corresponding to the following roadway stationing:

SB-7 @ 1 + 334, 7.5 M right (23 feet from center line)

SB-8 @ 1 + 317, 7 M right (24.5 feet from the center line).

3.02 SCREENING AND ANALYTICAL RESULTS

Soil samples collected were screened in the field with a PID and the results are presented in Table 3.02-1. No elevated PID readings (readings over 3 ppm) were observed at either boring, and no visual or olfactory field observations indicated the presence of contamination in samples.

Two soil samples from each boring were analyzed for GRO and VOCs. Soil analytical results are presented in Table 3.02-2. All four soil samples analyzed had detections of methylene chloride, a common lab contaminant. Methylene chloride was also detected in the methanol field blank, indicating that detections are due to laboratory contamination. The soil samples from borings SB-7, 10 to 12 feet BGS, and SB-8 at 2 to 4 feet BGS contained concentrations of tetrachloroethene (PCE) at 39 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and 440 $\mu\text{g}/\text{kg}$ respectively. The soil sample from boring SB-7 at 10 to 12 feet BGS contained a concentration of toluene at 3100 $\mu\text{g}/\text{kg}$, exceeding the NR 720 Residual Contaminant Level (RCL) of 1500 $\mu\text{g}/\text{kg}$. Soil boring SB-8 had detections of toluene below the RCL at both the 2 to 4 foot and 10 to 12 foot

depths (71 and 110 $\mu\text{g}/\text{kg}$, respectively). There were no detections of other VOCs or GRO, in the soil samples analyzed.

No groundwater sample could be obtained at soil boring SB-7 because the borehole collapsed several times and a temporary well could not be installed. The groundwater sample collected from a temporary well installed in soil boring SB-8 was analyzed for VOCs. Groundwater analytical results are presented in Table 3.02-3. A PCE concentration of 7.8 $\mu\text{g}/\text{L}$ was detected in the sample, exceeding NR 140 Enforcement Standard (ES) of 5 $\mu\text{g}/\text{L}$. There were no detections of other VOCs in the sample.

Copies of the laboratory analytical reports for the soil and groundwater samples are included in Appendix D.

**Field Screening Results (PID) - Cleaners of Merrill
STH 64/East Second Street - Merrill, WI**

Sample Depth, Ft.	Boring Number	
	SB-7	SB-8
0 - 2	NR	NR
2 - 4	2.4	2.0*
4 - 6	2.4	NR
6 - 8	2.8*	1.9
8 - 10	2.8	NR
10 - 12	2.9*	2.3*
12 - 16	NR	EOB
	EOB	

Notes:

* Sample retained for laboratory analysis.

NR Not recoverable.

EOB End of boring.

Samples collected November 4, 1998.

**Soil Analytical Results - Cleaners of Merrill
STH 64/East Second Street - Merrill, WI**

Parameter	NR 720 RCL	Boring Number			
		SB-7 6-8 ft	SB-7 10-12 ft	SB-8 2-4 ft	SB-8 10-12 ft
GRO, mg/kg	250 ¹	<2.6	<2.6	<2.7	<2.7
<u>Detected VOCs, µg/kg:</u>					
Methylene chloride	--	66	52	82	81
Tetrachloroethene	--	<25	39	440	<25
Toluene	1,500	<25	3100	71	110

Notes: Samples collected November 4, 1998.
Limits of Detection (LOD) and Limits of Quantification (LOQ) as specified in laboratory report in Appendix D.

¹ Assumes hydraulic conductivity less than 1×10^{-6} cm/s.

RCL Residual Contaminant Level.

Highlighted value exceeds NR 720 RCL standard.

Methylene chloride is a common lab contaminant and was detected in the methanol blank

**Groundwater Analytical Results - Cleaners of Merrill
STH 64/East Second Street - Merrill, WI**

<u>Parameter</u>	<u>NR 140 ES/PAL</u>	<u>Temp. Well SB-8</u>
<u>Detected VOCs, $\mu\text{g/l}$:</u>		
Methylene chloride	5/0.5	<0.36
Tetrachloroethene	5/0.5	7.8
Toluene	343/68.6	< 0.27

Notes: Samples collected November 4, 1998.
 ES Enforcement Standard.
 PAL Preventive Action Limit.
 7.8 Highlighted value exceeds NR 140 ES Standard.

SECTION 4
CONCLUSIONS AND RECOMMENDATIONS

4.01 CONCLUSIONS

Field observations (visual and olfactory observations) and PID field-screening results did not indicate the presence of solvent or petroleum-related soil or groundwater contamination at the borings completed. However, solvent and petroleum-related contamination was detected in the soil and groundwater samples submitted for laboratory analyses. The soil samples from borings SB-7, 10 to 12 feet BGS, and SB-8 at 2 to 4 feet BGS contained concentrations of tetrachloroethene (PCE) at 39 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and 440 $\mu\text{g}/\text{kg}$ respectively. The soil sample from SB-7 at 10 to 12 feet BGS contained a toluene concentration of 3100 $\mu\text{g}/\text{kg}$, exceeding the NR 720 RCL of 1500 $\mu\text{g}/\text{kg}$. PCE and toluene were detected in soil samples as shallow as 2 to 4 feet BGS. Contaminated groundwater was also identified at soil boring SB-8. A PCE concentration of 7.8 $\mu\text{g}/\text{L}$ was detected, exceeding the NR 140 ES for PCE (5.0 $\mu\text{g}/\text{L}$). The depth to groundwater is approximately 11 feet BGS near this site.

Excavation for road and utility line construction will extend to approximate maximum depths of 4 feet BGS for road work and 13 feet BGS for utilities. Storm sewer will be replaced along the south side of East Second Street to a depth of 6 feet. Sanitary sewer will be replaced in the center of the road with construction depths of approximately 13 feet BGS, and water main at an approximate depth of 6 feet will be replaced along the north side of East Second Street.

4.02 RECOMMENDATIONS

Based on the soil and groundwater analytical results, field observations, and the current knowledge of preliminary construction plans, a Phase 2.5 investigation at the Cleaners of Merrill site is recommended.

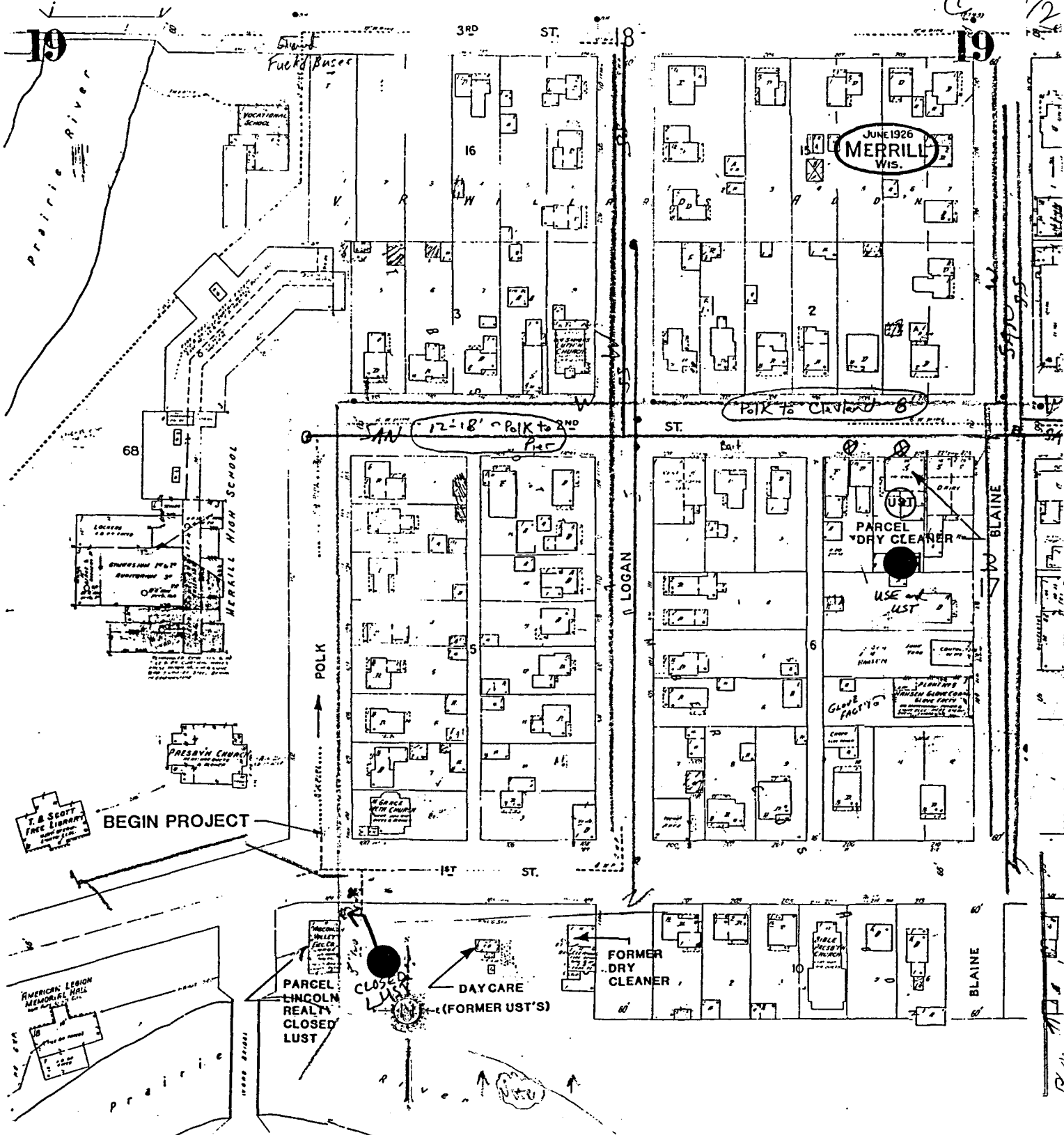
Both soil and groundwater contamination levels detected during the Phase 2 investigation exceeded the respective ESs and RCLs. Soil and groundwater wastes that are excavated during construction or pumped from a trench during dewatering would be considered a "Special Waste" if the material contains even "low" concentrations of petroleum or solvent contamination. Phase 2 investigation results indicate that soil with low-level petroleum or solvent contamination will be excavated from East Second Street for road and utility line construction. Results also indicate that dewatering will be needed during utility line construction and that the groundwater near SB-8 is impacted with PCE at levels exceeding the NR 140 ES. Because of the ES exceedance and potential impacts to the dewatering operations, the PCE groundwater contamination warrants further investigation. Additionally, the toluene NR 720 RCL exceedance at SB-7 warrants further investigation of the contamination source area, extent, and magnitude.

**SECTION 5
LIMITATIONS**

5.01 LIMITATIONS

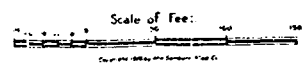
This Phase 2 Environmental Site Assessment (ESA) was prepared by Strand Associates, Inc. for the City of Merrill and WisDOT District 7 and was conducted in accordance with generally-accepted standards of practice and with WisDOT Facilities Development Manual Procedure No. 21-35-10. This ESA was conducted specifically for use by the City of Merrill and WisDOT for assessing potential environmental hazards within the proposed right-of-way along STH 64/East Second Street - Polk to Mill Streets, Merrill, WI, (Project ID 9996-03-00). Any reliance on this report by a party other than the City of Merrill and WisDOT shall be at such party's sole risk. This investigation was based on limited soil observation and sampling. The information, recommendations, and conclusions provided herein apply only to the subject properties as they existed during Strand Associates' site assessment. Should land use or conditions change, information, conclusions, and recommendations herein no longer apply. It is stressed that actual site conditions can only be determined by comprehensive and extensive investigation.

APPENDIX A
SANBORN AND USGS MAPS



Cleaners of Merrill Site

EDR Sanborn, Inc.
 This Sanborn map is a certified copy produced by EDR Sanborn, Inc. from its archival, microfilm or film master as derived from Sanborn Company records.
 MS4 CPE





Cleaners
of Merrill Site
@ 219 E. Second Street

CLEANERS

APPENDIX B
SITE INVESTIGATION PROCEDURES

B.01 SOIL BORINGS AND SOIL SAMPLING

Borings were advanced with Geoprobe® sampling equipment. Soil samples were collected using a 24-inch long Geoprobe® soil sampler with disposable acetate liners. When each boring was completed, the hole was filled with bentonite chips or powder to generally within 3 to 6 inches of the surface. The remaining space was filled with a surface seal similar to the existing surface (ie., asphalt).

Soil samples were classified for soil type, and boring logs and borehole abandonment forms are provided in Appendix C. Down-hole sampling equipment was decontaminated with a water and detergent wash and double water rinse between samples to prevent cross-contamination within the boring. Soil borings were abandoned in accordance with Wisconsin Administrative Code, Chapter NR 141.

B.02 SOIL SAMPLING

Soil samples were collected using 24-inch long Geoprobe® samplers with disposable acetate liners. Soil sampling equipment was decontaminated between each sample collected. A portion of each sample was collected into quart size ziploc bags for field screening and a portion was collected into jars for potential laboratory analyses. The samples were labeled and retained/stored on site in coolers. After all samples for the site were collected, the screening samples were brought to room temperature. Each field screening sample was agitated for about 30 seconds and analyzed with the PID meter. The PID used was a MicroTIP Model 2000 photoionization detector with a 10.6 electron volt (eV) lamp. The meter was calibrated in the factory and field-calibrated daily prior to sampling using an isobutylene standard.

Soil samples were selected for laboratory analyses based on screening results. Immediately after collection, soil for PVOC and GRO analyses (approximately 25 grams of soil) was placed into two 60 ml septum-lined-lid glass jars. The soil for lead analysis was placed into 250 ml plastic jars. Samples were placed on ice immediately after collection, preserved with 25 mls of methanol (GRO/PVOC only) after field-screening results were obtained, and sent to an analytical laboratory within the specified hold times. A field methanol blank was collected during sampling activities.

Typically, each boring was advanced either to 20 feet in depth or the depth of the water table, whichever was encountered first. The deepest sample above groundwater and/or the sample with the highest field-screening reading were generally retained for laboratory analysis in accordance with the WisDOT Facilities Development Manual.

B.03 GROUNDWATER SAMPLING

At boring locations where groundwater sampling was required, a 3/4-inch diameter PVC temporary well was installed in the open probe hole. The wells consisted of a 5-foot length of slotted PVC connected to PVC riser to the ground surface. The screen and riser assembly were installed at a depth to allow groundwater to accumulate in the screened section of the temporary well. Groundwater was purged from each well until the groundwater became clear, until the well was purged dry, or until five gallons of water was purged from the well. The wells were developed and sampled using a PVC bailer. The bailer was decontaminated between each sample. A field bailer blank was not collected. Although new PVC materials were not used for each temporary well and a field bailer blank was not collected, it does not appear that cross contamination between sampling locations influenced the analytical results.

Groundwater samples for PVOCs were collected into 40 mL VOC vials preserved with hydrochloric acid (HCL).

B.04 DECONTAMINATION PROCEDURES

Geoprobe® soil samplers, PVC temporary well screen and riser, and groundwater purging/sampling bailers were decontaminated between samples using a detergent wash and a double water rinse. Disposable nitrile gloves were changed between the collection and classification of each soil or groundwater sample.

B.05 INVESTIGATIVE WASTES

The volume of soil waste generated was minimal, resulting only from the unused portions of split-spoon samples, decontamination water, and purge water. Soil waste was initially containerized in 5-gallon buckets. After field screening determined no elevated readings, soil waste was disposed of by the geoprobe contractor. Water wastes were disposed of on to the paved ground surface at the site.

B.06 SAMPLE ANALYTICAL METHODS

All soil samples were analyzed by EN CHEM, Inc (Wisconsin DNR Laboratory Certification Number 405132750). The samples were transported to EN CHEM by courier.

Soil analytical methods included: GRO - WI DNR Modified Method, PVOCs - EPA Modified Method 8021B, VOCs - EPA Modified Method 8260B, and Lead - EPA Method SW846 7421.


Refer to the laboratory reports for detailed information.

APPENDIX C
SOIL BORING LOGS AND ABANDONMENT FORMS

Facility/Project Name MERRILL - EAST 2ND STREET			License/Permit/Monitoring Number		Boring Number SB-7 (CLEANERS)	
Boring Drilled By (Firm name and name of crew chief) SGS, INC Rowe Klade			Date Drilling Started 11/4/98		Date Drilling Completed 11/4/98	
DNR Facility Well No.			WI Unique Well No.		Common Well Name	
Final Static Water Level Feet MSL			Surface Elevation Feet MSL		Borehole Diameter 1.5 Inches	
Boring Location State Plane 219 E. Second St. N, E SE 1/4 of SE 1/4 of Section 11 T 31 N, R 6E			Lat 0 1 " Long 0 1 "		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
County LINCOLN			DNR County Code 35		Civil Town/City/ or Village MERRILL	

Sample Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
1			1	ASPHALT AND CONCRETE No sample recovery											
2			2	SAND, with clay, fine to medium grained, light brown, moist	SP			2.4							
3			4	SAND, with gravel, medium grained, light brown, moist	SP			2.4							
4			6					2.8							
5			8					2.8							
6			10	SAND, a little gravel, fine to medium grained, light brown, moist	SP			2.9							

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 

Firm **Maxm Technologies**
555 South 72nd Avenue, Wausau, WI
Tel: 715 845-4100, Fax: 715 842-0381

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Facility/Project Name MERRILL - EAST 2ND STREET		License/Permit/Monitoring Number	Boring Number SB-8 (CLEANERS)	
Boring Drilled By (Firm name and name of crew chief) SGS, INC Rowe Klade		Date Drilling Started 11/4/98	Date Drilling Completed 11/4/98	Drilling Method GEOPROBE
DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level Feet MSL	Surface Elevation Feet MSL
			Borehole Diameter 1.5 Inches	
Boring Location State Plane 219 E. Second St. N, E		Lat 01''	Local Grid Location (If applicable)	
SE 1/4 of SE 1/4 of Section 11 T 31 N, R 6E		Long 01''	<input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
County LINCOLN		DNR County Code 35	Civil Town/City/ or Village MERRILL	

Sample Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200		
1			1	ASPHALT AND CONCRETE No sample recovery											
2			2	SAND, with clay and cinders, fine grained, light brown, moist	SP			2.0							
3			3												
4			4	No sample recovery				1.9							
5			5												
6			6	SAND, with clay and gravel, fine to medium grained, light brown to brown, moist	SP			2.3							
7			7												
			8												
			9												
			10												
			11												
			12												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm Maxim Technologies 555 South 72nd Avenue, Wausau, WI Tel: 715 845-4100, Fax: 715 842-0381
---------------	--

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5,000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location	County	Original Well Owner (If Known)	
____ 1/4 of ____ 1/4 of Sec. ____; T. ____ N; R. ____ <input type="checkbox"/> E <input type="checkbox"/> W		Present Well Owner City of Merrill	
(if applicable) ____ Gov't Lot	____ Grid Number	Street or Route	
Grid Location ____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., ____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name		Facility Well No. and/or Name (If Applicable) SB-7	WI Unique Well No. _____
Street Address of Well East Second Street		Reason For Abandonment No longer needed	
City, Village Merrill, Wisconsin		Date of Abandonment November 4, 1998	

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) <u>November 4, 1998</u>		(4) Depth to Water (Feet) <u>None</u>	
<input type="checkbox"/> Monitoring Well	Construction Report Available? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Pump & Piping Removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Water Well		Liner(s) Removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Drillhole		Screen Removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> Borehole		Casing Left in Place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Construction Type: <input type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input checked="" type="checkbox"/> Other (Specify) <u>soil probe</u>		If No, Explain _____	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Total Well Depth (ft.) <u>16</u> Casing Diameter (ins.) <u>2.25</u> (From ground surface)		Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Casing Depth (ft.) _____		Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		(5) Required Method of Placing Sealing Material <input checked="" type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain)	
		(6) Sealing Materials <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Chipped Bentonite	
		For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Bentonite Pellets <input checked="" type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite-Cement Grout	

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	16	.19 ft ³	

(8) Comments:

(9) Name of Person or Firm Doing Sealing Work Rowe Klade, SGS Inc.		(10) FOR DNR OR COUNTY USE ONLY	
Signature of Person Doing Work	Date Signed	Date Received/Inspected	District/County
Street or Route	Telephone Number ()	Reviewer/Inspector	<input type="checkbox"/> Complying Work <input type="checkbox"/> Noncomplying Work
City, State, Zip Code Merrill, WI 54452		Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location	County	Original Well Owner (If Known)	
___ 1/4 of ___ 1/4 of Sec. ___; T. ___ N; R. ___ <input type="checkbox"/> E <input type="checkbox"/> W (if applicable)		Present Well Owner City of Merrill	
___ Gov't Lot ___ Grid Number		Street or Route	
Grid Location ___ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., ___ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name		Facility Well No. and/or Name (If Applicable) SB-8	WI Unique Well No. _ _ _ _
Street Address of Well East Second Street		Reason For Abandonment No longer needed	
City, Village Merrill, Wisconsin		Date of Abandonment November 4, 1998	

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) <u>November 4, 1998</u>		(4) Depth to Water (Feet) <u>11</u>	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A If No, Explain _____	
Construction Type: <input type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input checked="" type="checkbox"/> Other (Specify) <u>soil probe</u>		Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		(5) Required Method of Placing Sealing Material <input checked="" type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain)	
Total Well Depth (ft.) <u>12</u> Casing Diameter (ins.) <u>2.25</u> (From ground surface)		(6) Sealing Materials For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Clay-Sand Slurry <input checked="" type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Bentonite-Cement Grout <input type="checkbox"/> Chipped Bentonite	
Casing Depth (ft.) _____ Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet			

(7)	Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
	Granular Bentonite	Surface	12	.14 ft ³	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work Rowe Klade, SGS Inc.		(10) FOR DNR OR COUNTY USE ONLY	
Signature of Person Doing Work	Date Signed	Date Received/Inspected	District/County
Street or Route	Telephone Number ()	Reviewer/Inspector	<input type="checkbox"/> Complying Work <input type="checkbox"/> Noncomplying Work
City, State, Zip Code Merrill, WI 54452		Follow-up Necessary	

APPENDIX D
LABORATORY REPORTS

Company Name: Strand Associates
 Branch or Location: Madison
 Project Contact: Jim McCarthy
 Telephone: 608-251-4843
 Project Number: 1.023-420
 Project Name: East Second St - Merrill
 Project State: WI
 Sampled By (Print): Jim McCarthy
 Regulatory Program (circle): UST RCRA CLP SDWA
 NPDES/WPDES CAA NR
 Other
 NR720 Confirmation Analysis Required? (circle): Y N
 (En Chem will not confirm unless otherwise instructed.)



1241 Bellevue St., Suite 9
 Green Bay, WI 54302
 920-469-2436 • 1-800-736-2436
 FAX 920-469-8827

525 Science Drive
 Madison, WI 53711
 608-232-3300 • 1-888-536-2438
 FAX: 608-233-0502

1423 N. 8th Street, Suite 122
 Superior, WI 54880
 715-392-5844 • 1-800-837-8238
 FAX 715-392-5843

CHAIN OF CUSTODY

32797

Page 2 of 3

P.O. # _____ Quote # _____

Mail Report To: Luke Hellermann

Company: Strand Associates

Address: 910 W. Wingra Dr.
 Madison, WI 53715

Invoice To: Luke Hellermann

Company: _____
 Address: - Same -

Mail Invoice To: _____

FILTERED? (YES/NO)	N	N	N	N	N	N
PRESERVATION (CODE)*	F	F	F	A		

ANALYSES REQUESTED
 VOC's
 P.VOC's
 GRO
 DRO
 Lead

SHADED AREA FOR LABORATORY USE ONLY

FIELD ID	SAMPLE DESCRIPTION	COLLECTION		FIELD SCREEN	MATRIX	GOOD COND.	TOTAL BOTTLES	COMMENTS	LABORATORY NUMBER
		DATE	TIME						
	SB-5, 6-8' Kanitz	11/4/98	4:20	X	Soil	X	250 1-202		009
	SB-5, 10-12' Kanitz		4:40	X			1250 1-22m		010
	SB-6, 4-6' Kanitz		5:05	X					011
	SB-6, 10-12' Kanitz		5:09	X					012
	SB-7, 6-8' Cleburn		6:10	X			1-250w 2-202-w		013
	SB-7, 10-12' "		6:20	X					014
	SB-8, 2-4' "		6:50	X					015
	SB-8, 10-12' "	✓	7:05	X					016
	Meek Blank								017

Cancelled - no methanol in sample.
 OK per Jim McCarthy - MDR 11/10/98

Rec'd Not on chain
 Added by Lab
 TR
 11/19/98

<p>*Preservation Code A=None B=HCL C=H2SO4 D=HN03 E=EnCore F=Methanol** G=NaOH O=Other (Indicate)</p> <p>**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.</p>	Relinquished By: <u>Jim McCarthy</u>	Date/Time: <u>11/6/98 9:00</u>	Received By: <u>[Signature]</u>	Date/Time: <u>11-6-98 0950</u>	En Chem Project No. <u>886722</u>
	Relinquished By: <u>[Signature]</u>	Date/Time: <u>11-6-98 10:10</u>	Received By: <u>Kevin J. Walker</u>	Date/Time: <u>11/6/98 1010</u>	Sample Receipt Temp. <u>80E</u>
	Relinquished By: <u>Walker</u>	Date/Time: <u>11/9/98 = 0930</u>	Received By: <u>[Signature]</u>	Date/Time: <u>11/9/98 = 0930</u>	Sample Receipt pH (We/Metals)
	Relinquished By: <u>[Signature]</u>	Date/Time: <u>11/9/98 01:00</u>	Received By: <u>B. Kemper</u>	Date/Time: <u>11/2/98 1300</u>	Custody Seal

Company Name: Strand Associates
 Branch or Location: Madison
 Project Contact: Jim McCarthy
 Telephone: 608-251-4843
 Project Number: 1,023-420
 Project Name: East Second St. Merrill
 Project State: WI
 Sampled By (Print): Jim McCarthy
 Regulatory Program (circle): UST RCRA CLP SDWA
 NPDES/WPDES CAA NR
 Other _____



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 715-392-5844 • 1-800-837-8238
 FAX 715-392-5843

CHAIN OF CUSTODY

32798

Page 3 of 3

P.O. # _____ Quote # _____
 Mail Report To: Luke Hellemann
 Company: Strand Associates, Inc.
 Address: 910 W. Wingra Dr.
Madison, WI

FILTERED? (YES/NO) Na/No
 PRESERVATION (CODE)* B/B

ANALYSES REQUESTED
VOC's
PVOC's

Invoice To: _____
 Company: Same
 Address: _____
 Mail Invoice To: Same

NR720 Confirmation Analysis Required? (circle): Y N
 (En Chem will not confirm unless otherwise instructed.)

FIELD ID	SAMPLE DESCRIPTION	COLLECTION		FIELD SCREEN	MATRIX	SHADED AREA FOR LABORATORY USE ONLY		COMMENTS	LABORATORY NUMBER
		DATE	TIME			GOOD COND.	TOTAL BOTTLES		
	<u>WATER</u>								
	<u>SB-1^v</u>	<u>11/4/98</u>	<u>10:10</u>	<u>X</u>		<u>3/25</u>	<u>3/40</u>		<u>018</u>
	<u>SB-2^v</u>	<u>"</u>	<u>12:00</u>	<u>X</u>		<u>1/25</u>			<u>019</u>
	<u>SB-3^v NR</u>								
	<u>SB-4^v</u>	<u>11/4/98</u>	<u>3:30</u>	<u>X</u>		<u>1/25</u>			<u>020</u>
	<u>SB-5^v</u>	<u>"</u>	<u>4:40</u>	<u>X</u>		<u>1/25</u>			<u>021</u>
	<u>SB-6^v</u>	<u>"</u>	<u>5:10</u>	<u>X</u>		<u>2/25</u>			<u>022</u>
	<u>SB-7^v NR</u>								
	<u>SB-8</u>	<u>11/4/98</u>	<u>7:10</u>	<u>X</u>		<u>1/25</u>			<u>023</u>
	<u>Field Blank</u>			<u>X</u>					

No water trip to 11/4/98

*Preservation Code A=None B=HCL C=H2SO4 D=HN03 E=EnCore F=Methanol** G=NaOH O=Other (Indicate)	Relinquished By: <u>Jim R. McCarthy</u> Date/Time: <u>11/4/98 9:00</u>	Received By: <u>[Signature]</u> Date/Time: <u>11-6-98 09:50</u>	En Chem Project No. <u>286722</u>
	Relinquished By: <u>[Signature]</u> Date/Time: <u>11-6-98 10:10</u>	Received By: <u>Kevin Walker</u> Date/Time: <u>11/6/98 10:10</u>	Sample Receipt Temp. <u>R.O.I.</u>
	Relinquished By: <u>Walker</u> Date/Time: <u>11/9/98 = 09:30</u>	Received By: <u>[Signature]</u> Date/Time: <u>11/9/98 = 09:30</u>	Sample Receipt pH (Wet/Metals) _____
	Relinquished By: <u>[Signature]</u> Date/Time: <u>11/9/98 = 11:00</u>	Received By: <u>R. Hellemann</u> Date/Time: <u>11/9/98 12:00</u>	Custody Seal _____

**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Company Name: Strand Associates
 Branch or Location: Madison
 Project Contact: Jim McCarthy
 Telephone: 608-251-4843
 Project Number: 1.023-420
 Project Name: East Second St. - Merrill
 Project State: East Second St. WI
 Sampled By (Print): Jim McCarthy



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 FAX 715-392-5843

CHAIN OF CUSTODY

32796

Page 1 of 3

P.O. # _____ Quote # _____

Mail Report To: Luke Hellermann

Company: Strand Associates

Address: 910 W. Winga Drive
 Madison, WI 53715

Invoice To: Luke Hellermann

Company: _____

Address: — Same —

Mail Invoice To: Luke Hellermann

FILTERED? (YES/NO)	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
PRESERVATION (CODE)*	<u>-</u>	<u>F</u>	<u>F</u>	<u>-</u>	<u>A</u>

ANALYSES REQUESTED:
 VOC's
 PVOC's
 GRO
 DRO
 Lead

NR720 Confirmation Analysis Required? (circle): Y
 (En Chem will not confirm unless otherwise instructed.)

FIELD ID	SAMPLE DESCRIPTION	COLLECTION		X	X	X	X	X	X	X	X	X	X	X	X	X	X	SHADED AREA FOR LABORATORY USE ONLY			LABORATORY NUMBER	
		DATE	TIME															FIELD SCREEN	MATRIX	GOOD COND.		TOTAL BOTTLES
SB-1	4-6' Bricklayers	11/4/98	9:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Soil	A	1-250 1-202		001
SB-1	10-12' Bricklayers		10:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X					002
SB-2	4-6' Bricklayers		11:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X					003
SB-2	10-12' Bricklayers		11:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X					004
SB-3	4-6' Ward Wash		1:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X					005
SB-3	8-10' Ward Wash		1:30	X	X	X	X	X	X	X	X	X	X	X	X	X	X					006
SB-4	4-6' Ward Wash		3:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X					007
SB-4	10-12' Ward Wash	Y	3:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X					008

***Preservation Code**
 A=None B=HCL C=H2SO4
 D=HN03 E=EnCore F=Methanol**
 G=NaOH O=Other (Indicate)

**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Relinquished By: Jim McCarthy Date/Time: 11/6/98 9:00
 Relinquished By: [Signature] Date/Time: 11-6-98 10:10
 Relinquished By: [Signature] Date/Time: 11/9/98=0930
 Relinquished By: [Signature] Date/Time: 11/9/98=01

Received By: [Signature] Date/Time: 11-6-98 0950
 Received By: [Signature] Date/Time: 11/6/98 10:10
 Received By: [Signature] Date/Time: 11/9/98=0930
 Received By: [Signature] Date/Time: 11/9/98 1300

En Chem Project No. 886722
 Sample Receipt Temp. Not
 Sample Receipt pH (We/Metals)
 Custody Seal



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

WI DNR LAB ID : 405132750

Client: STRAND ASSOCIATES INC

Report Date : 11/18/98

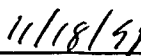
Sample No.	Field ID	Collection Date	Sample No.	Field ID	Collection Date
886722-001	SB-1, 4-6', BRICKNERS	11/4/98	886722-020	SB-4	11/4/98
886722-002	SB-1, 10-12', BRICKNERS	11/4/98	886722-021	SB-5	11/4/98
886722-003	SB-2, 4-6', BRICKNERS	11/4/98	886722-022	SB-6	11/4/98
886722-004	SB-2, 10-12', BRICKNERS	11/4/98	886722-023	SB-8	11/4/98
886722-005	SB-3, 4-6', WOND WASH	11/4/98			
886722-006	SB-3, 8-10', WOND WASH	11/4/98			
886722-007	SB-4, 4-6', WOND WASH	11/4/98			
886722-008	SB-4, 8-10', WOND WASH	11/4/98			
886722-009	SB-5, 6-8', KANITZ	11/4/98			
886722-010	SB-5, 10-12', KANITZ	11/4/98			
886722-011	SB-6, 4-6', KANITZ	11/4/98			
886722-012	SB-6, 10-12', KANITZ	11/4/98			
886722-013	SB-7, 6-8', CLEANERS	11/4/98			
886722-014	SB-7, 10-12', CLEANERS	11/4/98			
886722-015	SB-8, 2-4', CLEANERS	11/4/98			
886722-016	SB-8, 10-12', CLEANERS	11/4/98			
886722-017	MEOH BLANK	11/4/98			
886722-018	SB-1	11/4/98			
886722-019	SB-2	11/4/98			

The "Q" flag is present when a parameter has been detected below the LOQ. This indicates the results are qualified due to the uncertainty of the parameter concentration between the LOD and the LOQ.

Soil VOC detects are corrected for the total solids, unless otherwise noted.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this final report is authorized by Laboratory management, as is verified by the following signature.


Approval Signature


Date



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886722

All Samples

TestGroupID: _____ Comment: _____
Methylene chloride is present in the Extraction Blank.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-7, 6-8', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-013

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Solids, percent	96.4				%		11/10/98	SM2540G	SM2540G	DJB

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL

Prep Method: SW846 5030

Prep Date: 11/10/98

Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromochloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromodichloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromoform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
s-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
t-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
n-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Carbon tetrachloride	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorodibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
2-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
4-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromoethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Dibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,3-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,4-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dichloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-7, 6-8', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-013

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Dichlorodifluoromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
2,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Diisopropyl ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Ethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Fluorotrichloromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Hexachlorobutadiene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Isopropylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
p-Isopropyltoluene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Methylene chloride	66	26	62	ug/kg	B(88)	11/10/98	SW846 8260B
Methyl-tert-butyl-ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Naphthalene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
n-Propylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Styrene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Tetrachloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Toluene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Trichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Field ID : SB-7, 6-8', CLEANERS

Lab Sample Number : 886722-013

WI DNR LAB ID : 405132750

Client : STRAND ASSOCIATES INC

Report Date : 11/18/98

Collection Date : 11/4/98

Matrix Type : SOIL

Vinyl chloride	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylenes, -m, -p	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylene, -o	< 25	25	60	ug/kg	11/10/98	SW846 8260B
4-Bromofluorobenzene	87			%Recov	11/10/98	SW846 8260B
Dibromofluoromethane	103			%Recov	11/10/98	SW846 8260B
Toluene-d8	106			%Recov	11/10/98	SW846 8260B

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL			Prep Method: WI MOD.GRO			Prep Date: 11/10/98	Analyst: EGS	
Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.6			2.6	mg/kg		11/11/98	Wi MOD GRO
Blank Spike	102			1.00	%Recov		11/11/98	Wi MOD GRO
Blank Spike Duplicate	112			1.00	%Recov		11/11/98	Wi MOD GRO
Blank	< 2.5			2.5	mg/kg		11/11/98	Wi MOD GRO

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-7, 10-12', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-014

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Solids, percent	96.7				%		11/10/98	SM2540G	SM2540G	DJB

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL

Prep Method: SW846 5030

Prep Date: 11/10/98

Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromochloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromodichloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromoform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
s-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
t-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
n-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Carbon tetrachloride	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorodibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
2-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
4-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromoethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Dibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,3-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,4-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dichloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Field ID : SB-7, 10-12', CLEANERS

Lab Sample Number : 886722-014

WI DNR LAB ID : 405132750

Client : STRAND ASSOCIATES INC

Report Date : 11/18/98

Collection Date : 11/4/98

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Dichlorodifluoromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
2,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Diisopropyl ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Ethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Fluorotrichloromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Hexachlorobutadiene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Isopropylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
p-Isopropyltoluene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Methylene chloride	52	26	62	ug/kg	QB(88)	11/10/98	SW846 8260B
Methyl-tert-butyl-ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Naphthalene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
n-Propylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Styrene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Tetrachloroethene	39	26	62	ug/kg	Q	11/10/98	SW846 8260B
Toluene	3100	26	62	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Trichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-7, 10-12', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-014

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Vinyl chloride	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylenes, -m, -p	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylene, -o	< 25	25	60	ug/kg	11/10/98	SW846 8260B
4-Bromofluorobenzene	106			%Recov	11/10/98	SW846 8260B
Dibromofluoromethane	116			%Recov	11/10/98	SW846 8260B
Toluene-d8	125			%Recov	11/10/98	SW846 8260B

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL			Prep Method: WI MOD.GRO			Prep Date: 11/10/98	Analyst: EGS	
Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.6			2.6	mg/kg		11/11/98	Wi MOD GRO
Blank Spike	108			1.00	%Recov		11/11/98	Wi MOD GRO
Blank Spike Duplicate	108			1.00	%Recov		11/11/98	Wi MOD GRO
Blank	< 2.5			2.5	mg/kg		11/11/98	Wi MOD GRO

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-8, 2-4', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-015

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Solids, percent	91.7				%		11/10/98	SM2540G	SM2540G	DJB

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL

Prep Method: SW846 5030

Prep Date: 11/10/98 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromochloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromodichloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromoform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
s-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
t-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
n-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Carbon tetrachloride	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorodibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
2-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
4-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromoethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Dibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,3-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,4-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dichloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-8, 2-4', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-015

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Dichlorodifluoromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
2,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Diisopropyl ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Ethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Fluorotrichloromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Hexachlorobutadiene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Isopropylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
p-Isopropyltoluene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Methylene chloride	82	27	65	ug/kg	B(88)	11/10/98	SW846 8260B
Methyl-tert-butyl-ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Naphthalene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
n-Propylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Styrene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Tetrachloroethene	440	27	65	ug/kg		11/10/98	SW846 8260B
Toluene	71	27	65	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Trichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B

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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL
Project Number : 1.023-420
Field ID : SB-8, 2-4', CLEANERS
Lab Sample Number : 886722-015
WI DNR LAB ID : 405132750

Client : STRAND ASSOCIATES INC
Report Date : 11/18/98
Collection Date : 11/4/98
Matrix Type : SOIL

Vinyl chloride	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylenes, -m, -p	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylene, -o	< 25	25	60	ug/kg	11/10/98	SW846 8260B
4-Bromofluorobenzene	84			%Recov	11/10/98	SW846 8260B
Dibromofluoromethane	88			%Recov	11/10/98	SW846 8260B
Toluene-d8	93			%Recov	11/10/98	SW846 8260B

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL			Prep Method: WI MOD.GRO			Prep Date: 11/10/98	Analyst: EGS	
Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.7			2.7	mg/kg		11/11/98	Wi MOD GRO
Blank Spike	108			1.00	%Recov		11/11/98	Wi MOD GRO
Blank Spike Duplicate	108			1.00	%Recov		11/11/98	Wi MOD GRO
Blank	< 2.5			2.5	mg/kg		11/11/98	Wi MOD GRO

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-8, 10-12', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-016

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Solids, percent	94.2				%		11/10/98	SM2540G	SM2540G	DJB

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL

Prep Method: SW846 5030

Prep Date: 11/10/98

Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromochloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromodichloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromoform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Bromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
s-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
t-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
n-Butylbenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Carbon tetrachloride	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroform	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chlorodibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Chloromethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
2-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
4-Chlorotoluene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dibromoethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
Dibromomethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,3-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,4-Dichlorobenzene	< 25	25	60		ug/kg		11/10/98	SW846 8260B
1,2-Dichloroethane	< 25	25	60		ug/kg		11/10/98	SW846 8260B

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-8, 10-12', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-016

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

1,2-Dichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Dichlorodifluoromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,2-Dichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
2,2-Dichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
cis-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
trans-1,3-Dichloropropene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Diisopropyl ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Ethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Fluorotrichloromethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Hexachlorobutadiene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Isopropylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
p-Isopropyltoluene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Methylene chloride	81	27	65	ug/kg	B(88)	11/10/98	SW846 8260B
Methyl-tert-butyl-ether	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Naphthalene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
n-Propylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Styrene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Tetrachloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Toluene	110	27	65	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trichlorobenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,1-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,1,2-Trichloroethane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,4-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
Trichloroethene	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,2,3-Trichloropropane	< 25	25	60	ug/kg		11/10/98	SW846 8260B
1,3,5-Trimethylbenzene	< 25	25	60	ug/kg		11/10/98	SW846 8260B

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : SB-8, 10-12', CLEANERS

Report Date : 11/18/98

Lab Sample Number : 886722-016

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Vinyl chloride	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylenes, -m, -p	< 25	25	60	ug/kg	11/10/98	SW846 8260B
Xylene, -o	< 25	25	60	ug/kg	11/10/98	SW846 8260B
4-Bromofluorobenzene	92			%Recov	11/10/98	SW846 8260B
Dibromofluoromethane	103			%Recov	11/10/98	SW846 8260B
Toluene-d8	113			%Recov	11/10/98	SW846 8260B

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL

Prep Method: WI MOD.GRO

Prep Date: 11/10/98

Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.7			2.7	mg/kg		11/11/98	Wi MOD GRO
Blank Spike	108			1.00	%Recov		11/11/98	Wi MOD GRO
Blank Spike Duplicate	108			1.00	%Recov		11/11/98	Wi MOD GRO
Blank	< 2.5			2.5	mg/kg		11/11/98	Wi MOD GRO

All soil results are reported on a dry weight basis unless otherwise noted.



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Client : STRAND ASSOCIATES INC

Field ID : MEOH BLANK

Report Date : 11/12/98

Lab Sample Number : 886722-017

Collection Date : 11/4/98

WI DNR LAB ID : 405132750

Matrix Type : METHANOL

Organic Results

EPA 8260 VOLATILE LIST - METHANOL

Prep Method: SW846 5030

Prep Date: 11/10/98 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
Bromobenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
Bromochloromethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
Bromodichloromethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
Bromoform	< 25	25	60		ug/L		11/11/98	SW846 8260B
Bromomethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
s-Butylbenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
t-Butylbenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
n-Butylbenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
Carbon tetrachloride	< 25	25	60		ug/L		11/11/98	SW846 8260B
Chloroform	< 25	25	60		ug/L		11/11/98	SW846 8260B
Chlorobenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
Chlorodibromomethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
Chloroethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
Chloromethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
2-Chlorotoluene	< 25	25	60		ug/L		11/11/98	SW846 8260B
4-Chlorotoluene	< 25	25	60		ug/L		11/11/98	SW846 8260B
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/L		11/11/98	SW846 8260B
1,2-Dibromoethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
Dibromomethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
1,3-Dichlorobenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
1,4-Dichlorobenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
1,2-Dichloroethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
1,2-Dichlorobenzene	< 25	25	60		ug/L		11/11/98	SW846 8260B
1,1-Dichloroethene	< 25	25	60		ug/L		11/11/98	SW846 8260B
cis-1,2-Dichloroethene	< 25	25	60		ug/L		11/11/98	SW846 8260B
Dichlorodifluoromethane	< 25	25	60		ug/L		11/11/98	SW846 8260B
trans-1,2-Dichloroethene	< 25	25	60		ug/L		11/11/98	SW846 8260B



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Field ID : MEOH BLANK

Lab Sample Number : 886722-017

WI DNR LAB ID : 405132750

Client : STRAND ASSOCIATES INC

Report Date : 11/12/98

Collection Date : 11/4/98

Matrix Type : METHANOL

1,2-Dichloropropane	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,1-Dichloroethane	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,3-Dichloropropane	< 25	25	60	ug/L		11/11/98	SW846 8260B
2,2-Dichloropropane	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,1-Dichloropropene	< 25	25	60	ug/L		11/11/98	SW846 8260B
cis-1,3-Dichloropropene	< 25	25	60	ug/L		11/11/98	SW846 8260B
trans-1,3-Dichloropropene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Diisopropyl ether	< 25	25	60	ug/L		11/11/98	SW846 8260B
Ethylbenzene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Fluorotrichloromethane	< 25	25	60	ug/L		11/11/98	SW846 8260B
Hexachlorobutadiene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Isopropylbenzene	< 25	25	60	ug/L		11/11/98	SW846 8260B
p-Isopropyltoluene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Methylene chloride	76	25	60	ug/L	B(88)	11/11/98	SW846 8260B
Methyl-tert-butyl-ether	< 25	25	60	ug/L		11/11/98	SW846 8260B
Naphthalene	< 25	25	60	ug/L		11/11/98	SW846 8260B
n-Propylbenzene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Styrene	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,1,2,2-Tetrachloroethane	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,1,1,2-Tetrachloroethane	< 25	25	60	ug/L		11/11/98	SW846 8260B
Tetrachloroethene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Toluene	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,2,3-Trichlorobenzene	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,2,4-Trichlorobenzene	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,1,1-Trichloroethane	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,1,2-Trichloroethane	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,2,4-Trimethylbenzene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Trichloroethene	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,2,3-Trichloropropane	< 25	25	60	ug/L		11/11/98	SW846 8260B
1,3,5-Trimethylbenzene	< 25	25	60	ug/L		11/11/98	SW846 8260B
Vinyl chloride	< 25	25	60	ug/L		11/11/98	SW846 8260B
Xylenes, -m, -p	< 25	25	60	ug/L		11/11/98	SW846 8260B
Xylene, -o	< 25	25	60	ug/L		11/11/98	SW846 8260B
4-Bromofluorobenzene	91			%Recov		11/11/98	SW846 8260B
Dibromofluoromethane	103			%Recov		11/11/98	SW846 8260B



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL
Project Number : 1.023-420
Field ID : MEOH BLANK
Lab Sample Number : 886722-017
WI DNR LAB ID : 405132750

Client : STRAND ASSOCIATES INC
Report Date : 11/12/98
Collection Date : 11/4/98
Matrix Type : METHANOL

Toluene-d8	105	%Recov	11/11/98	SW846 8260B
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Organic Results

GASOLINE RANGE ORGANICS - METHANOL

Prep Method: WI MOD.GRO Prep Date: 11/10/98 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2500			2500	ug/L		11/11/98	WI MOD GRO
Blank Spike	108			1.00	%Recov		11/11/98	WI MOD GRO
Blank Spike Duplicate	108			1.00	%Recov		11/11/98	WI MOD GRO
Blank	< 50			50	ug/L		11/11/98	WI MOD GRO



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- Analytical Report -

Project Name : EAST SECOND ST.-MERRILL

Project Number : 1.023-420

Field ID : SB-8

Lab Sample Number : 886722-023

WI DNR LAB ID : 405132750

Client : STRAND ASSOCIATES INC

Report Date : 11/11/98

Collection Date : 11/4/98

Matrix Type : WATER

Organic Results

EPA 8260 VOLATILE LIST- WATER

Prep Method: SW846 5030

Prep Date: 11/10/98

Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 0.27	0.27	0.86		ug/L		11/10/98	SW846 8260B
Bromobenzene	< 0.83	0.83	2.6		ug/L		11/10/98	SW846 8260B
Bromochloromethane	< 0.42	0.42	1.3		ug/L		11/10/98	SW846 8260B
Bromodichloromethane	< 0.30	0.30	0.96		ug/L		11/10/98	SW846 8260B
Bromoform	< 0.44	0.44	1.4		ug/L		11/10/98	SW846 8260B
Bromomethane	< 0.70	0.70	2.2		ug/L		11/10/98	SW846 8260B
s-Butylbenzene	< 0.29	0.29	0.92		ug/L		11/10/98	SW846 8260B
t-Butylbenzene	< 0.32	0.32	1.0		ug/L		11/10/98	SW846 8260B
n-Butylbenzene	< 0.29	0.29	0.92		ug/L		11/10/98	SW846 8260B
Carbon tetrachloride	< 0.34	0.34	1.1		ug/L		11/10/98	SW846 8260B
Chloroform	< 0.35	0.35	1.1		ug/L		11/10/98	SW846 8260B
Chlorobenzene	< 0.23	0.23	0.73		ug/L		11/10/98	SW846 8260B
Chlorodibromomethane	< 0.42	0.42	1.3		ug/L		11/10/98	SW846 8260B
Chloroethane	< 0.54	0.54	1.7		ug/L		11/10/98	SW846 8260B
Chloromethane	< 0.61	0.61	1.9		ug/L		11/10/98	SW846 8260B
2-Chlorotoluene	< 0.31	0.31	0.99		ug/L		11/10/98	SW846 8260B
4-Chlorotoluene	< 0.32	0.32	1.0		ug/L		11/10/98	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.41	0.41	1.3		ug/L		11/10/98	SW846 8260B
1,2-Dibromoethane	< 0.39	0.39	1.2		ug/L		11/10/98	SW846 8260B
Dibromomethane	< 0.53	0.53	1.7		ug/L		11/10/98	SW846 8260B
1,3-Dichlorobenzene	< 0.34	0.34	1.1		ug/L		11/10/98	SW846 8260B
1,4-Dichlorobenzene	< 0.30	0.30	0.96		ug/L		11/10/98	SW846 8260B
1,2-Dichloroethane	< 0.37	0.37	1.2		ug/L		11/10/98	SW846 8260B
1,2-Dichlorobenzene	< 0.25	0.25	0.80		ug/L		11/10/98	SW846 8260B
1,1-Dichloroethene	< 0.43	0.43	1.4		ug/L		11/10/98	SW846 8260B
cis-1,2-Dichloroethene	< 0.28	0.28	0.89		ug/L		11/10/98	SW846 8260B
Dichlorodifluoromethane	< 0.47	0.47	1.5		ug/L		11/10/98	SW846 8260B
trans-1,2-Dichloroethene	< 0.79	0.79	2.5		ug/L		11/10/98	SW846 8260B



1795 Industrial Drive
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 Fax: 920-469-8827

- Analytical Report -

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Project Number : 1.023-420

Field ID : SB-8

Lab Sample Number : 886722-023

WI DNR LAB ID : 405132750

Client : STRAND ASSOCIATES INC

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1,2-Dichloropropane	< 0.35	0.35	1.1	ug/L	11/10/98	SW846 8260B
1,1-Dichloroethane	< 0.35	0.35	1.1	ug/L	11/10/98	SW846 8260B
1,3-Dichloropropane	< 0.42	0.42	1.3	ug/L	11/10/98	SW846 8260B
2,2-Dichloropropane	< 0.36	0.36	1.1	ug/L	11/10/98	SW846 8260B
1,1-Dichloropropene	< 0.81	0.81	2.6	ug/L	11/10/98	SW846 8260B
cis-1,3-Dichloropropene	< 0.32	0.32	1.0	ug/L	11/10/98	SW846 8260B
trans-1,3-Dichloropropene	< 0.43	0.43	1.4	ug/L	11/10/98	SW846 8260B
Diisopropyl ether	< 0.55	0.55	1.8	ug/L	11/10/98	SW846 8260B
Ethylbenzene	< 0.32	0.32	1.0	ug/L	11/10/98	SW846 8260B
Fluorotrchloromethane	< 0.28	0.28	0.89	ug/L	11/10/98	SW846 8260B
Hexachlorobutadiene	< 0.62	0.62	2.0	ug/L	11/10/98	SW846 8260B
Isopropylbenzene	< 0.26	0.26	0.83	ug/L	11/10/98	SW846 8260B
p-Isopropyltoluene	< 0.24	0.24	0.76	ug/L	11/10/98	SW846 8260B
Methylene chloride	< 0.36	0.36	1.1	ug/L	11/10/98	SW846 8260B
Methyl-tert-butyl-ether	< 0.32	0.32	1.0	ug/L	11/10/98	SW846 8260B
Naphthalene	< 0.35	0.35	1.1	ug/L	11/10/98	SW846 8260B
n-Propylbenzene	< 0.76	0.76	2.4	ug/L	11/10/98	SW846 8260B
Styrene	< 0.17	0.17	0.54	ug/L	11/10/98	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.69	0.69	2.2	ug/L	11/10/98	SW846 8260B
1,1,1,2-Tetrachloroethane	< 0.70	0.70	2.2	ug/L	11/10/98	SW846 8260B
Tetrachloroethene	7.8	0.43	1.4	ug/L	11/10/98	SW846 8260B
Toluene	< 0.27	0.27	0.86	ug/L	11/10/98	SW846 8260B
1,2,3-Trichlorobenzene	< 0.47	0.47	1.5	ug/L	11/10/98	SW846 8260B
1,2,4-Trichlorobenzene	< 0.27	0.27	0.86	ug/L	11/10/98	SW846 8260B
1,1,1-Trichloroethane	< 0.30	0.30	0.96	ug/L	11/10/98	SW846 8260B
1,1,2-Trichloroethane	< 0.61	0.61	1.9	ug/L	11/10/98	SW846 8260B
1,2,4-Trimethylbenzene	< 0.22	0.22	0.70	ug/L	11/10/98	SW846 8260B
Trichloroethene	< 0.37	0.37	1.2	ug/L	11/10/98	SW846 8260B
1,2,3-Trichloropropane	< 0.75	0.75	2.4	ug/L	11/10/98	SW846 8260B
1,3,5-Trimethylbenzene	< 0.27	0.27	0.86	ug/L	11/10/98	SW846 8260B
Vinyl chloride	< 0.20	0.20	0.64	ug/L	11/10/98	SW846 8260B
Xylenes, -m, -p	< 0.43	0.43	1.4	ug/L	11/10/98	SW846 8260B
Xylene, -o	< 0.24	0.24	0.76	ug/L	11/10/98	SW846 8260B
4-Bromofluorobenzene	81			%Recov	11/10/98	SW846 8260B
Dibromofluoromethane	91			%Recov	11/10/98	SW846 8260B



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Matrix Type : WATER

Toluene-d8	89	%Recov	11/10/98	SW846 8260B
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