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**STS CONSULTANTS, LTD.**

**Phase II Subsurface Assessment**

Proposed State Highway 23 Upgrade Project  
Quilt's and Quilting Right-of-Way  
607 West Main Street (STH 23)  
Princeton, Green Lake County, Wisconsin

STS Project No. 4-27811XW

# 03-24-384948 BRRTS

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REVIEWED

Wisconsin Department of Transportation  
1681 2nd Avenue South  
Wisconsin Rapids, Wisconsin 54495



May 9, 2005

Ms. Janet Smith, Environmental Coordinator  
Wisconsin Department of Transportation  
1681 Second Avenue South  
Wisconsin Rapids, Wisconsin 54495

Re: Phase II Subsurface Assessment, Proposed State Highway 23 Upgrade Project, Quilt's and Quilting  
Right-of-Way, 607 West Main Street (STH 23), Princeton, Green Lake County, Wisconsin --  
WisDOT Project ID No. 1430-08-04 -- STS Project No. 4-27811XW

Dear Ms. Smith:

STS Consultants, Ltd. (STS) is pleased to submit this Phase II Subsurface Assessment (Phase II) for the State Highway (STH) 23 right-of-way (ROW) adjacent to the Quilt's and Quilting property located at 102 South Pearl Street in the city of Princeton, Green Lake County, Wisconsin. The site was selected for a Phase II to assess environmental conditions associated with two former underground storage tanks removed from the site in 2002.

Phase II results indicate that groundwater in the STH 23 ROW adjacent to the Quilt's and Quilting property is impacted with low levels of residual petroleum compounds above regulatory standards. Concentrations of petroleum-related compounds were not detected above regulatory limits or suggested limits.

This report was completed in accordance with Wisconsin Department of Transportation Work Order No. 53 for Project ID No. 1430-08-04.

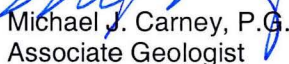
If you have any questions regarding this report, please contact Mr. Paul Garvey at (920) 406-3139.

Sincerely,

STS CONSULTANTS, LTD.



Paul M. Garvey  
Senior Project Scientist



Michael J. Carney, P.G.  
Associate Geologist

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Madison, Wisconsin 53707-7965

Ms. Casey Jones, Hydrogeologist (DOT LTE)  
Wisconsin Department of Natural Resources  
625 East County Road Y, Suite 700  
Oshkosh, Wisconsin 54901

Cary Mason, Owner  
Quilt's and Quilting  
607 West Main Street  
Princeton, Wisconsin 54968

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## 1.0 EXECUTIVE SUMMARY

As part of the State Highway (STH) 23 upgrade project in Princeton, Wisconsin, STS Consultants, Ltd. (STS) was retained by the Wisconsin Department of Transportation (WisDOT) to perform a Phase II Subsurface Assessment (Phase II) within the STH 23 right-of-way (ROW) adjacent to the Quilt's and Quilting (Quilt's) property. The Quilt's property is located at 607 West Main Street in the city of Princeton, Green Lake County, Wisconsin. The site was selected for a Phase II to assess environmental conditions associated with historic petroleum underground storage tanks (USTs) identified along the northern edge of the parcel. As summarized in the October 2003 Phase I Hazardous Materials Assessment (HMA), contamination was previously detected in the soil and groundwater. However, only minimal environmental investigation was conducted previously.

Groundwater samples analyzed indicated the presence of residual petroleum-related compounds above regulatory standards within the ROW adjacent to the Quilt's property. Some low-level petroleum compounds were detected in soil at concentrations below regulatory standards. Based on laboratory analytical results and field screening observations, residual petroleum compounds above generic regulatory standards or suggested standards may be encountered at low concentrations during the reconstruction of STH 23 in the vicinity of the Quilt's property.

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May 9, 2005

## **2.0 SITE INVESTIGATION**

### **2.1 Purpose of Scope**

The purpose of the Phase II was to determine whether past land use practices impacted the subsurface at the Quilt's property located at 607 West Main Street in the area of the proposed STH 23 reconstruction in Princeton, Wisconsin.

A Phase I HMA completed by KL Engineering, Inc., Madison, Wisconsin, dated October 2003, indicated that gasoline USTs existed at the northern edge of the parcel and were removed from the site in 2002. The scope of the Phase II investigation included the advancement of two soil borings within the proposed project limits to sample and analyze soil and groundwater, which could be encountered during construction activities. STS selected soil boring locations based on proximity to areas of suspected environmental impact identified in the Phase I HMA and accessibility of sampling equipment.

According to the Phase I, project reconstruction plans call for roadway reconstruction as well as excavation for utility installation adjacent to the Quilt's property. A sanitary sewer will be installed by the City of Princeton in the center of STH 23 (West Main Street) at a depth of approximately 10 feet near the site. The WisDOT portion of the utility installation includes a storm sewer on the north side of STH 23 to a depth of approximately 6 feet below ground surface (bgs) and water piping on the south side of the street at a depth of approximately 7 feet bgs near the site.

A site location map and soil boring location map are presented on Figures 1 and 2 (Section 2.3). Photos of the site and boring locations are included in Appendix 3.1.

### **2.2 Investigation Program**

On March 21, 2005, STS personnel accessed the ROW adjacent to the Quilt's property to collect soil and groundwater samples within the proposed project limits. STS retained a subcontract direct push firm (Kitson Environmental Services, Inc., Helenville, Wisconsin) to advance the borings. Two direct push borings (GP-4 and GP-5) were advanced. Soil borings were advanced to a depth of approximately 3 feet below the proposed WisDOT utility installation depth and were terminated at a depth of approximately 10 feet bgs. The water table was encountered in Borings GP-4 through GP-5 at a depth of approximately 4 feet bgs.

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Soil samples were collected from the borings using standard direct-push technology with a power-driver sampling spoon. A single-use disposable acetate liner was placed in each spoon, and the spoon was advanced to the desired depth. The spoon was then retrieved from the boring, the acetate liner extracted from the spoon, and the liner cut open to allow removal of the sample. Soil samples were collected continuously from the ground surface to boring termination depths. Soil samples recovered from the borings were field-screened with a photoionization detector (PID), which was equipped with a 10.6-electron volt lamp. Soil PID field screening results are indicated on the soil boring log information forms (Appendix 3.2). Following completion of sampling, the borings were abandoned with granular bentonite. Wisconsin Department of Natural Resources (WDNR) Well/Drillhole/Borehole Abandonment forms were prepared to record abandonment activities (Appendix 3.3).

Selected soil samples were prepared in the field and submitted to En Chem, Inc./Pace Laboratories (En Chem), Green Bay, Wisconsin, for analysis of one or more of the following analytes:

- ◆ Volatile organic compounds (VOCs) (EPA Method 8260B)
- ◆ Petroleum volatile organic compounds (PVOCs) (EPA Method 8021)
- ◆ Polynuclear aromatic hydrocarbons (PAHs) (EPA Method 8270C)
- ◆ Diesel range organics (DRO) (Wisconsin modified method)
- ◆ Gasoline range organics (GRO) (Wisconsin modified method)
- ◆ Cadmium, chromium, and lead (Method 6020)

Following completion of soil sampling, a 1-inch-diameter stainless steel Geoprobe well screen was installed in Borings GP-4 and GP-5 to facilitate groundwater collection. Approximately 1 to 2 gallons of groundwater were purged from the temporary wells using disposable high density polyethylene (HDPE) tubing and a peristaltic pump. Groundwater samples were collected in containers provided by the analytical laboratory. A portion of the groundwater sample was field-filtered for dissolved lead. The groundwater samples were submitted to En Chem for analysis of:

- ◆ VOCs (EPA Method 8260B)
- ◆ PAHs (EPA Method 8270C)
- ◆ Dissolved lead (Method 6010B)

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May 9, 2005

Laboratory analytical reports and Chain of Custody forms are included in Section 3.4 of the Appendix.

### 2.3 Site Maps

Figure 1 shows the location of the site on a portion of the United States Geological Survey (USGS) 7.5-minute topographic quadrangle map of east and west Princeton, Wisconsin. Figure 2 is a site diagram, which illustrates the locations of the borings completed during the Phase II activities.

### 2.4 Geology

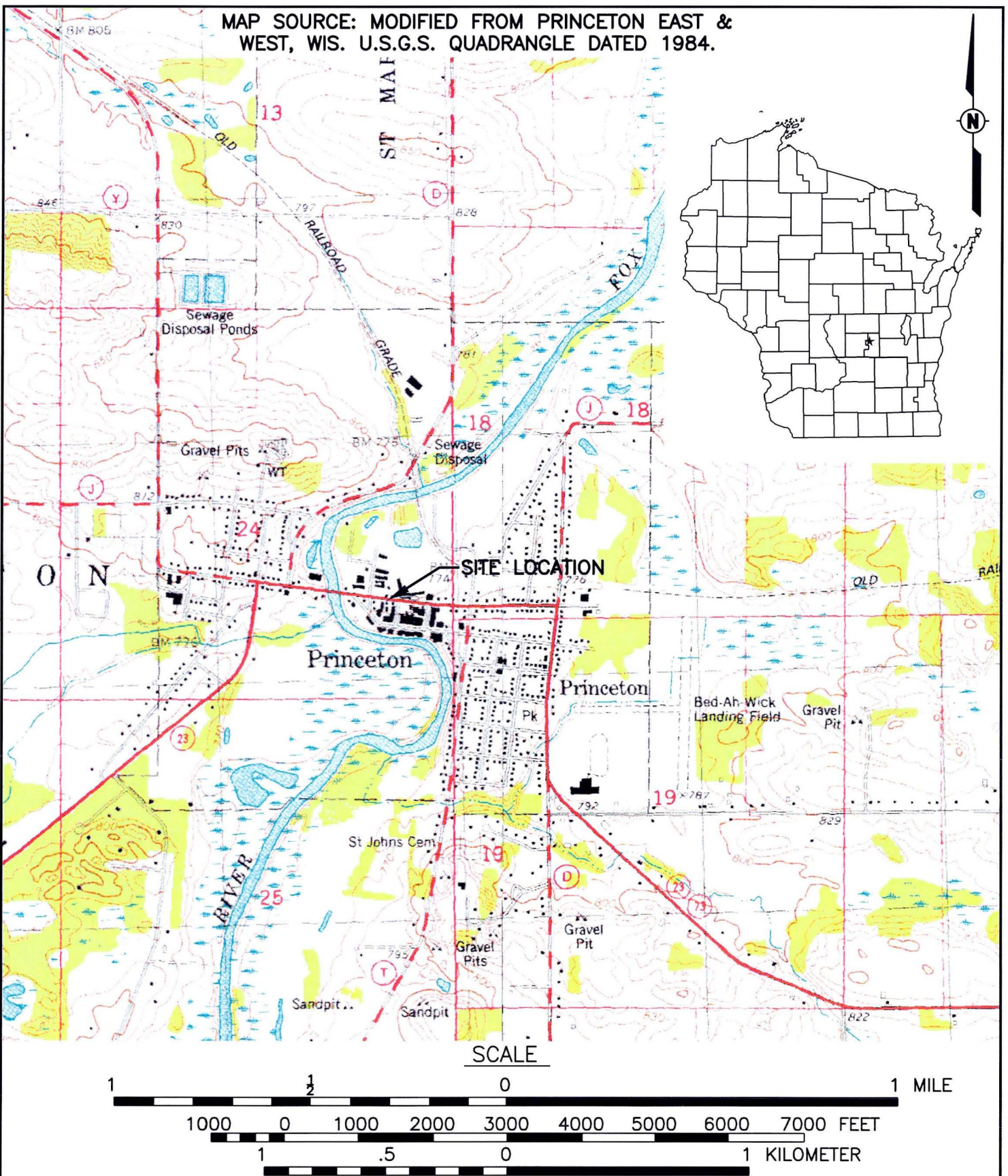
Review of the Department of the Interior, USGS Publication *Water Resources of Wisconsin, Fox-Wolf River Basin, Hydrogeologic Investigations, Atlas HA-321*, Sheet 1 of 4, 1968, indicated that the subject property is an area of glacial lake deposits (clay, silt, and sand) that overlie bedrock, which mostly consists of sandstone. The thickness of the glacial lake deposits over the bedrock is approximately 100 feet.

The USDA Soil Survey of Greendale County, Wisconsin, (1977) indicated that the native surficial soil in the area of the US Bank property is Oakville fine sand. The Oakville Series is described as nearly level to steep well-drained soils on outwash plains and terraces and in old glacial lake basins and of eolian sand deposits on till uplands. Permeability is very rapid and surface runoff is slow.

Regional groundwater flow direction is likely south-southwest toward the Fox River (*Water Resources of Wisconsin, Fox-Wolf River Basin, Hydrogeologic Investigations, Atlas HA-321*, Sheet 1 of 4, 1968). Existing ditches, underground utilities (such as sanitary/storm sewer piping systems), and other natural and manmade features may influence local groundwater flow direction. Site-specific groundwater flow direction cannot be determined without installation of monitoring wells.

A review of the Princeton East, Wisconsin, USGS 7.5-minute topographic map dated 1984 showed the Quilt's property as being located in an area that generally slopes to the south and west and at an elevation of approximately +780 feet above mean sea level (MSL).

MAP SOURCE: MODIFIED FROM PRINCETON EAST & WEST, WIS. U.S.G.S. QUADRANGLE DATED 1984.



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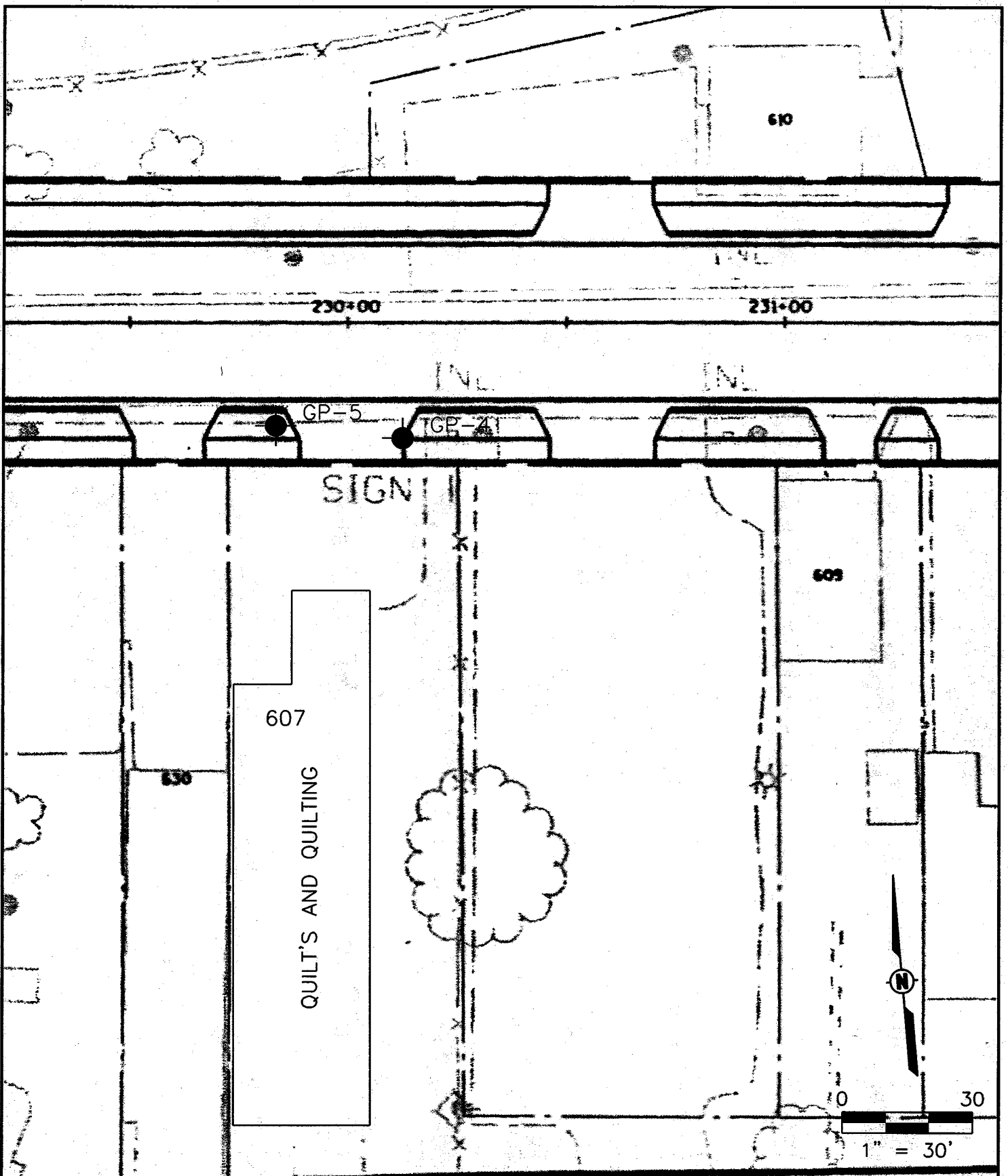
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**SITE LOCATION MAP**  
**PHASE II SUBSURFACE INVESTIGATION**  
**QUILT'S AND QUILTING**  
**607 WEST MAIN (STH 23)**  
**PRINCETON, WISCONSIN**

Drawn :	JMR 04/21/2005
Checked:	PMG 04/21/2005
Approved:	GHI 00/00/2005
PROJECT NUMBER	427811XW
FIGURE NUMBER	1



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**SOIL BORING LOCATION MAP  
 PHASE II SUBSURFACE INVESTIGATION  
 QUILT'S AND QUILTING  
 607 WEST MAIN STREET (STH 23)  
 PRINCETON, WISCONSIN**

Drawn :	JMR 04/21/2005
Checked:	PMG 04/21/2005
Approved:	
PROJECT NUMBER	4-27811XW
FIGURE NUMBER	2

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STS Project No. 4-27811XW  
May 9, 2005

## 2.5 Results

Soils encountered at Borings GP-4 and GP-5 consisted of approximately 6 feet of silty sand fill material overlying an organic silt layer approximately 1.5 feet thick, followed by a clayey silt native material to the boring termination depth. Groundwater was encountered while sampling at the 4-foot depth interval. PID readings from soil collected and screened from Boring GP-5 indicated elevated PID readings (>10 PID units) from the 6-foot to 8-foot depth interval (in the saturated zone). PID readings from soil collected and screened from Boring GP-4 was less than 1 PID unit. PID screening results for soil samples are summarized on the Soil Boring Log Information forms in Section 3.2 of the Appendix.

Soil laboratory analytical results are summarized on Table 1 and the laboratory report included in Section 3.4 of the Appendix. Soil analytical results indicate that petroleum-related compounds generally consisting of lighter PAHs (naphthalenes) were detected above background concentrations in Borings GP-4 and GP-5. GRO, DRO, and VOCs were not detected. Metals (including cadmium, chromium, and lead) were detected at levels characteristic of background concentrations. As shown on Table 1, no soil regulatory standards or suggested standards were exceeded.

Water sample results from Geoprobe Borings GP-4 and GP-5 are summarized on Table 2. PAHs including benzo(a)pyrene, benzo(b)fluoranthene, and chrysene were detected above Wisconsin Administrative Code Chapter NR 140 enforcement standards (ESs) in GP-4 at concentrations above the NR 140 ESs. Lead was not detected above regulatory standards. VOCs were not detected above method detection limits. Benzo(a)pyrene, benzo(b)fluoranthene, and chrysene were also detected above their respective NR 140 Preventive Action Limits (PALs) in GP-5. No other PAHs were detected above regulatory standards.

Laboratory reports are included in Section 3.4 of the Appendix.

## 2.6 Conclusions

Soils encountered in Borings GP-4 and GP-5 near the Quilt's property consisted primarily of fine sands to a depth of approximately 6 feet overlying an organic layer and natural silts. Groundwater was encountered at a depth of approximately 4 feet bgs while sampling. PID field screening results indicated elevated detection in Boring GP-5. Elevated PID detections were not recorded in Boring GP-4. PID screening results for soil samples are summarized on the WDNR soil boring log information forms in Section 3.2 of the Appendix.

**Table 1 (Page 1 of 3)**  
**Soil Analytical Results**  
**Quilt's and Quilting (607 West Main Street)**  
**Princeton, Wisconsin**

Boring Sample Depth (ft) Date	GP-4		GP-5		NR 720 RCL		NR 746	Suggested PAH Generic RCL <sup>1</sup>	
	2.0-4.0	4.0-6.0	2.0-4.0	6.0-8.0	Groundwater Pathway	Non- Industrial Direct Contact	Table 1 Soil Screening Levels	Groundwater Pathway	Non-Industrial Direct Contact Pathway
	3/21/05	3/21/05	3/21/05	3/21/05					
<b>METALS</b>									
	<b>Concentration (mg/kg)</b>								
Cadmium	---	0.13	---	0.28	NL	8	NL	NL	NL
Chromium	---	8	---	39	NL	16000/14	NL	NL	NL
Lead	---	21	---	11	NL	50	NL	NL	NL
Diesel Range Organics	<4.4	---	<5.3	---	100	NL	NL	NL	NL
Gasoline Range Organics	<2.9	---	<3.4	---	100	NL	NL	NL	NL
<b>PAHs</b>									
	<b>Concentration (ug/kg)</b>								
1-Methylnaphthalene	---	6	---	3.8	NL	NL	NL	23000	1100000
2-Methylnaphthalene	---	13	---	13	NL	NL	NL	20000	600000
Acenaphthene	---	<1.9	---	<2.2	NL	NL	NL	38000	900000
Acenaphthylene	---	<6.7	---	<7.8	NL	NL	NL	700	18000
Anthracene	---	<2.6	---	<3.0	NL	NL	NL	300000	5000000
Benzo(a)anthracene	---	<15	---	<17	NL	NL	NL	17000	88
Benzo(a)pyrene	---	<12	---	<14	NL	NL	NL	48000	8.8
Benzo(b)fluoranthene	---	<9.9	---	<12	NL	NL	NL	360000	88
Benzo(g,h,i)perylene	---	<6.7	---	<7.8	NL	NL	NL	870000	880
Benzo(k)fluoranthene	---	<13	---	<15	NL	NL	NL	6800000	1800
Chrysene	---	<14	---	<16	NL	NL	NL	37000	8800
Dibenzo (a,h)anthracene	---	<4.0	---	<4.7	NL	NL	NL	38000	8.8
Fluoranthene	---	<11	---	<13	NL	NL	NL	500000	600000
Fluorene	---	<1.6	---	<1.9	NL	NL	NL	100000	600000
Indeno(1,2,3-cd)pyrene	---	<6.4	---	<7.4	NL	NL	NL	680000	88
Naphthalene	---	11	---	5.1	NL	NL	2700	400	20000
Phenanthrene	---	<6.8	---	<7.9	NL	NL	NL	1800	18000
Pyrene	---	<15	---	<17	NL	NL	NL	8700000	500000

**Notes:**

(mg/kg) = milligrams per kilogram; (ug/kg) = micrograms per kilogram; < = analyte not detected above method detection limit; --- = not analyzed;

RCL = Residual Contaminant Level; NL = No Generic Limit Specified by WDNR

M = matrix effect present; Q = analyte detected at concentration between limit of detection and limit of quantification

<sup>1</sup>Suggested RCL established in WDNR Interim Guidance RR-519-97

**Table 1 (Page 2 of 3)**  
**Soil Analytical Results**  
**Quilt's and Quilting (607 West Main Street)**  
**Princeton, Wisconsin**

Boring	GP-4		GP-5		NR 720 RCL		NR 746	Suggested PAH Generic RCL <sup>1</sup>		
	Sample Depth (ft)	2.0-4.0	4.0-6.0	2.0-4.0	6.0-8.0	Groundwater Pathway	Non-Industrial Direct Contact	Table 1 Soil Screening Levels	Groundwater Pathway	Non-Industrial Direct Contact Pathway
	Date	3/21/05	3/21/05	3/21/05	3/21/05					
<b>VOCs</b>	<b>Concentration (ug/kg)</b>									
1,1,1,2-Tetrachloroethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,1,1-Trichloroethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,1,2,2-Tetrachloroethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,1,2-Trichloroethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,1-Dichloroethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,1-Dichloroethene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,1-Dichloropropene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,2,3-Trichlorobenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,2,3-Trichloropropane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,2,4-Trichlorobenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,2,4-Trimethylbenzene	<25	<25	<25	<50	NL	NL	83000	NL	NL	NL
1,2-Dibromo-3-chloropropane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,2-Dibromoethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,2-Dichlorobenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,2-Dichloroethane	---	<25	---	<50	4.9	NL	600	NL	NL	NL
1,2-Dichloropropane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,3,5-Trimethylbenzene	<25	<25	<25	<50	NL	NL	11000	NL	NL	NL
1,3-Dichlorobenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,3-Dichloropropane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
1,4-Dichlorobenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
2,2-Dichloropropane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
2-Chlorotoluene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
4-Chlorotoluene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Benzene	<25	<25	<25	<50	5.5	NL	8500	NL	NL	NL
Bromobenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Bromochloromethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Bromodichloromethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Bromoform	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Bromomethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Carbon tetrachloride	---	<25	---	<50	NL	NL	NL	NL	NL	NL

**Notes:**

(mg/kg) = milligrams per kilogram; (ug/kg) = micrograms per kilogram; < = analyte not detected above method detection limit; --- = not analyzed;

RCL = Residual Contaminant Level; NL = No Generic Limit Specified by WDNR

M = matrix effect present; Q = analyte detected at concentration between limit of detection and limit of quantification

<sup>1</sup>Suggested RCL established in WDNR Interim Guidance RR-519-97

**Table 1 (Page 3 of 3)**  
**Soil Analytical Results**  
**Quilt's and Quilting (607 West Main Street)**  
**Princeton, Wisconsin**

Boring	GP-4		GP-5		NR 720 RCL		NR 746	Suggested PAH Generic RCL <sup>1</sup>		
	Sample Depth (ft)	2.0-4.0	4.0-6.0	2.0-4.0	6.0-8.0	Groundwater Pathway	Non-Industrial Direct Contact	Table 1 Soil Screening Levels	Groundwater Pathway	Non-Industrial Direct Contact Pathway
	Date	3/21/05	3/21/05	3/21/05	3/21/05					
<b>VOCs, continued</b>	<b>Concentration (ug/kg)</b>									
Chlorobenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Chlorodibromomethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Chloroethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Chloroform	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Chloromethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
cis-1,2-Dichloroethene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
cis-1,3-dichloropropene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Dibromomethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Dichlorodifluoromethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Diisopropyl ether	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Ethylbenzene	<25	<25	<25	<50	2900	NL	4600	NL	NL	NL
Fluorotrichloromethane	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Hexachlorobutadine	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Isopropylbenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Methylene chloride	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Methyl tert-butyl ether	<25	<25	<25	<50	NL	NL	NL	NL	NL	NL
Naphthalene	---	<25	---	<50	NL	NL	2700	400	20000	
n-Butylbenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
n-Propylbenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
p-Isopropyltoluene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
sec-Butylbenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Styrene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
tert-Butylbenzene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Tetrachloroethene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Toluene	<25	<25	<25	<50	1500	NL	38000	NL	NL	NL
trans-1,2-Dichloroethene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
trans-1,3-dichloropropene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Trichloroethene	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Vinyl chloride	---	<25	---	<50	NL	NL	NL	NL	NL	NL
Xylenes, total	<75	<75	<75	<150	4100	NL	42000	NL	NL	NL

**Notes:**

(mg/kg) = milligrams per kilogram; (ug/kg) = micrograms per kilogram; < = analyte not detected above method detection limit; --- = not analyzed;

RCL = Residual Contaminant Level; NL = No Generic Limit Specified by WDNR

M = matrix effect present; Q = analyte detected at concentration between limit of detection and limit of quantification

<sup>1</sup>Suggested RCL established in WDNR Interim Guidance RR-519-97

**Table 2 (Page 1 of 2)**  
**Groundwater Analytical Results**  
**Quilt's and Quilting (102 South Pearl Street)**  
**Princeton, Wisconsin**

Sample	GP-4	GP-5	WAC NR 140 PHGWQ Standards <sup>1</sup>	
	Date	03/21/05	03/21/05	Enforcement Standard (ES)
	<b>Concentration (ug/L)</b>			
Lead	1.4	<1.5	15	1.5
	<b>PAHs</b>			
	<b>Concentration (ug/L)</b>			
1-Methylnaphthalene	<0.055	0.130	NL	NL
2-Methylnaphthalene	<0.062	0.29	NL	NL
Acenaphthene	<0.053	<0.054	NL	NL
Acenaphthylene	0.28	0.12	NL	NL
Anthracene	0.14	0.098	3,000	600
Benzo(a)anthracene	0.2	0.12	NL	NL
Benzo(a)pyrene	0.37	0.14	0.2	0.02
Benzo(b)fluoranthene	0.35	0.13	0.2	0.02
Benzo(g,h,i)perylene	0.36	0.13	NL	NL
Benzo(k)fluoranthene	0.27	0.13	NL	NL
Chrysene	0.25	0.12	0.2	0.02
Dibenzo (a,h)anthracene	0.1	<0.061	NL	NL
Fluoranthene	0.24	0.14	400	80
Fluorene	<0.060	<0.061	400	80
Indeno(1,2,3-cd)pyrene	0.3	0.12	NL	NL
Naphthalene	0.27	0.6	40	8
Phenanthrene	0.073	0.11	NL	NL
Pyrene	0.31	0.18	250	50
	<b>VOCs</b>			
	<b>Concentration (ug/L)</b>			
1,1,1,2-Tetrachloroethane	<0.92	<0.92	70	7
1,1,1-Trichloroethane	<0.90	<0.90	200	40
1,1,2,2-Tetrachloroethane	<0.20	<0.20	0.2	0.02
1,1,2-Trichloroethane	<0.42	<0.42	5	0.5
1,1-Dichloroethane	<0.75	<0.75	850	85
1,1-Dichloroethene	<0.57	<0.57	7	0.7
1,1-Dichloropropene	<0.75	<0.75	NL	NL
1,2,3-Trichlorobenzene	<0.74	<0.74	NL	NL
1,2,3-Trichloropropane	<0.99	<0.99	60	12
1,2,4-Trichlorobenzene	<0.97	<0.97	70	14
1,2-Dibromo-3-chloropropane	<0.87	<0.87	0.2	0.02
1,2-Dibromoethane	<0.56	<0.56	0.05	0.005
1,2-Dichlorobenzene	<0.83	<0.83	600	60
1,2-Dichloroethane	<0.36	<0.36	5	0.5
1,2-Dichloropropane	<0.46	<0.46	NL	NL
1,3-Dichlorobenzene	<0.87	<0.87	1,250	125
1,3-Dichloropropane	<0.61	<0.61	NL	NL
1,3-dichloropropene (cis/trans)	<0.38	<0.38	0.2	0.02
1,4-Dichlorobenzene	<0.95	<0.95	75	15
2,2-Dichloropropane	<0.62	<0.62	NL	NL
2-Chlorotoluene	<0.85	<0.85	NL	NL
4-Chlorotoluene	<0.74	<0.74	NL	NL

**Notes:**

(ug/L) = micrograms per liter; (mg/L) = milligrams per liter; < = analyte not detected above method detection limit;

NL = No Generic Limit Specified by WDNR

M = matrix effect present; Q = analyte detected at concentration between limit of detection and limit of quantification

Exceedance of the NR 140 ES indicated by: **100**

Exceedance of the NR 140 PAL indicated by: **100**

<sup>1</sup>WAC NR 140 PHGWQ Standards = Wisconsin Administrative Code Chapter NR 140 Public Health Groundwater Quality Standards

**Table 2 (Page 2 of 2)**  
**Groundwater Analytical Results**  
**Quilt's and Quilting (102 South Pearl Street)**  
**Princeton, Wisconsin**

Sample	Date	GP-4 03/21/05	GP-5 03/21/05	WAC NR 140 PHGWQ Standards <sup>1</sup>	
				Enforcement Standard (ES)	Preventive Action Limit (PAL)
<b>VOCs, continued</b>		<b>Concentration (ug/L)</b>			
Benzene		<0.41	<0.41	5	0.5
Bromobenzene		<0.82	<0.82	NL	NL
Bromochloromethane		<0.97	<0.97	NL	NL
Bromodichloromethane		<0.56	<0.56	0.6	0.06
Bromoform		<0.94	<0.94	4.4	0.44
Bromomethane		<0.91	<0.91	10	1
Carbon tetrachloride		<0.49	<0.49	5	0.5
Chlorobenzene		<0.41	<0.41	NL	NL
Chlorodibromomethane		<0.81	<0.81	60	6
Chloroethane		<0.97	<0.97	400	80
Chloroform		<0.37	<0.37	6	0.6
Chloromethane		<0.24	<0.24	3	0.3
cis-1,2-Dichloroethene		<0.83	<0.83	70	7
Dibromomethane		<0.60	<0.60	NL	NL
Dichlorodifluoromethane		<0.99	<0.99	1,000	200
Diisopropyl ether		<0.76	<0.76	NL	NL
Ethylbenzene		<0.54	<0.54	700	140
Fluorotrichloromethane		<0.79	<0.79	3,490	698
Hexachlorobutadine		<0.67	<0.67	NL	NL
Isopropylbenzene		<0.59	<0.59	NL	NL
Methylene chloride		<0.43	<0.43	5	0.5
Methyl tert-butyl ether		<0.61	<0.61	60	12
Naphthalene		<0.74	<0.74	40	8
n-Butylbenzene		<0.93	<0.93	NL	NL
n-Propylbenzene		<0.81	<0.81	NL	NL
p-Isopropyltoluene		<0.67	0.68	NL	NL
sec-Butylbenzene		<0.89	0.94	NL	NL
Styrene		<0.86	<0.86	100	10
tert-Butylbenzene		<0.97	<0.97	NL	NL
Tetrachloroethene		<0.45	<0.45	5	0.5
Toluene		<0.67	<0.67	1,000	200
trans-1,2-Dichloroethene		<0.89	<0.89	100	20
Trichloroethene		<0.48	<0.48	5	0.5
Trimethylbenzenes, total		<1.80	<1.80	480	96
Vinyl chloride		<0.18	<0.18	0.2	0.02
Xylenes, total		<2.63	<2.63	10,000	1,000

**Notes:**

(ug/L) = micrograms per liter; (mg/L) = milligrams per liter; < = analyte not detected above method detection limit;

NL = No Generic Limit Specified by WDNR

M = matrix effect present; Q = analyte detected at concentration between limit of detection and limit of quantification

Exceedance of the NR 140 ES indicated by: **100**

Exceedance of the NR 140 PAL indicated by: **100**

<sup>1</sup>WAC NR 140 PHGWQ Standards = Wisconsin Administrative Code Chapter NR 140 Public Health Groundwater Quality Standards

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Laboratory analytical results for groundwater indicate petroleum-related compounds are present at concentrations above regulatory standards. Analytical results at GP-4 and GP-5 indicate that some PAHs were detected in soil at concentrations below regulatory standards or suggested regulatory standards. The lighter PAHs detected in soil suggest possible residual diesel fuel impacts.

### **2.7 Recommendations**

STS recommends that WisDOT complete Phase 2.5 standard special provisions for encountering impacted soil and groundwater during the reconstruction of STH 23 to address the potential for encountering petroleum and lead-impacted soil and groundwater during construction.

STS also recommends that WisDOT notify the WDNR of soil and groundwater regulatory exceedances detected for petroleum-related compounds.

### **2.8 General Qualifications**

Conclusions presented in this report are based on field observations documented in the Phase I HMA report and subsurface conditions as revealed in the soil borings at locations identified on the figures. Stratification lines shown on the boring logs (Section 3.1) represent approximate boundaries between soil types. Variations may exist in both the horizontal and vertical directions between boring locations. In addition, seasonal and annual fluctuations of the groundwater table may influence distribution of compounds in the subsurface environment causing variations in groundwater quality.

STS has prepared this report at the request of our client. STS assumes responsibility for the accuracy of the contents of this report, subject to what is stated elsewhere in this section, but recommends this report be used only for the purposes intended by the client and STS at the time this report was prepared. This report may be unsuitable for other uses, and reliance on its content by anyone other than the client is done at the sole risk of the user. Our interpretations of results represent our scientific judgment based on available information. No other warranty is either expressed or implied, is made.





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### 3.0 APPENDICES



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### 3.1 Photo Log





Photo1: Boring locations are indicated by cones.



Photo 2: Quilt's and Quilting fronting State Highway 23/73 (Main Street)

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### 3.2 WDNR Soil Boring Log Information Forms



Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <b>WisDOT ID #1430-08-04, STH 23, Princeton</b>		License/Permit/Monitoring Number		Boring Number <b>GP-4</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Kitson Environmental - G. Kitson - STS Project No. 28990</b>		Date Drilling Started <b>3/21/2005</b>		Date Drilling Completed <b>3/21/2005</b>	
Drilling Method <b>Geoprobe</b>		WI Unique Well No.		DNR Well ID No.	
Common Well Name <b>GP-4</b>		Final Static Water Level <b>Feet MSL</b>		Surface Elevation <b>Feet MSL</b>	
Borehole Diameter <b>2.0 inches</b>		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/>		Local Grid Location	
State Plane <b>N, E S/C/N</b>		Lat _____ ° _____ ' _____ "		<input type="checkbox"/> N <input type="checkbox"/> E	
<b>NE 1/4 of SE 1/4 of Section 24, T 16 N, R 11 E</b>		Long _____ ° _____ ' _____ "		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County <b>Green Lake</b>		County Code <b>24</b>	
				Civil Town/City/ or Village <b>Princeton</b>	

Sample Number and Type	Length Att. & Recovered (in)	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
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1 GP	22 24		1.5	Asphalt pavement Fill: Brown silty fine sand (SM), trace gravel - moist to wet				Δ						
2 GP	24 24		3.0		SM			Δ						
3 GP	24 24		4.5					Δ						
4 GP	24 24		6.0	Gray clayey silt (OL) - moist to wet	OL			Δ						
5 GP	24 24		9.0	Brown clayey silt (ML), trace sand, trace organics - moist to wet	ML			Δ						
				End of Boring. Boring advanced from 0.0 feet to 10.0 feet using hydraulic push sampler. Boring backfilled with granular bentonite.										

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

Signature 	Firm <b>STS Consultants Ltd.</b> 1035 Kepler Drive Green Bay, Wisconsin 54311	Tel: 920-468-1978 Fax: 920-468-3312
---------------	---	--

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name WisDOT ID #1430-08-04, STH 23, Princeton			License/Permit/Monitoring Number		Boring Number GP-5	
Boring Drilled By: Name of crew chief (first, last) and Firm Kitson Environmental - G. Kitson - STS Project No. 28990			Date Drilling Started 3/21/2005		Date Drilling Completed 3/21/2005	Drilling Method Geoprobe
WI Unique Well No.	DNR Well ID No.	Common Well Name GP-5	Final Static Water Level Feet MSL		Surface Elevation Feet MSL	Borehole Diameter 2.0 inches
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input type="checkbox"/>			Local Grid Location			
State Plane N, E S/C/N			Lat _____ "			<input type="checkbox"/> N <input type="checkbox"/> E
NE 1/4 of SE 1/4 of Section 24, T 16 N, R 11 E			Long _____ "			Feet <input type="checkbox"/> S <input type="checkbox"/> W
Facility ID		County Green Lake	County Code 24	Civil Town/City/ or Village Princeton		

Sample Number and Type	Length Att. & Recovered (in)	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
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200		
1 GP	22 24		1.5	Asphalt pavement Fill: Brown silty fine sand (SP-SM), trace gravel - moist to wet				<1							
2 GP	24 24		3.0		SP-SM			<1							
3 GP	24 24		4.5					<1							
4 GP	24 24		6.0	Gray organic silt (OL), trace sand - moist to wet	OL			41.2							
5 GP	24 24		9.0	Brown clayey silt to silty clay (CL-ML), trace sand, trace organics - moist to wet	CL-ML			<1							
				End of Boring. Boring advanced from 0.0 feet to 10.0 feet using hydraulic push sampler. Boring backfilled with granular bentonite.											

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

Signature *Paul M. May* Firm **STS Consultants Ltd.** Tel: 920-468-1978  
1035 Kepler Drive Green Bay, Wisconsin 54311 Fax: 920-468-3312

Wisconsin Department of Transportation  
STS Project No. 4-27811XW  
May 9, 2005

### 3.3 WDNR Well/Drillhole/Borehole Abandonment Forms

Notice: Please complete Form 3300-5 and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to:  Drinking Water  Watershed/Wastewater  Waste Management  Remediation/Redevelopment  Other \_\_\_\_\_

(1) GENERAL INFORMATION		(2) FACILITY /OWNER INFORMATION	
WI Unique Well No.	DNR Well ID No.	County	Facility Name
		Green Lake	WisDOT ID #1430-08-04, STH 23, Princeton
Common Well Name <u>GP-4</u>		Gov't Lot (if applicable)	
<u>NE</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>24</u> ; T. <u>16</u> N; R. <u>11</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		Facility ID _____ License/Permit/Monitoring No. _____	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Well Location <input type="checkbox"/>		Street Address of Well	
Lat _____ ° _____ ' _____ " Long _____ ° _____ ' _____ " or		607 West Main Street	
State Plane _____ ft. N. _____ ft. E. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Zone		City, Village, or Town	
Reason For Abandonment		Present Well Owner	
completed sampling	WI Unique Well No.	WisDOT	
	of Replacement Well	Original Owner	
		WisDOT	
		Street Address or Route of Owner	
		4802 Sheboygan Avenue, Rm 451	
		City, State, Zip Code	
		Madison, Wisconsin 53707	

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION	(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL
Original Construction Date <u>3/21/2005</u>	Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input checked="" type="checkbox"/> Drillhole / Borehole	Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Construction Type: <input type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input checked="" type="checkbox"/> Other (Specify) <u>direct push</u>	Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock	Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No
Total Well Depth (ft) <u>10.0</u> Casing Diameter (in.) _____ (From ground surface) Casing Depth (ft.) _____	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Lower Drillhole Diameter (in.) _____	Did Sealing Material Rise to Surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, To What Depth? _____ Feet	If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No
Depth to Water (Feet) <u>4.0</u>	Required Method of Placing Sealing Material
	<input type="checkbox"/> Conductor Pipe - Gravity <input type="checkbox"/> Conductor Pipe - Pumped <input type="checkbox"/> Screened & Poured <input checked="" type="checkbox"/> Other (Explain) Gravity (Bentonite Chips)
	Sealing Materials For monitoring wells and monitoring well boreholes only
	<input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Bentonite Chips <input type="checkbox"/> Sand-Cement (Concrete) Grout <input checked="" type="checkbox"/> Granular Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite-Cement Grout <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite - Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Chipped Bentonite

(5) Sealing Material Used	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Granular bentonite	Surface	10.0	0.5	

(6) Comments \_\_\_\_\_

(7) Name of Person or Firm Doing Sealing Work		Date of Abandonment	
STS Consultants Ltd.		3/21/05	
Signature of Person Doing Work		Date Signed	
		5/5/05	
Street or Route		Telephone Number	
1035 Kepler Drive		920-468-1978	
City, State, Zip Code			
Green Bay, Wisconsin 54311			

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	



Notice: Please complete Form 3300-5 and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to:  Drinking Water  Watershed/Wastewater  Waste Management  Remediation/Redevelopment  Other \_\_\_\_\_

(1) GENERAL INFORMATION			(2) FACILITY /OWNER INFORMATION	
WI Unique Well No.	DNR Well ID No.	County Green Lake	Facility Name WisDOT ID #1430-08-04, STH 23, Princeton	
Common Well Name GP-5 Gov't Lot (if applicable)			Facility ID	License/Permit/Monitoring No.
Grid Location NE 1/4 of SE 1/4 of Sec. 24 ; T. 16 N; R. 11 <input checked="" type="checkbox"/> E <input type="checkbox"/> W			Street Address of Well 607 West Main Street	
_____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.			City, Village, or Town Princeton	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Well Location <input type="checkbox"/>			Present Well Owner WisDOT	
Lat _____ ° _____ ' _____ " Long _____ ° _____ ' _____ " or			Original Owner WisDOT	
State Plane _____ ft. N. _____ ft. E. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Zone			Street Address or Route of Owner 4802 Sheboygan Avenue, Rm 451	
Reason For Abandonment completed sampling		WI Unique Well No. of Replacement Well	City, State, Zip Code Madison, Wisconsin 53707	

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL			
Original Construction Date 3/21/2005	If a Well Construction Report is available, please attach.	Pump & Piping Removed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input checked="" type="checkbox"/> Drillhole / Borehole		Liner(s) Removed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Applicable
Construction Type: <input type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input checked="" type="checkbox"/> Other (Specify) direct push		Screen Removed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Applicable
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Casing Left in Place?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Total Well Depth (ft.) 10.0 Casing Diameter (in.) _____ (From ground surface) Casing Depth (ft.) _____		Was Casing Cut Off Below Surface?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Lower Drillhole Diameter (in.) _____		Did Sealing Material Rise to Surface?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown		Did Material Settle After 24 Hours?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
If Yes, To What Depth? _____ Feet		If Yes, Was Hole Retopped?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Depth to Water (Feet) 4.0		Required Method of Placing Sealing Material			
		<input type="checkbox"/> Conductor Pipe - Gravity <input type="checkbox"/> Conductor Pipe - Pumped			
		<input type="checkbox"/> Screened & Poured <input checked="" type="checkbox"/> Other (Explain) Gravity (Bentonite Chips)			
		Sealing Materials		For monitoring wells and monitoring well boreholes only	
		<input type="checkbox"/> Neat Cement Grout		<input type="checkbox"/> Bentonite Chips	
		<input type="checkbox"/> Sand-Cement (Concrete) Grout		<input checked="" type="checkbox"/> Granular Bentonite	
		<input type="checkbox"/> Concrete		<input type="checkbox"/> Bentonite-Cement Grout	
		<input type="checkbox"/> Clay-Sand Slurry		<input type="checkbox"/> Bentonite - Sand Slurry	
		<input type="checkbox"/> Bentonite-Sand Slurry			
		<input type="checkbox"/> Chipped Bentonite			

(5)	Sealing Material Used	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
	Granular bentonite	Surface	10.0	0.5	

(6) Comments \_\_\_\_\_

(7) Name of Person or Firm Doing Sealing Work STS Consultants Ltd.		Date of Abandonment 3/21/05
Signature of Person Doing Work <i>[Signature]</i>		Date Signed 5/5/05
Street or Route 1035 Kepler Drive	Telephone Number 920-468-1978	
City, State, Zip Code Green Bay, Wisconsin 54311		

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

Wisconsin Department of Transportation  
STS Project No. 4-27811XW  
May 9, 2005

### 3.4 Laboratory Analytical Reports and Chain of Custody Forms



## Analytical Report Number: 857394

Client: STS CONSULTANTS - GB

Lab Contact: Eric Bullock

Project Name: WISDOT-PRINCETON

Project Number: 27811XW

Lab Sample Number	Field ID	Matrix	Collection Date
<del>857394-001</del>	<del>GP-1 (2-4)</del>	SOIL	03/21/05
<del>857394-002</del>	<del>GP-1 (4-6)</del>	SOIL	03/21/05
<del>857394-003</del>	<del>GP-2 (2-4)</del>	SOIL	03/21/05
<del>857394-004</del>	<del>GP-2 (4-6)</del>	SOIL	03/21/05
<del>857394-005</del>	<del>GP-3 (2-4)</del>	SOIL	03/21/05
<del>857394-006</del>	<del>GP-3 (4-6)</del>	SOIL	03/21/05
857394-007	GP-4 (2-4)	SOIL	03/21/05
857394-008	GP-4 (4-6)	SOIL	03/21/05
857394-009	GP-5 (2-4)	SOIL	03/21/05
857394-010	GP-5 (6-8)	SOIL	03/21/05
<del>857394-011</del>	<del>GP-6 (4-6)</del>	SOIL	03/21/05
<del>857394-012</del>	<del>GP-6 (6-8)</del>	SOIL	03/21/05
<del>857394-013</del>	<del>GP-7 (4-6)</del>	SOIL	03/21/05
<del>857394-014</del>	<del>GP-7 (6-8)</del>	SOIL	03/21/05
<del>857394-015</del>	<del>GP-8 (4-6)</del>	SOIL	03/21/05
<del>857394-016</del>	<del>GP-8 (6-8)</del>	SOIL	03/21/05
<del>857394-017</del>	<del>GP-9 (4-6)</del>	SOIL	03/21/05
<del>857394-018</del>	<del>GP-9 (6-8)</del>	SOIL	03/21/05
<del>857394-019</del>	<del>GP-1</del>	WATER	03/21/05
<del>857394-020</del>	<del>GP-2</del>	WATER	03/21/05
857394-021	GP-4	WATER	03/21/05
857394-022	GP-5	WATER	03/21/05
857394-023	METHANOL BLANK	METH	03/21/05
857394-024	VOC TRIP BLANK	WATER	03/21/05

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 comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

  
Approval Signature

4/12/05  
Date

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB  
Project Name : WISDOT-PRINCETON  
Project Number : 27811XW  
Field ID : GP-4 (2-4)

Matrix Type : SOIL  
Collection Date : 03/21/05  
Report Date : 04/11/05  
Lab Sample Number : 857394-007

### INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Percent Solids	87.0				1	%		03/24/05	SM 2540G M	SM 2540G M

### DIESEL RANGE ORGANICS

Preservation Date: 03/25/05

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Diesel Range Organics	< 4.4			4.4	1	mg/kg		03/26/05	WI MOD DRO	WI MOD DRO
DRO Blank	< 5.0			5.0	1	mg/kg		03/26/05	WI MOD DRO	WI MOD DRO
DRO Blank Spike	79				1	%Recov		03/26/05	WI MOD DRO	WI MOD DRO
DRO Blank Spike Duplicate	76				1	%Recov		03/26/05	WI MOD DRO	WI MOD DRO

### GASOLINE RANGE ORGANICS

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Gasoline Range Organics	< 2.9			2.9	50	mg/kg		03/24/05	WI MOD GRO	WI MOD GRO
GRO Blank	< 2.5			2.5	50	mg/kg		03/24/05	WI MOD GRO	WI MOD GRO
GRO Blank Spike	100				1	%Recov		03/24/05	WI MOD GRO	WI MOD GRO
GRO Blank Spike Duplicate	103				1	%Recov		03/24/05	WI MOD GRO	WI MOD GRO

### PVOC

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
1,3,5-Trimethylbenzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Benzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Ethylbenzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Methyl-tert-butyl-ether	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Toluene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Xylene, o	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Xylenes, m + p	< 50	50	120		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
a,a,a-Trifluorotoluene	102				1	%Recov		03/24/05	SW846 5030B	SW846 M8021

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB  
Project Name : WISDOT-PRINCETON  
Project Number : 27811XW  
Field ID : GP-4 (4-6)

Matrix Type : SOIL  
Collection Date : 03/21/05  
Report Date : 04/11/05  
Lab Sample Number : 857394-008

### INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cadmium	0.13	0.090	0.30		5	mg/Kg	Q	03/31/05	SW846 3050B	SW846 6020
Chromium	8.0	0.17	0.55		5	mg/Kg		03/31/05	SW846 3050B	SW846 6020
Lead	21	0.092	0.31		5	mg/Kg		03/31/05	SW846 3050B	SW846 6020
Percent Solids	82.9				1	%		03/24/05	SM 2540G M	SM 2540G M

### VOLATILES

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1,2-Tetrachloroethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Benzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Bromobenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Bromochloromethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Bromodichloromethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Bromoform	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Bromomethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Chlorobenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Chloroethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Chloroform	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Chloromethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Dibromomethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Ethylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Fluorotrchloromethane	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : GP-4 (4-6)

Matrix Type : SOIL

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-008

### VOLATILES

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Hexachlorobutadiene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Isopropylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Methylene Chloride	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Naphthalene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
N-Butylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
n-Propylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
p-Isopropyltoluene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
sec-Butylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Styrene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
tert-Butylbenzene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Tetrachloroethene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Toluene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Trichloroethene	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Vinyl Chloride	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Xylene, o	< 25	25	60		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
Xylenes, m + p	< 50	50	120		50	ug/Kg		03/24/05	SW846 5030B	SW846 8260B
4-Bromofluorobenzene	98				50	%Recov		03/24/05	SW846 5030B	SW846 8260B
Toluene-d8	106				50	%Recov		03/24/05	SW846 5030B	SW846 8260B
Dibromofluoromethane	106				50	%Recov		03/24/05	SW846 5030B	SW846 8260B

### PAH/PNA

Prep Date: 03/28/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1-Methylnaphthalene	6.0	2.8	9.2		1	ug/Kg	Q	03/28/05	SW846 3545	8270C-SIM
2-Methylnaphthalene	13	3.9	13		1	ug/Kg	Q	03/28/05	SW846 3545	8270C-SIM
Acenaphthene	< 1.9	1.9	6.4		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Acenaphthylene	< 6.7	6.7	22		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Anthracene	< 2.6	2.6	8.6		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(a)anthracene	< 15	15	50		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(a)pyrene	< 12	12	41		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(b)fluoranthene	< 9.9	9.9	33		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(ghi)perylene	< 6.7	6.7	22		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(k)fluoranthene	< 13	13	44		1	ug/Kg	&	03/28/05	SW846 3545	8270C-SIM
Chrysene	< 14	14	46		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Dibenz(a,h)anthracene	< 4.0	4.0	13		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Fluoranthene	< 11	11	38		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Fluorene	< 1.6	1.6	5.3		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 6.4	6.4	21		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Naphthalene	11	3.0	9.9		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Phenanthrene	< 6.8	6.8	23		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Pyrene	< 15	15	50		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Nitrobenzene-d5	76				1	%Recov		03/28/05	SW846 3545	8270C-SIM
2-Fluorobiphenyl	70				1	%Recov		03/28/05	SW846 3545	8270C-SIM
Terphenyl-d14	76				1	%Recov		03/28/05	SW846 3545	8270C-SIM

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : GP-5 (2-4)

Matrix Type : SOIL

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-009

### INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Percent Solids	73.1				1	%		03/24/05	SM 2540G M	SM 2540G M

### DIESEL RANGE ORGANICS

Preservation Date: 03/25/05

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Diesel Range Organics	< 5.3			5.3	1	mg/kg		03/26/05	WI MOD DRO	WI MOD DRO
DRO Blank	< 5.0			5.0	1	mg/kg		03/26/05	WI MOD DRO	WI MOD DRO
DRO Blank Spike	79				1	%Recov		03/26/05	WI MOD DRO	WI MOD DRO
DRO Blank Spike Duplicate	76				1	%Recov		03/26/05	WI MOD DRO	WI MOD DRO

### GASOLINE RANGE ORGANICS

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Gasoline Range Organics	< 3.4			3.4	50	mg/kg		03/24/05	WI MOD GRO	WI MOD GRO
GRO Blank	< 2.5			2.5	50	mg/kg		03/24/05	WI MOD GRO	WI MOD GRO
GRO Blank Spike	100				1	%Recov		03/24/05	WI MOD GRO	WI MOD GRO
GRO Blank Spike Duplicate	103				1	%Recov		03/24/05	WI MOD GRO	WI MOD GRO

### PVOC

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,2,4-Trimethylbenzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
1,3,5-Trimethylbenzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Benzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Ethylbenzene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Methyl-tert-butyl-ether	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Toluene	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Xylene, o	< 25	25	60		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
Xylenes, m + p	< 50	50	120		50	ug/kg		03/24/05	SW846 5030B	SW846 M8021
a,a,a-Trifluorotoluene	101				1	%Recov		03/24/05	SW846 5030B	SW846 M8021

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Matrix Type : SOIL

Project Name : WISDOT-PRINCETON

Collection Date : 03/21/05

Project Number : 27811XW

Report Date : 04/11/05

Field ID : GP-5 (6-8)

Lab Sample Number : 857394-010

### INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Cadmium	0.28	0.10	0.35		5	mg/Kg	Q	03/31/05	SW846 3050B	SW846 6020
Chromium	39	0.19	0.64		5	mg/Kg		03/31/05	SW846 3050B	SW846 6020
Lead	11	0.11	0.35		5	mg/Kg		03/31/05	SW846 3050B	SW846 6020
Percent Solids	71.1				1	%		03/24/05	SM 2540G M	SM 2540G M

### VOLATILES

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1,2-Tetrachloroethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Benzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Bromobenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Bromochloromethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Bromodichloromethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Bromoform	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Bromomethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Chlorobenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Chloroethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Chloroform	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Chloromethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Dibromomethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Ethylbenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B



# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB  
Project Name : WISDOT-PRINCETON  
Project Number : 27811XW  
Field ID : GP-5 (6-8)

Matrix Type : SOIL  
Collection Date : 03/21/05  
Report Date : 04/11/05  
Lab Sample Number : 857394-010

### VOLATILES

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Hexachlorobutadiene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Isopropylbenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Methylene Chloride	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Naphthalene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
N-Butylbenzene	800	70	170		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
n-Propylbenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
p-Isopropyltoluene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
sec-Butylbenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Styrene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
tert-Butylbenzene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Tetrachloroethene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Toluene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Trichloroethene	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Vinyl Chloride	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Xylene, o	< 50	50	120		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
Xylenes, m + p	< 100	100	240		100	ug/Kg	K	03/24/05	SW846 5030B	SW846 8260B
4-Bromofluorobenzene	106				100	%Recov		03/24/05	SW846 5030B	SW846 8260B
Toluene-d8	112				100	%Recov		03/24/05	SW846 5030B	SW846 8260B
Dibromofluoromethane	97				100	%Recov		03/24/05	SW846 5030B	SW846 8260B

### PAH/PNA

Prep Date: 03/28/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1-Methylnaphthalene	3.8	3.2	11		1	ug/Kg	Q	03/28/05	SW846 3545	8270C-SIM
2-Methylnaphthalene	13	4.6	15		1	ug/Kg	Q	03/28/05	SW846 3545	8270C-SIM
Acenaphthene	< 2.2	2.2	7.4		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Acenaphthylene	< 7.8	7.8	26		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Anthracene	< 3.0	3.0	10		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(a)anthracene	< 17	17	58		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(a)pyrene	< 14	14	47		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(b)fluoranthene	< 12	12	38		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(ghi)perylene	< 7.8	7.8	26		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Benzo(k)fluoranthene	< 15	15	52		1	ug/Kg	&	03/28/05	SW846 3545	8270C-SIM
Chrysene	< 16	16	54		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Dibenz(a,h)anthracene	< 4.7	4.7	16		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Fluoranthene	< 13	13	45		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Fluorene	< 1.9	1.9	6.2		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Indeno(1,2,3-cd)pyrene	< 7.4	7.4	25		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Naphthalene	5.1	3.4	11		1	ug/Kg	Q	03/28/05	SW846 3545	8270C-SIM
Phenanthrene	< 7.9	7.9	26		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Pyrene	< 17	17	58		1	ug/Kg		03/28/05	SW846 3545	8270C-SIM
Nitrobenzene-d5	53				1	%Recov		03/28/05	SW846 3545	8270C-SIM
2-Fluorobiphenyl	67				1	%Recov		03/28/05	SW846 3545	8270C-SIM
Terphenyl-d14	78				1	%Recov		03/28/05	SW846 3545	8270C-SIM

# En Chem

Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB  
Project Name : WISDOT-PRINCETON  
Project Number : 27811XW  
Field ID : GP-4

Matrix Type : WATER  
Collection Date : 03/21/05  
Report Date : 04/11/05  
Lab Sample Number : 857394-021

## INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Lead - Dissolved	1.4	0.067	0.22		1	ug/L		04/01/05	SW846 3020A	SW846 6020

## VOLATILES

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1,2-Tetrachloroethane	< 0.92	0.92	3.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 0.90	0.90	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.20	0.20	0.67		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 0.42	0.42	1.4		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 0.75	0.75	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 0.57	0.57	1.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 0.75	0.75	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 0.74	0.74	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 0.99	0.99	3.3		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.87	0.87	2.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 0.56	0.56	1.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 0.36	0.36	1.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 0.46	0.46	1.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 0.87	0.87	2.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 0.61	0.61	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 0.95	0.95	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 0.62	0.62	2.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 0.85	0.85	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 0.74	0.74	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Benzene	< 0.41	0.41	1.4		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromobenzene	< 0.82	0.82	2.7		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromochloromethane	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromodichloromethane	< 0.56	0.56	1.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromoform	< 0.94	0.94	3.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromomethane	< 0.91	0.91	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 0.49	0.49	1.6		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chlorobenzene	< 0.41	0.41	1.4		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 0.81	0.81	2.7		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chloroethane	< 0.97	0.97	3.2		1	ug/L	&	03/25/05	SW846 5030B	SW846 8260B
Chloroform	< 0.37	0.37	1.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chloromethane	< 0.24	0.24	0.80		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Dibromomethane	< 0.60	0.60	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 0.99	0.99	3.3		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 0.76	0.76	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Ethylbenzene	< 0.54	0.54	1.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 0.79	0.79	2.6		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Hexachlorobutadiene	< 0.67	0.67	2.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Isopropylbenzene	< 0.59	0.59	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Methylene Chloride	< 0.43	0.43	1.4		1	ug/L		03/25/05	SW846 5030B	SW846 8260B

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : GP-4

Matrix Type : WATER

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-021

### VOLATILES

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Methyl-tert-butyl-ether	< 0.61	0.61	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Naphthalene	< 0.74	0.74	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
N-Butylbenzene	< 0.93	0.93	3.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
n-Propylbenzene	< 0.81	0.81	2.7		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
p-Isopropyltoluene	< 0.67	0.67	2.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
sec-Butylbenzene	< 0.89	0.89	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Styrene	< 0.86	0.86	2.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
tert-Butylbenzene	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Tetrachloroethene	< 0.45	0.45	1.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Toluene	< 0.67	0.67	2.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	< 0.89	0.89	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Trichloroethene	< 0.48	0.48	1.6		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Vinyl Chloride	< 0.18	0.18	0.60		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Xylene, o	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Xylenes, m + p	< 1.8	1.8	6.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
4-Bromofluorobenzene	78				1	%Recov		03/25/05	SW846 5030B	SW846 8260B
Toluene-d8	84				1	%Recov		03/25/05	SW846 5030B	SW846 8260B
Dibromofluoromethane	99				1	%Recov		03/25/05	SW846 5030B	SW846 8260B

### PAH/ PNA

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1-Methylnaphthalene	< 0.055	0.055	0.18		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
2-Methylnaphthalene	< 0.062	0.062	0.21		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Acenaphthene	< 0.053	0.053	0.18		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Acenaphthylene	0.28	0.053	0.18		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Anthracene	0.14	0.049	0.16		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.20	0.054	0.18		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Benzo(a)pyrene	0.37	0.050	0.17		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	0.35	0.049	0.16		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.36	0.057	0.19		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	0.27	0.053	0.18		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Chrysene	0.25	0.045	0.15		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	0.10	0.061	0.20		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Fluoranthene	0.24	0.045	0.15		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Fluorene	< 0.060	0.060	0.20		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.30	0.047	0.16		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Naphthalene	0.27	0.062	0.21		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Phenanthrene	0.073	0.056	0.19		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Pyrene	0.31	0.045	0.15		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Nitrobenzene-d5	95				2	%Recov		03/31/05	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	78				2	%Recov		03/31/05	SW846 3510C	8270C-SIM
Terphenyl-d14	90				2	%Recov		03/31/05	SW846 3510C	8270C-SIM

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : GP-5

Matrix Type : WATER

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-022

### INORGANICS

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Lead - Dissolved	< 1.5	1.5	5.1		1	ug/L		04/05/05	SW846 6010B	SW846 6010B

### VOLATILES

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1,2-Tetrachloroethane	< 0.92	0.92	3.1		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 0.90	0.90	3.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.20	0.20	0.67		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 0.42	0.42	1.4		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 0.75	0.75	2.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 0.57	0.57	1.9		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 0.75	0.75	2.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 0.74	0.74	2.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 0.99	0.99	3.3		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 0.97	0.97	3.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 0.97	0.97	3.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.87	0.87	2.9		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 0.56	0.56	1.9		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 0.83	0.83	2.8		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 0.36	0.36	1.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 0.46	0.46	1.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 0.83	0.83	2.8		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 0.87	0.87	2.9		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 0.61	0.61	2.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 0.95	0.95	3.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 0.62	0.62	2.1		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 0.85	0.85	2.8		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 0.74	0.74	2.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Benzene	< 0.41	0.41	1.4		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Bromobenzene	< 0.82	0.82	2.7		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Bromochloromethane	< 0.97	0.97	3.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Bromodichloromethane	< 0.56	0.56	1.9		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Bromoform	< 0.94	0.94	3.1		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Bromomethane	< 0.91	0.91	3.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 0.49	0.49	1.6		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Chlorobenzene	< 0.41	0.41	1.4		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 0.81	0.81	2.7		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Chloroethane	< 0.97	0.97	3.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Chloroform	< 0.37	0.37	1.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Chloromethane	< 0.24	0.24	0.80		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 0.83	0.83	2.8		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Dibromomethane	< 0.60	0.60	2.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 0.99	0.99	3.3		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 0.76	0.76	2.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Ethylbenzene	< 0.54	0.54	1.8		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 0.79	0.79	2.6		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Hexachlorobutadiene	< 0.67	0.67	2.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Isopropylbenzene	< 0.59	0.59	2.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Methylene Chloride	< 0.43	0.43	1.4		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : GP-5

Matrix Type : WATER

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-022

### VOLATILES

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Methyl-tert-butyl-ether	< 0.61	0.61	2.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Naphthalene	< 0.74	0.74	2.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
N-Butylbenzene	< 0.93	0.93	3.1		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
n-Propylbenzene	< 0.81	0.81	2.7		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
p-Isopropyltoluene	0.68	0.67	2.2		1	ug/L	QM	03/25/05	SW846 5030B	SW846 8260B
sec-Butylbenzene	0.94	0.89	3.0		1	ug/L	QM	03/25/05	SW846 5030B	SW846 8260B
Styrene	< 0.86	0.86	2.9		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
tert-Butylbenzene	< 0.97	0.97	3.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Tetrachloroethene	< 0.45	0.45	1.5		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Toluene	< 0.67	0.67	2.2		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	< 0.89	0.89	3.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Trichloroethene	< 0.48	0.48	1.6		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Vinyl Chloride	< 0.18	0.18	0.60		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Xylene, o	< 0.83	0.83	2.8		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
Xylenes, m + p	< 1.8	1.8	6.0		1	ug/L	M	03/25/05	SW846 5030B	SW846 8260B
4-Bromofluorobenzene	83				1	%Recov		03/25/05	SW846 5030B	SW846 8260B
Toluene-d8	90				1	%Recov		03/25/05	SW846 5030B	SW846 8260B
Dibromofluoromethane	93				1	%Recov		03/25/05	SW846 5030B	SW846 8260B

### PAH/ PNA

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1-Methylnaphthalene	0.13	0.056	0.19		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
2-Methylnaphthalene	0.29	0.063	0.21		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Acenaphthene	< 0.054	0.054	0.18		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Acenaphthylene	0.12	0.054	0.18		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Anthracene	0.098	0.049	0.16		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Benzo(a)anthracene	0.12	0.055	0.18		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Benzo(a)pyrene	0.14	0.051	0.17		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Benzo(b)fluoranthene	0.13	0.050	0.17		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Benzo(ghi)perylene	0.13	0.058	0.19		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Benzo(k)fluoranthene	0.13	0.054	0.18		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Chrysene	0.12	0.046	0.15		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Dibenz(a,h)anthracene	< 0.061	0.061	0.20		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Fluoranthene	0.14	0.046	0.15		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Fluorene	< 0.061	0.061	0.20		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.12	0.048	0.16		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Naphthalene	0.60	0.062	0.21		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Phenanthrene	0.11	0.057	0.19		2	ug/L	Q	03/31/05	SW846 3510C	8270C-SIM
Pyrene	0.18	0.045	0.15		2	ug/L		03/31/05	SW846 3510C	8270C-SIM
Nitrobenzene-d5	13				2	%Recov		03/31/05	SW846 3510C	8270C-SIM
2-Fluorobiphenyl	68				2	%Recov		03/31/05	SW846 3510C	8270C-SIM
Terphenyl-d14	94				2	%Recov		03/31/05	SW846 3510C	8270C-SIM

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : METHANOL BLANK

Matrix Type : METHANOL

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-023

### VOLATILES

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1,2-Tetrachloroethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Benzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Bromobenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Bromochloromethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Bromodichloromethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Bromoform	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Bromomethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Chlorobenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Chloroethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Chloroform	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Chloromethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Dibromomethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Ethylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Hexachlorobutadiene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Isopropylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Methylene Chloride	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Naphthalene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
N-Butylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
n-Propylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : METHANOL BLANK

Matrix Type : METHANOL

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-023

### VOLATILES

Prep Date: 03/24/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
p-Isopropyltoluene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
sec-Butylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Styrene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
tert-Butylbenzene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Tetrachloroethene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Toluene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Trichloroethene	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Vinyl Chloride	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Xylene, o	< 25	25	60		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
Xylenes, m + p	< 50	50	120		50	ug/L		03/24/05	SW846 5030B	SW846 8260B
4-Bromofluorobenzene	94				50	%Recov		03/24/05	SW846 5030B	SW846 8260B
Toluene-d8	97				50	%Recov		03/24/05	SW846 5030B	SW846 8260B
Dibromofluoromethane	101				50	%Recov		03/24/05	SW846 5030B	SW846 8260B

# En Chem

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

A Division of Pace Analytical Services, Inc.

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : VOC TRIP BLANK

Matrix Type : WATER

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-024

### VOLATILES

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
1,1,1,2-Tetrachloroethane	< 0.92	0.92	3.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1,1-Trichloroethane	< 0.90	0.90	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1,2,2-Tetrachloroethane	< 0.20	0.20	0.67		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1,2-Trichloroethane	< 0.42	0.42	1.4		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloroethane	< 0.75	0.75	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloroethene	< 0.57	0.57	1.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,1-Dichloropropene	< 0.75	0.75	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,3-Trichlorobenzene	< 0.74	0.74	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,3-Trichloropropane	< 0.99	0.99	3.3		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,4-Trichlorobenzene	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2,4-Trimethylbenzene	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dibromo-3-chloropropane	< 0.87	0.87	2.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dibromoethane	< 0.56	0.56	1.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dichlorobenzene	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dichloroethane	< 0.36	0.36	1.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,2-Dichloropropane	< 0.46	0.46	1.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,3,5-Trimethylbenzene	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,3-Dichlorobenzene	< 0.87	0.87	2.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,3-Dichloropropane	< 0.61	0.61	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
1,4-Dichlorobenzene	< 0.95	0.95	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
2,2-Dichloropropane	< 0.62	0.62	2.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
2-Chlorotoluene	< 0.85	0.85	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
4-Chlorotoluene	< 0.74	0.74	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Benzene	< 0.41	0.41	1.4		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromobenzene	< 0.82	0.82	2.7		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromochloromethane	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromodichloromethane	< 0.56	0.56	1.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromoform	< 0.94	0.94	3.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Bromomethane	< 0.91	0.91	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Carbon Tetrachloride	< 0.49	0.49	1.6		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chlorobenzene	< 0.41	0.41	1.4		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chlorodibromomethane	< 0.81	0.81	2.7		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chloroethane	< 0.97	0.97	3.2		1	ug/L	&	03/25/05	SW846 5030B	SW846 8260B
Chloroform	< 0.37	0.37	1.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Chloromethane	< 0.24	0.24	0.80		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
cis-1,2-Dichloroethene	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
cis-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Dibromomethane	< 0.60	0.60	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Dichlorodifluoromethane	< 0.99	0.99	3.3		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Diisopropyl Ether	< 0.76	0.76	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Ethylbenzene	< 0.54	0.54	1.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Fluorotrichloromethane	< 0.79	0.79	2.6		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Hexachlorobutadiene	< 0.67	0.67	2.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Isopropylbenzene	< 0.59	0.59	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Methylene Chloride	0.69	0.43	1.4		1	ug/L	Q	03/25/05	SW846 5030B	SW846 8260B
Methyl-tert-butyl-ether	< 0.61	0.61	2.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Naphthalene	< 0.74	0.74	2.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
N-Butylbenzene	< 0.93	0.93	3.1		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
n-Propylbenzene	< 0.81	0.81	2.7		1	ug/L		03/25/05	SW846 5030B	SW846 8260B



# En Chem

A Division of Pace Analytical Services, Inc.

## Analytical Report Number: 857394

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436

Client : STS CONSULTANTS - GB

Project Name : WISDOT-PRINCETON

Project Number : 27811XW

Field ID : VOC TRIP BLANK

Matrix Type : WATER

Collection Date : 03/21/05

Report Date : 04/11/05

Lab Sample Number : 857394-024

### VOLATILES

Prep Date: 03/25/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
p-Isopropyltoluene	< 0.67	0.67	2.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
sec-Butylbenzene	< 0.89	0.89	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Styrene	< 0.86	0.86	2.9		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
tert-Butylbenzene	< 0.97	0.97	3.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Tetrachloroethene	< 0.45	0.45	1.5		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Toluene	< 0.67	0.67	2.2		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
trans-1,2-Dichloroethene	< 0.89	0.89	3.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
trans-1,3-Dichloropropene	< 0.19	0.19	0.63		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Trichloroethene	< 0.48	0.48	1.6		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Vinyl Chloride	< 0.18	0.18	0.60		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Xylene, o	< 0.83	0.83	2.8		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
Xylenes, m + p	< 1.8	1.8	6.0		1	ug/L		03/25/05	SW846 5030B	SW846 8260B
4-Bromofluorobenzene	80				1	%Recov		03/25/05	SW846 5030B	SW846 8260B
Toluene-d8	92				1	%Recov		03/25/05	SW846 5030B	SW846 8260B
Dibromofluoromethane	100				1	%Recov		03/25/05	SW846 5030B	SW846 8260B

# En Chem

A Division of Pace Analytical Services, Inc.

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436  
Fax: 920-469-8827

Lab Number	TestGroupID	Field ID	Comment
857394-001	DRO-S	GP-1 (2-4)	Front eluting peaks, late eluting hump and diesel range peaks were present in the chromatogram.
857394-001	GRO-S-ME	GP-1 (2-4)	Early and late eluting peaks were present outside the window of analysis.
857394-003	DRO-S	GP-2 (2-4)	Late eluting hump along with diesel range peaks were present in the chromatogram.
857394-005	DRO-S	GP-3 (2-4)	Late eluting hump along with diesel range peaks were present in the chromatogram.
857394-011	DRO-S	GP-6 (4-6)	Late eluting hump along with diesel range peaks were present in the chromatogram.
857394-011	DRO-S	GP-6 (4-6)	DRO response was not in the upper half of the curve due to the high concentration of late eluting hydrocarbons.
857394-013	DRO-S	GP-7 (4-6)	Late eluting hump along with diesel range peaks were present in the chromatogram.
857394-020	M-PB-D	GP-2	C - Elevated detection limit due to matrix effect.

## Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Inorganic	Sample received unpreserved. Sample was either preserved at the time of receipt or at the time of sample preparation.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
T	All	Inadequate sample volume received to perform the method required MS/MSD.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.

# En Chem

A Division of Pace Analytical Services, Inc.

## Analysis Summary by Laboratory

1241 Bellevue Street  
Green Bay, WI 54302

1090 Kennedy Avenue  
Kimberly, WI 54136

Test Group Name	857394-001	857394-002	857394-003	857394-004	857394-005	857394-006	857394-007	857394-008	857394-009	857394-010	857394-011	857394-012	857394-013	857394-014	857394-015	857394-016	857394-017	857394-018	857394-019	857394-020	857394-021	857394-022	857394-023	857394-024	
CADMIUM		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
CHROMIUM		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
DIESEL RANGE ORGANICS		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
GASOLINE RANGE ORGANICS		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
LEAD		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
LEAD - DISSOLVED																			G	G	G	G			
PAH/ PNA																			G	G	G	G			
PAH/PNA		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
PERCENT SOLIDS		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
PVOC		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
VOLATILES		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

### Wisconsin Certification

G = En Chem Green Bay	405132750 / DATCP: 105-444
K = En Chem Kimberly	445134030
S = En Chem Superior	Not Applicable
C = Subcontracted Analysis	
I = Other Pace Lab Analysis	

## En Chem, Inc. Cooler Receipt Log

Batch No. 857394

Project Name or ID 27811XW

No. of Coolers: 2 Temps: ROI

A. Receipt Phase: Date cooler was opened: 3-23-05 By: GD

- 1: Were samples received on ice? (Must be  $\leq 6$  C).....  YES  NO<sup>2</sup>  NA
- 2: Was there a Temperature Blank?.....  YES  NO
- 3: Were custody seals present and intact on cooler? (Record on COC).....  YES  NO
- 4: Are COC documents present?.....  YES  NO<sup>2</sup>
- 5: Does this Project require quick turn around analysis?.....  YES  NO
- 6: Is there any sub-work?.....  YES  NO
- 7: Are there any short hold time tests?.....  YES  NO
- 8: Are any samples nearing expiration of hold-time? (Within 2 days).....  YES<sup>1</sup>  NO Contacted by/Who \_\_\_\_\_
- 9: Do any samples need to be Filtered or Preserved in the lab?.....  YES<sup>1</sup>  NO Contacted by/Who \_\_\_\_\_

B. Check-in Phase: Date samples were Checked-in: 3-23-05 By: GD

- 1: Were all sample containers listed on the COC received and intact?.....  YES  NO<sup>2</sup>  NA
- 2: Sign the COC as received by En Chem. Completed.....  YES  NO
- 3: Do sample labels match the COC? .....  YES  NO<sup>2</sup>
- 4: Completed pH check on preserved samples..  YES  NO  NA  
*(This statement does not apply to water: VOC, O&G, TOC, DRO, Total Rec. Phenolics)*
- 5: Do samples have correct chemical preservation?.....  YES  NO<sup>2</sup>  NA  
*(This statement does not apply to water: VOC, O&G, TOC, DRO, Total Rec. Phenolics)*
- 6: Are dissolved parameters field filtered?.....  YES  NO<sup>2</sup>  NA
- 7: Are sample volumes adequate for tests requested? .....  YES  NO<sup>2</sup>
- 8: Are VOC samples free of bubbles >6mm .....  YES  NO<sup>2</sup>  NA
- 9: Enter samples into logbook. Completed.....  YES  NO
- 10: Place laboratory sample number on all containers and COC. Completed.....  YES  NO
- 11: Complete Laboratory Tracking Sheet (LTS). Completed.....  YES  NO  NA
- 12: Start Nonconformance form. ....  YES  NO  NA
- 13: Initiate Subcontracting procedure. Completed.....  YES  NO  NA
- 14: Check laboratory sample number on all containers and COC. ....  YES  NO  NA

**Short Hold-time tests:**

24 Hours or less	48 Hours	7 days	Footnotes
Coliform	BOD	Ash	1 Notify proper lab group immediately.
Corrosivity = pH	Color	<u>Aqueous Extractable Organics- ALL</u>	2 Complete nonconformance memo.
Dissolved Oxygen	Nitrite or Nitrate	Flashpoint	
Hexavalent Chromium	Ortho Phosphorus	Free Liquids	
HPC	Surfactants	Sulfide	
Ferrous Iron	Turbidity	TDS	
Eh	En Core Preservation	TSS	
Odor	Power stop preservation	Total Solids	
Residual Chlorine		TVS	
Sulfite		TVSS	
		Unpreserved VOC's	

Rev. 2/05/04, Attachment to 1-REC-5.  
Subject to QA Audit.

Reviewed by/date SBJ/24/05

(Please Print Legibly)

Company Name: STS CONSULTANTS

Branch or Location: GREEN BAY

Project Contact: PAUL GARNEY/ERIC SCHMIDT

Telephone: 920-468-1978

Project Number: Z7811XW

Project Name: WISDOT - PRINCETON

Project State: WI

Sampled By (Print): ERIC C. SCHMIDT

PO #:



A Division of Pace Analytical Services, Inc.

1241 Bellevue St., Suite 9  
Green Bay, WI 54302  
920-469-2436  
Fax 920-469-8827

Page 1 of 2

Quote #:

Mail Report To: ERIC SCHMIDT

Company: STS CONSULTANTS

Address: 1035 KEPLER DR  
GREEN BAY, WI 54311

Invoice To: STS

Company:

Address:

Mail Invoice To:

# CHAIN OF CUSTODY No. 134906

\*Preservation Codes  
 A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methano G=NaOH  
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

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

Data Package Options - (please circle if requested)  
 Sample Results Only (no QC)  
 EPA Level II (Subject to Surcharge)  
 EPA Level III (Subject to Surcharge)  
 EPA Level IV (Subject to Surcharge)

Regulatory Program  
 UST  
 RCRA  
 SDWA  
 NPDES  
 CERCLA

Matrix Codes  
 GW=Ground Water  
 W=Water  
 S=Soil  
 A=Air  
 C=Charcoal  
 B=Biota  
 SI=Sludge  
 WP=Wipe

ANALYSES REQUESTED  
 GRO/AVOC  
 DRO  
 VOC  
 LEAD, CAD, CHROME  
 TCLP BEVERLY  
 TCLP LEAD  
 PAH  
 TCLP  
 TOTAL # OF BOTTLES SENT

LABORATORY ID (Lab Use Only)	FIELD ID	COLLECTION		MATRIX	ANALYSES REQUESTED										CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)		
		DATE	TIME		GRO/AVOC	DRO	VOC	LEAD	CAD	CHROME	TCLP BEVERLY	TCLP LEAD	PAH	TCLP				
001	GP-1 (2-4)	3/21	10:00	S	X	X											3	
002	GP-1 (4-6)		10:30				X	X	X	X	X	X					5	1-20g F 1-4g Poly 1-20g A PETRO 2002 HOLD TCLPs
003	GP-2 (2-4)		11:00		X	X											3	1-20g A
004	GP-2 (4-6)		11:30				X	X				X					3	1-80g Amber
005	GP-3 (2-4)		12:00		X	X											3	1-20g A
006	GP-3 (4-6)		12:10				X	X				X					3	1-80g Amber
007	GP-4 (2-4)		13:00		X	X											3	1-20g A
008	GP-4 (4-6)		13:10				X	X				X					3	1-80g Amber
009	GP-5 (2-4)		14:00		X	X											3	1-20g A
010	GP-5 (6-8)		14:10				X	X	X	X	X	X					5	1-80g Amber 1-20g A HOLD TCLPs
011	GP-6 (4-6)		15:00		X	X											3	1-20g A
012	GP-6 (6-8)		15:10				X	X	X	X	X	X					5	1-80g Amber 1-20g A HOLD TCLPs

Rush Turnaround Time Requested (TAT) - Prelim.  
 (Rush TAT subject to approval/surcharge)  
 Date Needed: \_\_\_\_\_  
 Transmit Prelim Rush Results by (circle):  
 Phone Fax E-mail  
 Phone #: \_\_\_\_\_  
 Fax #: \_\_\_\_\_  
 E-Mail Address: \_\_\_\_\_  
 Samples on HOLD are subject to special pricing and release of liability

Relinquished By: Eric C. Schmidt Date/Time: 3/23/05 09:00  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: Steve Datator Date/Time: 3/23/05 09:00  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

En Chem Project No. 857394  
 Sample Receipt Temp. 1202  
 Sample Receipt pH (Wet/Metals) NA  
 Cooler Custody Seal Present / Not Present  
 Intact / Not intact

(Please Print Legibly)

Company Name: STS CONSULTANTS

Branch or Location: GREEN BAY, WI

Project Contact: ERIC SCHMIDT

Telephone: 920-468-1978

Project Number: 278HXW

Project Name: WISDOT - PRINCETON - ~~PRINCETON~~

Project State: WI

Sampled By (Print): ERIC SCHMIDT

PO #:

**Data Package Options** - (please circle if requested)

- Sample Results Only (no QC)
- EPA Level II (Subject to Surcharge)
- EPA Level III (Subject to Surcharge)
- EPA Level IV (Subject to Surcharge)

Regulatory Program	Matrix Code:
UST	GW=Ground Water
RCRA	W=Water
SDWA	S=Soil
NPDES	A=Air
CERCLA	C=Charcoal
	B=Biota
	Sl=Sludge
	WP=Wipe



A Division of Pace Analytical Services, Inc.

1241 Bellevue St., Suite 9  
 Green Bay, WI 54302  
 920-469-2436  
 Fax 920-469-8827

# CHAIN OF CUSTODY No. 134910

Page 2 of 2

Quote #:

Mail Report To: ERIC SCHMIDT

Company: STS

Address: 1035 KEPLER DR

GREEN BAY, WI 54311

Invoice To: STS

Company:

Address:

Mail Invoice To:

\*Preservation Codes

A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methanol G=NaOH  
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED? (YES/NO) N N N N N N N Y N

PRESERVATION (CODE)\* F A F A A A A D B

ANALYSES REQUESTED

GRB P/IOC

LEAD

TCP/CHROME

TCP/RED/ZE

TCP/LEAD

PAH

DISSOLVED LEAD

VOCs

TOTAL # OF BOTTLES SENT

LABORATORY ID (Lab Use Only)	FIELD ID	COLLECTION		MATRIX	ANALYSES REQUESTED										CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	
		DATE	TIME		GRB	P/IOC	LEAD	TCP/CHROME	TCP/RED/ZE	TCP/LEAD	PAH	DISSOLVED LEAD	VOCs	TOTAL # OF BOTTLES SENT			
013	GP-7 (4-6)	3/21	16:00	S	X	X											1-2g F-14g Poly 1-2oz A
014	GP-7 (6-8)		16:10				X	X			X						
015	GP-8 (4-6)		17:00		X	X											1-2oz A
016	GP-8 (6-8)		17:10				X	X			X						
017	GP-9 (4-6)		17:30		X	X											1-2oz A
018	GP-9 (6-8)		17:40	V		X	X	X	X	X	X				5	HOLD TCPs	1-8oz Amber 1-2oz D 1-4oz Poly
019	GP-1		10:40	W					X	X	X				5		3-40ml B 1-250ml D 1 Amber A
020	GP-2		11:40						X	X	X				5		
021	GP-4		13:20						X	X	X				5		
022	GP-5		15:30	V					X	X	X				5		
023	METHANOL BLANK																2-40ml MeOH BLK
024	VOC TRIP BLANK																2-40ml B H2O TBK

**Rush Turnaround Time Requested (TAT) - Prelim**  
 (Rush TAT subject to approval/surcharge)

Date Needed: \_\_\_\_\_

Transmit Prelim Rush Results by (circle):  
 Phone Fax E-mail

Phone #: \_\_\_\_\_

Fax #: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

**Samples on HOLD are subject to special pricing and release of liability**

Relinquished By: Eric Schmidt Date/Time: 3/23/05 09:00

Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: Ami D. J. J. J. Date/Time: 3/23/05 09:00

Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

En Chem Project No. 857394

Sample Receipt Temp. 20

Sample Receipt pH (Wet/Metals) OK

Cooler Custody Seal Present / Not Present Present

Intact / Not Intact