



STS CONSULTANTS, LTD.

Site Investigation Report
301 East Brown Street Property
Milwaukee, Wisconsin
Brown Street III LLC
20 W. Hubbard Street Suite 2W
Chicago, IL 60610
FIRST Project No. 5-87185EA



11425 West Lake Park Drive Milwaukee, Wisconsin 53224 414-359-3030 Phone 414-359-0822 Fax

January 10, 2003

Ms. Victoria Stovall Wisconsin Department of Natural Resources 2300 N. Martin Luther King Drive Milwaukee, WI 53212

Re: 301 East Brown Street Property in Milwaukee, Wisconsin – STS Project No. 87185EA BRRTS#: 03-41-373872 FID#: 341065230

Dear Ms. Stovall:

On behalf of Brown Street III LLC, please find enclosed a Site Investigation Report for the referenced property, prepared by STS Consultants, Ltd. This report was prepared to provide information required under Chapter NR716.15 of the Wisconsin Administrative Code (WAC). We have enclosed a check in the amount of \$750 for Department review of this document, as required under WAC Chapter NR749. If you have any questions or comments concerning the information contained herein, please feel free to contact us at your convenience.

Respectfully submitted,

STS CONSULTANTS, LTD

Mark M. Mejac, P.G. Senior Hydrogeologist

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Dennis R. Lawton, P.G. Senior Hydrogeologist

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Attachment

cc: Mr. Brian Columbus, Brown Street III LLC

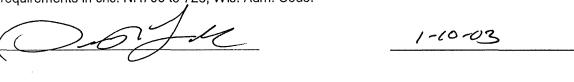


NR700 CERTIFICATIONS

"I, Mark Mejac, certify that I am a hydrogeologist as that term is defined in s.NR712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code."

Mus M. Mejac	1-10-03	
Mark Mejac, P.G.	Date	
Senior Hydrogeologist		

"I, Dennis Lawton, certify that I am a hydrogeologist as that term is defined in s.NR712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR700 to 726, Wis. Adm. Code."



Dennis Lawton, P.G.

Date
Senior Hydrogeologist



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NR716 SITE INVESTIGATION REPORT 301 EAST BROWN STREET PROPERTY MILWAUKEE, WISCONSIN

10/2/02

1.0 INTRODUCTION

STS Consultants Ltd (STS) has prepared this report to document the methodology and results of an NR 716 Site Investigation of soil and groundwater conditions at the property located at 301 East Brown Street in Milwaukee, Wisconsin (Figure 1). The report provides information required under Section NR716.15 of the Wisconsin Administrative Code (WAC), as a follow-up to the STS "NR 716 Site Investigation Work Plan", dated October 3, 2002. The NR 716 Site Investigation Work Plan referenced the following three previous reports associated with the subject property:

- Phase I Environmental Site Assessment (ESA) Report dated August 21, 1998, Weyco Group Buildings and Land, 234 East Reservoir Avenue, Milwaukee, Wisconsin, KEY Engineering Group Ltd.
- Phase II Environmental Site Assessment (ESA) Report dated March 11, 1999, Weyco Group Buildings and Land, 234 East Reservoir Avenue and 301 East Brown Street, Milwaukee, Wisconsin, KEY Engineering Group Ltd.
- Supplemental Phase II Environmental Site Assessment Report dated April 9, 1999,
 Weyco Group Buildings and Land, 234 East Reservoir Avenue and 301 East Brown Street, Milwaukee, Wisconsin, KEY Engineering Group Ltd.

These documents identify the former presence of an oil-fired boiler room in the basement of a former shoe manufacturing building within the northeastern portion of the subject property. No information is available concerning the specific former location of the tank or system used to provide fuel for the former boiler. The documents also identify the former presence of a solvent storage area along the western side of the former shoe manufacturing building. The results of the KEY Engineering investigations are summarized on KEY Engineering Figure 2 provided as Appendix A. As shown on the KEY Engineering Figure 2, soil sample B-4 (3.5 to 5 feet below ground surface [bgs]) collected from the immediate vicinity of the solvent storage area along the



western side of the former shoe manufacturing building did not reveal detectable concentrations of volatile organic compounds (VOCs). Soil samples GP-8 and GP-12 (11 to 13 feet bgs), collected from the area of the former boiler room, revealed detectable concentrations of petroleum VOCs (PVOCs).

1.1 Involved Parties

Parties currently involved with this project are provided in Appendix B.

1.2 Objectives and Scope of Work

The objectives of the scope of work presented herein are as follows:

- Source Identification (including the former presence of the oil-fired boiler room in the basement
 of the former shoe manufacturing building within the northeastern portion of the subject
 property, as well as unknown sources);
- Evaluation of Extent of Affected Soil and Groundwater; and
- Contaminant Fate and Transport Characterization.

To address the objectives listed above, four hydraulic probes were initially installed at the locations identified as STS-1 through STS-4 on Figure 2. The purpose of this initial field investigation task was to provide subsurface data to allow for proper placement of monitoring wells.

After receipt of laboratory results of collected soil samples from hydraulic probes STS-1 through STS-4, three hollow-stem augered soil borings were completed and permanent NR 141 WAC groundwater monitoring wells MW-1 through MW-3 (Figure 2) were installed for collection of soil and groundwater samples for laboratory analysis and determining groundwater flow direction.

Specific sampling and data collection and analysis activities are outlined below:

Soil Sampling – With respect to the monitoring well installation borings, soil samples
were collected at 2.5-foot intervals to 10 feet bgs, followed by 5-foot intervals to the
base of each monitoring well installation boring. Soil samples were collected at
continuous intervals from the hydraulic probes, to the base of each probe.





Monitoring Well Installation and Groundwater Sampling – One groundwater sample
was retained from each of the three monitoring wells for laboratory analysis. Flushmounted groundwater monitoring wells were installed in conformance with WAC NR
141. The wells were constructed with 10-foot length screens, and the locations and
elevations of the wells were surveyed to evaluate local groundwater flow direction.

1.3 Physical Site Description

The site location is depicted on Figure 1 and is described as follows:

301 East Brown Street
City of Milwaukee, Wisconsin 53212
SE1/4 of NE1/4 of Sec.20, T. 7N, R. 22E.

The subject site is a rectangular-shaped parcel that covers approximately 1.4 acres. The site is situated within an area of light industrial and residential land use.

1.4 Project History

The site was previously used as a shoe manufacturing facility. An oil-fired boiler room was reportedly present in the basement of the former shoe manufacturing building within the northernmost portion of the subject property. No information is available concerning the specific location of the tank or system used to provide fuel for the former boiler. A solvent storage area was reportedly previously present along the western side of the former shoe manufacturing building within the property. As indicated in the 1999 KEY Engineering Group Phase II Environmental Site Assessment Report (ESA) provided as Appendix A, relatively low concentrations of petroleum hydrocarbons have generally been detected in site soil samples; groundwater samples had not been collected.

1.5 Potential Receptors

Under current site land use, the only potential receptor for site conditions identified by this investigation is the limited potential for direct contact exposure with site soils. With appropriate site development, as referenced herein, the current limited risk of direct contact should be eliminated. The City of Milwaukee obtains its municipal water supply from Lake Michigan. The Milwaukee River is located approximately 1,000 feet to the southeast of the site.



2.0 INVESTIGATION FIELD ACTIVITIES

This section describes the data collection activities completed as part of the NR 716 Site Investigation of the 301 East Brown Street property. The rationale and methodologies for data collection are described in the STS NR 716 Site Investigation Work Plan, dated October 3, 2002. Data collection activities conducted during the Site Investigation consisted of the following:

- Installation of four hydraulic probe soil borings (October 16, 2002);
- Completion of three hollow-stem auger soil borings, followed by installation of monitoring wells in each of the borings (October 29, 2002);
- Completion of location and elevation survey of monitoring wells (November 5, 2002);
- Measurement of groundwater elevations from the monitoring wells (November 8, 2002 and December 27, 2002); and
- Sampling of monitoring wells (November 8, 2002).

The hydraulic probe services were provided by Probe Technologies, Inc. of North Lake, Wisconsin. The monitoring well installation activities were conducted by North Shore Drilling, Inc. of Grafton, Wisconsin and Giles Engineering Associates, Inc. of Waukesha, Wisconsin. Quantitative chemical analyses of collected soil and groundwater samples were conducted by Great Lakes Analytical of Oak Creek, Wisconsin.

2.1 Hydraulic Probe Installation

The soil probe unit hydraulically advanced a 2-inch diameter drive rod to collect soil samples. Soil samples were collected inside of a 4-foot polyethylene sheath inserted into the end of the drive rod. When the selected sample depth was reached, a spring release allowed the soil sample to be collected inside of the sheath. A new sheath was used to collect each sample at the specified depth. To extract the soil sample, the sheath was cut open using a razor blade. Collected soil samples were placed in containers for eventual laboratory analysis ("primary" samples) or in-field analysis ("co-located" samples). Following collection, primary samples were clearly labeled, placed in a cooler on ice to achieve a sample temperature of 4 degrees



centigrade, and securely stored pending delivery to the project laboratory. Sample labels identified the date of sample collection, the sample location, and the depth from which the sample was collected. Soil samples submitted to Great Lakes Analytical were delivered via courier within allowable holding times. All soil samples intended for laboratory analysis were placed in containers provided by the project laboratory.

The soil samples were described in the field with respect to the soil types (unified soil classification system code), grain size distribution, color (or discoloration), odor, moisture content, consistency and photoionizable constituent content, as appropriate. The observations were recorded on soil boring logs, which are provided in Appendix C. The soil samples were collected from each sampling interval for in-field screening using a photoionization detector (PID). PID yields a semi-quantitative headspace analysis of the concentration of the VOCs in the samples that have ionization potentials equal to or less than 10.6 electron volts (eV). The PID was calibrated in the field according to manufacturer's instructions, using 100 parts per million (ppm) isobutylene span gas and air (zero gas), and checked between each screening event for The peak instrument readings were recorded on the soil boring logs. PID readings from the co-located samples were assumed to be similar to the primary samples. As such, the primary samples were not screened. This procedure reduces the potential escape of VOCs from the sample submitted for laboratory analysis. The co-located soil samples were loosely placed in glass sample jars to allow sufficient headspace to optimize PID screening results. It is important to note that the PID does not allow for a differentiation of individual VOCs, and has a useful detection limit of approximately 0.1 ppm for select VOCs.

The soil samples submitted to Great Lakes Analytical were at all times accompanied by a chain-of-custody form. When transferring samples, the individuals relinquishing and receiving the samples signed and dated the forms. The original chain-of-custody form accompanied the shipment. A copy was retained by the field sampler and filed immediately upon return to the office. The forms include the following information: sample identification, date collected, source of sample (including type of sample and site identification), and name of sampler. The forms were completed in a legible matter using waterproof ink and signed by the sampler. Similar information was provided on the sample labels, which were securely attached to the sample containers. The soil samples submitted to Great Lakes Analytical were analyzed for all or a



subset of the following: VOCs, polynuclear aromatic hydrocarbons (PAHs), total lead, and total organic carbon (TOC).

Groundwater samples were not collected from the hydraulic probes, as they did not yield sufficient quantities of water. Each probe hole advanced at the site was abandoned in accordance with the procedures outlined in WAC NR 141. The probe holes were backfilled with bentonite chips from the bottom of the boring to the surface. A copy of WDNR Form 3300-5B was prepared for each location; these forms are provided in Appendix C.

2.2 Soil Sampling/Monitoring Well Installation

Three groundwater monitoring wells were installed at locations shown on Figure 2. The monitoring wells were installed in accordance with WAC Chapter NR 141. Hollow-stem augers (4 ¼-inch diameter) were utilized (ASTM Method D1586) to advance boreholes during auger drilling. The augers were advanced using a truck-mounted auger drilling rig.

Soil samples were collected at 2.5-foot intervals to 10 feet bgs and 5-foot intervals thereafter from the monitoring well installation borings. The soil samples were collected using a two-inch diameter split-spoon sampler (ASTM Method D1587) and visually classified in the field by an STS geologist. Soil boring logs are provided in Appendix B.

The soil sampling equipment was decontaminated prior to each soil-sampling event using laboratory-grade detergent and tap water rinse. Upon retrieval of the sampler, visual observations of the recovered material were documented in accordance with ASTM Method D-2488-93. Collected soil samples were placed in containers for eventual laboratory analysis ("primary" samples) or in-field analysis ("co-located" samples). Following collection, primary samples were clearly labeled, placed in a cooler on ice to achieve a sample temperature of 4 degrees centigrade, and securely stored pending delivery to the project laboratory. Sample labels identified the date of sample collection, the sample location, and the depth from which the sample was collected. Soil samples submitted to Great Lakes Analytical were delivered via courier within allowable holding times. All soil samples intended for laboratory analysis were placed in containers provided by the project laboratory.

The soil samples were described in the field with respect to soil type (unified soil classification system code), grain size distribution, color (or discoloration), odor, moisture content, consistency



and photoionizable constituent content, as appropriate. The observations were recorded on the soil boring logs. Soil samples were collected from each sampling interval for in-field screening using a PID, as discussed in Section 2.1.

The soil samples submitted to Great Lakes Analytical were at all times accompanied by a chain-of-custody form, using the procedure described in Section 2.1. The monitoring well installation boring soil samples submitted to Great Lakes Analytical were analyzed for all or a subset of the following: VOCs, PAHs, total lead, and TOC.

The new monitoring wells were constructed of 2-inch diameter, flush-thread, schedule 40 polyvinyl chloride (PVC) riser pipe with 10-slot screens. Monitoring well screen lengths were 10 or 15 feet. Coarse silica filter sand packs were placed to depths of approximately 2 feet above the top of each well screen. Following placement of the coarse sand pack, an approximate 1-foot fine sand pack was placed, followed by bentonite chips to 1 foot bgs and a concrete surface seal. The monitoring wells were completed with locking, flush-mount protective casings.

Prior to groundwater sampling, the new monitoring wells were developed in accordance with WAC Chapter NR141. Monitoring well construction details and monitoring well development forms are provided in Appendix C. The monitoring well purge water and soil cuttings generated as part of this investigation were stored on-site in 55-gallon drums.

2.3 Location and Elevation Survey

To facilitate reliable estimates of local groundwater flow direction and to document new monitoring well locations, the elevation and horizontal location of each well was surveyed by STS to a vertical accuracy of ± 0.01 foot and horizontal accuracy of 1 foot. Vertical elevations at each monitoring well were obtained at the ground surface and on the north or marked side top of the PVC well casing using differential leveling relative to a local datum.

2.4 Groundwater Sampling

Prior to sampling, depth to groundwater measurements were obtained from the three monitoring wells to an accuracy of 0.01-ft using an electronic water level indicator. These measurements were referenced to the top of the PVC casing at each well. Pre-sampling well purging consisted of the removal of a minimum of four volumes of water from each well. Groundwater sampling



was then conducted by lowering a dedicated disposable PVC bailer into the water column within the well (using dedicated polypropylene rope), in a manner such that disturbance to the water column was minimized. The bailer was then raised to the surface and water was discharged from the bailer into laboratory-supplied containers. Volatile organic analysis (VOA) vials were securely capped with a Teflon-lined lid and observed to verify that no headspace existed within the sample container. The groundwater samples collected from the monitoring wells were submitted to Great Lakes Analytical for analysis of VOCs, PAHs, and dissolved lead.



3.0 PHYSICAL SITE CHARACTERISTICS

3.1 Regional Geology

Surficial soils in the vicinity of the site are classified as Miami Clay Loam. This soil type consists of 4 to 8 inches of grayish-brown compact clay loam overlying clay loam or clay. Loam, gravel or sand is encountered at minimum depths of 2.5 feet bgs.

The general geology near the site consists of approximately 100 feet of glacial ground moraine deposits (glacial till). The glacial till includes boulders, gravel, sand, silt and clay, and overlies an approximate 2,000 to 3,000 foot thick sequence of sedimentary bedrock units. downward, the bedrock consists of Devonian-age dolomite, shaly limestone and shale. The Devonian-age dolomite overlies Silurian-age dolomite.

3.2 Regional Hydrogeology and Water Usage

Near-surface groundwater occurs in unconsolidated glacial deposits, and regionally flows to the southeast (toward the Milwaukee River). Local features, however, such as wells, buried utilities, tunnels, roadways, building foundations and fill soil can affect the direction of local shallow groundwater flow. Regionally, groundwater flow is eastward, toward Lake Michigan.

3.3 Site Specific Topography and Geology

The site is situated approximately 665 feet above mean sea level and slopes slightly to the south and southwest. The Milwaukee River is situated approximately 1,000 feet to the southeast of the subject property, at an elevation approximately 70 feet lower than the property. Surface water drainage from the subject site likely flows toward stormwater inlets located along North Hubbard Street to the east and/or East Reservoir Avenue to the south, and is directed toward the Milwaukee River.

Data collection activities conducted as part of this investigation have provided information to characterize subsurface conditions at the 301 East Brown Street property. The locations of hydraulic probe borings and monitoring wells installed as part of this investigation are shown on Figure 2, and their total depths and the depths of soil samples retained for laboratory analysis (in feet bgs) are as follows:

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Probe/Well	Total Depth (ft)	Soil Sample Depth (ft)
STS-1	8	2-4, 6-8
STS-2	9.5	2-4, 8-9.5
STS-3	8	2-4, 6-8
STS-4	6	2.5-4
MW-1	25.5	2-4, 7.5-9.5
MW-2	25.5	2-4, 7.5-9.5
MW-3	25.5	0-2, 7.5-9.5

With respect to soils encountered, the hydraulic probes and monitoring well installation borings revealed the presence of a minimum of approximately 18 feet of fill materials that consist of silty sand, silt, silty clay, clayey silt and sand and gravel that contains brick, slag, coal and concrete fragments, and possible foundry sand. The fill materials are underlain by sandy silt and silty clay to depths of 25.5 feet bgs. Based on the absence of noteworthy stratigraphy encountered beneath the fill materials, a geologic cross-section was not prepared as part of this report.

3.4 Site Specific Hydrogeology

Based on the November 8, 2002 depth to groundwater level measurements in feet below top of PVC well casing and the November 5, 2002 monitoring well elevation survey results, groundwater elevations are documented as follows:

	Top of	Depth	
Monitoring Well	PVC Elevation	to Water	Potentiometric Surface
MW-1	658.78	23.55	635.23
MW-2	658.89	20.15	638.74
MW-3	658.48	19.70	638.78

Based on apparent slow recovery of groundwater levels after monitoring well installation, additional groundwater levels were obtained on December 27, 2002. The resulting groundwater elevations are documented as follows:



Top of	Depth		
Monitoring Well	PVC Elevation	Depth to Water	Potentiometric Surface
MW-1	658.78	21.05	637.73
MW-2	658.89	21.55	637.34
MW-3	658.48	21.20	637.28

The potentiometric surface and inferred directions of groundwater flow based on the groundwater elevations listed above are illustrated on Figure 3. As shown on Figure 3, the estimated direction of shallow groundwater flow is toward the east-southeast, at a horizontal hydraulic gradient of 0.012.



4.0 CHEMICAL CHARACTERISTICS OF SOIL

Laboratory reports including chain-of-custody forms for the 13 soil samples collected from the 4 hydraulic probes and 3 monitoring well installation borings are provided in Appendix C, and the results are summarized in Table 1. The hydraulic probe and monitoring well installation boring locations are shown on Figure 2. Sample results are reported in units of micrograms per kilogram (μ g/kg), which is equivalent to parts per billion, or milligrams per kilogram (μ g/kg), which is equivalent to parts per million.

4.1 Volatile Organic Compounds

Seven soil samples were retained for laboratory analysis of VOCs. None of the soil samples collected from hydraulic probes STS-1 and STS-3 (Figure 2) at depths of 2 to 4 feet bgs revealed detectable concentrations of VOCs. Soil samples collected from STS-2 and STS-4 revealed the following VOC concentrations:

- STS-2 (2 4 feet): Toluene (35.5 μg/kg), Ethylbenzene (27.8 μg/kg), Xylenes (108 μg/kg); and
- STS-4 (2.5 4 feet): sec-Butylbenzene (34.1 μg/kg), tert-Butylbenzene (213 μg/kg), Ethylbenzene (34.8 μg/kg), Naphthalene (19,500 μg/kg).

Soil samples from all three monitoring well installation borings were also collected and submitted for laboratory analysis as part of this investigation. The soil sample collected from monitoring well installation boring MW-1 did not reveal detectable VOC concentrations. The remaining two soil samples revealed the following VOC concentrations:

- MW-2 (2 4 feet): n-Butylbenzene (36.8 μg/kg), p-Isopropyltoluene (25.8 μg/kg), Naphthalene (149 μg/kg)
 Trichloroethene (127 μg/kg)
 Xylenes (101 μg/kg); and
- MW-3 (7.5 9.5 feet): n-Butylbenzene (1,050 μg/kg):), sec-Butylbenzene (781 μg/kg), Ethylbenzene (5,880 μg/kg) Isopropylbenzene (280 μg/kg), p-isopropyltoluene (3,050 μg/kg), Naphthalene (1,260 μg/kg), Toluene (1,740 μg/kg), 1,2,4-Trimethylbenzene (211 μg/kg), 1,3,5-Trimethylbenzene (70.6 μg/kg), and Xylenes (18,900 μg/kg):).



With respect to the VOCs of interest, the groundwater pathway WAC NR 720 RCL is a lower value than the direct contact pathway RCL. Site-specific groundwater pathway RCLs for VOCs of interest at the 301 East Brown Street Property were calculated based on USEPA Soil Screening Levels and the arithmetic mean of TOC analyses from vadose zone soil samples (the mean TOC value is 0.0114) collected as part of this investigation. These RCL values are provided as follows:

- 1 A proces
- Ethylbenzene 12 mg/kg
- Xylenes 1,300 mg/kg
- Toluene 9 mg/kg
- TCE 0.021 mg/kg

0.057

Naphthalene – 67 mg/kg

Based on a comparison of the detected VOC concentrations in the seven soil samples retained for VOC analysis with the site-specific groundwater pathway RCLs listed above, the detected TCE concentration in sample MW-2 (2 to 4 feet bgs, 0.127 mg/kg) slightly exceeds the RCL. No other detected VOC concentrations exceed their respective RCLs.

4.2 Lead

All ten of the hydraulic probe and monitoring well installation boring soil samples submitted for laboratory analysis of lead revealed detectable lead concentrations, ranging from 8.47 mg/kg to 404 mg/kg. The seven soil samples retained for lead analysis from the upper four feet of the subsurface¹ revealed lead concentrations that also ranged between 8.47 mg/kg and 404 mg/kg. Six of seven soil samples revealed lead concentrations greater than the 50 mg/kg WAC NR720 generic direct contact RCL for non-industrial land use and less than the 500 mg/kg WAC NR720 generic direct contact RCL for industrial land use, as follows (Figure 2): MW-1 – 66.8 mg/kg, MW-2 – 210 mg/kg, MW-3 – 86.3 mg/kg, STS-1 – 156 mg/kg, STS-2 – 76.4 mg/kg, and STS-4 – 404 mg/kg. As indicated in Section 5.3, none of the collected groundwater samples revealed

¹ Based on WDNR guidance, the upper four feet of the subsurface is evaluated for direct contact exposure as part of WAC NR700 rule series.



detectable lead concentrations. The detected lead concentrations in collected soil samples have therefore not affected groundwater quality.

4.3 Polynuclear Aromatic Hydrocarbons

Of the seven soil samples submitted for laboratory analysis of PAHs, all seven soil samples revealed detectable concentrations of PAHs (Table 1). All seven soil samples revealed exceedances of non-industrial land use direct contact pathway RCLs for PAHs, and four of the seven soil samples revealed exceedances of industrial land use direct contact pathway RCLs for PAHs. These four soil samples are as follows: MW-1 (2-4 feet), MW-2 (2-4 feet), STS-2 (2-4 feet), and STS-4 (2.5-4 feet) (Figure 2). The specific PAH compounds that exceed the direct contact pathway RCLs are identified in Table 1.

The PAH concentrations detected in all seven soil samples are further evaluated in the determination of soil cleanup levels for PAHs using the benzo(a)pyrene-equivalent concentration approach. This approach is specified in the WDNR March 1997 "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance" document. Under this approach, the equivalent benzo(a)pyrene (BaP) concentration is determined by multiplying the measured concentration (mg/kg) of each carcinogenic PAH compound by its relative potency factor (RPF), as follows:

For MW-1:			
PAH	RPF	Concentration	BaP Equivalent Concentration
Benzo(a)anthracene	0.1	1.49	0.149
Benzo(a)pyrene	1	1.27	1.27
Benzo(b)fluoranthene	0.1	1.41	0.141
Benzo(k)fluoranthene	0.01	0.54	0.0054
Chrysene	0.001	1.29	0.00129
Indeno(1,2,3-cd)-pyrene	0.1	1.04	0.104
Dibenz(a,h)anthracene	1	1.12	<u>1.12</u>
		Total	2.79 mg/kg



0.1	4.04	
1 0.1 0.01 0.001 0.1 1	2.71 1.41 1.13 2.07 2.31 2.87	0.191 2.71 0.141 0.0113 0.00207 0.231 <u>2.87</u>
	Total	6.16 mg/kg
RPF	Concentration	BaP Equivalent Concentration
0.1 1 0.1 0.001 0.1 1	0.197 0.207 0.220 0.198 0.232 0.0316	0.0197 0.207 0.022 0.000198 0.0232 <u>0.0316</u>
	Total	0.304 mg/kg
RPF	Concentration	BaP Equivalent Concentration
0.1 1 0.1 0.01 0.001 0.1 1	0.396 0.627 0.555 0.218 0.564 0.328 0.222	0.0396 0.627 0.0555 0.00218 0.000564 0.0328 <u>0.222</u> 0.980 mg/kg
	1 0.1 0.01 0.001 0.1 1 1 RPF 0.1 1 0.001 0.1 1 0.1 0.1 0.01 0.01 0.	1 2.71 0.1 1.41 0.01 1.13 0.001 2.07 0.1 2.31 1 2.87 Total RPF Concentration 0.1 0.197 1 0.207 0.1 0.220 0.001 0.198 0.1 0.232 1 0.0316 Total RPF Concentration RPF Concentration 0.1 0.232 1 0.0316 Total RPF Concentration 0.1 0.396 1 0.627 0.1 0.555 0.01 0.218 0.001 0.564 0.1 0.328



For STS-2: PAH	RPF	Concentration	BaP Equivalent Concentration
Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Indeno(1,2,3-cd)-pyrene Dibenz(a,h)anthracene	0.1 1 0.1 0.01 0.001 0.1 1	0.411 0.604 0.514 0.195 0.502 0.323 0.344	0.0411 0.604 0.0514 0.00195 0.000502 0.0323 <u>0.344</u>
		Total	1.08 mg/kg
For STS-3: PAH	RPF	Concentration	BaP Equivalent Concentration
Benzo(a)pyrene Dibenz(a,h)anthracene	1 1	0.0225 0.00964	0.0225 <u>0.00964</u>
		Total	0.0321 mg/kg
For STS-4: PAH	RPF	Concentration	BaP Equivalent Concentration
Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Chrysene Indeno(1,2,3-cd)-pyrene Dibenz(a,h)anthracene	0.1 1 0.1 0.01 0.001 0.1 1	19.4 16.5 13.7 7.14 20.1 7.74 1.92 Total	1.94 16.5 1.37 0.0714 0.0201 0.774 <u>1.92</u> 22.6 mg/kg

As indicated on page D-2 of the WDNR March 1997 guidance document identified above, the target risk for the non-industrial scenario can be modified for in-situ contaminated soil to 1 x 10^{-6} on a site-specific basis under WAC NR 720.19(5)(a). Therefore, the resultant soil cleanup level equivalent to the generic RCLs (expressed as BaP-equivalent concentration) using a combined target risk of 7 x 10^{-6} is 0.61 mg/kg. This soil cleanup level is greater than the equivalent BaP concentrations for the soil samples identified as MW-3 (0 – 2 feet bgs) and STS-3 (2 – 4 feet bgs), such that the PAH concentrations detected in these two soil samples do not pose an



unacceptable risk to public health via the direct contact exposure pathway, based on WDNR guidance. The remaining five soil samples (collected from MW-1, MW-2, STS-1, STS-2, and STS-4) revealed PAH concentrations that exceeded the combined target risk of 7 x 10⁻⁶ of 0.61 mg/kg (expressed as BaP-equivalent concentration).

With respect to groundwater pathway RCLs for the PAHs, the following slight exceedances were noted: acenaphthylene (0.843 mg/kg detected compared with RCL of 0.7 mg/kg) and phenanthrene (2.98 mg/kg detected compared with RCL of 1.8 mg/kg) in the soil sample collected from monitoring well installation boring MW-1, and acenaphthylene (0.778 mg/kg detected compared with RCL of 0.7 mg/kg) in the soil sample collected from MW-2. As indicated in Section 5.2, however, none of the groundwater samples collected as part of this investigation revealed detectable PAH concentrations. The detected PAH concentrations in collected soil samples have therefore not affected groundwater quality.



5.0 CHEMICAL CHARACTERISTICS OF GROUNDWATER

Laboratory reports for the groundwater samples are provided as Appendix C and the results are summarized in Table 2. The monitoring well locations are shown on Figure 2. Sample results are reported in units of micrograms per liter ($\mu g/L$), which is equivalent to parts per billion, or milligrams per liter ($\mu g/L$), which is equivalent to parts per million.

5.1 Volatile Organic Compounds

With respect to groundwater samples collected from monitoring wells, no VOCs were detected in the groundwater samples collected from monitoring wells MW-1 and MW-3. The groundwater sample collected from MW-2 revealed a TCE concentration of 0.864 μ g/L, which slightly exceeds the WAC NR140 Preventive Action Limit (PAL) of 0.5 μ g/L but is lass than the Enforcement Standard (ES) of 5 μ g/L.

5.2 Lead

None of the collected groundwater samples had detectable concentrations of lead.

5.3 Polynuclear Aromatic Hydrocarbons

None of the collected groundwater samples revealed detectable PAH concentrations.



6.0 CONCLUSIONS

The field and laboratory information obtained as part of this site investigation have substantially increased our understanding of subsurface conditions at the 301 East Brown Street Property. With respect to soils encountered during the investigation, the hydraulic probes and monitoring well installation borings revealed the presence of a minimum of approximately 18 feet of fill materials that consist of silty sand, silt, silty clay, clayey silt and sand and gravel that contains brick, slag, coal and concrete fragments, and possible foundry sand. The presence of these fill materials may result in the subject property being classified as a "historic fill site", based on information contained in the WDNR April 2002 publication PUB-RR-683.

The fill materials are underlain by sandy silt and silty clay to depths of 25.5 feet bgs. The approximate depth to the water table measured in monitoring wells MW-1, MW-2 and MW-3 ranges between 21 and 22 feet bgs. The estimated direction of shallow groundwater flow is toward the east-southeast, at a horizontal hydraulic gradient of 0.012.

Based on a comparison of the detected VOC concentrations in the seven soil samples retained for VOC analysis with site-specific groundwater pathway RCLs, the detected TCE concentration in sample MW-2 (2 to 4 feet bgs, 0.127 mg/kg) slightly exceeds the RCL. No other detected VOC concentrations exceed their respective groundwater pathway and direct contact RCLs. Based on concentration and frequency of detection, STS concludes that the detected VOC concentrations in the vadose zone at the 301 East Reservoir property do not warrant additional vadose zone investigation or remediation.

Six of seven soil samples revealed lead concentrations greater than the 50 mg/kg WAC NR720 generic direct contact RCL for non-industrial land use and less than the 500 mg/kg WAC NR720 generic direct contact RCL for industrial land use. None of the collected groundwater samples revealed detectable lead concentrations. The detected lead concentrations in collected soil samples have therefore not affected groundwater quality.

With respect to PAHs, the soil cleanup level equivalent to the generic RCLs (expressed as BaP-equivalent concentration) using a combined target risk of 7 x 10^{-6} is 0.61 mg/kg. This soil cleanup level is greater than the equivalent BaP concentrations for the soil samples identified as MW-3 (0 – 2 feet bgs) and STS-3 (2 – 4 feet bgs), such that the PAH concentrations detected in these two



soil samples do not pose an unacceptable risk to public health via the direct contact exposure pathway, based on WDNR guidance. The remaining five soil samples (collected from MW-1, MW-2, STS-1, STS-2, and STS-4) revealed PAH concentrations that exceeded the combined target risk of 7 x 10⁻⁶ of 0.61 mg/kg (expressed as BaP-equivalent concentration). An applicable remedy to address the direct contact pathway would consist of covering the impacted soils inplace, which represents a performance standard remedy that would meet the requirements of WAC NR720.19(2).

With regard to groundwater pathway RCLs for the PAHs, the following slight exceedances were noted: acenaphthylene (0.843 mg/kg detected compared with RCL of 0.7 mg/kg) and phenanthrene (2.98 mg/kg detected compared with RCL of 1.8 mg/kg) in the soil sample collected from monitoring installation boring MW-1, and acenaphthylene (0.778 mg/kg detected compared with RCL of 0.7 mg/kg) in the soil sample collected from MW-2. None of the collected groundwater samples revealed detectable PAH concentrations. The detected PAH concentrations in collected soil samples have therefore not affected groundwater quality.

No VOCs were detected in the groundwater samples collected from monitoring wells MW-1 and MW-3. The groundwater sample collected from MW-2 revealed a TCE concentration of 0.864 μ g/L, which slightly exceeds the WAC NR140 Preventive Action Limit (PAL) of 0.5 μ g/L but is less than the ES value of 5.0 μ g/L. Based on concentration and frequency of detection, and the absence of groundwater receptors within the site vicinity, we request a PAL variance from the WDNR for the 0.864 μ g/L detected TCE concentration in the groundwater sample collected from monitoring well MW-2.

In summary, STS concludes the following:

- Lead, PAHs and VOCs have not impacted site groundwater to the extent that additional groundwater investigation or remediation is warranted.
- Soil samples collected from locations MW-1, MW-2, MW-3, STS-1, STS-2 and STS-4 (Figure
 2) revealed PAH or lead concentrations that exceeded direct contact pathway RCLs for nonindustrial land use. An applicable remedy to address the direct contact pathway consists of
 covering the impacted soils in-place, which represents a performance standard remedy that



will meet the requirements of WAC NR720.19(2). The impacted soils will be covered as part of property development during 2003, using a subset or all of the following: asphalt pavement, concrete pavement, an approximate two-foot layer of imported clean fill material, and building foundations. Impacted soils that are excavated as part of site development will be re-located beneath the cover elsewhere on the property or properly disposed offsite. Pursuant to WAC NR 724.15, a Construction Documentation Report will be prepared subsequent to the implementation of the performance standard remedy, and will be submitted to the WDNR as part of WAC NR726 Case Closure. As a condition of Case Closure, appropriate institutional controls, such as a property deed restriction to document the presence of the covered impacted soils, will be implemented.

k go

3. As indicated above, the presence of fill materials on the subject property may result in the property being classified as a "historic fill site", based on information contained in the WDNR April 2002 publication PUB-RR-683. As part of WDNR review of this Site Investigation report, we request a determination from the WDNR as to whether the 301 East Brown Street property is classified as a historic fill site. In that event, prior to site development, an exemption to WAC NR506.085 (which prohibits development on historic fill sites) will be requested from the WDNR through the completion of WDNR Forms 4400-226 and 4400-226A and supporting documents.



#3 55 Perini



FIGURES

- 1 Site Location
- 2 Site Features
- 3 Potentiometric Surface Elevations (December 27, 2002)

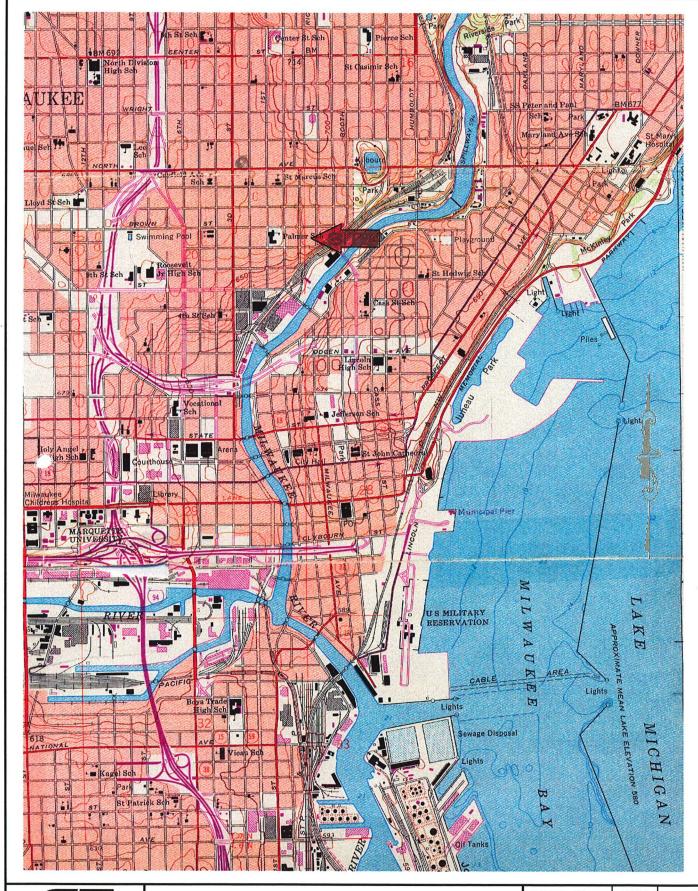
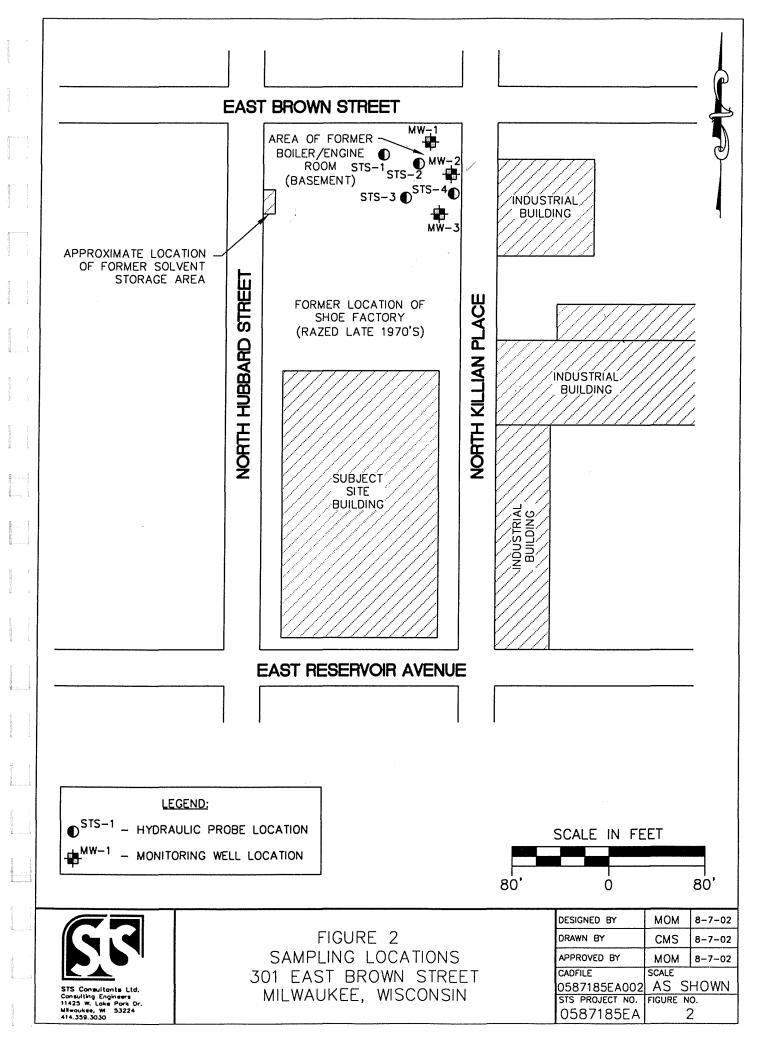


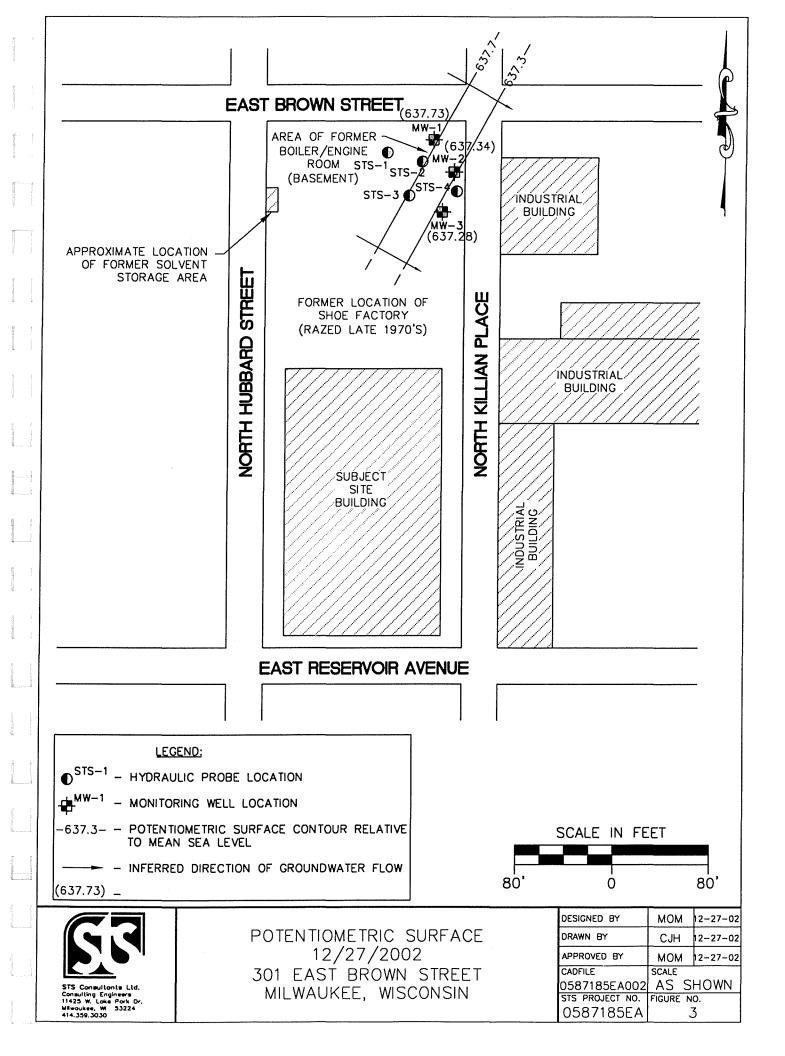


FIGURE 1
SITE LOCATION MAP
301 EAST BROWN STREET
MILWAUKEE, WISCONSIN

DESIGNED BY	МОМ	8-7-02
DRAWN BY	CMS	8-7-02
APPROVED BY	МОМ	8-7-02
CADFILE	SCALE	
0587185EA001		Γ.S.
STS PROJECT NO.	FIGURE N	0.
0587185EA		1

STS Consultants Ltd. Consulting Engineers 11425 W. Lake Park Dr. Milwaukee, W 53224 414.359.3030







TABLES

- 1 Laboratory Results of Collected Soil Samples
- 2 Laboratory Results of Collected Groundwater Samples

TABLE 1 LABORATORY RESULTS OF COLLECTED SOIL SAMPLES 301 EAST BROWN STREET PROPERTY STS PROJECT NO. 5-87185EA

		Generic RCLs		MW-1	MW-1	MW-2	MW-2	MW-3	MW-3	STS-1	STS-1	STS-2	STS-2	STS-3	STS-3 6-8'	STS-4 2.5-4'
Parameters	Direct Cont Non-Industrial	act Pathway Industrial	Groundwater Pathway	2-4' 10/29/2002	7.5-9.5' 10/29/2002	2-4' 10/29/2002	7.5-9.5' 10/29/2002	0-2' 10/29/2002	7.5-9.5' 10/29/2002	2-4' 10/16/2002	6-8' 10/16/2002	2-4' 10/16/2002	8-9.5' 10/6/2002	2-4' 10/16/2002	10/16/2002	10/16/2002
arameters	Non-moustrial	industrial	Tailway	TOZOZOOZ	10/20/2002	TO/EO/EOOE	TOILOIL	TO/EO/EOOE	10/20/2002	10.10.2002						
Metals (mg/kg)										400		70.44	814	0.47	NA	404
Lead	50	500		66.8 ^	396 ^	210 ^	9.98	86.3 ^	203 ^	156	NA	76.4 ^A	NA	8.47	14/)	404
/OCs (μg/kg)															,	
Benzene	-		5.5	NA	<25.0	<25.0	NA	NA	<25.0	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
Bromobenzene			-	NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA NA	<25.0 <25.0	NA NA	<25.0 <25.0
Bromodichloromethane	-			NA NA	<25.0 <25.0	<25.0 <25.0	NA NA	NA NA	<250 781	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0	NA	34.1
sec-Butylbenzene tert-Butylbenzene			-	NA NA	<25.0	<25.0	NA NA	NA NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	213
n-Butylbenzene				NA	<25.0	36.8	NA	NA	1050	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
Carbon tetrachloride			-	NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	N/A	<25.0
Chloroform		-	-	NA	<25.0 <25.0	<25.0 <25.0	NA NA	NA	<250 <250	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0 <25.0
Chlorobenzene Chlorodibromomethane				NA NA	<25.0	<25.0	NA NA	NA NA	<250	<25.0	NA NA	<25.0	NA NA	<25.0	NA	<25.0
Chloroethane	-			NA NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
Chloromethane	-			NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
2-Chlorotoluene			-	NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA NA	<25.0	NA	<25.0 <25.0
4-Chlorotoluene				NA NA	<25.0	<25.0	NA NA	NA NA	<250	<25.0	NA NA	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0
1,2-Dibromo-3-chloropropane	- '			NA NA	<25.0 <25.0	<25.0 <25.0	NA NA	NA NA	<250 <250	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0	NA.	<25.0
1,2-Dibromoethane 1,3-Dichlorobenzene	-			NA NA	<25.0	<25.0	NA NA	NA NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
1,4-Dichlorobenzene	_			NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
1,2-Dichloroethane			4.9	NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	NA NA	<25.0
1,2-Dichlorobenzene		-		NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
1,1-Dichloroethene	-	-		NA NA	<25.0	<25.0	NA NA	NA NA	<250 <250	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0 <25.0
cis-1,2-Dichloroethene	-			NA NA	<25.0 <25.0	<25.0 <25.0	NA NA	NA NA	<250 <250	<25.0 <25.0	NA NA	<25.0	NA NA	<25.0	NA	<25.0
Dichlorodilluoromethane trans-1,2-Dichloroethene			-	NA NA	<25.0	<25.0	NA	NA NA	<250	<25.0	NA NA	<25.0	NA	<25.0	NA	<25.0
1,1-Dichloroethane			-	NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
1,2-Dichloroethane				NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA	<25.0	NA	<25.0
1,2-Dichloropropane				NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	<25.0	NA NA	<25.0	NA NA	<25.0 <25.0
1,3-Dichloropropane				NA NA	<25.0	<25.0	NA	NA	<250	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0 <25.0	NA NA	<25.0
2,2-Dichloropropane				NA NA	<25.0 <25.0	<25.0 <25.0	NA NA	NA NA	<250 <250	<25.0	NA NA	<25.0	NA NA	<25.0	N.A	<25.0
Diisopropyl ether Ethylbenzene			2,900	NA NA	<25.0	<25.0	NA	NA NA	5880 C	<25.0	NA	27.8	NA	<25.0	NA	34.8
Hexachlorobutadiene				NA	<25.0	<25.0	NA	NA	<250	<25.0	NA	NA	NA	<25.0	N.A	NA
Isopropylbenzene				NA	<25.0	<25.0	NA	NA	280	<25.0	NA	NA	NA	<25.0	NA	NA
p-Isopropyltoluene				NA	<25.0	25.8	NA	NA	3050	<25.0	NA	NA	NA	<25.0	NA NA	<100 <100
Methylene chloride			-	NA	<100	<100	NA	NA	<1000	<100	NA	NA	NA NA	<100 <25	NA NA	<25
Methyl-tert-butyl-ether		110,000	400	NA NA	<25.0 <25.0	<25.0 149	NA NA	NA NA	<250	<25 <25	NA NA	NA NA	NA NA	<25	NA.	19500 C
Naphthalene n-Propylbenzene	20,000	110,000	400	NA NA	<25.0	<25.0	NA NA	NA NA	<250	<25	NA NA	NA	NA NA	<25	N.A	NA
1,1,2,2-Tetrachloroethane				NA NA	<25.0	<25.0	NA	NA	<250	<25	NA	NA	NA	<25	N.A	NA
Tetrachloroethene			-	NA	<25.0	<25.0	NA	NA	<250	<25	NA	NA	NA	<25	NA	NA
Toluene			1,500	NA	<25.0	44	NA	NA	1740 ^C	<25	NA	35.5	NA	<25	NA NA	NA NA
1,2,3-Trichlorobenzene				NA	<25.0	<25.0	NA	NA	<250	<25	NA NA	NA NA	NA NA	<25 <25	NA NA	NA NA
1,2,4-Trichlorobenzene				NA NA	<25.0 <25.0	<25.0 <25.0	NA NA	NA NA	<250 <250	<25 <25	NA NA	NA NA	NA NA	<25	N.A	NA
1,1,1-Trichloroethane 1,1,2-Trichloroethane				NA NA	<25.0	<25.0	NA NA	NA	<250	<25	NA	NA NA	NA	<25	NA	NA
Trichlorofluoromethane				NA	<25.0	<25.0	NA	NA	<250	<25	NA	NA	NA	<25	NA	NA -
1,2,4-Trimethylbenzene				NA	<25.0	<25.0	NA	NA	211	<25	NA	NA	NA	<25	NA	103
Trichloroethene	-			NA	<25.0	127	NA	NA	<250	<25	NA	NA	NA	<25	NA NA	NA NA
1,3,5-Trimethylbenzene			-	NA NA	<25.0 <25.0	<25.0 <25.0	NA NA	NA NA	70.6	<25 <25	NA NA	NA NA	NA NA	<25 <25	NA NA	NA NA
Vinyl chloride Xylenes, total	-		4,100	NA NA	<25.0 <25.0	101	NA NA	NA NA	<250 18900 ^C	<25 <25	NA NA	108	NA NA	<25	NA.	NA
zijienos, iotai			.,					3320.2								
AHs (μg/L)						.,				10 Table 10	252			110		31700
Acenaphthene	900,000	60,000,000	38,000	3050	NA	1160	NA	237	NA	1600	NA NA	1040	NA NA	<113 <226	NA NA	4000
Acenaphthylene	18,000	360,000	700 3,000,000	843 ^C 945	NA NA	778 ^C	NA NA	<235 <117	NA NA	275 168	NA NA	<218 <109	NA NA	<113	NA.	16400
Anthracene Benzo(a)anthracene	5,000,000 88	300,000,000	17,000	1490 ^A	NA NA	1910 ^	NA NA	197 ^	NA NA	396 A	NA NA	411 ^	NA NA	<56.6	NA	19400 C
Benzo(a)pyrene	8.8	390	48,000	1270 AB	NA	2710 AB	NA	207 ^	NA	627 A	NA	604 AB	NA	22.5	N.A	16500 A
Benzo(b)fluoranthene	88	3,900	360,000	1410 ^A	NA	3360 ^	NA	220 ^A	NA	555 A	NA	514 ^A	NA	<56.6	NA.	13700
Benzo(ghi)perylene	1,800	39,000	6,800,000	637	NA	1340	NA	186	NA	333	NA	349	NA NA	<113	NA NA	6190 A
Benzo(k)fluoranthene	880	39,000	870,000	540	NA	1130 ^	NA	<117	NA	218	NA	195	NA NA	<113 <113	NA NA	7140 A 20100 A
Chrysene	8,800	390,000	37,000	1290 1120 AB	NA NA	2070 2870 AB	NA NA	198 31.6 ^	NA NA	564 222 A	NA NA	502 344 ^	NA NA	9.64	NA NA	1920
Dibenzo(a,h,)anthracene Fluroanthene	8.8 600,000	390 40,000,000	38,000 500,000	3810	NA NA	1030	NA NA	31.6	NA NA	1040	NA NA	769	NA NA	<113	NA	145000
Fluorene	600,000	40,000,000	100,000	448	NA NA	130	NA	<117	NA NA	179	NA	<109	NA.	<113	NA	11000
Indeno(1,2,3-cd)pyrene	88	3,900	680,000	1040 ^	NA NA	2310 ^	NA	232 Å	NA	328 A	NA	323 ^A	NA	<56.6	NΛ	7740 A
1-Methylnaphthalene	1,100,000	70,000,000	23,000	2390	NA	556	NA	<117	NA	194	NA	<109	NA	<113	NA	9120
2-Methylnaphthalene	600,000	40,000,000	20,000	2730	NA	791	NA	<117	NA	782	NA	347	NA NA	<113	NA	18800 2630
	20,000	110,000	400	331	NA	<106	NA	<117	NA	<112	NA NA	<109	NA NA	<113 <113	NA NA	51000 A
Naphthalene	A STATE OF THE PARTY OF THE PAR						NA	171	NA	814	AIA .	286	NA			01000 100
Naphthalene Phenanthrene Pyrene	18,000 500,000	390,000 30,000,000	1,800 8,700,000	2980 ^C 2010	NA NA	<106 732	NA	409	NA NA	405	NA NA	320	NA	<113	NA.	19900

VOCs = Volatile Organic Compounds

PAHs = Polynuclear Aromatic Hydrocarbons

PAHs = Polynuclear Aromatic Hydrocarbons

A Parameter exceeds NR 720 Generic RCL for Non-Industrial Direct Contact.

B Parameter exceeds NR 720 Generic RCL for Industrial Direct Contact.

C Parameter exceeds NR 720 Generic RCL for Groundwater Pathway.

NO Generic RCL established.

NA = Not analyzed

TABLE 2 LABORATORY RESULTS OF COLLECTED GROUNDWATER SAMPLES 301 EAST BROWN STREET PROPERTY STS PROJECT NO. 5-87185EA

	3 3 3 3	140	MW-1	MW-2	MW-3	MW-3D	
		dards				44/0/22	
Parameters	ES	PAL	11/8/2002	11/8/2002	11/8/2002	11/8/2002	
Metals (ug/L)							
Lead	15	1.5	<5.00	<5.00	<5.00	NA	
VOCs (μg/L)							
Benzene	5	0.5	<0.500	<0.500	<0.500	<0.500	
Bromobenzene			<0.500	<0.500	<0.500	<0.500	
Bromodichloromethane	0.6	0.06	<0.500	<0.500	<0.500	<0.500	
n-Butylbenzene			<0.500	< 0.500	< 0.500	< 0.500	
sec-Butylbenzene			<0.500	< 0.500	< 0.500	<0.500	
tert-Butylbenzene			<0.500	<0.500	<0.500	<0.500	
Carbon tetrachloride	5	0.5	< 0.500	< 0.500	< 0.500	< 0.500	
Chlorobenzene			<0.500	< 0.500	<0.500	< 0.500	
Chloroethane	400	80	<0.500	<0.500	<0.500	< 0.500	
Chloroform	6	0.6	<0.140	< 0.140	<0.140	< 0.140	
Chloromethane	3	0.3	<0.600	<0.600	<0.600	<0.600	
2-Chlorotoluene			<0.500	< 0.500	< 0.500	< 0.500	
4-Chlorotoluene			<0.500	< 0.500	< 0.500	< 0.500	
Dibromochloromethane	60	6	<0.500	<0.500	<0.500	< 0.500	
1,2-Dibromo-3-chloropropane	0.2	0.02	< 0.390	< 0.390	< 0.390	< 0.390	
1,2-Dibromoethane	0.05	0.005	<0.380	<0.380	<0.380	<0.380	
1,2-Dichlorobenzene	600	6	<0.500	< 0.500	<0.500	< 0.500	
1,3-Dichlorobenzene	1250	125	< 0.500	< 0.500	<0.500	< 0.500	
1,4-Dichlorobenzene	75	15	< 0.500	< 0.500	< 0.500	< 0.500	
Dichlorodifluoromethane	1000	200	<0.500	< 0.500	< 0.500	< 0.500	
1,1-Dichloroethane	850	85	<0.500	<0.500	<0.500	<0.500	
1,2-Dichloroethane	5	0.5	<0.500	<0.500	<0.500	<0.500	
1,1-Dichloroethene	7	0.7	<0.500	<0.500	<0.500	< 0.500	
cis-1,2-Dichloroethene			<0.500	<0.500	<0.500	<0.500	
trans-1,2-Dichloroethene			<0.500	<0.500	< 0.500	<0.500	
1,2-Dichloropropane	5	0.5	<0.500	<0.500	<0.500	<0.500	
1,3-Dichloropropane	_		<0.500	< 0.500	< 0.500	<0.500	
2,2-Dichloropropane			<0.500	<0.500	<0.500	<0.500	
			<5.00	<5.00	<5.00	<5.00	
Diisopropyl ether	700	140	<0.500	<0.500	<0.500	<0.500	
Ethylbenzene Hexachlorobutadiene			<5.00	<5.00	<5.00	<5.00	
Isopropylbenzene	_		<0.500	<0.500	< 0.500	<0.500	
p-Isopropyltoluene			<0.500	<0.500	<0.500	<0.500	
Methylene chloride	5	0.5	<0.530	<0.530	<0.530	<0.530	
Methyl-tert-butyl-ether	60	12	<0.500	< 0.500	<0.500	<0.500	
Naphthalene	40	8	<2.00	<2.00	<2.00	<2.00	
n-Propylbenzene			<0.500	< 0.500	<0.500	<0.500	
1,1,2,2-Tetrachloroethane	0.2	0.02	<0.350	< 0.350	< 0.350	< 0.350	
Tetrachloroethene	5	0.5	<0.500	<0.500	< 0.500	<0.500	
Toluene	1000	200	<0.500	<0.500	<0.500	<0.500	
1,2,3-Trichlorobenzene			<2.00	<2.00	<2.00	<2.00	
	_		<2.00	<2.00	<2.00	<2.00	
1,2,4-Trichlorobenzene	200	40	<0.500	<0.500	<0.500	<0.500	
1,1,1-Trichloroethane	5	0.5	<0.160	<0.160	<0.160	<0.160	
1,1,2-Trichloroethane	5	0.5	<0.100	<u>0.864</u>	<0.100	<0.500	
Trichloroethene			<0.500	< 0.500	<0.500	<0.500	
Trichlorofluoromethane	480	96	<1.00	<1.00	<1.00	<1.00	
1,2,4-Trimethylbenzene		96 96	<1.00	<1.00	<1.00	<1.00	
1,3,5-Trimethylbenzene	480		<0.170	<0.170	<0.170	<0.170	
Vinyl chloride	0.2	0.02			and the second second		
Xylenes, total	10,000	1000	<0.500	<0.500	<0.500	<0.500	

PAL

TABLE 2 LABORATORY RESULTS OF COLLECTED GROUNDWATER SAMPLES 301 EAST BROWN STREET PROPERTY STS PROJECT NO. 5-87185EA

	E .	140	MW-1	MW-2	MW-3	MW-3D
		dards	11/0/0000	44/0/0000	44/0/0000	44/0/0000
Parameters	ES	PAL	11/8/2002	11/8/2002	11/8/2002	11/8/2002
PAHs (ug/kg)						
Acenaphthene	_		<5.00	<5.00	<5.00	NA
Acenaphthylene	_		<5.00	<5.00	<5.00	NA
Anthracene	3000	600	<5.00	<5.00	<5.00	NA
Benzo(a)anthracene			<0.100	<0.100	<0.100	NA
Benzo(a)pyrene	0.2	0.02	<0.0200	<0.0200	<0.0200	NA
Benzo(b)fluoranthene	0.2	0.02	<0.0200	<0.0200	<0.0200	NA
Benzo(g,h,l)perylene			<5.00	<5.00	<5.00	NA
Benzo(k)fluoranthene	-		<0.100	<0.100	<0.100	NA
Chrysene	0.2	0.02	<0.0200	<0.0200	<0.0200	NA
Dibenzo(a,h)anthracene	-		<0.100	<0.100	<0.100	NA
Fluoranthene	400	80	<5.00	<5.00	<5.00	NA
Fluorene	400	80	<5.00	<5.00	<5.00	NA
Indeno (1,2,3-cd) pyrene			<0.200	<0.200	<0.200	NA
1-Methylnaphthalene			<5.00	<5.00	<5.00	NA
2-Methylnaphthalene			<5.00	<5.00	<5.00	NA
Naphthalene	40	8	<5.00	<5.00	<5.00	NA
Phenanthrene			<5.00	<5.00	<5.00	NA
Pyrene	250	50	<5.00	<5.00	<5.00	NA

Notes:

VOCs = Volatile Organic Compounds
PAHs = Polynuclear Aromatic Hydrocarbons
Bold value = NR 140 Enforcement Standard Exceedance
Italic value = NR 140 WAC Preventive Action Limit Exceedance
-- No NR 140 ES or PAL established.

NA = Not analyzed



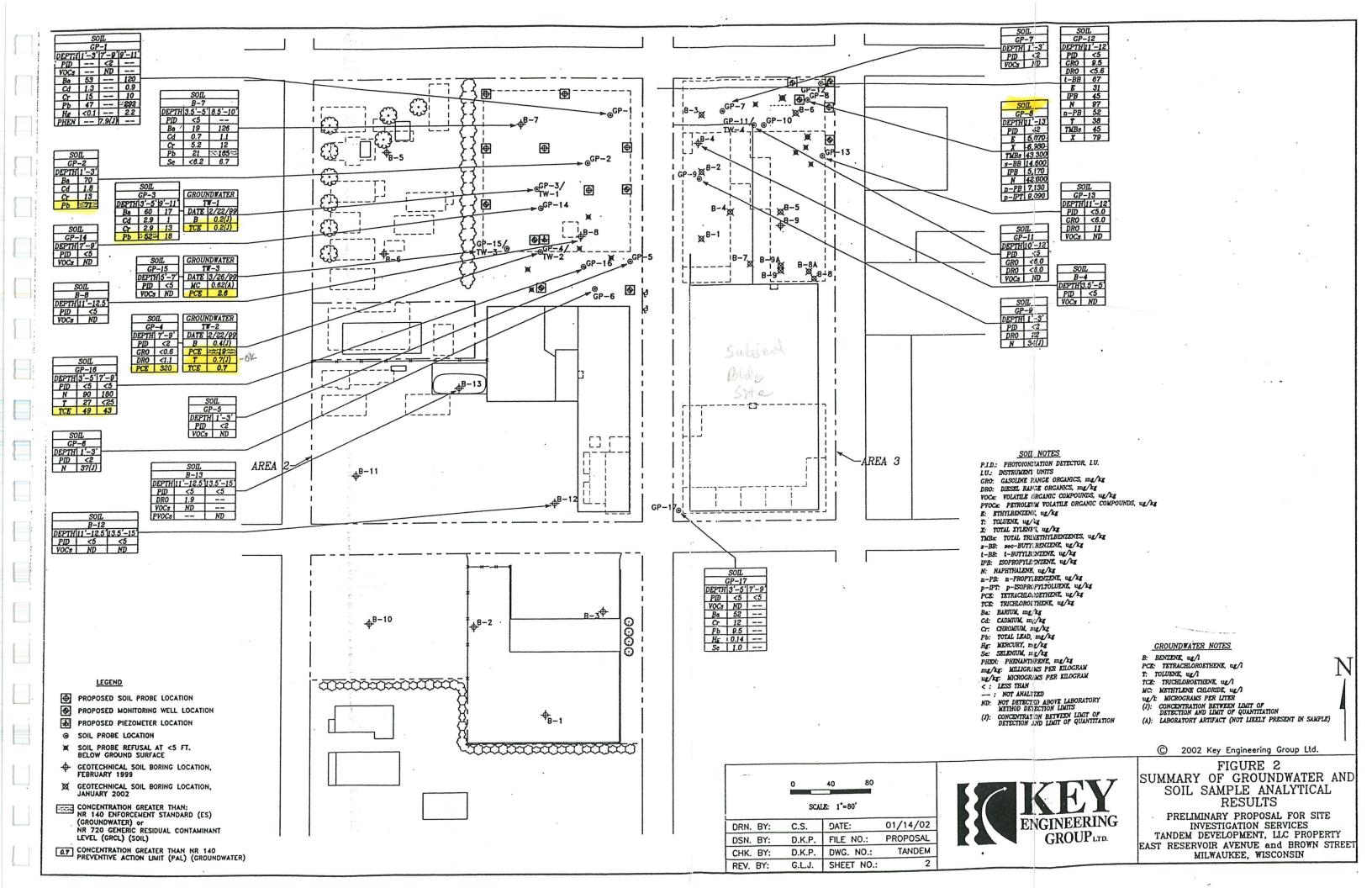
APPENDICES

- A Summary of KEY Engineering Investigations
- B Involved Parties List
- C Soil Boring Logs, Well Construction Details, Well Development Forms, and Borehole Abandonment Forms
- D Laboratory Results of Collected Soil and Groundwater Samples



APPENDIX A

Summary of KEY Engineering Investigations





APPENDIX B

Involved Parties List

APPENDIX B

INVOLVED PARTIES LIST BROWN STREET III LLC MILWAUKEE, WISCONSIN

Site Owner:

Brown Street III LLC 20 W. Hubbard Suite 2W Chicago, Illinois 60610 (312) 245-9000

Contact: Mr. Brian Columbus

Attorney:

Foley & Lardner

777 East Wisconsin Avenue, Suite 3800 Milwaukee, Wisconsin 53202-5367

(414) 297-5830

Contact: Mr. Edward B. Witte

Consultant:

STS Consultants, Ltd. 11425 West Lake Park Drive Milwaukee, WI 53224 (414) 359-3030

Contact: Mr. Mark Mejac Mr. Dennis Lawton

Department of Natural Resources:

Department of Natural Resources 2300 N. Dr. Martin Luther King, Jr. Drive Milwaukee, WI 53212-0436

(414) 263-8500

Contact: Ms. Victoria Stovall



APPENDIX C

Soil Borings Logs, Well Construction Details, Well Development Forms, and Borehole Abandonment Forms

SOIL BORING LOG INFORMATION

Form 4400-122 R

Rev. 5-97

			<u>R</u>	oute To:	Watershed/V	Wastewater□		Waste		gemei	nt□]								
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				ent 871															<u>'S-1</u>	
Borin	ng Drill	ed By ((Firm n	ame and r	name of crew c	hief)	Da	ate Dr	illing	Starte	d		D	Date Dr	illing (Coi	mplete	d	Dri	lling Method
Pro	nhe Te	chno	logies	, Dan B	endorf				10/1	6/20	02				10/1	6/	2002		10	eoProbe
	Inique \				Well ID No.	Common Well Name	e Fin	inal Sta				1	Surfa	ace Ele						e Diameter
						STS-1									Fee) Inches
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State SE	Plane	of N	TC 1	1/4 of Sect	tion 20,	S/C/N T 7 N, R 22 E		Lat.		- -	,		11	- [Е	aat	N □ S □:			☐ E Feet ☐ W
	ity ID	101 19			County	T 7 N, R 22 E		inty Co		Civil	To	wn/C	ity/ o	r Villa		cei				reet 🗀 w
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lber Type	igh /	ပိ	h In		Eac	h Major Unit			CS	hic		lram .	FID	pres	sture		it id	ticity	0)/ imer
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet						S D	Graphic I og	Ne S	Diagram	PID/FID	Compressive Strenoth	Moisture	5	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
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			<u> </u> -1						ML					i						
			E																	
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ĺ			-3						GM	P	1									
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3 -	24		-4	Fill: S	Silty Fine to	Coarse Sand and	1]	\exists		4.4				1			
GP	24		-	Grave	el, little bricl	k fragments and s	slag -	-			1						ĺ	ļ		
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Firm STS Consultants, Ltd.

11425 West Lake Park Drive, Milwaukee, WI 53224

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form mandatory. Failure to file this form mandatory.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form ma 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 be used for any other purpose. NOTE: See instructions for more information, including where the completed for should be sent.

	of Wis rtment			sources						SOIL Form 4			LOC		ORN .ev. 5-9	IATION 97
			<u>R</u>	oute To: Watershed/V	Vastewater 🗌	Waste	e Mana	gemen	t 🗌							
				Remediation	/Redevelopmen	Other										
														ige 1	of	1
	ty/Proj			ent 87185EA		License	e/Perm	it/Mon	itoring	Numbe	r	Borin	g Num		`S-2	
				ame and name of crew of	hief)	Date D	rilling	Started		Da	ite Dril	ling Co	mplete			lling Method
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Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Eac	h Major Unit		SC	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	200	RQD/ Comments
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3 GP	24 15		- -4.5	Fill: Silty Fine to little red brick fra						0.0						
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			7.5					PE								
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				\wet												
	[END OF BORING	G											
				Refusal at 9.5' on	concrete.											
				Boring advanced	to 9.5 feet by Geo	Probe.										

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

Boring backfilled with bentonite.

Signature	Firm	STS Consultants, Ltd.	Tel: (414) 359-3030
Part Ver		11425 West Lake Park Drive, Milwaukee, WI 53224	Fax: (414) 359-0822

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Route To:

Watershed/Wastewater

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

				Remediation	on/Redevelopmen□	Other	· 🗆									
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Facili	ty/Proje	ect Nai	me		· · · · · · · · · · · · · · · · · · ·	Licens	e/Perm	it/Moi	nitoring	Numb	er	Borin	g Num	ber		•
				ent 87185EA									***********		<u>S-3</u>	
Borin	g Drille	ed By (Firm n	ame and name of crew	chief)	Date D	rilling	Starte	d	D	ate Dril	lling Co	omplete	ed	Dri	lling Method
Pro	be Te	chnol	logies	, Dan Bendorf		1	10/1	6/20	02.	- 1		10/16	/2002		G	eoProbe
WIU	nique V	Vell No	0.	DNR Well ID No.	Common Well Name	Final S				Surfa	ce Elev					Diameter
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I hereb	y certif	y that t	the info	ormation on this form i	s true and correct to the l	best of m	y knov	ledge		L						
Signati		,				Consu									Tel: (4	14) 359-3030
B	_13.	سوه				West L				vaukee	, WI 5	3224	<u> </u>			14) 359-0822
This fo	rm is ai	/ uthoriz	ed by (Chapters 281, 283, 289	9, 291, 292, 293, 295, and	1 299, W	is. Stat	s. Co	mpletior	ns of th	is form	is man	datory.	. Failu	re to fil	e this form ma

Waste Management

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 be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

SOIL BORING LOG INFORMATION

Form 4400-122

Rev. 5-97

Watershed/Wastewater Waste Management Route To: Remediation/Redevelopmen Other 🗌 Page of l Facility/Project Name License/Permit/Monitoring Number Boring Number STS-4 Tandem Development 87185EA Boring Drilled By (Firm name and name of crew chief) Date Drilling Started Date Drilling Completed Drilling Method 10/16/2002 10/16/2002 GeoProbe Probe Technologies, Dan Bendorf Final Static Water Level DNR Well ID No. Common Well Name Surface Elevation Borehole Diameter WI Unique Well No. STS-4 Feet 2.0 Inches Boring Location or Local Grid Origin Local Grid Location (If applicable) (Check if estimated: |) Lat. State Plane S/C/N \square N \square E Feet
S SE т 7 N, R 22 E Feet W 1/4 of NE 1/4 of Section 20. Long. Civil Town/City/ or Village Facility ID County County Code Milwaukee 41 Milwaukee Soil Properties Sample Length Att. & Recovered (in) Soil/Rock Description Compressive Strength Depth In Feet Blow Counts And Geologic Origin For RQD/ Comments Moisture Content Plasticity Log Well Diagram PID/FID Graphic Each Major Unit Liquid Limit USC P 200 l GP 18 Fill: Silt, little sand and gravel - brown -12 moist ML 2 GP 12 Fill: Gravel - gray - moist GP -2 0.7 18 Fill: Possible Foundry Sand, little gravel 12 -3 and brick fragments - dark brown - moist SP 24 Fill: Gravel and Concrete Rubble - gray -1.9 GP 18 moist -6 END OF BORING Refusal at 6' on conrete. Boring advanced to 6 ft. by GeoProbe. Boring backfilled with bentonite.

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

 Signature
 Firm
 STS Consultants, Ltd.
 Tel: (414) 359-3030

 11425 West Lake Park Drive, Milwaukee, WI 53224
 Fax: (414) 359-0822

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en or Royle 11425 W. Lake Park Drive

City, State, Zip Code Milwaukee, WI 53224

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 4-97

Noncomplying Work

All abandonment work shall be performed in accordance with the provisions of Chapters NR 811, NR 812 or 141, Wis. Admin. Code, whichever is applicable. (1) GENERAL INFORMATION (2) FACILITY NAME Tandem Development 87185EA County Original Well Owner (If Known) Well/Drillhole/Borehole Location Milwaukee Tandem Development Present Well Owner <u>SE</u> $1/4 \text{ of } \underline{NE} 1/4 \text{ of Sec. } \underline{20} \text{ ; T. } \underline{7} \text{ N; R.}$ Tandem Development (If Applicable) Street or Route SE Corner of Intersection of N. Hubbard St. and E. Brown St Gov't Lot Grid Number Grid Location City, State, Zip Code ft. \square N. \square S.. . ft. 🗌 E. 🔲 W. Milwaukee, WI 53212 Civil Town Name Facility Well No. and/or Name (If Applicable) WI Unique Well No. Milwaukee Street Address of Well Reason For Abandonment SE Corner of Intersection of N. Hubbard St. and E. Brown St. Temporary Soil Boring City, Village Date of Abandonment Milwaukee 10/16/02 WELL/DRILLHOLE/BOREHOLE INFORMATION (4) Depth to Water (Feet) (3) Original Well/Drillhole/Borehole Construction Completed On Not Applicable 10/16/2002 Pump & Piping Removed? ☐ Yes ☐ No Not Applicable Yes No Liner(s) Removed? 🗌 Yes 🔲 No 🔯 Not Applicable Monitoring Well Construction Report Available? Screen Removed? Water Well Yes ⊠ No Yes No Casing Left in Place? Drillhole If No, Explain ■ Borehole Was Casing Cut Off Below Surface? Yes Yes No Construction Type: Did Sealing Material Rise to Surface? Drilled ☐ Dug ☐ Yes ☒ No ☐ Driven (Sandpoint) Did Material Settle After 24 Hours? Other (Specify) GeoProbe ☐ Yes ☐ No If Yes, Was Hole Retopped? Required Method of Placing Sealing Material Formation Type: Conductor Pipe - Gravity Conductor Pipe - Pumped ☐ Bedrock Unconsolidated Formation Dump Bailer Other (Explain) Total Well Depth (ft) Sealing Materials For monitoring wells and Casing Diameter (in.) (From groundsurface) Casing Depth (ft.) ☐ Neat Cement Grout monitoring well boreholes only Sand-Cement (Concrete) Grout Lower Drillhole Diameter (in.) _ Concrete Bentonite Pellets Clay-Sand Slurry Granular Bentonite Yes No Unknown Was Well Annular Space Grouted? Bentonite-Sand Slurry Bentonite-Cement Grout If Yes, To What Depth? Chipped Bentonite Sealing Material Used From (Ft.) To (Ft.) Mix Ratio or Mud Weight Native Soil Surface 0.5 0.5 8.0 Chipped Bentonite (8) Comments Name of Person or Firm Doing Sealing Work FOR DNR OR COUNTY USE ONLY District/County STS Consultants Ltd. Date Received/Inspected Signature of Person Doing Work Date Signed Reviewer/Inspector Complying Work 10-22-02

Follow-up Necessary

Telephone Number

414-359-3030

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 4-97

All abandonment work shall be performed in accordance with the provisions of Chapters NR 811, NR 812 or 141, Wis. Admin. Code, whichever is applicable.

Wolf-prilibod-Porteiols	(1) GENERAL INFORMATION		(2) FACIL	ITY NAME	Tandem Deve	lopment 87185EA							
SE		County											
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Series or Route Series or Route Series or Route SEC Corner of Intersection of N. Hubbard St. and E. Brown;	or ar o	0 7 22 ⊠ E											
SE Corner of Intersection of N. Hubbard St. and E. Brown: Civil Town Name	<u>SE</u> 1/4 of <u>NE</u> 1/4 of Sec. <u>Z</u>	<u>0</u> ; T. <u>/</u> N; R. <u>∠2</u>			nent								
Griy, State, Zip Code City, State, Zip Code Milwaukce, W 53212	, , ,					77 11 10 11	T D						
Milwaukee WI 53212		Grid Number			rsection of N.	Hubbard St. and	E. Brown S						
Civil Town Name Facility Well No. and/or Name (If Applicable) Wi Unique Well No. Milwaukee Street Address of Well			1 -	-	2212								
Milwaukee Sirset Address of Well SE Corner of Intersection of N. Hubbard St. and E. Brown St. City, Village Milwaukee SIRS-2 Season For Abandomment Temporary Soil Boring Date of Abandomment Temporar	ft. U. N. U. S.,	ft. L E. L W.	Facility W	ukee, W1 5	eable) WI Uniqu	WI Unique Well No							
Reason For Abandonment St. Carner of Intersection of N. Hubbard St. and E. Brown St. St. Carner of Intersection of N. Hubbard St. and E. Brown St. City, Village Date of Abandonment Interporary Soil Boring Date Signed Person Date State Date Signed Person Date State Date State of Page Prison Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State of Page Prison Date State Date State Date State of Page Prison Date State Date State													
SE Corner of Intersection of N. Hubbard St. and E. Brown St. City, Village Milwaukee Date of Abandoment 10/16/02 WEILDRILHOLE/BOREHOLE INFORMATION (3) Original Well/Drillhole/Borehole Construction Completed On (Date) 10/16/2002				r Abandonmer	nt .		77 had 77 had 24						
Date of Abandonment 10/16/202 WELL/DRILLHOLE/BOREHOLE INFORMATION 10/16/202		fN Hubbard St and F Brown St	l l										
Milwaukee 10/16/02 WELLDRILHOLE/BOREHOLE INFORMATION		11. Hubbard St. and E. Brown St.			ornig								
Well-Drillhole Borehole Construction Completed On (Date) 101/16/2002	• •												
Original Well/Drillhole/Borehole Construction Completed On (Date) 10/16/2002		FORMATION	10/10/0										
(Date) 10/16/2002			(4) Depth (to Water (Feet)								
Monitoring Well Construction Report Available? Screen Removed? Yes No Not Applicable Screen Removed? Yes No Not Applicable Screen Removed? Yes No Not Applicable Screen Removed? Yes No Not Applicable Casing Left in Place? Yes No Not Applicable Casing Left in Place? Yes No Not Applicable Screen Removed? Yes No Not Applicable Casing Left in Place?		Constitution Completed On	-			es 🗆 No 🗵 No	t Applicable						
Monitoring Well Vater Well	(Date)	A CONTRACTOR OF THE CONTRACTOR	_										
Water Well	☐ Monitoring Well	Construction Report Available?	,	•									
Drillhole Borehole Was Casing Cut Off Below Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Settle After 24 Hours? Yes No Did Material Sealing Material			Casing	Left in Place?	· 🛛 7								
Was Casing Cut Off Below Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Sealing Material Rise to Surface? Yes No Did Material Settle After 24 Hours? Yes No No Did Material Settle After 24 Hours? Yes No Did Material Settle After 24 Hours? Yes No Did Material Settle After 24 Hours? Yes No Durber (Explain) Other (Explain)	☐ Drillhole						····						
Construction Type: Drilled Driven (Sandpoint) Dug Other (Specify) GeoProbe Did Material Rise to Surface? Yes No Other (Specify) GeoProbe Promation Type: Unconsolidated Formation Bedrock Casing Diameter (in.) (From groundsurface) Casing Diameter (in.) (From groundsurface) Casing Depth (ft.) Casing Depth (ft.) (From groundsurface) Casing Depth (ft.) Did Material Stating Material (From groundsurface) Casing Depth (ft.) Did Material Stating Material (From groundsurface) Casing Depth (ft.) Did Material Stating Material (From groundsurface) Casing Depth (ft.) Did Material Stating Material (From groundsurface) Casing Depth (ft.) Did Material Stating Materials (From groundsurface) Casing Depth (ft.) Did Material Stating Materials (From groundsurface) Casing Depth (ft.) Did Material Stating Materials (From groundsurface) Casing Depth (ft.) Did Material Stating Materials (From groundsurface) Casing Materials From monitoring wells and monitoring wells and monitoring well boreholes only (From groundsurface) Did Material Stating Materials (From groundsurface) Did Material Stating Materials (From groundsurface) Did Material Stating Materials (From groundsurface) Did Material Stating Material (From groundsurface)	Borehole	1											
Drilled Driven (Sandpoint) Dug			Was Ca	asing Cut Off	Below Surface?	☐ Yes ☐ No)						
Some of the period of Placing Scaling Material Some of Person or Firm Doing Scaling Material Used Signstruct of Royal Bentonite Signstruct of Royal Be	Construction Type:		Did Sea	aling Material	Rise to Surface?	🛛 Yes 🗌 No)						
Formation Type: Unconsolidated Formation Bedrock Casing Diameter (in.) Casing Diameter (in.) Casing Depth (ft.) Casing Dep		ven (Sandpoint)	Did Ma	iterial Settle A	fter 24 Hours?	☐ Yes ☒ No	•						
Formation Type: Unconsolidated Formation Bedrock Dump Bailer Onductor Pipe - Pumped Dump Bailer Other (Explain)	Other (Specify) GeoProb	<u>e</u>	If Yes,	Was Hole Ret	opped?	☐ Yes ☐ No)						
Formation Type: Unconsolidated Formation Bedrock Dump Bailer Onductor Pipe - Pumped Dump Bailer Other (Explain)			(5) Require	ed Method of I	Placing Sealing N	Material							
Unconsolidated Formation	Formation Type:						nned						
Total Well Depth (ft) Casing Diameter (in.) (6) Sealing Materials For monitoring wells and monitoring well boreholes only Sand-Cement (Concrete) Granular Space Grouted? Yes No Unknown If Yes, To What Depth? Feet Clay-Sand Slurry Bentonite-Sand Slurry Bentonite-Cement Grout Bentonite-Cement Grout Bentonite-Cement Grout Bentonite-Cement Grout Bentonite-Cement Grout Bentonite-Cement Grout Clay-Sand Slurry Bentonite-Cement Grout Bentonite-Cement Grout Mix Ratio or Mud Weight Surface 0.5 Surface 0.5 Surface 0.5 Surface 0.5 Surface Surfac	Unconsolidated Formation	☐ Bedrock	_										
(From groundsurface)	Total Well Depth (ft)	Casing Diameter (in)											
Lower Drillhole Diameter (in.)		- · · · · · · · · · · · · · · · · · · ·	1.		nut.	_							
Lower Drillhole Diameter (in.)	(110m groundsurface)	cusing Dopin (iii)				mointoffig well be	renoies only						
Was Well Annular Space Grouted?	Lower Drillhole Diameter (in.)		}	,	mercic) Groun	Rentonite Pelle	te						
Was Well Annular Space Grouted?	(,												
If Yes, To What Depth? Feet Chipped Bentonite From (Ft.) To (Ft.) Mix Ratio or Mud Weight	Was Well Annular Space Grouted	1? Yes No Unknown	l			: —							
Sealing Material Used From (Ft.) To (Ft.) Mix Ratio or Mud Weight			l		•	I Bentonite Cont	ont Grout						
Native Soil Surface 0.5 Mix Ratio or Mud Weight			<u> </u>			T							
Chipped Bentonite 0.5 9.5 (8) Comments (9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /o-22-o2 Street of Royte 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Noncomplying Work Follow-up Necessary	Sealing 1	Material Used	From (Ft.)	To (Ft.)		Mix Ratio or Mu	d Weight						
Chipped Bentonite 0.5 9.5 (8) Comments (9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /o-22-o2 Street of Royte 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Noncomplying Work Follow-up Necessary			1										
(8) Comments (9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /o-22-o2 Street of Royle 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary	Native Soil		Surface	0.5									
(8) Comments (9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /o-22-o2 Street of Royle 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary													
(9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /0-22-02 Street of Royce 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary	Chipped Bentonite		0.5	9.5									
(9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /0-22-02 Street of Royce 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary													
(9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /0-22-02 Street of Royce 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary													
(9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /0-22-02 Street of Royce 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary													
(9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /0-22-02 Street of Royce 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary													
(9) Name of Person or Firm Doing Sealing Work STS Consultants Ltd. Signature of Person Doing Work Date Signed /0-22-02 Street of Royce 11425 W. Lake Park Drive City, State, Zip Code (10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected Reviewer/Inspector Complying Work Follow-up Necessary	(8) Comments												
STS Consultants Ltd. Signature of Person Doing Work Date Signed /o-22-o2 Street of Route 11425 W. Lake Park Drive City, State, Zip Code Date Received/Inspected Reviewer/Inspector Reviewer/Inspector Follow-up Necessary Date Received/Inspected Reviewer/Inspector Follow-up Necessary	(o) Comments												
Signature of Person Doing Work /o - 22 - o 2 Street of Royte 11425 W. Lake Park Drive City, State, Zip Code Date Signed Reviewer/Inspector Reviewer/Inspector Reviewer/Inspector Follow-up Necessary	(9) Name of Person or Firm Doing Se	ealing Work	L	and the second second									
Complying Work Reviewer/Inspector Complying Work Telephone Number 11425 W. Lake Park Drive 414-359-3030 Follow-up Necessary Follow-up Nece			Date	Received/Insp	ected	District/County							
Street of Royce 11425 W. Lake Park Drive Telephone Number 414-359-3030 Follow-up Necessary City, State, Zip Code	Signature of Person Doing Work	Date Signed		<u> </u>									
Street of Royce 11425 W. Lake Park Drive Telephone Number 414-359-3030 Follow-up Necessary City, State, Zip Code	Baller	10-22-02											
City, State, Zip Code	Street of Royce	Telephone Number	[[[]										
City, State, Zip Code Milwankee, WI, 53224		414-339-3030	Follo	w-up Necessar	У								
	City, State, Zip Code Milwaukee, WI 53224			<u> </u>			<u> </u>						

WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5B Rev. 4-97

All abandonment work shall be performed in accordance with the provisions of Chapters NR 811, NR 812 or 141, Wis. Admin.

Code, whichever is applicable.	
(1) GENERAL INFORMATION	(2) FACILITY NAME Tandem Development 87185EA
Well/Drillhole/Borehole County	Original Well Owner (If Known)
Location Milwaukee	Tandem Development Present Well Owner
SE 1/4 of NE 1/4 of Sec. 20 ; T. 7 N; R. 22 W (If Applicable)	Tandem Development Street or Route
Goy't Lot Grid Number	SE Corner of Intersection of N. Hubbard St. and E. Brown S
Grid Location	City, State, Zip Code
ft.	Milwaukee, WI 53212
	Facility Well No. and/or Name (If Applicable) WI Unique Well No.
Milwaukee Street Address of Well	STS-3 Reason For Abandonment
SE Corner of Intersection of N. Hubbard St. and E. Brown St.	Temporary Soil Boring
City, Village	Date of Abandonment
Milwaukee	10/16/02
WELL/DRILLHOLE/BOREHOLE INFORMATION	
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet)
(Date) 10/16/2002	Pump & Piping Removed? Yes No Not Applicable Liner(s) Removed? Yes No Not Applicable
Monitoring Well Construction Report Available?	Screen Removed? Yes \(\sum \) Not Applicable Yes \(\sum \) No \(\text{Not Applicable} \)
☐ Water Well ☐ Yes ☐ No	Casing Left in Place? Yes No
☐ Drillhole	If No, Explain
□ Borehole □	
	Was Casing Cut Off Below Surface?
Construction Type:	Did Sealing Material Rise to Surface? Yes No
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (Specify) ☐ GeoProbe	Did Material Settle After 24 Hours? Yes No If Yes, Was Hole Retopped? Yes No
Other (Specify) Geof Tode	
Formation Type:	(5) Required Method of Placing Sealing Material
Unconsolidated Formation Bedrock	☐ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped ☐ Dump Bailer ☐ Other (Explain)
Total Wall Dorot (A)	
Total Well Depth (ft) Casing Diameter (in.) (From groundsurface) Casing Depth (ft.)	(6) Sealing Materials For monitoring wells and Neat Cement Grout monitoring well boreholes only
Carring a spar (ca)	Sand-Cement (Concrete) Grout
Lower Drillhole Diameter (in.)	Concrete Bentonite Pellets
	☐ Clay-Sand Slurry ☐ Granular Bentonite
Was Well Annular Space Grouted? Yes No Unknown	Bentonite-Sand Slurry Bentonite-Cement Grout
If Yes, To What Depth? Feet	Chipped Bentonite
(7) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight
Native Soil	Surface 0.5
Chipped Bentonite	0.5 8.0
(8) Comments	
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY
STS Consultants Ltd.	Date Received/Inspected District/County
Signature of Person Doing Work Date Signed	
10-22-02 Street 10-22-02	Reviewer/Inspector Complying Work
Street of Route Telephone Number 11425 W. Lake Park Drive 414-359-3030	Follow-up Necessary Noncomplying Work
City, State, Zip Code Milwaukee, WI 53224	1 Onow-up (*cccosary

WELL/DRILLHOLE/BOREHOLE ABANDONMEN' Form 3300-5B Rev. 4-97

All abandonment work shall be performed in accordance with the provisions of Chapters NR 811, NR 812 or 141, Wis. Admin. Code, whichever is applicable.

(1) GENERAL INFORMATION	(2) FACILITY NAME Tandem Development 87185EA								
Well/Drillhole/Borehole County	Original Well Owner (If Known)								
Location Milwaukee	Tandem Development								
∑ E	Present Well Owner								
SE 1/4 of NE 1/4 of Sec. 20 ; T. 7 N; R. 22 W (If Applicable)	Tandem Development								
(If Applicable)	Street or Route								
Gov't Lot Grid Number	SE Corner of Intersection of N. Hubbard St. and E. Brown S								
Grid Location	City, State, Zip Code								
ft. \[\text{N.} \] S., \[\text{L.} \] ft. \[\text{E.} \] W.	Milwaukee, WI 53212								
Civil Town Name	Facility Well No. and/or Name (If Applicable) WI Unique Well No.								
Milwaukee	STS-4								
Street Address of Well	Reason For Abandonment								
SE Corner of Intersection of N. Hubbard St. and E. Brown St. City, Village	Temporary Soil Boring Date of Abandonment								
• •	1								
Milwaukee WELL/DRILLHOLE/BOREHOLE INFORMATION	10/16/02								
	(4) Doubh to Water (Foot)								
(3) Original Well/Drillhole/Borehole Construction Completed On	(4) Depth to Water (Feet) Yes No Not Applicable								
(Date) 10/16/2002	Pump & Piping Removed?								
☐ Monitoring Well Construction Report Available?	Screen Removed?								
☐ Water Well ☐ Yes ☒ No	Casing Left in Place? Yes No								
Drillhole	If No, Explain								
Borehole	II No, Explain								
ZZ Potetiole	Was Casing Cut Off Below Surface? Yes No								
Construction Type:	Did Sealing Material Rise to Surface? Yes No								
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug	Did Material Settle After 24 Hours? Yes No								
Other (Specify) GeoProbe	If Yes, Was Hole Retopped? Yes No								
23 Other (Speetry)									
Formation Type:	(5) Required Method of Placing Sealing Material								
☐ Unconsolidated Formation ☐ Bedrock	Conductor Pipe - Gravity Conductor Pipe - Pumped								
	☐ Dump Bailer ☐ Other (Explain)								
Total Well Depth (ft) Casing Diameter (in.)	(6) Sealing Materials For monitoring wells and								
(From groundsurface) Casing Depth (ft.)	Neat Cement Grout monitoring well boreholes only								
T	Sand-Cement (Concrete) Grout								
Lower Drillhole Diameter (in.)	Concrete Bentonite Pellets								
Was Well Annular Space Grouted? Yes No Unknown	Clay-Sand Slurry Granular Bentonite								
Was Well Annular Space Grouted?	Bentonite-Sand Slurry Bentonite-Cement Grout								
11 Tes, To what Depth?	Chipped Bentonite								
(7) Sealing Material Used	From (Ft.) To (Ft.) Mix Ratio or Mud Weight								
Scaling Waterial Oscu	Troil (1 t.) To (1 t.)								
Native Soil	Surface 0.5								
Native Soft	Surface 0.5								
Chipped Bentonite	0.5 6.0								
Chipped Bentonite	0.5 0.0								
(8) Comments									
**************************************	(10) POD BYID OD GOVERNMY VOD OVER 1								
(9) Name of Person or Firm Doing Sealing Work	(10) FOR DNR OR COUNTY USE ONLY								
STS Consultants Ltd. Signature of Person Doing Work Date Signed	Date Received/Inspected District/County								
A /	Paristratification								
Street or Your Talanhara Number	Reviewer/Inspector Complying Work								
Street or Rout Telephone Number 11425 W. Lake Park Drive 414-359-3030	Follow up Necessary								
City, State, Zip Code	Follow-up Necessary								
Milwaukee, WI 53224									

Route To:

Watershed/Wastewater

SOIL BORING LOG INFORMATION Form 4400-122 Rev. 5-97

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Facili	ty/Proj	ect Na	me						License	/Perm	it/Mon	itoring	y Numb	er	Borin	g Num	ber		
				ent 8718														<u>W-1</u>	
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Facili	ty ID			1	ounty				County C	ode			/City/ o	r Villag	ge				
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This fo	rm is a	uthori	zed by	Chapters 28	81, 283, 2	289, 29	91, 292, 293	3, 295, and	1 299, Wi	is. Stat	s. Con	npletio	ns of th	is form	is man	datory.	. Failu	re to fi	le this form m

Waste Management ☐

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 be used for any other purpose. NOTE: See instructions for more information, including where the completed for should be sent.

Number and Type Length Att. & Recovered (in) Blow Counts Blow Counts U S C S U S C S U S C S U S C S U S C S U S C S Comparessive Content C	RQD/ Comments
Aumber and Type congram Att. & Counts Slow)/ ıments
Aumber and Type cength Att Secovered Slow County Slow)/ nment
Alumb And Tyles and Tyles	\sim \approx
	RQI
Possible Fill: Silty Medium Sand, trace coal fragments - dark gray brown - moist	
to wet	
sš M 18 i E	
Sandy Silt, trace gravel - gray - moist to wet	
7 SS WOH 20 WOH 20 WH 20	
7 SS WOH 20 WOH 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	
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Silty Clay little grovel groy brown	
Silty Clay, little gravel - gray brown - moist	
8	
8 SS 24 3 E 23 CL CL 0.0	
END OF BORING	
Boring advanced to 25.5 ft. by hollow stem auger.	
Groundwater monitoring well installed to 25 feet on 10/29/02.	

SOIL BORING LOG INFORMATION

Form 4400

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0-1	22			R	ev.	. 5-	97			

Watershed/Wastewater Waste Management [Route To: Other Remediation/Redevelopmen Page Facility/Project Name License/Permit/Monitoring Number Boring Number Tandem Development 87185EA MW-2 Boring Drilled By (Firm name and name of crew chief) Date Drilling Completed Drilling Method Date Drilling Started Giles Engineering Associates, Inc. 10/29/2002 10/29/2002 **HSA** WI Unique Well No. DNR Well ID No. Common Well Name Final Static Water Level Surface Elevation Borehole Diameter Feet PK562 8.3 Inches MW-2 (Check if estimated:) Local Grid Location (If applicable) Boring Location or Local Grid Origin Lat. State Plane S/C/N □ и □ E SE Feet D S Feet 🗌 W 1/4 of NE 20, N, R 22 E Long. 1/4 of Section Facility ID Civil Town/City/ or Village County County Code Milwaukee 41 Milwaukee Sample Soil Properties Length Att. & Recovered (in) Soil/Rock Description Compressive Strength Blow Counts Depth In Feet Length Att. And Geologic Origin For Moisture Content PID/FID Graphic Log Plasticity Index USCS Diagram Each Major Unit Liquid Limit P 200 Well I SS 24 Fill: Silty Clay, trace gravel - brown -16 moist 5 Fill: Silty Fine to Coarse Sand - brown --2 2 SS 24 6 0.0 18 Fill: Fine to Coarse Sand, little gravel and 6 3 slag - brown - moist -3 4 Possible Fill: Silty Fine Sand, trace to some clay, trace gravel - brown - moist 3 SS 24 22 0.0 3 4 5 5 7 SM 0.0 4 SS 2 3 3 2 - 8 ٠9 Possible Fill: Sandy Silt, trace charcoal 10 24 0.0 2 2 1 and possible brick fragments - brown -SS 18 moist 11

i nercoy certify that the information on th	s form is true and correct to the oest	of my knowledge.	
Signature	Firm STS Co	•	Tel: (414) 359-303
	11425 We	st Lake Park Drive, Milwaukee, WI 53224	Fax: (414) 359-082

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form m 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 be used for any other purpose. NOTE: See instructions for more information, including where the completed for should be sent.

Boring 1		ber	MW	Use only as an attachment to Form 4400)-122.						~		ge 2		2
Number and Type	Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	cs	Graphic	. 20	Well Diagram	PID/FID	Compressive Strength			Plasticity seith		RQD/ Comments
and and	Rec	Blo	Dep		S D	Gra	Log	We Dia	PIC	S ts	Co	Liquid Limit	Plastic Index	P 200	Co. RQ
6 SS	24 12	3 2 1 1 1	13 -14 -15 -16 -17 -18 -19 -20 -21 -22	Possible Fill: Sand and Gravel, some silt, possible brick fragments - gray brown - wet	ML				0.0						
8 SS	24 12	1 1 2 2 2		Fine to Coarse Sandy Silt, possible trace coal - dark brown gray - moist to wet END OF BORING Boring advanced to 25.5 ft. by hollow stem auger. Groundwater monitoring well installed to 25 feet on 10/29/02.	ML				0.0						

SOIL BORING LOG INFORMATION

Form 4400-122

Rev. 5-97 Route To: Watershed/Wastewater Waste Management Other 🗌 Remediation/Redevelopmen Page 1 of 2 Facility/Project Name License/Permit/Monitoring Number Boring Number Tandem Development 87185EA MW-3 Boring Drilled By (Firm name and name of crew chief) Date Drilling Started Date Drilling Completed Drilling Method Giles Engineering Associates, Inc. 10/29/2002 10/29/2002 **HSA** WI Unique Well No. DNR Well ID No. Common Well Name Final Static Water Level Surface Elevation Borehole Diameter PK563 MW-3 8.3 Inches Feet Boring Location or Local Grid Origin Local Grid Location (If applicable) (Check if estimated: \(\) Lat. State Plane S/C/N \square E SE 1/4 of NE 20, т 7 N, R 22 E Long. Feet S Feet W 1/4 of Section Civil Town/City/ or Village Facility ID County County Code 41 Milwaukee Milwaukee Sample Soil Properties Soil/Rock Description Recovered (in) Compressive Strength Depth In Feet Blow Counts Length Att. And Geologic Origin For RQD/ Comments Plasticity Index PID/FID Moisture Content Graphic Log Each Major Unit Liquid Limit P 200 Well 1 SS 24 12 6 7 Fill: Clayey Silt, trace sand and gravel brown - moist 12 10 -1 ٠2 2 SS 24 10 Fill: Concrete Rubble, little red brick 0.0 24 fragments, metal bolt - gray - moist 40 -3 48 3 SS 24 42 4.3 9 6 .7 Fill: Sandy Silt, some red brick 24 1999 4 7 9 fragments, trace wood and coal - brown -SS 16 -8 moist - petroleum odor 9 Fill: Sandy Silt, trace brick fragments and 10 WOH 7.3 24 coal - gray - moist SS 10

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

-11

3

Signature Firm STS Consultants, Ltd. Tel: (414) 359-3030 Fax: (414) 359-0822 11425 West Lake Park Drive, Milwaukee, WI 53224

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form m 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 be used for any other purpose. NOTE: See instructions for more information, including where the completed for should be sent.

Department of Natural Resources

SOIL BORING LOG INFORMATIC

Form 4400-122 Rev. 5-97

			<u>R</u>	oute To:	Watershed/\ Remediation			Wast Othe	e Mana r 🗌	igemen	ıt 🗌									
							•									Pa	ge 1	of	2	
		ject Na						Licens	e/Perm	it/Mon	itorin	g Nu	mbe	r	Borin	g Num	ber			
Bori	nden ng Dril	led By	(Firm r	ent 871	85EA name of crew of	hief)		Date F	rilling	Started	1		D	te Dril	ling Co	omplete		$\frac{W-3}{ D_{ril} }$	lling Method	
			(*	idillo dila l	mine of elem (JIII (2)		Date	/IIIIIIg	Startee			100	ne Din	mg CC	mpieu	, u		iiiig ivioiiiou	
Gi	les E	nginee	ering A	Associate						29/200					10/29/2002				HSA	
WIU	-	Well N K563		DNR W	Vell ID No.	i	on Well Name	Final S	Final Static Water Level Surface Eleva					В		rehole Diameter				
Bori				 Grid Origi	n (Check		MW-3 ated: □)		***						Feet Grid L	ocation	(If app		Inches	
	e Plane			J.1.2 J.1.8.	(01.001.		S/C/N	Lat.		<u> </u>	<u>'</u> -			L.oou.	Ond D	1 🔲			_ □ E	
SE		4 of 1	VE	1/4 of Sect		<u>t 7</u>	n, r 22 e	Lor		<u> </u>	<u> </u>					t 🗆 S			Feet 🗌 W	
Facil	ity ID			i	County			County (Code				// or	Villag	e					
Sa	mple	1	1	[I	Milwaukee			41	1	Mil	waul	cee		J	Call	Prop	artias			
<u></u>					Soil/R	ock Des	crintian								2011	ГРГОР	ernes		-	
	II. &	unts	Feet				rigin For			1				ive					<u> </u>	
ber Fype	th A	Ş	h In			h Major	•		CS	hic		E I	-بان	oress gth	ture	. e	icity		/ meni	
Number and Type	Length Att. &	Blow Counts	Depth In Feet			-			n s c	Graphic	Well	Jag	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments	
I SS	24	6	-	Fill: (Clayey Silt,	trace s	and and gra	ivel -					0.0	0 07	20					
SS	12	12	E		ı - moist		Ü													
		10	-1																	
V	V		E																	
2 SS	24	10	-2	Fill: C	Concrete Ri	ıbble, l	ittle red bri	ck		 		0	0.0							
SS	6	24	E				gray - moist													
- 1/		48	-3																	
	1		E												İ	;		:		
L	1		-4											ĺ						
			E												:					
3 SS	24	42	_5									4	.3							
ss	12	9	E																	
IX		3	- 6																	
			F]										ĺ						
L			7																	
4 <u> </u>	24	4	F	Fill: S	Sandy Silt, s	ome re	ed brick					19	99	1	İ					
4 SS	16	4 7 9 3	- 8	moist -	- petroleum	vood ar odor	nd coal - bro	own -								,				
IX		3	F		F													ĺ		
- //			<u>-</u> 9																	
L			E												- 1					
5	24	WOH	- 10				ick fragmer	nts and				7	.3							
5 SS \	10	1	E	coai - g	gray - mois	L														
IX		3	-11									Ĭ		- 1						
- //			ţ.									,					-			

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

 Signature
 Firm
 STS Consultants, Ltd.
 Tel: (414) 359-3030

 11425 West Lake Park Drive, Milwaukee, WI 53224
 Fax: (414) 359-0822

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form m 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 be used for any other purpose. NOTE: See instructions for more information, including where the completed for should be sent.

Borin	g Num	ıber	MW	V-3 Use only as an attachment to Form 440	0-122.	_						ge 2		2
	nple									Soil	Prop	erties		•
	% (E)	l str	eet	Soil/Rock Description And Geologic Origin For					ive					S
er ype	h Att	Cour	In F	Each Major Unit	S]ic	am	Į į	oress gth	ture	- E	icity		/ ment
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	11 8		E						1 0 0,					
			- - 13											
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		İ	F 14											
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6	24 20	2	-15					0.0						
SS V	20	2 2 2 2	-											
Iλ		2	<u> </u>											
Γ			17											
			E											
			-18											
į			Ė	Fill: Sand and Silt, little brick fragments and glass - gray - moist to wet										
			- 19	and glass - gray - moist to wet								i		
			<u>-</u> 20					0.0						
7 SS \	24 15	2 2 1	-					0.0						
IX.		1	-21											
/ \			<u> -</u>											
_		١	—22 —	·										
			<u> </u>											
			24											
			È											
8 SS /	24	WOH 2	-25					0.0						
22	21	2	- -26											
M	!	1	- ²⁰											
Ц			-27	END OF BORING			-							
				Boring advanced to 25.5 ft. by hollow stem auger.										
				Groundwater monitoring well installed to										
				25 feet on 10/29/02.										
į					1	I	I	'	1	' '		1		'

Department of Natural Resources Route To:	Watershed/Wastewater□	Waste Management ☐	MONITORING WELL CONSTRUCTION
	Remediation/Redevelopmen	Other 🗌	Form 4400-113A Rev. 6-97
Facility/Project Name	Local Grid Location of Well	пг	Well Name
Tandem Development 87185EA	ft. 🗆 S. —	ft. 🗆 🛱.	MW-1
Facility License, Permit or Monitoring No.	Grid Origin Location	(Check if estimated:)	MW-1 Wis. Unique Well NdDNR Well Number PK561
			PK561
Facility ID	St. Plane ft. N, _ Section Location of Waste/Source	ft. E. S/C/N	Date Well Installed
Type of Well	Section Location of Waste/Source	ce pr	10/29/2002
	SE 1/4 of NE 1/4 of Sec. 2	20, T. 7 N, R. 22 WW	Well Installed By: (Person's Name and Fi B.J., Brian, Keith
Well Code 11/mw Distance Well Is From Waste/Source	1 Location of 77 on tenantite to 77 a	31C/ C/ C/ C/ C/ C/ C/ C/ C/ C/ C/ C/ C/ C	B.J., Brian, Keith
Boundary ft.	u □ Upgradient s □ S d □ Downgradient n □ N		Giles Engineering Associates, Inc.
A. Protective pipe, top elevation B. Well casing, top elevation	ft. MSL	1. Cap and lock?	⊠ Yes □ No
B. Well casing, top elevation	ft. MSL	2. Protective cover	
J	ft, MSL \	a. Inside diamete b. Length:	er: $\frac{9.0}{1.0}$ i ₁
		c. Material:	Steel ⊠ 04
D. Surface seal, bottom ft. MSI	or 1.0 ft.	10 10 10 10 10 10 10 10 10 10 10 10 10 1	Other 🗆 💆
12. USC classification of soil near screen:	2000	d. Additional pro	otection?
GP□ GM□ GC□ GW□ SV	W SP D	If yes, describ	e:
SM□ SC□ ML⊠ MH□ Cl Bedrock□	LU CHU	3. Surface seal:	Bentonite 30
13. Sieve analysis attached? ☐ Yes	⊠No	3. Surface seal:	Concrete ⊠ 01
		A Matarial hatrus	Other 🗆 🚉
14. Drilling method used: Rotar Hollow Stem Auge	y L130	4. Material between	Bentonite 3 0
Othe		X	Sand Other 🖾
	y □ 5 0 er ⋈ 4 1 er □ □ □ r □ 0 1 e ⋈ 9 9 ⋈ No	5 Annular space se	al: a. Granular Bentonite ⊠ 3 3
15. Drilling fluid used: Water □ 0 2 Ai	r 🗆 0 1	O1 "	a. Grantial Bentonite \(\sigma \) 3.5 and weight Bentonite-sand slurry \(\sigma \) 3.5
Drilling Mud □ 0 3 Non	e ⊠99 🐰 🥻		and weight Bentonite slurry 3 1
16 8 191			nite Bentonite-cement grout 50
16. Drilling additives used? ☐ Yes	⊠No	eFt³	volume added for any of the above
Describe		f. How installed	
17. Source of water (attach analysis):			Tremie pumped □ 02
17. Source of water (actuell unarysis).			Gravity ⊠ 08
	<u></u> J	6. Bentonite seal:	
	10 .		3/8 in. □ 1/2 in. Bentonite pellets ⊠ 3.2
E. Bentonite seal, top ft. MSL	or ft. \	C	Other Dal: Manufacturer, product name and mesh s
F. Fine sand, top ft. MSL	an 12.0 a. \	7. Pine saile materia	Red Flint #45-55
r. rine sand, top it. MSL	or 12.0 ft.	a b. Volume added	
G. Filter pack, top ft. MSL	or 13.0 ft.	8. Filter pack mater	ial: Manufacturer, product name and mesh
• • •		a	Red Flint #30
H. Screen joint, top ft. MSL	or15.0 ft	b. Volume added	
	35.0	9. Well casing:	Flush threaded PVC schedule 40 ⊠ 23
I. Well bottom ft. MSL	or23.0 ft		Flush threaded PVC schedule 80 24
I Elles and between G MCI	25.5 6	10 5 1 1 1 1	PVC Schedule 40
J. Filter pack, bottom ft. MSL	or n.	10. Screen material:_ a. Screen Type:	Factory cut 🗵 1 1
K. Borehole, bottom ft. MSL	or 27.0 ft	a. Screen Type:	Continuous slot 0 1
ii. Botoliolo, bottolii ii. Wibb	··· — ··· \		Other □
L. Borehole, diameter8.3 in.		b. Manufacturer	Diedrich
		c. Slot size:	_0.010_ in.
M. O.D. well casing 2.38 in.		d. Slotted length	
-		11. Backfill material	· · · · · · · · · · · · · · · · · · ·
N. I.D. well casing 2.07 in.			Other 🗆 💆
I hereby certify that the information on this signature			
O'BHALUIC	Firm STS Consul	tants Ltd.	Tel:
		VID 600 1.1	Fax:

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports 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 the forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be contained as a second of the complete depending on the program and conduct involved.

State of Wisconsin Department of Natural Resources Route To:	Watershed/Wastewater□	Waste Management ☐	MONITORING WELL CONSTRUCTION
Koule 10.	Remediation/Redevelopmen	Other	Form 4400-113A Rev. 6-97
Facility/Project Name	Local Grid Location of Well		Well Name
Tandem Development 87185EA	ft. S. —	ft. □ E. □ W.	MW-2 Wis. Unique Well NqDNR Well Number
Facility License, Permit or Monitoring No.	Grid Origin Location	(Check if estimated: [])	Wis. Unique Well NoDNR Well Number
	Lat Lon	g or	PK562
Facility ID	St. Plane ft. N, Section Location of Waste/Source	ft. E. S/C/N	Date Well Installed
T. CYL II	Section Location of Waste/Source	, , , , , , , , , , , , , , , , , , ,	10/29/2002
Type of Well	SE 1/4 of NE 1/4 of Sec. 20	0 , T. 7 N, R. 22 \square W	Well Installed By: (Person's Name and Fi
Well Code 11/mw Distance Well Is From Waste/Source	Location of Well Relative to Wast	e/Source	Well Installed By: (Person's Name and Fi B.J., Brian, Keith
D 1	l a c obstaction o c ou	20814410111	Giles Engineering Associates, Inc.
A. Protective pipe, top elevation B. Well casing, top elevation	ft MSI.	1. Cap and lock?	✓ Yes □ No
D. Wall and a standard and	6 NG	2. Protective cover	pipe:
		a. Inside diamete	er: 9.0 in
C. Land surface elevation	ft. MSL	b. Length:	
D. Surface seal, bottom ft. MSI	or <u>1.0</u> ft.	C. Material.	Other 🗆 💆
12. USC classification of soil near screen:		d. Additional pro	otection?
GP GM GC GW SY	wo spol 🖊 📉 🍴	If yes, describ	e:
SM SC ML MH C	LO CHO W W	3. Surface seal:	Bentonite 30
Bedrock□		3. Surface sear.	Concrete 🛛 01
13. Sieve analysis attached? ☐ Yes	1 1884 1885		Other 🗆
14. Drilling method used: Rotar		4. Material betweer	well casing and protective pipe:
Hollow Stem Aug			Bentonite ☐ 3 0 Sand Other ☑ ☐
Office			
15. Drilling fluid used: Water □ 0 2 Ai	r 🗆 0 1		al: a. Granular Bentonite \(\triangle 3 \) 3 and weight . Bentonite-sand slurry \(\triangle 3 \) 5
Drilling Mud □ 0 3 Non			and weight Bentonite slurry 3 1
			nite Bentonite-cement grout \square 50
16. Drilling additives used? ☐ Yes	⊠ No		volume added for any of the above
Describe		f. How installed	
17. Source of water (attach analysis):			Tremie pumped □ 0 2
17. Bource of water (attach analysis).			Gravity ⊠ 08
		6. Bentonite seal:	
T. D	10 0		/8 in. □ 1/2 in. Bentonite pellets ⊠ 3.2
E. Bentonite seal, top ft. MSL	or tt.	7 Fine sand materia	Other Daniel Manufacturer, product name and mesh s
F. Fine sand, top ft. MSL	or 12.0 ft.	a	Red Flint #45-55
1.1 mo sand, top	or 12.0 ft.	b. Volume added	
G. Filter pack, top ft. MSL	or 13.0 ft.	8. Filter pack mater	ial: Manufacturer, product name and mesh
		a	Red Flint #30
H. Screen joint, top ft. MSL	or15.0 ft.	b. Volume added	
7 W 11 6 MOV	25.0 6	9. Well casing:	Flush threaded PVC schedule 40 \omega 2 3
I. Well bottom ft. MSL	or		Flush threaded PVC schedule 80 24 Other Other
J. Filter pack, bottom ft. MSL	or25.0 ft.	10. Screen material:	19 Abra 5
7. Their pack, bottom It. Wild	01 11.	a. Screen Type:	Factory cut 🗵 11
K. Borehole, bottom ft. MSL	or <u>27.0</u> ft.	Sereen 1,per	Continuous slot 0 1
			Other 🗆 🖾
L. Borehole, diameter8.3 in.		b. Manufacturer	Diedrich
2.22		c. Slot size:	0.010 in.
M. O.D. well casing $\frac{2.38}{}$ in.		d. Slotted length:	
N. I.D. well 2.07		i i . Backiiii materiai	(below filter pack): None ≥ 14
N. I.D. well casing 2.07 in.			Omor Li
I hereby certify that the information on this	form is true and correct to the best	of my knowledge.	
Signature	Firm STS Consult		Tel:
	5 15 Consult		Fax:
Please complete both Forms 4400-113A and 4400	113D and rature to the appropriate DN	P office and bureau Completion	of these reports is required by she 160 281 283

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports 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 the forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should sent.

State of Wisconsin Department of Natural Resources Route To:	Watershed/Wastewater□	Waste Management□	MONITORING WELL CONSTRUCTION
Route 10.	Remediation/Redevelopmen		Form 4400-113A Rev. 6-97
Facility/Project Name	Local Grid Location of Well	nc	Well Name
Tandem Development 87185EA	ft. S. —	ft. 🗀 🛱 .	MW-3 Wis. Unique Well NdDNR Well Number PK563
Facility License, Permit or Monitoring No.	Grid Origin Location	(Check if estimated:)	Wis. Unique Well NdDNR Well Number
E. III. ID			PK563 Date Well Installed
Facility ID	St. Plane ft. N,	ft. E. S/C/N	
Type of Well	Section Location of Waste/Sou	irce ⊠ F	Well Installed Ry: (Person's Name and Ei
Well Code 11/mw	SE_1/4 of NE_ 1/4 of Sec	<u></u>	Well Installed By: (Person's Name and Fi B.J., Brian, Keith
Distance Well Is From Waste/Source		/aste/Source Sidegradient	B.J., Brian, Keith
Don't be			Giles Engineering Associates, Inc.
A. Protective pipe, top elevation B. Well casing top elevation	ft. MSL	1. Cap and lock?	. Yes □ No
B. Well casing, top elevation	ft. MSL	2. Protective cover a. Inside diamete	· ·
C. Land surface elevation	ft. MSL \	b. Length:	
		c. Material:	Steel ⊠ 04
D. Surface seal, bottom ft. MSI	or it.		Other 🗆 🔼
12. USC classification of soil near screen:	2/20/20/2	d. Additional pro	otection? ☐ Yes ☒ No
	W SP D	If yes, describe	e:
SM□ SC□ ML⊠ MH□ Cl Bedrock□	LU CHU	3. Surface seal:	Bentonite 3 0
13. Sieve analysis attached? ☐ Yes	⊠ No ₩		Concrete ⊠ 0 1 Other □ □
14. Drilling method used: Rotar	₩	4 Material between	well casing and protective pipe:
Hollow Stem Aug		4. Waterial between	Bentonite 3 0
Othe			Sand Other 🗵
		5 Annular space se	eal: a. Granular Bentonite ⊠ 3 3
15. Drilling fluid used: Water □ 0 2 A	ir □ 0 1		nud weight . Bentonite-sand slurry 3 5
Drilling Mud □ 0 3 Non	e ⊠99 ※	cLbs/gal n	nud weight Bentonite slurry 3 1
16 Dailling additions used?	⊠ No	d% Bentor	nite Bentonite-cement grout 5 0
16. Drilling additives used? ☐ Yes	Z 100	ma .	volume added for any of the above
Describe		f. How installed	
17. Source of water (attach analysis):			Tremie pumped 0 2
(Gravity ⊠ 08
**************************************		6. Bentonite seal:	a. Bentonite granules ☐ 3 3 3/8 in. ☐ 1/2 in. Bentonite pellets ☒ 3 2
E Domtonita and ton & MCI	10 &		Other \square
E. Bentonite seal, top ft. MSL	01 11.	.7. Fine sand materia	al: Manufacturer, product name and mesh si
F. Fine sand, top ft. MSL	or 12.0 ft.	■ / / a	Red Flint #45-55
		7. Fine sand materia a. b. Volume added	\mathfrak{h}^3
G. Filter pack, top ft. MSL	or 12.0 ft.	8. Filter pack mater	ial: Manufacturer, product name and mesh
H. Screen joint, top ft. MSL	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	a b. Volume added	Red Flint #30
ii. Screen joint, top it. wist	01	9. Well casing:	Flush threaded PVC schedule 40 \(\triangle 2 3
I. Well bottom ft. MSL	or 25.0 ft.	7: Won ousning.	Flush threaded PVC schedule 80 \square 24
			Other 🗆 🔍
J. Filter pack, bottom ft. MSL	or25.5 ft	10. Screen material:	PVC Schedule 40
•		a. Screen Type:	Factory cut 🖾 1 1
K. Borehole, bottom ft. MSL	or <u>27.0</u> ft.		Continuous slot \Box 0 1
			Other 🗆 💆
L. Borehole, diameter8.3 in.	VIIII	b. Manufacturer	Diedrich
220		c. Slot size:	0.010 in. 10.0 ft.
M. O.D. well casing $\frac{2.38}{}$ in.		d. Slotted length	
N. I.D. well casing 2.07 in.		ii. Dackiiii material	(below filter pack): None & 14
N. I.D. well casing 2.07 in.			Onioi - I
I hereby certify that the information on this	form is true and correct to the be	est of my knowledge	
Signature	Firm STS Cons		Tel:
	010 000	MIMILO LIVA	Fax:

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports 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 the forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be contained.

MONITORING	MELL DE VELOPME
Form 4400-113B	Rev. 6-97

	ion/Rec		-	Other 🗆	133	7.11 N	_			
Facility/Project Name		ľ	-		"	Vell Name	3.6	TT / 1		•
Facility License Permit or Monitoring Number	ŁA			Milwaukee	lumba		IVI IDNIR Wal	W-1	··	
racinty License, Fernint or Monitoring Number			-			<u>r</u>	DIAK MEI	i Number		
Mile to the second seco	Remediation/Redevelopment Other									
1. Can this well be purged dry?	\boxtimes	Yes	□ No	11 Depth to Water	Be	fore Dev	elopment	After D	evelopn	nent
2. Well development method:					•		23 Q1 A		24.9:	5 A
surged with bailer and bailed	×	4 1		well casing)	a,		23.71 11.		27.7.	J 1t.
surged with bailer and pumped										
surged with block and bailed		42		Date	Ъ.	11/05	/2002	11/	05/200	2
surged with block and pumped		62								
surged with block, bailed, and pumped		70		•						
compressed air		20		Time	c.	01:0	00 pm	0	1:10 pn	n
bailed only		10								
pumped only		5 1		12. Sediment in wel	1	0.	.0 inches		0.0 in	ches
pumped slowly				bottom						
other	. 🗆			13. Water clarity				Clear ⊠ Turbid □	2 0 2 5	
3. Time spent developing well		1	0 min.		(De	escribe)		(Describe)		
4. Depth of well (from top of well casing)		25.	0 ft.			WW.				
5. Inside diameter of well		2.0	7 in.		_					
6 Maluma a Country in City and and and								-		
casing		1.	O gal		-			-		
ousing .			o gan.	Fill in if drilling fluid	de war	a usad and	wall is at so	did wasta fa	oilitu	
7. 37-1		Λ	51	I in in ii dining nak	13 WCI	c uscu and	well is at se	mu wasic ia	cility.	
7. Volume of water removed from well		0.	J gai.	14 Total suspended			mg/l			ng/l
8. Volume of water added (if any)			gal.	_			1116/1		1	116/1
9. Source of water added	_			15. COD			mg/l		n	ng/l
				16. Well developed b	v: Per	son's Nam	e and Firm			
10. Analysis performed on water added?	Y	Yes	□ No		-					
(If yes, attach results)				Bryan I	Bergr	nann				
				STS Co	onsult	tants, Lto	1.			
17. Additional comments on development:				······································						
Removed 0.5 gallons, then dry.										
•										
Facility Address or Owner/Responsible Party Add	dress			I hereby certify that t	he abo	we informs	ation is true	and correct	to the hes	et of m
Name:							ition is true	and correct	to the bes	
D										

Street: 20 West Hubbard, Suite 2W									-1.25	_
City/State/Zip: Chicago, IL 60610				Firm: STS C	Consu	ıltants Lt	:d			

(If yes, attach results)

17. Additional comments on development:

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97 Watershed/Wastewater Route To: Waste Management Remediation/Redevelopmen□ Other Facility/Project Name County Well Name Milwaukee MW-2 Tandem Development 87185EA Wis. Unique Well Number Facility License, Permit or Monitoring Number County Code DNR Well Number 41 PK562 ☐ Yes ☒ No Before Development After Development 1. Can this well be purged dry? 11. Depth to Water (from top of 2. Well development method: 20.15 ft. 20.15 ft. well casing) surged with bailer and bailed \boxtimes 4 1 surged with bailer and pumped 61 11/05/2002 Date h 11/05/2002 surged with block and bailed 42 62 surged with block and pumped surged with block, bailed, and pumped 70 Time 01:20 pm 02:45 pm 20 compressed air bailed only 10 pumped only 5 1 12. Sediment in well 0.0 inches 0.0 inches bottom pumped slowly 50 13. Water clarity Clear

10 Clear ⊠ 20 other _ Turbid ⊠ 15 Turbid 🗆 25 (Describe) (Describe) 85 min. 3. Time spent developing well Gray 25.0 ft. 4. Depth of well (from top of well casing) 5. Inside diameter of well 2.07 in. 6. Volume of water in filter pack and well 4.5 gal. casing Fill in if drilling fluids were used and well is at solid waste facility: 25.0 gal. 7. Volume of water removed from well 14. Total suspended mg/l mg/l solids 8. Volume of water added (if any) gal. 15. COD mg/l mg/l 9. Source of water added 16. Well developed by: Person's Name and Firm 10. Analysis performed on water added? ☐ Yes ☐ No Bryan Bergmann

STS Consultants, Ltd.

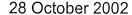
MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 6-97

Route To: Watershed				Waste Mana	gement L	J			
Remediati	on/Red		•	Other 🗌					****
Facility/Project Name			County			Well N			
Tandem Development 87185E	A_			<u> Iilwaukee</u>				W-3	
Facility License, Permit or Monitoring Number			County Code	Wis. Unique			DNR Wel	l Number	
			41	<u> </u>	PK56	3			***************************************
1. Can this well be purged dry?		Yes	⊠ No	11. Depth to	Water	Before	Developmen	After De	velopment
2. Well development method:				(from to			19,67 ft.		10 (7 a
surged with bailer and bailed	⊠	4 1	1	well casi		a.	19.07 ft.		19.67 ft.
surged with bailer and pumped		6 1							
surged with block and bailed		4 2		Date		b. 11	/05/2002	11/0	05/2002
surged with block and pumped		6.2							
surged with block, bailed, and pumped		70							
compressed air		2 0		Time		c.	01:25 pm	02	2:15 pm
bailed only		10		1			1		1
pumped only		5 1		12. Sediment	in well		0.0 inches		0.0 inches
pumped slowly		5 0	1	bottom					
other		<u>ai</u>	₹ -	13. Water cla	rity	Clear (Turbid (Clear ⊠ Turbid □	2 0 2 5
3. Time spent developing well			50 min.			(Describe	7	(Describe)	
4. Depth of well (from top of well casing)		25	5.0 ft.						
5. Inside diameter of well		2.	07 in.			***************************************			
6. Volume of water in filter pack and well casing		4	.9 gal.						
ousg		•	., 6	Fill in if drilli	no fluids	were used	and well is at so	olid waste fac	ilitv [.]
7. Volume of water removed from well		25	.0 gal.	14. Total sus			mg/l		-
8. Volume of water added (if any)			gal.	solids	pended		IIIg/1		mg/l
9. Source of water added				15. COD			mg/l		mg/l
				16. Well devel	oped by:	: Person's l	Name and Firm		
10. Analysis performed on water added?		Yes	□ No	В	ryan B	ergmann			
(If yes, attach results)				S'	TS Cor	isultants,	Ltd.		
17. Additional comments on development:									
Facility Address or Owner/Responsible Party Add	ress			I hereby certif	y that the	e above inf	ormation is true	and correct to	the best of n
Name:				knowledge.					
Firm: Brown Street II LLC				Signature: _					
Street: 20 West Hubbard, Suite 2W		***************************************		Print Name: _					····
City/State/Zip: Chicago, IL 60610				Firm: _	STS C	onsultant	s Ltd.		



APPENDIX D

Laboratory Results of Collected Soil and Groundwater Samples





Mark Mejac STS Consultants 11425 S. Lake Park Dr. Milwaukee, WI 53224 RE: 87185EA Southeast

ANALYTICAL

Enclosed are the results of analyses for samples received by the laboratory on 10/21/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Great Lakes Analytical

Andrea Stathas

Project Manager

State of Wisconsin Certification Numbers:

Great Lakes Analytical--Oak Creek, WI: 341000330 Great Lakes Analytical--Buffalo Grove, IL: 999917160



Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]

Project Manager: Mark Mejac

Reported: 10/28/02 16:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
STS-1 6-8'	W210241-01	Soil	10/16/02 00:00	10/21/02 12:11
STS-2 8-9.5'	W210241-02	Soil	10/16/02 00:00	10/21/02 12:11
STS-3 6-8'	W210241-03	Soil	10/16/02 00:00	10/21/02 12:11

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

11425 S. Lake Park Dr.

Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none] Project Manager: Mark Mejac

Reported: 10/28/02 16:50

General Chemistry

Great Lakes Analytical--Buffalo Grove

Analyte	l Result	Reporting Limit Unit	s Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-1 6-8' (W210241-01) Soil	Sampled: 10/16/02 00:00	Received: 10/2	1/02 12:11					_
Total Organic Carbon	13200	100 mg/kg	dry 1	2100523	10/25/02	10/28/02	EPA 9060	Е
STS-2 8-9.5' (W210241-02) Soi	l Sampled: 10/16/02 00:0	0 Received: 10	/21/02 12:11					
Total Organic Carbon	12100	100 mg/kg	iry I	2100523	10/25/02	10/28/02	EPA 9060	Е
STS-3 6-8' (W210241-03) Soil	Sampled: 10/16/02 00:00	Received: 10/2	1/02 12:11					
Total Organic Carbon	8990	100 mg/kg	lry I	2100523	10/25/02	10/28/02	EPA 9060	Е

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Stathas, Project Manager

Page 2 of 6



Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 16:50

Percent Solids

Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-1 6-8' (W210241-01) Soil	Sampled: 10/16/02 00:00	Received	l: 10/21/	02 12:11					
% Solids	82.9	0.0100	%	1	2100527	10/25/02	10/25/02	5035 7.5	
STS-2 8-9.5' (W210241-02) Soil	Sampled: 10/16/02 00:0	0 Receive	ed: 10/2	1/02 12:11					
% Solids	89.6	0.0100	%	1	2100527	10/25/02	10/25/02	5035 7.5	
STS-3 6-8' (W210241-03) Soil	Sampled: 10/16/02 00:00	Received	: 10/21/	02 12:11					
% Solids	77.5	0.0100	%	1	2100527	10/25/02	10/25/02	5035 7.5	

Great Lakes Analytical--Oak Creek

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STS Consultants

11425 S. Lake Park Dr.

Project: 87185EA Southeast

Project Number: [none]

Milwaukee WI, 53224 Project Manager: Mark Mejac

Reported: 10/28/02 16:50

General Chemistry - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2100523 - General Prep WC										
Blank (2100523-BLK1)				Prepared:	10/25/02	Analyzed:	10/28/02			
Total Organic Carbon	ND	100	mg/kg wet							
LCS (2100523-BS1)				Prepared:	10/25/02	Analyzed:	10/28/02			
Total Organic Carbon	581	100	mg/kg wet	500		116	80-120			
Duplicate (2100523-DUP1)	Sou	ırce: B21035	58-01	Prepared:	10/25/02	Analyzed:	10/28/02			
Total Organic Carbon	10600	100	mg/kg dry		12100			13.2	20	

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Cendrea Starthas



Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 16:50

Percent Solids - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2100527 - General Prep			····		_					
Blank (2100527-BLK1)				Prepared o	& Analyze	d: 10/25/0)2			
% Solids	0.0940	0.0100	%							
Blank (2100527-BLK2)				Prepared &	& Analyze	ed: 10/25/0)2			
% Solids	0.121	0.0100	%							
Blank (2100527-BLK3)				Prepared &	& Analyze	ed: 10/25/0)2			
% Solids	0.113	0.0100	%							
Blank (2100527-BLK4)				Prepared &	& Analyze	d: 10/25/0)2			
% Solids	ND	0.0100	%	- A		,				
Duplicate (2100527-DUP1)				Prepared &	& Analyze	d: 10/25/0)2			
% Solids	79.4	0.0100	%						20	
Duplicate (2100527-DUP2)				Prepared &	& Analyze	d: 10/25/0)2			
% Solids	83.8	0.0100	%						20	
Duplicate (2100527-DUP3)				Prepared &	& Analyze	d: 10/25/0	2			
% Solids	83.8	0.0100	%			AND AND AND AND AND AND AND AND AND AND			20	
Duplicate (2100527-DUP4)				Prepared &	& Analyze	d: 10/25/0	2			
% Solids	87.8	0.0100	%						20	

Great Lakes Analytical--Oak Creek

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Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 16:50

Notes and Definitions

E This result is estimated. The analysis gave a final result that is above the calibration range.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

L This quality control measurement is below the laboratory established limit.

H This quality control measurement is above the laboratory established limit.

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Stathas, Project Manager

Page 6 of 6



CHAIN OF CUSTODY REPORT

0 Bu Park
Buffalo Grove, IL 60089-4505
(847) 808-7766
FAX (847) 808-7772

14 . Ryε oad Oak Creek, WI 53154 (414) 570-9460 FAX (414) 570-9461

Client: SB Consultants, Ltd.				Bill To:									TAT	TAT: STD.) 4 DAY 3					3 DAY 2 DAY 1 DAY < 24 HRS.					
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28 October 2002

Mark Mejac STS Consultants 11425 S. Lake Park Dr. Milwaukee, WI 53224 RE: 87185EA Southeast

Enclosed are the results of analyses for samples received by the laboratory on 10/17/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Great Lakes Analytical

Andrea Stathas Project Manager

State of Wisconsin Certification Numbers:

Great Lakes Analytical--Oak Creek, WI: 341000330 Great Lakes Analytical--Buffalo Grove, IL: 999917160 STS Consultants 11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received		
STS-1;2-4'	W210203-01	Soil	10/16/02 00:00	10/17/02 09:40		
STS-2;2-4'	W210203-02	Soil	10/16/02 00:00	10/17/02 09:40		
STS-3;2-4'	W210203-03	Soil	10/16/02 00:00	10/17/02 09:40		
STS-4;2.5-4'	W210203-04	Soil	10/16/02 00:00	10/17/02 09:40		
MeOH Blank	W210203-05	MeOH Blank	10/16/02 00:00	10/17/02 09:40		

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

11425 S. Lake Park Dr.

Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Great Lakes AnalyticalOak Creek											
Analyte	Result	leporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes		
STS-1;2-4' (W210203-01) Soil	Sampled: 10/16/02 00:00	Receive	d: 10/17/0	2 09:40							
Benzene	ND	25.0	ug/kg dry	50	2100157	10/24/02	10/24/02	EPA 8021B			
Bromobenzene	ND	25.0	**	n	H	"	11	н			
Bromodichloromethane	ND	25.0	ff	11	n	Ħ	II.	ti			
n-Butylbenzene	ND	25.0	n	U	u	11	"	U			
sec-Butylbenzene	ND	25.0	U	"	U	U	11	U			
tert-Butylbenzene	ND	25.0	n.	Ħ	и	U	0	11			
Carbon tetrachloride	ND	25.0	It	"	**	tt	"	tt.			
Chlorobenzene	ND	25.0	11	11	Ð	н	11	u			
Chloroethane	ND	25.0	"	Ü	u .	н	Ħ	II.			
Chloroform	ND	25.0	11	II	O	"	11	11			
Chloromethane	ND	25.0	11	17	It	II .	O O	n			
2-Chlorotoluene	ND	25.0	H	11	11	11	0	Ħ			
4-Chlorotoluene	ND	25.0	Ħ	11	ŧŧ	н	H	II.			
Dibromochloromethane	ND	25.0	11	11	11	tt	Ħ	n			
1,2-Dibromo-3-chloropropane	ND	25.0	11	11	**	n	Ħ	n			
1,2-Dibromoethane	ND	25.0	11	11	**	11	11	н			
1,2-Dichlorobenzene	ND	25.0	0		11	n	IJ	#			
1,3-Dichlorobenzene	ND	25.0	"	11	н	"	0	0			
1,4-Dichlorobenzene	ND	25.0	"	н	#1	В	u .	u			
Dichlorodifluoromethane	ND	25.0	11		11	и	11	u			
1,1-Dichloroethane	ND	25.0	11	11	II.	11	11	н			
1,2-Dichloroethane	ND	25.0	11	11	11	**	ti	н			
1,1-Dichloroethene	ND	25.0	"	e	11	"	11	н			
cis-1,2-Dichloroethene	ND	25.0	**	H	15	11	n.	11			
trans-1,2-Dichloroethene	ND	25.0	n	Ħ	н	Ħ	n.	O			
1,2-Dichloropropane	ND	25.0	н	n	n	Ħ	I)	II.			
1,3-Dichloropropane	ND	25.0	н	n	0	11	n	II .			
2,2-Dichloropropane	ND	25.0	11	n	11	n n	11	n			
Di-isopropyl ether	ND	25.0	11	11	н	11	ŧı	tt			
Ethylbenzene	ND	25.0	11	11	n	n	0	11			
Hexachlorobutadiene	ND	25.0		17	tt.	**	11	11			
Isopropylbenzene	ND	25.0	e e	**	11	11	11	11			
p-Isopropyltoluene	ND	25.0	#	rt	11	**	Ħ	"			
Methylene chloride	ND	100	**	H	11	п	n	н			
Methyl tert-butyl ether	ND	25.0	11	11	"	u	11	н			
Naphthalene	ND	25.0	11	11	ıı.	u u	11	II			
n-Propylbenzene	ND	25.0	11	u	H	n .	11	**			
1,1,2,2-Tetrachloroethane	ND ND	25.0	"	11	11	0	u	11			
Tetrachloroethene	ND ND	25.0	"	"	н	H	U	11			
i cu acinorocinene	עאו	23.0									

Great Lakes Analytical-Oak Creek

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021

Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-1;2-4' (W210203-01) Soil	Sampled: 10/16/02 00:00	Receive	d: 10/17/0	2 09:40			www.austofor	-	
Toluene	ND	25.0	ug/kg dry	50	2100157	10/24/02	10/24/02	EPA 8021B	
1,2,3-Trichlorobenzene	ND	25.0	11	н	n	n	н	n n	
1,2,4-Trichlorobenzene	ND	25.0	11	10	n	11	fi .	11	
1,1,1-Trichloroethane	ND	25.0	11	u	11	II .	11	н	
1,1,2-Trichloroethane	ND	25.0	11		11	II.	n	11	
Trichloroethene	ND	25.0	11	11	"	11	"	17	
Trichlorofluoromethane	ND	25.0	II .	#	n	н	H	n	
1,2,4-Trimethylbenzene	ND	25.0	ii .	11	**	11	11	Ħ	
1,3,5-Trimethylbenzene	ND	25.0	H	**	#	11	11	11	
Vinyl chloride	ND	25.0	н	11	11	u u	n	11	
Total Xylenes	ND	25.0	U	Ħ	u	11	n	11	
Surrogate: 1-Cl-4-FB (ELCD)		104 %	80-1	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		103 %	80-1		"	"	"	"	
STS-2;2-4' (W210203-02) Soil	Sampled: 10/16/02 00:00		d: 10/17/02	2 09:40					
Benzene	ND	25.0	ug/kg dry	50	2100157	10/24/02	10/24/02	EPA 8021B	
Bromobenzene	ND	25.0	11	11	11	"	n	11	
Bromodichloromethane	ND	25.0	11	н	0	H	0	11	,
n-Butylbenzene	ND	25.0	11	н	0	н	11	n .	
sec-Butylbenzene	ND	25.0	и	n	n	11	H	0	
tert-Butylbenzene	ND	25.0	н	n	n	11	н	"	
Carbon tetrachloride	ND	25.0	11	n	11	n	н	н .	
Chlorobenzene	ND	25.0	11	n	11	u u	п	н	
Chloroethane	ND	25.0	u .	н	11	n	11	n	
Chloroform	ND	25.0	It	н	n	"	11	11	
Chloromethane	ND	25.0	н	n	n	11	II .	n	
2-Chlorotoluene	ND	25.0	11	0	H	11	11	U	
4-Chlorotoluene	ND	25.0	11	11	11	U	11	u	
Dibromochloromethane	ND	25.0	n	11	11	n	tt .	H	
1,2-Dibromo-3-chloropropane	ND	25.0	н	11	0	н	11	н	
1,2-Dibromoethane	ND	25.0	н	11	"	11	11	n	
1,2-Dichlorobenzene	ND	25.0	"	11	17	H	"	11	
1,3-Dichlorobenzene	ND	25.0	9	11	H	11	"	0	
1,4-Dichlorobenzene	ND	25.0	"	u	н	11	11	11	
Dichlorodifluoromethane	ND	25.0	"	Ħ	н	11	n	n	
I,I-Dichloroethane	ND	25.0	п	"	11	Ħ	и	u	
1,2-Dichloroethane	ND	25.0	ft	н	11	n	u	и	
1,1-Dichloroethene	ND	25.0	11	11	н	- 11	ii.	н	
cis-1,2-Dichloroethene	ND	25.0	11	11	H	11	**	11	
,2 270110100110110	110	25.0							

Great Lakes Analytical-Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Unduly Stark

11425 S. Lake Park Dr.

Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none] Project Manager: Mark Mejac

Reported: 10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021

Great Lakes Analytical--Oak Creek

Analyte	Result	eporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-2;2-4' (W210203-02) Soil	Sampled: 10/16/02 00:00	Receive	d: 10/17/0	2 09:40					
trans-1,2-Dichloroethene	ND	25.0	ug/kg dry	50	2100157	10/24/02	10/24/02	EPA 8021B	
1,2-Dichloropropane	ND	25.0	#	B	11	11	11	ŧI	
1,3-Dichloropropane	ND	25.0	U.	Ħ	11	U	11	II.	
2,2-Dichloropropane	ND	25.0	Ħ	u	0	n	**	tt .	
Di-isopropyl ether	ND	25.0	Ħ	11	н	11	II.	n	
Ethylbenzene	27.8	25.0	11	11	11	n	н	· ·	
Hexachlorobutadiene	ND	25.0	н	***	n	tt	11	ıı	
Isopropylbenzene	ND	25.0	н	17	11	u	n	n	
p-Isopropyltoluene	ND	25.0	11	н	u	n	н	II .	
Methylene chloride	ND	100	11	11	10	**	11	n	
Methyl tert-butyl ether	ND	25.0	**	11	11	11	II.	H	
Naphthalene	ND	25.0	H	11	11	"	#	0	
n-Propylbenzene	ND	25.0	**	п	11	н	H	n .	
1,1,2,2-Tetrachloroethane	ND	25.0	n n	**	0	or .	11	#	
Tetrachloroethene	ND	25.0	н	0	"	U	n	U	
Toluene	35.5	25.0	н	If	11	,"	11	u , ,	
1,2,3-Trichlorobenzene	ND	25.0	11	H	U	11	11	Ħ	
1,2,4-Trichlorobenzene	ND	25.0	17	"	п	•	II.	tt.	
1,1,1-Trichloroethane	ND	25.0	"	"	n .	"	н		
1,1,2-Trichloroethane	ND	25.0	H	Ħ	II .	#1	**	u .	
Trichloroethene	ND	25.0	11	11	17	11	11	Ħ	
Trichlorofluoromethane	ND	25.0	n	11	17	n	II .	11	
1,2,4-Trimethylbenzene	ND	25.0	IF	u	11	n	II .	11	
1,3,5-Trimethylbenzene	. ND	25.0	н	H	11	**	11	H	
Vinyl chloride	ND	25.0	11	11	0	11	**	11	
Total Xylenes	108	25.0	0	11	0	"	"	†1	
Surrogate: 1-Cl-4-FB (ELCD)		91.7%	80-1.	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		90.3 %	80-1.	20	"	"	"	"	

Great Lakes Analytical-Oak Creek

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	F Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-3;2-4' (W210203-03) Soil	Sampled: 10/16/02 00:00	Receive	ed: 10/17/0	2 09:40					
Benzene	ND	25.0	ug/kg dry	50	2100157	10/24/02	10/24/02	EPA 8021B	
Bromobenzene	ND	25.0	11	0	н	"	H	11	
Bromodichloromethane	ND	25.0	*	**	**	0	10	n	
n-Butylbenzene	ND	25.0	11	11	n	н	0	0	
sec-Butylbenzene	ND	25.0	11	11	11	U	11	11	
tert-Butylbenzene	ND	25.0	11	11	"	**	11	**	
Carbon tetrachloride	ND	25.0	11	9	н	"	ı,	TI .	
Chlorobenzene	ND	25.0	n	n.	#	n	и	н	
Chloroethane	ND	25.0	It	11	**	n	11	н	
Chloroform	ND	25.0	11	11	Ħ	н	n	**	
Chloromethane	ND	25.0	0	н	Ħ	11	ti.	"	
2-Chlorotoluene	ND	25.0	н	н	9	0	n	n .	
4-Chlorotoluene	ND	25.0	11	11	0	n	n	И	
Dibromochloromethane	ND	25.0	0	u .	11	**	"	II.	
1,2-Dibromo-3-chloropropane	ND	25.0	n	17	11	D	#	11	
1,2-Dibromoethane	ND	25.0	n	n	n	**	***	11	
1,2-Dichlorobenzene	ND	25.0	11	u	н	н	. #	II .	
1,3-Dichlorobenzene	ND	25.0	H	n	17	n	11	н	
1,4-Dichlorobenzene	ND	25.0	11	u	"	11	11	11	
Dichlorodifluoromethane	ND	25.0	11	"	н	н	11	o o	
1,1-Dichloroethane	ND	25.0	11	n	11	11	71	н	
1,2-Dichloroethane	ND	25.0	#	н	n	"	11	11	
1,1-Dichloroethene	ND	25.0	U		11	**	n	0	
cis-1,2-Dichloroethene	ND	25.0	11	15	11	н	H	n	
trans-1,2-Dichloroethene	ND	25.0	Ħ	Ħ	u	11	11	"	
1,2-Dichloropropane	ND	25.0	11	O O	н	If	n	II .	
1,3-Dichloropropane	ND	25.0	n	0	11	11	н	u .	
2,2-Dichloropropane	ND	25.0	tt.	tf	11	11	n	H	
Di-isopropyl ether	ND	25.0	11	11	н	11	n	11	
Ethylbenzene	ND	25.0	n	H	11	11	11	н	
Hexachlorobutadiene	ND	25.0	н	н	H	ŧI	v	n	
Isopropylbenzene	ND	25.0	II .	11	н	n	0	u	
p-Isopropyltoluene	ND	25.0	11	11	11	н	n	n	
Methylene chloride	ND	100	н	"	n	11	21	и	
Methyl tert-butyl ether	ND	25.0	II.	11	#	**	0	n	
Naphthalene	ND	25.0	II .	n	10	н	H	"	
n-Propylbenzene	ND	25.0	н	н	n	a	н	n	
1,1,2,2-Tetrachloroethane	ND	25.0	11	11	н	11	11	"	
Tetrachloroethene	ND	25.0	"	n	10	н	u	n .	

Great Lakes Analytical--Oak Creek

Project: 87185EA Southeast

Project Number: [none] Project Manager: Mark Mejac Reported: 10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

		eporting	Analyth						
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-3;2-4' (W210203-03) Soil	Sampled: 10/16/02 00:00	Receive	d: 10/17/0	2 09:40					
Toluene	ND	25.0	ug/kg dry	50	2100157	10/24/02	10/24/02	EPA 8021B	
1,2,3-Trichlorobenzene	ND	25.0	n	**	**	11	#	0	
1,2,4-Trichlorobenzene	ND	25.0	11	9	11	11	11	"	
1,1,1-Trichloroethane	ND	25.0	11	11	"	н	n	"	
1,1,2-Trichloroethane	ND	25.0	u,	Pt .	"	Ħ	H	11	
Trichloroethene	ND	25.0	n	11	Ħ	"	"	II.	
Trichlorofluoromethane	ND	25.0	н	0	ŧ	n	U	u	
1,2,4-Trimethylbenzene	ND	25.0	ŧŧ	U	11	Ħ	u	H	
1,3,5-Trimethylbenzene	ND	25.0	ii	17	B	n	н	ii.	
Vinyl chloride	ND	25.0	0	**	**	u	и	11	
Total Xylenes	ND	25.0	I)	Ħ	"	0	0	11	
Surrogate: 1-Cl-4-FB (ELCD)		93.9 %	80-1	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		88.6 %	80-1		"	"	"	"	
STS-4;2.5-4' (W210203-04) Soil	Sampled: 10/16/02 00:00		/ed: 10/17/	02 09:40					
Benzene	ND		ug/kg dry	50	2100157	10/24/02	10/25/02	EPA 8021B	
Bromobenzene	ND	25.0	"	11	н	11	a	u .	
Bromodichloromethane	ND	25.0	II	11	11	0	11	"	
n-Butylbenzene	213	25.0	H	n	11	II.	0	**	
sec-Butylbenzene	34.1	25.0	11	"	0	II	"	н	
tert-Butylbenzene	ND	25.0	11	u	11	11	ti	н	
Carbon tetrachloride	ND	25.0	11		11	11	н	er e	
Chlorobenzene	ND	25.0	11	n	n	11	rt .	u u	
Chloroethane	ND	25.0	D)	11	"	"	11	0	
Chloroform	ND	25.0	n,	н	11	tt.	11	O.	
Chloromethane	ND	25.0	11	11	0	н	11	H	
2-Chlorotoluene	ND	25.0	It	**	11	"	n	#	
4-Chlorotoluene	ND	25.0	Tr.	**	Ħ	n	Ħ	11	
Dibromochloromethane	ND	25.0	11	**	H	11	н	11	
1,2-Dibromo-3-chloropropane	ND	25.0	11	rt	11	11	11	u	
1,2-Dibromoethane	ND	25.0	ti .	II	11	O.	n	u	
1,2-Dichlorobenzene	ND	25.0	11	11	"	11	u	n .	
1,3-Dichlorobenzene	ND	25.0	n	11	**	11	u	н	
1,4-Dichlorobenzene	ND	25.0	n	11	H.	н	u	u .	
Dichlorodifluoromethane	ND	25.0	n	"	11	н	11	**	
1,1-Dichloroethane	ND ND	25.0	и	11	11	н	н	t)	
1,2-Dichloroethane	ND	25.0	18	11	н	ti .	н	11	
1,1-Dichloroethene	ND ND	25.0	łi .	н	11	n	н	n .	
	ND ND	25.0	11	н	10	11	н	11	
cis-1,2-Dichloroethene	מא	∠3.0	**	•	**	•	•		

Great Lakes Analytical-Oak Creek

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	porting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-4;2.5-4' (W210203-04) Soil	Sampled: 10/16/02 00:00	Receiv	ved: 10/17/	02 09:40					
trans-1,2-Dichloroethene	ND	25.0	ug/kg dry	50	2100157	10/24/02	10/25/02	EPA 8021B	
1,2-Dichloropropane	ND	25.0	"	11	"	"	n		
1,3-Dichloropropane	ND	25.0	"	u	U	II .	"	"	
2,2-Dichloropropane	ND	25.0	"	u	11	u	11	u	
Di-isopropyl ether	ND	25.0	"	"	11	U	11	u	
Ethylbenzene	34.8	25.0	n	II .	"	11	"	"	
Hexachlorobutadiene	ND	25.0	"	11	"	.11	"	ii .	
Isopropylbenzene	ND	25.0	"	"	11	11	11	u .	
p-Isopropyltoluene	ND	25.0	"			"	11	"	
Methylene chloride	ND	100	11	"	"	11	n.	"	
Methyl tert-butyl ether	ND	25.0	"	"	"	11	u .	"	
Naphthalene	19500	500	n .	1000	"	и	10/25/02	n .	
n-Propylbenzene	ND	25.0	II .	50	"	"	10/25/02	"	
1,1,2,2-Tetrachloroethane	ND	25.0	Ü	"	п	11	u	n.	
Tetrachloroethene	ND	25.0	0	11	"	"	0	"	
Toluene	ND	25.0	"		11	"	0	II .	
1,2,3-Trichlorobenzene	ND	25.0		11	11	11	. "	."	
1,2,4-Trichlorobenzene	ND	25.0	"	11		"	11	"	
1,1,1-Trichloroethane	ND	25.0	"	11	ti.	n	"	"	
1,1,2-Trichloroethane	ND	25.0	".	"	Ü	"	,,,	n-	
Trichloroethene	ND	25.0	"	11	0	н	"	11	
Trichlorofluoromethane	ND	25.0	"		0	"	"	"	
1,2,4-Trimethylbenzene	103	25.0	"		0	"	u	II .	
1,3,5-Trimethylbenzene	ND	25.0	II	11		II.	n	n .	
Vinyl chloride	ND	25.0	W	11	n	H.	11	u .	
Total Xylenes	ND	25.0	и	"	11	u .	n	u	
Surrogate: 1-Cl-4-FB (ELCD)	9	0.2 %	80-1.	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)	8	7.7 %	80-1.	20	"	"	"	"	

Great Lakes Analytical-Oak Creek

Central Stathas

STS Consultants 11425 S. Lake Park Dr.

Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Percent Solids

Great Lakes Analytical--Oak Creek

		eporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-1;2-4' (W210203-01) Soil	Sampled: 10/16/02 00:00	Received	: 10/17/	02 09:40					
% Solids	89.1	0.0100	%	1	2100129	10/18/02	10/21/02	5035 7.5	
STS-2;2-4' (W210203-02) Soil	Sampled: 10/16/02 00:00	Received	: 10/17/	02 09:40					
% Solids	91.9	0.0100	%	1	2100129	10/18/02	10/21/02	5035 7.5	
STS-3;2-4' (W210203-03) Soil	Sampled: 10/16/02 00:00	Received	: 10/17/0	02 09:40					
% Solids	88.4	0.0100	%	1	2100129	10/18/02	10/21/02	5035 7.5	
STS-4;2.5-4' (W210203-04) Soil	Sampled: 10/16/02 00:00) Receive	d: 10/17	7/02 09:40					
% Solids	82.3	0.0100	%	1	2100129	10/18/02	10/21/02	5035 7.5	

Great Lakes Analytical-Oak Creek

Pendleg Stathas

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]

Reported: 10/28/02 08:38

Project Manager: Mark Mejac

Total Metals by EPA 6000/7000 Series Methods

Great Lakes Analytical--Buffalo Grove

Analyte	Result	Leporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-1;2-4' (W210203-01) Soil	Sampled: 10/16/02 00:00	Received	i: 10/17/0	2 09:40					
Lead	156	1.12	mg/kg dry	1	2100474	10/23/02	10/24/02	EPA 6010B	
STS-2;2-4' (W210203-02) Soil	Sampled: 10/16/02 00:00	Received	1: 10/17/0	2 09:40					
Lead	76.4	1.09	mg/kg dry	1	2100474	10/23/02	10/24/02	EPA 6010B	
STS-3;2-4' (W210203-03) Soil	Sampled: 10/16/02 00:00	Received	l: 10/17/0	2 09:40					
Lead	8.47	1.13	mg/kg dry	1	2100474	10/23/02	10/24/02	EPA 6010B	
STS-4;2.5-4' (W210203-04) Soil	Sampled: 10/16/02 00:00) Receiv	ed: 10/17/	02 09:40				3	
Lead	404	1.22 1	ng/kg dry	1	2100474	10/23/02	10/24/02	EPA 6010B	

Great Lakes Analytical-Oak Creek

11425 S. Lake Park Dr.

Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none]

Project Manager: Mark Mejac

Reported:

10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021 (Blanks)

Great Lakes Analytical--Oak Creek

Great Lakes AnalyticalOak Creek											
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes		
MeOH Blank (W210203-05) MeOH Blank	Sampled:	10/16/02 00:	00 Rece	ived: 10/17	7/02 09:40						
Benzene	ND	25.0	ug/l	50	2100158	10/24/02	10/24/02	EPA 8021B			
Bromobenzene	ND	25.0	u	H	н	**	n	Ħ			
Bromodichloromethane	ND	25.0	II.	u	н	Ħ	11	Ħ			
n-Butylbenzene	ND	25.0	"	U	11	u u	11	0			
sec-Butylbenzene	ND	25.0	11	и	II	0	U	H			
tert-Butylbenzene	ND	25.0	II .	#	H	ш	"	n ·			
Carbon tetrachloride	ND	25.0	Ħ	11	п	ti .	n .	ti			
Chlorobenzene	ND	25.0	11	**	11	0	U	u			
Chloroethane	ND	25.0	11	n	U	n.	11	н			
Chloroform	ND	25.0	11	it	17	H	n	11			
Chloromethane	ND	25.0	n	n	н	n	it	Ħ			
2-Chlorotoluene	ND	25.0	n	n	n	n	II.	u			
4-Chlorotoluene	ND	25.0	H	II	n n	n	U				
Dibromochloromethane	ND	25.0	ŧı	н	**	0	U	Ħ			
1,2-Dibromo-3-chloropropane	ND	25.0	u	11	er e	**	11	*			
1,2-Dibromoethane	ND	25.0	u u	11	**	н	11	'n			
1,2-Dichlorobenzene	ND	25.0	tt	11	H	11	u	"			
1,3-Dichlorobenzene	ND	25.0	. "	11	**	11	u u	tt.			
1,4-Dichlorobenzene	ND	25.0	11	н	11	n .	11	11			
Dichlorodifluoromethane	ND	25.0	ti .	11	0	н	11	H			
1,1-Dichloroethane	ND	25.0	n	11	Ħ	н	11	11			
1,2-Dichloroethane	ND	25.0	n	II.	н	11	u	11			
1,1-Dichloroethene	ND	25.0	15	11	tt	**	u	n			
cis-1,2-Dichloroethene	ND	25.0	#	н	11	11	H	tr			
trans-1,2-Dichloroethene	ND	25.0	11	11	"	H	e	11			
1,2-Dichloropropane	ND	25.0	0	11	II	11	11	н			
1,3-Dichloropropane	ND	25.0	11	u	н	TI .	0	n			
2,2-Dichloropropane	ND	25.0	н	U	н	11	11	н			
Di-isopropyl ether	ND	25.0	H	н	н	u	H	н			
Ethylbenzene	ND	25.0	#1	H	"	11	**	**			
Hexachlorobutadiene	ND	25.0	11	11	n	н	tt.	**			
Isopropylbenzene	ND	25.0	11	n	"	H		н			
p-Isopropyltoluene	ND	25.0	0	II.	н	"	n	ti .			
Methylene chloride	ND	100	**	"	11	11	H	11			
Methyl tert-butyl ether	ND	10.0	п	н	11	0	If	0			
Naphthalene	ND	25.0	11	11	11	11	11	11			
n-Propylbenzene	ND	25.0	11	11		"	u u	H			
1,1,2,2-Tetrachloroethane	ND	25.0	o o	"	n	н	o o	#			
Tetrachloroethene	ND	25.0	.,	**	11	W	"	и			
1 CH aCHIOLOGUICHE	ND	43.0									

Great Lakes Analytical-Oak Creek

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

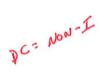
Reported: 10/28/02 08:38

WDNR Volatile Organic Compounds by Method 8021 (Blanks)

Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MeOH Blank (W210203-05) MeOH Blank	Sampled:	10/16/02 00:	00 Rece	ived: 10/1	7/02 09:40				
Toluene	ND	25.0	ug/l	50	2100158	10/24/02	10/24/02	EPA 8021B	
1,2,3-Trichlorobenzene	ND	25.0	11	11	11	0	11	11	
1,2,4-Trichlorobenzene	ND	25.0	н	11	11	0	W	11	
1,1,1-Trichloroethane	ND	25.0	н	0	0	n	#	II .	
1,1,2-Trichloroethane	ND	25.0	н	n	"	Ħ	11	U	
Trichloroethene	ND	25.0	н	II .	"	н	11	n .	
Trichlorofluoromethane	ND	25.0	#1	11	н	H	11	11	
1,2,4-Trimethylbenzene	ND	25.0	n	"	n	н	11	n	
1,3,5-Trimethylbenzene	ND	25.0	н	н	"	H	11	n	
Vinyl chloride	ND	25.0	10	н	H	11	n	n	
Total Xylenes	ND	25.0	n	If	Ħ	11	U	н	
Surrogate: 1-Cl-4-FB (ELCD)		92.3 %	80-	120	"	,,	"	"	
Surrogate: 1-Cl-4-FB (PID)		96.5 %	80-	120	"	"	"	"	

Great Lakes Analytical-Oak Creek



11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Polynuclear Aromatic Compounds by EPA Method 8310

Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method		Note
STS-1;2-4' (W210203-01) Soil	Sampled: 10/16/02 00:	00 Receive	ed: 10/17/0	2 09:40						Q
Acenaphthene	1600	112	ug/kg dry	1	2100425	10/21/02	10/22/02	EPA 8310		
Acenaphthylene	275	224	· n	"	**	"	11	11		
Anthracene	168	112	11	"	11	11	и	11		
Benz (a) anthracene	396 💟	56.1	.0	11	Ŭ.	11	0.	"		
Benzo (a) pyrene	627 🦻	5.61	11		u.	"	11	. 11		
Benzo (b) fluoranthene	555 🗘	6 56.1	u	"	ii.	н -	U	"		
Benzo (ghi) perylene	333	112	11	"	11	11	H	II .		
Benzo (k) fluoranthene	218	112		"		IE	307	11		
Chrysene	564	112	11	11	н	11	11	II .		
Dibenz (a,h) anthracene	222 降	5.61	n		11	U.		II.		
Fluoranthene	1040	112	n	11	п	н	11	. "		
Fluorene	179	112	u			n	"	u.		
Indeno (1,2,3-cd) pyrene	328	56.1	u.	"	н	11	II .			
l-Methylnaphthalene	194	112	o.	11.		u		0		
2-Methylnaphthalene	782	112		"	n		и .			
Naphthalene	ND	112	U	"	11	11	и	"		
Phenanthrene	814	112	n	"	U	11	ï	11		
Pyrene	405	112		u	11	"	"	0		
Surrogate: Carbazole		242 %	14.9-	144	"	"	"	"	Н	
STS-2;2-4' (W210203-02) Soil	Sampled: 10/16/02 00:0	0 Receive	d: 10/17/02	2 09:40						QC
Acenaphthene	1040	109	ug/kg dry	1	2100425	10/21/02	10/22/02	EPA 8310		
Acenaphthylene	ND	218		.01	n	11	H.	11		
Anthracene	ND	109	"	11		"	H.	ш		
Benz (a) anthracene	411 D	54.4	11	U	"		n.	ш		
Benzo (a) pyrene	604	5.44	11	11	"	11	11	11		
Benzo (b) fluoranthene	514 P	54.4	ï	11	"	"	U	II.		
Benzo (ghi) perylene		(109	"	u		U	.01	"		
Benzo (k) fluoranthene	195	109	11	n	THE STATE OF THE S	m .	.0	. "		
Chrysene	502	109	и				n .	11		
Dibenz (a,h) anthracene	344	5.44	n	11	10	11	iii	Ti .		
luoranthene	769	109	11	n	W	II .		"		
luorene	ND	109	"	н	11	n	11	U		
ndeno (1,2,3-cd) pyrene	323 🌹	54.4	110	11	"		11			
(-,-,) PJ				11	11	n	"			
-Methylnaphthalene	ND	109								
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ND 347	109	Ü	11		u	"	"		

Great Lakes Analytical-Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Stathas, Project Manager

Page 12 of 21

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Polynuclear Aromatic Compounds by EPA Method 8310 Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit		Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-2;2-4' (W210203-02) Soil	Sampled: 10/16/02 00:00	Receive	ed: 10/17/0	2 09:40					QC
Phenanthrene	286	109	ug/kg dry	1	2100425	10/21/02	10/22/02	EPA 8310	1
Pyrene	320	109	20	.u	u	,U	n	.00	
Surrogate: Carbazole		94.3 %	14.9	-144	"	"	"	"	
STS-3;2-4' (W210203-03) Soil	Sampled: 10/16/02 00:00	Receive	ed: 10/17/0	2 09:40					QC
Acenaphthene	ND	113	ug/kg dry	1	2100425	10/21/02	10/23/02	EPA 8310	
Acenaphthylene	ND	226	n	и .	п	n	11	iii	
Anthracene	ND	113	n	11	"	11	11	"	
Benz (a) anthracene	ND	56.6	11	"	11	11	H.	u	
Benzo (a) pyrene	22.5	5.66	11	11	TI.	11	H.	"	
Benzo (b) fluoranthene	ND	56.6		"	, и		D.	11.	
Benzo (ghi) perylene	ND	113	100	н	11	10	II.	"	
Benzo (k) fluoranthene	ND	113	n	11	11	11	11	"	
Chrysene	ND	113	11	0		H	11		
Dibenz (a,h) anthracene	9.64	5.66	11	10	п	11	11	n.	
Fluoranthene	ND	113	"	o o	n	11	11	n .	
Fluorene	ND	113	11	n	II .	n	. 11	11	
Indeno (1,2,3-cd) pyrene	ND	56.6	u	11	U	u	u		
1-Methylnaphthalene	ND	113	"	n	u	n.	.0	311	
2-Methylnaphthalene	ND	113	Ti.	"		"	11	U	
Naphthalene	ND	113		u	"	.11	u	U	
Phenanthrene	ND	113				"	11	.00	
Pyrene	ND	113		u u	Ш	u u	п	11	
Surrogate: Carbazole		72.2 %	14.9-	144	"	"	"	"	

Great Lakes Analytical-Oak Creek

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Polynuclear Aromatic Compounds by EPA Method 8310

Great Lakes Analytical--Buffalo Grove

Analyte	Result	porting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-4;2.5-4' (W210203-04) Soil	Sampled: 10/16/02 00:00	Recei	ved: 10/17/	02 09:40			ā		QC
Acenaphthene	31700	12200	ug/kg dry	100	2100425	10/21/02	10/23/02	EPA 8310	
Acenaphthylene	4000 💪 🗸	2430	п		0	. 11	11		
Anthracene	16400	12200	"	"	"	n	II .	11	
Benz (a) anthracene	19400 💆 🗲	6080	n	0	11	"	"	ıı	
Benzo (a) pyrene	16500 🎖 🖰	608	.0	.11	"	U	11	u.	
Benzo (b) fluoranthene	13700	6080	11	11	U	O.	11.	11.	
Benzo (ghi) perylene	6190 00	1220	"	"		"	11	n	
Benzo (k) fluoranthene	7140	1220	II.	"	u	u	II.	u	
Chrysene	20100	12200	"	.00	"	11	11.		
Dibenz (a,h) anthracene	1920 D 6	608	II.	n	U	11		11	
Fluoranthene	145000 GW	12200	115	11	"	n.		n .	
Fluorene	11000	1220	Ü.	11	"	11	"	"	
Indeno (1,2,3-cd) pyrene	7740 降 🗲	6080	n	n	Ü	U	U	ıı	
1-Methylnaphthalene	9120	1220		"	n.		u		
2-Methylnaphthalene	18800	12200	u ,	"	II .		II .	. 0	
Naphthalene	2630 GW	1220	11		"	III	u .	п	
Phenanthrene	51000 وس ^{اړړ د}	12200	U	11	11	II .	n		
Pyrene	19900	12200	11	"	n .	0	0	11	
Surrogate: Carbazole	5	650 %	14.9-	44	"	"	"	"	Н

Great Lakes Analytical--Oak Creek

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Percent Solids

Great Lakes Analytical--Buffalo Grove

	R	eporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
STS-1;2-4' (W210203-01) Soil	Sampled: 10/16/02 00:00	Received	: 10/17/0	02 09:40					
% Solids	89.1	0.0100	%	l	2100470	10/23/02	10/25/02	5035 7.5	
STS-2;2-4' (W210203-02) Soil	Sampled: 10/16/02 00:00	Received	: 10/17/0	02 09:40					
% Solids	91.9	0.0100	0 6	1	2100470	10/23/02	10/25/02	5035 7.5	
STS-3;2-4' (W210203-03) Soil	Sampled: 10/16/02 00:00	Received	: 10/17/0	02 09:40					
% Solids	88.4	0.0100	%	1	2100470	10/23/02	10/25/02	5035 7.5	
STS-4;2.5-4' (W210203-04) Soil	Sampled: 10/16/02 00:00) Receive	ed: 10/17	//02 09:40					
% Solids	82.3	0.0100	%	1	2100470	10/23/02	10/25/02	5035 7.5	

Great Lakes Analytical--Oak Creek

11425 S. Lake Park Dr.

Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none]

Project Manager: Mark Mejac

Reported:

10/28/02 08:38

Percent Solids - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2100129 - Percent Solids									4	
Blank (2100129-BLK1)				Prepared:	10/18/02	Analyzed	: 10/21/02			
% Solids	ND	0.0100	%							
Duplicate (2100129-DUP1)	Sou	ırce: W2101	93-03	Prepared:	10/18/02	Analyzed	: 10/21/02			
% Solids	83.8	0.0100	%		81.5			2.78	20	

Great Lakes Analytical--Oak Creek

Pendina Station

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Total Metals by EPA 6000/7000 Series Methods - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit Un	Spike its Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2100474 - EPA 3050B									
Blank (2100474-BLK1)			Prepared	: 10/23/02	Analyzed	: 10/24/02			
Lead	ND	1.00 mg/kg	g wet						
LCS (2100474-BS1)			Prepared	: 10/23/02	Analyzed:	10/24/02			
Lead	201	1.00 mg/kg	wet 201		100	84-109			
Matrix Spike (2100474-MS1)	So	urce: W210203-01	Prepared	10/23/02	Analyzed:	10/24/02			
Lead	324	1.12 mg/kg	g dry 224	156	75.0	52-125			
Matrix Spike Dup (2100474-MSD1)	So	ırce: W210203-01	Prepared	10/23/02	Analyzed:	10/24/02			
Lead	305	1.12 mg/kg	dry 224	156	66.5	52-125	6.04	14	

Great Lakes Analytical-Oak Creek

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2100425 - EPA 3550B										
Blank (2100425-BLK1)				Prepared:	10/21/02	Analyzed	: 10/22/02			
Acenaphthene	ND	100	ug/kg wet							<u> </u>
Acenaphthylene	ND	200	11							
Anthracene	ND	100	#							
Benz (a) anthracene	ND	50.0	U							
Benzo (a) pyrene	ND	5.00	11							
Benzo (b) fluoranthene	ND	50.0	U							
Benzo (ghi) perylene	ND	100	11							
Benzo (k) fluoranthene	ND	100	"							
Chrysene	ND	100	11							
Dibenz (a,h) anthracene	ND	5.00	··							
Fluoranthene	ND	100	"							
Fluorene	ND	100	u .							
Indeno (1,2,3-cd) pyrene	ND	50.0	11							
l-Methylnaphthalene	ND	100	11							
2-Methylnaphthalene	ND	100	**							
Naphthalene	ND	100	91							
Phenanthrene	ND	100	11							
Pyrene	ND	100	11							
Surrogate: Carbazole	47.3		"	66.7		70.9	14.9-144			
LCS (2100425-BS1)				Prepared:	10/21/02	Analyzed:	10/22/02			
Acenaphthene	125	10.0	ug/kg wet	133		94.0	30.3-126			
Acenaphthylene	85.9	20.0	II .	133		64.6	75.8-175			L
Anthracene	101	10.0	н	133		75.9	45-115			
Benz (a) anthracene	120	5.00	II .	133		90.2	40.9-146			
Benzo (a) pyrene	115	0.500	n	133		86.5	10-150			
Benzo (b) fluoranthene	122	5.00	u	133		91.7	47.4-133			
Benzo (ghi) perylene	124	10.0	11	133		93.2	38-131			
Benzo (k) fluoranthene	126	10.0	11	133		94.7	49.1-137			
Chrysene	121	10.0	0	133		91.0	59.7-119			
Dibenz (a,h) anthracene	132	0.500	11	133		99.2	33.7-144			
Fluoranthene	96.6	10.0	**	133		72.6	52.3-126			
Fluorene	98.8	10.0	#	133		74.3	51-110			
ndeno (1,2,3-cd) pyrene	115	5.00		133		86.5	54.1-125			

Great Lakes Analytical-Oak Creek

India Status

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

A 1	D 1	Reporting	TILLIA	Spike	Source	0/ D.C.C	%REC	D.D.D.	RPD	N I
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2100425 - EPA 3550B										
LCS (2100425-BS1)				Prepared:	10/21/02	Analyzed	d: 10/22/02			
1-Methylnaphthalene	148	10.0	ug/kg wet	133		111	31.2-125	· · · · · · · · · · · · · · · · · · ·		
2-Methylnaphthalene	117	10.0	ti	133		88.0	33.3-119			
Naphthalene	104	10.0	"	133		78.2	43.3-136			
Phenanthrene	105	10.0	tt	133		78.9	36.3-142			
Pyrene	113	10.0	#	133		85.0	41.3-122			
Surrogate: Carbazole	50.2		"	66.7		75.3	14.9-144			
Matrix Spike (2100425-MS1)	So	urce: B2103	28-09	Prepared:	10/21/02	Analyzed	d: 10/22/02			
Acenaphthene	97.8	12.2	ug/kg dry	162	ND	60.4	10-140			
Acenaphthylene	100	24.4	H	162	ND	61.7	10-218			
Anthracene	84.7	12.2	n	162	ND	52.3	10-136			
Benz (a) anthracene	93.0	6.09	11	162	ND	57.4	10-152			
Benzo (a) pyrene	81.5	0.609	11	162	ND	50.3	10-132			
Benzo (b) fluoranthene	86.3	6.09	, 11	162	ND	53.3	10-140			
Benzo (ghi) perylene	77.2	12.2	11	162	ND	47.7	10-167			
Benzo (k) fluoranthene	89.5	12.2	"	162	ND	55.2	10-144			
Chrysene	94.5	12.2	0	162	ND	58.3	10-146			
Dibenz (a,h) anthracene	88.6	0.609	II .	162	ND	54.7	10-131			
Fluoranthene	91.2	12.2	"	162	14.0	47.7	10-153			
Fluorene	89.5	12.2	ii.	162	ND	55.2	10-125			
Indeno (1,2,3-cd) pyrene	72.2	6.09	11	162	ND	44.6	10-138			
I-Methylnaphthalene	112	12.2	**	162	ND	69.1	10-150			
2-Methylnaphthalene	99.9	12.2	H	162	ND	61.7	10-155			
Naphthalene	103	12.2	11	162	ND	63.6	10-158			
Phenanthrene	99.3	12.2	o.	162	ND	61.3	10-155			
Pyrene	95.1	12.2	11	162	ND	55.4	10-154			
Surrogate: Carbazole	57.1		"	81.2		70.3	14.9-144			

Great Lakes Analytical-Oak Creek

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2100425 - EPA 3550B										
Matrix Spike Dup (2100425-MSD1)	Sou	rce: B2103	28-09	Prepared:	10/21/02	Analyzed	l: 10/22/02			
Acenaphthene	112	12.2	ug/kg dry	162	ND	69.1	10-140	13.5	105	
Acenaphthylene	107	24.4	н	162	ND	66.0	10-218	6.76	59.8	
Anthracene	101	12.2	11	162	ND	62.3	10-136	17.6	62.1	
Benz (a) anthracene	114	6.09	n .	162	ND	70.4	10-152	20.3	81.6	
Benzo (a) pyrene	105	0.609	H	162	ND	64.8	10-132	25.2	56.9	
Benzo (b) fluoranthene	109	6.09	и	162	ND	67.3	10-140	23.2	96.8	
Benzo (ghi) perylene	101	12.2	u	162	ND	62.3	10-167	26.7	64.9	
Benzo (k) fluoranthene	112	12.2	11	162	ND	69.1	10-144	22.3	59.5	
Chrysene	114	12.2	#	162	ND	70.4	10-146	18.7	113	
Dibenz (a,h) anthracene	113	0.609	II .	162	ND	69.8	10-131	24.2	57.5	
Fluoranthene	106	12.2	**	162	14.0	56.8	10-153	15.0	103	
Fluorene	101	12.2	H	162	ND	62.3	10-125	12.1	59	
Indeno (1,2,3-cd) pyrene	100	6.09	"	162	ŅD	61.7	10-138	32.3	84.6	
l-Methylnaphthalene	123	12.2	11	162	ND	75.9	10-150	9.36	91.8	
2-Methylnaphthalene	110	12.2	н	162	ND	67.9	10-155	9.62	89.4	
Naphthalene	108	12.2	"	162	ND	66.7	10-158	4.74	92.2	
Phenanthrene	117	12.2	Ħ	162	ND	72.2	10-155	16.4	89	
Pyrene	116	12.2	į t	162	ND	68.3	10-154	19.8	78.5	
Surrogate: Carbazole	57.9		"	81.0		71.5	14.9-144			

Great Lakes Analytical--Oak Creek

Gendles Stathas

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Notes and Definitions

QC The result for one or more quality control measurements associated with this sample did not meet the laboratory and/or source

method acceptance criteria.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

L This quality control measurement is below the laboratory established limit.

H This quality control measurement is above the laboratory established limit.

Great Lakes Analytical-Oak Creek

14 November 2002

Mark Mejac STS Consultants 11425 S. Lake Park Dr. Milwaukee, WI 53224 RE: 87185EA Southeast

Enclosed are the results of analyses for samples received by the laboratory on 11/01/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Great Lakes Analytical

Andrea Stathas

Project Manager

State of Wisconsin Certification Numbers:

Great Lakes Analytical--Oak Creek, WI: 341000330 Great Lakes Analytical--Buffalo Grove, IL: 999917160





Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1 2-4'	W211002-01	Soil	10/29/02 00:00	11/01/02 09:01
MW-1 7.5-9.5'	W211002-02	Soil	10/29/02 00:00	11/01/02 09:01
MW-2 2-4'	W211002-03	Soil	10/29/02 00:00	11/01/02 09:01
MW-2 7.5-9.5'	W211002-04	Soil	10/29/02 00:00	11/01/02 09:01
MW-3 0-2'	W211002-05	Soil	10/29/02 00:00	11/01/02 09:01
MW-3 7.5-9.5'	W211002-06	Soil	10/29/02 00:00	11/01/02 09:01
BLANK	W211002-07	MeOH Blank	10/29/02 00:00	11/01/02 09:01

Great Lakes Analytical--Oak Creek

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 10/28/02 08:38

Great Lakes Analytical-Oak Creek

Ceroliea Stathas



Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
						Trepared	Allalyzed	Method	
MW-1 7.5-9.5' (W211002-02) Soil	Sampled: 10/29/02 (00:00 Red	eived: 11/0	01/02 09:0	1				QC
Benzene	ND		ug/kg wet	50	2110064	11/12/02	11/12/02	EPA 8021B	
Bromobenzene	ND	25.0	"	11	11	**	"	H	
Bromodichloromethane	ND	25.0	11	11	U	п	11	II .	
n-Butylbenzene	ND	25.0	11	11	11	n	11	II .	
sec-Butylbenzene	ND	25.0	II .	"	II.	II	If	lt.	
tert-Butylbenzene	ND	25.0	11	11	"	Ш	#	и	
Carbon tetrachloride	ND	25.0	**	11	11	11	ti	41	
Chlorobenzene	ND	25.0	II .	II .	II	1#	11	It	
Chloroethane	ND	25.0	Ħ	11	ń	11	**	11	
Chloroform	ND -	25.0	"	**	**	H	17	11	
Chloromethane	ND	25.0	II .	u	u	U	II .	H .	
2-Chlorotoluene	ND	25.0	n	n	U	II	11	U	
4-Chlorotoluene	ND	25.0		11	n	11	(1)	11	
Dibromochloromethane	ND	25.0	u	"	"	tr.	II	H.	
1,2-Dibromo-3-chloropropane	ND	25.0	**	11	u	II .	11	n	
1,2-Dibromoethane	ND	25.0	tt	0	II.	"	**	n	
1,2-Dichlorobenzene	ND	25.0	II .	**	H	**	11	tt	
1,3-Dichlorobenzene	ND	25.0	II .	**	11	II	n .	u .	
1,4-Dichlorobenzene	ND	25.0	U	п	ш	D .	11	II	
Dichlorodifluoromethane	ND	25.0	11	11	0	11	11	II	
1,1-Dichloroethane	ND	25.0	11	11	11	11	R	n	
1,2-Dichloroethane	ND	25.0	u	17	11	**		11	
1,1-Dichloroethene	ND	25.0	0	11	11	lt.	II .	11	
cis-1,2-Dichloroethene	ND	25.0	11	n	u	R	**	и	
trans-1,2-Dichloroethene	ND	25.0	"	*1	11	н	**	II .	
1,2-Dichloropropane	ND	25.0	n	**	n	**	It	n	
1,3-Dichloropropane	ND	25.0	11	n .	**	11	II.	e	
2,2-Dichloropropane	ND	25.0	**	и	11	II .	11	II.	
Di-isopropyl ether	ND	25.0	**	11	"	II .	11	11	
Ethylbenzene	ND	25.0	u .	p	11	11	11	11	
Hexachlorobutadiene	ND	25.0	n n	u	**	1f	11	**	
Isopropylbenzene	ND	25.0	n .	II .	11	II	11	11	
p-Isopropyltoluene	ND	25.0	11	n	n .	n	**	H .	
Methylene chloride	ND	100	H	**	"	11	lt.	н	
Methyl tert-butyl ether	ND	25.0	er e	11	11	11	11	**	
Naphthalene	ND	25.0	u	lt.	11	II	11	H.	
1-Propylbenzene	ND	25.0	11	11	11	II.	"	u	
1,1,2,2-Tetrachloroethane	ND	25.0	11	11	11	п	**	II .	
Tetrachloroethene	ND	25.0	17	"	"	n .	"	п	
Foluene	ND	25.0	**	**	11	11	"	n	
1,2,3-Trichlorobenzene	ND ND	25.0	**	**	,,	11	u	п	
,2,3-irichioropenzene	מא	25.0	**						

Great Lakes Analytical--Oak Creek

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ardia Status



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
						Trepared	Anaryzeu	Withou	
MW-1 7.5-9.5' (W211002-02) Soil	Sampled: 10/29/02 00	:00 Rec		01/02 09:0 	1				Q
1,2,4-Trichlorobenzene	ND	25.0		50	2110064	11/12/02	11/12/02	EPA 8021B	
1,1,1-Trichloroethane	ND	25.0	11	"	**	U	n	If	
1,1,2-Trichloroethane	ND	25.0	"	11	u	"		II	
Trichloroethene	ND	25.0	ш	"	11	"	1#	u	
Trichlorofluoromethane	ND	25.0	42	"	"	11	II .	п	
1,2,4-Trimethylbenzene	ND	25.0	11	ш	11	**	11	u	
1,3,5-Trimethylbenzene	ND	25.0	H	**	Ħ	u		11	
Vinyl chloride	ND	25.0	"	II	11	11	"	и	
Total Xylenes	ND	25.0		11	FF	11	11	14	
Surrogate: 1-Cl-4-FB (ELCD)		86.7 %	80-1	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		89.2 %	80-1	20	"	"	"	II .	
MW-2 2-4' (W211002-03) Soil S	ampled: 10/29/02 00:00	Receive	ed: 11/01/0	2 09:01					Qu
Benzene	ND	25.0	ug/kg wet	50	2110064	11/12/02	11/12/02	EPA 8021B	
Bromobenzene	ND	25.0	- 11	u	11	U	11	II .	
Bromodichloromethane	ND	25.0	u	tt .	31	u	n n	11	
n-Butylbenzene	36.8	25,0	**	II .	"	**	11 .	II .	
sec-Butylbenzene	ND	25.0	11	11	11	n n	"	11	
tert-Butylbenzene	ND	25.0	II .	tr	**	**	n n	11	•
Carbon tetrachloride	ND	25.0	17	11	II.	n .	"	11	
Chlorobenzene	ND	25.0	11	tt.	u	11	u	**	
Chloroethane	ND	25.0	II.	11	11	#	##	п	
Chloroform	ND	25.0	**	11	n	п	n	18	
Chloromethane	ND	25.0		11	44	n	•	п	
2-Chlorotoluene	ND	25.0	51	11	II.	n n	n	tt.	
4-Chlorotoluene	ND	25.0	н		12	17		11	
Dibromochloromethane	ND	25.0	tr	n	11	n .		11	
1,2-Dibromo-3-chloropropane	ND	25.0	11	11	(F	#1	11	п	
1,2-Dibromoethane	ND	25.0	Ü	11	11	u	11	31	
1,2-Dichlorobenzene	ND	25.0	11	ш	11	**	11	п	
1,3-Dichlorobenzene	ND	25.0	П	31	ti .	II	**	u .	
1,4-Dichlorobenzene	ND	25.0	11	Ü	11	11	**	n	
Dichlorodifluoromethane	ND	25.0	"	11	**	11	11	11	
1,1-Dichloroethane	ND	25.0	11	п	11	**	11	11	
1,2-Dichloroethane	ND ND	25.0	"	11		11	**	11	
I, I-Dichloroethene	ND ND	25.0	"	u	11	11	п	II .	
cis-1,2-Dichloroethene	ND ND	25.0	"			11	**	10	
trans-1,2-Dichloroethene	ND ND	25.0	11	ıı	11	11	11	II.	
	ND ND	25.0	ir	n	11		11	11	
1,2-Dichloropropane	ND ND		11		er.	,,	ir .	II .	
1,3-Dichloropropane		25.0	"	11			11	31	
2,2-Dichloropropane	ND	25.0	**	**	**	-			

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 2-4' (W211002-03) Soil	Sampled: 10/29/02 00:00	Receive	ed: 11/01/0	2 09:01					QC
Di-isopropyl ether	ND	25.0	ug/kg wet	50	2110064	11/12/02	11/12/02	EPA 8021B	~~~
Ethylbenzene	ND	25.0	u	ŧ	Ð	II	rr rr	II .	
Hexachlorobutadiene	ND	25.0	II .	11	11	n	"	11	
Isopropylbenzene	ND	25.0	II.	II	17	11	ш	#	
p-Isopropyltoluene	25.8	25.0	11	u	11	u	11	0	
Methylene chloride	ND	100	11	U	11	lt .	"	tt.	
Methyl tert-butyl ether	ND	25.0	H .	ii	11	ii .	"	п	
Naphthalene	149	25.0	tt.	11	11	11	**	u	
n-Propylbenzene	ND	25.0	II	11	11	11		ц	
1,1,2,2-Tetrachloroethane	ND	25.0	U	11	11	11	H	II.	
Tetrachloroethene	ND	25.0	II .	11	11	**	tt.	"	
Toluene	44.0	25.0	H	u	11	11	II .	11	
1,2,3-Trichlorobenzene	ND	25.0	11	II .	II.	n	u u	11	
1,2,4-Trichlorobenzene	ND	25.0	11	u .	11	Ħ	н	11	
1,1,1-Trichloroethane	ND	25.0	n	11	U .	11	II .	11	
1,1,2-Trichloroethane	ND	25.0	11	11	IF.	*1	п	f f	
Trichloroethene	127	25.0	11	11	U	**	u	H	
Trichlorofluoromethane	ND	25.0	n .	11	II .	11	u	tt	
1,2,4-Trimethylbenzene	ND	25.0	51	11	11	11	ш	tt	
1,3,5-Trimethylbenzene	ND	25.0	**	11	II .	11	n	ff	
Vinyl chloride	ND	25.0	**	II	11	11	n	11	
Total Xylenes	101	25.0	n		11	0	II .	11	
Surrogate: 1-Cl-4-FB (ELCD)		102 %	80-1	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		95.5 %	80-1	20	"	,,	"	II .	

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 7.5-9.5' (W211002-06) Soil	Sampled: 10/29/02 (00:00 Red	eived: 11/	01/02 09:0	1	-			QC
Benzene	ND	25.0	ug/kg wet	50	2110064	11/12/02	11/13/02	EPA 8021B	
Bromobenzene	ND	250	11	500	16	II .	11/13/02	п	
Bromodichloromethane	ND	250	ŧ1	11	II .	**	11	11	
n-Butylbenzene	1050	250	Iŧ	ıı	31	10	II	и	
sec-Butylbenzene	781	250	*1	11	11	11	11	n	
tert-Butylbenzene	ND	250	11	ıı	11	u	#	**	
Carbon tetrachloride	ND	250	1)	11	11	n .	Ü	II .	
Chlorobenzene	ND	250	u	u u	n	н	**	"	
Chloroethane	ND	250	II .	n n	11	п	"	u	
Chloroform	ND	250	11	11	II	n	11	11	
Chloromethane	ND	250	u	u	11	u	u	a	
2-Chlorotoluene	ND	250	11	n	11	ti .	II	n .	
4-Chlorotoluene	ND	250	II .	II .	н	11	n	tt.	
Dibromochloromethane	ND	250	"	"	"	n	n	u	
1,2-Dibromo-3-chloropropane	ND	250	11	11	11	91	11	11	
1,2-Dibromoethane	ND	250	11	**	"	II .	U	u .	
1,2-Dichlorobenzene	ND	250	u ·	0	II .	11	11	ti	
1,3-Dichlorobenzene	ND	250	11	11	11	н	tr	**	
1,4-Dichlorobenzene	ND	250	tr.	u	u	11	**	**	*
Dichlorodifluoromethane	ND	250	11	n	11	u		n .	
1,1-Dichloroethane	ND	250	11	11	u	II		n .	
1,2-Dichloroethane	ND	250	u	u	ti	11	11	51	
1,1-Dichloroethene	ND	250	11	11	11	н		п	
cis-1,2-Dichloroethene	ND	250		u	#1	11	11	11	
trans-1,2-Dichloroethene	ND	250	**	11	**	11	1f	tr .	
1,2-Dichloropropane	ND	250	u	**	n	II	ш	п	
1,3-Dichloropropane	ND	250	11	ш	**	11	71	11	
2,2-Dichloropropane	ND	250	11	11	11	II	u	u	
Di-isopropyl ether	ND	250	п	11	II .	"	n n	u	
Ethylbenzene Ethylbenzene	5880	250	n	II	11	II .	11	11	
Hexachlorobutadiene	ND	250	11	11	tt.	ш	11	n	
Isopropylbenzene	280	250		ij	11	11	n	u u	
p-Isopropyltoluene	3050	250	10	ii	11	ır	11	"	
Methylene chloride	ND	1000		11	ш	11	п	11	
Methyl tert-butyl ether	ND	250		п	11	11	11	"	
Naphthalene	1260	250	**	11	IT	II	n .	II.	
-	1260 ND	250	п	"	п	11	н	11	
n-Propylbenzene	ND ND	250	11	11	#	19	ŧı	n	
1,1,2,2-Tetrachloroethane Tetrachloroethene	ND ND	250	11	11	"	"	"	11	
		250 250		11	11	II.	11	n .	
Toluene	1740	250 250	11		11	"	11	11	
1,2,3-Trichlorobenzene	ND _.	250	••	**					

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021

Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 7.5-9.5' (W211002-06) Soil	Sampled: 10/29/02	00:00 Red	eived: 11/0	01/02 09:0)1				QC
1,2,4-Trichlorobenzene	ND	250	ug/kg wet	500	2110064	11/12/02	11/13/02	EPA 8021B	
1,1,1-Trichloroethane	ND	250	u	ŧI	п	11	11	11	
1,1,2-Trichloroethane	ND	250	II .	**	11	**	11	"	
Trichloroethene	ND	250	11	R	11	II.	· ·	**	
Trichlorofluoromethane	ND	250	#	If	11	11	п	II .	
1,2,4-Trimethylbenzene	211	25.0	II .	50	11	11	11/13/02	II .	
1,3,5-Trimethylbenzene	70.6	25.0	II	11	11	11	11	11	
Vinyl chloride	ND	250	II .	500	11	1)	11/13/02	**	
Total Xylenes	18900	250	II .	11	11	**	tt .	11	
Surrogate: 1-Cl-4-FB (ELCD)		120 %	80-1	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		91.3 %	80-1	20	"	"	"	"	

Great Lakes Analytical--Oak Creek

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STS Consultants

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 (Blanks) Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit		Dilution	Batch	Prepared	Analyzed	Method	Notes
BLANK (W211002-07) MeOH Blank	Sampled: 10/29/	02 00:00	Received:	11/01/02 0	9:01				
Benzene	ND	25.0	ug/l	50	2110065	11/12/02	11/12/02	EPA 8021B	
Bromobenzene	ND	25.0	11	u u	**	U	11	11	
Bromodichloromethane	ND	25.0	11	н	0	19	II	11	
n-Butylbenzene	ND	25.0	и	11	13	u	11	11	
sec-Butylbenzene	ND	25.0	1)	11	11	U	11	11	
tert-Butylbenzene	ND	25.0	II.	11	n	#	n n	II.	
Carbon tetrachloride	ND	25.0	II.	ıı .	11	n	"	**	
Chlorobenzene	ND	25.0	**	**	0	16	u	II .	
Chloroethane	ND	25.0	11	n .	#	п	II.	n	
Chloroform	ND	25.0	11	11	11	11	11	11	
Chloromethane	ND	25.0	n	**	II .	#	**	If	
2-Chlorotoluene	ND	25.0	11	ш	n	ш	11	11	
1-Chlorotoluene	ND	25.0	**	11	11	n .	**	11	
Dibromochloromethane	ND	25.0	и	11	11	11	II .	II .	
,2-Dibromo-3-chloropropane	ND	25.0	11	II	11	a		11	
1,2-Dibromoethane	ND	25.0	11	11	11	n	50	II .	
1,2-Dichlorobenzene	ND	25.0	n n	"	11	11	u .	II .	
,3-Dichlorobenzene	ND	25.0	**	n	"	11	**	**	
,4-Dichlorobenzene	ND	25.0		lt.	II.	† I	tt.	и	
Dichlorodifluoromethane	ND	25.0	n .	ш	n	II.	IT	п	
,1-Dichloroethane	ND	25.0	11	п	11	u	11	11	
,2-Dichloroethane	ND	25.0	u	11	п	"	11	**	
.1-Dichloroethene	ND	25.0	11	If	II .	16	tt	II	
is-1,2-Dichloroethene	ND	25.0	11	11	**	п	II .	и	
rans-1,2-Dichloroethene	ND	25.0	11	11	"	· ·	n	11	
,2-Dichloropropane	ND	25.0		11	"	н	11	11	
,3-Dichloropropane	ND	25.0	11	п	11	ır	**	п	
2,2-Dichloropropane	ND	25.0	10	11	**	a	n	н	
Di-isopropyl ether	ND	25.0	н	ų	II	n	•	11	
Ethylbenzene	ND	25.0	"	II.	II .	#	11	11	
Hexachlorobutadiene	ND	25.0	**	11	rr	u	II .	11	
sopropylbenzene	ND	25.0	11	tr.	II .	n	11	tř	
-Isopropyltoluene	ND	25.0	**	п	n .	**	11	lt.	
Methylene chloride	ND	100	11	n	11		u	If	
Methyl tert-butyl ether	ND	10.0	u	**	ш	п	11	11	
Vaphthalene	ND	25.0	11	tt	n	**	11	**	
-Propylbenzene	ND	25.0	f1	11	**	18	11	п	
,1,2,2-Tetrachloroethane	ND	25.0	п	18	(t	u	II	11	
etrachloroethene	ND ND	25.0	11	tt.	II.	11	11	н	
Coluene	ND ND	25.0	11	11	"	14	11	u .	
,2,3-Trichlorobenzene	ND	25.0	ıı	11	11	11	"	11	

Great Lakes Analytical--Oak Creek

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Andrea Stathas, Project Manager

Page 7 of 23



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 (Blanks)

Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BLANK (W211002-07) MeOH Blank	Sampled: 10/29	/02 00:00 R	eceived:	11/01/02 0	9:01				
1,2,4-Trichlorobenzene	ND	25.0	ug/l	50	2110065	11/12/02	11/12/02	EPA 8021B	
1,1,1-Trichloroethane	ND	25.0	11	tr .	11	u	tt	**	
1,1,2-Trichloroethane	ND	25.0	t)	11	n .	11	II .	II	
Trichloroethene	ND	25.0	u .	и	**	II.	11	##	
Trichlorofluoromethane	ND	25.0	11	n	II .	11	n	IF	
1,2,4-Trimethylbenzene	ND	25.0	II	11	#1	II .	Ħ	#1	
1,3,5-Trimethylbenzene	ND	25.0	#1	11	II .	11	II	It	
Vinyl chloride	ND	25.0	H	It	tt	ir	11	11	
Total Xylenes	ND	25.0	11	11	н	11	tt	tr .	
Surrogate: 1-Cl-4-FB (ELCD)		124 %	80	120	"	"	"	" Н	I
Surrogate: 1-Cl-4-FB (PID)		87.0 %	80-	120	"	"	"	"	

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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STS Consultants

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

Total Metals by EPA 6000/7000 Series Methods Great Lakes Analytical--Buffalo Grove

	1	Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 2-4' (W211002-01) Soil	Sampled: 10/29/02 00:00	Received	l: 11/01/0	2 09:01					***************************************
Lead	66.8	1.15 r	ng/kg dry	1	2110142	11/08/02	11/11/02	EPA 6010B	
MW-1 7.5-9.5' (W211002-02) S	oil Sampled: 10/29/02 00	:00 Recei	ived: 11/0	1/02 09:0	1				
Lead	396	1.18 n	ng/kg dry	l	2110142	11/08/02	11/11/02	EPA 6010B	
MW-2 2-4' (W211002-03) Soil	Sampled: 10/29/02 00:00	Received	l: 11/01/0	2 09:01					
Lead	210	1.06 n	ng/kg dry	1	2110142	11/08/02	11/11/02	EPA 6010B	
MW-2 7.5-9.5' (W211002-04) S	oil Sampled: 10/29/02 00	:00 Recei	ived: 11/0	1/02 09:0	1				
Lead	9.98	1.15 n	ng/kg dry	1	2110142	11/08/02	11/11/02	EPA 6010B	
MW-3 0-2' (W211002-05) Soil	Sampled: 10/29/02 00:00	Received	: 11/01/02	2 09:01					
Lead	86.3	1.17 n	ng/kg dry	L	2110142	11/08/02	11/11/02	EPA 6010B	
MW-3 7.5-9.5' (W211002-06) S	oil Sampled: 10/29/02 00:	00 Recei	ved: 11/0	1/02 09:0	1				
Lead	203	1.20 n	ng/kg dry	1	2110142	11/08/02	11/11/02	EPA 6010B	

Great Lakes Analytical--Oak Creek



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none] Project Manager: Mark Mejac

Reported: 11/14/02 16:45

Polynuclear Aromatic Compounds by EPA Method 8310 Great Lakes Analytical--Buffalo Grove

F Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Sampled: 10/29/02 00:00		ed: 11/01/0	2 09:01	,		-		Q
			10	2110070	11/05/02	11/07/02	EPA 8310	
		11	11	11	11	11	11	
	115	II	n	II .	"	51	II .	
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		#	u	**	11	11	11	
			**	п	II.	11	ŧŧ	
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2010		14.9-	144	"	"	"	"	Н
Sampled: 10/29/02 00:00	Receive	d: 11/01/0:	2 09:01					Q
				2110070	11/05/02	11/07/02	FPA 8310	
		יי	11	11	11/05/02	"	"	
		17	"	"	u	II.	11	
		п	11	"	**	11	11	
		11	11	**	11	11	"	
		tt.	11	Ħ	u .	11	ш	
	•	и	#1	11		п	,,	
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	100				**	**		
556	106					II.	,,	
556 791	106	II	n	It	11	"	11	
556 791 ND	106 106	11	" 1	п	n	11	11	
556 791	106	II	n	It				
	Result Sampled: 10/29/02 00:00 3050 843 945 1490 1270 1410 637 540 1290 1120 3810 448 1040 2390 2730 331 2980 2010	Sampled: 10/29/02 00:00 Received 3050 115 843 230 945 115 1490 57.5 1270 5.75 1410 57.5 637 115 540 115 1290 115 1120 5.75 3810 115 448 115 1040 57.5 2390 115 2730 115 331 115 2980 115 2010 115 418 % Sampled: 10/29/02 00:00 Receive 1160 1060 778 212 135 106 1910 529 2710 52.9 3360 529 1340 1060 2070 1060 2870 52.9 1030 106 130 106	Result Limit Units Sampled: 10/29/02 00:00 Received: 11/01/0 3050 115 ug/kg dry 843 230 " 945 115 " 1490 57.5 " 1270 5.75 " 1410 57.5 " 637 115 " 637 115 " 540 115 " 1290 115 " 1290 115 " 1120 5.75 " 3810 115 " 448 115 " 2390 115 " 2390 115 " 2980 115 " 2980 115 " 2980 115 " 2010 115 " 418 % 14.9- Sampled: 10/29/02 00:00 Received: 11/01/02 1160 1060 ug/kg dr	Result Limit Units Dilution Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 3050 115 ug/kg dry 10 843 230 " " 945 115 " " 1490 57.5 " " 1270 5.75 " " 637 115 " " 637 115 " " 637 115 " " 1290 115 " " 1120 5.75 " " 3810 115 " " 1040 57.5 " " 2390 115 " " 2390 115 " " 2390 115 " " 2390 115 " " 2980 115 " " 2980 115 " " <t< td=""><td>Reporting Limit Units Dilution Batch Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 3050 115 ug/kg dry 10 2110070 843 230 " " " 945 115 " " " 1490 57.5 " " " 1270 5.75 " " " 637 115 " " " 637 115 " " " 637 115 " " " 637 115 " " " 1290 115 " " " 1120 5.75 " " " 3810 115 " " " 1144 115 " " " 2390 115 " " " 2980 115 " <</td><td>Result Reporting Limit Units Dilution Batch Prepared Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 115 ug/kg dry 10 2110070 11/05/02 843 230 " " " " 945 115 " " " " 1490 57.5 " " " " 1270 5.75 " " " " 637 115 " " " " 637 115 " " " " 540 115 " " " " 1290 115 " " " " 1120 5.75 " " " " " 3810 115 " " " " " " " " " " " " " " " " " " " <t< td=""><td>Result Limit Units Dilution Batch Prepared Analyzed Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 3050 115 ug/kg dry 10 2110070 11/05/02 11/07/02 11/07/02 843 230 " " " " " " " " " " " " " " " " " 945 115 " " " " " " " " " " " " " " " " " 1490 57.5 " " " " " " " " " " " " " " " " " " " 1270 5.75 " " " " " " " " " " " " " " " " " " " " " 637 115 " " " " " " " " " " " " " " " " " " " " " " " " " 540 115 " " " " " " " " " " " " " " " " " "</td><td> Result</td></t<></td></t<>	Reporting Limit Units Dilution Batch Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 3050 115 ug/kg dry 10 2110070 843 230 " " " 945 115 " " " 1490 57.5 " " " 1270 5.75 " " " 637 115 " " " 637 115 " " " 637 115 " " " 637 115 " " " 1290 115 " " " 1120 5.75 " " " 3810 115 " " " 1144 115 " " " 2390 115 " " " 2980 115 " <	Result Reporting Limit Units Dilution Batch Prepared Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 115 ug/kg dry 10 2110070 11/05/02 843 230 " " " " 945 115 " " " " 1490 57.5 " " " " 1270 5.75 " " " " 637 115 " " " " 637 115 " " " " 540 115 " " " " 1290 115 " " " " 1120 5.75 " " " " " 3810 115 " " " " " " " " " " " " " " " " " " " <t< td=""><td>Result Limit Units Dilution Batch Prepared Analyzed Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 3050 115 ug/kg dry 10 2110070 11/05/02 11/07/02 11/07/02 843 230 " " " " " " " " " " " " " " " " " 945 115 " " " " " " " " " " " " " " " " " 1490 57.5 " " " " " " " " " " " " " " " " " " " 1270 5.75 " " " " " " " " " " " " " " " " " " " " " 637 115 " " " " " " " " " " " " " " " " " " " " " " " " " 540 115 " " " " " " " " " " " " " " " " " "</td><td> Result</td></t<>	Result Limit Units Dilution Batch Prepared Analyzed Sampled: 10/29/02 00:00 Received: 11/01/02 09:01 3050 115 ug/kg dry 10 2110070 11/05/02 11/07/02 11/07/02 843 230 " " " " " " " " " " " " " " " " " 945 115 " " " " " " " " " " " " " " " " " 1490 57.5 " " " " " " " " " " " " " " " " " " " 1270 5.75 " " " " " " " " " " " " " " " " " " " " " 637 115 " " " " " " " " " " " " " " " " " " " " " " " " " 540 115 " " " " " " " " " " " " " " " " " "	Result

Great Lakes Analytical--Oak Creek



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11425 S. Lake Park Dr. Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

Polynuclear Aromatic Compounds by EPA Method 8310 Great Lakes Analytical--Buffalo Grove

Analyte	F Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 0-2' (W211002-05) Soil	Sampled: 10/29/02 00:00	Receive	ed: 11/01/0	2 09:01					Qt
Acenaphthene	237	117	ug/kg dry	1	2110070	11/05/02	11/08/02	EPA 8310	
Acenaphthylene	ND	235	11	11	**	#	п	II .	
Anthracene	ND	117	"	18	u .	n .		"	
Benz (a) anthracene	197	58.7	"	ш	11	**	n	п	
Benzo (a) pyrene	207	5.87	"	11	II .	11	tt	11	
Benzo (b) fluoranthene	220	58.7	0	n	11	**	n	II .	
Benzo (ghi) perylene	186	117	11	11	n .	11	1F	10	
Benzo (k) fluoranthene	ND	117	11	11	11	11	n	п	
Chrysene	198	117	II	**	II.	ii	"	11	
Dibenz (a,h) anthracene	31.6	5.87	lt .	11	**	11	II .	II	
Fluoranthene	327	117		11	0	II.	n	ti .	
Fluorene	ND	117	11	n	n	u	"	II.	
Indeno (1,2,3-cd) pyrene	232	58.7	11	11	u ·	u .	п	#1	
I-Methylnaphthalene	ND	117	**	u	U	II .	11	11	
2-Methylnaphthalene	ND	117	tr.	ii .	11	**	u	16	
Naphthalene	ND	117	11	11	u	II .	п	н	
Phenanthrene	171	117	11	u	n	11	11	**	
Pyrene	409	117	n		10	"	0	11	
Surrogate: Carbazole		94.5 %	14.9-	144	"	"	"	"	

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Stathas, Project Manager



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Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

Percent Solids

Great Lakes Analytical--Buffalo Grove

Analyte	I Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 2-4' (W211002-01) Soil	Sampled: 10/29/02 00:00	Receive	1: 11/01/	02 09:01	-				
% Solids	86.9	0.0100	%	1	2110108	11/07/02	11/08/02	5035 7.5	
MW-1 7.5-9.5' (W211002-02) S	oil Sampled: 10/29/02 00	:00 Rece	ived: 11	/01/02 09:0	1				
% Solids	84.5	0.0100	%	1	2110108	11/07/02	11/08/02	5035 7.5	
MW-2 2-4' (W211002-03) Soil	Sampled: 10/29/02 00:00	Received	l: 11/01/	02 09:01					
% Solids	94.5	0.0100	%	1	2110108	11/07/02	11/08/02	5035 7.5	
MW-2 7.5-9.5' (W211002-04) Se	oil Sampled: 10/29/02 00	:00 Rece	ived: 11	/01/02 09:0	1				
% Solids	86.7	0.0100	%	1	2110108	11/07/02	11/08/02	5035 7.5	
MW-3 0-2' (W211002-05) Soil	Sampled: 10/29/02 00:00	Received	l: 11/01/	02 09:01					
% Solids	85.2	0.0100	%	1	2110108	11/07/02	11/08/02	5035 7.5	
MW-3 7.5-9.5' (W211002-06) So	oil Sampled: 10/29/02 00	:00 Rece	ived: 11	/01/02 09:0	1				
% Solids	83.4	0.0100	%	1	2110108	11/07/02	11/08/02	5035 7.5	

Great Lakes Analytical--Oak Creek

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STS Consultants

Milwaukee WI, 53224

11425 S. Lake Park Dr.

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
		2	2			,,,,,			~t	110103
Batch 2110064 - EPA 5030B [MeOH]		~								
Blank (2110064-BLK1)	***************************************			Prepared	& Analyze	d: 11/12/0)2			
Benzene	ND	25.0	ug/kg wet							
Bromobenzene	ND	25.0	"							
Bromodichloromethane	ND	25.0	"							
n-Butylbenzene	ND	25.0	11							
sec-Butylbenzene	ND	25.0	tt.							
tert-Butylbenzene	ND	25.0	"							
Carbon tetrachloride	ND	25.0	11							
Chlorobenzene	ND	25.0	11							
Chloroethane	ND	25.0	п							
Chloroform	ND	25.0	11							
Chloromethane	ND	25.0	II.							
2-Chlorotoluene	ND	25.0	u							
4-Chlorotoluene	ND	25.0	11							
Dibromochloromethane	ND	25.0	u							
1,2-Dibromo-3-chloropropane	ND	25.0	11							
1,2-Dibromoethane	ND	25.0	н							
1,2-Dichlorobenzene	ND	25.0	u							
1,3-Dichlorobenzene	ND	25.0	**							
1,4-Dichlorobenzene	ND	25.0	n							
Dichlorodifluoromethane	ND	25.0	ø							
1,1-Dichloroethane	ND	25.0	**							
1,2-Dichloroethane	ND	25.0	ji .							
1,1-Dichloroethene	ND	25.0	11							
cis-1,2-Dichloroethene	ND	25.0	**							
rans-1,2-Dichloroethene	ND	25.0	μ							
1,2-Dichloropropane	ND	25.0	tt.							
1,3-Dichloropropane	ND	25.0	n.							
2,2-Dichloropropane	ND	25.0	ıt							
Di-isopropyl ether	ND	25.0	#1							
Ethylbenzene	ND	25.0	ıı							
Hexachlorobutadiene	ND	25.0	11							
sopropylbenzene	ND	25.0	ıt							
p-Isopropyltoluene	ND	25.0	11							
Methylene chloride	ND	100	(I							

Great Lakes Analytical--Oak Creek



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Project: 87185EA Southeast

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Project Number: [none] Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Blank (2110064 - EPA 5030B MeOH		Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Methyl tert-butyl ether ND		Batch 2110064 - EPA 5030B [MeOH]										
Naphthalene ND 25.0 "		Blank (2110064-BLK1)				Prepared o	& Analyze	d: 11/12/0)2			
Name		Methyl tert-butyl ether	ND	25.0	ug/kg wet			and a fit the same of the same	American Service & 1114 Service & 1114			***************************************
	1	Naphthalene	ND	25.0	11							
Tetrachloroethene ND 25.0 " Tetrachloroethene ND 25.0 " 1,2,3-Trichloroethane ND 25.0 " 1,1,1-Trichloroethane ND 25.0 " 1,2,4-Trimethylbenzene ND 25.0 " 1,000 111 80-120 (1,1,2,4-Trichloroethane ND 25.0 " 1,000 111 80-120 (1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.0 " 1,1,1,1-Trichloroethane ND 25.		n-Propylbenzene	ND	25.0	II							
Toluene ND 25.0 "		1,1,2,2-Tetrachloroethane	ND	25.0	II							
1,2,3-Trichlorobenzene ND 25.0 "		Tetrachloroethene	ND	25.0	11							
1,2,4-Trichlorobenzene		Toluene	ND	25.0	**							
1,1,1-Trichloroethane ND 25.0 " 1,1,2-Trichloroethane ND 25.0 " 1Trichloroethane ND 25.0 " 1Trichloroethane ND 25.0 " 1,2,4-Trimethylbenzene ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " 1,1,1-Trichloroethane ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " 1,1,1-Trimethylbenzene ND 25.0 " 1,1,1-Trimethylbenzene ND 25.0 " 1,1,2,4-Trimethylbenzene ND 25.0 " 1,1,1-Trimethylbenzene ND 25.0		1,2,3-Trichlorobenzene	ND	25.0	u							
1,1,2-Trichloroethane		1,2,4-Trichlorobenzene	ND	25.0	II .							
Trichloroethene ND 25.0 " Trichlorofluoromethane ND 25.0 " 1,2,4-Trimethylbenzene ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " Total Xylenes ND 25.0 " Total Xylenes ND 25.0 " Surrogate: 1-Ct-4-FB (ELCD) 1120 " 1000 112 80-120 Surrogate: 1-Ct-4-FB (PID) 867 " 1000 86.7 80-120 LCS (2110064-BS1) " Benzene 992 25.0 ug/kg wt 1000 99.2 80-120 Bromoblenzene 1180 25.0 " 1000 118 80-120 Bromoblenzene 1180 25.0 " 1000 118 80-120 Bromoblenzene 1090 25.0 " 1000 116 80-120 sec-Butylbenzene 1160 25.0 " 1000 116 80-120 cert-Butylbenzene 1160 25.0 " 1000 116 80-120 Carbon tetrachloride 809 25.0 " 1000 116 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 113 80-120 Chlorofethane 1130 25.0 " 1000 114 80-120 Chlorofethane 1130 25.0 " 1000 114 80-120 Chlorofethane 1130 25.0 " 1000 114 80-120 Chlorofethane 1130 25.0 " 1000 114 80-120 Chlorofethane 1130 25.0 " 1000 114 80-120 Chlorofethane 1130 25.0 " 1000 111 80-120		1,1,1-Trichloroethane	ND	25.0	"							
Trichlorofluoromethane ND 25.0 " 1,2,4-Trimethylbenzene ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " 1,3,5-Trimethylbenzene ND 25.0 " 1,000 112 80-120 Surrogate: 1-C1-4-FB (ELCD) 1120 " 1000 112 80-120 Surrogate: 1-C1-4-FB (PID) 867 " 1000 86.7 80-120 LCS (2110064-BS1)		1,1,2-Trichloroethane	ND	25.0	II .							
1,2,4-Trimethylbenzene ND 25.0 "	1	Trichloroethene	ND	25.0	II.							
1,3,5-Trimethylbenzene ND 25.0 " Vinyl chloride ND 25.0 " Total Xylenes ND 25.0 " Surrogate: 1-Cl-4-FB (ELCD) 1/120 867 " 1/000 1/12 80-120 Surrogate: 1-Cl-4-FB (PID) 867 " 1/000 86.7 80-120 CCS (2110064-BS1) Prepared: 11/12/02 Analyzed: 11/13/02 Benzene 992 25.0 ug/kg wet 1/000 99.2 80-120 Bromobenzene 1/180 25.0 " 1/000 1/18 80-120 Bromodichloromethane 7/14 25.0 " 1/000 1/18 80-120 Bromodichloromethane 1/14 25.0 " 1/000 1/14 80-120 L n-Butylbenzene 1/160 25.0 " 1/000 1/16 80-120 sec-Butylbenzene 1/160 25.0 " 1/000 1/16 80-120 tert-Butylbenzene 1/160 25.0 " 1/000 1/16 80-120 Carbon tetrachloride 809 25.0 " 1/000 1/16 80-120 Chlorobenzene 1/130 25.0 " 1/000 1/13 80-120 Chlorotothane 1/130 25.0 " 1/000 1/13 80-120 Chloroform 777 25.0 " 1/000 1/13 80-120 Chloromethane 1/190 25.0 " 1/000 1/13 80-120 Chloromethane 1/190 25.0 " 1/000 1/13 80-120 Chlorotothane 1/190 25.0 " 1/000 1/11 80-120 Chlorotothane 1/190 25.0 " 1/000 1/11 80-120 Chlorotothane 1/190 25.0 " 1/000 1/11 80-120 Chlorotothane 1/190 25.0 " 1/1000 1/15 80-120 Chlorotothane 1/190 25.0 " 1/1000 1/1		Trichlorofluoromethane	ND	25.0	11							
Vinyl chloride ND 25.0 "	1	1,2,4-Trimethylbenzene	ND	25.0	It							
Total Xylenes ND 25.0 " Surrogate: 1-Cl-4-FB (ELCD) 1120 " 1000 112 80-120 Surrogate: 1-Cl-4-FB (PID) 867 " 1000 86.7 80-120 LCS (2110064-BS1) Prepared: 11/12/02 Analyzed: 11/13/02 Benzene 992 25.0 ug/kg wet 1000 99.2 80-120 Bromobenzene 1180 25.0 " 1000 118 80-120 Bromodichloromethane 714 25.0 " 1000 71.4 80-120 L n-Butylbenzene 1090 25.0 " 1000 116 80-120 sec-Butylbenzene 1160 25.0 " 1000 116 80-120 tert-Butylbenzene 1160 25.0 " 1000 116 80-120 cert-Butylbenzene 1160 25.0 " 1000 116 80-120 Carbon tetrachloride 809 25.0 " 1000 116 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chlorothane 1130 25.0 " 1000 113 80-120 Chlorothane 1130 25.0 " 1000 113 80-120 Chlorothane 1130 25.0 " 1000 113 80-120 Chlorothane 1190 25.0 " 1000 113 80-120 Chlorothane 1190 25.0 " 1000 113 80-120 Chlorothane 1190 25.0 " 1000 113 80-120 Chlorothane 1190 25.0 " 1000 111 80-120 Chlorothane 1190 25.0 " 1000 111 80-120 Chlorotoluene 1110 25.0 " 1000 111 80-120	j	1,3,5-Trimethylbenzene	ND	25.0								
Surrogate: 1-Cl-4-FB (ELCD) 1120		Vinyl chloride	ND	25.0	11							
Note		Total Xylenes	ND	25.0	Ħ							
Description		Surrogate: 1-Cl-4-FB (ELCD)	1120		"	1000		112	80-120			
Benzene 992 25.0 ug/kg wet 1000 99.2 80-120 Bromobenzene 1180 25.0 " 1000 118 80-120 Bromodichloromethane 714 25.0 " 1000 71.4 80-120 L n-Butylbenzene 1090 25.0 " 1000 109 80-120 Ecse-Butylbenzene 1160 25.0 " 1000 116 80-120 sec-Butylbenzene 1160 25.0 " 1000 116 80-120 Ectet-Butylbenzene 116 80-120 Carbon tetrachloride 809 25.0 " 1000 80.9 80-120 Ectet-Butylbenzene 1130 25.0 " 1000 113 80-120 Chlorotethane 1130 25.0 " 1000 113 80-120 Ectet-Butylbenzene Ectet-Butylbenzene 1130 80-120 Chlorotethane 1130 25.0 " 1000 113 80-120 Ectet-Butylbenzene		Surrogate: 1-Cl-4-FB (PID)	867		"	1000		86.7	80-120			
Bromobenzene 1180 25.0 " 1000 118 80-120 Bromodichloromethane 714 25.0 " 1000 71.4 80-120 L n-Butylbenzene 1090 25.0 " 1000 109 80-120 sec-Butylbenzene 1160 25.0 " 1000 116 80-120 tert-Butylbenzene 1160 25.0 " 1000 116 80-120 Carbon tetrachloride 809 25.0 " 1000 80.9 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chlorothane 1130 25.0 " 1000 113 80-120 Chlorothane 1990 25.0 " 1000 77.7 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 H 4-Chlorotoluene 1150 25.0 " 1000 115 80-120<		LCS (2110064-BS1)				Prepared:	11/12/02	Analyzed:	11/13/02			
Bromodichloromethane 714 25.0 " 1000 71.4 80-120 L n-Butylbenzene 1090 25.0 " 1000 116 80-120 sec-Butylbenzene 1160 25.0 " 1000 116 80-120 tert-Butylbenzene 1160 25.0 " 1000 116 80-120 Carbon tetrachloride 809 25.0 " 1000 80.9 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chlorotethane 1130 25.0 " 1000 113 80-120 Chlorotethane 1130 25.0 " 1000 113 80-120 Chlorotethane 1990 25.0 " 1000 113 80-120 Chlorotethane 1990 25.0 " 1000 113 80-120 L Chloromethane 1990 25.0 " 1000 119 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120		Benzene	992	25.0	ug/kg wet	1000		99.2	80-120			
n-Butylbenzene 1090 25.0 " 1000 109 80-120 sec-Butylbenzene 1160 25.0 " 1000 116 80-120 tert-Butylbenzene 1160 25.0 " 1000 80.9 80-120 Carbon tetrachloride 809 25.0 " 1000 80.9 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chloroform 777 25.0 " 1000 77.7 80-120 L Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 H 4-Chlorotoluene 1150 25.0 " 1000 115 80-120		Bromobenzene	1180	25.0	"	1000		118	80-120			
sec-Butylbenzene 1160 25.0 " 1000 116 80-120 tert-Butylbenzene 1160 25.0 " 1000 116 80-120 Carbon tetrachloride 809 25.0 " 1000 80.9 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chloroethane 1130 25.0 " 1000 77.7 80-120 L Chloroform 777 25.0 " 1000 199 80-120 L Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120]	Bromodichloromethane	714	25.0	"	1000		71.4	80-120			L
tert-Butylbenzene 1160 25.0 " 1000 116 80-120 Carbon tetrachloride 809 25.0 " 1000 80.9 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chloroethane 1130 25.0 " 1000 113 80-120 Chloroform 777 25.0 " 1000 77.7 80-120 Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120	7	n-Butylbenzene	1090	25.0	11	1000		109	80-120			
Carbon tetrachloride 809 25.0 " 1000 80.9 80-120 Chlorobenzene 1130 25.0 " 1000 113 80-120 Chloroethane 1130 25.0 " 1000 113 80-120 Chloroform 777 25.0 " 1000 77.7 80-120 L Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120		sec-Butylbenzene	1160	25.0	"	1000		116	80-120			
Chlorobenzene 1130 25.0 " 1000 113 80-120 Chloroethane 1130 25.0 " 1000 113 80-120 Chloroform 777 25.0 " 1000 77.7 80-120 L Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120		tert-Butylbenzene	1160	25.0	11	1000		116	80-120			
Chloroethane 1130 25.0 " 1000 113 80-120 Chloroform 777 25.0 " 1000 77.7 80-120 L Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120		Carbon tetrachloride	809	25.0	**	1000		80.9	80-120			
Chloroform 777 25.0 " 1000 77.7 80-120 L Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120	Ţ	Chlorobenzene	1130	25.0	"	1000		113	80-120			
Chloromethane 1990 25.0 " 1000 199 80-120 H 2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120		Chloroethane	1130	25.0	II.	1000		113	80-120			
2-Chlorotoluene 1110 25.0 " 1000 111 80-120 4-Chlorotoluene 1150 25.0 " 1000 115 80-120		Chloroform	777	25.0	11	1000		77.7	80-120			L
4-Chlorotoluene 1150 25.0 " 1000 115 80-120		Chloromethane	1990	25.0	11	1000		199	80-120			Н
4-Cinolololideile 1130 23.0 1000 113 00-120		2-Chlorotoluene	1110	25.0	**	1000		111	80-120			
Dibromochloromethane 817 25.0 " 1000 81.7 80-120	The second second	4-Chlorotoluene	1150	25.0	11	1000		115	80-120			
)	Dibromochloromethane	817	25.0	"	1000		81.7	80-120			

Great Lakes Analytical--Oak Creek



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11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
										. 10103
Batch 2110064 - EPA 5030B [MeOH]				<u> </u>			11/12/02			
LCS (2110064-BS1)	0.50	27.0	В .		11/12/02		: 11/13/02			
1,2-Dibromo-3-chloropropane	852	25.0	ug/kg wet	1000		85.2	80-120			
I,2-Dibromoethane	817	25.0		1000		81.7	80-120			
1,2-Dichlorobenzene	1180	25.0	"	1000		118	80-120			
1,3-Dichlorobenzene	1130	25.0		1000		113	80-120			
1,4-Dichlorobenzene	1120	25.0		1000		112	80-120			
Dichlorodifluoromethane	1680	25.0		1000		168	80-120			Н
1,1-Dichloroethane	865	25.0	"	1000		86.5	80-120			
1,2-Dichloroethane	834	25.0	"	1000		83.4	80-120			
1,1-Dichloroethene	1150	25.0	"	1000		115	80-120			
cis-1,2-Dichloroethene	1050	25.0	"	1000		105	80-120			
trans-1,2-Dichloroethene	1050	25.0		1000		105	80-120			
1,2-Dichloropropane	756	25.0	"	1000		75.6	80-120			L
1,3-Dichloropropane	820	25.0	"	1000		82.0	80-120			
2,2-Dichloropropane	848	25.0	"	1000		84.8	80-120			
Di-isopropyl ether	885	25.0	11	1000		88.5	80-120			
Ethylbenzene	1100	25.0	11	1000		110	80-120			
Hexachlorobutadiene	1150	25.0	11	1000		115	80-120			
sopropylbenzene	1180	25.0	u	1000		118	80-120			
o-Isopropyltoluene	1080	25.0	**	1000		108	80-120			
Methylene chloride	1080	100	u u	1000		108	80-120			
Methyl tert-butyl ether	952	25.0	n	1000		95.2	80-120			
Naphthalene	1110	25.0	u	1000		111	80-120			
1-Propylbenzene	1160	25.0	n	1000		116	80-120			
1,1,2,2-Tetrachloroethane	915	25.0	11	1000		91.5	80-120			
Tetrachloroethene	1070	25.0	II .	1000		107	80-120			
Foluene Foluene	1090	25.0	11	1000		109	80-120			
,2,3-Trichlorobenzene	1130	25.0	11	1000		113	80-120			
,2,4-Trichlorobenzene	1060	25.0	11	1000		106	80-120			
,1,1-Trichloroethane	857	25.0	H	1000		85.7	80-120			
,1,2-Trichloroethane	858	25.0	11	1000		85.8	80-120			
Frichloroethene Trichloroethene	955	25.0	н	1000		95.5	80-120			
Frichlorofluoromethane	794	25.0	**	1000		79.4	80-120			L
,2,4-Trimethylbenzene	1170	25.0	11	1000		117	80-120			
,3,5-Trimethylbenzene	1170	25.0	u .	1000		117	80-120			

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Amahda	n t	Reporting	Y 7 **	Spike	Source	0/BFC	%REC	n n n	RPD	37.
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2110064 - EPA 5030B [MeO]	H)				****					
LCS (2110064-BS1)				Prepared:	11/12/02	Analyzed	: 11/13/02			
Vinyl chloride	949	25.0	ug/kg wet	1000		94.9	80-120			
Total Xylenes	3430	25.0	ţt	3000		114	80-120			
Surrogate: 1-Cl-4-FB (ELCD)	1000		"	1000		100	80-120			
Surrogate: 1-Cl-4-FB (PID)	1020		"	1000		102	80-120			
LCS Dup (2110064-BSD1)				Prepared:	11/12/02	Analyzed	: 11/13/02			
Benzene	966	25.0	ug/kg wet	1000		96.6	80-120	2.66	20	
Bromobenzene	1120	25.0	"	1000		112	80-120	5.22	20	
Bromodichloromethane	801	25.0	11	1000		80.1	80-120	11.5	20	
n-Butylbenzene	1080	25.0	11	1000		108	80-120	0.922	20	
ec-Butylbenzene	1100	25.0	u	1000		110	80-120	5.31	20	
ert-Butylbenzene	1090	25.0	11	1000		109	80-120	6.22	20	
Carbon tetrachloride	841	25.0	u .	1000		84.1	80-120	3.88	20	
Chlorobenzene	1080	25.0	u	. 1000		108	80-120	4.52	20	
Chloroethane	1130	25.0	11	1000		113	80-120	0.00	20	
Chloroform	805	25.0	п	1000		80.5	80-120	3.54	20	
Chloromethane	1850	25.0	11	1000		185	80-120	7.29	20	Н
-Chlorotoluene	1060	25.0	tt	1000		106	80-120	4.61	20	
-Chlorotoluene	1090	25.0	II .	1000		109	80-120	5.36	20	
Dibromochloromethane	812	25.0	**	1000		81.2	80-120	0.614	20	
,2-Dibromo-3-chloropropane	842	25.0	11	1000		84.2	80-120	1.18	20	
,2-Dibromoethane	856	25.0	н	1000		85.6	80-120	4.66	20	
,2-Dichlorobenzene	1100	25.0	11	1000		110	80-120	7.02	20	
,3-Dichlorobenzene	1080	25.0	n	1000		108	80-120	4.52	20	
,4-Dichlorobenzene	1080	25.0	**	1000		108	80-120	3.64	20	
Dichlorodifluoromethane	1570	25.0	11	1000		157	80-120	6.77	20	Н
,1-Dichloroethane	908	25.0	11	1000		90.8	80-120	4.85	20	
,2-Dichloroethane	845	25.0	11	1000		84.5	80-120	1.31	20	
,1-Dichloroethene	1120	25.0	"	1000		112	80-120	2.64	20	
is-1,2-Dichloroethene	1030	25.0	11	1000		103	80-120	1.92	20	
rans-1,2-Dichloroethene	1020	25.0	u	1000		102	80-120	2.90	20	
,2-Dichloropropane	772	25.0	u	1000		77.2	80-120	2.09	20	L
,3-Dichloropropane	851	25.0	11	1000		85.1	80-120	3.71	20	
,2-Dichloropropane	886	25.0	n	1000		88.6	80-120	4.38	20	

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110064 - EPA 5030B [MeOH]										T
LCS Dup (2110064-BSD1)				Prepared:	11/12/02	Analyzed	: 11/13/02			
Di-isopropyl ether	901	25.0	ug/kg wet	1000		90.1	80-120	1.79	20	
Ethylbenzene	1050	25.0	11	1000		105	80-120	4.65	20	
Hexachlorobutadiene	1060	25.0	**	1000		106	80-120	8.14	20	
Isopropylbenzene	1110	25.0	"	1000		111	80-120	6.11	20	
p-Isopropyltoluene	1080	25.0	"	1000		108	80-120	0.00	20	
Methylene chloride	1070	100	"	1000		107	80-120	0.930	20	
Methyl tert-butyl ether	921	25.0	u u	1000		92.1	80-120	3.31	20	
Naphthalene	1110	25.0	11	1000		111	80-120	0.00	20	
n-Propylbenzene	1100	25.0	n	1000		110	80-120	5.31	20	
1,1,2,2-Tetrachloroethane	941	25.0	H	1000		94.1	80-120	2.80	20	
Tetrachloroethene	1040	25.0	n	1000		104	80-120	2.84	20	
Toluene	1060	25.0	п	1000		106	80-120	2.79	20	
1,2,3-Trichlorobenzene	1120	25.0	U	1000		112	80-120	0.889	20	
1,2,4-Trichlorobenzene	1130	25.0	n	1000		113	80-120	6.39	20	
1,1,1-Trichloroethane	883	25.0	n	1000		88.3	80-120	2.99	20	
1,1,2-Trichloroethane	884	25.0	II .	1000		88.4	80-120	2.99	20	
Trichloroethene	964	25.0	II .	1000		96.4	80-120	0.938	20	
richlorofluoromethane	938	25.0	11	1000		93.8	80-120	16.6	20	
1,2,4-Trimethylbenzene	1100	25.0	"	1000		110	80-120	6.17	20	
1,3,5-Trimethylbenzene	1110	25.0	11	1000		111	80-120	5.26	20	
Vinyl chloride	882	25.0	n	1000		88.2	80-120	7.32	20	
Total Xylenes	3300	25.0	II.	3000		110	80-120	3.86	20	
Surrogate: 1-Cl-4-FB (ELCD)	1030		"	1000		103	80-120			***************************************
Surrogate: 1-Cl-4-FB (PID)	981		"	1000		98.1	80-120			

Great Lakes Analytical--Oak Creek

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Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

Total Metals by EPA 6000/7000 Series Methods - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110142 - EPA 3050B		····		16.761V						
Blank (2110142-BLK1)				Prepared:	11/08/02	Analyzed	: 11/11/02			
Lead	ND	1.00 n	ng/kg wet							
LCS (2110142-BS1)				Prepared:	11/08/02	Analyzed	11/11/02			
Lead	202	1.00 m	ıg/kg wet	201		100	84-109			
Matrix Spike (2110142-MS1)	Sou	rce: B211019	-01	Prepared:	11/08/02	Analyzed:	11/11/02			
Lead	452	1.14 n	ıg/kg dry	223	261	85.7	52-125			
Matrix Spike Dup (2110142-MSD1)	Sou	rce: B211019	-01	Prepared:	11/08/02	Analyzed:	11/11/02			
Lead	512	1.14 m	ıg/kg dry	219	261	115	52-125	12.4	14	

Great Lakes Analytical--Oak Creek

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11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
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Reported: 11/14/02 16:45

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110070 - EPA 3550B										
Blank (2110070-BLK1)				Prepared:	11/05/02	Analyzed	: 11/07/02			
Acenaphthene	ND	100	ug/kg wet							
Acenaphthylene	ND	200	11							
Anthracene	ND	100	tt							
Benz (a) anthracene	ND	50.0	U							
Benzo (a) pyrene	ND	5.00	II							
Benzo (b) fluoranthene	ND	50.0	11							
Benzo (ghi) perylene	ND	100	II							
Benzo (k) fluoranthene	ND	100	11							
Chrysene	ND	100	11							
Dibenz (a,h) anthracene	ND	5.00	**							
Fluoranthene	ND	100	II							
Fluorene	ND	100	U							
Indeno (1,2,3-cd) pyrene	ND	50.0	ij							
l-Methylnaphthalene	ND	100			,					
2-Methylnaphthalene	ND	100	ü							
Naphthalene	ND	100	II .							
Phenanthrene	ND	100	"							
Pyrene	ND	100	n							
Surrogate: Carbazole	44.4		"	67.9		65.4	14.9-144			
LCS (2110070-BS1)				Prepared:	11/05/02	Analyzed	: 11/07/02			
Acenaphthene	94.0	10.0	ug/kg wet	137		68.6	30.3-126			
Acenaphthylene	83.1	20.0	11	137		60.7	75.8-175			L
Anthracene	93.8	10.0	u	137		68.5	45-115			
Benz (a) anthracene	130	5.00	II.	137		94.9	40.9-146			
Benzo (a) pyrene	107	0.500	D.	137		78.1	10-150			
Benzo (b) fluoranthene	117	5.00	11	137		85.4	47.4-133			
Benzo (ghi) perylene	132	10.0	n	137		96.4	38-131			
Benzo (k) fluoranthene	117	10.0	11	137		85.4	49.1-137			
Chrysene	125	10.0	11	137		91.2	59.7-119			
Dibenz (a,h) anthracene	123	0.500	11	137		89.8	33.7-144			
luoranthene	105	10.0	u	137		76.6	52.3-126			
fluorene	94.1	10.0	11	137		68.7	51-110			
ndeno (1,2,3-cd) pyrene	116	5.00	"	137		84.7	54.1-125			

Great Lakes Analytical--Oak Creek



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Reported: 11/14/02 16:45

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	Batch 2110070 - EPA 3550B	***************************************									
	LCS (2110070-BS1)				Prepared:	11/05/02	Analyzed	1: 11/07/02			
	1-Methylnaphthalene	79.6	10.0	ug/kg wet	137		58.1	31.2-125			
1	2-Methylnaphthalene	84.0	10.0	n	137		61.3	33.3-119			
	Naphthalene	78.4	10.0	ti .	137		57.2	43.3-136			
	Phenanthrene	96.3	10.0	U	137		70.3	36.3-142			
	Pyrene	118	10.0	11	137		86.1	41.3-122			
	Surrogate: Carbazole	48.2		"	68.4		70.5	14.9-144			
	Matrix Spike (2110070-MS1)	Sou	rce: B2110	11-01	Prepared:	11/05/02	Analyzed	: 11/07/02			
,	Acenaphthene	93.5	12.4	ug/kg dry	169	ND	55.3	10-140			
	Acenaphthylene	679	24.9	11	169	104	340	10-218			H
1	Anthracene	69.8	12.4	11	169	ND	41.3	10-136			
	Benz (a) anthracene	87.7	6.21	11	169	ND	51.9	10-152			
ŧ	Benzo (a) pyrene	65.8	0.621	"	169	ND	38.9	10-132			
ļ	Benzo (b) fluoranthene	72.8	6.21	**	169	ND	43.1	10-140			
	Benzo (ghi) perylene	65.3	12.4	II .	169	ND	38.6	10-167			
	Benzo (k) fluoranthene	71.5	12.4	u	169	ND	42.3	10-144			
	Chrysene	85.4	12.4	II	169	ND	50.5	10-146			
	Dibenz (a,h) anthracene	69.2	0.621	tı	169	ND	40.9	10-131			
i	Fluoranthene	131	12.4	п	169	12.6	70.1	10-153			
	Fluorene	78.4	12.4	ŧf	169	ND	46.4	10-125			
1	Indeno (1,2,3-cd) pyrene	61.9	6.21	II	169	ND	36.6	10-138			
THE RESERVE	1-Methylnaphthalene	499	12.4	tr .	169	88.0	243	10-150			Н
	2-Methylnaphthalene	660	12.4	11	169	162	295	10-155			Н
	Naphthalene	824	12.4	11	169	156	395	10-158			Н
	Phenanthrene	122	12.4	11	169	ND	72.2	10-155			
	Pyrene	99.8	12.4	If	169	ND	55.1	10-154			
	Surrogate: Carbazole	66.5		"	84.7		78.5	14.9-144	***************************************		

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Cendra Statha



Email: info@glalabs.com (414) 570-9460 FAX (414) 570-9461

STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110070 - EPA 3550B		20-11-1-1-1-1						···		
Matrix Spike Dup (2110070-MSD1)	So	urce: B2110	11-01	Prepared:	11/05/02	Analyzed	i: 11/07/02			
Acenaphthene	64.9	12.4	ug/kg dry	170	ND	38.2	10-140	36.1	105	
Acenaphthylene	364	24.9	n n	170	104	153	10-218	60.4	59.8	Н
Anthracene	67.0	12.4	11	170	ND	39.4	10-136	4.09	62.1	
Benz (a) anthracene	89.0	6.21	n	170	ND	52.4	10-152	1.47	81.6	
Benzo (a) pyrene	69.0	0.621	11	170	ND	40.6	10-132	4.75	56.9	
Benzo (b) fluoranthene	73.9	6.21	II.	170	ND	43.5	10-140	1.50	96.8	
Benzo (ghi) perylene	68.4	12.4	n	170	ND	40.2	10-167	4.64	64.9	
Benzo (k) fluoranthene	72.5	12.4	n	170	ND	42.6	10-144	1.39	59.5	
Chrysene	85.1	12.4	11	170	ND	50.1	10-146	0.352	113	
Dibenz (a,h) anthracene	71.4	0.621	п	170	ND	42.0	10-131	3.13	57.5	
Fluoranthene	132	12.4	11	170	12.6	70.2	10-153	0.760	103	
Fluorene	69.3	12.4	n	170	ND	40.8	10-125	12.3	59	
Indeno (1,2,3-cd) pyrene	64.9	6.21	11	170	ND	38.2	10-138	4.73	84.6	
l-Methylnaphthalene	121	12.4	ıı	170	88.0	19.4	10-150	122	91.8	Н
2-Methylnaphthalene	372	12.4	11	170	162	124	10-155	55.8	89.4	
Naphthalene	533	12.4	u	170	156	222	10-158	42.9	92.2	Н
Phenanthrene	111	12.4	**	170	ND	65.3	10-155	9.44	89	
Pyrene	93.1	12.4	u	170	ND	50.8	10-154	6.95	78.5	
Surrogate: Carbazole	63.8		"	85.0		75.1	14.9-144			

Great Lakes Analytical--Oak Creek



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/14/02 16:45

Percent Solids - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110108 - General Prep		- <u>-</u>								
Blank (2110108-BLK1)				Prepared:	11/07/02	Analyzed:	11/08/02			
% Solids	ND	0.0100	%							
Blank (2110108-BLK2)				Prepared:	11/07/02	Analyzed:	11/08/02			
% Solids	0.113	0.0100	%							
Duplicate (2110108-DUP1)				Prepared:	11/07/02	Analyzed:	11/08/02			
% Solids	92.1	0.0100	%						20	
Duplicate (2110108-DUP2)				Prepared:	11/07/02	Analyzed:	11/08/02			
% Solids	84.1	0.0100	%	***************************************					20	

Great Lakes Analytical--Oak Creek

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Cendra Status



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr.

Project Number: [none]

Reported:

Milwaukee WI, 53224

Project Manager: Mark Mejac

11/14/02 16:45

Notes and Definitions

QC The result for one or more quality control measurements associated with this sample did not meet the laboratory and/or source

method acceptance criteria.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

L This quality control measurement is below the laboratory established limit.

H This quality control measurement is above the laboratory established limit.

Great Lakes Analytical--Oak Creek

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Andrea Stathas, Project Manager

Page 23 of 23



CHAIN OF CUSTODY REPORT

1380 Busch Parkway Buffalo Grove, IL 60089-4505 (847) 808-7766 FAX (847) 808-7772 140 E. Ryan Road Oak Creek, WI 53154 (414) 570-9460 FAX (414) 570-9461

Client: STS Consultants Ltd.		Bill To:											TAT:	STD.	A DA	Y 3	DAY	2 DAY	1 DAY	< 24 HRS.
Address: 11925 W. Lake Park	٠,	Address	S:											S - TAT O - TAT is				DATE R	ESULTS NE	EDED:
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Project: 87185EA Southeast	/	/ /	1.	7	# of B	ottles	<i>rax</i> S		7	7 /	7	7	1 4 8	TD [] Otne	<u> </u>	SAM	1015		
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1 MW-1 2-4'							1													
PID: 0.0	10-29-02	Soll		-		2	2		_	A	$ \swarrow $	-	_			+	u	1210	<u>90 Z</u>	01
2 MW-1 7.5-4.5' PID: 0.0	-		1			1	2				X									-02
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19 November 2002

Mark Mejac STS Consultants 11425 S. Lake Park Dr. Milwaukee, WI 53224 RE: 87185EA Southeast

Enclosed are the results of analyses for samples received by the laboratory on 11/08/02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Great Lakes Analytical

India Stathas

Andrea Stathas
Project Manager

State of Wisconsin Certification Numbers:

Great Lakes Analytical--Oak Creek, WI: 341000330 Great Lakes Analytical--Buffalo Grove, IL: 999917160





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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-4	W211078-01	Water	11/08/02 00:00	11/08/02 12:45
MW-5	W211078-02	Water	11/08/02 00:00	11/08/02 12:45
MW-6	W211078-03	Water	11/08/02 00:00	11/08/02 12:45
MW-1	W211078-04	Water	11/08/02 00:00	11/08/02 12:45
MW-2	W211078-05	Water	11/08/02 00:00	11/08/02 12:45
MW-3	W211078-06	Water	11/08/02 00:00	11/08/02 12:45
MW-3D	W211078-07	Water	11/08/02 00:00	11/08/02 12:45

Great Lakes Analytical--Oak Creek

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Andrea Stathas, Project Manager



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte Result MW-4 (W211078-01) Water Sampled: 11/08/02 00:00 Robers Result Benzene ND Bromobenzene ND Bromodichloromethane ND n-Butylbenzene ND sec-Butylbenzene ND tert-Butylbenzene ND Carbon tetrachloride ND Chlorobenzene ND Chloroform ND Chloromethane ND Chloromethane ND Chloromethane ND Chloromethane ND Chloromethane ND Chlorotoluene ND	eporting			Citte				
Benzene ND Bromobenzene ND Bromodichloromethane ND n-Butylbenzene ND sec-Butylbenzene ND tert-Butylbenzene ND Carbon tetrachloride ND Chlorobenzene ND Chloroform ND Chloromethane ND	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene ND Bromodichloromethane ND n-Butylbenzene ND sec-Butylbenzene ND tert-Butylbenzene ND Carbon tetrachloride ND Chlorobenzene ND Chloroethane ND Chloroform ND Chloromethane ND	eceived:	11/08/02	12:45					Qo
Bromodichloromethane ND n-Butylbenzene ND sec-Butylbenzene ND tert-Butylbenzene ND Carbon tetrachloride ND Chlorobenzene ND Chloroethane ND Chloroform ND Chloromethane ND	0.500	ug/l	1	2110087	11/15/02	11/15/02	EPA 8021B	
n-Butylbenzene ND sec-Butylbenzene ND tert-Butylbenzene ND Carbon tetrachloride ND Chlorobenzene ND Chloroethane ND Chloroform ND Chloromethane ND	0.500	11	ţ;	II	11		II .	
sec-ButylbenzeneNDtert-ButylbenzeneNDCarbon tetrachlorideNDChlorobenzeneNDChloroethaneNDChloroformNDChloromethaneND	0.500	11	11	II	11	"	u	
tert-Butylbenzene ND Carbon tetrachloride ND Chlorobenzene ND Chloroethane ND Chloroform ND Chloromethane ND	0.500		**	"	H	1)	11	
Carbon tetrachlorideNDChlorobenzeneNDChloroethaneNDChloroformNDChloromethaneND	0.500	u	II .	11	11	n	II .	
ChlorobenzeneNDChloroethaneNDChloroformNDChloromethaneND	0.500	u	п	11	11	11	II	
ChloroethaneNDChloroformNDChloromethaneND	0.500	II .	u	11	11	11	II .	
Chloroform ND Chloromethane ND	0.500	11	II .	ŧī	"	11	II .	
Chloromethane ND	0.500	"	II .	U	U	u	n	
	0.140	"	11	tt.	ıı	11	n	
2-Chlorotoluene ND	0.600	"	"	11	u	11	n .	
2 Chlorotolucile ND	0.500	n	11	It	u	u	11	
4-Chlorotoluene ND	0.500	11	n	u	u	"	**	
Dibromochloromethane ND	0.500	11	n	U .	u	**	u .	
1,2-Dibromo-3-chloropropane ND	0.390	**	#1	U		n .	If	
1,2-Dibromoethane ND	0.380	#	*1	II .	11	II.	tt.	
1,2-Dichlorobenzene ND	0.500	**	tt	n	"	n .	u	
1,3-Dichlorobenzene ND	0.500	"	**	II	11	11	u .	
1,4-Dichlorobenzene ND	0.500	18	II	n .	17	11	u	
Dichlorodifluoromethane ND	0.500	O	II.	11	11	n .	II	
1,1-Dichloroethane ND	0.500	**	u	n	11	n	II .	
1,2-Dichloroethane ND	0.500	**	11	**	11	Ħ	II	
1,1-Dichloroethene ND	0.500	**	11	**	**	tt	п	
cis-1,2-Dichloroethene ND	0.500	11	II	**	11	ti .	ш	
trans-1,2-Dichloroethene ND	0.500	II.	u	**	u	##	n	
1,2-Dichloropropane ND	0.500		11	**	It	11	и	
1,3-Dichloropropane ND	0.500	n n	u	**	u	**	н	
2,2-Dichloropropane ND	0.500	II .	II .	tt	11	**	u u	
Di-isopropyl ether ND	5.00	u .	U.	11	11	11	II.	
Ethylbenzene ND	0.500	ti.	u	11	ŧŧ	"	· ·	
Hexachlorobutadiene ND	5.00	ш	u	11	it	11	u	
Isopropylbenzene ND	0.500	11	u	n	11	11	u	
p-Isopropyltoluene ND	0.500	11	TI .	п	n	u	Œ	
Methylene chloride ND	0.530	12	11		II.	II	17	
Methyl tert-butyl ether ND	0.500	11	**	п	u .	II .	11	
Naphthalene ND	2.00	n	n	u .	II .	II	**	
n-Propylbenzene ND	0.500	D	#	11	II .	u	**	
1,1,2,2-Tetrachloroethane ND	0.350		11	11	u	п	**	
Tetrachloroethene ND	0.500	11	11	11	tt.	11	п	
Toluene ND	0.500	11	п	17	11	11	II .	
1,2,3-Trichlorobenzene ND	2.00	11	II .	11	**	U	u	

Great Lakes Analytical--Oak Creek

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ardres Stathas



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

		i Lakes A				-				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method		Not
MW-4 (W211078-01) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45						Q
1,2,4-Trichlorobenzene	ND	2.00	ug/l	1	2110087	11/15/02	11/15/02	EPA 8021B		
1,1,1-Trichloroethane	ND	0.500	н	11	**	11	11	II		
1,1,2-Trichloroethane	ND	0.160	"	н	11	11	11	11		
Trichloroethene	ND	0.500	n	**	11	II	11	· ·		
Trichlorofluoromethane	ND	0.500	**	11	"	11	"	11		
1,2,4-Trimethylbenzene	ND	1.00		1)	n n	11	u	ir .		
1,3,5-Trimethylbenzene	ND	1.00	11	u	11	Ħ	II .	11		
Vinyl chloride	ND	0.170	"	п	ц	II.	11	11		
Total Xylenes	ND	0.500	11	11	11	II	U	U		
Surrogate: 1-Cl-4-FB (ELCD)		123 %	80-	120	"	"	"	"	Н	
Surrogate: 1-Cl-4-FB (PID)		100 %	80-	120	"	"	"	"		
MW-5 (W211078-02) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45						QO
Benzene	ND	0.500	ug/l	1	2110087	11/15/02	11/16/02	EPA 8021B		
Bromobenzene	ND	0.500	*1	10	11	ш	11	II .		
Bromodichloromethane	ND	0.500	**	п	11	11	U	п		
n-Butylbenzene	ND	0.500	"	n	н	"	11	11		
sec-Butylbenzene	ND	0.500	n	11	11	II	16	11		
tert-Butylbenzene	ND	0.500	or o	u	***	11	u	n .		
Carbon tetrachloride	ND	0.500	u u	n	11	11	11	11		
Chlorobenzene	ND	0.500	11	78	n	ii .	**	**		
Chloroethane	ND	0.500	**	u	17	11	11	п		
Chloroform	ND	0.140	n	11	II .	**	11	"		
Chloromethane	ND	0.600	11	11	**		11	17		
2-Chlorotoluene	ND	0.500	tr.	11	**	11	tr.	п		
4-Chlorotoluene	ND	0.500	11	н	11	11	II.	11		
Dibromochloromethane	ND	0.500	11	11	*1	II	11	11		
1,2-Dibromo-3-chloropropane	ND	0.390	o o	II	II.	11	"	u		
1,2-Dibromoethane	ND	0.380	II .	**	11	17		n		
1,2-Dichlorobenzene	ND	0.500	**	ır	11	11	11	**		
1,3-Dichlorobenzene	ND	0.500	II	n	11	58	II .	11		
1,4-Dichlorobenzene	ND	0.500	11	11	11	II	II .	**		
Dichlorodifluoromethane	ND	0.500	11	"	11	п	**	11		
1,1-Dichloroethane	ND	0.500	11	II	11	11	If	11		
1,2-Dichloroethane	ND	0.500	11	11	11	tt.	II	n .		
1,1-Dichloroethene	ND	0.500	11	**	11	и	II .	11		
cis-1,2-Dichloroethene	ND	0.500	n	u	11	11	11	10		
rans-1,2-Dichloroethene	ND	0.500	п	н	H.	*11	11	u		
1,2-Dichloropropane	ND	0.500	11	11	п	u	II	u u		
1,3-Dichloropropane	ND	0.500	11	11	11	ır	II	**		
2,2-Dichloropropane	ND	0.500	"	ır	11	II .	**	11		
.,. Diemoropropane	ND	0.500								

Great Lakes Analytical--Oak Creek

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Cendra Stathas



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Approx	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	MW-5 (W211078-02) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					QC
	Di-isopropyl ether	ND	5.00	ug/l	l	2110087	11/15/02	11/16/02	EPA 8021B	
*	Ethylbenzene	ND	0.500	11	It	11	11	"	n .	
2	Hexachlorobutadiene	ND	5.00	II .	II	"	II	II.	"	
	Isopropylbenzene	ND	0.500	11	п	**	**	ш	Tf.	
	p-Isopropyltoluene	ND	0.500	**	**	.01	"	u	tt.	
	Methylene chloride	ND	0.530	"	11	11	"	u	tt.	
	Methyl tert-butyl ether	ND	0.500	"	11	11	H	II	u	
	Naphthalene	ND	2.00	U	**	"	ıı	II .	n .	
	n-Propylbenzene	ND	0.500	II.	"	II	II .	II	u	
	1,1,2,2-Tetrachloroethane	ND	0.350	"	"	n	п	11	n	
	Tetrachloroethene	ND	0.500		"	11	n	11	n	
	Toluene	ND	0.500	**	u	н	11	11	11	
	1,2,3-Trichlorobenzene	ND	2.00	51	11	"	**	п	n	
	1,2,4-Trichlorobenzene	ND	2.00	11	11	"	Ħ	11	tt.	
	1,1,1-Trichloroethane	ND	0.500	tt	11	11	11	11	***	
	1,1,2-Trichloroethane	ND	0.160	11	11	п	II.	II	u	
	Trichloroethene	ND	0.500	li .	67	II.	It	11		
	Trichlorofluoromethane	ND	0.500	11	17	U	n	II	II .	
	1,2,4-Trimethylbenzene	ND	1.00	11		11	11	11	u .	
	1,3,5-Trimethylbenzene	ND	1.00	11	"	11	11	ŧ)	**	
	Vinyl chloride	ND	0.170	**	"	Ħ	**	11	11	
	Total Xylenes	ND	0.500	Ħ	11	tr.	11	(t	tt	
	Surrogate: 1-Cl-4-FB (ELCD)		109 %	80-	120	"	"	11	"	
	Surrogate: 1-Cl-4-FB (PID)		99.7 %	80-	120	"	"	ıı .	"	

Great Lakes Analytical--Oak Creek



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-6 (W211078-03) Water	Sampled: 11/08/02 00:00								Qu
Benzene	ND	0.500	ug/l	1	2110087	11/15/02	11/15/02	EPA 8021B	
Bromobenzene	ND	0.500	"	"	11	11	"	"	
Bromodichloromethane	ND	0.500	17	**	#	ŧı	11	11	
n-Butylbenzene	ND	0.500	#	•	11	n	**	n	
sec-Butylbenzene	ND	0.500	11	11	11	**	#	11	
tert-Butylbenzene	ND	0.500	"	tt	11	11	**	U	
Carbon tetrachloride	ND	0.500	19	11	ŧi	n	#	n	
Chlorobenzene	ND	0.500	1)	18	11	11	11	n .	
Chloroethane	ND	0.500	**	11	11	II	11	U	
Chloroform	ND	0.140	41	11	n	n n	n	п	
Chloromethane	ND	0.600	IJ	11	n	II .	u	II	•
2-Chlorotoluene	ND	0.500	ш	11	II	U	n	11	
4-Chlorotoluene	ND	0.500	п	н	n	11	u	18	
Dibromochloromethane	ND	0.500	п	11	II.	11	11	II .	
1,2-Dibromo-3-chloropropane	ND	0.390	11	11	11	11	11	II.	
1,2-Dibromoethane	ND	0.380	11	11	11	н	н	u	
1,2-Dichlorobenzene	ND	0.500	16	11	n	н	11	tt.	
1,3-Dichlorobenzene	ND	0.500	11	n	п	II .	II	11	
1,4-Dichlorobenzene	ND	0.500	**	. 11	ıı	II .	"	11	
Dichlorodifluoromethane	ND	0.500	u .	11	17	11	11	n	
1,1-Dichloroethane	ND	0.500	n n	u	*1	11	11	11	
1,2-Dichloroethane	ND	0.500	q	u	#1	n	n	п	
1,1-Dichloroethene	ND	0.500	u .	tt.	#1	11	11	II .	
cis-1,2-Dichloroethene	ND	0.500	11	ff	**	II	ii	ti	
trans-1,2-Dichloroethene	ND	0.500	**	11	II.	11	п	tr	
1,2-Dichloropropane	ND	0.500	51	11	H	II.	n	tr	
1,3-Dichloropropane	ND	0.500	17	**	II	**	11	11	
2,2-Dichloropropane	ND	0.500	19	#1	n .	"	11	11	
Di-isopropyl ether	ND	5.00	ŧ	u u	17	**	**	n	
Ethylbenzene	ND	0.500	11	11	11		11	li .	
Hexachlorobutadiene	ND	5.00	11	u	11	**	11	11	
Isopropylbenzene	ND	0.500	II.	II.	**	II .	n n	li .	
p-Isopropyltoluene	ND	0.500	н	11	11	п	n n	li .	
Methylene chloride	ND	0.530	II.	11	11	n	II .	11	
Methyl tert-butyl ether	ND	0.500	11	11	п		tr.	11	
Naphthalene	ND ND	2.00	12	11	11	58	18	11	
n-Propylbenzene	ND ND	0.500	н	11	tf	91	II .	ų	
1,1,2,2-Tetrachloroethane	ND ND	0.350	11	It	**	11	ш	u	
Tetrachloroethene	ND ND	0.500	II.	,,	11	IF	U	11	
Toluene	ND ND	0.500	II	11	п	11	11	u	
1,2,3-Trichlorobenzene	ND ND	2.00	11	n .	11	11	n	п	
1,2,3-111011010001120110	מא	2.00							

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

		Reporting						***	
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (W211078-03) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					QC
1,2,4-Trichlorobenzene	ND	2.00	ug/l	1	2110087	11/15/02	11/15/02	EPA 8021B	
1,1,1-Trichloroethane	ND	0.500	11	p	"	tř	"	II	
1,1,2-Trichloroethane	ND	0.160	11	**	11	п	II.	11	
Trichloroethene	ND	0.500	n	u	11	11	II.	11	
Trichlorofluoromethane	ND	0.500	u	II	n	11	"	11	
1,2,4-Trimethylbenzene	ND	1.00		11	"	"	**	(I	
1,3,5-Trimethylbenzene	ND	1.00	11	II .	11	11	"	n	
Vinyl chloride	ND	0.170	ir .	"	н	11	"	u	
Total Xylenes	ND	0.500		11	11	II	11		
Surrogate: 1-Cl-4-FB (ELCD)		107 %	80-	120	"	n	"	"	
Surrogate: 1-Cl-4-FB (PID)		101 %	80-	120	"	n	"	"	
MW-1 (W211078-04) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					QC
Benzene	ND	0.500	ug/l	I	2110087	11/15/02	11/16/02	EPA 8021B	
Bromobenzene	ND	0.500	11	tı	"	11	11	u u	
Bromodichloromethane	ND	0.500	II .	u	11	n	11	**	
n-Butylbenzene	ND	0.500	11	n	11		**	U	
sec-Butylbenzene	ND	0.500	ш	11	**	II	11	H.	
tert-Butylbenzene	ND	0.500	n	n n	11	11	n	11	
Carbon tetrachloride	ND	0.500	51	U	11	W	11	u	
Chlorobenzene	ND	0.500	11	11	**	u	II.	H	
Chloroethane	ND	0.500	"	11	**	n	n	n	
Chloroform	ND	0.140	"	ш	u .	н	n	tt	
Chloromethane	ND	0.600	**	11		**	11	п	
2-Chlorotoluene	ND	0.500	11	**	"	"	**	n	
4-Chlorotoluene	ND	0.500	O O	11	**	n	"	**	
Dibromochloromethane	ND	0.500	n	u	u u	**	"	11	
1,2-Dibromo-3-chloropropane	ND	0.390	11	11	n .	11	Ħ	п	
1,2-Dibromoethane	ND	0.380	**	"	H	II .	"	11	
1,2-Dichlorobenzene	ND	0.500		**	**	II .	n	11	
1,3-Dichlorobenzene	ND	0.500		u	u	n	n .	tt	
1,4-Dichlorobenzene	ND	0.500	"	11	u	11	11	u	
Dichlorodifluoromethane	ND	0.500	**	11	II .	tf	**	II .	
1,1-Dichloroethane	ND	0.500	11	n	D	п	II	n	
1,2-Dichloroethane	ND	0.500		11	17	0	II.	ti.	
1,1-Dichloroethene	ND	0.500		"	It	11	0	"	
cis-1,2-Dichloroethene	ND	0.500	11	"	n	u ·	11	п	
trans-1,2-Dichloroethene	ND	0.500	**	п		"	tt	п	
1,2-Dichloropropane	ND	0.500	**	п	31	11	16	n	
1,3-Dichloropropane	ND	0.500	11	"	н	11	п	"	
2,2-Dichloropropane	ND	0.500	tr.	**	11	11	11	11	
2,2-Dicinoropropane	עא	0.500							

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note,
MW-1 (W211078-04) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					Qu
Di-isopropyl ether	ND	5.00	ug/l	1	2110087	11/15/02	11/16/02	EPA 8021B	***************************************
Ethylbenzene	ND	0.500	(r	n n	11	II .	11	IT	
Hexachlorobutadiene	ND	5.00	n	"	tt .	11	"	11	
Isopropylbenzene	ND	0.500	u	"	11	II	"	"	
p-Isopropyltoluene	ND	0.500	11	11	"	11	"	11	
Methylene chloride	ND	0.530	11	**	II .	II .	**	ii .	
Methyl tert-butyl ether	ND	0.500	II .	1\$	**	Ħ	11	II .	
Naphthalene	ND	2.00	"	11	II .	11	11	n	
n-Propylbenzene	ND	0.500	n	11	0	n	15	и	
1,1,2,2-Tetrachloroethane	ND	0.350	17	11	11	11	II .	n	
Tetrachloroethene	ND	0.500	tr.	**	11	II	11	и	
Toluene	ND	0.500	0	tt	11	**	11	II .	
1,2,3-Trichlorobenzene	ND	2.00	11	н	u	11		11	
1,2,4-Trichlorobenzene	ND	2.00		11	11	11	"	91	
1,1,1-Trichloroethane	ND	0.500	н	II	"	11	12	п	
1,1,2-Trichloroethane	ND	0.160	"	II.	11	11	**	n	
Trichloroethene	ND	0.500		**	11	11	11	0	
Trichlorofluoromethane	ND	0.500	n	11	11	11	11	п	
1,2,4-Trimethylbenzene	ND	1.00	u	n	u	11	11	**	
1,3,5-Trimethylbenzene	ND	1.00	п	"	11	п	11	er	
Vinyl chloride	ND	0.170	**	п	11	u	"	n	
Total Xylenes	ND	0.500	u	**	11	11	11	N	
Surrogate: 1-Cl-4-FB (ELCD)		108 %	80-	120	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		102 %	80-	120	"	n	"	"	

Great Lakes Analytical--Oak Creek

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Andrea Stathas, Project Manager



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

		Grea	t Liancs A	anaiy ii	calOa	K CICCH		····		
·	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	MW-2 (W211078-05) Water	Sampled: 11/08/02 00:00	Received:	11/08/02 1	12:45					QC
	Benzene	ND	0.500	ug/l	1	2110087	11/15/02	11/16/02	EPA 8021B	
	Bromobenzene	ND	0.500	"	11	11	11	11	"	
	Bromodichloromethane	ND	0.500	tr	ш	Ħ	11	II .	H	
	n-Butylbenzene	ND	0.500	11	11	ti	11	n	ıı	
	sec-Butylbenzene	ND	0.500	II .	11	18	II	11	II .	
	tert-Butylbenzene	ND	0.500	n .	11	u	II .	11	п	
	Carbon tetrachloride	ND	0.500	11	11	n .	n .	11	u	
	Chlorobenzene	ND	0.500	11	**	11	"	17	u .	
	Chloroethane	ND	0.500	"	"	п	11	11	n	
	Chloroform	ND	0.140	**	u	n	1)	ļi.	0	
	Chloromethane	ND	0.600	H .	н	n	n		**	
	2-Chlorotoluene	ND	0.500	II.	II .	11	tt.	II .	tr	
	4-Chlorotoluene	ND	0.500	u	n	o o	II.	п	O.	
	Dibromochloromethane	ND	0.500	u .	11	u .	11	n .	u	
	1,2-Dibromo-3-chloropropane	ND	0.390	D	11	lt.	u u	**	ш	
	1,2-Dibromoethane	ND	0.380	11	tt	II	н	"	II .	
	1,2-Dichlorobenzene	ND	0.500	11	**	II .	"	tt.	н	
	1,3-Dichlorobenzene	ND	0.500	"	11	n	"	11	11	
	1,4-Dichlorobenzene	ND	0.500	U	u	11	#1	**	11	
	Dichlorodifluoromethane	ND	0.500	II	n	11	11	**	1)	
	1,1-Dichloroethane	ND	0.500	11	u	11	11	u	11	
	1,2-Dichloroethane	ND	0.500	"	u	11	ŧŧ	u	11	
	1,1-Dichloroethene	ND	0.500	11	11	11	**	tt.	11	
	cis-1,2-Dichloroethene	ND	0.500	"	11	11	e	**	11	
	trans-1,2-Dichloroethene	ND	0.500	11	II	11	11	11	11	
	1,2-Dichloropropane	ND	0.500	**	II .	**	n	tt.	"	
	1,3-Dichloropropane	ND	0.500	11	II	11	11	13	"	
	2,2-Dichloropropane	ND	0.500	11	u	11	tř	tt.	11	
	Di-isopropyl ether	ND	5.00	rr r	11	"	\$1	11	"	
	Ethylbenzene	ND	0.500	11	n n	11	11	**	1)	
	Hexachlorobutadiene	ND	5.00	**	п	п	11	11	11	
	Isopropylbenzene	ND	0.500	u	u	11	11	#	n .	
	p-Isopropyltoluene	ND	0.500	**	II .	**	"	Ħ	11	
	Methylene chloride	ND	0.530	**	II	**	"	"	u	
	Methyl tert-butyl ether	ND	0.500	**	**	**	11	11	**	
	Naphthalene	ND	2.00	**	u ·	11	11	11	u .	
	n-Propylbenzene	ND	0.500	11	tt	11	**	**	11	
	1,1,2,2-Tetrachloroethane	ND	0.350	11		11	**	**	u .	
	Tetrachloroethene	ND	0.500	n	11	11	11	**	n .	
	Toluene	ND	0.500	н	Ħ	н	11	u	u	
	1,2,3-Trichlorobenzene	ND	2.00	u	11	U	ii .	n	H .	

Great Lakes Analytical--Oak Creek

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STS Consultants

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Result		Grea	t Lakes A	Anaiyu	caiOa	K Creek				
1,2,4-Trichlorobenzene	Analyte	Result		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,1 Trickhloroethane	MW-2 (W211078-05) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					QC
1,1,1-Trichloroethane	1,2,4-Trichlorobenzene	ND	2.00	ug/l	1 -	2110087	11/15/02	11/16/02	EPA 8021B	
Trichloroethene	1,1,1-Trichloroethane	ND	0.500		:01	u	11	11	II .	
Trichlorofulcome ND	1,1,2-Trichloroethane	ND	0.160		ti .	n .	11	11	II .	
1,24-frimethylbenzene	Trichloroethene	0.864	0.500	н		ii.	īī	II	II.	
1,3,5-Trimethylbenzene	Trichlorofluoromethane	ND	0.500	"	11	H	11	II	"	
Vinyl chloride	1,2,4-Trimethylbenzene	ND	1.00	"	n	11	II	11	II.	
Total Xylenes ND	1,3,5-Trimethylbenzene	ND	1.00	"	n	11	II	II.	II.	
Surrogate: 1-Cl-4-FB (ELCD)	Vinyl chloride	ND	0.170	11	30	11	11	TI .	II.	
MW-3 (W211078-06) Water Sampled: 11/08/02 00:00 Received: 11/08/02 12:45 PA 8021B	Total Xylenes	ND	0.500	11	11	H.	11	U	U	
Surrogate: I-CI-4-FB (PID) Sampled: 11/08/02 00:00 Received: 11/08/02 12:45 """"""""""""""""""""""""""""""""""""	Surrogate: 1-Cl-4-FB (FLCD)		109 %	80-	120	"	"	"	"	
MW-3 (W211078-06) Water Sampled: 11/08/02 00:00 Received: 11/08/02 12:45 Sampled: 11/08/02	,					"	"	"	"	
Benzene ND 0.500 ug/l 1 2110087 11/15/02 11/16/02 EPA 8021B										4
Bromodichloromethane ND 0.500 """"""""""""""""""""""""""""""""""""	MW-3 (W211078-06) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					QC
Bromodichloromethane ND 0.500	Benzene	ND	0.500	ug/l	1	2110087	11/15/02	11/16/02	EPA 8021B	
ND	Bromobenzene	ND	0.500	11	"	III.	II.	"	II .	
ND	Bromodichloromethane	ND	0.500	н	и	11	111		II .	
tert-Burylbenzene ND 0.500 " " " " " " " " " " " " " " " " " "	n-Butylbenzene	ND	0.500	11	"	ш	III.	"	n °	
Carbon tetrachloride	sec-Butylbenzene	ND	0.500		и	111	11		0	
Chlorobenzene ND 0.500 "	tert-Butylbenzene	ND	0.500	"	и.	11	· и	11		
Chloroethane ND 0.500 " " " " " " " " " " " " " " " " " "	Carbon tetrachloride	ND	0.500	11		11	u,		"	
Chloroform ND 0.140 "	Chlorobenzene	ND	0.500			"	ū		ú	
Chloromethane ND 0.600 " " " " " " " " " " " " " " " " " "	Chloroethane	ND	0.500	11	11	.0	ŭ	"	u	
Chlorotoluene	Chloroform	ND	0.140	11	11	Ü	U	11	n .	
4-Chlorotoluene ND 0.500 " " " " " " " " " " " " " " " " " "	Chloromethane	ND	0.600	11	D	u	II	u	II .	
Dibromochloromethane ND 0.500 " " " " " " " " " " " " " " " " " "	2-Chlorotoluene	ND	0.500	11	ii.	11	11	II.	"	
1,2-Dibromo-3-chloropropane ND 0.390 " " " " " " " " " " " " 1,2-Dibromo-thane ND 0.380 " " " " " " " " " " " " " " " " " " "	4-Chlorotoluene	ND	0.500	n	11	.11	н	11	**	
1,2-Dibromo-3-chloropropane ND 0.390 "	Dibromochloromethane	ND	0.500	H.	U	TI .	'n	m.	11	
1,2-Dibromoethane ND 0.380 " <td>1,2-Dibromo-3-chloropropane</td> <td></td> <td>0.390</td> <td>n</td> <td>0</td> <td>n</td> <td>JI .</td> <td>II .</td> <td>"</td> <td></td>	1,2-Dibromo-3-chloropropane		0.390	n	0	n	JI .	II .	"	
1,2-Dichlorobenzene ND 0.500 " </td <td></td> <td>ND</td> <td>0.380</td> <td>TI.</td> <td>H</td> <td>H</td> <td>u</td> <td>II .</td> <td>n</td> <td></td>		ND	0.380	TI.	H	H	u	II .	n	
1,3-Dichlorobenzene ND 0.500 " </td <td></td> <td></td> <td></td> <td>n.</td> <td>11</td> <td>, ii</td> <td>.11</td> <td>"</td> <td>II .</td> <td></td>				n.	11	, ii	.11	"	II .	
1,4-Dichlorobenzene ND 0.500 " </td <td></td> <td></td> <td></td> <td>H .</td> <td>11</td> <td>11</td> <td>11</td> <td>11</td> <td>ш</td> <td></td>				H .	11	11	11	11	ш	
Dichlorodifluoromethane ND 0.500 "				11	.11	11	U	11	ш	
1,1-Dichloroethane ND 0.500 " <td></td> <td></td> <td></td> <td>u .</td> <td>U</td> <td>11</td> <td>u .</td> <td>II .</td> <td>II.</td> <td></td>				u .	U	11	u .	II .	II.	
1,2-Dichloroethane ND 0.500 " <td></td> <td></td> <td></td> <td>n .</td> <td></td> <td>**</td> <td></td> <td>u.</td> <td>11</td> <td></td>				n .		**		u.	11	
1,1-Dichloroethene ND 0.500 " <td>1</td> <td></td> <td></td> <td>п</td> <td>11</td> <td></td> <td></td> <td>u.</td> <td>п</td> <td></td>	1			п	11			u.	п	
cis-1,2-Dichloroethene ND 0.500 "					11			U.	11	
trans-1,2-Dichloroethene ND 0.500 " <t< td=""><td></td><td></td><td></td><td>н</td><td>11</td><td>u .</td><td></td><td>n .</td><td>11</td><td></td></t<>				н	11	u .		n .	11	
1,2-Dichloropropane ND 0.500 " </td <td>150</td> <td></td> <td></td> <td></td> <td>u</td> <td>ш</td> <td></td> <td>n</td> <td>TI .</td> <td></td>	150				u	ш		n	TI .	
1,3-Dichloropropane ND 0.500 " " " " " " "				11	11	ш		ii	Ü	
				"	ш	n	11	Ü	TT .	
	2,2-Dichloropropane	ND	0.500	u	ū	п	11	II	īī	

Great Lakes Analytical--Oak Creek

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Page 9 of 27



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Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (W211078-06) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					QC
Di-isopropyl ether	ND	5.00	ug/l	1	2110087	11/15/02	11/16/02	EPA 8021B	
Ethylbenzene	ND	0.500	tt	11	u	51	U	ш	
Hexachlorobutadiene	ND	5.00	u	II	U	11	II.	п	
Isopropylbenzene	ND	0.500	II .	II	u	tt	п	ш	
p-Isopropyltoluene	ND	0.500	II .	II .	"	#	"	II .	
Methylene chloride	ND	0.530	**	n	"	"		11	
Methyl tert-butyl ether	ND	0.500	11	11	11	II .	п	"	
Naphthalene	ND	2.00	n	11	11	11	**	**	
n-Propylbenzene	ND	0.500	tr.	11	**	11	17	11	
1,1,2,2-Tetrachloroethane	ND	0.350	u	It	**	II .	11	11	
Tetrachloroethene	ND	0.500	11	11	(t	11	ti	u	
Toluene	ND	0.500	11	11	u	11	11	ш	
1,2,3-Trichlorobenzene	ND	2.00	"	11	It	ŧı	11	H .	
1,2,4-Trichlorobenzene	ND	2.00	II	11	11	17	11	n n	
1,1,1-Trichloroethane	ND	0.500	11	11	u	tt .	11	п	
1,1,2-Trichloroethane	ND	0.160		"	"	"	п	п	
Trichloroethene	ND	0.500	и	n	11	и	11	п	
Trichlorofluoromethane	ND	0.500	11	11	п	u	II	II .	
1,2,4-Trimethylbenzene	ND	1.00	"	**	11	IF	II .	II .	
1,3,5-Trimethylbenzene	ND	1.00	11	0	11	tt.	II .	II .	
Vinyl chloride	ND	0.170	Ð	ti.	11	II.	п	II .	
Total Xylenes	ND	0.500	н	11	н	n .	11	11	
Surrogate: 1-Cl-4-FB (ELCD)		108 %	80-	120	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		101 %	80-	120	"	"	"	"	

Great Lakes Analytical--Oak Creek

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Andrea Stathas, Project Manager



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STS Consultants

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not
MW-3D (W211078-07) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					QC
Benzene	ND	0.500	ug/l	ı	2110087	11/15/02	11/16/02	EPA 8021B	
Bromobenzene	ND	0.500	"	u	It	11	11	11	
Bromodichloromethane	ND	0.500	u	**	11	11	lf .	II .	
n-Butylbenzene	ND	0.500	**	11	п	II	11	11	
sec-Butylbenzene	ND	0.500	n	11	H	Ħ	II .	n	
ert-Butylbenzene	ND	0.500	u	11	"	II .	11	II	
Carbon tetrachloride	ND	0.500	**	"	ŧŧ	re .	II .	11	
Chlorobenzene	ND	0.500	II .	ii	n	*1	11	II.	4
Chloroethane	ND	0.500		**	"	U .	11	11	
Chloroform	ND	0.140	11	п	n .	II	U	u	
Chloromethane	ND	0.600	u .	"		11	11	11	
-Chlorotoluene	ND	0.500	11	**	н	н	**	· ·	
-Chlorotoluene	ND	0.500	11	n .	11	"	19	n	
Dibromochloromethane	ND	0.500	11	n	n	II .	D	"	
,2-Dibromo-3-chloropropane	ND	0.390	11	11	н	n	##	II .	
,2-Dibromoethane	ND	0.380	n	œ	n	ıı	11	**	
,2-Dichlorobenzene	ND	0.500	**	11	11	**	tf	11	
,3-Dichlorobenzene	ND	0.500	n	ıı	11	11	. 11	п	
,4-Dichlorobenzene	ND	0.500	"	п	n	u	n .	11	
ichlorodifluoromethane	ND	0.500	**	11	11	11	11	u	
,1-Dichloroethane	ND	0.500	**	**	"	If	н	**	
,2-Dichloroethane	ND	0.500	II .	**		11	Ü	n	
1-Dichloroethene	ND	0.500	n	n .	11	n .	11	u	
s-1,2-Dichloroethene	ND	0.500	n	tr	II.	tf.		U	
ans-1,2-Dichloroethene	ND	0.500	u	19	16	11		II .	
2-Dichloropropane	ND	0.500		11	n .	II .	п	"	
3-Dichloropropane	ND	0.500	**	II .	ш	11	11	II.	
2-Dichloropropane	ND	0.500		**	"	II .	u	11	
i-isopropyl ether	ND	5.00	u ·	11	11	59	**	u .	
hylbenzene	ND	0.500	11	16	11	n .	n	11	
exachlorobutadiene	ND	5.00	11	#	n	O .	II.	H	
opropylbenzene	ND	0.500	п	u	**	et .	#1	U	
Isopropyltoluene	ND	0.500	11	11		11	**	u	
ethylene chloride	ND	0.530		11	"	11	11	ш	
ethyl tert-butyl ether	ND	0.500	**	**	U	lt.	II.	и	
aphthalene	ND	2.00	ш	п	11	11	11	**	
Propylbenzene	ND	0.500	11	**	11	11	H	n .	
1,2,2-Tetrachloroethane	ND	0.350	n	"	11	11	11	**	
trachloroethene	ND	0.500		u	11	II .	II .		
luene	ND	0.500	11	11	11	11	11	11	
2,3-Trichlorobenzene	ND	2.00	·	**	n		ш	n	

Great Lakes Analytical--Oak Creek

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Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none] Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021

Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3D (W211078-07) Water	Sampled: 11/08/02 00:00	Received	: 11/08/0	2 12:45					QC
1,2,4-Trichlorobenzene	ND	2.00	ug/l	1	2110087	11/15/02	11/16/02	EPA 8021B	
1,1,1-Trichloroethane	ND	0.500	н	0	u	11	n	II .	
,1,2-Trichloroethane	ND	0.160	н	n	n	u	11	11	
Trichloroethene	ND	0.500	u	**	##	"	tt.	H	
Trichlorofluoromethane	ND	0.500	n		II	D	u	u	
,2,4-Trimethylbenzene	ND	1.00	11	17	11	It	II.	II.	
r,3,5-Trimethylbenzene	ND	1.00	rs .	**	11	11	**	n	
Vinyl chloride	ND	0.170	**	n	"	**	11	11	
otal Xylenes	ND	0.500	ji	ti .	u .	11	"	u	
Surrogate: 1-Cl-4-FB (ELCD)		111%	80-1	20	"	"	"	"	
Surrogate: 1-Cl-4-FB (PID)		103 %	80-1	20	"	"	"	u	

Great Lakes Analytical--Oak Creek



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11425 S. Lake Park Dr. Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Dissolved Metals by EPA 6000/7000 Series Methods Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
MW-4 (W211078-01) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	2 12:45					
Lead	ND	0.00500	mg/l	1	2110294	11/15/02	11/15/02	EPA 7421	
MW-5 (W211078-02) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	2 12:45					
Lead	ND	0.00500	mg/l	1	2110294	11/15/02	11/15/02	EPA 7421	
MW-6 (W211078-03) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	2 12:45					g-v
Lead	ND	0.00500	mg/l	ı	2110294	11/15/02	11/15/02	EPA 7421	
MW-1 (W211078-04) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	2 12:45					
Lead	ND	0.00500	mg/l	l	2110294	11/15/02	11/15/02	EPA 7421	
MW-2 (W211078-05) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					
Lead	ND	0.00500	mg/l	1	2110294	11/15/02	11/15/02	EPA 7421	
MW-3 (W211078-06) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					
Lead	ND	0.00500	mg/l	1	2110294	11/15/02	11/15/02	EPA 7421	

Great Lakes Analytical--Oak Creek



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Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Polynuclear Aromatic Compounds by EPA Method 8310 Great Lakes Analytical--Buffalo Grove

					41Duna					
1	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	MW-4 (W211078-01) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45	***************************************				
	Acenaphthene	ND	5.62	ug/l	1	2110220	11/12/02	11/16/02	EPA 8310	
1	Acenaphthylene	ND	5.62	н	11	11	II	**	"	
	Anthracene	ND	5.62	II .	II .	11	11	II .	u	
	Benz (a) anthracene	ND	0.112	u .	n	II	II .	11	II.	
	Benzo (a) pyrene	ND	0.0225	II .	U.	11	ti.	n .	"	
	Benzo (b) fluoranthene	ND	0.0225	11	11	II .	н	11	п	
	Benzo (ghi) perylene	ND	5.62	II .	tt	51	H	11	u	
	Benzo (k) fluoranthene	ND	0.112	11	11	II	II	11	n	
	Chrysene	ND	0.0225	11	11	**	U	u	•	
	Dibenz (a,h) anthracene	ND	0.112	**			II	11	n .	
	Fluoranthene	ND	5.62	n	**	"	11	tt.	**	
	Fluorene	ND	5.62	n	u	\$\$	11	n .		
	Indeno (1,2,3-cd) pyrene	ND	0.225	11	11	n	II .	"	n	
	1-Methylnaphthalene	ND	5.62	11	11	**	**	"	u	
	2-Methylnaphthalene	ND	5.62	11	u	n .	n	n ·	n .	
	Naphthalene	ND	5.62	**	11	п	11	11	11	
	Phenanthrene	ND ·	5.62	n .	11	11	u	II .	11	
	Pyrene	ND	5.62		u	11	IF	и		
	Surrogate: Carbazole		46.7 %	25-1		"	"	<i>n</i>	n .	
	MW-5 (W211078-02) Water	Sampled: 11/08/02 00:00	Received: 1	11/08/02 1	12:45					
•	Acenaphthene	ND	5.00	ug/l	1	2110220	11/12/02	11/16/02	EPA 8310	
	Acenaphthylene	ND ND	5.00	ug/i	1 "	2110220	11/12/02	11/10/02	EFA 6510	
	Anthracene			,,	11	116	,,	**	"	
	Benz (a) anthracene	ND ND	5.00 0.100		H			tr.	11	
	• •				tt.	tt	II		11	
	Benzo (a) pyrene	ND ND	0.0200 0.0200	1)		u	**	11	11	
	Benzo (b) fluoranthene			41	11	,,	If		to to	
	Benzo (ghi) perylene	ND	5.00	n n	II.		11		"	
	Benzo (k) fluoranthene Chrysene	ND	0.100 0.0200		11				"	
	•	ND			(I	**		ır	"	
	Dibenz (a,h) anthracene Fluoranthene	ND	0.100	"	"	ur		11	"	
		ND	5.00	,,	11		"		"	
	Fluorene	ND	5.00	"	"	"	"	"	14	
	Indeno (1,2,3-cd) pyrene	ND	0.200	"	"	"	"	"	"	
	l-Methylnaphthalene	ND	5.00	"	"	"	**	II II	"	
	2-Methylnaphthalene	ND	5.00	"	"	"	11	11	,,	
	Naphthalene	ND	5.00	"						
	Phenanthrene	ND	5.00		11	17	11	11	17	
1 -	Pyrene	ND	5.00							
5	Surrogate: Carbazole		66.8 %	25-1	29	"	"	"	"	

Great Lakes Analytical--Oak Creek

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Cenoliea Starthas



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none] Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Polynuclear Aromatic Compounds by EPA Method 8310 Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (W211078-03) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					
Acenaphthene	ND	5.00	ug/l	1	2110220	11/12/02	11/16/02	EPA 8310	
Acenaphthylene	ND	5.00	11	**	,,	11	U	II.	
Anthracene	ND	5.00	11	"	11	11	II .	II .	
Benz (a) anthracene	ND	0.100	"	11	11	"	11	11	
Benzo (a) pyrene	ND	0.0200	11	H	**	11	11	11	
Benzo (b) fluoranthene	ND	0.0200	0	ü	U	II	n n	u	
Benzo (ghi) perylene	ND	5.00	u	n n	II .	n	H	н	
Benzo (k) fluoranthene	ND	0.100		"	11	11	"	п	
Chrysene	ND	0.0200	11	"	II.	11	II .	II .	
Dibenz (a,h) anthracene	ND	0.100	"	**	11	11	11	**	
Fluoranthene	ND	5.00	11	11	11	11	II .	11	
Fluorene	ND	5.00	11	II .	II .	II .	II .	11	
Indeno (1,2,3-cd) pyrene	ND	0.200	II	11	11	11	11	**	
l-Methylnaphthalene	ND	5.00	n .	tt.	**	"	11	11	
2-Methylnaphthalene	ND	5.00	18	U	II .	п	II .	II .	
Vaphthalene	ND	5.00	п	11	n .	n	"	11	
Phenanthrene	ND	5.00	11	11	11	"	II .	II .	
yrene	ND	5.00	II .	н	"	ıı .	11	u .	
Surrogate: Carbazole		61.7 %	25-	129	"	"	"	"	

MW-1 (W211078-04) Water	Sampled: 11/08/02 00:00	Received:	11/08/0	2 12:45					
Acenaphthene	ND	5.00	ug/l	1	2110220	11/12/02	11/16/02	EPA 8310	
Acenaphthylene	ND	5.00	п	n	H	II .	n .	II.	
Anthracene	ND	5.00	"	11	11	11	11	"	
Benz (a) anthracene	ND	0.100	"	"	"	11	re .	u	
Benzo (a) pyrene	ND	0.0200	"	"	11	11	11	II	
Benzo (b) fluoranthene	ND	0.0200	**	**	11	II .	"	II.	
Benzo (ghi) perylene	ND	5.00	**	11	19	**	te	11	
Benzo (k) fluoranthene	ND	0.100	"	II .	п	II .	tt.	u	
Chrysene	ND	0.0200	11	H	n	n	11	n .	
Dibenz (a,h) anthracene	ND	0.100	19	11	11	n	"	"	
Fluoranthene	ND	5.00	"	н	11	"	**	II .	
Fluorene	ND	5.00	"	"	"	ű.	II.	II .	
Indeno (1,2,3-cd) pyrene	ND	0.200	**	"	"	п	u u	"	
1-Methylnaphthalene	ND	5.00	"		"	11	**	u u	
2-Methylnaphthalene	ND	5.00		11	II	и	II .	н	
Naphthalene	ND	5.00	11	19	n	II	n .	II .	
Phenanthrene	ND	5.00	39	TP.	**	11	11	12	
Pyrene	ND	5.00	11	u	U	u	11	u	
Surrogate: Carbazole		61.7 %	25	5-129	"	"	"	"	

Great Lakes Analytical--Oak Creek



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Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Polynuclear Aromatic Compounds by EPA Method 8310 Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (W211078-05) Water	Sampled: 11/08/02 00:00	Received:	11/08/02	12:45					
Acenaphthene	ND	5.00	ug/l	1	2110220	11/12/02	11/16/02	EPA 8310	
Acenaphthylene	ND	5.00	o o		11	11	**	и	
Anthracene	ND	5.00	11	11	II	11	n	"	
Benz (a) anthracene	ND	0.100	II	#	11	11	u	II.	
Benzo (a) pyrene	ND	0.0200	51	"	н	II	n	11	
Benzo (b) fluoranthene	ND	0.0200	"	u	11	11	п	n	
Benzo (ghi) perylene	ND	5.00	tt	11		11	D	· ·	
Benzo (k) fluoranthene	ND	0.100	U	11	11	#	u	ıı .	
Chrysene	ND	0.0200	II.	**	**	11	"	"	
Dibenz (a,h) anthracene	ND	0.100	0	11		11	u	"	
Fluoranthene	ND	5.00	įt.	**	"	11	"	11	
Fluorene	ND	5.00	11	11	II	17	u	11	
Indeno (1,2,3-cd) pyrene	ND	0.200	0	"	11	п	n	II .	
1-Methylnaphthalene	ND	5.00	p	II .	lt .	**	u	n	
2-Methylnaphthalene	ND	5.00	11	11	U	и	"	11	
Naphthalene	ND	5.00	11	и	tr .	II.	н	II .	
Phenanthrene	ND	5.00	11	n	"	u	u	11	
Pyrene	. ND	5.00	u	17	**	"	*11	ir .	
Surrogate: Carbazole		61.9 %	25-1	29	"	"	"	n .	
MW-3 (W211078-06) Water	Sampled: 11/08/02 00:00	Received:	11/08/02 1	2:45					
Acenaphthene	ND	5.00	ug/l	1	2110220	11/12/02	11/16/02	EPA 8310	
Acenaphthylene	ND	5.00	"	11	11	tt.	u u	11	
Anthracene	ND	5.00	H.	17	11		n	u	
Benz (a) anthracene	ND	0.100	17	II .	II .	16		n	
Benzo (a) pyrene	ND	0.0200	ii.	tf	**	n	**	II.	
Benzo (b) fluoranthene	ND	0.0200	p	u u	п	**	u	11	
Benzo (ghi) perylene	ND	5.00	tt.	***	17	n	n .	**	
Benzo (k) fluoranthene	ND	0.100	н	11	u .	ш	11	11	
Chrysene	ND	0.0200	11	n	11	n	н	и	
Dibenz (a,h) anthracene	ND	0.100	U	II	II .	11	11	H .	
Fluoranthene	ND	5.00	Ħ	"	11	n	n .	11	
Fluorene	ND	5.00	u	II.	11	11	#	11	
Indeno (1,2,3-cd) pyrene	ND	0.200	11	ij	u	n .	n	11	
1-Methylnaphthalene	ND	5.00	lt.	11	11	ıı .	н	u .	
2-Methylnaphthalene	ND	5.00	0	u	u	"	11	u	
Naphthalene	ND	5.00	11	11	н	ш	u	11	
Phenanthrene	ND	5.00	***	11	11	11	n	u .	
Pyrene	ND	5.00	II .	u	11	11	#1	II .	
Surrogate: Carbazole	1112	63.7 %	25-1	29	"	"	"	н	

Great Lakes Analytical--Oak Creek

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11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110087 - EPA 5030B (P/T)										
Blank (2110087-BLK1)				Prepared	& Analyze	ed: 11/15/0)2			
Benzene	ND	0.500	ug/l							
Bromobenzene	ND	0.500	"							
Bromodichloromethane	ND	0.500	11							
n-Butylbenzene	ND	0.500	ir .							
sec-Butylbenzene	ND	0.500	"							
tert-Butylbenzene	ND	0.500	"							
Carbon tetrachloride	ND	0.500	11							
Chlorobenzene	ND	0.500	11							
Chloroethane	ND	0.500	n							
Chloroform	ND	0.140	1t							
Chloromethane	ND	0.600	11							
2-Chlorotoluene	ND	0.500	H							
4-Chlorotoluene	ND	0.500	"							
Dibromochloromethane	ND	0.500	**							
1,2-Dibromo-3-chloropropane	ND	0.390	11			•				
1,2-Dibromoethane	ND	0.380	11							
1,2-Dichlorobenzene	ND	0.500	u							
1,3-Dichlorobenzene	ND	0.500	**							
1,4-Dichlorobenzene	ND	0.500	"							
Dichlorodifluoromethane	ND	0.500	**							
1,1-Dichloroethane	ND	0.500	,,							
1,2-Dichloroethane	ND	0.500								
1,1-Dichloroethene	ND	0.500	**							
cis-1,2-Dichloroethene	ND	0.500								
trans-1,2-Dichloroethene	ND	0.500	11							
1,2-Dichloropropane	ND	0.500	п							
1,3-Dichloropropane	ND	0.500								
2,2-Dichloropropane	ND	0.500	te							
Di-isopropyl ether	ND	5.00	11							
Ethylbenzene	ND	0.500	11							
Hexachlorobutadiene	ND	5.00	•							
Sopropylbenzene	ND	0.500	n							
p-Isopropyltoluene	ND	0.500	11							
Methylene chloride	ND	0.530	ш							

Great Lakes Analytical--Oak Creek



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

***************************************	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1	Batch 2110087 - EPA 5030B (P/T)									W-1,	
	Blank (2110087-BLK1)				Prepared a	& Analyze	d: 11/15/0	02			
	Methyl tert-butyl ether	ND	0.500	ug/l							
	Naphthalene	ND	2.00								
	n-Propylbenzene	ND	0.500	17							
	1,1,2,2-Tetrachloroethane	ND	0.350	u							
	Tetrachloroethene	ND	0.500	11							
	Toluene	ND	0.500	u							
	1,2,3-Trichlorobenzene	ND	2.00	**							
	1,2,4-Trichlorobenzene	ND	2.00	u							
	1,1,1-Trichloroethane	ND	0.500	11							
÷	1,1,2-Trichloroethane	ND	0.160	II							
	Trichloroethene	ND	0.500	· ·							
	Trichlorofluoromethane	ND	0.500	"							
	1,2,4-Trimethylbenzene	ND	1.00	" '							
i	1,3,5-Trimethylbenzene	ND	1.00	"							
	Vinyl chloride	ND	0.170	**							
	Total Xylenes	ND	0.500	u							
	Surrogate: 1-Cl-4-FB (ELCD)	10.5		"	10.0		105	80-120			
	Surrogate: 1-Cl-4-FB (PID)	10.1		"	10.0		101	80-120			
į	LCS (2110087-BS1)				Prepared 8	& Analyzed	d: 11/15/0	2			
	Benzene	9.94	0.500	ug/l	10.0		99.4	85-115			
7	Bromobenzene	10.4	0.500	n	10.0		104	85-115			
. 19	Bromodichloromethane	9.20	0.500	u	10.0		92.0	85-115			
7	n-Butylbenzene	9.81	0.500	n	10.0		98.1	85-115			
	sec-Butylbenzene	10.1	0.500	**	10.0		101	85-115			
	tert-Butylbenzene	10.2	0.500	m .	10.0		102	85-115			
(Carbon tetrachloride	9.43	0.500	"	10.0		94.3	85-115			
] (Chlorobenzene	10.1	0.500	IT	10.0		101	85-115			
•	Chloroethane	8.59	0.500	"	10.0		85.9	85-115			
į	Chloroform	8.99	0.140	II .	10.0		89.9	85-115			
1	Chloromethane	8.79	0.600	n	10.0		87.9	85-115			
. 1	2-Chlorotoluene	10.1	0.500	n	10.0		101	85-115			
14	4-Chlorotoluene	10.2	0.500	II	10.0		102	85-115			
.i	Dibromochloromethane	8.67	0.500	11	10.0		86.7	85-115			

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110087 - EPA 5030B (P/T)										
LCS (2110087-BS1)				Prepared	& Analyze	ed: 11/15/0)2			
1,2-Dibromo-3-chloropropane	9.06	0.390	ug/l	10.0		90.6	85-115			
1,2-Dibromoethane	8.84	0.380	"	10.0		88.4	85-115			
1,2-Dichlorobenzene	10.4	0.500	11	10.0		104	85-115			
1,3-Dichlorobenzene	10.3	0.500	"	10.0		103	85-115			
1,4-Dichlorobenzene	9.94	0.500	**	10.0		99.4	85-115			
Dichlorodifluoromethane	6.75	0.500	11	10.0		67.5	85-115			L
1,1-Dichloroethane	9.04	0.500	11	10.0		90.4	85-115			
1,2-Dichloroethane	9.44	0.500	11	10.0		94.4	85-115			
1,1-Dichloroethene	10.3	0.500	II .	10.0		103	85-115			
cis-1,2-Dichloroethene	10.5	0.500	**	10.0		105	85-115			
trans-1,2-Dichloroethene	10.5	0.500	11	10.0		105	85-115			
1,2-Dichloropropane	9.12	0.500	11	10.0		91.2	85-115			
1,3-Dichloropropane	8.64	0.500	н	10.0		86.4	85-115			
2,2-Dichloropropane	9.78	0.500	11	10.0		97.8	85-115			
Di-isopropyl ether	9.94	5.00	II	10.0		99.4	85-115			
Ethylbenzene	9.90	0.500	п	10.0		99.0	85-115			
Hexachlorobutadiene	10.0	5.00	11	10.0		100	85-115			
Isopropylbenzene	10.6	0.500	11	10.0		106	85-115			
p-Isopropyltoluene	9.66	0.500	**	10.0		96.6	85-115			
Methylene chloride	10.5	0.530	"	10.0		105	85-115			
Methyl tert-butyl ether	10.6	0.500	"	10.0		106	85-115			
Naphthalene	9.29	2.00	11	10.0		92.9	85-115			
n-Propylbenzene	10.3	0.500	11	10.0		103	85-115			
1,1,2,2-Tetrachloroethane	8.99	0.350	11	10.0		89.9	85-115			
Tetrachloroethene	10.5	0.500	**	10.0		105	85-115			
Toluene	10.0	0.500	u .	10.0		100	85-115			
1,2,3-Trichlorobenzene	9.42	2.00	11	10.0		94.2	85-115			
1,2,4-Trichlorobenzene	10.9	2.00	**	10.0		109	85-115			
1,1,1-Trichloroethane	9.84	0.500		10.0		98.4	85-115			
1,1,2-Trichloroethane	9.38	0.160	11	10.0		93.8	85-115			
Trichloroethene	10.3	0.500	II .	10.0		103	85-115			
Trichlorofluoromethane	9.52	0.500	п	10.0		95.2	85-115			
1,2,4-Trimethylbenzene	10.1	1.00	11	10.0		101	85-115			
1,3,5-Trimethylbenzene	10.4	1.00	"	10.0		104	85-115			

Great Lakes Analytical--Oak Creek



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STS Consultants

11425 S. Lake Park Dr.

Milwaukee WI, 53224

Project: 87185EA Southeast

Project Number: [none]

Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Description	
Vinyl chloride 8.77 0.170 ug/l 10.0 87.7 85-115 Total Xylenes 31.0 0.500 " 30.0 103 85-115 Surrogate: I-Cl-4-FB (ELCD) 10.1 " 10.0 101 80-120 Surrogate: I-Cl-4-FB (PID) 9.91 " 10.0 99.1 80-120 Matrix Spike (2110087-MS1) Source: W211060-01 Prepared & Analyzed: 11/15/02 Benzene 8.99 0.500 ug/l 10.0 ND 89.9 75-125 Bromobenzene 8.74 0.500 " 10.0 ND 87.4 75-125 Bromodichloromethane 7.73 0.500 " 10.0 ND 89.8 75-125 n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 88.7 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
Total Xylenes 31.0 0.500 " 30.0 103 85-115 Surrogate: I-Cl-4-FB (ELCD) 10.1 " 10.0 101 80-120 Matrix Spike (2110087-MS1) Source: W211060-01 Prepared & Analyzed: 11/15/02 Benzene 8.99 0.500 ug/l 10.0 ND 89.9 75-125 Bromobenzene 8.74 0.500 " 10.0 ND 87.4 75-125 Bromodichloromethane 7.73 0.500 " 10.0 ND 89.8 75-125 n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
Surrogate: 1-Cl-4-FB (ELCD) 10.1 " 10.0 10.1 80-120 Surrogate: 1-Cl-4-FB (PID) 9.91 " 10.0 99.1 80-120 Matrix Spike (2110087-MS1) Source: W211060-01 Prepared & Analyzed: 11/15/02 Benzene 8.99 0.500 ug/l 10.0 ND 89.9 75-125 Bromobenzene 8.74 0.500 " 10.0 ND 87.4 75-125 Bromodichloromethane 7.73 0.500 " 10.0 ND 77.3 75-125 n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
Matrix Spike (2110087-MS1) Source: W211060-01 Prepared & Analyzed: 11/15/02 Benzene 8.99 0.500 ug/l 10.0 ND 89.9 75-125 Bromobenzene 8.74 0.500 " 10.0 ND 87.4 75-125 Bromodichloromethane 7.73 0.500 " 10.0 ND 77.3 75-125 n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
Matrix Spike (2110087-MS1) Source: W211060-01 Prepared & Analyzed: 11/15/02 Benzene 8.99 0.500 ug/l 10.0 ND 89.9 75-125 Bromobenzene 8.74 0.500 " 10.0 ND 87.4 75-125 Bromodichloromethane 7.73 0.500 " 10.0 ND 77.3 75-125 n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
Benzene 8.99 0.500 ug/l 10.0 ND 89.9 75-125 Bromobenzene 8.74 0.500 " 10.0 ND 87.4 75-125 Bromodichloromethane 7.73 0.500 " 10.0 ND 77.3 75-125 n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
Benzene 8.99 0.500 ug/l 10.0 ND 89.9 75-125 Bromobenzene 8.74 0.500 " 10.0 ND 87.4 75-125 Bromodichloromethane 7.73 0.500 " 10.0 ND 77.3 75-125 n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
Bromodichloromethane 7.73 0.500 10.0 ND 77.3 75-125 n-Butylbenzene 8.98 0.500 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 10.0 ND 88.7 75-125	
n-Butylbenzene 8.98 0.500 " 10.0 ND 89.8 75-125 sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
sec-Butylbenzene 9.09 0.500 " 10.0 ND 90.9 75-125 tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
tert-Butylbenzene 8.87 0.500 " 10.0 ND 88.7 75-125	
6.67 0.500 10.0 175 50.7 75 125	
Carbon tetrachloride 7.77 0.500 " 10.0 ND 77.7 75-125	
Chlorobenzene 8.64 0.500 " 10.0 ND 86.4 75-125	
Chloroethane 5.09 0.500 " 10.0 ND 50.9 75-125	L
Chloroform 6.95 0.140 " 10.0 ND 69.5 75-125	L
Chloromethane 6.11 0.600 " 10.0 ND 61.1 75-125	L
2-Chlorotoluene 8.64 0.500 " 10.0 ND 86.4 75-125	
4-Chlorotoluene 8.44 0.500 " 10.0 ND 84.4 75-125	
Dibromochloromethane 7.52 0.500 " 10.0 ND 75.2 75-125	
1,2-Dibromo-3-chloropropane 6.71 0.390 " 10.0 ND 67.1 75-125	L
1,2-Dibromoethane 6.70 0.380 " 10.0 ND 67.0 75-125	L
1,2-Dichlorobenzene 10.2 0.500 " 10.0 ND 102 75-125	
1,3-Dichlorobenzene 8.26 0.500 " 10.0 ND 82.6 75-125	
1,4-Dichlorobenzene 8.06 0.500 " 10.0 ND 80.6 75-125	
Dichlorodifluoromethane 5.73 0.500 " 10.0 ND 57.3 75-125	L
1,1-Dichloroethane 7.96 0.500 " 10.0 ND 79.6 75-125	
1,2-Dichloroethane 8.08 0.500 " 10.0 ND 80.8 75-125	
1,1-Dichloroethene 8.84 0.500 " 10.0 ND 88.4 75-125	
cis-1,2-Dichloroethene 8.77 0.500 " 10.0 ND 87.7 75-125	
trans-1,2-Dichloroethene 8.76 0.500 " 10.0 ND 87.6 75-125	
1,2-Dichloropropane 7.12 0.500 " 10.0 ND 71.2 75-125	L
1,3-Dichloropropane 7.75 0.500 " 10.0 ND 77.5 75-125	
2,2-Dichloropropane 7.75 0.500 " 10.0 ND 77.5 75-125	

Great Lakes Analytical--Oak Creek

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11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110087 - EPA 5030B (P/T)										
Matrix Spike (2110087-MS1)	So	urce: W2110	60-01	Prepared	& Analyze	ed: 11/15/0	02			
Di-isopropyl ether	8.41	5.00	ug/l	10.0	ND	84.1	75-125			
Ethylbenzene	8.39	0.500	tr.	10.0	ND	83.9	75-125			
·lexachlorobutadiene	10.6	5.00	tr.	10.0	ND	106	75-125			
sopropylbenzene	8.94	0.500	17	10.0	ND	89.4	75-125			
-Isopropyltoluene	9.44	0.500	11	10.0	ND	94.4	75-125			
Methylene chloride	8.68	0.530	Į)	10.0	ND	86.8	75-125			
1ethyl tert-butyl ether	8.73	0.500	11	10.0	ND	87.3	75-125			
Naphthalene	9.81	2.00	11	10.0	ND	98.1	75-125			
-Propylbenzene	8.47	0.500	12	10.0	ND	84.7	75-125			
,1,2,2-Tetrachloroethane	8.30	0.350	11	10.0	ND	83.0	75-125			
etrachloroethene	8.89	0.500	ıı	10.0	ND	88.9	75-125			
oluene oluene	8.89	0.500	1 t	10.0	ND	88.9	75-125			
,2,3-Trichlorobenzene	8.90	2.00	11	10.0	ND	89.0	75-125			
,2,4-Trichlorobenzene	11.5	2.00	"	10.0	ND	115	75-125			
,1,1-Trichloroethane	7.93	0.500	II.	10.0	ND	79.3	75-125			
,1,2-Trichloroethane	8.29	0.160	**	10.0	ND	82.9	75-125			
richloroethene	8.85	0.500	"	10.0	ND	88.5	75-125			
richlorofluoromethane	7.93	0.500		10.0	ND	79.3	75-125			
,2,4-Trimethylbenzene	8.86	1.00	"	10.0	ND	88.6	75-125			
,3,5-Trimethylbenzene	8.95	1,00	"	10.0	ND	89.5	75-125			
'inyl chloride	8.81	0.170	"	10.0	ND	1.88	75-125			
otal Xylenes	26.1	0.500	11	30.0	ND	87.0	75-125			
urrogate: 1-Cl-4-FB (ELCD)	10.8		"	10.0		108	80-120			
urrogate: 1-Cl-4-FB (PID)	10.0		"	10.0		100	80-120			
Iatrix Spike Dup (2110087-MSD1)	Sou	ırce: W21106	0-01	Prepared &	& Analyze	d: 11/15/0)2			
enzene	9.73	0.500	ug/l	10.0	ND	97.3	75-125	7.91	20	
romobenzene	10.3	0.500	II.	10.0	ND	103	75-125	16.4	20	
romodichloromethane	8.18	0.500	**	10.0	ND	81.8	75-125	5.66	20	
Butylbenzene	10.6	0.500	II .	10.0	ND	106	75-125	16.5	20	
ec-Butylbenzene	10.8	0.500	11	10.0	ND	108	75-125	17.2	20	
rt-Butylbenzene	10.6	0.500	11	10.0	ND	106	75-125	17.8	20	
arbon tetrachloride	8.16	0.500	II	10.0	ND	81.6	75-125	4.90	20	
hlorobenzene	10.0	0.500	**	10.0	ND	100	75-125	14.6	20	

Great Lakes Analytical--Oak Creek



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STS Consultants 11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit Uni	Spike ts Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110087 - EPA 5030B (P/T)									
Matrix Spike Dup (2110087-MSD1)	So	urce: W211060-01	Prepared	& Analyz	ed: 11/15/	02			
Chloroethane	8.03	0.500 ug/	10.0	ND	80.3	75-125	44.8	20	Н
Chloroform	7.79	0.140 "	10.0	ND	77.9	75-125	11.4	20	
Chloromethane	8.95	0.600 "	10.0	ND	89.5	75-125	37.7	20	Н
2-Chlorotoluene	9.68	0.500 "	10.0	ND	96.8	75-125	11.4	20	
4-Chlorotoluene	9.62	0.500 "	10.0	ND	96.2	75-125	13.1	20	
Dibromochloromethane	7.74	0.500 "	10.0	ND	77.4	75-125	2.88	20	
1,2-Dibromo-3-chloropropane	7.96	0.390 "	10.0	ND	79.6	75-125	17.0	20	
1,2-Dibromoethane	7.42	0.380 "	10.0	ND	74.2	75-125	10.2	20	L
1,2-Dichlorobenzene	10.3	0.500 "	10.0	ND	103	75-125	0.976	20	
1,3-Dichlorobenzene	11.3	0.500 "	10.0	ND	113	75-125	31.1	20	Н
1,4-Dichlorobenzene	9.88	0.500 "	10.0	ND	98.8	75-125	20.3	20	Н
Dichlorodifluoromethane	7.13	0.500 "	10.0	ND	71.3	75-125	21.8	20	LH
1,1-Dichloroethane	7.90	0.500 "	10.0	ND	79.0	75-125	0.757	20	
1,2-Dichloroethane	8.96	0.500 "	10.0	ND	89.6	75-125	10.3	20	
1,1-Dichloroethene	9.78	0.500 "	10.0	ND	97.8	75-125	10.1	20	
cis-1,2-Dichloroethene	9.87	0.500 "	10.0	ND	98.7	75-125	11.8	20	
trans-1,2-Dichloroethene	9.68	0.500 "	10.0	ND	96.8	75-125	9.98	20	
1,2-Dichloropropane	7.92	0.500 "	10.0	ND	79.2	75-125	10.6	20	
1,3-Dichloropropane	8.58	0.500 "	10.0	ND	85.8	75-125	10.2	20	
2,2-Dichloropropane	8.47	0.500 "	10.0	ND	84.7	75-125	8.88	20	
Di-isopropyl ether	9.56	5.00 "	10.0	ND	95.6	75-125	12.8	20	
3thylbenzene	9.91	0.500 "	10.0	ND	99.1	75-125	16.6	20	
Hexachlorobutadiene	10.1	5.00 "	10.0	ND	101	75-125	4.83	20	
sopropylbenzene	10.3	0.500 "	10.0	ND	103	75-125	14.1	20	
p-Isopropyltoluene	10.5	0.500 "	10.0	ND	105	75-125	10.6	20	
Methylene chloride	9.24	0.530 "	10.0	ND	92.4	75-125	6.25	20	
Methyl tert-butyl ether	9.57	0.500 "	10.0	ND	95.7	75-125	9.18	20	
Naphthalene	9.84	2.00 "	10.0	ND	98.4	75-125	0.305	20	
n-Propylbenzene	9.78	0.500 "	10.0	ND	97.8	75-125	14.4	20	
,1,2,2-Tetrachloroethane	9.27	0.350 "	10.0	ND	92.7	75-125	11.0	20	
Tetrachloroethene	10.2	0.500 "	10.0	ND	102	75-125	13.7	20	
Toluene	9.91	0.500 "	10.0	ND	99.1	75-125	10.9	20	
,2,3-Trichlorobenzene	10.3	2.00 "	10.0	ND	103	75-125	14.6	20	
1,2,4-Trichlorobenzene	9.80	2.00 "	10.0	ND	98.0	75-125	16.0	20	

Great Lakes Analytical--Oak Creek

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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

WDNR Volatile Organic Compounds by Method 8021 - Quality Control Great Lakes Analytical--Oak Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110087 - EPA 5030B (P/T)										
Matrix Spike Dup (2110087-MSD1)	Sou	urce: W2110	60-01	Prepared	& Analyze	ed: 11/15/	02			
1,1,1-Trichloroethane	8.82	0.500	ug/l	10.0	ND	88.2	75-125	10.6	20	
1,1,2-Trichloroethane	9.11	0.160	**	10.0	ND	91.1	75-125	9.43	20	
Trichloroethene	9,91	0.500	"	10.0	ND	99.1	75-125	11.3	20	
Trichlorofluoromethane	8.16	0.500	в	10.0	ND	81.6	75-125	2.86	20	
1,2,4-Trimethylbenzene	10.3	1.00	Ð	10.0	ND	103	75-125	15.0	20	
1,3,5-Trimethylbenzene	10.7	1.00	If	10.0	ND	107	75-125	17.8	20	
Vinyl chloride	10.1	0.170	f#	10.0	ND	101	75-125	13.6	20	
Total Xylenes	29.9	0.500	11	30.0	ND	99.7	75-125	13.6	20	
Surrogate: 1-Cl-4-FB (ELCD)	10.7		"	10.0		107	80-120			
Surrogate: 1-Cl-4-FB (PID)	10.9		"	10.0		109	80-120			

Great Lakes Analytical--Oak Creek



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224 Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110294 - General Prep Metals		<u> </u>		H98.4						
Blank (2110294-BLK1)				Prepared	& Analyze	d: 11/15/	02			
Lead	ND	0.00500	mg/l							
LCS (2110294-BS1)				Prepared of	& Analyze	ed: 11/15/	02			
Lead	0.0209	0.00500	mg/l	0.0240		87.1	63.2-127			
Matrix Spike (2110294-MS1)	Sou	rce: B21112	5-13	Prepared a	& Analyze	ed: 11/15/	02			
Lead	0.0234	0.00500	mg/l	0.0240	ND	97.5	24.5-184			
Matrix Spike Dup (2110294-MSD1)	Sou	rce: B21112	5-13	Prepared o	& Analyze	d: 11/15/	02			
Lead	0.0249	0.00500	mg/l	0.0240	ND	104	24.5-184	6.21	9.72	

Great Lakes Analytical--Oak Creek

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Cendra Starthas



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Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110220 - EPA 3510C										
Blank (2110220-BLK1)				Prepared:	11/12/02	Analyzed	: 11/14/02			
Acenaphthene	ND	5.00	ug/l							
Acenaphthylene	ND	5.00	11							
Anthracene	ND	5.00	11							
Benz (a) anthracene	ND	0.100	n							
Benzo (a) pyrene	ND	0.0200	"							
Benzo (b) fluoranthene	ND	0.0200	#1							
Benzo (ghi) perylene	ND	5.00	u u							
Benzo (k) fluoranthene	ND	0.100	t1							
Chrysene	ND	0.0200	II .							
Dibenz (a,h) anthracene	ND	0.100	"							
Fluoranthene	ND	5.00	11							
Fluorene	ND	5.00	11							
ndeno (1,2,3-cd) pyrene	ND	0.200	11							
-Methylnaphthalene	ND	5.00	11							
2-Methylnaphthalene	ND	5.00	11	•••					•	
Naphthalene	ND	5.00	11							
Phenanthrene	ND	5.00	n							
Ругепе	ND	5.00	11							
Surrogate: Carbazole	1.20		"	2.00		60.0	25-129			
LCS (2110220-BS1)				Prepared:	11/12/02	Analyzed	: 11/14/02			
Acenaphthene	2.34	0.500	ug/l	4.00		58.5	10-114			
Acenaphthylene	1.89	0.500	11	4.00		47.2	21.1-123			
Anthracene	2.77	0.500	11	4.00		69.2	17.9-119			
Benz (a) anthracene	3.22	0.0100	ır	4.00		80.5	34.3-124			
Benzo (a) pyrene	2.69	0.00200	**	4.00		67.2	13.4-120			
Benzo (b) fluoranthene	3.00	0.00200	II .	4.00		75.0	36.7-124			
Benzo (ghi) perylene	2.28	0.500	11	4.00		57.0	18.7-118			
Benzo (k) fluoranthene	2.88	0.0100	u .	4.00		72.0	42.3-117			
Chrysene	3.09	0.00200	"	4.00		77.2	43.2-116			
Dibenz (a,h) anthracene	1.93	0.0100	u	4.00		48.2	18.7-110			
luoranthene	3.00	0.500	II .	4.00		75.0	38.3-119			
fluorene	2.46	0.500		4.00		61.5	20.8-123			
ndeno (1,2,3-cd) pyrene	2.64	0.0200	11	4.00		66.0	29.9-114			

Great Lakes Analytical--Oak Creek



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11425 S. Lake Park Dr. Milwaukee WI, 53224 Project: 87185EA Southeast

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Polynuclear Aromatic Compounds by EPA Method 8310 - Quality Control Great Lakes Analytical--Buffalo Grove

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2110220 - EPA 3510C										
LCS (2110220-BS1)				Prepared:	11/12/02	Analyzed	1: 11/14/02			
-Methylnaphthalene	1.71	0.500	ug/l	4.00		42.8	17.4-113		4	
-Methylnaphthalene	1.94	0.500	11	4.00		48.5	17.6-116			
Naphthalene	2.40	0.500	"	4.00		60.0	10-135			
Phenanthrene	2.89	0.500	u	4.00		72.2	28.5-120			
Pyrene	3.25	0.500	0	4.00		81.2	22.6-125			
Surrogate: Carbazole	1.22		"	2.00		61.0	25-129			
LCS Dup (2110220-BSD1)				Prepared:	11/12/02	Analyzed	: 11/14/02			
Acenaphthene	2.61	0.500	ug/l	4.00		65.2	10-114	10.9	53.8	
Acenaphthylene	2.42	0.500	11	4.00		60.5	21.1-123	24.6	104	
Anthracene	2.92	0.500	н	4.00		73.0	17.9-119	5.27	59.5	
Benz (a) anthracene	3.10	0.0100	**	4.00		77.5	34.3-124	3.80	40.4	
Benzo (a) pyrene	2.61	0.00200	11	4.00		65.2	13.4-120	3.02	48.5	
Benzo (b) fluoranthene	2.92	0.00200		4.00		73.0	36.7-124	2.70	48.8	
Benzo (ghi) perylene	2.50	0.500	17	4.00		62.5	18.7-118	9.21	65.5	
Benzo (k) fluoranthene	2.94	0.0100	11	4.00		73.5	42.3-117	2.06	54.2	
Chrysene	3.03	0.00200	"	4.00		75.8	43.2-116	1.96	77.1	
Dibenz (a,h) anthracene	2.18	0.0100	"	4.00		54.5	18.7-110	12.2	53.5	
luoranthene	2.91	0.500	11	4.00		72.8	38.3-119	3.05	57.8	
luorene	2.87	0.500	II .	4.00		71.8	20.8-123	15.4	74.7	
ndeno (1,2,3-cd) pyrene	2.69	0.0200	u .	4.00		67.2	29.9-114	1.88	35.7	
-Methylnaphthalene	2.31	0.500	**	4.00		57.8	17.4-113	29.9	81.5	
-Methylnaphthalene	2.38	0.500	II .	4.00		59.5	17.6-116	20.4	63.5	
aphthalene	3.22	0.500	•	4.00		80.5	10-135	29.2	60.4	
henanthrene	3.08	0.500	11	4.00		77.0	28.5-120	6.37	71.4	
yrene	3.14	0.500	"	4.00		78.5	22.6-125	3.44	47.2	
urrogate: Carbazole	1.12		"	2.00		56.0	25-129			

Great Lakes Analytical--Oak Creek

Andrea Stathas, Project Manager

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ardrea Stathas



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STS Consultants

Project: 87185EA Southeast

11425 S. Lake Park Dr. Milwaukee WI, 53224

Project Number: [none]
Project Manager: Mark Mejac

Reported: 11/19/02 13:48

Notes and Definitions

QC The result for one or more quality control measurements associated with this sample did not meet the laboratory and/or source

method acceptance criteria.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

L This quality control measurement is below the laboratory established limit.

H This quality control measurement is above the laboratory established limit.

Great Lakes Analytical--Oak Creek



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140 E. Hyan Hoad Oak Creek, WI 53154 (414) 570-9460 FAX (414) 570-9461

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