SITE INVESTIGATION REPORT

City of Milwaukee - Department of Public Works
Sanitation Field Headquarters
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

WDNR BRRTS No. 02-41-552260

Shaw Project No. 131994

October 2, 2008

Prepared for:

City of Milwaukee

Redevelopment Authority of the City of Milwaukee
809 North Broadway
Milwaukee, WI 53202

Prepared by:

Shaw® Shaw Environmental, Inc.

111 West Pleasant Street, Suite 105
Milwaukee, Wisconsin 53212-3939

SITE INVESTIGATION REPORT

City of Milwaukee - Department of Public Works
Sanitation Field Headquarters
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

WDNR BRRTS No. 02-41-552260

Shaw Project No. 131994.04

October 2, 2008

Prepared for:

City of Milwaukee
Redevelopment Authority of the City of Milwaukee
809 North Broadway
Milwaukee, WI 53202

Preparer:

Trevor J. Hornbacher
Project Scientist

Reviewer:

I, Timothy P. Welch hereby certify that I am a hydrogeologist as that term is defined in *s. NR 712.03(3), 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. NR 700 to 726, Wis. Adm. Code.*

WISCONSIN
TIMOTHY P. WELCH
G-558
SAUKVILLE
WI
PROFESSIONAL GEOLOGIST

Timothy P. Welch, P.G.
Program Manager

This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. Any dissemination, distribution, or copying of this document is strictly prohibited.

Table of Contents

List of Tables v
List of Figures v
List of Appendices v
Acronyms and Abbreviations vi

Executive Summary ES-1
1.0 Introduction 1-1
2.0 Site Description and History 2-1
2.1 Site Location and Legal Description 2-1
2.2 Site and Vicinity General Characteristics 2-1
2.3 Site History 2-2
2.4 Previous Environmental Reports 2-3
3.0 Subsurface Investigation Procedures 3-1
3.1 Site Investigation Chronology 3-1
3.2 Geophysical Survey 3-3
3.3 Soil Investigation 3-3
3.3.1 Soil Boring Installation 3-3
3.3.2 Soil Sampling 3-3
3.3.3 Drillhole / Borehole Abandonment 3-5
3.4 Groundwater Investigation 3-5
3.4.1 Temporary Groundwater Monitoring Well Installation 3-5
3.4.2 Groundwater Monitoring Well Installation 3-6
3.4.3 Groundwater Monitoring Well Development 3-6
3.4.4 Groundwater Sampling 3-6
3.4.5 Temporary Groundwater Monitoring Well Abandonment 3-7
3.5 Groundwater Monitoring Well Elevation Survey 3-7
3.6 Management of Investigation-Derived Waste 3-8
3.6.1 Soil Waste 3-8
3.6.2 Groundwater Waste 3-8
4.0 Subsurface Investigation Results 4-1
4.1 Subsurface Conditions 4-1
4.1.1 Site Lithology 4-1
4.1.2 Site Hydrogeology 4-1
4.2 Geophysical Survey Results 4-1
4.3 Soil Analyses 4-2
4.3.1 Regulatory Criteria for Soil 4-2
4.3.2 Volatile Organic Vapor Scan 4-2
4.3.3 Results of Soil Analyses 4-2

Table of Contents (continued)

4.4 Groundwater Analyses 4-3
4.4.1 Regulatory Criteria for Groundwater 4-3
4.4.2 Results of Groundwater Analyses 4-3
4.5 Potential Contaminant Migration Pathways and Receptors 4-4
4.5.1 Structures 4-4
4.5.2 Utilities 4-4
4.5.3 Water Supply Wells 4-4
4.5.4 Potential Impacts to Habitats, Wetlands, Outstanding Resource Waters 4-4
5.0 Findings 5-1
5.1 Geophysical Survey Results 5-1
5.2 Extent of Soil Impacts 5-1
5.2.1 Polycyclic Aromatic Hydrocarbons (PAHs) 5-1
5.2.2 Chloride 5-1
5.2.3 Volatile Organic Compounds (VOCs) 5-1
5.3 Extent of Groundwater Impacts 5-1
5.3.1 Chloride 5-1
5.3.2 Volatile Organic C ompounds (VOCs) 5-2
6.0 Recommendations 6-1
7.0 Conditions and Limitations 7-1

Table of Contents (continued)

List of Tables

Table 1 Summary of Groundwater Elevations
Table 2 Summary of Soil VOC, PAH and Chloride Results
Table 3 Summary of Groundwater VOC and Chloride Results

List of Figures

Figure 1 Site Location Map
Figure 2 General Land Use Map
Figure 3 Summary of Phase I ESA Findings
Figure 4 Geophysical Survey Results
Figure 5 Site Plan – Boring Location Map
Figure 6 Geologic Cross Section Location Map
Figure 7 Geologic Cross-Sections A-A' and B-B'
Figure 8 Groundwater Contour Map (October 1, 2008)
Figure 9 Soil Quality Map
Figure 10 Groundwater Quality Map

List of Appendices

Appendix A Standard Operating Procedures
Appendix B Soil Boring Logs and Well/Drillhole/Borehole Abandonment Forms
Appendix C Monitoring Well Construction Logs and Development Forms
Appendix D Laboratory Analytical Reports and Chain of Custody

Acronyms and Abbreviations

AST	Aboveground Storage Tank
AUL	Activity and Use Limitation
bgs	Below Ground Surface
BRRTS	Bureau of Remediation and Redevelopment Tracking System
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	Certified Survey Map
EPA	U.S. Environmental Protection Agency
ES	Enforcement Standard
ESA	Environmental Site Assessment
*e*V	Electron Volt
ft	Feet
g	Grams
mg/kg	Milligrams per Kilogram
mV	MilliVolts
NR	Natural Resources
OVM	Organic Vapor Meter
PAH	Polycyclic Aromatic Hydrocarbon
PAL	Preventive Action Limit
PCB	Polychlorinated Biphenyl
PID	photoionization detector
ppm/V	Parts per Million / Volume
PVC	Polyvinyl Chloride
PVOC	Petroleum Volatile Organic Compound
RACM	Redevelopment Authority of the City of Milwaukee
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
Shaw	Shaw Environmental, Inc.
SI	Site Investigation
SMP	Soil Management Plan
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WAC	Wisconsin Administrative Code
WDNR	Wisconsin Department of Natural Resources
Wis. Adm. Code	Wisconsin Administrative Code

Executive Summary

The Redevelopment Authority of the City of Milwaukee (RACM) retained Shaw Environmental, Inc. (Shaw) to complete an environmental site investigation on the multi-parcel property located at 7222 and 7318 West Fond du Lac Avenue in the City of Milwaukee, Milwaukee County, Wisconsin, hereinafter collectively referenced as the "Site". This Site Investigation (SI) was completed in a general accordance with *Natural Resources (NR) Chapters 716 and 722 of the Wisconsin Administrative Code (Wis. Adm. Code)* requirements.

The Site is a 1.08-acre parcel of land occupied by four vacant, former municipal service structures. Three structures (an office structure, service garage and concrete dome structure) are situated in the southern portion of the Site (7222 West Fond du Lac Avenue); and one garage / storage structure is situated in the northern portion of the Site (7318 West Fond du Lac Avenue). With the exception of a gravel area in the northwest corner, the area surrounding the structures is occupied by asphalt paved drive or parking areas.

The Site was vacant and / or agricultural land until at least 1962 when the Site was developed as an auto sales and service operation. Auto sales and service operations continued on the Site from 1962 through about 1983, when the City of Milwaukee Department of Public Works acquired the Site and utilized the Site as a sanitation field headquarters, garbage can repair facility, snow equipment staging/storage and road salt transfer station. These operations had associated or known use / management of bulk quantities of salt (including solid and liquid additives such as calcium chloride), petroleum products and hazardous substances. Considering the current and former usage of the Site, a site investigation to evaluate soil and groundwater quality relative to possible surface spills and releases from former on-Site municipal yard operations and historical auto sales and service operations was deemed warranted and requested by RACM.

This SI included the advancement of a total of twenty six soil borings, the construction of a total of five temporary groundwater monitoring wells (at both interior and exterior locations), and five *NR 141 Wis. Adm. Code* compliant groundwater monitoring wells. Throughout the SI, Shaw collected select soil and groundwater samples and submitted the samples for Volatile Organic Compound (VOC), Polycyclic Aromatic Hydrocarbons (PAHs) and / or chloride laboratory analysis. The SI also included the completion of an electromagnetic geophysical survey to search for the possible presence of USTs and/or buried drums remaining in-place potentially associated with historical operations.

The following is a brief summary of SI findings:

Geophysical Survey Results

No electromagnetic anomalies indicative of an underground storage tanks (UST) and/or buried drums are present on the Site.

Soil Quality Conditions

Soil borings advanced to depths of 16 to 20 feet below ground surface (bgs) encountered gravelly silty sand fill material to depths of 2 feet, underlain by silty clay.

The PAH constituents benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene are present in soil within the direct contact interval (0-4 feet bgs) of soil borings GP-1, GP-2, GP-4, GP-5, GP-10, and GP-12 through GP-23 exceed the respective constituents non-industrial suggested generic direct contact soil clean-up standard as set forth in WDNR guidance document *Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons Interim Guidance* (RR-519-97). To date, the extent of PAH impacted soil appears to be located in the northwestern portion of the Site.

Chloride was reported in soil borings GP-4, GP- 6, GP-7, and B-1/MW-1 through B-5/MW-5 (general vicinity of the salt storage dome and transfer area) at concentrations ranging from 353 to 11600 milligrams per kilogram (mg/kg). However, chloride does not have an established regulatory generic soil clean-up standard (i.e. *chs. NR 720 and 746, Wis. Adm. Code*).

No VOCs were reported at concentrations above laboratory analytical method detection limits in any of the remaining soil samples.

Groundwater Quality Conditions

Shallow groundwater within unconsolidated sediments across the Site is generally present at depths ranging from 5 to 16 feet bgs. The shallow, horizontal groundwater flow across the Site is inferred to be towards the southeast.

Chloride concentrations present in NR 141 compliant groundwater monitoring wells B-1/MW-1 through B-5/MW-5 ranged from 80 to 9250 milligrams per liter (mg/l); while chloride at temporary well locations GP-4, GP-6 and GP-7 ranged from 1690 to 17800 mg/l. The reported concentrations of chloride exceed either the regulatory groundwater preventive action limit (125 mg/l) or enforcement standard (250 mg/l) as set forth in *s. NR 140.12 Wis. Adm. Code*. To date, the extent of chloride impacted groundwater appears to be located in the general vicinity of the salt storage dome and transfer area; however, the full extend of the chloride contaminant plume has not been defined.

No VOCs were reported at concentrations above laboratory analytical method detection limits in groundwater at the three temporary groundwater monitoring well locations.

Recommendations

Based on the findings of this Site Investigation, supplemental subsurface investigation activities are recommended. Recommended supplemental investigation activities include, but are not limited to the following:

- The horizontal extent of the dissolved phase chloride contaminant plume has not been defined. Additional NR 141 compliant groundwater monitoring wells will likely need to be installed to define the extent of the contaminant plume that originates from the salt dome storage/transfer area.
- Quarterly groundwater monitoring of the groundwater monitoring well network will likely need to be performed to document contaminant plume stability.
- To date, the extent of PAH impacted soil (within the direct contact interval) appears to be located in the northwestern portion of the Site, near and west of the garage. If future use / development includes the demolition of the garage structure or the surrounding asphalt along with the displacement/disturbance of soil in this area, the development and implementation of a Soil Management Plan and Capping Maintenance Plan is recommended. (Note: displacement of PAH impacted soil on-Site with specific engineering controls [i.e. beneath landscape/hardscape features or asphalt capping]; or off-Site removal and disposal as “special waste” [depending on site development plans and overall soil balance issues] are two potential soil management alternatives.)

1.0 Introduction

The Redevelopment Authority of the City of Milwaukee (RACM) retained Shaw Environmental, Inc. (Shaw) to complete an environmental site investigation on the multi-parcel property located at 7222 and 7318 West Fond du Lac Avenue in the City of Milwaukee, Milwaukee County, Wisconsin, hereinafter collectively referenced as the "Site". Site Investigation activities contained herein have been promulgated and based in general accordance with *Chapters Natural Resources (NR) 716 and 722 of the Wisconsin Administrative Code (Wis. Adm. Code)* requirements.

Previous environmental site assessments were completed on the Site from April 2008 through July 2008 for RACM. The initial *Phase I Environmental Site Assessment* (ESA) (dated April 27, 2008) and a subsequent *Phase II ESA* (dated July 2, 2008) were completed to evaluate environmental conditions and business environmental risks on the Site relative to a prospective real estate transaction. The Phase II ESA identified several contaminants of concern including Polycyclic Aromatic Hydrocarbons (PAH) constituents and chloride in select soil and groundwater samples at concentrations above applicable regulatory soil / groundwater action levels or remediation clean-up standards. Subsequently, supplemental subsurface investigation activities were deemed warranted and requested by RACM.

Upon completion of Phase II ESA activities, RACM notified the WDNR of the identified hazardous substance impacts and in response, the WDNR issued a responsible party letter on September 5, 2008 to the City of Milwaukee.

2.0 Site Description and History

2.1 Site Location and Legal Description

Figure 1 – Site Location Map illustrates the general location of the Site.

Location and Legal Description		
Name / Address	Tax Key Parcel	Brief Legal
7222 West Fond du Lac Avenue Bldg No. 1721 – Sanitation Field Headquarters Bldg No. 1734 – Sanitation Garage Bldg No. 1733 – Sanitation Salt Storage Dome	212-0286-110-2	JEFFERSON GARDENS IN SW 1/4 SEC 34-8-21 DESCRIPTION BLOCK 10 LOTS (34 THRU 39) & VAC WALK ADJ
7318 West Fond du Lac Avenue Bldg No. 1751 – Storage / Garage	212-0292-111-3	JEFFERSON GARDENS IN SW 1/4 SEC 34-8-21 DESCRIPTION BLOCK 10 LOTS 40-41 & SELY 21.50' LOT 42 & VAC ALLEY ADJ

Source: City of Milwaukee Assessor's Office - http://www.city.milwaukee.gov. Referenced building numbers obtained from the City of Milwaukee Bureau of Bridges and Public Buildings – List of Buildings.

Public Land Survey System (PLSS)

SW ¼ of the SW ¼ of Section 34, Township 8 North, Range 21 East.

2.2 Site and Vicinity General Characteristics

Figure 2 – General Land Use Map illustrates the general land use in the vicinity of the Site. **Figure 5 – Site Plan - Boring Location Map** illustrates the Site features

Site General Characteristics	
Issue	Comments
Acreage, structure(s), and general improvements:	The Site is a 1.08-acre parcel of land occupied by four vacant, former municipal service structures. Three structures (an office structure, service garage and concrete dome structure) are situated in the southern portion of the Site (7222 West Fond du Lac Avenue); and one garage / storage structure is situated in the northern portion of the Site (7318 West Fond du Lac Avenue). With the exception of a gravel area in the northwest corner, the area surrounding the structures is occupied by asphalt paved drive or parking areas. 7222 West Fond du Lac Avenue Three structures (an office structure, service garage and concrete dome structure) are situated in the southern parcel of the Site. A 2,556-square foot, single-story, slab-on-grade masonry block office structure is situated in the southwest corner of the Site. A 2,305-square foot single-story, slab-on-grade masonry block service garage structure is situated in the southeast corner of the Site. A 4,475-square foot slab-on-grade, reinforced cast concrete and masonry block dome structure is situated in the central portion of the Site. Two poly aboveground storage tanks (ASTs) are present immediately south of the dome structure. On AST is labeled "Calcium Chloride"

Site General Characteristics	
Issue	Comments
	7318 West Fond du Lac Avenue A 2,440-square foot, two-story, slab-on-grade, wood framed and masonry block garage / storage structure is present in the northern parcel of the Site.
Status or operations:	The structures on the Site are currently vacant; however, the most recent occupants have included the City of Milwaukee Department of Public Works – Bureau of Bridges and Public Buildings – Sanitation and used automobile sales, service and repair operations. No staged materials or equipment was observed in open areas of the Site.

The Site and / or structures are serviced by the following private and / or municipal utility companies:

Description of Utilities		
Utility	Utility Provider	Comments
Sewerage Disposal:	City of Milwaukee	Milwaukee Metropolitan Sewerage District
Potable Water Source:	City of Milwaukee	- -
Natural Gas:	WE Energies	- -
Electric:	WE Energies	- -

2.3 Site History

Summary of Site History (approximate dates)	
Dates	Property Use
Pre 1962	Vacant and / or agricultural land
1962 – 1982	7222 West Fond du Lac Avenue: Construction of an auto sales and service structure in 1962 (associated business names Borkin Use Auto Sales & Service, Autobrokers, Auto Finders)
1964 - 1984	7318 West Fond du Lac Avenue: Construction of an auto sales and service structure in 1964 (associated business names Holiday Motor & Sales, Tommy's Auto Exchange, DJ's Transmission)
1983	7222 West Fond du Lac Avenue: City of Milwaukee Department of Public Works became associated with the Site.
1984	7222 West Fond du Lac Avenue: City of Milwaukee Department of Public Works constructed the existing office and salt dome structures and completed a western addition to the existing storage garage.
1984 - late 1990s	7222 West Fond du Lac Avenue: City of Milwaukee Department of Public Works conducted full-time operations at the Site including light repairs of garbage carts and the staging of snow / ice removal vehicles, equipment, and road salt related storage and transfer.
1986 – Late 1990s	7318 West Fond du Lac Avenue: City of Milwaukee Department of Public Works acquired the property in about 1986 and conducted full-time operations at the Site including light repairs of garbage carts and the staging of snow / ice removal vehicles, equipment and road salt related storage and transfer.

Summary of Site History (approximate dates)	
Dates	Property Use
Late 1990s – winter 2007/2008	7222 and 7318 West Fond du Lac Avenue: City of Milwaukee Department of Public Works conducted seasonal operations associated with the staging of snow / ice removal vehicles, equipment, and road salt related storage and transfer.

2.4 Previous Environmental Reports

RACM approved the use and / or provided Shaw with previous environmental reports / documentation associated with the Site. The following is a brief summary of reports / documentation associated with the Site.

Report: Phase I Environmental Site Assessment
Date: April 27, 2008
Prepared By: Shaw Environmental, Inc.
Prepared For: Redevelopment Authority of the City of Milwaukee

In April, 2008, Shaw completed a Phase I ESA on the Site. Shaw reported that the Site was vacant and / or agricultural land until at least 1962. Initial development of the Site with an auto sales and service operation occurred in 1962. Auto sales and service operations continued on the property from 1962 through about 1983 when the City of Milwaukee Department of Public Works acquired the Site and utilized the Site as a sanitation field headquarters, light repair facility, snow equipment staging/storage and road salt transfer station. No documentation relative to the evaluation of soil and groundwater conditions with respect to former operations on the Site was available or on record.

Shaw identified the following recognized environmental conditions (RECs) associated with Site. **Figure 3 – Summary of Phase I ESA Findings** illustrates generalized locations of identified RECs.

Summary of Phase I ESA Recognized Environmental Conditions		
REC	Location	Issue / Concern / Comments
REC 1	7318 W Fond du Lac Storage Garage	Presence of two below-grade mounted hydraulic lifts. There is an absence of qualitative soil and groundwater data associated with these hydraulic lifts.
REC 2	7222 W Fond du Lac Southeast of the Storage Dome	Presence of a calcium chloride transfer area without an integrated spill collection and containment system. There is an absence of qualitative soil and groundwater data in the general vicinity of the calcium chloride transfer area.
REC 3	7222 – 7318 W Fond du Lac Both general properties	Presence of automotive sales and repair operations from approximately 1962 – 1983, with the likely use and storage of hazardous substances and petroleum products. There is an absence of qualitative soil and groundwater data associated with both of these parcels.

Report: Phase II Environmental Site Assessment
Date: July 2, 2008
Prepared By: Shaw Environmental, Inc.
Prepared For: Redevelopment Authority of the City of Milwaukee

In July, 2008, Shaw completed Phase II ESA activities to investigate the identified RECs as noted in the April 2008 Phase I ESA Report. The Phase II ESA soil and groundwater subsurface investigation included the advancement of nine direct-push (Geoprobe®) soil borings, and the installation of five temporary groundwater monitoring wells. Soil borings were advanced to depths of 16 to 20 feet below ground surface (bgs) across the Site. Soil samples collected during the subsurface investigation were field screened for the presence of volatile organic vapors. Soil and groundwater samples were collected from the boreholes or temporary groundwater monitoring wells and submitted for Volatile Organic Compound (VOC), Polycyclic Aromatic Hydrocarbons (PAH) and chloride laboratory analyses. The Phase II ESA findings and analytical results are discussed in detail within subsequent sections of this SI Report. In general, both soil and groundwater contaminants of concern were measured at levels which exceed WDNR regulatory standards.

As part of the Phase II ESA activities, Shaw completed an electromagnetic geophysical survey on the Site and searched for the possible presence of underground storage tanks (USTs) and/or buried drums. The electromagnetic geophysical survey was completed as a non-invasive method to detect and map the locations of potential buried metallic (ferrous and non-ferrous) objects, including the possible presence of any UST's or drums, and to delineate the locations of other buried metallic waste and construction debris material that might be of interest for future property development. The electromagnetic survey method utilizing a Geonics Limited *Electromagnetic 61 Mark II* (EM61-MKII) equipped with a Trimble *AgGPS 114* global positioning system was selected as the most appropriate geophysical investigation method, given site characteristics, target objectives, and data resolution requirements. No electromagnetic anomalies indicative of a UST and / or buried drums were present on the Site. Shaw concluded that a UST was not present within the property boundaries of the Site. **Figure 4 – Geophysical Survey Results** illustrates the electromagnetic responses identified on the Site.

Document: Notification for Hazardous Substance Discharge
Date: August 15, 2008
Prepared By: The Redevelopment Authority of the City of Milwaukee
Prepared For: The Redevelopment Authority of the City of Milwaukee

On August 15, 2008, a RACM representative notified the WDNR of the identified hazardous substance impacts on the Site. In response, the WDNR issued a responsible party letter on September 5, 2008 to the City of Milwaukee and assigned a WDNR case number of ERP BRRTS No. 02-341-552260.

3.0 Subsurface Investigation Procedures

As previously mentioned, Shaw initiated Phase II ESA subsurface investigation activities in June 2008, followed by a supplemental site investigation to evaluate soil and groundwater quality relative to possible surface spills and releases from former on-Site municipal yard operations and historical auto sales and service operations. These operations had associated or known use / management of bulk quantities of salt (including solid and liquid additives such as calcium chloride), petroleum products and hazardous substances. The subsurface investigation has included the advancement of a total of 28 soil borings, the construction of a total of five temporary groundwater monitoring wells (at both interior and exterior locations), and five *NR 141 Wis. Adm. Code* compliant groundwater wells. The subsurface investigation also included the completion of an electromagnetic geophysical survey on the Site to search for the possible presence of USTs and/or buried drums remaining in-place potentially associated with historical operations.

Throughout the site investigation, Shaw collected select soil and groundwater samples and submitted the samples for VOC, PAHs and / or chloride laboratory analysis. A summary of laboratory analytical results for VOCs, PAHs and chloride within soil and groundwater along with applicable *chs. NR 720 and NR 140, Wis. Adm. Code* standards are presented in provided **Tables**. Site features, soil boring locations and soil and groundwater quality maps are illustrated on provided **Figures**.

The following is a brief summary and chronology of the site investigation:

3.1 Site Investigation Chronology

May 28, 2008

On May 28, 2008, Shaw completed an electromagnetic geophysical survey on the Site and searched for the possible presence of USTs and/or buried drums. No electromagnetic anomalies indicative of a UST and/or buried drums are present on the Site. However, discrete electromagnetic anomalies were identified on the Site and attributed to above-ground features and small below-ground objects, some of which may be located at or near the ground surface (*i.e.*, steel guard rails, garbage cart axels, catch basins, clean outs, bollards and cut sign and fence posts).

June 3, 2008

On June 3, 2008, Shaw supervised the advancement of a total of nine direct-push soil borings (designated as soil boring numbers GP-1 through GP-9) to depths of 16 to 20 feet below ground surface (bgs) and the construction of five temporary groundwater wells placed within respective boreholes. Interior soil borings GP-2 and GP-3 and its associated temporary groundwater well were advanced / constructed within the northern garage structure in the vicinity of two existing in-ground mounted hydraulic lifts. The soil borings and temporary groundwater monitoring wells were completed as part of the initial Phase II ESA, preliminarily evaluating subsurface conditions with respect to former municipal yard operations and historical auto sales and service operations. Shaw submitted select soil samples for VOC, PAH and/or

chloride laboratory analyses. Various PAH constituents and chloride in select soil samples were reported at concentrations above Wisconsin Department of Natural Resources *Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons Interim Guidance* (RR-519-97) regulatory standards. No VOCs were reported at concentrations above laboratory analytical detection limits in the submitted groundwater samples. Subsequently, supplemental subsurface investigation activities were deemed warranted and requested by RACM.

June 10, 2008

Temporary groundwater monitoring wells GP-3, GP-4, and GP-6 through GP-8 did not yield water at the time of construction. As such, Shaw allowed for the temporary wells to recharge and groundwater sampling was conducted on June 10, 2008. Shaw submitted the groundwater samples for VOC and/or chloride laboratory analyses. Chloride in select groundwater samples were reported at concentrations above *ch. NR 140 Wis. Adm. Code* regulatory standards. No VOCs at concentrations above laboratory analytical detection limits were reported within the submitted groundwater samples.

August 14 and 15, 2008

On August 14 and 15, 2008, Shaw supervised the advancement of fourteen additional exterior direct-push soil borings (designated as soil boring numbers GP-10 through GP-23), and the installation of five *NR 141 Wis. Adm. Code* compliant groundwater monitoring wells (designated as soil boring/groundwater well numbers B-1/MW-1 through B-5/MW-10). Soil borings GP-10 through GP-23 were advanced to depths of 4 feet bgs to further evaluate surficial soil quality within the direct contact depth interval (0 – 4 ft bgs) in the vicinity of previously identified PAH soil impacts. Exterior *NR 141 Wis. Adm. Code* compliant groundwater monitoring wells B-1/MW-1 through B-5/MW-5 were advanced / constructed to depths of 15 to 18 feet bgs with 10 feet of slotted screen. Shaw submitted select soil samples for PAH and chloride laboratory analyses. Various PAH constituents and chloride in select soil samples were reported at concentrations above WDNR RR-519-97 regulatory standards.

August 18, 2008

On August 18, 2008, Shaw developed the newly installed groundwater monitoring wells B-2/MW-2 and B-4/MW-4. Monitoring wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 were dry and required additional development techniques with the addition of distilled water.

August 21, 2008

On August 21, 2008, Shaw measured static groundwater levels and sampled the newly installed *NR 141 Wis. Adm. Code* compliant groundwater monitoring wells B-2/MW-2 and B-4/MW-4 using low flow technique. Groundwater samples were submitted for chloride laboratory analysis.

August 29, 2008

On August 29, 2008, Shaw surged the newly installed groundwater monitoring wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 by the addition of distilled water and developed the respective groundwater monitoring wells.

September 5, 2008

On September 5, 2008, Shaw measured static groundwater levels, developed, and sampled the newly installed *NR 141 Wis. Adm. Code* compliant groundwater monitoring wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 using bailers. Groundwater samples were submitted for chloride laboratory analysis.

3.2 Geophysical Survey

On May 28, 2008, Shaw completed an electromagnetic geophysical survey on the Site and searched for the possible presence of underground storage tanks (USTs) and/or buried drums. The electromagnetic geophysical survey was completed as a non-invasive method to detect and map the locations of potential buried metallic (ferrous and non-ferrous) objects, including the possible presence of any UST's or drums, and to delineate the locations of other buried metallic waste and construction debris material that might be of interest for future property development.

The electromagnetic survey method utilizing a Geonics Limited *Electromagnetic 61 Mark II* (EM61-MKII) equipped with a Trimble *AgGPS 114* global positioning system was selected as the most appropriate geophysical investigation method, given site characteristics, target objectives, and data resolution requirements. Within urban and industrial environments, there are often large metallic surface obstacles, such as buildings, fences, and overhead power lines that can generate interference that adversely affects the reliability of other geophysical instrumentation including magnetometer data. The EM61-MKII instrumentation is less susceptible to these interferences, and is the preferred method in terms of data resolution and the given site characteristics.

3.3 Soil Investigation

3.3.1 Soil Boring Installation

Soil borings GP-1 through GP-23 were advanced using standard direct-push-sampling techniques at 4-foot continuous intervals. Soil borings B-1/MW-1 through B-5/MW-5 were advanced by a conventional drill rig utilizing hollow-stem-auger drilling techniques at 2-foot continuous intervals. Soil samples were physically characterized in general accordance with the Unified Soil Classification System (*American Society of Testing Materials [ASTM] Method D-2488-75*) and subjected to a volatile organic vapor scan using a photoionization detector (PID). Shaw field personnel followed Shaw's *Standards for Conducting Direct Push Drilling and Soil Sampling* (Standard Operating Procedure EI-GS021) and *Jar Headspace Screening* (Standard Operating Procedure T-FS-203) as provided in **Appendix A**. The soil boring locations are illustrated on **Figure 5 – Site Plan and Boring Location Map**.

3.3.2 Soil Sampling

Soil sample selection for laboratory analysis was based on volatile vapor scan (a.k.a. PID) response, physical characteristics, Site and off-site environmental features, and depth of sample interval relative to the moisture content and water table. Shaw field personnel followed Shaw's *Standards for Conducting Direct Push Drilling and Soil Sampling* (Standard Operating Procedure EI-GS021) as provided in

Appendix A. The depths at which soil samples were collected are recorded on respective soil boring logs provided in **Appendix B** and the soil analytical tables found in **Appendix D**.

During each soil sampling event, a minimum of one methanol trip blank sample was transported with the other collected soil samples submitted for laboratory analyses. Sampling, handling, and storage procedures associated with the respective samples were performed in accordance with WDNR protocol and standard chain of custody (COC) requirements. Methanol trip blanks provide a mechanism to evaluate quality assurance for the collected soil samples.

Select soil samples were submitted to Pace Laboratories (Pace) of Green Bay, Wisconsin (WDNR Certification No. 405132750) and analyzed for the following laboratory analytical parameters:

Soil Analytical Parameters			
Sample ID	Volatile Organic Compounds EPA Method SW846 8260	Polycyclic Aromatic Hydrocarbons EPA Method SW846 8270 by SIM	Chloride EPA Method 300.0
GP-1 (2-4")	X	X	NA
GP-1 (12-14")	X	NA	NA
GP-2 (2-4")	X	X	NA
GP-2 (12-14")	X	X	NA
GP-3 (6-8")	X	X	NA
GP-3 (12-14")	X	X	NA
GP-4 (2-4")	X	X	NA
GP-4 (3-4')	NA	NA	X
GP-4 (12-14")	X	X	NA
GP-5 (2-4")	X	X	NA
GP-5 (14-16")	X	X	NA
GP-6 (3-4")	NA	NA	X
GP-7 (3-4")	NA	NA	X
GP-8 (12-14")	X	X	NA
GP-9 (12-14")	X	NA	NA
GP-10 (2-4')	NA	X	NA
GP-11 (2-4')	NA	X	NA
GP-12 (2-4')	NA	X	NA
GP-13 (2-4')	NA	X	NA
GP-14 (2-4')	NA	X	NA
GP-15 (2-4')	NA	X	NA

Soil Analytical Parameters			
Sample ID	Volatile Organic Compounds EPA Method SW846 8260	Polycyclic Aromatic Hydrocarbons EPA Method SW846 8270 by SIM	Chloride EPA Method 300.0
GP-16 (2-4')	NA	X	NA
GP-17 (2-4')	NA	X	NA
GP-18 (2-4')	NA	X	NA
GP-19 (2-4')	NA	X	NA
GP-20 (2-4')	NA	X	NA
GP-21 (2-4')	NA	X	NA
GP-22 (2-4')	NA	X	NA
GP-23 (2-4')	NA	X	NA
B-1 SS-5 (8.5')	NA	NA	X
B-2 (MW-2) (6-8')	NA	NA	X
B-3 SS-4 (7')	NA	NA	X
B-4 SS-5 (8')	NA	NA	X
B-5 SS-5 (9')	NA	NA	X

NA – Not Analyzed

Sample containers, preservation methods and storage procedures, followed the requirements for the respective analytical method.

3.3.3 Drillhole / Borehole Abandonment

Upon completion of soil sampling, all soil boreholes except those used for permanent groundwater monitoring wells, were abandoned with granular bentonite chips in accordance with *chs. NR 112 and NR 141, Wis. Adm. Code* requirements. The borehole abandonment forms, *Well / Drillhole / Borehole Abandonment* (WDNR Form 3300-5B) are provided in **Appendix B**. Shaw field personnel followed Shaw's *Standards for Conducting Direct Push Drilling and Soil Sampling* (Standard Operating Procedure EI-GS021) as provided in **Appendix A**.

3.4 Groundwater Investigation

3.4.1 Temporary Groundwater Monitoring Well Installation

On June 3, 2008, Shaw supervised the advancement of the nine direct-push soil borings and the subsequent construction of five temporary groundwater monitoring wells (GP-3, GP-4, GP-6, GP-7 and GP-8). The temporary groundwater monitoring wells were advanced using standard direct-push-sampling techniques at 4-foot continuous intervals.

Temporary groundwater monitoring well construction included a ¾-inch inside diameter, solid poly-vinyl chloride (PVC) riser pipe, with a 10 foot, 0.010-inch slotted PVC screen interval placed within respective soil boreholes.

Temporary groundwater monitoring wells did not yield water during Shaw's June 3, 2008 activities and were allowed to recharge prior to sampling. The temporary groundwater monitoring wells were capped with an appropriately sized PVC cap and a bentonite seal was place in the void space between the riser and the outer borehole boundary. The temporary groundwater monitoring locations are illustrated on **Figure 5**.

3.4.2 Groundwater Monitoring Well Installation

On August 14 and 15, 2008 Shaw supervised the advancement of five soil borings and the construction of five *NR 141 Wis. Adm. Code* compliant groundwater monitoring wells (B-1/MW-1 through B-5/MW-5). Soil borings B-1/MW-1 through B-5/MW-5 were advanced by a conventional drill rig utilizing hollow-stem-auger drilling techniques at 2-foot continuous intervals.

Monitoring well construction included a 2-inch-inside diameter PVC riser pipe with a 10 foot, 0.010-inch slot PVC screened interval. The monitoring wells were completed in concrete pads with steel bolt-down flush-mount protective cover assemblies. Monitoring well locations are illustrated on **Figure 5**. Monitoring well construction logs *(WDNR Form 4400-113A)* are provided within **Appendix C**.

3.4.3 Groundwater Monitoring Well Development

On August 18, 2008, groundwater monitoring wells B-1/MW-1 through B-5/MW-5 were developed using the surge / pump well development method. Groundwater wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 did not yield water during the August 18, 2008 development activities. As such, on August 29, 2008 bottled distilled water was added (surged) into the well facilitating the cleansing and opening of the slotted PVC well screen. Development of groundwater wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 was subsequently completed on September 5, 2008.

Wells were pumped utilizing a whaler pump and dedicated tubing for each well location. Monitoring well development forms *(WDNR Form 4400-113B)* are provided in **Appendix C**. Disposal of well development groundwater is described in *Section 3.6.*

3.4.4 Groundwater Sampling

Groundwater was extracted from the temporary groundwater wells and *NR 141 Wis. Adm. Code* compliant groundwater monitoring wells using a peristaltic pump and new, polyethylene drop tubing. Shaw field personnel followed Shaw's *Standards for Direct Push Groundwater Sampling* (Standard Operating Procedure EI-GS009) or Shaw's *Standards for Low-flow / Micro-purge Sampling* (Standard Operating Procedure EI-FS111), respectively as provided in **Appendix A.**

During each groundwater sampling event, a minimum of one groundwater trip blank sample was transported with the other collected groundwater samples submitted for laboratory analyses. A duplicate

groundwater sample was also collected during each sampling event. Sampling, handling, and storage procedures associated with the respective samples were performed in accordance with WDNR protocol and standard chain of custody (COC) requirements. The groundwater trip blank and duplicate sample provides quality assurance for the collected groundwater samples.

Groundwater samples collected during various groundwater sampling events were submitted to Pace Laboratories (Pace) of Green Bay, Wisconsin (WDNR Certification 405132750) and analyzed for the following laboratory analytical parameters:

Groundwater Analytical Parameters		
Sample ID	Volatile Organic Compounds EPA Method SW846 8260	Chloride EPA Method 300.0
GP-3	X	NA
GP-4	X	X
GP-6	NA	X
GP-7	NA	X
GP-8	X	NA
B-1 / MW-1	NA	X
B-2 / MW-2	NA	X
B-3 / MW-3	NA	X
B-4 / MW-4	NA	X
B-5 / MW-5	NA	X

NA – Not Analyzed

Sample containers, preservation methods and storage procedures, followed the requirements for the analytical method.

3.4.5 Temporary Groundwater Monitoring Well Abandonment

On June 10, 2008, Shaw abandoned temporary groundwater monitoring wells GP-3, GP-4, GP-6, GP-7 and GP-8 with granular bentonite chips in accordance with *chs. NR 112 and NR 141, Wis. Adm. Code* requirements. The borehole abandonment forms, *Well / Drillhole / Borehole Abandonment* (WDNR Form 3300-5B) are provided in **Appendix B**. Shaw field personnel followed Shaw's *Standards for Conducting Direct Push Drilling and Soil Sampling* (Standard Operating Procedure EI-GS021) as provided in **Appendix A**.

3.5 Groundwater Monitoring Well Elevation Survey

Elevations and locations of groundwater monitoring wells were determined using conventional surveying and measurement techniques. The elevations were referenced (benchmarked) to a local, on-Site

benchmark, the fire hydrant (north side of the top flange) located southwest of the site along West Fond du Lac Avenue. The assumed elevation of this local, on-Site benchmark is 100.00 feet.

Static water levels were measured during the groundwater sampling events from a consistent point on each well (north side, top of casing) utilizing a decontaminated slope indicator water-level measuring tape. Static groundwater levels are considered to be accurate within 0.01± ft. A summary of groundwater elevation data is provided on **Table 1 – Summary of Groundwater Elevations**.

3.6 Management of Investigation-Derived Waste

3.6.1 Soil Waste

Soil boring auger and direct-push cuttings generated during the installation of the soil borings and groundwater monitoring wells were containerized in a total of six labeled, 55-gallon steel drums (Department of Transportation – approved), and staged on-Site (east side of office building) pending disposal.

3.6.2 Groundwater Waste

Groundwater monitoring well development and purge water generated during the installation and sampling events was containerized in a total of one labeled, 55-gallon steel drums (Department of Transportation-approved) and staged on-Site (east side of office building) pending disposal.

4.0 Subsurface Investigation Results

4.1 Subsurface Conditions

4.1.1 Site Lithology

Based on a total of 28 soil borings advanced on the Site, gravel, sandy silt and silt (possible fill) is present across the majority of the Site at depths ranging from ground surface to 2 feet bgs. Underlying native soils generally consist of silty sand to silty clay from depths of 2 to 20 feet bgs (maximum depth explored).

Figure 6: Geologic Cross Section Location Map, and **Figure 7: Geologic Cross-Sections A–A' and B–B'** illustrate the cross-sectional lithology parallel and perpendicular to groundwater flow. The cross sections present the approximate location and depths of underground utilities in the immediate vicinity. The depths of on-Site utility corridors are assumed to be 4 feet bgs. No exploratory trenches or "as-built" Site plans were completed or provided to verify utility corridor depths.

4.1.2 Site Hydrogeology

Shallow groundwater within unconsolidated sediments across the Site is generally present at depths ranging from 5 to 16 feet bgs. The shallow, horizontal groundwater flow across the Site is inferred to be towards the east-southeast. Static water level measurements and corresponding groundwater elevations are included on **Table 1 – Summary of Groundwater Elevations.**

On August 21, 2008, static water levels within the groundwater monitoring wells B-2/MW-2 and B-4/MW-4 ranged from 7.59 to 5.45 feet bgs, respectively. Groundwater monitoring wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 were dry. (Note groundwater monitoring wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 and B-4/MW-4 were subsequently surged with bottle distilled water and developed.

On September 5, 2008, static water levels within the groundwater monitoring wells B-1/MW-1, B-3/MW-3, and B-5/MW-5 and B-4/MW-4 ranged from 10.02 to 16.31 feet bgs. October 1, 2008, static water level measurements are illustrated on **Figure 8 – Groundwater Contour Map (October 1, 2008)**.

4.2 Geophysical Survey Results

No electromagnetic anomalies indicative of a UST and/or buried drums are present on the Site.

Discrete electromagnetic anomalies identified on the Site are attributed to aboveground features and small belowground objects, some of which may be located at or near the ground surface (*i.e.*, steel guard rails, garbage cart axels, catch basins, clean outs, bollards and cut sign and fence posts). **Figure 4 – Geophysical Survey Results** illustrates the acquired EM61-MKII response.

4.3 Soil Analyses

4.3.1 Regulatory Criteria for Soil

According to City of Milwaukee Zoning Department, parcels of the Site are zoned Commercial Service (CS). Therefore, the Site is considered to be "non-industrial" with respect to applicable regulatory soil standards, at this time.

The Wisconsin Department of Natural Resources (WDNR) has established generic residual contaminant levels (RCLs) for five VOCs (1,2-Dichloroethane [1,2-DCA], Benzene, Ethylebenzene, Toluene, and Xylenes) based on the protection of groundwater. These VOC RCLs are set forth in *s. NR 720.09 Table 1 Wis. Adm. Code*. In addition, RCLs for RCRA metal constituents have been established based on protection of human health from direct contact exposure (0 – 4 feet bgs). The RCRA metal RCLs are sub-divided into two site-specific land use classifications; Non-industrial and Industrial. These RCLs are set forth in *s. NR 720.11 Table 2 Wis. Adm. Code*. Considering the existing non-industrial use and the above-mentioned non-industrial zoning classification, the RCRA metal Non-Industrial RCLs are applicable to the Site.

Suggested generic RCLs for Polynuclear Aromatic Hydrocarbons (PAHs) have been proposed, but have not formally been adopted. Industrial and Non-Industrial direct contact RCLs and RCLs based on the protection of groundwater for PAH compounds are published in the WDNR guidance document, *RR-519-97 Table 1*. Considering the existing non-industrial use and the above-mentioned industrial district zoning classification, the suggested generic PAH Non-Industrial RCLs and Groundwater RCLs are applicable to the Site.

4.3.2 Volatile Organic Vapor Scan

Soil samples collected during soil boring activities were field screened for volatile organic vapors utilizing a portable organic vapor meter, Thermo Environmental Instrument Model 580B OVM, equipped with a 10.5 electron volt (eV) organic vapor meter.

Relatively low volatile organic vapors were measured above instrument detection limits within collected soil samples. However, the measured volatile organic vapors are within typical urban area ambient air concentration or at concentrations influenced by soil moisture content rather than petroleum or hazardous substance volatile vapor emissions. The results are illustrated on the soil boring logs, *Soil Boring Log Information* (WDNR Form 4400-13) provided in **Appendix B.**

4.3.3 Results of Soil Analyses

A summary of detected laboratory analytical results for VOCs, PAHs and chloride, with applicable *Wis. Adm. Code* standards are presented on **Table 2 – Summary of Soil VOC, PAH and Chloride Results**. **Figure 9 – Soil Quality Map** illustrates the general soil impacts on the Site. Laboratory reports and chain-of-custody documentation are provided in **Appendix D**.

Results of Soil Analyses	
Analytical Parameter	Comments
VOC	No VOC constituents were reported at concentrations above laboratory analytical method detection limits within the soil samples submitted from the Site.
PAH	The PAH constituents dibenz (a,h) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene are present in soil within the direct contact interval (0-4 feet bgs) of soil borings GP-1, GP-2, GP-4, GP-5, GP-10, and GP-12 through GP-23 and exceed the respective constituents non-industrial suggested generic direct contact soil clean-up standard as set forth in WDNR guidance document RR-519-97. The reported PAH concentration did not exceed the industrial suggested direct contact soil clean-up standard.
Chloride	Chloride concentrations present in soil at soil borings GP-4, GP- 6, GP-7, and B-1/MW-1 through B-5/MW-5 ranged from 353 to 11600 milligrams per kilogram (mg/kg). However, chloride does not have an established regulatory soil clean-up standard (i.e. *chs. NR 720 and 746 Wis. Adm. Code*).

4.4 Groundwater Analyses

4.4.1 Regulatory Criteria for Groundwater

The WDNR has established public health and public welfare related groundwater contaminant levels which are set forth in ss. *NR 140.10 Table 1 and NR 140.12 Table 2 Wis. Adm. Code,* respectively. For each regulated compound, two standards have been established, the Enforcement Standard (ES) and the Preventive Action Limit (PAL). In general, if the regulated contaminant exceeds the PAL value, but is below the ES value, the WDNR may require continued monitoring or additional investigation. If the regulated contaminant is above the ES value the WDNR may require a more active response such as additional investigation, continued monitoring and / or remediation.

4.4.2 Results of Groundwater Analyses

A summary of detected laboratory analytical results for VOCs or chloride in groundwater with applicable *Wis. Adm. Code* standards is presented in **Table 3 – Summary of Groundwater VOC and Chloride Results**. **Figure 10 – Groundwater Quality Map** illustrates the general groundwater impacts on the Site. Laboratory reports and chain-of-custody documentation are provided in **Appendix D**.

Results of Groundwater Analyses	
Analytical Parameter	Comments
VOC	No VOC constituents were reported at concentrations above laboratory analytical method detection limits within the groundwater samples submitted from the Site.
Chloride	Chloride concentrations present in NR 141 compliant groundwater monitoring wells B-1/MW-1 through B-5/MW-5 ranged from 80 to 9250 milligrams per liter (mg/l); while chloride at temporary well locations GP-4, GP-6 and GP-7 ranged from 1690 to 17800 mg/l. The reported concentrations of chloride exceed either the regulatory groundwater preventive action limit (125 mg/l) or enforcement standard (250 mg/l) as set forth in *s. NR 140.12 Wis. Adm. Code*.

4.5 Potential Contaminant Migration Pathways and Receptors

The Site is located in an urban area of Milwaukee and within a transitional mixed use industrial / commercial and residential area. Both on-Site and off-site properties (including air emissions from traffic on Highway 145) may have adversely impacted, caused or contributed to the identified on-Site PAH impacted soil. Considering the commercial and industrial setting, the urban density of development and the distance that contaminants are likely to migrate based on local geological and hydrological conditions, the Site may be a receptor of PAH contaminants from an off-Site source(s).

4.5.1 Structures

On-Site structures are of slab-on-grade construction with respective below-grade sump crocks. To date, no strong or pungent odors or vapors have been reported within the structures.

4.5.2 Utilities

The Site maintains underground utilities including water, natural gas, sanitary sewer and storm sewer as illustrated on **Figure 5** and **Figure 6**. Utility trenches and corridors bisect areas of identified contaminants of concern found in soil and groundwater on the Site.

4.5.3 Water Supply Wells

A request was submitted to the Wisconsin Geological and Natural History Survey (WGNHS) to obtain well construction records for wells located within a 1,200 foot radius of the outermost edge of the contaminant plume. Shaw ordered available well constructor records and geologic logs for the SW ¼ of Section 34, Township 8, Range 21 East. There are over 100 logs for the quarter section; therefore, well records will be kept on file and are not included in this report.

Municipal Wells within 1,200 Feet

Based on review of well records there are no municipal wells known to be located within a 1,200-foot radius of the Site.

Private Wells within 1,200 Feet

The City of Milwaukee provides water via their municipal water supply distribution system. Based on review of well records there are no private potable wells known to be located within a 1,200-foot radius of the Site.

4.5.4 Potential Impacts to Habitats, Wetlands, Outstanding Resource Waters

Species, Habitat or Sensitive Ecosystems

Based on available information, there are no sensitive ecosystems or habitats and no state or federally listed endangered species present on or adjacent to the Site.

Wetlands

There are no known wetlands located on or immediately adjacent to the Site

Outstanding or Exceptional Resource Waters

No outstanding resource waters or exceptional resource waters were identified on or in the immediate vicinity of the Site as defined in *ss. NR 102.10 or NR 102.11 Wis. Adm. Code*.

5.0 Findings

Based on the analytical data and findings of this site investigation, the contaminants of concern identified and attributed to on-Site operations and conditions include: select PAHs and chloride.

5.1 Geophysical Survey Results

No electromagnetic anomalies indicative of underground storage tanks (UST) and/or buried drums are present on the Site.

5.2 Extent of Soil Impacts

5.2.1 Polycyclic Aromatic Hydrocarbons (PAHs)

The PAH constituents benzo (a) pyrene, benzo (b) flouranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene present in soil within the direct contact interval (0-4 feet bgs) of soil borings GP-1, GP-2, GP-4, GP-5, GP-10, and GP-12 through GP-23 exceed the respective constituents non-industrial suggested generic direct contact soil clean-up standard as set forth in WDNR guidance document *Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons Interim Guidance* (RR-519-97). To date, the extent of PAH impacted soil appears to be located in the northwestern portion of the Site.

5.2.2 Chloride

Chloride was reported in soil borings GP-4, GP- 6, GP-7, and B-1/MW-1 through B-5/MW-5 (general vicinity of the salt storage dome and transfer area) at concentrations ranging from 353 to 11600 mg/kg. However, chloride does not have an established regulatory generic soil clean-up standard (i.e. *chs. NR 720 and 746, Wis. Adm. Code*).

5.2.3 Volatile Organic Compounds (VOCs)

No VOCs were reported at concentrations above laboratory analytical method detection limits in any of the remaining soil samples.

5.3 Extent of Groundwater Impacts

5.3.1 Chloride

Chloride concentrations present in NR 141 compliant groundwater monitoring wells B-1/MW-1 through B-5/MW-5 ranged from 80 to 9250 milligrams per liter (mg/l); while chloride at temporary well locations GP-4, GP-6 and GP-7 ranged from 1690 to 17800 mg/l. The reported concentrations of chloride exceed either the regulatory groundwater preventive action limit (125 mg/l) or enforcement standard (250 mg/l) as set forth in *s. NR 140.12 Wis. Adm. Code*. To date, the extent of the dissolved phase chloride groundwater contaminant plume originating from the salt storage dome and transfer area has not been defined.

5.3.2 Volatile Organic C ompounds (VOCs)

No VOCs were reported at concentrations above laboratory analytical method detection limits in groundwater at the three temporary groundwater monitoring well locations.

6.0 Recommendations

Based on the findings of this Site Investigation, supplemental subsurface investigation activities are recommended. Recommended supplemental investigation activities include, but are not limited to the following:

- The horizontal extent of the dissolved phase chloride contaminant plume has not been defined. Additional NR 141 compliant groundwater monitoring wells will likely need to be installed to define the extent of the contaminant plume that originates from the salt dome storage/transfer area.
- Quarterly groundwater monitoring of the groundwater monitoring well network will likely need to be performed to document contaminant plume stability.
- To date, the extent of PAH impacted soil (within the direct contact interval) appears to be located in the northwestern portion of the Site, near and west of the garage. If future use / development includes the demolition of the garage structure or the surrounding asphalt along with the displacement/disturbance of soil in this area, the development and implementation of a Soil Management Plan and Capping Maintenance Plan is recommended. (Note: displacement of PAH impacted soil on-Site with specific engineering controls [i.e. beneath landscape/hardscape features or asphalt capping]; or off-Site removal and disposal as “special waste” [depending on site development plans and overall soil balance issues] are two potential soil management alternatives.

7.0 Conditions and Limitations

The evaluations and recommendations presented in this report were developed from a consideration of the project characteristics and an interpretation of available geologic, hydrogeologic, and boring data. Shaw's description of the subsurface conditions is based on interpretation of the test boring and monitoring well data using normally accepted geologic / hydrogeologic practices and reasonable engineering judgment. Although boring and monitoring well data are considered to be representative of the subsurface conditions at the precise locations on the dates shown, they are not necessarily indicative of the subsurface conditions at other locations and / or at other times of the year.

Information on actual hydrogeologic conditions and chemical concentrations exists only at the specific sampling locations, and it is possible that conditions between sampling locations may vary from those indicated. Variations in soil and groundwater conditions typically exist at most sites between sampling locations and at different times, the extent of which may not become evident without further exploration or excavation. If variations are noted in the future, Shaw should be informed. It may be necessary to conduct additional exploration activities to determine the characteristics of these variations and provide an opportunity to make a re-evaluation of the conclusions in this report.

Shaw's professional services have been performed, findings obtained, and recommendations prepared in accordance with generally accepted engineering and hydrogeologic principles and practices. This warranty is in lieu of all other warranties either implied or expressed. Shaw assumes no responsibility for data or interpretations made by others. Shaw assumes responsibility for the accuracy of the report's contents subject to what is stated elsewhere in this section, but recommends that the report be used only for the purpose intended by the client and Shaw when the report was prepared. The report may be unsuitable for other uses, and reliance on its contents by anyone other than the client is done at the sole risk of the user. Shaw accepts no responsibility for application or interpretation of the results by anyone other than the client.

The recommendations and conclusions presented herein have been developed from consideration of the project characteristics and interpretation of available information. Because only limited information is available, Shaw’s reserves the right to modify actual site activities based on subsequent findings. The recommendations contained in this Report represent our professional opinions.

Tables

Table 1

Summary of Groundwater Elevations
City of Milwaukee - DPW - Sanitation
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

Period: 8/21/2008 - 10/1/2008

Well Number	Measurement Date	Top of Casing Elevation (ft)	Screen Interval Top (ft)	Screen Interval Bottom (ft)	Depth to Water (ft btoc)	Floating Product Thickness (ft)	Water Elevation (ft)	Change in Water Elevation (ft)
MW-1	8/21/2008	100.3	92.63	82.63	Dry		Dry	
	9/5/2008				10.02	0	90.28	
	10/1/2008				6.74		93.56	
MW-2	8/21/2008	99.32	95.13	85.13	7.59	0	91.73	
	9/5/2008				NM		NM	
	10/1/2008				7.57		91.75	
MW-3	8/21/2008	100.57	95.39	85.39	Dry		Dry	
	9/5/2008				13.91	0	86.66	
	10/1/2008				9.98		90.59	
MW-4	8/21/2008	97.97	92.65	82.65	5.45	0	92.52	
	9/5/2008				NM		NM	
	10/1/2008				5.38		92.59	
MW-5	8/21/2008	98.23	90.38	80.38	Dry		Dry	
	9/5/2008				16.31	0	81.92	
	10/1/2008				13.08		85.15	

NOTES
ft = feet
ft btoc = feet below top of casing
NM = not measured
Benchmark: Fire Hydrant (north side top flange) located along West Fond du Lac Avenue. Assumed local, on-site elevation, 100.00 feet.

Checked by:_____ Approved by:___.

Summary of Soil VOC, PAH and Chloride Results
City of Milwaukee - DPW - Sanitation
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

Boring/Well Number		RR-519-97 Table 1			GP-1			GP-1		GP-2			GP-2		GP-3			GP-3		GP-4		GP-4
Sample Date		Groundwater	Direct Contact		6/3/2008			6/3/2008		6/3/2008			6/3/2008		6/3/2008			6/3/2008		6/3/2008		6/3/2008
Sample Depth	Units	Pathway	Non-Ind	Industrial	2'-4'			12'-14'		2'-4'			12'-14'		6'-8'			12'-14'		2'-4'		3'-4'
PID	ppm/v				2			1		1			1		4			1		1		1
Chloride	mg/kg	Note 1	Note 1	Note 1	NA			NA		NA			NA		NA			NA		NA		1270
VOCs (all constituents)	µg/kg	Note 2	Note 2	Note 2	BDL			BDL		BDL			BDL		BDL			BDL		BDL		NA
PAHs																						
1-Methylnaphthalene	µg/kg	*23000*	**1100000**	70000000	3.3	J	<	1.6	<	1.7		<	1.7	<	8.2		<	1.7	<	1.6		NA
2-Methylnaphthalene	µg/kg	*20000*	**600000**	40000000	4	J	<	1.6	<	1.8		<	1.8	<	8.6		<	1.7		2.7	J	NA
Acenaphthene	µg/kg	*38000*	**900000**	60000000	8.8	J	<	1.8	<	1.9		<	2	<	9.4		<	1.9	<	1.8		NA
Acenaphthylene	µg/kg	*700*	**18000**	360000	7.9	J	<	2		2.1	J	<	2.2	<	10.3		<	2.1		2.2	J	NA
Anthracene	µg/kg	*3000000*	**5000000**	300000000	31.3		<	2.1		2.9	J	<	2.3		12.3	J	<	2.2		3.5	J	NA
Benzo(a)anthracene	µg/kg	*17000*	**88**	3900	58.8		<	2.1		18.3	J	<	2.3	<	11.1		<	2.2		14.1	J	NA
Benzo(a)pyrene	µg/kg	*48000*	**8.8**	390	**60.9**		<	2		**18.5**	**J**	<	2.2	<	10.6		<	2.1		**19**	**J**	NA
Benzo(b)fluoranthene	µg/kg	*360000*	**88**	3900	52.4		<	2		19.5	J	<	2.2	<	10.7		<	2.2		33.9		NA
Benzo(ghi)perylene	µg/kg	*6800000*	**1800**	39000	38.1		<	2.2		11.3	J	<	2.4	<	11.6		<	2.3		18.2	J	NA
Benzo(k)fluoranthene	µg/kg	*870000*	**880**	39000	53.5		<	2		20.5	J	<	2.2	<	10.3		<	2.1		25.7		NA
Chrysene	µg/kg	*37000*	**8800**	390000	60.5		<	2.3		22.4		<	2.6		28.1	J		3.1	J	32.6		NA
Dibenz(a,h)anthracene	µg/kg	*38000*	**8.8**	390	**12.4**	**J**	<	2.2		3.8	J	<	2.4	<	11.5		<	2.3		5.7	J	NA
Fluoranthene	µg/kg	*500000*	**600000**	40000000	135		<	2.1		32.7		<	2.4	<	11.3		<	2.3		39		NA
Fluorene	µg/kg	*100000*	**600000**	40000000	10.6	J	<	1.9	<	2.1		<	2.1		13.6	J	<	2	<	1.9		NA
Indeno(1,2,3-cd)pyrene	µg/kg	*680000*	**88**	3900	33.4		<	2.1		10	J	<	2.3	<	11.1		<	2.2		14	J	NA
Naphthalene	µg/kg	*400*	**20000**	110000	6.8	J	<	1.3	<	1.4		<	1.5	<	7		<	1.4		3.4	J	NA
Phenanthrene	µg/kg	*1800*	**18000**	390000	100		<	2.1		12.1	J	<	2.3		25.3	J	<	2.2		10.4	J	NA
Pyrene	µg/kg	*8700000*	**500000**	30000000	123		<	2.2		31.1		<	2.5		13.2	J	<	2.4		30.4		NA

NOTES:

Note 1 = No established Wisconsin regulatory standard for chloride in soil

Note 2 : Regulatory standards used for VOC comparison - *chs. NR 720 and NR 746 Wis. Adm. Code*

BDL = Below Laboratory Analytical Method Detection Limit

PID = organic vapor meter/photoionization detector

PAH = Polycyclic Aromatic Hydrocarbons

ppm/v = parts per million per volume

µg/kg = micrograms per kilogram

NA = not analyzed

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

L2 = Analyte recovery in laboratory control sample was below QC limits. Results may be biased low

Blue/Italic = RR-519-97 Table 1 (suggested groundwater pathway RCL) exceedence

Red/Bold = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Green/Underline = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Summary of Soil VOC, PAH and Chloride Results
City of Milwaukee - DPW - Sanitation
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

Boring/Well Number		RR-519-97 Table 1			GP-4	GP-5	GP-5	GP-6	GP-7	GP-8	GP-9	GP-10
Sample Date		Groundwater	Direct Contact		6/3/2008	6/3/2008	6/3/2008	6/3/2008	6/3/2008	6/4/2008	6/4/2008	8/15/2008
Sample Depth	Units	Pathway	Non-Ind	Industrial	12'-14'	2'-4'	14'-16"	3'-4'	3'-4'	12'-14'	12'-14'	2'-4'
PID	ppm/v				2	2	2	1	3	1	1	0
Chloride	mg/kg	Note 1	Note 1	Note 1	NA	NA	NA	353	11600	NA	NA	NA
VOCs (all constituents)	µg/kg	Note 2	Note 2	Note 2	BDL	BDL	BDL	NA	NA	BDL	BDL	NA
PAHs												
1-Methylnaphthalene	µg/kg	*23000*	**1100000**	70000000	< 1.7	7.6 J	< 1.7	NA	NA	< 1.7	15.8 J	12.8 J
2-Methylnaphthalene	µg/kg	*20000*	**600000**	40000000	< 1.8	12.4 J	< 1.8	NA	NA	< 1.8	21.4	18.7 J
Acenaphthene	µg/kg	*38000*	**900000**	60000000	< 1.9	5.6 J	< 1.9	NA	NA	< 2.00	< 1.9	19.5 J
Acenaphthylene	µg/kg	*700*	**18000**	360000	< 2.1	13.7 J	< 2.1	NA	NA	< 2.2	< 2.1	11.8 J
Anthracene	µg/kg	*3000000*	**5000000**	300000000	< 2.3	26.5	< 2.3	NA	NA	< 2.3	< 2.2	92.1
Benzo(a)anthracene	µg/kg	*17000*	**88**	3900	7.9 J	192	< 2.3	NA	NA	< 2.3	< 2.2	**185 L2**
Benzo(a)pyrene	µg/kg	*48000*	**8.8**	390	7.3 J	**254**	< 2.2	NA	NA	< 2.2	< 2.1	**193**
Benzo(b)fluoranthene	µg/kg	*360000*	**88**	3900	27.8	241	< 2.2	NA	NA	< 2.2	< 2.2	**217**
Benzo(ghi)perylene	µg/kg	*6800000*	**1800**	39000	6.7 J	145	< 2.4	NA	NA	< 2.4	< 2.3	94.5
Benzo(k)fluoranthene	µg/kg	*870000*	**880**	39000	16.4 J	214	< 2.1	NA	NA	< 2.1	< 2.1	173
Chrysene	µg/kg	*37000*	**8800**	390000	31.3	195	< 2.5	NA	NA	< 2.5	3.1 J	189
Dibenz(a,h)anthracene	µg/kg	*38000*	**8.8**	390	< 2.4	**46.5**	< 2.4	NA	NA	< 2.4	< 2.3	**37.4**
Fluoranthene	µg/kg	*500000*	**600000**	40000000	57.3	189	< 2.3	NA	NA	< 2.3	< 2.3	523
Fluorene	µg/kg	*100000*	**600000**	40000000	< 2.1	5.9 J	< 2.1	NA	NA	< 2.1	< 2.00	34.0
Indeno(1,2,3-cd)pyrene	µg/kg	*680000*	**88**	3900	6.4 J	**137**	< 2.3	NA	NA	< 2.3	< 2.2	**88.9**
Naphthalene	µg/kg	*400*	**20000**	110000	< 1.4	13 J	< 1.4	NA	NA	< 1.5	7.9 J	24.5 J
Phenanthrene	µg/kg	*1800*	**18000**	390000	3.9 J	49.6	< 2.2	NA	NA	< 2.3	4.2 J	300
Pyrene	µg/kg	*8700000*	**500000**	30000000	31.8	211	< 2.4	NA	NA	< 2.4	< 2.4	313

NOTES:

Note 1 = No established Wisconsin regulatory standard for chloride in soil

Note 2 : Regulatory standards used for VOC comparison - *chs. NR 720 and NR 746 Wis. Adm. Code*

BDL = Below Laboratory Analytical Method Detection Limit

PID = organic vapor meter/photoionization detector

PAH = Polycyclic Aromatic Hydrocarbons

ppm/v = parts per million per volume

µg/kg = micrograms per kilogram

NA = not analyzed

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

L2 = Analyte recovery in laboratory control sample was below QC limits. Results may be biased low

Blue/Italic = RR-519-97 Table 1 (suggested groundwater pathway RCL) exceedence

Red/Bold = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Green/Underline = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Summary of Soil VOC, PAH and Chloride Results
City of Milwaukee - DPW - Sanitation
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

Boring/Well Number		RR-519-97 Table 1			GP-11	GP-12	GP-13	GP-14	GP-15	GP-16	GP-17	GP-18
Sample Date		Groundwater	Direct Contact		8/15/2008	8/15/2008	8/15/2008	8/15/2008	8/15/2008	8/15/2008	8/15/2008	8/15/2008
Sample Depth	Units	Pathway	Non-Ind	Industrial	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'
PID	ppm/v				2	2	2	2	2	2	2	2
Chloride	mg/kg	Note 1	Note 1	Note 1	NA	NA	NA	NA	NA	NA	NA	NA
VOCs (all constituents)	µg/kg	Note 2	Note 2	Note 2	NA	NA	NA	NA	NA	NA	NA	NA
PAHs												
1-Methylnaphthalene	µg/kg	*23000*	**1100000**	70000000	< 2.2	17.2 J	11.5 J	< 2.2	< 2.2	< 2.2	2.5 J	2.9 J
2-Methylnaphthalene	µg/kg	*20000*	**600000**	40000000	< 2.2	26.2	15.5 J	2.5 J	2.7 J	< 2.2	4.0 J	5.0 J
Acenaphthene	µg/kg	*38000*	**900000**	60000000	< 1.1	11.4 J	9.5 J	2.7 J	1.6 J	1.8 J	3.1 J	3.3 J
Acenaphthylene	µg/kg	*700*	**18000**	360000	< 2.1	30.1	11.6 J	8.4 J	2.3 J	< 2.0	2.4 J	3.4 J
Anthracene	µg/kg	*3000000*	**5000000**	300000000	< 5.5	66.4	45.3	21.8	8.5 J	7.2 J	13.2 J	8.8 J
Benzo(a)anthracene	µg/kg	*17000*	**88**	3900	< 10.1 L2	**167 L2**	**126 L2**	64.7 L2	17.7 JL2	17.4 JL2	32.0 L2	25.5 L2
Benzo(a)pyrene	µg/kg	*48000*	**8.8**	390	< 4.4	**218**	**142**	**79.1**	**20.7**	**19.2 J**	**36.2**	**31.1**
Benzo(b)fluoranthene	µg/kg	*360000*	**88**	3900	< 6.9	**308**	**202**	79.8	22.8	23.1	40.8	38.8
Benzo(ghi)perylene	µg/kg	*6800000*	**1800**	39000	< 5.1	113	60.4	38.2	12.8 J	14.9 J	20.2	19.7 J
Benzo(k)fluoranthene	µg/kg	*870000*	**880**	39000	< 7.5	193	111	73.1	22.2	16.4 J	34.4	33.7
Chrysene	µg/kg	*37000*	**8800**	390000	7.4 J	189	133	65.3	24.4	23.2	35.6	36.6
Dibenz(a,h)anthracene	µg/kg	*38000*	**8.8**	390	< 5.6	**34.6**	**20.7 J**	**11.6 J**	< 5.5 U	< 5.6	6.3 J	6.7 J
Fluoranthene	µg/kg	*500000*	**600000**	40000000	11.6 J	450	338	164	53.5	46.4	89.8	69.8
Fluorene	µg/kg	*100000*	**600000**	40000000	< 1.1	15.9 J	12.3 J	2.6 J	1.7 J	2.0 J	5.1 J	4.8 J
Indeno(1,2,3-cd)pyrene	µg/kg	*680000*	**88**	3900	< 5.1	**108**	61.1	35.5	9.7 J	10.5 J	16.8 J	15.7 J
Naphthalene	µg/kg	*400*	**20000**	110000	1.8 J	30.3	23.0	4.8 J	3.1 J	2.4 J	5.8 J	7.8 J
Phenanthrene	µg/kg	*1800*	**18000**	390000	7.0 J	189	167	57.6	22.9	23.5	49.4	39.0
Pyrene	µg/kg	*8700000*	**500000**	30000000	7.7 J	278	220	100	33.7	32.8	54.7	46.4

NOTES:

Note 1 = No established Wisconsin regulatory standard for chloride in soil

Note 2 : Regulatory standards used for VOC comparison - *chs. NR 720 and NR 746 Wis. Adm. Code*

BDL = Below Laboratory Analytical Method Detection Limit

PID = organic vapor meter/photoionization detector

PAH = Polycyclic Aromatic Hydrocarbons

ppm/v = parts per million per volume

µg/kg = micrograms per kilogram

NA = not analyzed

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

L2 = Analyte recovery in laboratory control sample was below QC limits. Results may be biased low

Blue/Italic = RR-519-97 Table 1 (suggested groundwater pathway RCL) exceedence

Red/Bold = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Green/Underline = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Summary of Soil VOC, PAH and Chloride Results
City of Milwaukee - DPW - Sanitation
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

Boring/Well Number		RR-519-97 Table 1			GP-19	GP-20	GP-21	GP-22	GP-23	B-1 SS-5	B-2 (MW-2)	B-3 SS-4
Sample Date		Groundwater	Direct Contact		8/15/2008	8/15/2008	8/15/2008	8/15/2008	8/15/2008	8/14/2008	8/15/2008	8/14/2008
Sample Depth	Units	Pathway	Non-Ind	Industrial	2'-4'	2'-4'	2'-4'	2'-4'	2'-4'	8.5'	6-8'	7.0'
PID	ppm/v				1	1	1	1	1	0	1	0
Chloride	mg/kg	Note 1	Note 1	Note 1	NA	NA	NA	NA	NA	104	2860	691
VOCs (all constituents)	µg/kg	Note 2	Note 2	Note 2	NA	NA	NA	NA	NA	NA	NA	NA
PAHs												
1-Methylnaphthalene	µg/kg	*23000*	**1100000**	70000000	4.5 J	5.1 J	2.6 J	4.2 J	< 2.2	NA	NA	NA
2-Methylnaphthalene	µg/kg	*20000*	**600000**	40000000	7.6 J	9.2 J	4.9 J	6.3 J	3.5 J	NA	NA	NA
Acenaphthene	µg/kg	*38000*	**900000**	60000000	6.2 J	5.5 J	1.6 J	2.7 J	3.1 J	NA	NA	NA
Acenaphthylene	µg/kg	*700*	**18000**	360000	10.3 J	37.5	2.2 J	6.8 J	15.2 J	NA	NA	NA
Anthracene	µg/kg	*3000000*	**5000000**	300000000	25.7	36.5	7.3 J	13.5 J	20.2	NA	NA	NA
Benzo(a)anthracene	µg/kg	*17000*	**88**	3900	71.1 L2	**103 L2**	19.8 JL2	39.5 L2	53.1 L2	NA	NA	NA
Benzo(a)pyrene	µg/kg	*48000*	**8.8**	390	**84.8**	**146**	**24.5**	**54.8**	**73.7**	NA	NA	NA
Benzo(b)fluoranthene	µg/kg	*360000*	**88**	3900	**119**	**195**	31.9	63.5	**108**	NA	NA	NA
Benzo(ghi)perylene	µg/kg	*6800000*	**1800**	39000	57.4	108	13.5 J	28.5	41.1	NA	NA	NA
Benzo(k)fluoranthene	µg/kg	*870000*	**880**	39000	76.7	134	26.4	58.4	59.1	NA	NA	NA
Chrysene	µg/kg	*37000*	**8800**	390000	90.1	126	27.8	55.9	73.4	NA	NA	NA
Dibenz(a,h)anthracene	µg/kg	*38000*	**8.8**	390	**18.1 J**	**31.4**	< 5.9	**9.3 J**	**15.9 J**	NA	NA	NA
Fluoranthene	µg/kg	*500000*	**600000**	40000000	187	259	67.9	134	145	NA	NA	NA
Fluorene	µg/kg	*100000*	**600000**	40000000	10.0 J	7.9 J	1.8 J	5.4 J	6.6 J	NA	NA	NA
Indeno(1,2,3-cd)pyrene	µg/kg	*680000*	**88**	3900	53.0	**99.5**	11.6 J	25.2	39.3	NA	NA	NA
Naphthalene	µg/kg	*400*	**20000**	110000	12.0 J	17.8 J	8.4 J	8.8 J	7.2 J	NA	NA	NA
Phenanthrene	µg/kg	*1800*	**18000**	390000	91.2	94.8	37.3	66.1	66.5	NA	NA	NA
Pyrene	µg/kg	*8700000*	**500000**	30000000	113	159	38.7	82.3	90.6	NA	NA	NA

NOTES:

Note 1 = No established Wisconsin regulatory standard for chloride in soil

Note 2 : Regulatory standards used for VOC comparison - *chs. NR 720 and NR 746 Wis. Adm. Code*

BDL = Below Laboratory Analytical Method Detection Limit

PID = organic vapor meter/photoionization detector

PAH = Polycyclic Aromatic Hydrocarbons

ppm/v = parts per million per volume

µg/kg = micrograms per kilogram

NA = not analyzed

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

L2 = Analyte recovery in laboratory control sample was below QC limits. Results may be biased low

Blue/Italic = RR-519-97 Table 1 (suggested groundwater pathway RCL) exceedence

Red/Bold = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Green/Underline = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Table 2

Summary of Soil VOC, PAH and Chloride Results
City of Milwaukee - DPW - Sanitation
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

Boring/Well Number		RR-519-97 Table 1			B-4 SS-5	B-5 SS-5
Sample Date		Groundwater	Direct Contact		8/14/2008	8/14/2008
Sample Depth	Units	Pathway	Non-Ind	Industrial	8.0'	9.0'
PID	ppm/v				0	0
Chloride	mg/kg	Note 1	Note 1	Note 1	2070	727
VOCs (all constituents)	µg/kg	Note 2	Note 2	Note 2	NA	NA
PAHs						
1-Methylnaphthalene	µg/kg	*23000*	**1100000**	70000000	NA	NA
2-Methylnaphthalene	µg/kg	*20000*	**600000**	40000000	NA	NA
Acenaphthene	µg/kg	*38000*	**900000**	60000000	NA	NA
Acenaphthylene	µg/kg	*700*	**18000**	360000	NA	NA
Anthracene	µg/kg	*3000000*	**5000000**	300000000	NA	NA
Benzo(a)anthracene	µg/kg	*17000*	**88**	3900	NA	NA
Benzo(a)pyrene	µg/kg	*48000*	**8.8**	390	NA	NA
Benzo(b)fluoranthene	µg/kg	*360000*	**88**	3900	NA	NA
Benzo(ghi)perylene	µg/kg	*6800000*	**1800**	39000	NA	NA
Benzo(k)fluoranthene	µg/kg	*870000*	**880**	39000	NA	NA
Chrysene	µg/kg	*37000*	**8800**	390000	NA	NA
Dibenz(a,h)anthracene	µg/kg	*38000*	**8.8**	390	NA	NA
Fluoranthene	µg/kg	*500000*	**600000**	40000000	NA	NA
Fluorene	µg/kg	*100000*	**600000**	40000000	NA	NA
Indeno(1,2,3-cd)pyrene	µg/kg	*680000*	**88**	3900	NA	NA
Naphthalene	µg/kg	*400*	**20000**	110000	NA	NA
Phenanthrene	µg/kg	*1800*	**18000**	390000	NA	NA
Pyrene	µg/kg	*8700000*	**500000**	30000000	NA	NA

NOTES:

Note 1 = No established Wisconsin regulatory standard for chloride in soil

Note 2 : Regulatory standards used for VOC comparison - *chs. NR 720 and NR 746 Wis. Adm. Code*

BDL = Below Laboratory Analytical Method Detection Limit

PID = organic vapor meter/photoionization detector

PAH = Polycyclic Aromatic Hydrocarbons

ppm/v = parts per million per volume

µg/kg = micrograms per kilogram

NA = not analyzed

J = estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

L2 = Analyte recovery in laboratory control sample was below QC limits. Results may be biased low

Blue/Italic = RR-519-97 Table 1 (suggested groundwater pathway RCL) exceedence

Red/Bold = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

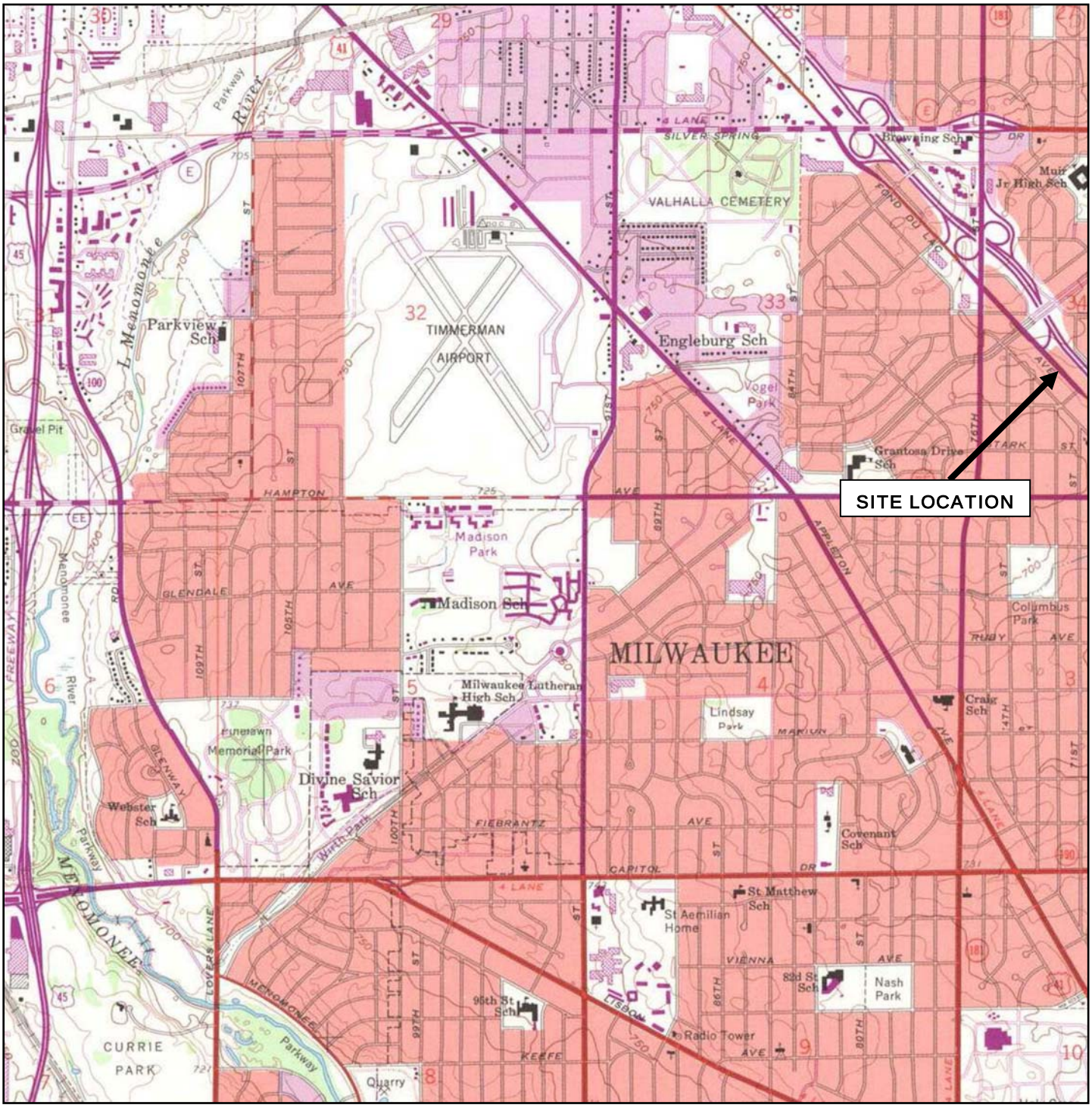
Green/Underline = RR-519-97 Table 1 (suggested non-industrial direct contact pathway RCL) exceedence

Summary of Groundwater VOC and Chloride Results
City of Milwaukee - DPW - Sanitation
7222 and 7318 West Fond du Lac Avenue
Milwaukee, Wisconsin

Well Number		NR 140		GP-3	GP-4	GP-6	GP-7	GP-8	MW-1	MW-2	MW-3	MW-4	MW-5
Sample Date	Units	PAL	ES	6/10/2008	6/10/2008	6/10/2008	6/10/2008	6/10/2008	9/5/089	8/21/2008	9/5/2008	8/21/2008	9/5/2008
Chloride	mg/l	*125* [(1)]	**250** [(1)]	NA	**3350**	**1690**	**17800**	NA	**901**	**9250**	*127*	**9200**	80.2
VOCs (all constituents)	µg/l	Note (2)	Note (2)	BDL	BDL	NA	NA	BDL	NA	NA	NA	NA	NA

NOTES
(1) = Regulatory standard as set forth in *s. NR 140.12 Wis. Adm. Code for Public Welfare*
(2) = Regulatory standard used for VOC comparison *s. NR 140.10 Wis. Adm. Code.*
BDL = Below Laboratory Analytical Method Detection Limit
NA = not analyzed
µg/l = micrograms per liter
Q = analyte detected between the limit of detection (LOD) and limit of quantitation (LOQ)
Red/Bold = *ch. NR 140 Wis. Adm. Code Enforcement Standard* (ES) exceedence
Blue/Italic = ch. NR 140 Wis. Adm. Code Preventive Action Limit (PAL) exceedence

Figures



Source: USGS *Wauwatosa, Wisconsin* 7.5-minute Series (topographic) Quadrangle Map
Scale: 1:24,000
Contour Interval: 10 feet

PLSS: SW ¼ of the SW ¼ of Section 34, Township 8 North, Range 21 East

Shaw

Project No. 131994

City of Milwaukee DPW
7222 and 7318 W Fond du Lac Ave
Milwaukee, Wisconsin

Figure 1
Site Location Map

LEGEND

SUBJECT PROPERTY

7222 ADDRESS

KEY

7222-7318	SUBJECT PROPERTY	7219	CUSTOM AUTO
7124	ACCURATE TRANSMISSION	7325	DJ'S TRANSMISSION
7158	STARGAZER	7337	THRIFT STORE
7200	THE STAGE	7368	HISTORICAL TAVERN
7212	MULTI–TENANT OFFICE	7373	AMERICAN FAMILY INSURANCE
7169	WEISMAN AUTOMOTIVE	7401	SERVICE STATION (ROB WEISMAN)
		7405 VILLARD	SERVICE STATION (CAR CLINIC)

NOT TO SCALE

N

Shaw The Shaw Group, Inc.®

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: GENERAL LAND USE MAP

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
JRD	TH	-	-	131446	2
		REVISION DATE -		DATE 04/22/08	

File: N:\CAD\131446\131446.dwg Layout: LAND_USE User: jill.deitchler Apr 28, 2008 – 8:31am

LEGEND

SUBJECT PROPERTY

7222 ADDRESS

1 RECOGNIZED ENVIRONMENTAL CONDITION

SUMMARY OF PHASE I ESA RECOGNIZED ENVIRONMENTAL CONDITIONS

REC #	LOCATION	ISSUE/CONCERN/COMMENTS
1	7318 W. FOND DU LAC STORAGE GARAGE	PRESENCE OF TWO BELOW–GRADE MOUNTED HYDRAULIC LIFTS. THERE IS AN ABSENCE OF QUALITATIVE SOIL AND GROUNDWATER DATA ASSOCIATED WITH THESE HYDRAULIC LIFTS.
2	7222 W. FOND DU LAC SOUTHWEST OF STORAGE DOME	PRESENCE OF CALCIUM CHLORIDE TRANSFER AREA WITHOUT AN INTEGRATED SPILL COLLECTION AND CONTAINMENT SYSTEM. THERE IS AN ABSENCE OF QUALITATIVE SOIL AND GROUNDWATER DATA IN THE GENERAL VICINITY OF THE CALCIUM CHLORIDE TRANSFER AREA.
3	7222 – 7318 W. FOND DU LAC BOTH GENERAL PROPERTIES	PRESENCE OF AUTOMOTIVE SALES AND REPAIR OPERATIONS FROM APPROXIMATELY 1962 – 1983, WITH THE LIKELY USE AND STORAGE OF HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS. THERE IS AN ABSENCE OF QUALITATIVE SOIL AND GROUNDWATER DATA ASSOCIATED WITH BOTH OF THESE PARCELS.

NOT TO SCALE

N

Shaw The Shaw Group, Inc.

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

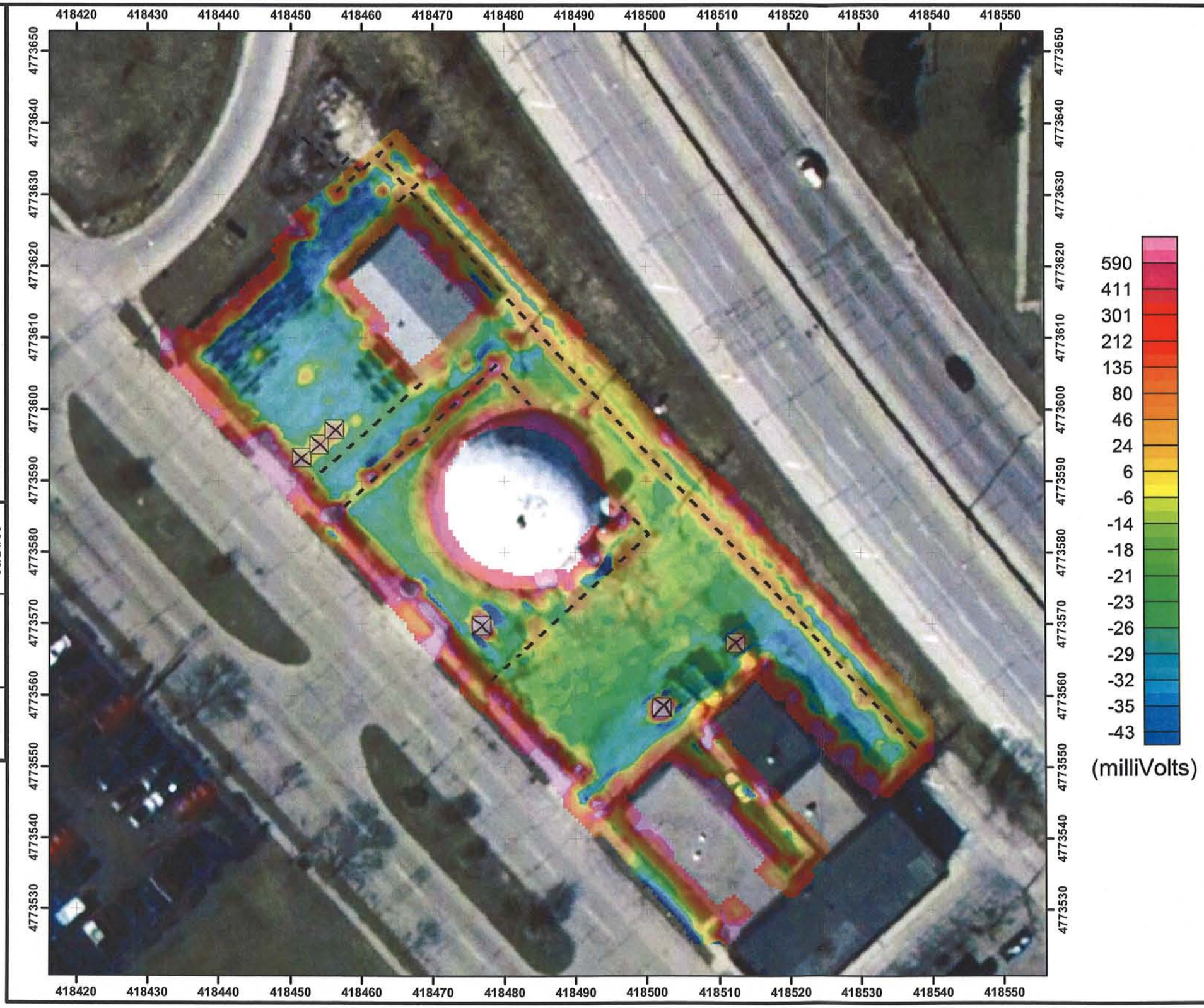
CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: SUMMARY OF PHASE I ESA FINDINGS

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
JRD	TH	-	-	131446	3
		REVISION DATE -		DATE 04/22/08	

File: N:\CAD\131446\131446.dwg Layout: SUMMARY User: jill.deitchler Apr 28, 2008 – 8:26am



N

Legend

Surface Metal

Geophysical Interpretation

(See Figure 3 for specific surface metal/geophysical interpretive details)

Meters

10 5 0 10 20 30

1:600

REFERENCE/PROJECTION: NAD83, UTM Zone 16N, Meters

Shaw®

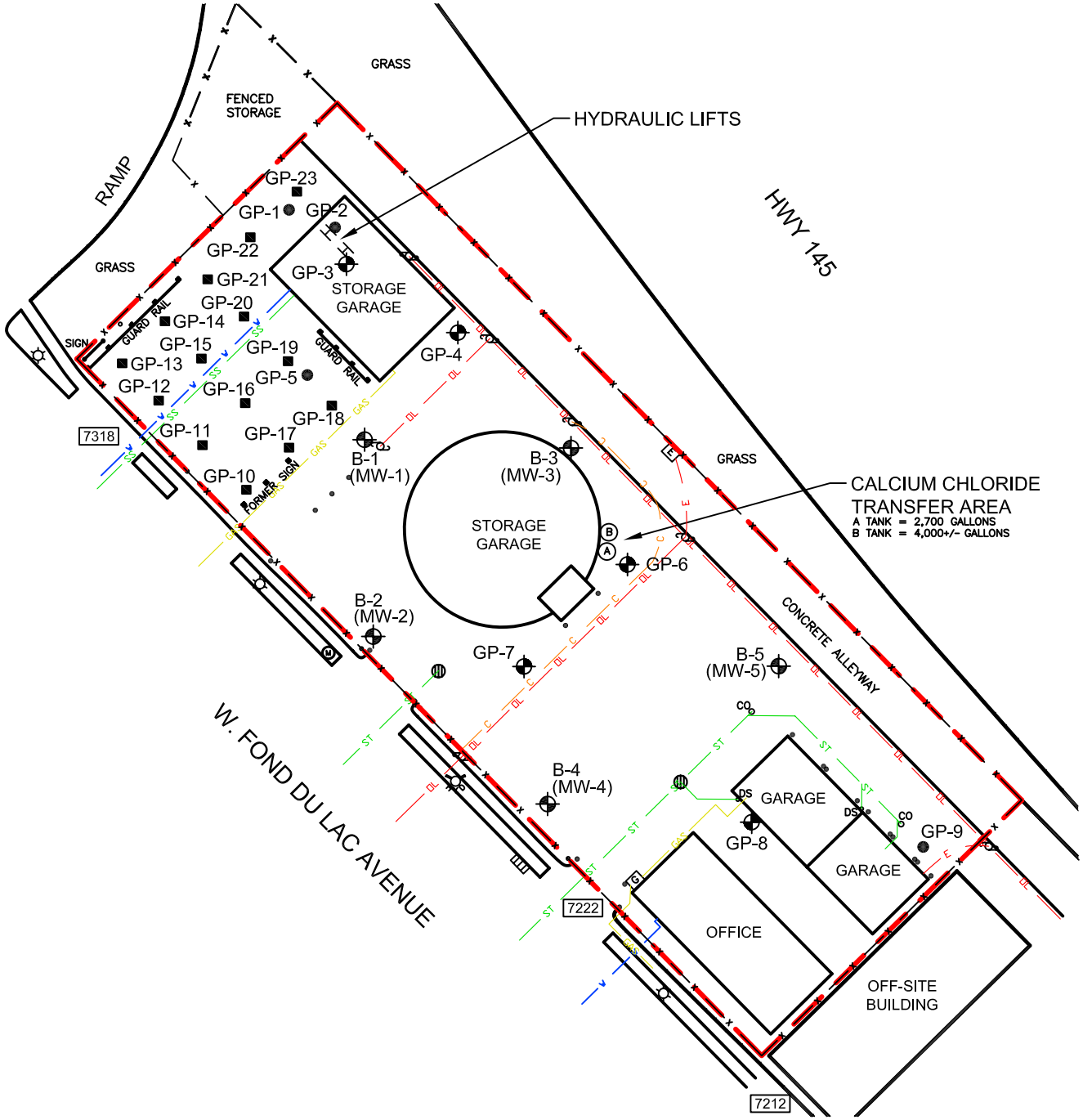
REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE
MILWAUKEE, WISCONSIN

FIGURE 4

Geophysical Survey Results

City of Milwaukee - DPW Sanitation
7222 and 7318 Fon Du Lac Avenue, Milwaukee, Wisconsin
EM61-MK2 Response Map (milliVolts)

OFFICE	DRAWN BY	DRAWING NUMBER
SAC	JF 06/24/08	City_of_Milwaukee.mxd



LEGEND

- SUBJECT PROPERTY
- 7222 PROPERTY ADDRESS
- FENCE
- OVERHEAD UTILITY
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMINCATION
- UNDERGROUND GAS
- UNDERGROUND STORM
- UNDERGROUND SANITARY
- UNDERGROUND WATER
- BORING/TEMPORARY WELL
- MONITORING WELL
- SOIL BORING DIRECT PUSH
- SOIL BORING
- BOLLARD/ CUT BOLLARD
- DOWNSPOUT
- CLEANOUT
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- UTILIY POLE
- HYDRANT
- ELECTRIC METER
- GAS METER

APPROXIMATE SCALE IN FEET

0 30 60 90

Shaw The Shaw Group, Inc.

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

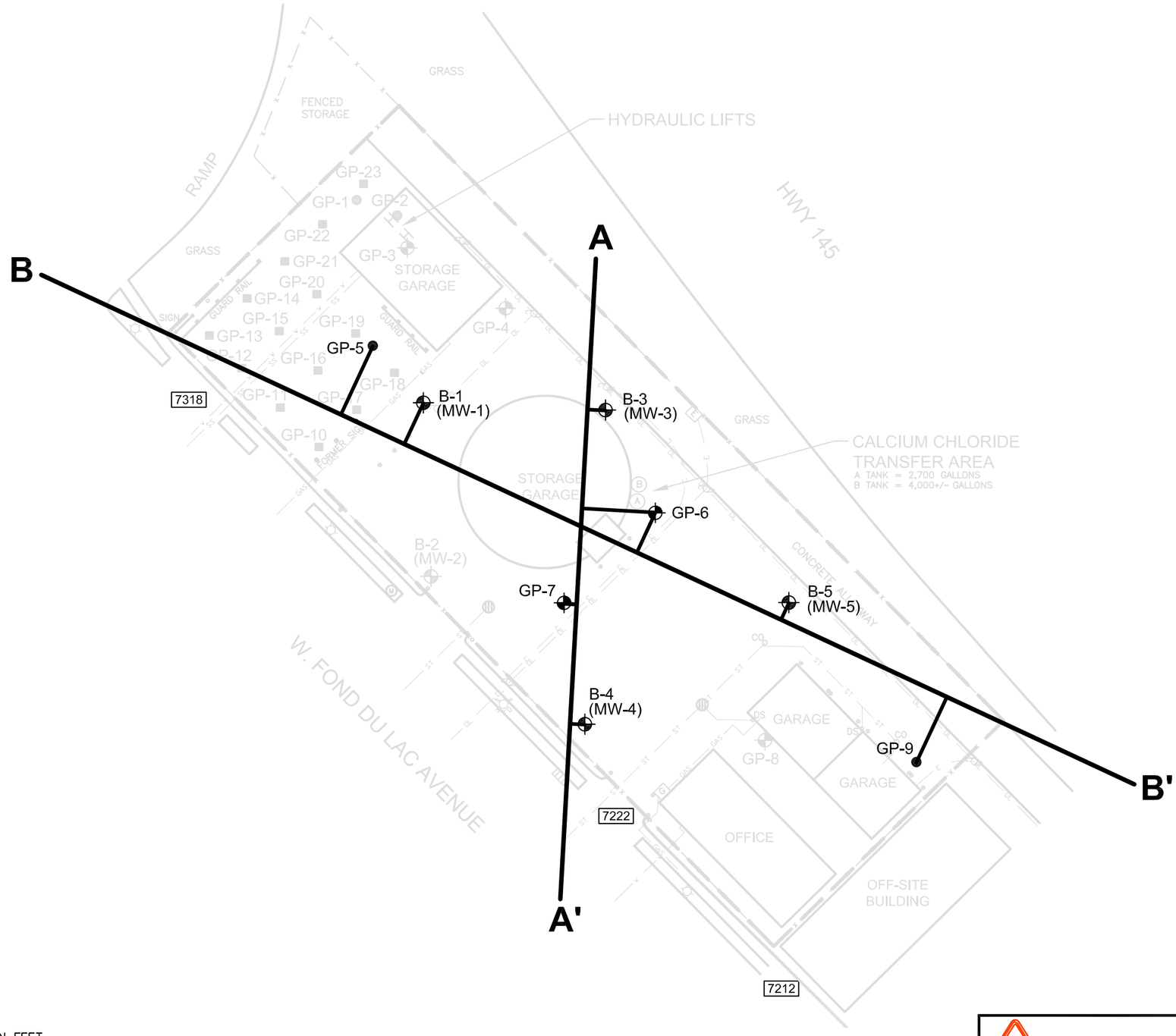
CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: **SITE PLAN - BORING LOCATION MAP**

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
BEB	CJZ	BEB	-	131994	5
		REVISION DATE 09/30/08		DATE 09/11/08	

File: Q:\Projects\100000\131994 - MKE 7222 Fond du Lac\CAD\131994.dwg Layout: FIGURE 5 SITE PLAN SB MW User: bruce.benoit Oct 01, 2008 - 3:42pm



LEGEND

- SUBJECT PROPERTY
- 7222 PROPERTY ADDRESS
- FENCE
- OVERHEAD UTILITY
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMINCATION
- UNDERGROUND GAS
- UNDERGROUND STORM
- UNDERGROUND SANITARY
- UNDERGROUND WATER
- BORING/TEMPORARY WELL
- MONITORING WELL
- SOIL BORING DIRECT PUSH
- SOIL BORING
- BOLLARD/ CUT BOLLARD
- DOWNSPOUT
- CLEANOUT
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- UTILIY POLE
- HYDRANT
- ELECTRIC METER
- GAS METER
- A —— A' GEOLOGIC CROSS SECTION LOCATION

APPROXIMATE SCALE IN FEET

0 25 50 75

Shaw The Shaw Group, Inc.

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

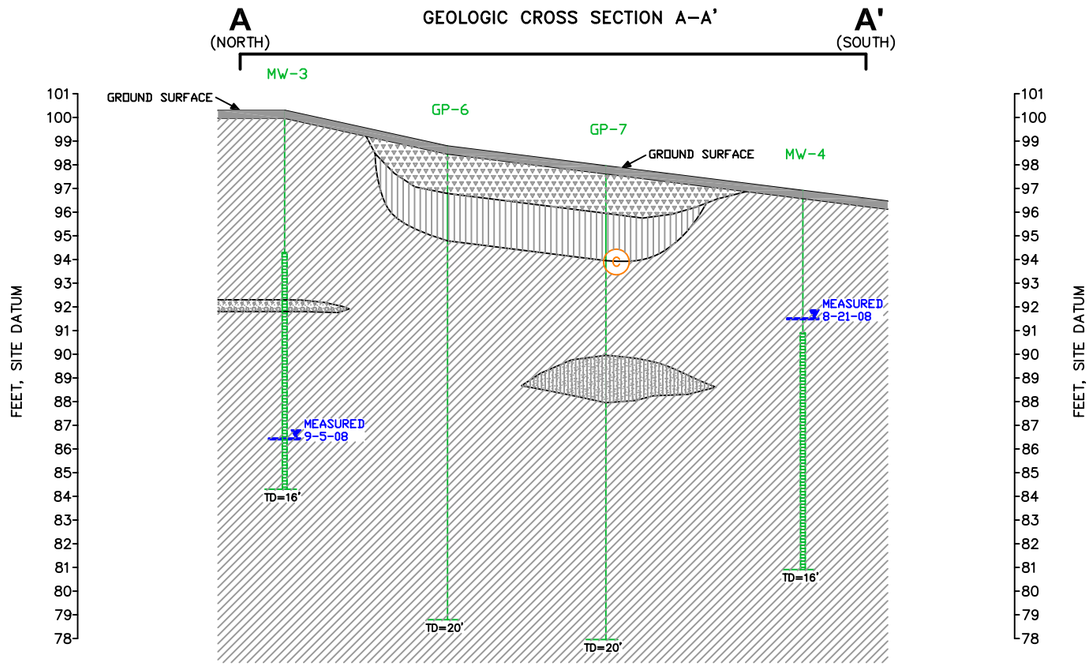
CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

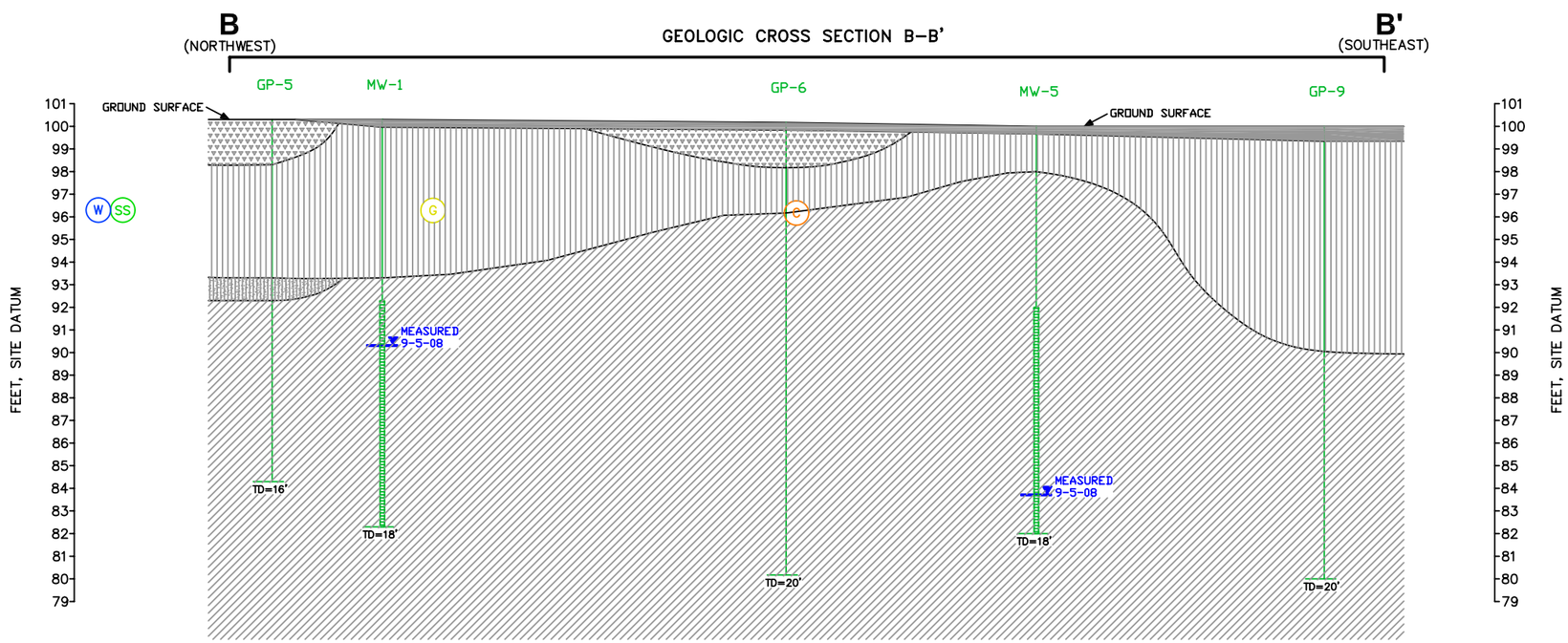
LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: **GEOLOGIC CROSS SECTION LOCATION MAP**

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
BEB	TJH	BEB	-	131994	6
		REVISION DATE 09/30/08		DATE 09/18/08	

File: Q:\Projects\100000\131994 - MKE 7222 Fond du Lac\CAD\131994.dwg Layout: FIGURE 6 X-SEC LOC User: bruce.benolt Oct 01, 2008 - 3:44pm





EXPLANATION

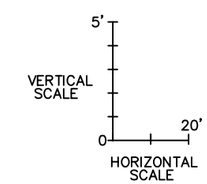
- STATIC GROUNDWATER LEVEL MEASURED 8–21–08, OR 9–5–08
- SOIL CONTACTS
- TD — TOTAL DEPTH
- SCREENED INTERVAL

SOIL UNITS

	AS	ASPHALT
	FILL	FILL MATERIAL
	CL	CLAY
	SM	SILTY SAND
	GW	SAND & GRAVEL
	ML	SILT

LEGEND

- C — UNDERGROUND COMMUNICATION
- G — UNDERGROUND GAS
- ST — UNDERGROUND STORM
- W — UNDERGROUND WATER



NOTES:

1) *UTILITY ELEVATIONS ASSUMED 4 FEET BELOW GROUND SURFACE. ALL UTILITIES MUST BE FIELD VERIFIED.*
2) *ELEVATIONS WERE BASED ON SITE DATUM. USED NORTH SIDE OF FLANGE ON FIRE HYDRANT AT SOUTHWEST SIDE OF PROPERTY ALONG W. FOND DU LAC AVENUE AS BENCHMARK (ASSUMED ELEVATION 100 FT).*
3) *SOIL CLASSIFICATION IS BASED ON DRILLED LOCATIONS AND IS INFERRED BETWEEN DRILLING LOCATIONS.*
4) *CONTACT LINES ARE INFERRED.*

Shaw® The Shaw Group, Inc.®

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

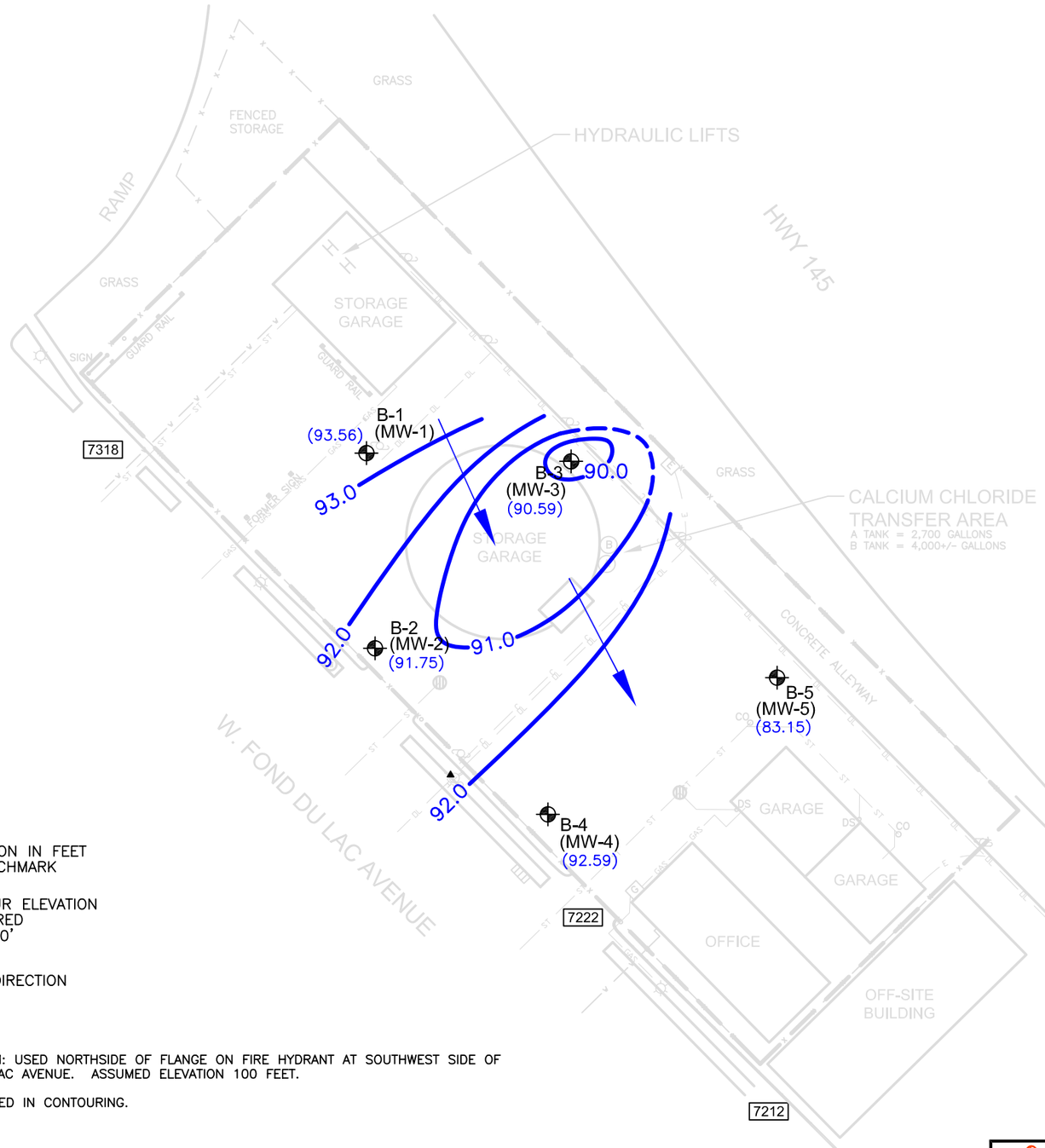
CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: **GEOLOGIC CROSS-SECTIONS A-A' AND B-B'**

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
BEB	TJH	BEB	-	131994	7
		REVISION DATE 09/30/08		DATE 09/25/08	

File: Q:\Projects\100000\131994 – MKE 7222 Fond du Lac\CAD\CrossSection.dwg Layout: A–A' AND B–B' User: bruce.benoit Oct 01, 2008 – 3:48pm



LEGEND

- SUBJECT PROPERTY
- 7222 PROPERTY ADDRESS
- FENCE
- OVERHEAD UTILITY
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMINCATION
- UNDERGROUND GAS
- UNDERGROUND STORM
- UNDERGROUND SANITARY
- UNDERGROUND WATER
- BORING/TEMPORARY WELL
- MONITORING WELL
- SOIL BORING DIRECT PUSH
- SOIL BORING
- BOLLARD/ CUT BOLLARD
- DOWNSPOUT
- CLEANOUT
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- UTILIY POLE
- HYDRANT
- ELECTRIC METER
- GAS METER
- BENCHMARK: ASSUMED 100.0'

KEY

(92.59) GROUNDWATER ELEVATION IN FEET RELATIVE TO SITE BENCHMARK

GROUNDWATER CONTOUR ELEVATION DASHED WHERE INFERRED CONTOUR INTERVAL: 1.0'

GROUNDWATER FLOW DIRECTION

NOTES

1. ELEVATIONS BASED ON SITE DATUM: USED NORTHSIDE OF FLANGE ON FIRE HYDRANT AT SOUTHWEST SIDE OF PROPERTY ANLONG W. FOND DU LAC AVENUE. ASSUMED ELEVATION 100 FEET.
2. MW-5: ANOMALOUS DATA, NOT USED IN CONTOURING.

APPROXIMATE SCALE IN FEET

0 25 50 75

Shaw The Shaw Group, Inc.

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

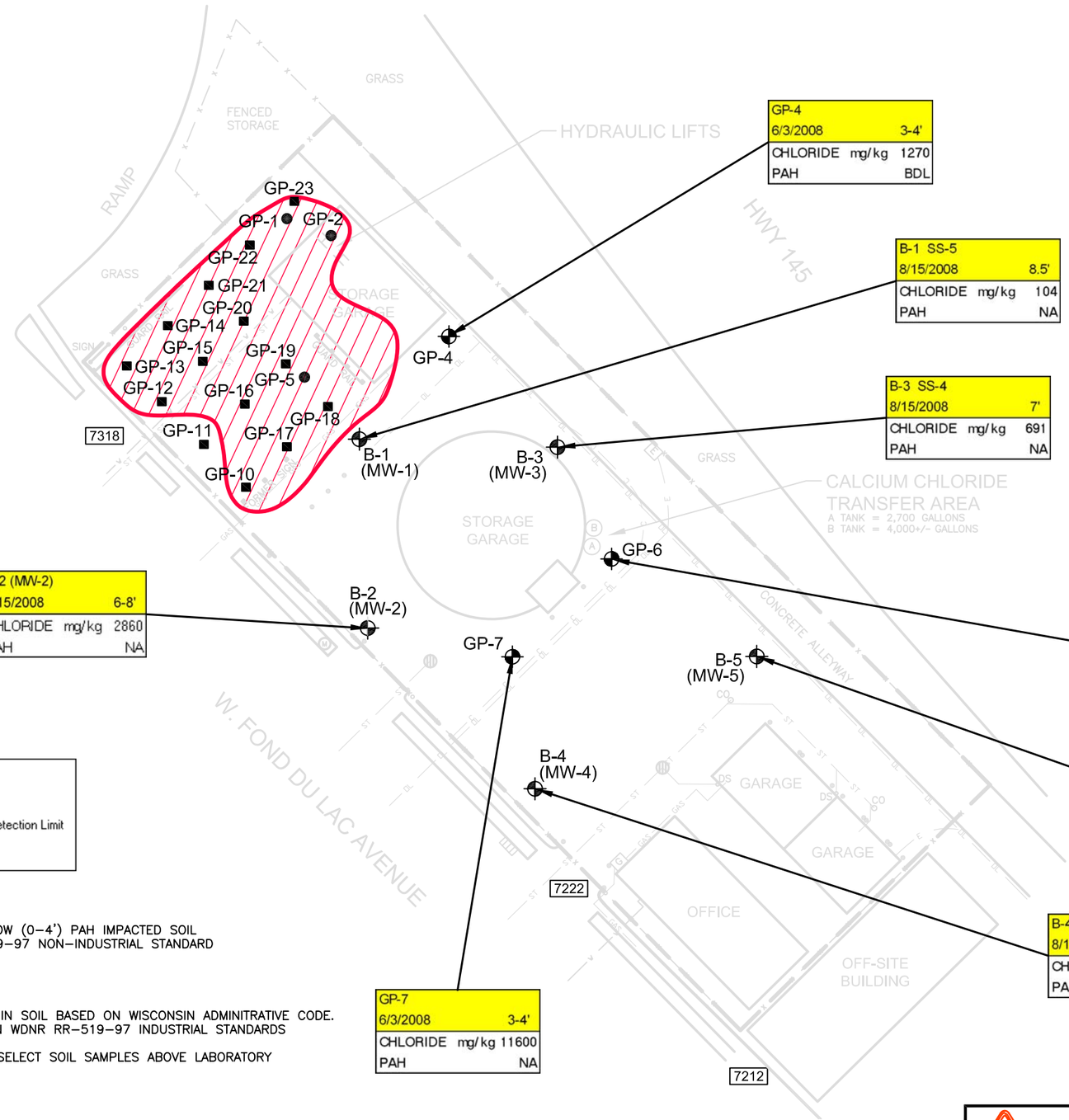
CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: GROUNDWATER CONTOUR MAP (OCTOBER 1, 2008)

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
BEB	TJH	-	-	131994	8
		REVISION DATE -		DATE 10/02/08	

File: G:\Projects\100000\131994 - MKE 7222 Fond du Lac\CAD\131994.dwg Layout: FIGURE 8 GW CONT 10-08 User: bruce.benolt Oct 02, 2008 - 8:21am



GP-4	
6/3/2008	3-4'
CHLORIDE mg/kg	1270
PAH	BDL

B-1 SS-5	
8/15/2008	8.5'
CHLORIDE mg/kg	104
PAH	NA

B-3 SS-4	
8/15/2008	7'
CHLORIDE mg/kg	691
PAH	NA

B-2 (MW-2)	
8/15/2008	6-8'
CHLORIDE mg/kg	2860
PAH	NA

GP-6	
6/3/2008	3-4'
CHLORIDE mg/kg	353
PAH	NA

B-5 SS-5	
8/15/2008	9'
CHLORIDE mg/kg	2070
PAH	NA

B-4 SS-5	
8/15/2008	8'
CHLORIDE mg/kg	727
PAH	NA

GP-7	
6/3/2008	3-4'
CHLORIDE mg/kg	11600
PAH	NA

LEGEND

- SUBJECT PROPERTY
- 7222 PROPERTY ADDRESS
- FENCE
- OVERHEAD UTILITY
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMINCATION
- UNDERGROUND GAS
- UNDERGROUND STORM
- UNDERGROUND SANITARY
- UNDERGROUND WATER
- BORING/TEMPORARY WELL
- MONITORING WELL
- SOIL BORING DIRECT PUSH
- SOIL BORING
- BOLLARD/ CUT BOLLARD
- DOWNSPOUT
- CLEANOUT
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- UTILIY POLE
- HYDRANT
- ELECTRIC METER
- GAS METER

ABBREVIATIONS

PAH	Polynucler Aromatic Hydrocarbon
mg/kg	Milligrams per Kilogram
BDL	Below Laboratory Analytical Method Detection Limit
NA	Not Analyzed

SOIL RESULT COLOR KEY

ESITMATED EXTENT OF SHALLOW (0–4') PAH IMPACTED SOIL GREATER THAN WDNR RR–519–97 NON–INDUSTRIAL STANDARD

NOTES

1. NO ESTABLISHED CHLORIDE STANDARD IN SOIL BASED ON WISCONSIN ADMINITRATIVE CODE.
2. NO PAH IMPACTED SOIL GREATER THAN WDNR RR–519–97 INDUSTRIAL STANDARDS REPORTED ON–SITE.
3. NO VOC CONSTITUENTS REPORTED IN SELECT SOIL SAMPLES ABOVE LABORATORY ANALYTICAL METHOD DETECTION LIMITS.

APPROXIMATE SCALE IN FEET

0 25 50 75

Shaw The Shaw Group, Inc.

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

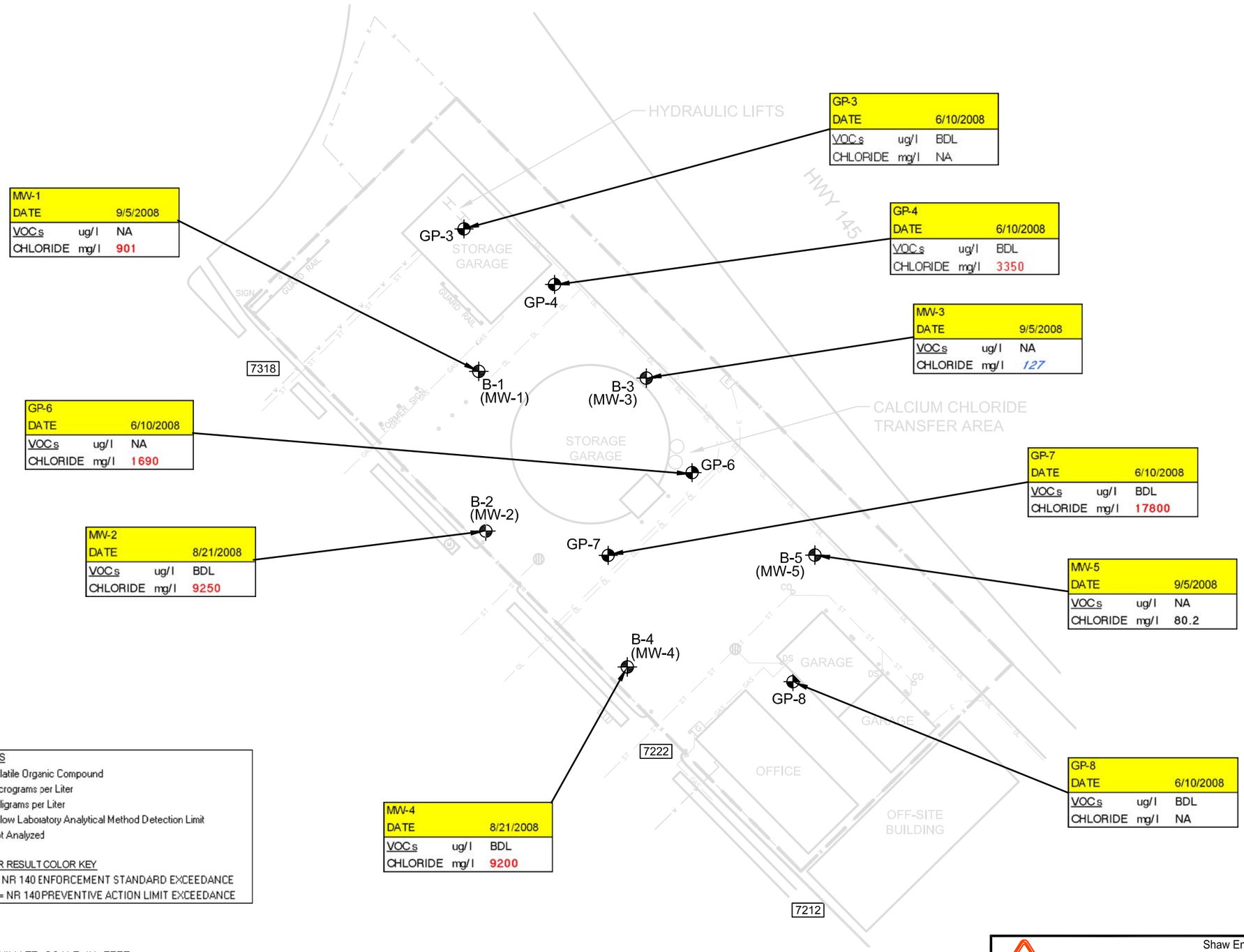
CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: SOIL QUALITY MAP

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
BEB	TJH	BEB	-	131994	9
		REVISION DATE 09/30/08		DATE 09/22/08	

File: Q:\Projects\100000\131994 – MKE 7222 Fond du Lac\CAD\131994.dwg Layout: FIGURE 9 SOIL QUALITY User: bruce.benoit Oct 01, 2008 – 11:13am



LEGEND

- SUBJECT PROPERTY
- 7222 PROPERTY ADDRESS
- FENCE
- OVERHEAD UTILITY
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMINCATION
- UNDERGROUND GAS
- UNDERGROUND STORM
- UNDERGROUND SANITARY
- UNDERGROUND WATER
- BORING/TEMPORARY WELL
- MONITORING WELL
- SOIL BORING DIRECT PUSH
- SOIL BORING
- BOLLARD/ CUT BOLLARD
- DOWNSPOUT
- CLEANOUT
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- UTILIY POLE
- HYDRANT
- ELECTRIC METER
- GAS METER

ABBREVIATIONS

VOC	Volatile Organic Compound
ug/l	Micrograms per Liter
mg/l	Milligrams per Liter
BDL	Below Laboratory Analytical Method Detection Limit
NA	Not Analyzed

GROUNDWATER RESULT COLOR KEY

RED/BOLD = NR 140 ENFORCEMENT STANDARD EXCEEDANCE

BLUE/ITALIC = NR 140 PREVENTIVE ACTION LIMIT EXCEEDANCE

Shaw® The Shaw Group, Inc.®

Shaw Environmental, Inc.
111 W. Pleasant St. Suite 105
Milwaukee, Wisconsin 53212-3939
(414) 291-2350

CLIENT: REDEVELOPMENT AUTHORITY OF THE CITY OF MILWAUKEE

LOCATION: CITY OF MILWAUKEE - DPW - SANITATION
7222 and 7318 West Fond Du Lac Avenue
Milwaukee, Wisconsin

TITLE: **GROUNDWATER QUALITY MAP**

DRWN	CHKD	REVD BY	APPRVD BY	PROJECT NO.	FIGURE NO.
BEB	CJZ	BEB	-	131994	10
		REVISION DATE 09/30/08		DATE 09/18/08	

File: Q:\Projects\100000\131994 – MKE 7222 Fond du Lac\CAD\131994.dwg Layout: FIGURE 10 GW QUALITY User: bruce.benoit Oct 01, 2008 – 11:06am

Appendices

Appendix A
Standard Operating Procedures

STANDARD OPERATING PROCEDURE

Subject: Standards for Conducting Direct Push Drilling and Soil Sampling

1. PURPOSE

This procedure provides the standard practice for direct push drilling and soil sampling. The procedure provides the minimum required steps and quality checks that employees and subcontractors are to follow when performing the subject task.

This procedure may also contain guidance for recommended or suggested practice that is based upon collective professional experience. Recommended or suggested practice goes beyond the minimum requirements of the procedure and should be implemented when appropriate.

2. SCOPE AND RELATED STANDARDS

Geosciences Standard Operating Procedure (SOP) EI-GS021 describes standards for direct push drilling and soil sampling, and discusses how such drilling and sampling will be conducted and documented for projects executed by Shaw Environmental & Infrastrucure Inc. (Shaw E & I). Responsibilities of individuals performing the work are also detailed. Additional project-specific requirements for direct push drilling and soil sampling may be developed, as necessary, to supplement this procedure and to address project-specific conditions and/or objectives.

This SOP covers requirements for collection of soil and unconsolidated materials by direct push methods primarily for laboratory or other testing and for lithologic description or analysis (logging). It describes basic equipment and procedures and addresses aspects of the process where quality must be maintained. It does not address procedures for specific brands of equipment, or for uncommon purposes of boring or sampling. Other types of soil and rock sampling while drilling are addressed in other Shaw E & I technical SOPs.

3. REFERENCES (STANDARD INDUSTRY PRACTICES)

The methodology for direct push drilling and soil sampling should follow industry standard practices. The latest revision of the following references are relevant and useful for planning and conducting direct push drilling and soil sampling:

ASTM D 6282	Direct Push Soil Sampling for Environmental Site Characterizations
ASTM D 6286	Standard Guide for Selection of Drilling Methods for Environmental Site Characterization

4. DEFINITIONS

The following definitions are applicable to direct push drilling and soil sampling and this SOP.

- **Direct push drilling**—The creation of a boring by the displacement of soil without cutting or grinding and without the production of mechanically-altered soil (cuttings) at the ground surface. In direct push drilling, soil is displaced, primarily laterally, as a pipe or rod is forced vertically downward, creating a cylindrical space (i.e. a boring). Energy to create the boring may be generated from constant pressure (e.g., hydraulically-powered), vibration, or other means.

- **Slough**—Slough is soil or other earth material that has been dislodged from its original location within the boring and displaced elsewhere within the boring (usually to the bottom). The creation

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

and sampling of slough should be avoided, because slough has disturbed properties and is typically of uncertain origin with respect to depth. The presence of slough also impedes proper abandonment of borings.

- **Conductor Casing**—Conductor casing is drill pipe that is extended down into the ground as a boring is advanced, to prevent sidewall material from falling into the borehole and covering the in-place soil material that constitutes the bottom of the boring. Conductor casing is usually removed when a borehole is being abandoned.

- **Sample**—A mass of soil or earthen material that has been removed from the boring from a known depth, has had little internal disturbance, and may be considered representative of the in-situ earthen material from a known depth and representative with respect to the intended tests or properties of interest.

5. RESPONSIBILITIES

5.1 Procedure Responsibility

The Geosciences Discipline Lead is responsible for the development, maintenance, and revision of this procedure. Any questions, comments, or suggestions regarding this technical SOP should be directed to the Geosciences Discipline Lead. The Geosciences Discipline Lead's location and associated contact information can be found on the Shaw Group intranet site, ShawNet.

5.2 Project Responsibility

Employees planning or conducting direct push drilling and soil sampling, or any portion thereof, are responsible for meeting the requirements of this procedure. Employees conducting technical review or oversight of direct push drilling and soil sampling are also responsible for following appropriate portions of this SOP. Project participants are responsible for recording information in sufficient detail to provide objective documentation (field notes, logs, forms, reports, etc.) that the requirements of this SOP have been met. Such documentation shall be retained as project records.

6. PROCEDURES (TECHNICAL REQUIREMENTS)

This section addresses basic requirements and procedures involved with direct push drilling and soil sampling. This section includes information on selection of methods and equipment, planning and preparation requirements, health and safety requirements, drilling and sampling procedures, and key practices for ensuring quality.

Proper drilling and subsurface soil sampling procedures are necessary to ensure the quality and integrity of the samples. The details within this SOP should be used in conjunction with project-specific work plans. The project work plans should generally provide the following information:

- Specific direct push drilling and soil sampling methodologies and equipment to be employed
- Sample collection objectives
- Anticipated locations and total depths of soil borings and target horizons or depths of soil samples to be collected
- Numbers and volumes of samples to be collected
- Types of chemical analyses to be conducted for the samples
- Specific quality control (QC) procedures and sampling requirements

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- Detailed direct push drilling and subsurface soil sampling requirements or procedures based upon site-specific conditions and project-specific objectives/requirements

6.1 Selection of Methods and Equipment

The practice of direct push drilling and soil sampling involves numerous variations in methodology and types of equipment. There are few industry-wide standards for direct push drilling and soil boring. Key aspects of the variations in direct push drilling and sampling are as follows:

- **The use of single-wall or dual-wall sampling systems**. Single-wall systems generally provide lower-quality sampling and higher rates of production than dual-wall systems. Single-wall systems can typically be advanced with lower energy sources (i.e., to greater depth) than dual-wall systems because they have smaller area and hence encounter less sidewall friction and tip resistance during advance.

- **Open-hole or cased boring**. *This SOP recommends that borings always be advanced through or with a conductor casing*.

- **Open-barrel or closed (sealed)-barrel sampler**. Open-barrel samplers are open at the bottom at all times, and may fill with slough, lose sample material as they are retrieved, or contribute to or be subject to cross-contamination. Closed-barrel samplers are closed at the bottom until being mechanically opened at a target depth. Closed-barrel samplers reduce the potential for sampling of slough or cross-contamination of the sample.

- **Liner or inner-barrel material**. Inner barrel/sampler tubes should be selected based on the need to see or access samples for lithologic evaluation and the need to perform chemical or other analytical testing. Use of lexan or other see-through materials can be beneficial in identifying soil type or visual indications of contamination (such as petroleum saturation). Some liners, such as lexan, can be quickly cut to select certain sample intervals for testing, and the sample may be retained, shipped, and stored directly in the liner. Liners or sample barrel material should generally not be made of materials that include any of the chemical species that are sought during analysis.

- **Energy source for making the boring**. Energy sources may be static or dynamic, and may include vibratory or sonic systems, hydraulic systems, percussion (hammer) systems, or even rotational systems.

- **Energy source for removing the sampler**. Energy sources may be static or dynamic, and are generally one of the following: hydraulically-lifted rod systems, winch and wire rope systems, or percussive systems (backpounding). This SOP recommends against backpounding as a means of removing samplers, as it tends to disturb samples.

- **Use of checkball or open-top tubes for collection of soil**. Checkball systems prevent fluids that are within the sampling barrel, above the sample, from flowing down into the barrel as the sampler is retrieved. Checkball systems are mostly used when sampling granular soils beneath the water table, to minimize the potential for water to dislodge or alter sample material as the barrel is retrieved.

- **Use of catchers or retainers**. Catchers are used to help retain loose soils within the sampling barrel as it is retrieved. Catchers are most commonly used when sampling granular soils beneath the water table, with variable success.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

6.2 Planning and Preparation

Planning for direct push drilling and soil sampling activities involves the following:

- Identifying drilling and sample collection objectives and exact methodologies and equipment to be used for sample collection
- Identifying specific drilling and sampling locations, targeted depths, and specific identification numbers of soil samples to be collected
- Identifying numbers and volumes of samples to be collected
- Specifying types of chemical analyses to be conducted for the samples
- Listing specific quality control (QC) procedures and sampling requirements
- Describing any detailed project-specific sampling requirements or procedures beyond those covered in this SOP, as necessary
- Listing expected soil types, hydrostratigraphy, and/or formations to be encountered (if known)
- Identifying and listing all pertinent health and safety issues and requirements, including those contained in the project-specific health and safety plan(s), relative to work activities (including site utility clearance)
- Compiling main subcontractor requirements for direct push drilling and soil sampling and generating the statement of work to procure subcontractor services

All of the above information and items should be compiled as part of a sampling plan contained within the project work plans. This plan includes detailed, project-specific direct push drilling and soil sampling procedures beyond the basic procedures and requirements in this SOP.

Preparation for direct push drilling and soil sampling activities includes the following:

- Securing all necessary site access, permitting, and plan approvals
- Procuring the appropriate direct push drilling and sampling subcontractor
- Completing all necessary underground utility clearance activities at each of the sampling locations; each location should be cleared according to requirements in appropriate Shaw E & I technical SOPs and the project work plans.
- Briefing the rig geologist, subcontractor personnel, and other site personnel on specific information necessary for effective implementation of the sampling effort (e.g., sampling objectives, locations and depths, project-specific sampling requirements and procedures, pertinent health and safety requirements, etc.)
- Verifying that job personnel have proper health and safety training

The Project Manager, or designee, is responsible for appropriately briefing field personnel, as described above.

6.3 Health and Safety Requirements

Prior to initiating drilling and sampling activities, applicable Shaw E & I and project-specific safety requirements must be reviewed by Shaw E & I site personnel and subcontractors. This review is conducted to familiarize these individuals with specific hazards associated with the site and drilling activities, as well as with health and safety procedures associated with the operation and maintenance of drilling equipment. Such information may be found in the project health and safety

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

plan and other applicable Shaw E & I policies and procedures, such as HS316, *Drilling Operations*, and HS-308, *Underground/Overhead Utility Contact Prevention*. Additional health and safety requirements include the following:

- Tailgate Safety Meetings should be held in the manner and frequency stated in the project health and safety plan. All Shaw E & I and subcontractor personnel at the site should have appropriate training and qualifications as specified by the project health and safety plan. Documentation should be kept readily available in the project files on site.
- During drilling, all personnel within the exclusion zone should pay close attention to all rig operations. Pushed or driven drill tools can catch or snag loose clothing, causing serious injury.
- Clear communication signals must be established with the drilling crew, since verbal communication may not be heard during the drilling process.
- The entire crew should be made aware to inform the rig geologist when any unforeseen hazard arises or when anyone is approaching the exclusion zone.

6.4 Drilling and Sampling Requirements/Procedures

This SOP cannot present a single, detailed and specific procedure that is applicable to all methods and equipment that are available (Section 6.1) or to the specific sampling objectives of a specific project. An example procedure for direct push drilling and soil sample collection is shown in Attachment 1. The example procedure may be supplemented or customized to provide project-specific requirements and procedures.

Sample quality is easily compromised by poorly selected samples or haphazard drilling and sampling technique. Common problems and suggested solutions include the following:

- Generation of excess slough. Excess sloughing occurs when conductor casing is not used, when soil materials fall out of the sample barrel as it is retrieved, and when soil at or near the ground surface falls into the boring. Slough is excess when the amount that is present hinders the collection of sufficient representative sample volume or mass for the required testing or lithologic analysis.
- Collection of slough for testing or logging. This occurs when a large volume of slough is present in the boring bottom at the time the sampler is emplaced and driven into soil. Because slough is disturbed and from unknown depth, it is unsuitable for logging or testing.
- Disturbance (negatively-biasing) of samples for analysis of Volatile Organic Compounds (VOCs). The act of driving a sampling tube into soil causes compression and some heating of the soil, and can create macroscopic void space, i.e., a microannulus between the soil and sampling tube. Heating, compression of soil, and creation of void space contribute to the migration of gaseous fluids as well as the partitioning of VOCs, such as gasoline or solvent vapors. Although some heating, compression, and formation of microannular space are unavoidable, care should be taken to minimize these phenomena to the extent that is reasonably possible. Some sampling devices and methods are more suitable for analysis of samples for VOCs than others.
- Improper abandonment of borings. Excess slough or caving (the dislodgement and falling of a significant volume of sidewall material) hinders the proper abandonment of a boring. Where this occurs, the borehole should be cleaned out prior to grouting. A tremmie pipe should be used to conduct grout to the bottom of the borehole if a conductor casing is not in place prior to and during grouting.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

Additional key practices that will ensure the quality of the samples collected and proper/efficient abandonment of the borings, include the following:

- Drill with a Conductor Casing. Various equipment, systems, and methods exist for direct push drilling and soil sampling. Some systems are open-hole (i.e., do not use conductor casing), hence borings made with these systems are at high risk for slough-related difficulties in logging, sampling, and abandonment. Most systems have provisions for driving down a conductor casing, to keep the boring open and relatively free of slough when the sampler or a plug or drive-point is not present at the bottom of the casing system. **This SOP recommends the use of a method of direct push drilling that integrally includes the advancement of conductor casing as the boring is made**, and further recommends that the conductor casing remain in place during sampling and into the abandonment process.

- Measure the Boring Depth. A weighted tape should be used to verify the depth of the boring within the conductor casing. Measurement should be made with reference to the ground surface. It is important to measure depth at the start of sampling intervals and at total depth (TD) of the boring.

- Clean-Out Excessive Slough. If slough is present, it should be removed by forcing a sampler into it and retrieving and emptying the sampler of slough.

- Identify Slough and Avoid Sampling it or Logging it as In Situ Material. Slough is generally easy to identify based on jumbled internal textures, lighter density, macroscopic and unmineralized void spaces, greater softness and malleability, and decreased cohesion, as compared to in situ material that has not been dislodged prior to the sampling process.

- Grout Through a Conductor Casing. Grouting through a conductor casing prevents any significant accumulation of slough in the boring and ensures that grout will be the predominant material in the borehole, thereby minimizing any potential for vertical migration of fluids in the filled borespace. This minimizes potential liability.

6.5 Documentation

Accurate documentation of the boring, sampling, and abandonment activities is important for interpreting sample results, interpreting boring conditions and lithologic information, and conceptually reconstructing events. Appropriate forms (including boring logs) should be completed in accordance with appropriate Shaw E & I technical SOPs and project-specific requirements/procedures.

6.6 Technical Review

All direct push drilling and soil sampling specifications, procedures, and results (e.g., reports, forms, etc.) should undergo technical review. It is recommended that the technical reviewer also provide review/oversight of the actual field implementation of direct push drilling and soil sampling activities. This should include aiding in troubleshooting for drilling and sampling problems. The technical reviewer should be an experienced senior geologist or hydrogeologist. At a minimum, the technical reviewer should be a person capable of planning and supervising direct push drilling and associated sampling and well installation programs. Individuals needing assistance in finding qualified technical reviewers may consult internal Shaw technical listings for experts in drilling or direct push drilling and sampling.

Any issues raised during the technical review shall be resolved between the reviewer and the staff planning, conducting, or preparing results of direct push drilling and soil sampling activities, as follows:

- Comments/issues that arise relative to planning and developing detailed procedures for direct push drilling and soil sampling should be resolved before mobilization and drilling commences.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- Comments/issues that arise relative to the results of drilling and sampling activities should be resolved before external (i.e., outside of Shaw E & I) use or submission of the results.

The technical review comments and issues, and corresponding resolution, shall be documented and filed with the project records. Such records should be maintained until project closeout.

7. ATTACHMENTS

- Attachment 1, Example Direct Push Drilling and Soil Sampling Procedure

8. FORMS

None.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

Attachment 1
Example Direct Push Drilling and Soil Sampling Procedure

The following procedure is provided as an example. It should be customized based on project/site-specific equipment, methodology, and sampling and quality control requirements. This procedure is written for a direct push drilling rig that uses a small-diameter conductor casing with a 3-foot long inner wireline sample barrel (with a 3-foot long acrylic liner) connected to the bottom of the casing. The casing and associated sample barrel are driven, pushed, or vibrated into the ground in 3-foot increments. Soil samples are collected into the acrylic sample tubes as the conductor casing and sample barrel are advanced into the formation. The samples inside the liner and sample barrel are then retrieved with a wireline, leaving the conductor casing in place. Soil samples are thus continuously collected until the total depth of the boring is reached. The example procedure consists of the following:

1. Decontaminate the direct push sampling rig and associated sampling equipment before mobilizing to the first sample location, in accordance with applicable Shaw E & I technical SOPs and/or project-specific requirements/procedures.

2. Inspect the direct push rig to make sure the equipment is properly maintained, adequately decontaminated, and determined capable of achieving the objectives for drilling (equipment advancement), sample collection, and abandonment of the boring (to be done by the driller and rig geologist).

3. Calibrate all field analytical and health and safety monitoring equipment according to the instrument manufacturer's specifications and/or project work plans. Calibration results must be recorded on the appropriate form(s) as specified by the project work plans or health and safety plan.

4. Wear the appropriate personal protective equipment, as specified in the project work plans or health and safety plan. Personal protection will typically include, at a minimum, a hard hat, safety glasses, gloves, steel-toed boots, hearing protection, and coveralls.

5. Remove the surface cover (e.g., concrete, asphalt, etc.) at the drilling/sampling location according to the project work plans.

6. Once the direct push rig is sited at the sampling location, make sure the location is free of underground utilities, as per the project work plans and Shaw Policy and Procedure HS308, *Underground/Overhead Utility Contact Prevention*. Manually probe or excavate near-surface soils (as required) as an additional step to avoid underground utilities or structures.

7. Learn the drilling equipment heights and dimensions necessary to independently determine the boring or sampler depth while observing the work (to be done by the rig geologist). Such information includes lengths of rods, casing, barrels, and other in-ground equipment; the length of strokes or advances; and the height from ground surface to "full down" stroke of the direct push rig.

8. Between each sampling location and prior to each sampling run, decontaminate the sampling equipment according to applicable Shaw E & I technical SOPs and/or project-specific procedures.

9. Inform the driller of the expected total depth, the first and expected additional sampling depths, the likelihood of encountering groundwater or NAPL, and any contingency or opportunistic decisions that are anticipated (such as contingency-sampling or increased total depth).

10. Record the type of sampler assembly on the appropriate form(s) as specified in appropriate Shaw E & I technical SOPs or the project work plans. To minimize off-gassing of volatiles, the sampler should not be advanced/pushed until the sampling team is ready to process the sample.

11. Commence drilling and sample collection by advancing the conductor casing and associated sample barrel (with liner) for the first 3-foot increment.

12. Pull the wireline sampling string up from the bottom of the borehole and remove the sample barrel. Make sure that each sample barrel is retrieved as quickly and smoothly as possible. Record the depth interval for each sample drive as the sample barrel is being retrieved.

13. Remove the acrylic liner containing the soil sample from the sample barrel.

14. Observe and record the amount of sample recovery on the appropriate form(s), according to applicable Shaw E & I procedures and/or the project work plans. Any observed field problems associated with the sampling attempt (e.g., refusal) or lack of recovery should be noted on the appropriate form.

15. Select the appropriate portion of the liner containing the sample to be cut and be submitted for laboratory analysis. Such selection should be based on the following factors: (1) judgment that the sample represents relatively undisturbed intact material, not slough; (2) volume/length of sample required for analysis; (3) minimal exposure to air; (4) lithology; and (5) obvious evidence of contamination. The project work plans should specify the volume/length of sample to be submitted for specific analyses and confirm the selection factor(s).

16. Place Teflon™ film over each end of the liner containing the samples to be submitted for chemical analysis and seal each end with plastic end caps. Do not use any type of tape to seal the cap, because tape causes a toluene interference. All samples should be individually stored in resealable plastic bags. Note: Additional project-specific sample preparation steps or modifications may be required as stated in the project work plans.

17. Appropriately label and number each sample to be submitted for analysis according to applicable Shaw E & I technical SOPs and the project work plans. The label will be filled out using waterproof ink and may contain, at a minimum, the following information:

    – Project number
    – Boring number
    – Sample number
    – Bottom depth of sleeve
    – Date and time of sample collection
    – Parameters of analysis
    – Sampler's initials

18. Document the sampling event on the appropriate form(s), as specified in the project work plans. The information listed on the form(s) should, at a minimum, include the following:

    – Project name and number
    – Date and time of the sampling event
    – Sampling methods used – specify sample type
    – Sample number
    – Sample location
    – Sample depth interval
    – Sample description (type of matrix)
    – Weather conditions
    – Unusual events, including lack of water or insufficient water volume in sampler
    – Signature or initials of sampler

19. Appropriately preserve, package, handle, and ship the sample in accordance with applicable Shaw E & I technical SOPs and/or project-specific procedures. The samples shall also be maintained under custody. Samples stored on site will be subject to the provisions of applicable Shaw E & I procedures and/or project requirements. All reasonable attempts should be made to ship samples on the date they are collected.

20. Cut/split the remaining acrylic liner to expose the remaining soils for logging. The descriptions of the soil and preparation of a boring log should follow applicable Shaw E & I technical SOPs and project-specific requirements/procedures. The soil boring log should include the following information:

    – Borehole location
    – Name of the drilling company and driller
    – Dates and times when drilling began and when it was completed
    – Lithologic data and descriptions from soil samples
    – Sampling depths and recovery of soil samples

21. Continue to advance the borehole in 3-foot increments and collect soil samples to the total depth. As the borehole is advanced, the rig geologist will generally do the following:

    – Observe and monitor rig operations
    – Conduct all health and safety monitoring and sampling and supervise health and safety compliance
    – Prepare a boring log from cuttings or soil samples according to applicable Shaw E & I technical SOPs and project-specific requirements
    – Document drilling progress and other appropriate observations on appropriate forms
    – Supervise the collection and preparation of any soil, soil vapor, or groundwater samples

    The rig geologist should not leave the drill site while drilling operations are being conducted and the borehole is being advanced.

22. As drilling progresses, the rig geologist should observe and be in frequent communication with the driller regarding drilling operations. Conditions noted should include relative rates of penetration, flowing sands, drilling refusal, changes in equipment, etc. These conditions should be recorded on the appropriate logs and forms in accordance with applicable Shaw E & I technical SOPs and/or the project work plans. Drilling should not be allowed to progress faster than the rig geologist can adequately observe conditions, compile logs, and supervise safety and sampling activities.

23. The rig geologist should also observe the make-up and tightening of connections as additional conductor casing joints are added to the drill string. Any observed drilling problems and causes, including significant down time, should be recorded on the appropriate forms.

24. Cuttings (i.e., left over soil samples) and fluid containment during drilling should be observed and supervised by the rig geologist as per the project work plans.

25. Periodically measure the boring depth with a weighted tape to verify its depth. If it cannot be directly measured, then count rods or pipe lengths that have been inserted into the ground or take other action to verify depth (in a manner that is independent of asking the driller the boring depth).

26. If the borehole is to be abandoned once drilling and sampling is completed, follow procedures outlined in applicable Shaw E & I technical SOPs and the project work plans. The abandonment will be supervised by the rig geologist. If the borehole contains slough, the slough should be removed prior to abandonment.

27. If a monitoring well is to be installed in the borehole, follow appropriate Shaw E & I technical SOPs and project-specific requirements/procedures. The well installation will be supervised by the rig geologist.

28. After drilling, sampling, and well installation or borehole abandonment is completed, lay the conductor casing down and move the rig off of the location. The rig geologist or appropriate designee will supervise demobilization/site restoration. Additional demobilization requirements/ procedures are as follows:

    – All debris generated by the drilling operation should be removed and disposed of appropriately.

    – The site should be cleaned, the ground washed as necessary, and the site conditions restored according to the project work plans.

    – All abandoned borings should be topped off and completed as specified by the project work plans. All wells should also have their surface completions finished as specified by the project work plans.

    – Any hazards remaining as a result of drilling activities should be identified and appropriate barriers and markers put in place, as specified by the project health and safety plan.

    – All soil cuttings and fluids should be properly contained, clearly labeled, and maintained in compliance with the project work plans and/or other applicable requirements.

29. Complete all appropriate forms and documentation as required in the project work plans.

STANDARD OPERATING PROCEDURE

Subject: Jar Headspace Screening

1. PURPOSE

The purpose of this procedure is to provide the basic methods and guidance for volatile organic compound (VOC) screening of environmental samples using jar headspace techniques. Jar headspace analytical screening can be used to provide field data regarding the presence or absence of VOC vapors in environmental samples.

Field screening for VOC compounds can be useful for such environmental characterization purposes as discovery of site VOC contamination; selection of field samples to submit to a laboratory for analyses; selection of surface soil sampling locations; selection of boring locations; placement of groundwater monitoring wells; soil cutting (from drilling operations) screening for disposal characterization purposes; and purge water (from well purging/sampling tasks) screening for disposal characterization purposes.

2. SCOPE

This SOP is applicable to all Shaw E & I projects where VOC screening by the jar headspace method is employed. This procedure serves as general guidance on the proper methods for conducting jar headspace analytical screening. Users should always consult state-specific, program-specific, or project-specific requirements to ensure compliance with requirements when performing the activities of this SOP.

3. REFERENCES

- Massachusetts Department of Environmental Protection, *Interim Remediation Waste Management Policy for Petroleum Contaminated Soils*, #WCS-94-400.

4. DEFINITIONS

- **Flame Ionization Detector (FID)**—An organic compound detector based upon the ionization in a flame of compounds containing carbon-hydrogen bonds. The FID is a gross screening tool that detects the total organic content of the introduced sample. Its response is lower to halogenated compounds, and it will not respond to compounds lacking a carbon-hydrogen bond.

- **Ionization Potential (IP)**—The amount of energy required to remove an electron from the outer shell of a molecule or atom. The resultant molecule or atom will be a positively charged cation.

- **Photo Ionization Detector (PID)**—An organic compound detection system based upon the ionization of compounds via UV-radiation. A PID will respond only to those compounds with IP values less than or equal to the output of the UV-lamp. As such it is an indicator of aromatic and conjugated organic compounds. PID response is lower for halogenated compounds. PID systems are available with either a 10.2 or 11.7ev lamp.

5. RESPONSIBILITIES

5.1. Procedure Responsibility

The Field Sampling Discipline Lead is responsible for maintenance, management, and revision of this procedure. Questions, comments, or suggestions regarding this technical SOP should be directed to the Field Sampling Discipline Lead.

5.2. Project Responsibility

Shaw E & I employees performing this task, or any portion thereof, are responsible for meeting the requirements of this procedure. Shaw E & I employees conducting technical review of task performance are also responsible for following appropriate portions of this SOP.

For those projects where the activities of this SOP are conducted, the Project Manager, or designee, is responsible for ensuring that those activities are conducted in accordance with this and other appropriate procedures. Project participants are responsible for recording information in sufficient detail to provide objective documentation (i.e., checkprints, calculations, reports, etc.) that the requirements of this SOP have been met. Such documentation shall be retained as project records.

6. PROCEDURE

6.1. Equipment

The equipment to be used for jar headspace screening includes the following:

- Field logbook(s)
- Volatile organic compound vapor meter (PID or FID)
- Field Data Forms - See Section 8
- Indelible markers
- Wide-mouth glass jars (16-oz preferred, 8 oz minimum size)
- Stainless steel laboratory spoons
- Aluminum foil

6.2. Field Gas Chromatography

If field GC is being employed, the following additional equipment will be required:

- Gas Chromatograph system
- Calibration standards and materials
- Gas-tight syringes

6.3. Procedure Steps

- Calibrate field screening equipment in accordance with the manufacturer's instructions and/or project-specific requirements.
- Obtain a soil sample from the sampling device (split spoon, spatula, shovel, etc.) immediately after removal from the ground. Groundwater samples can be collected from the inside of auger

flights using a disposable bailer. In order to reduce loss of the volatiles, take care to minimize handling of the sample and exposure to the air during transfer to the jar.

- Half-fill a clean glass jar with the sample to be analyzed. Quickly cover each open top with one or two sheets of clean aluminum foil and subsequently apply screw caps to tightly seal the jars. Sixteen-ounce (approximately 500 mL) soil or "mason" type jars are preferred. Do not use jars with less than 8 oz. (approximately 250 mL) total capacity.
- Allow sealed jar to sit for at least 10 minutes. Vigorously shake jars for 15 seconds at the beginning of the headspace development period. Where ambient temperatures are below 32°F (0°C), sample bottles should be placed within a heated vehicle or building for the prescribed period to allow the volatilization process to occur.
- Remove screw/lid and expose foil seal. Puncture foil seal with instrument sampling probe into the jar. Keep probe tip sufficiently above the media surface to avoid uptake of water droplets or soil particulates into the sample probe.
- As an alternative collection method or when using a field GC, use a gas-tight syringe to withdraw a measured volume of the headspace and inject into the probe inlet or calibrated GC.
- Following probe insertion through the foil seal and/or sample injection into the probe, the maximum (non-GC) instrument response should occur between 2 and 5 seconds. Record the highest meter response as the jar headspace concentration in the field log book or sheet. For GC analysis, determine and record the response/concentration of the target compound(s)
- Perform Duplicate QC and evaluate in accordance with the project plans
- Dispose of all wastes, including screened samples, in accordance with the project plans

7. ATTACHMENTS

- Attachment 1, Ionization Potentials for Common Volatile Contaminants

8. FORMS

- Jar Headspace Screening Results Log

Attachment 1
Ionization Potentials for Common Volatile Contaminants

Analyte	IP (eV)	Analyte type
Acetone	9.69	AAK
Acrolein	10.10	AAK
Allyl alcohol	9.67	SDO
Benzene	9.245	AC
Bromochloromethane (I.S.)	10.77	AH
Bromoform	10.51	AH
Bromomethane	10.53	AH
n-Butanol	10.04	AAETS
2-Butanone (MEK)	9.53	AAK
Carbon disulfide	10.08	AAETS
Carbon tetrachloride	11.47	AH
Chlorobenzene	9.07	AC
Chlorodibromomethane	10.59	AH
Chloroethane	10.98	AH
Chloroform	11.42	AH
Chloromethane	11.28	AH
1,2-Dibromoethane	10.19	AH
Dibromomethane	10.49	AH
1,2-Dichlorobenzene	9.07	AH
1,3-Dichlorobenzene	9.12	AH
1,4-Dichlorobenzene	8.94	AH
Dichlorodifluoromethane	12.31	AH
1,2-Dichloroethane	11.12	AH
trans-1,2-Dichloroethene	9.66	AH
1,2-Dichloropropane	10.87	AH
Diethyl ether	9.53	AAETS
Ethanol	10.48	AAETS
Ethyl acetate	10.11	AAE
Ethyl benzene	8.76	AC
Ethylene oxide	10.565	MM
2-Hexanone	9.34	AAK
Iodomethane	9.54	AH
Isopropylbenzene	8.69	AH
Methane	12.98	PC
Methanol	10.85	AAETS
Methylene chloride (DCM)	11.35	AH
4-Methyl-2-pentanone (MIBK)	9.30	AAK
Naphthalene	8.12	AC
Nitrobenzene	9.92	AC
Pyridine	9.32	HM
Styrene	8.47	AC

Analyte	IP (eV)	Analyte type
Tetrachloroethene	9.32	SDO
Toluene	8.82	AC
Trichloroethene	9.45	SDO
Trichlorofluoromethane	11.77	AH
Vinyl acetate	9.19	SDO
Vinyl chloride	9.995	SDO
o-Xylene	8.56	AC
m-Xylene	8.56	AC
p-Xylene	8.445	AC

PC = Paraffins and Cycloparaffins

AH = Alkyl Halides

AAETS = Aliphatic Alcohol, Ether, Thiol, and Sulfides

AAK = Aliphatic Aldehydes and Ketones

AAE = Aliphatic Acids and Esters

SDO = Some Derivatives of Olefins

HM = Heterocyclic Molecules

AC = Aromatic Compounds

MM = Miscellaneous Molecules

STANDARD OPERATING PROCEDURE

Subject: Standards for Direct Push Groundwater Sampling

1. PURPOSE

This procedure provides the standard practice for direct push groundwater sampling. The procedure provides the minimum required steps and quality checks that employees and subcontractors are to follow when performing the subject task.

This procedure may also contain guidance for recommended or suggested practice that is based upon collective professional experience. Recommended or suggested practice goes beyond the minimum requirements of the procedure and should be implemented when appropriate.

2. SCOPE AND RELATED STANDARDS

Geosciences Standard Operating Procedure (SOP) EI-GS009 describes standards for direct push groundwater sampling and discusses how such sampling will be conducted and documented for projects executed by Shaw Environmental & Infrastructure Inc. (Shaw E & I). Responsibilities of individuals performing the work are also detailed. Additional project-specific requirements for direct push groundwater sampling may be developed, as necessary, to supplement this procedure and to address project-specific conditions and/or objectives.

This SOP covers requirements for basic collection of groundwater samples from direct push temporary installations (such as the Hydropunch® system). It describes equipment, procedures, and aspects of quality control. The following are some manners of collecting groundwater samples that are not covered specifically in this SOP:

- The use of driven-point well systems that do not protect (enclose) the well screen during installation.
- The use of specialized closed-chamber devices such as the BAT® system (www.bat-gms.com) or SimulProbe® (www.besstinc.com).
- The use of driven devices that contain built-in pumping or testing systems.

Individuals needing assistance planning or conducting direct push groundwater sampling or these other types of sampling may consult internal Shaw E & I technical listings for experts or may contact the Geosciences Discipline Lead (see Section 5.1).

3. REFERENCES (STANDARD INDUSTRY PRACTICES)

The most current versions of the following references are useful for planning and implementing direct push groundwater sampling activities:

ASTM D 6001	Standard Guide for Direct-Push Water Sampling for Geoenvironmental Investigations
ASTM D 5730	Guide to Site Characterization for Environmental Purposes with Emphasis on Soil, Rock, the Vadose Zone, and Ground Water
ASTM D 4448	Guide for Sampling Groundwater Monitoring Wells

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

ASTM D 4750 Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well (Observation Well)

QED Environmental Systems, Inc. http://www.qedenv.com/sales/hydropunch.html

Geoprobe Systems, Inc. http://www.geoprobe.com

USEPA Clu-in. http://fate.clu-in.org/direct_push/dpgroundwater.asp

4. DEFINITIONS

The following definitions are applicable to direct push groundwater sampling and this SOP:

- **Direct Push**—The creation of a boring by the displacement of soil without cutting or grinding, and without the production of mechanically altered soil (cuttings) at the ground surface. In direct push methods, soil is displaced, primarily laterally, as a pipe or rod is forced vertically downward, creating a cylindrical space (i.e., a boring). Energy to create the boring is generated by a "direct push rig" and may use constant pressure (e.g., hydraulically-powered), vibration, or other means.

- **Geoprobe**—Geoprobe® is a registered trademark of Geoprobe Systems, Inc. (www.geoprobe.com). The term *geoprobe* is informally used to refer to any small-diameter push-coring tool that is operated from a small vehicle and is used for site characterization (typically soils). Geoprobe Screen Point 15 and Screen Point 16 Systems are similar to the Hydropunch® II system (see below) and are considered suitable for use by this SOP.

- **Hydropunch**—Hydropunch® I and II are registered products of QED Environmental Systems, Inc. (www.qedenv.com). The term *hydropunch* is informally used to refer to any short to medium-length small-diameter, protected well screen system that is driven (pushed) to depth and then exposed to soil material and pore fluids by retraction of a protective sleeve, without regard to manufacturer, trademark, or registered name. The Hydropunch® I and Hydropunch® II systems are considered suitable for use by this SOP.

- **Well Screen**—A filtering device that is designed to retain soil, earthen material, or artificial sand pack on one side (outside) and permit the flow of water or other subsurface fluid into a void space on the other side (inside). A well screen is nearly always rigid and cylindrical.

- **Protected Screen**—A well screen that is encased within another material or system as it is emplaced and becomes exposed to soil materials and pore fluids only when a target depth has been reached and the protective device has been retracted or removed. The Hydropunch® and Geoprobe® Screen Point systems utilize protective covers, which are left in place until the target depth has been reached, and are then lifted upward, exposing the well screen to adjacent soil material and pore fluids.

- **Unprotected Screen**—A well screen that is in contact at all times during use with soil materials and pore fluids. The most common unprotected screen is a driven well point.

5. RESPONSIBILITIES

5.1 Procedure Responsibility

The Geosciences Discipline Lead is responsible for the development, maintenance, and revision of this procedure. Any questions, comments, or suggestions regarding this technical SOP should be directed to the Geosciences Discipline Lead. The Geosciences Discipline Lead's location and associated contact information can be found on the Shaw Group intranet site, ShawNet.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

5.2 Project Responsibility

Employees planning or conducting direct push groundwater sampling are responsible for meeting the requirements of this procedure. Employees conducting technical review or oversight of direct push groundwater sampling are also responsible for appropriate portions of this SOP. Project participants are responsible for recording information in sufficient detail to provide objective documentation (i.e., field notes, forms, reports, etc.) that the requirements of this SOP have been met. Such documentation shall be retained as project records.

6. PROCEDURES (TECHNICAL REQUIREMENTS)

This section presents information on design issues, planning and preparation, basic procedures, documentation requirements, and technical review requirements for direct push groundwater sampling. Contract vendors generally conduct the pushing or driving of the sampling equipment to the desired sampling depth and associated collection of groundwater samples on Shaw E & I projects. A rig geologist is also present at each sampling event to oversee sampling activities and to ensure that samples are collected from the proper depths and placed in the correct containers following appropriate protocols. Contract vendors will require a detailed scope of work and adequate oversight.

6.1 Design Issues Likely to Affect Sample Quality or Collection

Sample quality is easily compromised by poorly selected or applied sampling techniques. Common and avoidable problems include the following:

- Use of Unprotected Screens. Use of an unprotected screen creates a likelihood that pore fluid and possibly soil particles that are not from the target depth (final depth) of the screen will pass through the well screen and into the well chamber and be included in the sample. This creates uncertainty as to how representative the sample is of the target horizon. This SOP recommends against the use of unprotected screens.

- Excessive Sediment or Particulate Matter within Well Screen. The presence of sediment within samples may bias analytical result, hamper laboratory quality control, or have other deleterious effects. The presence of sediment from an aquifer that is contaminated with an organic contaminant may positively bias (i.e., increase) the concentration results from analysis of organic chemicals, as organic chemicals are typically sorbed onto sediment. The presence of sediment or other particulate matter may also positively bias the concentration results from analysis of metals. This SOP recommends that entrainment of sediment into water within the well screen and the sample be avoided as much as reasonably possible.

- Collection of samples at a Uniform Depth Interval (e.g., every five feet or every ten feet of depth) Instead of Collection at Targeted Hydrostratigraphic Horizons. Many programs have been designed for sample collection at uniform pre-set depth intervals. Though this methodology may provide useful data, a more efficient and technically sound methodology involves targeting specific hydrostratigraphic units and boundaries (interfaces) between the units that may significantly affect the transport and distribution of contaminants. Such methodology involves constructing suitable cross-sections and interpreting the distribution of hydrostratigraphic units from boring logs, cone penetrometer test curves, and/or borehole geophysical logs, and then selecting sampling locations and depths appropriately.

Direct push groundwater sampling is commonly used in unconsolidated fine-grained and sandy soils. Problems are encountered when trying to push/drive the sampler through consolidated soils, cemented soils, coble or boulder beds, rubble fill, etc. In addition, some fine-grained beds may not yield water in sufficient volumes to allow sample collection in a timely manner. Evaluation of subsurface data (e.g., boring logs, cross-sections, reports, cone penetrometer tests, borehole geophysical logs, etc.) from the site or adjacent areas may provide information relative to potential problems with direct push sampling, including if the method is viable at the site. This should be done as part of the planning phase.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

6.2 Planning and Preparation

Planning for direct push groundwater sampling activities involves the following:

- Reviewing and following Shaw Procedure HS316 “Drill Rig Operations.”
- Identifying sample collection objectives and exact methodologies and equipment to be used for sample collection.
- Identifying specific locations, targeted depths, and specific identification numbers for groundwater samples to be collected.
- Identifying numbers and volumes of samples to be collected.
- Specifying types of chemical analyses to be conducted for the samples.
- Listing specific quality control (QC) procedures and sampling required.
- Describing any detailed project-specific sampling requirements or procedures beyond those covered in this SOP, as necessary.
- Listing expected soil types, hydrostratigraphy, and/or formations to be encountered.
- Identifying and listing all pertinent health and safety issues and requirements, including those contained in the project-specific health and safety plan(s), relative to work activities, including site utility clearance.
- Compiling main subcontractor requirements for direct push groundwater sampling and generating the statement of work to procure subcontractor services.

The specific sampling methods to be used and detailed procedures for collecting the groundwater samples should be developed to minimize disturbance or alteration of the samples. For example, the procedures for collecting groundwater samples for VOC analysis should prescribe a methodology that minimizes the contact of the sample with air. The methods and procedures should also allow appropriate or successful sample collection with respect to the expected depth to water, total depth, and inside diameter of the temporary screen system. For example, specified pumps should have sufficient power to lift water, and any downhole equipment should be narrow enough to operate without fouling or sticking in the direct push sample tubes.

All of the above information and items should be compiled as part of a sampling plan contained within the project-specific work plans. The work plans should include detailed, project-specific direct push groundwater sampling procedures beyond the basic procedures and requirements in this SOP.

Preparation for direct push groundwater sampling activities includes the following:

- Securing all necessary site access, permitting, and plan approvals.
- Procuring the appropriate direct push sampling subcontractor.
- Completing all necessary underground utility clearance activities at each of the sampling locations; each location should be cleared according to requirements of Shaw Procedure HS308 “Underground/Overhead Utility Contact Prevention” and the project work plans.
- Briefing the rig geologist and other site personnel on specific information necessary for effective implementation of the sampling effort (e.g., sampling objectives, locations, and depths; project-specific sampling requirements and procedures; pertinent health and safety requirements; etc.).
- Verifying that project personnel have proper health and safety training.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

The project manager or designee is responsible for appropriately briefing field personnel, as described above.

6.3 Basic Procedure

The basic procedure for direct push groundwater sample collection is described below. More detailed project-specific procedures, based on sampling and quality control requirements and other aspects of the actual project, should be compiled to supplement this procedure and should be presented in the project work plans.

1. Decontaminate the direct push sampling rig and associated sampling equipment, in accordance with applicable Shaw E & I SOPs and/or project-specific requirements/procedures, before mobilizing to the first sample location.

2. The driller and rig geologist should inspect the direct push rig to verify that the equipment is properly maintained, adequately decontaminated, and capable of achieving the objectives for sampling equipment advancement, groundwater sample collection, and abandonment of the boring.

3. Calibrate all field analytical and health and safety monitoring equipment according to the instrument manufacturer's specifications and/or project work plans. Calibration results must be recorded on the appropriate form(s) as specified by the project work plans or health and safety plan.

4. Wear the appropriate personal protective equipment as specified in the project work plans or health and safety plan. Personal protection will typically include the following, at a minimum: hard hat, safety glasses, gloves, steel-toed boots, hearing protection, and coveralls.

5. Make sure the location is free of underground utilities in accordance with Shaw Procedure HS308 and the project work plans.

6. Between each sampling location and prior to each sampling run, decontaminate the sampling equipment according to applicable Shaw E & I SOPs and/or project-specific procedures.

7. Push or advance the sampling device until it is at the target depth or horizon where the sample is to be collected.

8. Retract the protective sleeve upward until the length of well screen is exposed, allowing water to flow into the sampler.

9. During advancement of the sampling device and collecting of the sample, conduct appropriate health and safety measurements/monitoring as required and specified in the project work plans or health and safety plan.

10. Evaluate for the presence and sufficiency of water within the well screen. This is usually done with a small-diameter electric water-level indicator.

11. If sufficient water is present, perform any purging that is part of the required sampling protocol.

12. Collect the water sample from inside the well screen and transfer into appropriate containers in accordance with appropriate Shaw E & I SOPs and project-specific requirements. Label and number each sample container according to applicable Shaw E & I SOPs and/or the project work plans.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

13. Document the sampling event on the appropriate form(s), as specified in the project work plans. The information listed on the form(s) should, at a minimum, include the following:
    - Project name and number
    - Date and time of the sampling event
    - Sampling methods used – specify sample type
    - Sample number
    - Sample location
    - Sample depth interval
    - Sample description (type of matrix)
    - Weather conditions
    - Unusual events, including lack of water or insufficient water volume in sampler
    - Signature or initials of sampler
14. Appropriately preserve, package, handle, and ship the sample in accordance with applicable Shaw E & I technical SOPs and/or project-specific procedures. The samples shall also be maintained under custody. Samples stored on site will be subject to the provisions of applicable Shaw E & I procedures and/or project requirements. All reasonable attempts should be made to ship samples on the date they are collected.
15. Perform any other downhole operations that are required prior to abandoning the hole, including removing the direct push sampling equipment from the boring.
16. Fill the boring with grout in accordance with applicable Shaw E & I SOPs and/or project-specific requirements/procedures.

6.4 Documentation

Accurate documentation of the sampling event (e.g., emplacement of the temporary screen system, development of the temporary installation, sample collection, etc.) and the sample condition are important for interpreting the quality of the analyte concentrations found within the sample, and for ensuring that various project and quality control requirements are met. Such documentation should be compiled on the appropriate forms as specified in the project work plans. In addition, some regulatory agencies may require that any boring that penetrates the water table be reported in the same manner as a monitoring well. This may necessitate generation of a well construction diagram and/or boring log. Such documentation requirements should be specified in the project work plans.

6.5 Technical Review

Direct push groundwater sampling specifications, procedures, and results (e.g., reports, logs, etc.) should undergo technical review. It is recommended that the technical reviewer also provide review/oversight of the actual field implementation of the sampling activities. This may include aiding in troubleshooting sampling problems. The technical reviewer should be an experienced senior geologist or hydrogeologist. At a minimum, the technical reviewer should be a person capable of planning and supervising direct push groundwater sampling programs. Individuals needing assistance in finding qualified technical reviewers may consult internal Shaw technical listings for experts in direct push sampling.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

Any issues raised during the technical review shall be resolved between the reviewer and staff planning, conducting, or preparing results of direct push groundwater sampling activities as follows:

- Comments/issues raised relative to planning and developing detailed procedures for sampling should be resolved before mobilization and sampling commences.
- Comments/issues raised relative to results of sampling activities should be resolved before external use or submission (i.e., outside of Shaw E & I) of the results.

The technical review comments and issues, and corresponding resolution, shall be documented and filed with the project records. The records should be maintained until project closeout.

7. ATTACHMENTS

None.

8. FORMS

None.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

STANDARD OPERATING PROCEDURE

Subject: Low Flow/Micro-Purge Well Sampling

1. PURPOSE

This procedure is intended to provide methods for low-flow sampling of groundwater from monitoring wells. Low-flow or micro-purge sampling is a method of collecting samples from a well that does not require the removal of large volumes of water from the well and therefore does not overly agitate the water and suspended particles or potentially aspirate VOCs. The method entails the removal of water directly from the screened interval without disturbing any stagnant water above the screen by pumping the well at low enough flow rates to maintain minimal drawdown of the water column followed by in-line sample collection. Typical flow rates for low-flow sampling range from 0.1 L/min to 0.5 L/min depending on site characteristics.

2. SCOPE

This procedure is applicable to all Shaw E & I projects where groundwater samples will be collected from a monitoring well using low-flow or micro-purge methods and where no project/program specific procedure is in use.

3. REFERENCES

- U.S. Army Corps of Engineers, 2001, *Requirements for the Preparation of Sampling and Analysis Plans*, Appendix C, Section C.2, EM200-1-3, Washington, D.C.
- American Society for Testing and Materials, D6771-02, *Standard practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations*, West Conshohocken, PA.
- American Society for Testing and Materials, D4448-01, *Standard Guide for Sampling Ground-Water Monitoring Wells*, West Conshohocken, PA .
- U.S. Environmental Protection Agency Region 1, 1996, *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells*, SOP GW0001, Revision 2, July 30.

4. DEFINITIONS

- **Low Flow**—Refers to the velocity that is imparted during pumping to the formation adjacent to the well screen, not necessarily the flow rate of the water discharged by the pump at the surface.
- **Micro-purge**—Another term for low-flow sampling referred to as such due to the fact that pre-sampling groundwater removal (purging) is performed at flow rates 2 to 3 orders of magnitude less than typical bailer or pump methods.
- **Pump**—An electric, compressed air, or inert gas driven device that raises liquids by means of pressure or suction. The types of pumps used for well purging should be chosen based on the well size and depth, the type of contaminants, and the specific factors affecting the overall performance of the sampling effort. Low flow/micro-purge sampling is performed using

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

specially constructed pumps, usually of centrifugal, peristaltic, or centrifugal submersible design, with low draw rates (<1.0L/min).

- **Well Purging**—The action of removing groundwater using mechanical means from a monitoring well prior to collecting groundwater samples. Purging removes the stagnant groundwater from the column allowing the groundwater surrounding the well screen to enter the collection zone.

5. RESPONSIBILITIES

5.1 Procedure Responsibility

The Field Sampling Discipline Lead is responsible for maintenance, management, and revision of this procedure. Questions, comments, or suggestions regarding this technical SOP should be directed to the Field Sampling Discipline Lead.

5.2 Project Responsibility

Shaw employees performing this task, or any portion thereof, are responsible for meeting the requirements of this procedure and utilizing materials of a construction specified in the project plans or applicable to the contaminants of concern and other aspects of the sampling effort. These aspects may include well diameter, well construction materials, depth to water, and the presence of DNAPL or LNAPL contaminants. Shaw employees conducting technical review of task performance are also responsible for following appropriate portions of this SOP.

For those projects where the activities of this SOP are conducted, the Project Manager, or designee, is responsible for ensuring that those activities are conducted in accordance with this and other appropriate procedures. Project participants are responsible for documenting information in sufficient detail to provide objective documentation (checkprints, calculations, reports, etc.) that the requirements of this SOP have been met. Such documentation shall be retained as project records.

6. PROCEDURE

Low-flow/micro-purge sampling involves removing water directly from the screened interval without disturbing any stagnant water above the screen or without lowering the water table. Since it is not based upon the removal of well volumes, it requires in-line monitoring of water quality parameters which may include pH, specific conductivity, temperature, dissolved oxygen, and redox potential to determine when the groundwater sample zone has stabilized. The sample is then collected using the same pump directly from the discharge tubing.

6.1 Considerations

The following variables should be reviewed in planning for low-flow purging and sampling:

- **Recharge capacity of each well:** The recharge capacity of a well will determine how fast the well should be purged. The purge rate should be no greater than the recharge rate of the groundwater zone to prevent water table drawdown.

- **Well construction details, including well depth, diameter, screened interval, screen size, material of construction, and depth to water table:** The diameter and well depth will determine the size of the pump and the location from which the pump will operate. Peristaltic and suction draw pumps are only viable at depths of less than 25 feet. The pump intake should be placed within the well screen.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- **Pump:** Low-flow purging and sampling can be used in any well that can be pumped at a constant rate of not more than 1.0 L/min. Continuous discharge and cycle discharge pumps with adjustable flow rate controls should be used to avoid causing continuous drawdown. Whenever possible, dedicated pumps should be installed to avoid disturbing the water column.

- **Groundwater quality, including type and concentration of chemical compounds present:** Low-flow methods can be used for all types of aqueous-phase contamination, including VOCs, SVOCs, metals, pesticides, PCBs, radionuclides, and microbiological constituents. Pump parts and tubing should be made of materials that are compatible with the analytes of interest.

6.2 Equipment

The following equipment is recommended for use in conducting well purging:

- Pump capable of <1.0L/min draw rates
- Discharge line constructed of material compatible with the contaminants of interest. Enough for a fresh line to be used at each well
- Water level indicator
- Flow-through Water Quality Meter (pH, specific conductance, temperature, optional Dissolved Oxygen, Redox potential)–calibrated
- Nephelometer–for turbidity measurement-calibrated (if required)
- Photoionization Detector (PID)–calibrated (if screening for VOCs is required)
- Drums or tanks to contain the purge water
- Field log book
- Calculator
- Plastic sheeting
- Sample containers and preservatives
- Ice and Ziploc-type bags

6.3 Pre-Sampling

To prevent cross-contamination of other wells on-site, upgradient and background wells should be addressed first. It is also a good idea to use fresh discharge line for each well as the low-flows make it difficult to flush contaminants between samples. The procedure for pre-sampling is as follows:

- Prepare the area surrounding the well by placing plastic sheeting on the ground surface to prevent potential cross-contamination of the pump and discharge hose or sample equipment and materials.
- Place and secure the drum, tank, or suitable purge water container in close proximity to the well for the collection and storage of purge water. *Purge water must be containerized and disposed of in the manner specified in the project/program plan or as the client directs.* ***Never*** *return purge water to the well.* If in doubt or where requirements are not specified, handle all purge water as waste and dispose of it accordingly.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- If performing VOC screening, measure and record the background organic vapors in the ambient air using a PID, in accordance with manufacturer recommendations.
- Open the well casing, remove the well cap, and immediately measure and record the organic vapor levels from the head space within the well casing using a PID, in accordance with manufacturer recommendations.
- Measure the depth to the static water level using the water level indicator in accordance with Procedure EI-FS108, *Water Level Measurements*.

6.4 Well Purging

The procedure for well purging is as follows:

- Review and understand the proper operating and maintenance instruction for each type of pump that is used prior to placing the pump in the well. Each pump type has specific operating procedures.
- Some wells may include a dedicated pump that is already placed in the well along the well screen. If this is the case, review well construction data to verify the proper placement of the pump intake. Inspect the location where the discharge line and pump support cable exit the well to determine that they are in the proper position (markings should be present at the well head to show this).
- Assemble the pump and clean discharge line in accordance with manufacturer instructions. Ensure the pump discharge line is long enough so that the pump intake can be located within the well screen area and the discharge end can reach the purge water container.
- Slowly lower the pump into the well until it is submerged and at the desired pumping depth.
- Connect the pump discharge to the flow-through water quality meter system in accordance with the manufacturer's procedure.
- Start the pump and begin monitoring discharge rates and volume collected. Adjust flows if necessary to remain in a range of 0.1 to 0.5L/min without exceeding the well discharge rate.
- Monitor and record the pH, conductivity, temperature, dissolved oxygen, redox potential, and turbidity at set intervals (2 to 10 minutes).
- Collect the sample following the procedure below when all monitored water quality parameters are stable, as indicated by three consecutive readings differing by less than 10 percent. For pH use +/-0.3 units as the standard.

6.5 Sample Collection

The procedure for sample collection is as follows:

- Prepare the sample bottles and preservatives required for the sampling.
- Don a pair of clean gloves.
- Collect the sample immediately after purging through the pump discharge line.
  - Fill VOA vials first (reduce the flow rate of the pump discharge) allowing the liquid to slowly fill the container without agitation and obtain a meniscus slightly above the top of the vial.
  - Cap and check all VOA vials for entrained air by slowly tipping and observing for bubbles. If any are present, discard the sample and collect again as above.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- Continue filling all required sample bottles.
- Add preservatives to the samples as needed, and place the sample bottles on ice. Note that most sample bottles come with preservatives already added. If such is the case, do not overfill the bottles.
- Replace the well cap, if required, and lock the cover.
- Record the sampling information.
- For a dedicated down-hole pumping system, do not decontaminate the pump but rinse the water quality meter's flow-cell and probes with distilled water.
- If using a non-dedicated pump and meter system, decontaminate the pump and meter.
  - Retrieve the pump and remove and dispose of the discharge line, including the line leading to and from the water quality meter system.
  - Rinse the water quality meter system with distilled water.
  - Attach a few feet of clean line to the pump and water quality meter system with a discharge end into the purge waste container.
  - Place the pump into a container of distilled water, adjust the flow to its maximum, and allow the entire system to flush with distilled water for at least 5 minutes or longer if the waste does not appear to be clean.
- Secure the area by removing equipment and materials, properly dispose of plastic sheeting and other disposable sampling materials, and close the purge water container(s).
- Proceed to the next well and repeat the process using clean discharge tubing for each well sampled.

7. ATTACHMENTS

None.

8. FORMS

None.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

STANDARD OPERATING PROCEDURE

Subject: Standards for Aquifer Testing

1. PURPOSE

This procedure provides the standard practice for aquifer testing. The procedure includes the minimum required steps and quality checks that employees and subcontractors are to follow when performing the subject task.

This procedure may also contain guidance for recommended or suggested practice that is based upon collective professional experience. Recommended practice goes beyond the minimum requirements of the procedure, and should be implemented when appropriate.

2. SCOPE

Geosciences Standard Operating Procedure (SOP) EI-GS045 describes standards for designing, implementing, and analyzing aquifer tests conducted for projects executed by Shaw Environmental & Infrastructure, Inc. (Shaw E & I). For the purposes of this SOP, aquifer tests include slug, specific capacity, step drawdown, and single and multiple well constant rate pumping tests. The SOP addresses technical requirements and required documentation. Responsibilities of individuals performing the work are also detailed. Additional project-specific requirements for aquifer testing may be developed as necessary, to supplement this procedure and to address project-specific conditions and/or objectives.

Packer Test procedures are not included as part of this SOP. However, ASTM references for these types of aquifer tests are included in the reference section for completeness.

3. REFERENCES (STANDARD INDUSTRY PRACTICES)

Aquifer test design, implementation, and analysis shall follow accepted industry practices as defined in the latest version of the following ASTM Standards:

ASTM D 4043	Standard Guide for **Selection of Aquifer Test Method** in Determining Hydraulic Properties by Well Techniques
ASTM D 4044	Standard Test Method (Field Procedure) for Instantaneous Change in Head (**Slug) Tests** for Determining Hydraulic Properties of Aquifers
ASTM D 4050	Standard Test Method (Field Procedure) for Withdrawal and Injection Well Tests for Determining Hydraulic Properties of Aquifer Systems (**Test Planning**)
ASTM D 4104	Standard Test Method (Analytical Procedure) for Determining Transmissivity of Nonleaky Confined Aquifers by Overdamped Well Response to Instantaneous Change in Head (**Slug Tests**)
ASTM D 4105	Standard Test Method (Analytical Procedure) for Determining Transmissivity and Storage Coefficient of **Nonleaky Confined Aquifers** by the Modified Theis Nonequilibrium Method

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

ASTM D 4106	Standard Test Method (Analytical Procedure) for Determining Transmissivity and Storage Coefficient of **Nonleaky Confined Aquifers** by the Theis Nonequilibrium Method
ASTM D 4630	Standard Test Method for Determining Transmissivity and Storage Coefficient of Low-Permeability Rocks by In Situ Measurements Using the Constant Head Injection Test (**Packer Test**)
ASTM D 4631	Standard Test Method for Determining Transmissivity and Storativity of Low Permeability Rocks by In Situ Measurements Using Pressure Pulse Technique (**Packer Test)**
ASTM D 4750	Standard Test Method for **Determining** Subsurface **Liquid Levels** in a Borehole or Monitoring Well (Observation Well)
ASTM D 5269	Standard Test Method for Determining Transmissivity of **Nonleaky Confined Aquifers** by the Theis Recovery Method
ASTM D 5270	Standard Test Method for Determining Transmissivity and Storage Coefficient of **Bounded, Nonleaky, Confined Aquifers**
ASTM D 5472	Standard Test Method for Determining **Specific Capacity** and Estimating Transmissivity at the Control Well
ASTM D 5473	Standard Test Method (Analytical Procedure) for Analyzing the Effects of **Partial Penetration** of Control Well And Determining Horizontal and Vertical Hydraulic Conductivity in a **Nonleaky Confined Aquifer**
ASTM D 5716	Standard Test Method for **Measuring** the Rate of **Well Discharge** by Circular Orifice Weir
ASTM D 5737	Standard Guide for Methods for **Measuring Well Discharge**
ASTM D 5785	Standard Test Method (Analytical Procedure) for Determining Transmissivity of **Confined Nonleaky Aquifers** by Underdamped Well Response to Instantaneous Change in Head (**Slug Test**)
ASTM D 5786	Standard Practice (Field Procedure) for Constant Drawdown Tests in **Flowing Wells** for Determining Hydraulic Properties of Aquifer Systems
ASTM D 5850	Standard Test Method (Analytical Procedure) for Determining, Transmissivity, Storage Coefficient, and **Anisotropy Ratio** from a Network of **Partially Penetrating Wells**
ASTM D 5855	Standard Test Method (Analytical Procedure) for Determining Transmissivity and Storage Coefficient of a **Confined Nonleaky or Leaky Aquifer** by Constant Drawdown Method in a **Flowing Well**
ASTM D 5881	Standard Test Method (Analytical Procedure) for Determining Transmissivity of Confined Nonleaky Aquifers by Critically Damped Well Response to Instantaneous Change in Head (**Slug**)
ASTM D 5912	Standard Test Method (Analytical Procedure) for Determining Hydraulic Conductivity of an Unconfined Aquifer by Overdamped Well Response to Instantaneous Change in Head (**Slug**)
ASTM D 5920	Standard Test Method (Analytical Procedure) for Tests of **Anisotropic Unconfined Aquifers** by Neuman Method

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

ASTM D 6028 — Standard Test Method (Analytical Procedure) for Determining Hydraulic Properties of a **Confined Aquifer** Taking into Consideration Storage of Water In **Leaky Confining Beds** by Modified Hantush Method

ASTM D 6029 — Standard Test Method (Analytical Procedure) for Determining Hydraulic Properties of a **Confined Aquifer** and a **Leaky Confining Bed** with Negligible Storage by the Hantush-Jacob Method

ASTM D 6034 — Standard Test Method (Analytical Procedure) for Determining the **Efficiency** of a **Production Well** in a Confined Aquifer from a Constant Rate Pumping Test

Additional reference materials, which are useful for designing, conducting, and analyzing aquifer tests, include the following:

- Batu, V, 1998, *Aquifer Hydraulics, A Comprehensive Guide to Hydrogeologic Data Analysis*, John Wiley & Sons, Inc.
- Butler, J.J. Jr., 1998, *The Design, Performance, and Analysis of Slug Tests*, Lewis Publishers.
- Dawson, K.J. and J.D. Istok, 1991, *Aquifer Testing, Design and Analysis of Pumping and Slug Tests*, Lewis Publishers.
- Driscoll, F.G., 1995, *Groundwater and Wells*, U.S. Filter/Johnson Screens, St. Paul, MN.
- Domenico, P.A., 1972, *Concepts and Models in Groundwater Hydrology*, McGraw Hill Book Company.
- Fetter, C.W., 1988, *Applied Hydrogeology*, Merrill Publishing Company.
- Kruseman G.P. and N.A. de Ridder, 1990, *Analysis and Evaluation of Pumping Test Data*, International Institute for Land Reclamation and Improvement, 2nd. Ed.
- Lohman, S.W., 1979, *Groundwater Hydraulics*, U. S. Geological Survey, Professional Paper 708.
- Walton, W.C. 1987, *Groundwater Pumping Tests, Design and Analysis*, Lewis Publishers, Inc.

4. DEFINITIONS

The following definitions are applicable to aquifer testing.

- **Aquifer Testing**—Refers to physical testing methods used to determine the hydraulic properties of confined and unconfined aquifers or formations. Slug, specific capacity, step-drawdown, and constant rate pumping tests are commonly used testing methods and are collectively covered under the term “aquifer testing” in this SOP.
  - **Slug Tests**—Conducted by instantaneously (or nearly instantaneously) changing the water level in a well by adding, removing, or displacing a known volume of water and then monitoring the water level recovery in the well. Slug tests are performed with either falling or rising head within a monitoring well.
  - **Specific Capacity Tests**—Short-term single-well pumping tests used to determine well efficiency and to estimate aquifer transmissivity. The method consists of measuring the stabilized drawdown in the well while pumping at a constant discharge (or as a step drawdown test). Specific capacity tests can be conducted immediately after well development, utilizing the pump used for the development. While less accurate than long-term multi-well pumping tests, the tests provide fast and easy-to-interpret data for estimating aquifer transmissivity.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- **Step-Drawdown Tests**—Conducted by pumping the well at several successively higher rates and measuring the corresponding water level drawdown. These tests are used to estimate well performance, determine a sustainable optimum pumping rate for the well, and estimate aquifer properties. Specific capacity can be determined for each pumping step to determine the most efficient extraction rate.

- **Constant Rate Pumping Tests**—The method generally involves extracting water at a constant rate from a well by pumping, and monitoring (measuring) the corresponding water level drawdown in nearby observation wells. The recovery of water levels in the observation wells may also be monitored after pumping is terminated (recovery test). Water level monitoring during a pumping and recovery test commonly includes the pumping well and one or more nearby observation wells. In certain instances, observation wells are not available, and water level monitoring is limited to only the pumping well.

- **Cone of Depression**—A depression in the groundwater table or potentiometric surface that has the shape of an inverted cone around a well from which water is being withdrawn.

- **Confined Aquifer**—An aquifer that is overlain and/or underlain by confining layers of lower hydraulic conductivity and that has, at a given point, a total head that is higher than the base of the upper confining layer.

- **Drawdown (s)**—The difference between the height of the static water level and the height of the water level in a well during pumping or water withdrawal. Or, in a confined aquifer, the reduction of the pressure head as a result of the withdrawal of free water.

- **Discharge (Q)**—Volume of water removed per unit of time from a well.

- **Electric Well Tape or Electric Tape**—A water level measuring device that uses a light, or sounds a buzzer, to indicate that the end of the tape has entered the water. The water in the well completes an electric circuit that turns on the light or sounds the buzzer. The tape is graduated to show the depth to water in the well.

- **Flow Regulator** (or flow controller)—A device used to control the discharge rate (in volume/time) of water from the well while pumping. The discharge from the mechanical pump is normally set at a constant rate.

- **Hydraulic Conductivity (K**)—A quantitative measure of the ability of a porous material to transmit water. Also defined as the volume of water that will flow through a unit area of porous material per unit time under a unit hydraulic gradient. Hydraulic conductivity is dependent upon properties of the material and fluid.

- **Hydraulic Head (total)**—The sum of the elevation head, the pressure head, and the velocity head at a given point in an aquifer.

- **Measuring Point**—A fixed and clearly identified point of reference from which water levels in a monitoring or extraction well may be measured. It is generally established on the upper rim of the outer protective well casing and has a surveyed location and elevation.

- **Mechanical Pump**—A powered water pump (generally electric) used to withdraw water from the well during a pumping test.

- **Observation or Monitoring Well**—A non-pumping well used to monitor the groundwater levels during a pumping test.

- **Potentiometric Surface**—A surface that represents the level to which water will rise in a tightly cased well. If head varies significantly with depth in an aquifer then there may be more than one potentiometric surface. The water table is the uppermost potentiometric surface of an unconfined aquifer.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- **Pressure Transducer and Data Logger**—An electronic sensor and storage device that can accurately measure hydrostatic pressure and store the data for future use. By relating hydrostatic pressure to depth below the water surface, the water level in the well can be electronically measured by the pressure transducer. Periodic water level measurements can be taken and stored automatically by the data logger, without operator assistance, for later recall and data evaluation.

- **Recovery**—The time rate of return to the static water level during an aquifer test. This is related to the aquifer's response to the change in water level during the test. After the water level has been raised or lowered, the water will return to static conditions (static water level). Usually the water level is allowed to recover to 80 to 90 percent of the initial condition, but in some cases recovery can be as high as 95 percent before ending or repeating the test. The degree of required recovery is dependent on the formation storage coefficient.

- **Saturated Thickness (b)**—For unconfined aquifers, the interval between the water table and base of the unconfined water bearing unit. For confined aquifers, the interval between the base of the upper confining unit and the top of the lower confining unit.

- **Slug**—A solid metallic or PVC rod (or weighted cylinder) of known volume that is lowered into and removed from a well to displace the water during a slug test.

- **Specific Capacity**—A measure of the efficiency of a pumping well recorded as discharge per unit of drawdown in a pumping well (Q/s).

- **Specific Yield (Sy)**—The ratio of the volume of water that saturated soil or rock will yield under the influence of gravity, per unit volume of the saturated soil or rock. Specific yield is dimensionless.

- **Storage Coefficient or Storativity (S)**—The volume of water that an aquifer releases from or takes into storage per unit area of aquifer, per unit change in head. Storage coefficient is dimensionless.

- **Transmissivity (T)**—A quantitative measure of the ability of an aquifer to transmit water. It is the product of the hydraulic conductivity (K) and saturated thickness (b). Also defined as the volume of water that will flow through a unit thickness of an aquifer per unit time under a unit hydraulic gradient.

- **Unconfined Aquifer**—An aquifer in which the water table forms the upper boundary.

- **Water Level**—The position of the air-water interface in a well. The water level is usually measured as the depth to the water from a measuring point (such as the top of the outer protective well casing) by the use of a weighted measuring tape or electric sounder. Changes in the water level over time may also be monitored by a pressure transducer installed at a known depth within the water column inside the well. The water level is called the static water level when it is not influenced by well drilling activities, aquifer testing, well development, or groundwater sampling.

- **Water Table**—The saturated zone surface at which the pore water pressure is equal to atmospheric pressure. The water table is the uppermost potentiometric surface for an unconfined aquifer.

5. RESPONSIBILITIES

5.1 Procedure Responsibility

The Geosciences Discipline Lead is responsible for the development, maintenance, and revision of this procedure. Any questions, comments, or suggestions regarding this technical SOP should be

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

directed to the Geosciences Discipline Lead. The Geosciences Discipline Lead's location and associated contact information can be found on the Shaw Group intranet site, ShawNet.

5.2 Project Responsibility

Employees designing, conducting, or analyzing aquifer tests, or any portion thereof, are responsible for meeting the requirements of this procedure. Employees conducting technical review or oversight of aquifer tests are also responsible for following appropriate portions of this SOP. Project participants are responsible for recording information in sufficient detail to provide objective documentation (field notes, forms, calculations, reports, etc.) that the requirements of this SOP have been met. Such documentation shall be retained as project records.

6. PROCEDURES (TECHNICAL REQUIREMENTS AND STANDARDS)

This section presents planning, basic methodology, documentation, and review requirements for aquifer testing. Basic procedures for conducting aquifer tests are provided as Attachments 1 through 4 and are listed in Section 7. Attachment 5 provides some special considerations for setting up and performing slug and pumping tests.

6.1 Planning

Aquifer testing is a controlled field experiment conducted to determine the approximate hydraulic properties (e.g., transmissivity, hydraulic conductivity, and storage coefficient) of water-bearing materials. All aquifer testing must incorporate and be tailored to the following:

- Known or assumed site-specific hydrogeologic conditions (confined, unconfined, leaky aquifer, fractured or low-yield formations, etc.)
- Targeted parameters to be evaluated
- Analytical methodologies, assumptions, and limitations

These factors must be considered and the aquifer tests designed well before implementation in the field. Aquifer testing information and specifications to be considered will include, at a minimum, the following:

- Objectives of the aquifer testing
- Aquifer parameters to be evaluated
- Known or assumed hydrogeologic conditions
- Types of aquifer tests to be conducted
- Limitations of the aquifer test methodologies
- Duration of the test
- Procedures for tests to be conducted
- Site access and restrictions on equipment layout
- Exact wells to be used for testing
- Construction and condition of the wells to be used
- Distance wells are spaced apart and their distance/direction from pumping wells
- Equipment to be used (simple or complex)

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

- Type, duration, and frequency of measurements to be made
- Water handling and disposal
- Data correction for tidal and barometric influences
- Data analysis techniques to be used (including analytical software)
- Additional procedures or requirements beyond those covered in this SOP

The above information and specifications must be compiled during the planning and design phases of the testing and should be included in project-specific work plans. The assumptions underlying the conventional analysis techniques applied to the test results (data) must be known and incorporated in the planning and analysis of the test(s). The limitations of the technique for determining aquifer parameters are related to the correspondence between the field situation and the simplifying assumptions of the analysis method(s). Such limitations should be understood and considered during planning analysis and review of test results.

6.2 Methodology and Basic Issues

This text describes the basic methods for conducting slug, specific capacity, step drawdown, and constant rate pumping tests. Example general procedures for conducting each of these aquifer test methods and special considerations are attached to this SOP (see Section 7). The general procedures should be modified as appropriate to address specific site conditions and requirements. These detailed project-specific procedures should be presented in the project work plans.

6.2.1 Slug Tests

A slug test is an aquifer test to determine hydraulic conductivity, in which the water level in a well is instantaneously changed by removing, adding, or displacing a known volume of water. The water level response is monitored over a period of time in the slugged well. The water level response is generally proportional to the hydraulic conductivity of the water-bearing unit.

A known volume of water can be removed relatively rapidly from the well with a submersible pump or bailer. Potable water can be added rapidly to a well by directly dumping from a container. However, the most common method used in environmental projects involves the insertion and removal of a solid slug (e.g., a solid cylindrical PVC blank), which instantaneously displaces the water level inside the well. The added or removed solid slug or water volume should be sufficient to create a measurable displacement in water level.

During testing, water levels may be measured with an electric tape if the wells recharge slowly. However, pressure transducers (with associated data loggers) are more commonly used to measure water levels, as they can record a large number of measurements on a more rapid basis. Many brands of transducer/data logger packages have the ability to pre-program the rate of measurement, obtaining frequent measurements during the initial portions of the test and less frequent measurements near the end of the test as the water level slowly stabilizes. For convenience in performing the test, some data loggers can be programmed to store data only after a specified change in water level has taken place. Attachment 1 provides the general procedure for performing slug tests.

Slug tests are commonly used testing methods to determine the hydraulic conductivity of confined and unconfined aquifers. Slug tests are low-cost, relatively simple and rapid tests that are very useful in formations that do not have very high hydraulic conductivity. Usually, no water has to be handled, and the analysis of data is usually straightforward. However, the test is limited to the immediate vicinity of the well, and the results of the slug tests are heavily impacted by drilling-induced formation disturbances, well completion, completeness of well development, and well screen fouling. The simplicity of the technique can also breed a certain casualness among those performing the tests and analyzing the test data.

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

Attention to detail regarding the installation and development of monitoring wells, along with attention to detail during the design, implementation, and analysis of slug tests, can greatly the improve the representativeness and accuracy of the results. Falling head tests (slug-in) should not be performed where the slug of water will flow into the unsaturated zone, and caution must be exercised in low-permeability formations where the well filter pack permeability is much greater then the formation. In the later case, the slug of water may move up or down the filter pack rather than in or out of the formation, leading to erroneous results.

6.2.2 Specific Capacity Testing

Specific capacity tests are short-term, single-well pumping tests, generally performed to test well efficiency. The method consists of measuring the stabilized drawdown in the well while pumping at a uniform rate. The tests may be conducted in monitoring, extraction, and injection wells. Specific capacity tests can be conducted at the end of well development, using the pump utilized for development. Specific capacity can also be determined for each pumping rate while conducting step drawdown tests. Attachment 2 provides the general procedure for performing specific capacity tests.

While less accurate than long-term multiple well pumping tests, specific capacity tests provide fast and easy-to-interpret data for estimating transmissivity of the water-bearing unit. The aquifer transmissivity is estimated from well specific capacity data (Driscoll, 1995, pg. 1021). The simplifying assumptions of the Theis equation and application are never fully met in a specific capacity field test situation. Generally the values of transmissivity derived from specific capacity vary from those values determined from aquifer pumping tests using observation wells placed at a distance from the pumping well. These differences may be due to well construction, gravel pack, well development, partial penetration, well efficiency, or near-well aquifer conditions. Therefore, the transmissivity values derived from the specific capacity tests may be viewed as estimated values.

6.2.3 Step Drawdown Tests

A step-drawdown test is conducted for the pumping well and is recommended prior to initiation of any constant rate pumping test. The data provided by the step drawdown test is used to evaluate well performance and to determine the optimum discharge for the subsequent constant rate test.

The step drawdown test entails conducting three or more steps of increased discharge while monitoring water level drawdown. Each step is conducted until the water level drawdown shows signs of stabilization. This effectively produces successive stepped drawdown curves. Aquifer testing may potentially be discontinued at a well after the step-drawdown pumping test if 1) only a single well pumping test is planned and 2) the step-drawdown test provides all the necessary data of a single well pumping test. Specific capacity of the pumping well can be determined at each step to determine the optimum and sustainable pumping rate of the extraction well. Attachment 3 provides the general procedure for performing step drawdown tests.

If drawdown is excessive during the initial pumping step, a decreasing discharge step test may be performed. Data analysis will be the same as for an increasing discharge step test.

6.2.4 Single or Multiple Well Constant Rate Pumping Tests

A constant rate pumping test involves pumping water (using a mechanical pump) from a well at a constant discharge, and monitoring the water level drawdown in response to the pumping to determine the transmissivity and storage coefficient of the aquifer. Water level recovery may also be monitored after the pumping is discontinued. When designed, conducted, and analyzed properly, the data and corresponding analysis results from pumping tests tend to be more reliable than from slug or specific capacity tests. Attachment 4 provides the general procedure for performing single or multiple well constant rate pumping tests.

Water level monitoring may be limited to the pumping well (single well pumping test) or may include one or more nearby observation wells (multiple well pumping test). For the single well pumping test,

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

the water level drawdown and recovery are measured only in the pumping well. The storage coefficient of the aquifer cannot be determined from the pumping well data.

The multiple well test utilizes not only the pumping well but one or more observation (monitoring) wells at selected distances and locations relative to the pumping well. Water levels are monitored in the pumping and observation wells throughout the duration of the test. Selection of observation wells should consider well screen interval, depth and hydrostratigraphic zone of completion, and direction and distance from the pumping well.

6.3 Documentation

Documentation of aquifer test design, implementation, description/discussion of data analysis techniques (including software), and analysis results shall be placed in the project files and shall include all field forms, notes, logs, plots or graphs, calculation sheets, and electronic or hard copy data files.

6.4 Technical Review

All aquifer test procedures, data analysis, and results shall undergo technical review. It is also recommended that the technical reviewer provide review/oversight of the actual field implementation of the aquifer test(s). The technical reviewer should be an experienced senior geologist or hydrogeologist. At a minimum, the technical reviewer should be a person capable of designing and conducting the aquifer tests. However, the technical reviewer should not have developed or conducted the particular test to be reviewed. Individuals needing assistance in finding qualified technical reviewers may consult internal Shaw technical listings for experts in aquifer testing.

The technical review, at a minimum, should consider and evaluate the following items:

- Hydrogeologic setting (soil types and degree of stratification, confined or unconfined water-bearing zone)
- Appropriateness of the test method selected
- Appropriateness and content of the test procedure (described in project work plans)
- Duration of the test
- Pumping and observation well construction details and development
- Selection and layout of the test equipment
- Execution of the procedure
- Quality of the data collected
- Appropriate and required data corrections for tidal and barometric influences
- Appropriateness of data analysis method and data analysis software
- Validity and/or viability of any and all assumptions used in selecting test method, selecting analysis method, and conducting analysis of the field data
- Completeness and technical viability of analysis conducted on field data
- Technical validity/supportability of analysis results
- Documentation of results

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

Any issues raised during the technical review shall be resolved between the reviewer and the staff conducting the aquifer tests before external (i.e., outside of Shaw) use or submission of the results. The technical review comments and issues, and corresponding resolution, shall be documented and filed with the project records. Such records should be maintained until project closeout.

7. ATTACHMENTS

- Attachment 1, General Procedure for Performing Slug Tests
- Attachment 2, General Procedure for Performing Specific Capacity Tests
- Attachment 3, General Procedure for Performing Step-Drawdown Tests
- Attachment 4, General Procedure for Performing Single and Multiple Well Constant Rate Aquifer Pumping Tests
- Attachment 5, Special Considerations for Setting Up and Performing Slug and Aquifer Pumping Tests

8. FORMS

- Slug Test Data Sheet

This document contains proprietary information of Shaw Environmental & Infrastructure Inc. Shaw Environmental & Infrastructure, Inc. retains all rights associated with theses materials, which may not be reproduced without express written permission of the company.

Attachment 1
General Procedure for Performing Slug Tests

The general procedure/approach described below is written for use with a slug and pressure transducer/data logger during the test. The approach covers both slug insertion (slug-in) and slug withdrawal (slug-out) portions of slug testing. In certain instances, only the slug withdrawal test data are used for analysis. However, it is advisable to still conduct the slug insertion test even if only using the withdrawal test data for evaluation of aquifer hydraulic conductivity. The slug insertion test can provide information to make necessary adjustments to the withdrawal test in the field. This approach is readily adaptable for other slug testing methods.

1. Select wells with known and adequate/appropriate construction for testing, and ensure that the wells to be tested are adequately developed before commencing test activities. If more than one well is available, select the one that best represents the area or lithologic/hydrogeologic unit of concern.

2. Inspect the equipment to ensure that it is in good working order. Slug test equipment will vary depending on the formation, other site conditions, the diameter and depth of the wells, and the number of the wells to be tested. To reduce slug rod spinning, select a rope that will not twist when stretched while in tension.

3. Calibrate and test all measuring and testing equipment prior to use, in accordance with manufacturer's specifications and appropriate project-specific requirements and procedures.

4. Decontaminate all downhole equipment in accordance with applicable Shaw E & I and project-specific requirements/procedures. If the contaminant histories of the wells to be tested are known or anticipated, the slug should be selected to be chemically compatible with the formation water, and tests should be performed starting with the least contaminated well and ending with the most contaminated. Also, it is recommended to replace braided rope or line that has been submerged during slug testing of one well before moving on to another well. These practices will reduce the potential for cross-contamination between wells.

5. Visually inspect the wellhead for damage or obstructions that could hinder transducer or slug insertion or removal. Use a mirror or flashlight to inspect the well. If it is not vertically straight, install the transducer cable to one side of the well, insert the slug, and test for free movement.

6. Obtain a water level depth measurement and sound the bottom of the well. If LNAPL or DNAPL is expected, use an interface probe for monitoring. Compare the measured total depth to the bottom of the well with the well construction diagram/information, to determine if sediment is in the bottom of the well. It is important not to set the pressure transducer in the sediment. Temporarily install the pressure transducer in the well and connect it to the data logger. Read the depth before securing the transducer in the well. Install the pressure transducer in the water column to a depth that will not interfere with the insertion or withdrawal of the slug during testing, but also not exceed the maximum head limitation of the transducer. Secure the pressure transducer so that it will not move during the test.

7. Calculate the height of the water column in the well. The height of the water column should be sufficient to totally immerse the slug and also allow concurrent use of a pressure transducer or other measuring equipment during the testing.

8. Connect the pressure transducer to the data logger.

9. Obtain a barometric pressure measurement if testing (recovery of water level) is expected to take longer than 30 minutes or if weather conditions are changing rapidly. Station barometric pressure may be recorded from on-site equipment or obtained from a local weather station.

10. Turn on the pressure transducer/data logger and set the recording frequency (frequency that recorder stores data measured from the transducer and displays a reading) for pre-test monitoring. Data loggers should be placed in a secure location to prevent tampering.

11. Measure the water level with an electric tape (or equivalent) and record along with the measurement time. Commence pre-test monitoring with the pressure transducer/data logger. In general, the total time should be roughly equal to or greater than twice the length of time expected to run the slug test.

12. Once the pre-test monitoring period is ended, remeasure the water level using the electric tape and record along with the measurement time.

13. Change the recording frequency on the data logger for the slug-in test. If the data logger is programmable to store specific changes in water levels (Events), select an appropriate delta time for test recording. Lower the slug to just above the static water level. Concurrently start the data logger and lower the slug as quickly as possible to a depth below the static water level. Do not allow the slug to free-fall when lowering. Record the time of initiation of the slug on the appropriate form.

    The slug should be completely submerged. However, it is best to lower the slug only enough to make sure it is submerged and not more. This will reduce the chance of pinching the transducer cables, dragging the transducer, or sticking the slug.

14. Continue to monitor water level decline with the pressure transducer/data logger, taking periodic water level measurements with the electric tape. Data logger and tape readings should be conducted in accordance with the schedule prior to the test.

15. The slug-in test may be terminated once the water level has returned sufficiently to the pre-test static level. Once the slug-in test is terminated, take a physical water level measurement with the electric tape. Record the measurement and time. Continue on to the slug withdrawal ("slug-out") test.

16. The slug withdrawal test should not be initiated until the water level has recovered sufficiently.

17. Remeasure the water level using the electric tape and record along with the time.

18. Change the recording frequency on the data logger to the appropriate frequency of data recording for the slug withdrawal test (if the data logger is not programmed to store events only). The recording frequency may be modified based upon a review of the slug-in test data. Concurrently with starting the data logger, immediately raise the slug as quickly as possible such that the rod is completely out of the water column and above the static water level. If possible, remove the slug completely from the well to eliminate water dripping on the water column causing some deviations in the recorded readings. Record the test initiation time.

19. Continue to monitor water level rise with the pressure transducer/data logger, taking periodic water level measurements with the electric tape.

20. The slug-out test may be terminated once the water level has returned sufficiently close to the pre-test static level. Once the slug-out test is terminated, take a physical water level measurement with the electric tape. Record the measurement and time.

21. The data should be reviewed in the field to help ensure the validity of the test. Complete all documentation in accordance with applicable Shaw E & I SOPs and/or project-specific requirements.

22. The slug-in and slug-out tests may be repeated as necessary and as appropriate.

23. Once all tests are satisfactorily completed for the well, all downhole equipment may be removed and decontaminated, and the wellhead secured.

Attachment 2
General Procedure for Performing Specific Capacity Tests

This discussion provides general requirements and procedures for specific capacity tests. Newly installed wells to be tested for specific capacity must be developed before commencing test activities. At times, the specific capacity test may be conducted right after development, using the same submersible pump used to develop the well. Specific capacity testing may be performed at a single or multiple pumping rates (steps).

1. Select wells with adequate yield for testing. Wells that do not recharge sufficiently to maintain a stabilized water level during the lowest pump discharge rates cannot be used for specific capacity tests. This can be determined by checking well development records or purging records (for water sampling).

2. Inspect the equipment to ensure that it is in good working order. Specific capacity test equipment may vary widely depending on the formation and site conditions, and the diameter and depth of the wells. A pump should be selected that has the required maximum capacity and is efficient for the full range of the planned extraction rates.

3. Calibrate and test all measuring and testing equipment prior to use, in accordance with manufacturer's specifications and appropriate project-specific requirements and procedures.

4. Decontaminate all downhole equipment in accordance with Shaw E & I and/or project-specific requirements/procedures.

5. Visually inspect the wellhead for damage or obstructions that could hinder water level recorder or pump insertion and removal.

6. Obtain a water level depth measurement and sound the bottom of the well.

7. Install the mechanical pump in the well using the manufacturer's instructions. Place the pump in the well so that there is sufficient water above the pump intake during pumping. During testing, the drawdown should not be so great as to cause the pump to cavitate.

8. Obtain a barometric pressure measurement if testing (recovery of water level) is expected to take longer than 30 minutes or if weather conditions are changing rapidly. Station barometric pressure may be recorded from on-site equipment or obtained from a local weather station.

9. Immediately prior to turning on the pump, physically measure the water level in the well. Start the mechanical pump and adjust the valve or flow regulator to maintain a constant discharge as determined from the well development records. The discharge rate should be sufficient to calculate specific capacity and maintain a stabilized, sustainable drawdown.

10. Once pumping starts, physically measure the water level decline with the electric well tape (or equivalent). Observe and record the wellhead flow meter readings at intervals specified by the project work plans. Record these measurements and the time.

11. Once the drawdown appears to stabilize (i.e., the water level under pumping conditions is relatively stable for a sufficient time), continue pumping for a sufficient length of time. During this time period, continue to physically measure and record the water levels.

12. Once the specified time period has elapsed, take a final physical water level measurement with the electric tape and shut the pump down (or increase the pumping rate to the next step). Record the measurement and time.

13. The data should be reviewed in the field to ensure that valid data have been collected. This includes verifying that discharge was maintained at a constant rate and that the drawdown stabilized. Complete all documentation in accordance with applicable Shaw E & I SOPs and/or project-specific requirements.

14. The specific capacity tests may be repeated, as necessary, at different discharge rates.
15. Once all tests are satisfactorily completed for the well, all down-hole equipment may be removed and decontaminated, and the wellhead may be secured.

Attachment 3
General Procedure for Performing Step-Drawdown Tests

This discussion provides general requirements and procedures for step-drawdown tests. Step-drawdown testing should be conducted before other pumping tests. All newly installed wells should be developed before conducting step-drawdown tests. Generally, three pumping rates are selected for the test, based on estimates of the water-bearing formation yield. Sometimes more steps are added to the test based on specific field or project requirements.

1. Inspect the equipment to be used to ensure that it is in good working order. Equipment used for the step-drawdown testing will vary widely based upon site-specific conditions.

2. Calibrate and test all measuring and testing equipment prior to use, in accordance with manufacturer's specifications and appropriate project-specific requirements and procedures.

3. Decontaminate all downhole equipment in accordance with applicable Shaw E & I and/or project-specific requirements/procedures.

4. Visually inspect the wellhead for damage or obstructions that could hinder water level recorder or pump insertion and removal.

5. Obtain a depth to water level measurement and sound the bottom of the well with the electric tape.

6. Install the mechanical pump in the well using the manufacturer's instructions. The position of the pump intake inside the well should be based upon well construction and site-specific factors. Note the height of the water column from the static water level to the pump intake. Record all information. During testing, the drawdown should not be so great as to cause the pump to cavitate.

7. Connect the pressure transducer to the data logger. Lower the pressure transducer inside the pumping well to a depth below the bottom of the anticipated drawdown. The transducer should be installed at a level that 1) eliminates effects from the pump intake, 2) is below the anticipated water level during maximum drawdown, and 3) does not exceed the maximum transducer head limitations. In addition, the transducer must be secured inside the pumping well in such a manner that the transducer will not be affected by turbulence from the pump. Record the depth of the transducer.

8. Turn on the pressure transducer/data logger, and set the recording frequency for pre-test monitoring to that specified by the project work plans. Data loggers should be placed in a secure location to prevent tampering.

9. Obtain barometric pressure measurements throughout the test. Station barometric pressure may be recorded from on-site equipment or obtained from a local weather station.

10. Physically measure the water level with the electric tape and record it along with the time. Commence pre-test monitoring with the pressure transducer/data logger. Generally, water levels are recorded for a period before the step-drawdown test that is at least twice as long as the time expected for the step-drawdown test and the recovery period. Record the information, including times of measurements.

11. Once the pre-test monitoring period is ended, remeasure the water level using the electric tape and record it along with the time.

12. Change the recording frequency on the data logger to the appropriate frequency for step-drawdown data entry. Begin recording water level measurements with pressure transducer/data logger for the initial pumping phase of the step-drawdown test. Start the mechanical pump and adjust the valve or flow regulator to maintain the constant rate of discharge. This rate will be the first step in the step-drawdown test. Record the time of the start of the step-drawdown test.

13. Continue to monitor water level decline during the first step with the pressure transducer/data logger, taking periodic water level measurements with the electric tape. Data logger and tape readings should be

conducted in accordance with the predetermined schedule. As the first step continues, review the water level data and, if necessary, adjust the recording frequency of the data logger. Observe and record the wellhead flow meter readings.

14. Continue pumping and recording water levels and flow meter readings in the first step until adequate data is acquired and the rate of water level change becomes insignificant with time.

15. Once the first step is ended, measure the water level with the electric tape and record depth and time. Adjust the data logger as necessary (based upon review of data from the first step) for commencement of the second step of the test.

16. Without turning the mechanical pump off, initiate the second step of the test by changing (increasing) the pumping rate with the valve or flow regulator to the rate specified.

17. Monitor the water levels and flow meter readings and continue the second step.

18. Repeat the cycles of changing pumping rate and recording depth of water as often as is required (for each step of the step-drawdown test).

19. Once the last step is completed, re-set the data logger for the recovery period measurement duration and frequency. Obtain a water level measurement with the electric well tape and record the measurement and time. Shut down the mechanical pump. Record the time that the pump was shut down.

20. Continue to measure and record the water level recovery with the pressure transducer/data logger until the water level has recovered to at least 90 percent of the level expected from the pretest trends. Also, continue to take physical water level measurements periodically during recovery. Once the recovery period is ended, take a final physical water level measurement at the end of the test. Record the measurement and time.

21. The data should be reviewed in the field to help ensure the validity of the test. The field data review may also be used to determine the discharge rate to be used during a constant rate pumping test. Complete all documentation in accordance with applicable Shaw E & I SOPs and/or project-specific requirements.

22. Once the step-drawdown test is satisfactorily completed for the well, the equipment may be left in the well for subsequent constant rate aquifer testing. If subsequent testing will not be conducted, all down-hole equipment may be removed and decontaminated, and the wellhead may be secured.

Attachment 4
General Procedure for Performing Single and Multiple Well Constant Rate Aquifer Pumping Tests

The discussion provides general requirements and procedures for conducting single and multiple well constant rate pumping tests. The procedures in this section are written for a multiple well pumping test. However, these procedures are directly applicable to single well testing. The only difference for single well tests is that water level measurements are collected only from the pumping well.

1. Inspect the equipment to be used to ensure that it is in good working order. Equipment used for the pumping test will vary widely based upon site-specific conditions.

2. Calibrate and test all measuring and testing equipment prior to use, in accordance with manufacturer's specifications and appropriate project-specific requirements and procedures.

3. Decontaminate all downhole equipment according to applicable Shaw E & I and/or project-specific requirements/procedures. Equipment remaining inside the pumping well from the step-drawdown test to be used directly for the subsequent constant rate pumping test does not need to be re-decontaminated.

4. Visually inspect the wellhead for damage or obstructions that could hinder water level recorder or pump insertion and removal.

5. Obtain a depth to water level measurement and sound the bottom of each well to be used with the electric tape.

6. If necessary, install the mechanical pump in the pumping well as described in item number 6 in Attachment 3.

7. If a multiple well test is being conducted, connect the pressure transducers to their respective data loggers. Install the transducers inside the observation wells at this time. The transducers should be installed at a position inside each well that is below the anticipated water level during maximum drawdown, and that does not exceed the maximum head limitation. Set up another pressure transducer in an outlying well (outside of the suspected influence of the pumping well) to record station barometric effects, if required. If not already installed from the step-drawdown test, set the pressure transducer inside the pumping well as described in item number 7 in Attachment 3.

8. Record the depth(s) of the transducer(s) below the water surface using the data logger.

9. Appropriately protect any transducer cables that run across traffic areas. Consider using in-well data recorders to eliminate long cables and road crossings. Data loggers should also be placed in a secure location to prevent tampering.

10. Turn on the pressure transducers/data loggers, and set the recording frequencies for pre-test monitoring to that specified by the project work plans. It is also important before initiating pre-test monitoring for the pumping test to ensure that water levels from any previous step-drawdown testing have completely recovered.

11. Obtain barometric pressure measurements throughout the test. Station barometric pressure may be recorded from on-site equipment or obtained from a local weather station.

12. Physically measure the water levels in the pumping and observation wells with the electric tape and record it along with the time. Separate data sheets should be used for each well.

13. Commence pre-test monitoring with the pressure transducers/data loggers. The total length of time over which the pre-test measurements are made should be the length of the pumping test and recovery period, if practicable. Test requirements and aquifer characteristics will dictate the length of pre-test monitoring required. Record the information, including times of measurements.

14. Once the pre-test monitoring period is ended, remeasure the water levels in the wells using the electric tape and record it along with the time.

15. Change the recording frequencies in the data loggers for the pumping test. Just before starting the pump, begin recording the pressure transducer measurements.

16. Start the mechanical pump and adjust the valve or flow regulator to maintain a constant rate of discharge, as determined from the step-drawdown test. Record pump start time.

17. Continue to monitor water levels during pumping with the pressure transducers/data loggers, taking periodic water level measurements in each of the wells with the electric tape. The water level data should be evaluated during the test and, if necessary, the recording frequencies of the data loggers should be adjusted.

18. Observe and record the wellhead flow meter readings.

19. The duration of the test should be based on expected aquifer response to pumping (non-leaky confined, leaky confined, unconfined with gravity drainage, etc.), review of field generated drawdown versus time plots from the pumping and observation wells, and precipitation or other recharge events during the pumping period.

20. Once the pumping phase is completed, re-set the data loggers for the recovery period, recording duration and frequencies as specified in the project work plans. Obtain a water level measurement in each of the wells with the electric well tape, and record the measurements and times. Shut down the mechanical pump. Record the time that the pump was shut down.

21. Continue to record the water level recovery in the wells with the pressure transducers/data loggers until the water levels have recovered to within 90 percent of the level expected from the pretest trends. Also, continue to take physical water level measurements periodically during recovery. Once the recovery period is ended, take a physical water level measurement in each observation well. Record the measurements and times.

22. Additional depth to water measurements may be physically taken following complete well recovery in order to monitor post-test trends in water levels.

23. The data should be reviewed in the field to help ensure the validity of the test. Complete all documentation according to applicable Shaw E & I SOPs and/or project-specific requirements.

24. Once the pump test is satisfactorily completed for the wells, all downhole equipment may be removed and decontaminated, and the wellheads may be secured.

Attachment 5
Special Considerations for Setting Up and Performing Slug and Aquifer Pumping Tests

The following special considerations may be useful when planning and executing slug and aquifer pumping tests.

1. A single ball valve or gate valve may not be adequate, for some pumping tests, to stabilize groundwater flow rates. Installing a flow-control system between the well and the discharge line or tank will greatly increase the control of the pumping rate. The flow control system includes the following equipment (along the direction of flow):
   - Pressure gauge (for pump performance and to show cavitations)
   - Check valve (to prevent groundwater backflow to well)
   - First gate valve for main flow control
   - Flow diversion and sampling port (to divert initial turbid water before the totalizer)
   - Rotameter (vertical flow meter) to visualize and adjust groundwater flow
   - Second gate valve to adjust and fine-tune flow
   - Totalizer flow meter

2. A great deal of time may be saved if the data logger is programmed to store data only when there is a significant change in water level (such as 0.2 inches) with default storage at a specified period of time (e.g., 5 minutes). Such a program will cover rapid changes that occur in seconds and slow changes that may take 5 or more minutes. Other advantages include the following:
   - Generation of a smaller data record (file)
   - No need to reprogram the logger between pre-test, pumping test, and recovery test
   - No need to synchronize pumping with logging
   - Every detail will be recorded between and after testing

   At least two makers (In Situ and Campbell Scientific) have this option ("Event" programming) in the data logger. The "Event" program can also be used for long-term monitoring and for testing.

3. Using a recording transducer, such as the In Situ Troll 4000 or minitroll, will eliminate the requirement for a data logger outside of the wellhead or transducer cables running across traffic areas. This will make it safer and practical to install the logger in the well and to secure the well box for a few days of testing. It will also allow monitoring more wells without the need to extend cables over traffic areas.

4. Using observation wells that contain some product will require protection for the transducer. In such wells, a soft-sealed latex-type sheath filled with distilled water could be used to protect the transducer during use. An interface probe should still be used to periodically monitor product thickness in the well in addition to the total fluid head monitored with the transducer.

5. Sampling and recording changes in the groundwater quality parameters may help determine the source of pumped groundwater, particularly if an aquitard is leaking different quality water into the aquifer. In many cases, the aquifer may have different quality water with depth that could be detected during pumping.

6. Groundwater sampling may be conducted during aquifer pumping tests in either the pumping or monitoring (observation) wells, or both. Changes in field parameters and organic contaminants may indicate aquifer conditions such as sources of contamination, leaky aquitards, and inadequate well

development. If transducers are in the monitoring wells, care will need to be taken to prevent pinching or damaging transducer cables during sampling.

7. If the plan is to monitor groundwater levels in the pumping well using an electric tape or interface probe, it is recommended to install (if the well diameter permits) a small-diameter casing with screen inside the well through which measurements will take place. This is in case the pumping well has a hose, steel cable or rope, electric cable, and other obstacles that may interfere with groundwater level monitoring, or entangle the electric sounder.

8. If there is a lack of sufficient groundwater flow rate and recovery data for wells that were not developed or improperly monitored during development, an initial period of brief testing is required before performing any pumping test. Initial pumping will help determine the following:
   - Well yield and pump capacity at the specified depth
   - Pump depth with reference to screen depth, total drawdown, and total well depth
   - Flow range for selection of the flow controller (low gpm or high gpm range)
   - Water turbidity and if a totalizer should be used

9. Installing a slug in the well a day before the test may save time if the formation is fine sand or silt with a very slow recovery rate. In addition, removing the slug from the well (rising water level test) will produce more representative test data for the saturated zone compared to dropping the slug rod into the well (falling water level test) if water is forced into the dry filter pack and the unsaturated zone in wells that are screened through the water table. This may not be significant in confined zones where the test takes place within the well casing only and the groundwater level is above the well filter pack.

Shaw® Shaw E & I

SLUG TEST DATA SHEET

Slug Volume V:
$V = 3.14 (r^2 * L)$, where
r is slug radius and
L is slug length

Location _____

Well No. _____ Date _____ Project Number _____

Static Water Level _____ Time _____ Measuring Point _____

Depth to Well Bottom _____ Water Column Height _____ Barometric Pressure _____ _____

Transducer Model _____ Serial Number _____ Set Depth _____ Depth Reading _____

Test 1				Test 2				Test 3			
Slug Size _____				Slug Size _____				Slug Size _____			
Slug Volume _____				Slug Volume _____				Slug Volume _____			
Slug In Test		**Slug Out Test**		**Slug In Test**		**Slug Out Test**		**Slug In Test**		**Slug Out Test**	
Time Slug In _____		Time Slug Out _____		Time Slug In _____		Time Slug Out _____		Time Slug In _____		Time Slug Out _____	
Time Complete _____		Time Complete _____		Time Complete _____		Time Complete _____		Time Complete _____		Time Complete _____	
Initial Water Levels				**Initial Water Levels**				**Initial Water Levels**			
Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
Final Water Levels				**Final Water Levels**				**Final Water Levels**			
Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level
Periodic Water Levels				**Periodic Water Levels**				**Periodic Water Levels**			
Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level	Time	Water Level

Shaw™ Shaw Environmental, Inc.

Appendix B
Soil Boring Logs and
Well/Drillhole/Borehole Abandonment Forms

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 1

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/3/2008	6/3/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 18			GRAVEL FILL underlain by GRAVEL and SANDY SILT (FILL)	FILL			0						
2 PS	24 / 24		2.5	Brown SILT and Gray-Brown SILTY CLAY	ML			2						Sampled from 2-4± feet
3 PS	24 / 12		5.0	Brown SILT and Dark Brown SILT	ML			0						
4 PS	24 / 24			Brown SILTY SAND to 7½± feet	SM			2						
5 PS	24 / 24		7.5	Brown SILTY CLAY (stiffer at 10± feet) - Moist	CL			1						
6 PS	24 / 24		10.0					2						
7 PS	24 / 24		12.5					1						Sampled from 12-14± feet
8 PS	24 / 24			Brown SILTY CLAY to Brown-Gray SILTY CLAY at 13± feet	CL		▼	1						
9 PS	24 / 24		15.0	Gray SILTY CLAY - Wet	CL			0						
10 PS	24 / 24		17.5					0						
			20.0	Boring terminated at 20 feet bgs										1.75 pocket penetrometer

NOTE: Test boring backfilled with chipped bentonite following probe removal

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/3/2008	6/3/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 0			3-4"± CONCRETE floor	CONCRETE			--						
				Brown SILT (FILL)	ML									
2 PS	24 / 18		2.5	Light Brown SILTY SAND	SM			1						Sampled from 2-4± feet
3 PS	24 / 12		5.0	Brown SILTY CLAY	CL			2						
4 PS	24 / 24		7.5	Gray-Brown SILTY CLAY at 12± feet				2						
5 PS	24 / 24							1						
6 PS	24 / 24		10.0		CL			1						
7 PS	24 / 24		12.5					1						Sampled from 12-14± feet
8 PS	24 / 24		15.0	Gray SILTY CLAY - Wet			▼	1						
9 PS	24 / 24		17.5		CL			1						
10 PS	24 / 24							0						
			20.0	Boring terminated at 20 feet bgs NOTE: Test boring backfilled with chipped bentonite following probe removal										

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 3

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/3/2008	6/3/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 0			3-4"± CONCRETE floor	CONCRETE			–						
2 PS	24 / 6		2.5	SILTY SAND and SILT (little recovery) (FILL)	SM			3						
3 PS	24 / 18		5.0	Light Brown SILTY SAND - Moist	SM			3						
4 PS	24 / 18		7.5	Brown SILTY CLAY	CL			4						Sampled from 6-8± feet
5 PS	24 / 18							2						
6 PS	24 / 24		10.0					2						
7 PS	24 / 24		12.5	Brown and Gray-Brown SILTY CLAY	CL			1						Sampled from 12-14± feet
8 PS	24 / 24		15.0	Gray SILTY CLAY (with 2"± Sand seam at 17± feet) - Wet	CL			1						
9 PS	24 / 24		17.5					1						
10 PS	24 / 24							0						
			20.0	Boring terminated at 20 feet bgs NOTE: Temporary monitoring well with 10-foot screen installed at 20± feet										

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 4

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/3/2008	6/3/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 0			GRAVEL and broken ASPHALT (FILL)	FILL			-						
2 PS	24 / 6		2.5	Brown SILTY FILL	ML			1						Sampled from 2-4± feet
3 PS	24 / 18		5.0	Light Brown SANDY SILT	SM			1						Sampled from 3-4± feet
4 PS	24 / 24		7.5	Brown SILTY CLAY	CL			0						
5 PS	24 / 24							0						
6 PS	24 / 24		10.0					2						
7 PS	24 / 24		12.5	Gray-Brown SILTY CLAY (stiff)	CL			2						Sampled from 12-14± feet
8 PS	24 / 24		15.0	Gray SILTY CLAY (with 2"± Silty Sand seam at 18± feet) - Wet	CL			1						
9 PS	24 / 24		17.5					1						
10 PS	24 / 24		20.0					1						
				Boring terminated at 20 feet bgs NOTE: Temporary monitoring well with 10-foot screen installed at 20± feet										

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 5

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/3/2008	6/3/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 6			GRAVEL / crushed ASPHALT underlain by SANDY GRAVEL (FILL)	FILL			-						
2 PS	24 / 24		2.5	Brown / Dark Brown SILTY FILL	ML			2						Sampled from 2-4± feet
3 PS	24 / 6		5.0					1						
4 PS	24 / 18			Brown SILT	ML			2						
			7.5	Light Brown SILTY SAND	SM									
5 PS	24 / 24			Brown SILTY CLAY (stiff at 12± feet and very stiff at 14± feet)	CL			2						
6 PS	24 / 24		10.0					1						
7 PS	24 / 24		12.5					0						
8 PS	24 / 24		15.0					2						Sampled from 14-16± feet
				Boring terminated at 16 feet bgs NOTE: Test boring backfilled with chipped bentonite following probe removal										

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 6

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/3/2008	6/3/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 6			ASPHALT and GRAVEL (FILL)	FILL			--						
2 PS	24 / 18		2.5	Brown and Dark Brown SILT	ML			1						
3 PS	24 / 24		5.0	Brown SILTY CLAY	CL			2						Sampled from 3-4± feet
4 PS	24 / 24		7.5					2						
5 PS	24 / 24							2						
6 PS	24 / 24		10.0					2						
7 PS	24 / 24		12.5	Brown-Gray SILTY CLAY - Wet	CL			0						
8 PS	24 / 24		15.0	Gray SILTY CLAY	CL			1						
9 PS	24 / 24		17.5					1						
10 PS	24 / 24							1						
			20.0	Boring terminated at 20 feet bgs NOTE: Temporary monitoring well with 10-foot screen installed at 20± feet										

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 7

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/3/2008	6/3/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 18			2"± ASPHALT (FILL)	ASPHALT			1						
				2"± GRAVEL (FILL)	FILL									
2 PS	24 / 24		2.5	Brown SILTY FILL	FILL			3						
				Brown SILTY CLAY underlain by Dark Brown SILT	ML									
3 PS	24 / 0		5.0	No recovery (rock in sleeve)				--						Sampled from 3-4± feet
4 PS	24 / 18		7.5	Brown SILTY CLAY	CL			2						
5 PS	24 / 24		10.0	Light Brown SANDY SILT with 2"± coarse Sand layer at 9± feet	SM			2						
6 PS	24 / 24			Brown SILTY CLAY - Wet at 12± feet	CL			2						
7 PS	24 / 24		12.5					2						
8 PS	24 / 24		15.0	Gray SILTY CLAY with 4"± Sand seam at 19± feet	CL			1						
9 PS	24 / 24		17.5					0						
10 PS	24 / 24		20.0					1						
				Boring terminated at 20 feet bgs NOTE: Temporary monitoring well with 10-foot screen installed at 20± feet										

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 8

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/4/2008	6/4/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 6			2"± ASPHALT (FILL)	ASPHALT			--						
				GRAVEL (FILL)	FILL									
2 PS	24 / 18		2.5	GRAVELLY SAND (FILL)	SW			1						
3 PS	24 / 18		5.0	Coarse SAND (FILL)	SW			1						
				Brown SILT and SILTY CLAY	ML									
4 PS	24 / 24		7.5	Light Brown SANDY SILT with Gravel	SM			1						
5 PS	24 / 24			Light Brown SILT, minor Sand mixed-in	ML			1						
6 PS	24 / 24		10.0	Brown CLAYEY SILT	ML			2						
7 PS	24 / 24		12.5	Brown SILTY CLAY	CL			1						Sampled from 12-14± feet
				Gray SILTY CLAY	CL									
8 PS	24 / 24		15.0	No recovery (slough in liner)				--						
9 PS	24 / 24		17.5	Gray SILTY CLAY	CL			1						
10 PS	24 / 24		20.0					1						

Boring terminated at 20 feet bgs

NOTE: Temporary monitoring well with 10-foot screen installed at 20± feet

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 9

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Rick Downey-Filbrandt Gestra Engineering	6/4/2008	6/4/2008	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.0 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 10			2-3"± ASPHALT (FILL)	ASPHALT			1						
				6"± GRAVEL (FILL)	FILL									
2 PS	24 / 24		2.5	Brown / Dark Brown SILT (FILL)	ML			1						
3 PS	24 / 12		5.0					1						
4 PS	24 / 24		7.5	Light Brown SILT and CLAYEY SILT	ML			1						
5 PS	24 / 24			Brown CLAYEY SILT	ML			1						
6 PS	24 / 24		10.0	Brown SILTY CLAY with minor Gray streaks at 12± feet	CL			1						
7 PS	24 / 24		12.5	Brown-Gray to Gray SILTY CLAY	CL			1						Sampled from 12-14± feet
8 PS	24 / 24		15.0	Gray SILTY CLAY with minor Sand and pebbles	CL			1						
9 PS	24 / 24		17.5					1						
10 PS	24 / 24		20.0					1						
				Boring terminated at 20 feet bgs NOTE: Test boring backfilled with chipped bentonite following probe removal										

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

Signature

Firm Shaw Environmental & Infrastructure, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			3"± ASPHALT (FILL)	FILL			0						
				6"± GRAVEL (FILL)	FILL									
2 PS	24 / 24		2.5	Brown SILT (FILL)	FILL			0						Sampled from 2-4± feet
				Brown / Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 11

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			ASPHALT / GRAVEL (FILL)	FILL			0						
2 PS	24 / 24		2.5	Brown / Dark Brown SILT	ML			2						Sampled from 2-4± feet
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 12

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 12			3"± ASPHALT (FILL)	FILL			0						
				6"± GRAVEL (FILL)	FILL									
2 PS	24 24		2.5	Brown SILT (FILL)	FILL			2						Sampled from 2-4± feet
				Brown / Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 13

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 18			3"± ASPHALT (FILL)	FILL			0						
				4"± GRAVEL (FILL)	FILL									
2 PS	24 / 24		2.5	Brown SILT	ML			2						Sampled from 2-4± feet
				Dark Brown SILT - Moist	ML									
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 14

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location
☐ N ☐ E
Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			6"± GRAVEL (FILL)	FILL			0						
				Brown SILT (FILL)	FILL									
2 PS	24 / 24		2.5	Brown CLAYEY SILT	ML			2						Sampled from 2-4± feet
				Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 15

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 18			Broken ASPHALT / GRAVEL (FILL) underlain by Brown SILT (FILL)	FILL			0						
2 PS	24 / 24		2.5	Brown CLAYEY SILT	ML			2						Sampled from 2-4± feet
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 16

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			2"± ASPHALT (FILL)	FILL			0						
				GRAVEL and Brown SILT (FILL)	FILL									
2 PS	24 / 24		2.5	Brown SILTY CLAY with pebbles	CL			2						Sampled from 2-4± feet
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: GP - 17	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/15/2008	Date Drilling Completed: 8/15/2005	Drilling Method: GeoProbe
WI Unique Well No. / DNR Well ID No. / Common Well Name	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N | Lat ___ ° ___ ' ___ " | Local Grid Location ☐ N ☐ E
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E | Long ___ ° ___ ' ___ " | Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			ASPHALT, GRAVEL and Brown SILT (FILL)	FILL			0						
2 PS	24 / 24		2.5	Brown SILTY CLAY	CL			2						Sampled from 2-4± feet
				Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature: [signature] Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: GP - 18	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/15/2008	Date Drilling Completed: 8/15/2005	Drilling Method: GeoProbe
WI Unique Well No. / DNR Well ID No. / Common Well Name	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 2.00 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ State Plane N, E S/C/N	Lat ___ ° ___ ' ___ " Long ___ ° ___ ' ___ "	Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W	
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E			
Facility ID: 131994	County: Milwaukee	County Code: 41	Civil Town/City/ or Village: Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			2"± ASPHALT (FILL)	FILL			0						
				6"± GRAVEL (FILL)	FILL									
2 PS	24 / 24		2.5	Brown SILTY CLAY	CL			2						Sampled from 2-4± feet
				Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature: [signature] Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: GP - 19	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/15/2008	Date Drilling Completed: 8/15/2005	Drilling Method: GeoProbe
WI Unique Well No. / DNR Well ID No. / Common Well Name	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 2.00 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐; State Plane N, E S/C/N; NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E	Lat ___° ___' ___"; Long ___° ___' ___"	Local Grid Location: Feet ☐ N ☐ S; Feet ☐ E ☐ W	
Facility ID: 131994	County: Milwaukee	County Code: 41	Civil Town/City/ or Village: Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			2"± ASPHALT (FILL)	FILL			0						
				6"± GRAVEL (FILL)	FILL									
2 PS	24 / 24		2.5	Brown SILTY CLAY	CL			2						Sampled from 2-4± feet
				Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature: [signature] Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: GP - 20	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/15/2008	Date Drilling Completed: 8/15/2005	Drilling Method: GeoProbe
WI Unique Well No. / DNR Well ID No. / Common Well Name	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 2.00 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐; State Plane N, E S/C/N; NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E	Lat ___° ___' ___"; Long ___° ___' ___"	Local Grid Location: ☐ N Feet ☐ S; ☐ E Feet ☐ W	
Facility ID: 131994	County: Milwaukee	County Code: 41	Civil Town/City/ or Village: Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 12			6"± ASPHALT / GRAVEL (FILL)	FILL			0						
2 PS	24 / 24		2.5	Brown SILTY CLAY	CL			1						Sampled from 2-4± feet
				Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature: [signature]

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation		License/Permit/Monitoring Number	Boring Number: GP - 21	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services		Date Drilling Started: 8/15/2008	Date Drilling Completed: 8/15/2005	Drilling Method: GeoProbe
WI Unique Well No.	DNR Well ID No. / Common Well Name	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 6			6"± GRAVEL (FILL)	FILL			0						
				No recovery										
2 PS	24 / 24		2.5	Brown SILT	ML			1						Sampled from 2-4± feet
				Dark Brown SILT	ML									
				Boring terminated at 4 feet bgs										

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

Signature

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
City of Milwaukee - DPW Sanitation		GP - 22

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-Site Environmental Services	8/15/2008	8/15/2005	GeoProbe

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet	2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 6			6"± GRAVEL (FILL)	FILL			0						
				No recovery										
2 PS	24 / 24		2.5	Brown / Dark Brown SILT	ML			1						Sampled from 2-4± feet
				Boring terminated at 4 feet bgs										

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

Signature

Firm Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: GP - 23	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/15/2008	Date Drilling Completed: 8/15/2005	Drilling Method: GeoProbe
WI Unique Well No. / DNR Well ID No. / Common Well Name	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 2.00 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location: ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 PS	24 / 18			6"± GRAVEL (FILL)	FILL			1						
				Brown SILTY CLAY	CL									
2 PS	24 / 24		2.5	Brown / Dark Brown SILT	ML			1						Sampled from 2-4± feet
				Boring terminated at 4 feet bgs										

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

Signature

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: B - 1/MW - 1	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/14/2008	Date Drilling Completed: 8/14/2008	Drilling Method: hollow stem auger
WI Unique Well No. / DNR Well ID No. / Common Well Name: MW - 1	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 4.25 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ State Plane N, E S/C/N	Lat ___° ___' ___" Long ___° ___' ___"	Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W	
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E			
Facility ID: 131994	County: Milwaukee	County Code: 41	Civil Town/City/ or Village: Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24 / 22			2"± ASPHALT (FILL)	FILL			0						
				2"± GRAVEL (FILL)	FILL									
2 SS	24 / 24		2.5	Dark Brown SILT - Dry to Moist at 5± feet	ML			1						
3 SS	24 / 24		5.0					0						
4 SS	24 / 24							0						
			7.5	Brown SILTY CLAY - Moist to Wet at 9± feet										
5 SS	24 / 24							0						
6 SS	24 / 24		10.0					0						Sampled at 8½± feet
7 SS	24 / 24		12.5		CL			0						
8 SS	24 / 24		15.0					0						
9 SS	24 / 24		17.5					0						

Boring terminated at 18 feet bgs

NOTE: Groundwater monitoring well with 10-foot screen installed at 18± feet

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

Signature

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: MW - 2	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/15/2008	Date Drilling Completed: 8/15/2005	Drilling Method: hollow stem auger
WI Unique Well No.	DNR Well ID No.	Common Well Name: MW - 2	Final Static Water Level: Feet MSL
Surface Elevation: Feet	Borehole Diameter: 8.25 inches		

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
Lat ___° ___' ___"
Long ___° ___' ___"
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24 / 12			3"± ASPHALT (FILL)	FILL			0						
				6"± GRAVEL (FILL)	FILL									
2 SS	24 / 24		2.5	Brown SILT (FILL)	ML			0						
				Brown SILT										
3 SS	24 / 24		5.0	Brown SANDY SILT	SM			1						
4 SS	24 / 24		7.5	Brown and Gray SILT and CLAY with pebbles - Moist	CL			1						Sampled from 6-8± feet
5 SS	24 / 24			Brown and Gray CLAYEY SILT	ML			0						
6 SS	24 / 24		10.0					0						
7 SS	24 / 24		12.5	GRAVELLY SAND seam from 12-13½ feet	SW			0						
8 SS	24 / 12		15.0	Gray SILTY CLAY	CL			0						
				Boring terminated at 15 feet bgs										
				NOTE: Groundwater monitoring well with 10-foot screen installed at 15± feet										

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

Signature

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: B - 3/MW - 3	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/14/2008	Date Drilling Completed: 8/14/2008	Drilling Method: hollow stem auger
WI Unique Well No. / DNR Well ID No. / Common Well Name: MW - 3	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 4.25 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ State Plane N, E S/C/N	Lat ° ' " Long ° ' "	Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W	
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E			
Facility ID: 131994	County: Milwaukee	County Code: 41	Civil Town/City/ or Village: Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24 / 4			2"± ASPHALT (FILL)	FILL			0						
				2"± GRAVEL (FILL)	FILL									
2 SS	24 / 0		2.5	No recovery (rock in nose)				0						
3 SS	24 / 24		5.0	Brown SILTY CLAY, trace Sand - Moist to Wet at 8± feet	CL			0						
4 SS	24 / 24		7.5					0						
5 SS	24 / 24			6"± SAND and GRAVEL lens				0						Sampled at 7± feet
			10.0	Brown SILTY CLAY, trace SAND - Wet	CL									
6 SS	24 / 24			Dark Brown SILTY CLAY, trace Sand - Wet				0						
7 SS	24 / 24		12.5		CL			0						
8 SS	24 / 24		15.0					0						
				Boring terminated at 16 feet bgs										
				NOTE: Groundwater monitoring well with 10-foot screen installed at 16± feet										

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

Signature

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: B - 4/MW - 4	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/14/2008	Date Drilling Completed: 8/14/2008	Drilling Method: hollow stem auger
WI Unique Well No. / DNR Well ID No. / Common Well Name: MW - 4	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 4.25 inches
Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐ State Plane N, E S/C/N	Lat ___° ___' ___" Long ___° ___' ___"	Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W	
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E			
Facility ID: 131994	County: Milwaukee	County Code: 41	Civil Town/City/ or Village: Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24 / 24			2"± ASPHALT (FILL)	FILL			0						
				2"± GRAVEL (FILL)	FILL									
2 SS	24 / 24		2.5	Brown SILTY CLAY - Moist	CL			0						
3 SS	24 / 24		5.0	Brown SILTY CLAY, trace Sand and Gravel - Moist	CL			1						
4 SS	24 / 24		7.5	Gray SILTY CLAY, trace Sand, less Gravel - Moist to Wet at 8½± feet	CL			1						
5 SS	24 / 24							0						Sampled at 8± feet
6 SS	24 / 24		10.0	Brown SILTY CLAY - Wet	CL			0						
7 SS	24 / 24		12.5					0						
8 SS	24 / 24		15.0					0						

Boring terminated at 16 feet bgs

NOTE: Groundwater monitoring well with 10-foot screen installed at 16± feet

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

Signature

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

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

Facility/Project Name: City of Milwaukee - DPW Sanitation	License/Permit/Monitoring Number	Boring Number: B - 5/MW - 5	
Boring Drilled By: Name of crew chief (first, last) and Firm: Tony Kapugi, On-Site Environmental Services	Date Drilling Started: 8/14/2008	Date Drilling Completed: 8/14/2008	Drilling Method: hollow stem auger
WI Unique Well No. / DNR Well ID No. / Common Well Name: MW - 5	Final Static Water Level: Feet MSL	Surface Elevation: Feet	Borehole Diameter: 4.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane N, E S/C/N
NW 1/4 of SW 1/4 of Section 34, T 8 N, R 21 E
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
131994	Milwaukee	41	Milwaukee

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content (%)	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 SS	24 / 24			2"± ASPHALT (FILL)	FILL			0						
				2"± GRAVEL (FILL)	FILL									
2 SS	24 / 24		2.5	Dark Brown SILT - Dry	ML			0						
3 SS	24 / 24		5.0	Brown SILTY CLAY - Moist to Wet at 9¾± feet				0						
4 SS	24 / 24		7.5					0						
5 SS	24 / 24							0						
6 SS	24 / 24		10.0		CL			0						Sampled at 9± feet
7 SS	24 / 24		12.5					0						
8 SS	24 / 24		15.0					0						
9 SS	24 / 24		17.5					0						
				Boring terminated at 18 feet bgs										
				NOTE: Groundwater monitoring well with 10-foot screen installed at 18± feet										

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

Signature

Firm: Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105 Milwaukee, Wisconsin 53212
Tel: 414.291.2350
Fax: 414.291.2385

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

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-1 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/3/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-2 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/3/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-3 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/10/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-4 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/10/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-5 _____ Gov't Lot (If applicable)

NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W
Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.
Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/3/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-6 _____ Gov't Lot (If applicable)

NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W
Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7222 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/10/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-7 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7222 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/10/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-8 _____ Gov't Lot (If applicable)

NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W
Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.
Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7222 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/3/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 20 (From groundsurface) Casing Diameter (in.) 1
Casing Depth (ft.) 20

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed? ☐ Yes ☐ No [X] Not Applicable
Liner(s) Removed? ☐ Yes ☐ No [X] Not Applicable
Screen Removed? ☐ Yes ☐ No [X] Not Applicable
Casing Left in Place? ☐ Yes [X] No

Was Casing Cut Off Below Surface? [X] Yes ☐ No
Did Sealing Material Rise to Surface? [X] Yes ☐ No
Did Material Settle After 24 Hours? ☐ Yes [X] No
If Yes, Was Hole Retopped? ☐ Yes ☐ No

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/10/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-9 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location [X]

Lat. ___° ___' ___.___" Long ___° ___' ___.___" or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe/Temp Well | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milwaukee DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7222 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 6/4/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) (From groundsurface): 20 Casing Diameter (in.): 1
Casing Depth (ft.): 20

Lower Drillhole Diameter (in.): 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
[X] Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20	0.25	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental, Inc. | Date of Abandonment: 6/4/2008

Signature of Person Doing Work | Date Signed: 6-10-08

Street or Route: 111 West Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-10 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-11 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-12 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____ Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-13 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-14 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY/ OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____ Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-15 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-16 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-17 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-18 _____ Gov't Lot (If applicable)

NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W
Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed? ☐ Yes ☐ No [X] Not Applicable
Liner(s) Removed? ☐ Yes ☐ No [X] Not Applicable
Screen Removed? ☐ Yes ☐ No [X] Not Applicable
Casing Left in Place? ☐ Yes ☐ No

Was Casing Cut Off Below Surface? ☐ Yes ☐ No
Did Sealing Material Rise to Surface? [X] Yes ☐ No
Did Material Settle After 24 Hours? ☐ Yes [X] No
If Yes, Was Hole Retopped? ☐ Yes ☐ No

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-19 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.:

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-20 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____ Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed? ☐ Yes ☐ No [X] Not Applicable
Liner(s) Removed? ☐ Yes ☐ No [X] Not Applicable
Screen Removed? ☐ Yes ☐ No [X] Not Applicable
Casing Left in Place? ☐ Yes ☐ No

Was Casing Cut Off Below Surface? ☐ Yes ☐ No
Did Sealing Material Rise to Surface? [X] Yes ☐ No
Did Material Settle After 24 Hours? ☐ Yes [X] No
If Yes, Was Hole Retopped? ☐ Yes ☐ No

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-21 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414) 291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-22 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: MILWAUKEE

Common Well Name: GP-23 _____ Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 34 ; T. 8 N; R. 21 [X] E ☐ W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. ___ ° ___ ' ___ . ___ " Long ___ ° ___ ' ___ . ___ " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Geoprobe | WI Unique Well No. of Replacement Well _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Milw. DPW - Sanitation

Facility ID: 131994 | License/Permit/Monitoring No.

Street Address of Well: 7318 W. Fond Du Lac Avenue

City, Village, or Town: Milwaukee

Present Well Owner | Original Owner

Street Address or Route of Owner

City, State, Zip Code

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 8/15/2008

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 4 (From groundsurface) Casing Diameter (in.) _____ Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes [X] No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) _____

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	☐ No	
Was Casing Cut Off Below Surface?	☐ Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain)

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
[X] Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
☐ Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	Sacks Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	4	0.1	

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Shaw Environmental & Infrastructure, Inc. | Date of Abandonment: 8/15/2008

Signature of Person Doing Work | Date Signed

Street or Route: 111 W. Pleasant Street | Telephone Number: (414)291-2350

City, State, Zip Code: Milwaukee WI 53212-

FOR DNR OR COUNTY USE ONLY
Date Received | Noted By
Comments

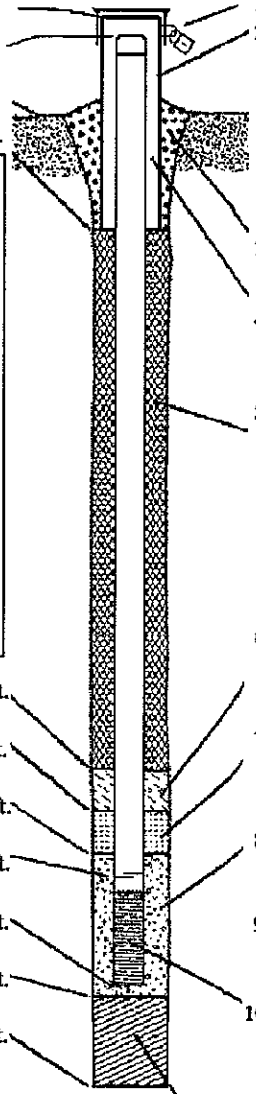
Appendix C
Monitoring Well Construction Logs and Development Forms

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment [X] Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name Milwaukee DPW - Sanitation	Local Grid Location of Well _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name MW-1
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location [X] Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No. _____ / DNR Well ID No. _____
Facility ID _____	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed 8 / 15 / 2008 (m m d d y y y y)
Type of Well Well Code 11 / mw	Section Location of Waste/Source NW 1/4 of SW 1/4 of Sec. 34 T. 8 N, R. 21 [X] E ☐ W	Well Installed By: Name (first, last) and Firm Tony Kapugi On-Site Environmental Services
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number _____



A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 0.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML [X] MH ☐ CL [X] CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes [X] No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger [X] 41
_____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None [X] 99

16. Drilling additives used? ☐ Yes [X] No

Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _____ ft. MSL or 0.5 ft.

F. Fine sand, top _____ ft. MSL or 6 ft.

G. Filter pack, top _____ ft. MSL or 7 ft.

H. Screen joint, top _____ ft. MSL or 8 ft.

I. Well bottom _____ ft. MSL or 18 ft.

J. Filter pack, bottom _____ ft. MSL or 18 ft.

K. Borehole, bottom _____ ft. MSL or 18 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.33 in.

N. I.D. well casing 2 in.

1. Cap and lock? [X] Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel [X] 04
_____ Other ☐
d. Additional protection? ☐ Yes [X] No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30
Concrete [X] 01
_____ Other ☐

4. Material between well casing and protective pipe:
Bentonite [X] 30
_____ Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite [X] 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 1.87 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity [X] 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. [X] 3/8 in. ☐ 1/2 in. Bentonite chips [X] 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sindley #4000
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sindley #5
b. Volume added 3.74 ft^3

9. Well casing: Flush threaded PVC schedule 40 [X] 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐

10. Screen material: PVC
a. Screen type: Factory cut [X] 11
Continuous slot ☐ 01
_____ Other ☐
b. Manufacturer _____
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None [X] 14
_____ Other ☐

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

Signature	Firm
	SHAW ENVIRONMENTAL & INFRASTRUCTURE, INC.

Please complete both Forms 4400-113A and 4400-113B and return them 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 these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on 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 sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment [X] Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Milwaukee DPW - Sanitation	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-2
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location [X] Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 8/15/2008 (m m d d y y y y)
Type of Well: Well Code 11 / mw	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 34, T. 8 N, R. 21 [X] E ☐ W	Well Installed By: Name (first, last) and Firm: Tony Kapugi, On-Site Environmental Services
Distance from Waste/Source ____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known; Gov. Lot Number ____	

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation ____ ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML [X] MH ☐ CL [X] CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes [X] No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger [X] 41; Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None [X] 99

16. Drilling additives used? ☐ Yes [X] No

Describe ____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.

F. Fine sand, top ____ ft. MSL or 3 ft.

G. Filter pack, top ____ ft. MSL or 4 ft.

H. Screen joint, top ____ ft. MSL or 5 ft.

I. Well bottom ____ ft. MSL or 15 ft.

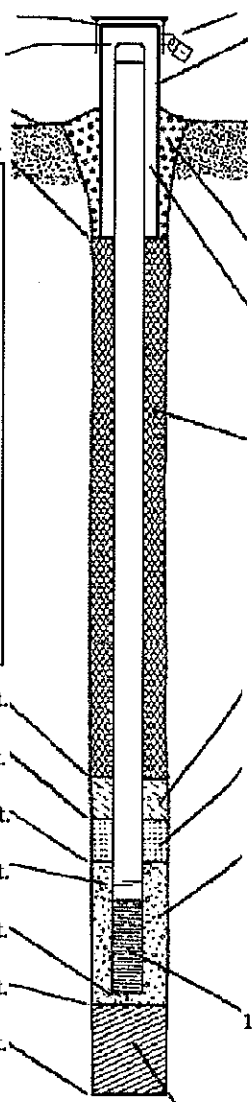
J. Filter pack, bottom ____ ft. MSL or 15 ft.

K. Borehole, bottom ____ ft. MSL or 15 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.33 in.

N. I.D. well casing 2 in.



1. Cap and lock? [X] Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel [X] 04; Other ☐
d. Additional protection? ☐ Yes [X] No
If yes, describe: ____

3. Surface seal: Bentonite ☐ 30; Concrete [X] 01; Other ☐

4. Material between well casing and protective pipe: Bentonite [X] 30; Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite [X] 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 0.85 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity [X] 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. [X]3/8 in. ☐1/2 in. Bentonite chips [X] 32
c. ____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sindley #4000
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sindley #5
b. Volume added 3.74 ft^3

9. Well casing: Flush threaded PVC schedule 40 [X] 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐

10. Screen material: PVC
a. Screen type: Factory cut [X] 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer ____
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None [X] 14; Other ☐

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

Signature	Firm
	SHAW ENVIRONMENTAL & INFRASTRUCTURE, INC.

Please complete both Forms 4400-113A and 4400-113B and return them 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 these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on 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 sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment [X] Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name Milwaukee DPW - Sanitation	Local Grid Location of Well _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name MW-3
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location [X] Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No. _ _ _ _ _ _ / DNR Well ID No. _ _ _
Facility ID _ _ _ _ _ _ _ _ _ _	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed 8 / 15 / 2008 (m m d d y y y y)
Type of Well Well Code 11 / mw	Section Location of Waste/Source NW 1/4 of SW 1/4 of Sec. 34 T. 8 N. R. 21 [X] E. ☐ W.	Well Installed By: Name (first, last) and Firm Tony Kapugi On-Site Environmental Services
Distance from Waste/Source _____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number _____

A. Protective pipe, top elevation _ _ _ _ _ _ ft. MSL

B. Well casing, top elevation _ _ _ _ _ _ ft. MSL

C. Land surface elevation _ _ _ _ _ _ ft. MSL

D. Surface seal, bottom _ _ _ _ _ _ ft. MSL or 0.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML [X] MH ☐ CL [X] CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes [X] No

14. Drilling method used: Rotary ☐ 5 0
Hollow Stem Auger [X] 4 1
_____ Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1
Drilling Mud ☐ 0 3 None [X] 9 9

16. Drilling additives used? ☐ Yes [X] No

Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _ _ _ _ _ _ ft. MSL or 0.5 ft.

F. Fine sand, top _ _ _ _ _ _ ft. MSL or 4 ft.

G. Filter pack, top _ _ _ _ _ _ ft. MSL or 5 ft.

H. Screen joint, top _ _ _ _ _ _ ft. MSL or 6 ft.

I. Well bottom _ _ _ _ _ _ ft. MSL or 16 ft.

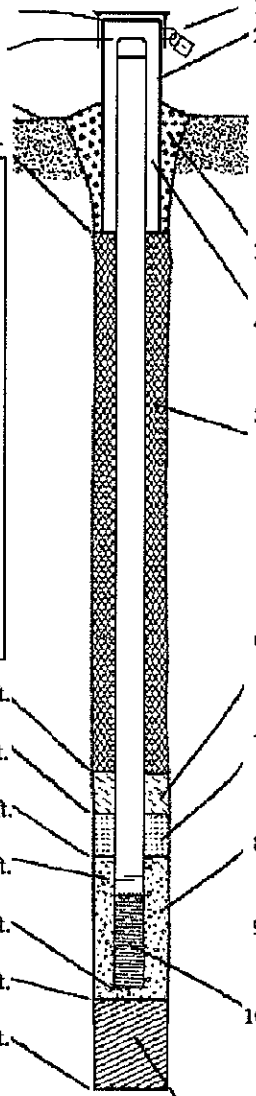
J. Filter pack, bottom _ _ _ _ _ _ ft. MSL or 16 ft.

K. Borehole, bottom _ _ _ _ _ _ ft. MSL or 16 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.33 in.

N. I.D. well casing 2 in.



1. Cap and lock? [X] Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel [X] 0 4
_____ Other ☐
d. Additional protection? ☐ Yes [X] No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 3 0
Concrete [X] 0 1
_____ Other ☐

4. Material between well casing and protective pipe:
Bentonite [X] 3 0
_____ Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite [X] 3 3
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 3 5
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 3 1
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 5 0
e. 1.19 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 0 1
Tremie pumped ☐ 0 2
Gravity [X] 0 8

6. Bentonite seal: a. Bentonite granules ☐ 3 3
b. ☐ 1/4 in. [X] 3/8 in. ☐ 1/2 in. Bentonite chips [X] 3 2
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sindley #4000
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sindley #5
b. Volume added 3.74 ft^3

9. Well casing: Flush threaded PVC schedule 40 [X] 2 3
Flush threaded PVC schedule 80 ☐ 2 4
_____ Other ☐

10. Screen material: PVC
a. Screen type: Factory cut [X] 1 1
Continuous slot ☐ 0 1
_____ Other ☐
b. Manufacturer _____
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None [X] 1 4
_____ Other ☐

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

Signature	Firm
	SHAW ENVIRONMENTAL & INFRASTRUCTURE, INC.

Please complete both Forms 4400-113A and 4400-113B and return them 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 these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on 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 sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment [X] Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name Milwaukee DPW - Sanitation	Local Grid Location of Well _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name MW-4
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location [X] Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No. _ _ _ _ _ _ / DNR Well ID No. _ _ _
Facility ID _ _ _ _ _ _ _ _ _ _	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed 8/15/2008 (m m d d y y y y)
Type of Well Well Code 11 / mw	Section Location of Waste/Source NW 1/4 of SW 1/4 of Sec. 34, T. 8 N, R. 21 [X] E. ☐ W.	Well Installed By: Name (first, last) and Firm Tony Kapugi On-Site Environmental Services
Distance from Waste/Source _____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known Gov. Lot Number _____	

A. Protective pipe, top elevation _ _ _ _ _ _ ft. MSL

B. Well casing, top elevation _ _ _ _ _ _ ft. MSL

C. Land surface elevation _ _ _ _ _ _ ft. MSL

D. Surface seal, bottom _ _ _ _ _ _ ft. MSL or 0.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML [X] MH ☐ CL [X] CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes [X] No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger [X] 41
_____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None [X] 99

16. Drilling additives used? ☐ Yes [X] No

Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _ _ _ _ _ _ ft. MSL or 0.5 ft.

F. Fine sand, top _ _ _ _ _ _ ft. MSL or 4 ft.

G. Filter pack, top _ _ _ _ _ _ ft. MSL or 5 ft.

H. Screen joint, top _ _ _ _ _ _ ft. MSL or 6 ft.

I. Well bottom _ _ _ _ _ _ ft. MSL or 16 ft.

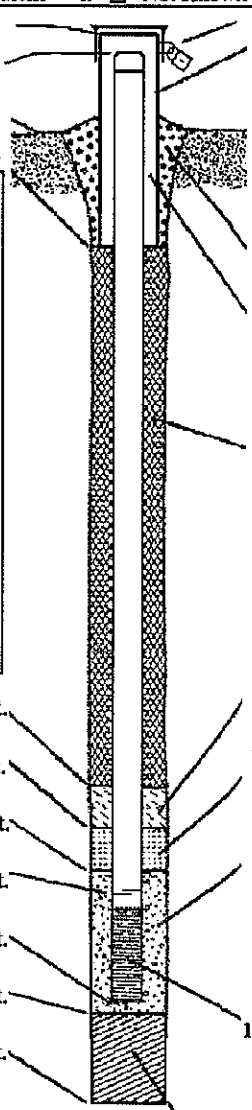
J. Filter pack, bottom _ _ _ _ _ _ ft. MSL or 16 ft.

K. Borehole, bottom _ _ _ _ _ _ ft. MSL or 16 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.33 in.

N. I.D. well casing 2 in.



1. Cap and lock? [X] Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel [X] 04
_____ Other ☐
d. Additional protection? ☐ Yes [X] No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30
Concrete [X] 01
_____ Other ☐

4. Material between well casing and protective pipe:
Bentonite [X] 30
_____ Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite [X] 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 1.19 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity [X] 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. [X] 3/8 in. ☐ 1/2 in. Bentonite chips [X] 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sindley #4000
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sindley #5
b. Volume added 3.74 ft^3

9. Well casing: Flush threaded PVC schedule 40 [X] 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐

10. Screen material: PVC _____
a. Screen type: Factory cut [X] 11
Continuous slot ☐ 01
_____ Other ☐
b. Manufacturer _____
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None [X] 14
_____ Other ☐

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

Signature	Firm
	SHAW ENVIRONMENTAL & INFRASTRUCTURE, INC.

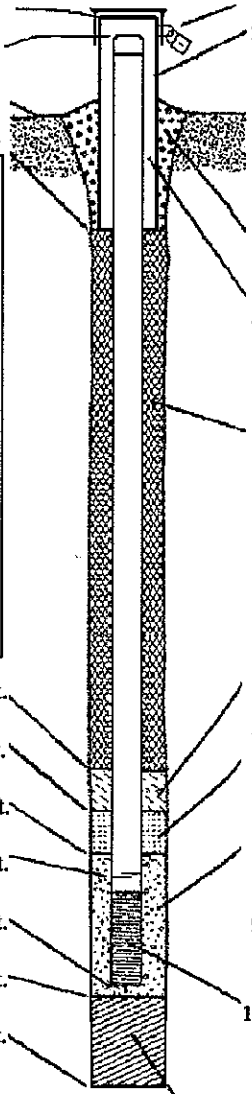
Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on 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 sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment [X] Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name Milwaukee DPW - Sanitation	Local Grid Location of Well ☐ N. ☐ S. _____ ft. ☐ E. ☐ W. _____ ft.	Well Name MW-5
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location [X] Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well No. _ _ _ _ _ _ / DNR Well ID No. _ _ _
Facility ID _ _ _ _ _ _ _ _ _ _	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed 8/15/2008 (m m d d y y y y)
Type of Well Well Code 11 / mw	Section Location of Waste/Source NW 1/4 of SW 1/4 of Sec. 34 T. 8 N, R. 21 [X] E ☐ W	Well Installed By: Name (first, last) and Firm Tony Kapugi On-Site Environmental Services
Distance from Waste/Source _____ ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number _____



A. Protective pipe, top elevation _ _ _ _ _ _ ft. MSL

B. Well casing, top elevation _ _ _ _ _ _ ft. MSL

C. Land surface elevation _ _ _ _ _ _ ft. MSL

D. Surface seal, bottom _ _ _ _ _ _ ft. MSL or 0.5 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML [X] MH ☐ CL [X] CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes [X] No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger [X] 41
_____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None [X] 99

16. Drilling additives used? ☐ Yes [X] No

Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _ _ _ _ _ _ ft. MSL or 0.5 ft.

F. Fine sand, top _ _ _ _ _ _ ft. MSL or 6 ft.

G. Filter pack, top _ _ _ _ _ _ ft. MSL or 7 ft.

H. Screen joint, top _ _ _ _ _ _ ft. MSL or 8 ft.

I. Well bottom _ _ _ _ _ _ ft. MSL or 18 ft.

J. Filter pack, bottom _ _ _ _ _ _ ft. MSL or 18 ft.

K. Borehole, bottom _ _ _ _ _ _ ft. MSL or 18 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.33 in.

N. I.D. well casing 2 in.

1. Cap and lock? [X] Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel [X] 04
_____ Other ☐
d. Additional protection? ☐ Yes [X] No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30
Concrete [X] 01
_____ Other ☐

4. Material between well casing and protective pipe:
Bentonite [X] 30
_____ Other ☐

5. Annular space seal: a. Granular/Chipped Bentonite [X] 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 1.87 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity [X] 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. [X] 3/8 in. ☐ 1/2 in. Bentonite chips [X] 32
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. RW Sindley #4000
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. RW Sindley #5
b. Volume added 3.74 ft^3

9. Well casing: Flush threaded PVC schedule 40 [X] 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐

10. Screen material: PVC
a. Screen type: Factory cut [X] 11
Continuous slot ☐ 01
_____ Other ☐
b. Manufacturer _____
c. Slot size: 0.01 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None [X] 14
_____ Other ☐

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

Signature	Firm
	SHAW ENVIRONMENTAL & INFRASTRUCTURE, INC.

Please complete both Forms 4400-113A and 4400-113B and return them 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 these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on 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 sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [ ] Waste Management [ ]
Remediation/Redevelopment [X] Other [ ] _____

Facility/Project Name	County Name	Well Name
City of Milwaukee - DPW Sanitation	MILWAUKEE	MW-1

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41		

1. Can this well be purged dry? [X] Yes [ ] No

2. Well development method
   - surged with bailer and bailed [ ] 41
   - surged with bailer and pumped [X] 61
   - surged with block and bailed [ ] 42
   - surged with block and pumped [ ] 62
   - surged with block, bailed and pumped [ ] 70
   - compressed air [ ] 20
   - bailed only [ ] 10
   - pumped only [ ] 51
   - pumped slowly [ ] 50
   - Other _____ [ ]

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 17.7 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 5.3 gal.

7. Volume of water removed from well 20 gal.

8. Volume of water added (if any) 4 gal.

9. Source of water added Distilled Water from Walgreens

10. Analysis performed on water added? [ ] Yes [X] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. ____ ft.	10.02 ft.
Date	b. 08 / 29 / 2008 (m m d d y y y y)	9/ / 2008 (m m d d y y y y)
Time	c. 09 : 45 [X] a.m. [ ] p.m.	12 : 10 [X] a.m. [ ] p.m.
12. Sediment in well bottom	____ inches	____ inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15 (Describe)	Clear [X] 20 Turbid [ ] 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____ mg/l	____ mg/l
15. COD	____ mg/l	____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Peshek
Firm: Shaw Environmental

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City Of Milwaukee
Street: 809 North Broadway
City/State/Zip: Milwaukee WI 53212-

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Print Name: Chris Peshek
Firm: Shaw Environmental & Infrastructure, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [ ] Waste Management [ ]
Remediation/Redevelopment [X] Other [ ] _____

Facility/Project Name	County Name	Well Name
City of Milwaukee - DPW Sanitation	MILWAUKEE	MW-2

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41		

1. Can this well be purged dry? [X] Yes [ ] No

2. Well development method
   - surged with bailer and bailed [ ] 41
   - surged with bailer and pumped [X] 61
   - surged with block and bailed [ ] 42
   - surged with block and pumped [ ] 62
   - surged with block, bailed and pumped [ ] 70
   - compressed air [ ] 20
   - bailed only [ ] 10
   - pumped only [ ] 51
   - pumped slowly [ ] 50
   - Other _____ [ ]

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 14.2 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 4.6 gal.

7. Volume of water removed from well 20 gal.

8. Volume of water added (if any) ____ gal.

9. Source of water added _____

10. Analysis performed on water added? [ ] Yes [ ] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 7.5 ft.	14 ft.
Date	b. 08 / 18 / 2008 (m m d d y y y y)	8/ / 18/ / 2008 (m m d d y y y y)
Time	c. 10 : 30 [X] a.m. [ ] p.m.	11 : 30 [X] a.m. [ ] p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15 (Describe)	Clear [X] 20 Turbid [ ] 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____ mg/l	____ mg/l
15. COD	____ mg/l	____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chuck Last Name: Zimney
Firm: Shaw Environmental

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City Of Milwaukee
Street: 809 North Broadway
City/State/Zip: Milwaukee WI 53212-

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Chris Peshek
Firm: Shaw Environmental & Infrastructure, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [ ] Waste Management [ ]
Remediation/Redevelopment [X] Other [ ] _____

Facility/Project Name	County Name	Well Name
City of Milwaukee - DPW Sanitation	MILWAUKEE	MW-3

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41		

1. Can this well be purged dry? [X] Yes [ ] No

2. Well development method
   - surged with bailer and bailed [ ] 41
   - surged with bailer and pumped [X] 61
   - surged with block and bailed [ ] 42
   - surged with block and pumped [ ] 62
   - surged with block, bailed and pumped [ ] 70
   - compressed air [ ] 20
   - bailed only [ ] 10
   - pumped only [ ] 51
   - pumped slowly [ ] 50
   - Other _____ [ ]

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 15.2 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 0.9 gal.

7. Volume of water removed from well 9 gal.

8. Volume of water added (if any) 4 gal.

9. Source of water added Distilled water from Walgreens

10. Analysis performed on water added? [ ] Yes [X] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. ____ ft.	13.91 ft.
Date	b. 08 / 29 / 2008 (m m d d y y y y)	9/ 5/2 0 08 (m m d d y y y y)
Time	c. 09 : 04 [X] a.m. [ ] p.m.	11 : 55 [X] a.m. [ ] p.m.
12. Sediment in well bottom	____ inches	____ inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15 (Describe)	Clear [X] 20 Turbid [ ] 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____ mg/l	____ mg/l
15. COD	____ mg/l	____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Peshek
Firm: Shaw Environmental

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City Of Milwaukee
Street: 809 North Broadway
City/State/Zip: Milwaukee WI 53212-

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Print Name: Chris Peshek
Firm: Shaw Environmental & Infrastructure, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [ ] Waste Management [ ]
Remediation/Redevelopment [X] Other [ ] _____

Facility/Project Name	County Name	Well Name
City of Milwaukee - DPW Sanitation	MILWAUKEE	MW-4

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41		

1. Can this well be purged dry? [X] Yes [ ] No

2. Well development method
   - surged with bailer and bailed [ ] 41
   - surged with bailer and pumped [X] 61
   - surged with block and bailed [ ] 42
   - surged with block and pumped [ ] 62
   - surged with block, bailed and pumped [ ] 70
   - compressed air [ ] 20
   - bailed only [ ] 10
   - pumped only [ ] 51
   - pumped slowly [ ] 50
   - Other _____ [ ]

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 15.3 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 6.9 gal.

7. Volume of water removed from well 20 gal.

8. Volume of water added (if any) ___ gal.

9. Source of water added _____

10. Analysis performed on water added? [ ] Yes [ ] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 5.44 ft.	15.32 ft.
Date	b. 08 / 18 / 2008 (m m d d y y y y)	8/ / 18/ 2008 (m m d d y y y y)
Time	c. 12 : 00 [ ] a.m. [X] p.m.	13 : 00 [ ] a.m. [X] p.m.
12. Sediment in well bottom	___ inches	___ inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15 (Describe)	Clear [X] 20 Turbid [ ] 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___ mg/l	___ mg/l
15. COD	___ mg/l	___ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chuck Last Name: Zimney
Firm: Shaw Environmental

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City Of Milwaukee
Street: 809 North Broadway
City/State/Zip: Milwaukee WI 53212-

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Print Name: Chris Peshek
Firm: Shaw Environmental & Infrastructure, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment [X] Other ☐ _____

Facility/Project Name	County Name	Well Name
City of Milwaukee - DPW Sanitation	MILWAUKEE	MW-5

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	41		

1. Can this well be purged dry? [X] Yes ☐ No

2. Well development method
   - surged with bailer and bailed ☐ 41
   - surged with bailer and pumped [X] 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ☐ 51
   - pumped slowly ☐ 50
   - Other _____ ☐

3. Time spent developing well 80 min.

4. Depth of well (from top of well casisng) 17.9 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 1.1 gal.

7. Volume of water removed from well 10 gal.

8. Volume of water added (if any) 4 gal.

9. Source of water added Distilled Water from Walgreens

10. Analysis performed on water added? (If yes, attach results) ☐ Yes X No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 17.85 ft.	16.31 ft.
Date	b. 08 / 29 / 2008 (m m d d y y y y)	9/ 5/2 0 08 (m m d d y y y y)
Time	c. 08 : 20 [X] a.m. ☐ p.m.	11 : 45 [X] a.m. ☐ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid [X] 15 (Describe)	Clear [X] 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Chris Last Name: Peshek
Firm: Shaw Environmental

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City Of Milwaukee
Street: 809 North Broadway
City/State/Zip: Milwaukee WI 53212-

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Chris Peshek
Firm: Shaw Environmental & Infrastructure, Inc.

NOTE: See instructions for more information including a list of county codes and well type codes.

Appendix D
Laboratory Analytical Reports and Chain of Custody

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

June 20, 2008

Tim Welch
Shaw E & I
111 West Pleasant Street
Suite 105
Milwaukee, WI 53212

RE: Project: 131994
Pace Project No.: 404791

Dear Tim Welch:
Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kang Khang

kang.khang@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 131994
Pace Project No.: 404791

Green Bay Certification IDs

Florida (NELAP) Certification #: E87948
Illinois Certification #: 200050
California Certification #: 06246CA
New York Certification #: 11888
North Dakota Certification #: R-150
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 82
Louisiana Certification #: 04168

Green Bay Volatiles Certification IDs

Florida (NELAP) Certification #: E87951
California Certification #: 06247CA
Illinois Certification #: 200051
New York Certification #: 11887
North Dakota Certification #: R-200
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 83
Louisiana Certification #: 04169

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 131994
Pace Project No.: 404791

Lab ID	Sample ID	Matrix	Date Collected	Date Received
404791001	**GP-1 2-4'**	Solid	06/03/08 09:00	06/06/08 08:45
404791002	**GP-1 12-14'**	Solid	06/03/08 09:15	06/06/08 08:45
404791003	**GP-2 2-4'**	Solid	06/03/08 10:15	06/06/08 08:45
404791004	**GP-2 12-14'**	Solid	06/03/08 10:30	06/06/08 08:45
404791005	**GP-3 6-8'**	Solid	06/03/08 11:15	06/06/08 08:45
404791006	**GP-3 12-14'**	Solid	06/03/08 11:30	06/06/08 08:45
404791007	**GP-4 2-4'**	Solid	06/03/08 12:30	06/06/08 08:45
404791008	**GP-4 12-14'**	Solid	06/03/08 12:45	06/06/08 08:45
404791009	**GP-4 3-4'**	Solid	06/03/08 12:30	06/06/08 08:45
404791010	**GP-5 2-4'**	Solid	06/03/08 13:15	06/06/08 08:45
404791011	**GP-5 14-16'**	Solid	06/03/08 13:30	06/06/08 08:45
404791012	**GP-6 3-4'**	Solid	06/03/08 14:30	06/06/08 08:45
404791013	**GP-7 3-4'**	Solid	06/03/08 16:20	06/06/08 08:45
404791014	**GP-8 12-14'**	Solid	06/04/08 16:00	06/06/08 08:45
404791015	**GP-9 12-14'**	Solid	06/04/08 17:00	06/06/08 08:45

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 131994
Pace Project No.: 404791

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
404791001	**GP-1 2-4'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791002	**GP-1 12-14'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791003	**GP-2 2-4'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791004	**GP-2 12-14'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791005	**GP-3 6-8'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791006	**GP-3 12-14'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791007	**GP-4 2-4'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791008	**GP-4 12-14'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791009	**GP-4 3-4'**	ASTM D2974-87	AG	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
404791010	**GP-5 2-4'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791011	**GP-5 14-16'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791012	**GP-6 3-4'**	ASTM D2974-87	AG	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
404791013	**GP-7 3-4'**	ASTM D2974-87	AG	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
404791014	**GP-8 12-14'**	ASTM D2974-87	AG	1	PASI-G

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 131994
Pace Project No.: 404791

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
404791015	**GP-9 12-14'**	ASTM D2974-87	AG	1	PASI-G
		EPA 8260	JJB	64	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-1 2-4' **Lab ID: 404791001** Collected: 06/03/08 09:00 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**8.8J**	ug/kg	21.0	2.0	1	06/10/08 09:55	06/11/08 02:02	83-32-9	
Acenaphthylene	**7.9J**	ug/kg	21.0	2.2	1	06/10/08 09:55	06/11/08 02:02	208-96-8	
Anthracene	**31.3**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/11/08 02:02	120-12-7	
Benzo(a)anthracene	**58.8**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/11/08 02:02	56-55-3	
Benzo(a)pyrene	**60.9**	ug/kg	21.0	2.2	1	06/10/08 09:55	06/11/08 02:02	50-32-8	
Benzo(b)fluoranthene	**52.4**	ug/kg	21.0	2.2	1	06/10/08 09:55	06/11/08 02:02	205-99-2	
Benzo(g,h,i)perylene	**38.1**	ug/kg	21.0	2.4	1	06/10/08 09:55	06/11/08 02:02	191-24-2	
Benzo(k)fluoranthene	**53.5**	ug/kg	21.0	2.1	1	06/10/08 09:55	06/11/08 02:02	207-08-9	
Chrysene	**60.5**	ug/kg	21.0	2.6	1	06/10/08 09:55	06/11/08 02:02	218-01-9	
Dibenz(a,h)anthracene	**12.4J**	ug/kg	21.0	2.4	1	06/10/08 09:55	06/11/08 02:02	53-70-3	
Fluoranthene	**135**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/11/08 02:02	206-44-0	
Fluorene	**10.6J**	ug/kg	21.0	2.1	1	06/10/08 09:55	06/11/08 02:02	86-73-7	
Indeno(1,2,3-cd)pyrene	**33.4**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/11/08 02:02	193-39-5	
1-Methylnaphthalene	**3.3J**	ug/kg	21.0	1.7	1	06/10/08 09:55	06/11/08 02:02	90-12-0	
2-Methylnaphthalene	**4.0J**	ug/kg	21.0	1.8	1	06/10/08 09:55	06/11/08 02:02	91-57-6	
Naphthalene	**6.8J**	ug/kg	21.0	1.5	1	06/10/08 09:55	06/11/08 02:02	91-20-3	
Phenanthrene	**100**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/11/08 02:02	85-01-8	
Pyrene	**123**	ug/kg	21.0	2.4	1	06/10/08 09:55	06/11/08 02:02	129-00-0	
Nitrobenzene-d5 (S)	60	%	27-117		1	06/10/08 09:55	06/11/08 02:02	4165-60-0	
2-Fluorobiphenyl (S)	61	%	30-98		1	06/10/08 09:55	06/11/08 02:02	321-60-8	
Terphenyl-d14 (S)	72	%	27-90		1	06/10/08 09:55	06/11/08 02:02	1718-51-0	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 13:11	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 13:11	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 13:11	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 13:11	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-1 2-4' **Lab ID: 404791001** Collected: 06/03/08 09:00 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 13:11	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 13:11	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:11	95-47-6	W
Dibromofluoromethane (S)	125	%	64-140		1	06/10/08 12:09	06/10/08 13:11	1868-53-7	
Toluene-d8 (S)	111	%	67-139		1	06/10/08 12:09	06/10/08 13:11	2037-26-5	
4-Bromofluorobenzene (S)	108	%	64-133		1	06/10/08 12:09	06/10/08 13:11	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**20.5**	%	0.10	0.10	1		06/07/08 08:31		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-1 12-14' **Lab ID: 404791002** Collected: 06/03/08 09:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.8**	ug/kg	19.1	1.8	1	06/10/08 09:55	06/11/08 02:25	83-32-9	
Acenaphthylene	**<2.0**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 02:25	208-96-8	
Anthracene	**<2.1**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 02:25	120-12-7	
Benzo(a)anthracene	**<2.1**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 02:25	56-55-3	
Benzo(a)pyrene	**<2.0**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 02:25	50-32-8	
Benzo(b)fluoranthene	**<2.0**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 02:25	205-99-2	
Benzo(g,h,i)perylene	**<2.2**	ug/kg	19.1	2.2	1	06/10/08 09:55	06/11/08 02:25	191-24-2	
Benzo(k)fluoranthene	**<2.0**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 02:25	207-08-9	
Chrysene	**<2.3**	ug/kg	19.1	2.3	1	06/10/08 09:55	06/11/08 02:25	218-01-9	
Dibenz(a,h)anthracene	**<2.2**	ug/kg	19.1	2.2	1	06/10/08 09:55	06/11/08 02:25	53-70-3	
Fluoranthene	**<2.1**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 02:25	206-44-0	
Fluorene	**<1.9**	ug/kg	19.1	1.9	1	06/10/08 09:55	06/11/08 02:25	86-73-7	
Indeno(1,2,3-cd)pyrene	**<2.1**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 02:25	193-39-5	
1-Methylnaphthalene	**<1.6**	ug/kg	19.1	1.6	1	06/10/08 09:55	06/11/08 02:25	90-12-0	
2-Methylnaphthalene	**<1.6**	ug/kg	19.1	1.6	1	06/10/08 09:55	06/11/08 02:25	91-57-6	
Naphthalene	**<1.3**	ug/kg	19.1	1.3	1	06/10/08 09:55	06/11/08 02:25	91-20-3	
Phenanthrene	**<2.1**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 02:25	85-01-8	
Pyrene	**<2.2**	ug/kg	19.1	2.2	1	06/10/08 09:55	06/11/08 02:25	129-00-0	
Nitrobenzene-d5 (S)	78	%	27-117		1	06/10/08 09:55	06/11/08 02:25	4165-60-0	
2-Fluorobiphenyl (S)	76	%	30-98		1	06/10/08 09:55	06/11/08 02:25	321-60-8	
Terphenyl-d14 (S)	93	%	27-90		1	06/10/08 09:55	06/11/08 02:25	1718-51-0	S0
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 13:33	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 13:33	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 13:33	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 13:33	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-1 12-14' **Lab ID: 404791002** Collected: 06/03/08 09:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 13:33	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 13:33	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:33	95-47-6	W
Dibromofluoromethane (S)	123	%	64-140		1	06/10/08 12:09	06/10/08 13:33	1868-53-7	
Toluene-d8 (S)	110	%	67-139		1	06/10/08 12:09	06/10/08 13:33	2037-26-5	
4-Bromofluorobenzene (S)	110	%	64-133		1	06/10/08 12:09	06/10/08 13:33	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.7**	%	0.10	0.10	1		06/07/08 08:31		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-2 2-4' **Lab ID: 404791003** Collected: 06/03/08 10:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.9**	ug/kg	20.7	1.9	1	06/10/08 09:55	06/10/08 21:51	83-32-9	
Acenaphthylene	**2.1J**	ug/kg	20.7	2.1	1	06/10/08 09:55	06/10/08 21:51	208-96-8	
Anthracene	**2.9J**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/10/08 21:51	120-12-7	
Benzo(a)anthracene	**18.3J**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/10/08 21:51	56-55-3	
Benzo(a)pyrene	**18.5J**	ug/kg	20.7	2.2	1	06/10/08 09:55	06/10/08 21:51	50-32-8	
Benzo(b)fluoranthene	**19.5J**	ug/kg	20.7	2.2	1	06/10/08 09:55	06/10/08 21:51	205-99-2	
Benzo(g,h,i)perylene	**11.3J**	ug/kg	20.7	2.4	1	06/10/08 09:55	06/10/08 21:51	191-24-2	
Benzo(k)fluoranthene	**20.5J**	ug/kg	20.7	2.1	1	06/10/08 09:55	06/10/08 21:51	207-08-9	
Chrysene	**22.4**	ug/kg	20.7	2.5	1	06/10/08 09:55	06/10/08 21:51	218-01-9	
Dibenz(a,h)anthracene	**3.8J**	ug/kg	20.7	2.4	1	06/10/08 09:55	06/10/08 21:51	53-70-3	
Fluoranthene	**32.7**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/10/08 21:51	206-44-0	
Fluorene	**<2.1**	ug/kg	20.7	2.1	1	06/10/08 09:55	06/10/08 21:51	86-73-7	
Indeno(1,2,3-cd)pyrene	**10.0J**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/10/08 21:51	193-39-5	
1-Methylnaphthalene	**<1.7**	ug/kg	20.7	1.7	1	06/10/08 09:55	06/10/08 21:51	90-12-0	
2-Methylnaphthalene	**<1.8**	ug/kg	20.7	1.8	1	06/10/08 09:55	06/10/08 21:51	91-57-6	
Naphthalene	**<1.4**	ug/kg	20.7	1.4	1	06/10/08 09:55	06/10/08 21:51	91-20-3	
Phenanthrene	**12.1J**	ug/kg	20.7	2.2	1	06/10/08 09:55	06/10/08 21:51	85-01-8	
Pyrene	**31.1**	ug/kg	20.7	2.4	1	06/10/08 09:55	06/10/08 21:51	129-00-0	
Nitrobenzene-d5 (S)	76	%	27-117		1	06/10/08 09:55	06/10/08 21:51	4165-60-0	
2-Fluorobiphenyl (S)	72	%	30-98		1	06/10/08 09:55	06/10/08 21:51	321-60-8	
Terphenyl-d14 (S)	88	%	27-90		1	06/10/08 09:55	06/10/08 21:51	1718-51-0	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 13:55	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 13:55	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 13:55	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 13:55	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-2 2-4' **Lab ID: 404791003** Collected: 06/03/08 10:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 13:55	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 13:55	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 13:55	95-47-6	W
Dibromofluoromethane (S)	135	%	64-140		1	06/10/08 12:09	06/10/08 13:55	1868-53-7	
Toluene-d8 (S)	122	%	67-139		1	06/10/08 12:09	06/10/08 13:55	2037-26-5	
4-Bromofluorobenzene (S)	121	%	64-133		1	06/10/08 12:09	06/10/08 13:55	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**19.4**	%	0.10	0.10	1		06/07/08 08:31		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-2 12-14' **Lab ID: 404791004** Collected: 06/03/08 10:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<2.0**	ug/kg	21.0	2.0	1	06/10/08 09:55	06/10/08 22:14	83-32-9	
Acenaphthylene	**<2.2**	ug/kg	21.0	2.2	1	06/10/08 09:55	06/10/08 22:14	208-96-8	
Anthracene	**<2.3**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/10/08 22:14	120-12-7	
Benzo(a)anthracene	**<2.3**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/10/08 22:14	56-55-3	
Benzo(a)pyrene	**<2.2**	ug/kg	21.0	2.2	1	06/10/08 09:55	06/10/08 22:14	50-32-8	
Benzo(b)fluoranthene	**<2.2**	ug/kg	21.0	2.2	1	06/10/08 09:55	06/10/08 22:14	205-99-2	
Benzo(g,h,i)perylene	**<2.4**	ug/kg	21.0	2.4	1	06/10/08 09:55	06/10/08 22:14	191-24-2	
Benzo(k)fluoranthene	**<2.2**	ug/kg	21.0	2.2	1	06/10/08 09:55	06/10/08 22:14	207-08-9	
Chrysene	**<2.6**	ug/kg	21.0	2.6	1	06/10/08 09:55	06/10/08 22:14	218-01-9	
Dibenz(a,h)anthracene	**<2.4**	ug/kg	21.0	2.4	1	06/10/08 09:55	06/10/08 22:14	53-70-3	
Fluoranthene	**<2.4**	ug/kg	21.0	2.4	1	06/10/08 09:55	06/10/08 22:14	206-44-0	
Fluorene	**<2.1**	ug/kg	21.0	2.1	1	06/10/08 09:55	06/10/08 22:14	86-73-7	
Indeno(1,2,3-cd)pyrene	**<2.3**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/10/08 22:14	193-39-5	
1-Methylnaphthalene	**<1.7**	ug/kg	21.0	1.7	1	06/10/08 09:55	06/10/08 22:14	90-12-0	
2-Methylnaphthalene	**<1.8**	ug/kg	21.0	1.8	1	06/10/08 09:55	06/10/08 22:14	91-57-6	
Naphthalene	**<1.5**	ug/kg	21.0	1.5	1	06/10/08 09:55	06/10/08 22:14	91-20-3	
Phenanthrene	**<2.3**	ug/kg	21.0	2.3	1	06/10/08 09:55	06/10/08 22:14	85-01-8	
Pyrene	**<2.5**	ug/kg	21.0	2.5	1	06/10/08 09:55	06/10/08 22:14	129-00-0	
Nitrobenzene-d5 (S)	69	%	27-117		1	06/10/08 09:55	06/10/08 22:14	4165-60-0	
2-Fluorobiphenyl (S)	71	%	30-98		1	06/10/08 09:55	06/10/08 22:14	321-60-8	
Terphenyl-d14 (S)	90	%	27-90		1	06/10/08 09:55	06/10/08 22:14	1718-51-0	S0
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 14:18	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 14:18	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 14:18	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 14:18	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-2 12-14' **Lab ID: 404791004** Collected: 06/03/08 10:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 14:18	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 14:18	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:18	95-47-6	W
Dibromofluoromethane (S)	135	%	64-140		1	06/10/08 12:09	06/10/08 14:18	1868-53-7	
Toluene-d8 (S)	121	%	67-139		1	06/10/08 12:09	06/10/08 14:18	2037-26-5	
4-Bromofluorobenzene (S)	119	%	64-133		1	06/10/08 12:09	06/10/08 14:18	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**20.6**	%	0.10	0.10	1		06/07/08 08:31		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-3 6-8' **Lab ID: 404791005** Collected: 06/03/08 11:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<9.4**	ug/kg	100	9.4	5	06/10/08 09:55	06/11/08 12:13	83-32-9	
Acenaphthylene	**<10.3**	ug/kg	100	10.3	5	06/10/08 09:55	06/11/08 12:13	208-96-8	
Anthracene	**12.3J**	ug/kg	100	11.2	5	06/10/08 09:55	06/11/08 12:13	120-12-7	
Benzo(a)anthracene	**<11.1**	ug/kg	100	11.1	5	06/10/08 09:55	06/11/08 12:13	56-55-3	
Benzo(a)pyrene	**<10.6**	ug/kg	100	10.6	5	06/10/08 09:55	06/11/08 12:13	50-32-8	
Benzo(b)fluoranthene	**<10.7**	ug/kg	100	10.7	5	06/10/08 09:55	06/11/08 12:13	205-99-2	
Benzo(g,h,i)perylene	**<11.6**	ug/kg	100	11.6	5	06/10/08 09:55	06/11/08 12:13	191-24-2	
Benzo(k)fluoranthene	**<10.3**	ug/kg	100	10.3	5	06/10/08 09:55	06/11/08 12:13	207-08-9	
Chrysene	**28.1J**	ug/kg	100	12.2	5	06/10/08 09:55	06/11/08 12:13	218-01-9	
Dibenz(a,h)anthracene	**<11.5**	ug/kg	100	11.5	5	06/10/08 09:55	06/11/08 12:13	53-70-3	
Fluoranthene	**<11.3**	ug/kg	100	11.3	5	06/10/08 09:55	06/11/08 12:13	206-44-0	
Fluorene	**13.6J**	ug/kg	100	10.1	5	06/10/08 09:55	06/11/08 12:13	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.1**	ug/kg	100	11.1	5	06/10/08 09:55	06/11/08 12:13	193-39-5	
1-Methylnaphthalene	**<8.2**	ug/kg	100	8.2	5	06/10/08 09:55	06/11/08 12:13	90-12-0	
2-Methylnaphthalene	**<8.6**	ug/kg	100	8.6	5	06/10/08 09:55	06/11/08 12:13	91-57-6	
Naphthalene	**<7.0**	ug/kg	100	7.0	5	06/10/08 09:55	06/11/08 12:13	91-20-3	D3
Phenanthrene	**25.3J**	ug/kg	100	10.9	5	06/10/08 09:55	06/11/08 12:13	85-01-8	
Pyrene	**13.2J**	ug/kg	100	11.7	5	06/10/08 09:55	06/11/08 12:13	129-00-0	
Nitrobenzene-d5 (S)	59	%	27-117		5	06/10/08 09:55	06/11/08 12:13	4165-60-0	
2-Fluorobiphenyl (S)	52	%	30-98		5	06/10/08 09:55	06/11/08 12:13	321-60-8	
Terphenyl-d14 (S)	49	%	27-90		5	06/10/08 09:55	06/11/08 12:13	1718-51-0	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 14:40	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 14:40	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 14:40	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 14:40	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-3 6-8' **Lab ID: 404791005** Collected: 06/03/08 11:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 14:40	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 14:40	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 14:40	95-47-6	W
Dibromofluoromethane (S)	109	%	64-140		1	06/10/08 12:09	06/10/08 14:40	1868-53-7	
Toluene-d8 (S)	97	%	67-139		1	06/10/08 12:09	06/10/08 14:40	2037-26-5	
4-Bromofluorobenzene (S)	99	%	64-133		1	06/10/08 12:09	06/10/08 14:40	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.1**	%	0.10	0.10	1		06/07/08 08:31		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-3 12-14' **Lab ID: 404791006** Collected: 06/03/08 11:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.9**	ug/kg	20.2	1.9	1	06/10/08 09:55	06/10/08 23:00	83-32-9	
Acenaphthylene	**<2.1**	ug/kg	20.2	2.1	1	06/10/08 09:55	06/10/08 23:00	208-96-8	
Anthracene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/10/08 23:00	120-12-7	
Benzo(a)anthracene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/10/08 23:00	56-55-3	
Benzo(a)pyrene	**<2.1**	ug/kg	20.2	2.1	1	06/10/08 09:55	06/10/08 23:00	50-32-8	
Benzo(b)fluoranthene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/10/08 23:00	205-99-2	
Benzo(g,h,i)perylene	**<2.3**	ug/kg	20.2	2.3	1	06/10/08 09:55	06/10/08 23:00	191-24-2	
Benzo(k)fluoranthene	**<2.1**	ug/kg	20.2	2.1	1	06/10/08 09:55	06/10/08 23:00	207-08-9	
Chrysene	**3.1J**	ug/kg	20.2	2.5	1	06/10/08 09:55	06/10/08 23:00	218-01-9	
Dibenz(a,h)anthracene	**<2.3**	ug/kg	20.2	2.3	1	06/10/08 09:55	06/10/08 23:00	53-70-3	
Fluoranthene	**<2.3**	ug/kg	20.2	2.3	1	06/10/08 09:55	06/10/08 23:00	206-44-0	
Fluorene	**<2.0**	ug/kg	20.2	2.0	1	06/10/08 09:55	06/10/08 23:00	86-73-7	
Indeno(1,2,3-cd)pyrene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/10/08 23:00	193-39-5	
1-Methylnaphthalene	**<1.7**	ug/kg	20.2	1.7	1	06/10/08 09:55	06/10/08 23:00	90-12-0	
2-Methylnaphthalene	**<1.7**	ug/kg	20.2	1.7	1	06/10/08 09:55	06/10/08 23:00	91-57-6	
Naphthalene	**<1.4**	ug/kg	20.2	1.4	1	06/10/08 09:55	06/10/08 23:00	91-20-3	
Phenanthrene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/10/08 23:00	85-01-8	
Pyrene	**<2.4**	ug/kg	20.2	2.4	1	06/10/08 09:55	06/10/08 23:00	129-00-0	
Nitrobenzene-d5 (S)	67	%	27-117		1	06/10/08 09:55	06/10/08 23:00	4165-60-0	
2-Fluorobiphenyl (S)	70	%	30-98		1	06/10/08 09:55	06/10/08 23:00	321-60-8	
Terphenyl-d14 (S)	76	%	27-90		1	06/10/08 09:55	06/10/08 23:00	1718-51-0	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 15:02	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 15:02	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 15:02	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 15:02	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-3 12-14' **Lab ID: 404791006** Collected: 06/03/08 11:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 15:02	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 15:02	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:02	95-47-6	W
Dibromofluoromethane (S)	111	%	64-140		1	06/10/08 12:09	06/10/08 15:02	1868-53-7	
Toluene-d8 (S)	100	%	67-139		1	06/10/08 12:09	06/10/08 15:02	2037-26-5	
4-Bromofluorobenzene (S)	95	%	64-133		1	06/10/08 12:09	06/10/08 15:02	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.6**	%	0.10	0.10	1		06/07/08 08:31		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-4 2-4' **Lab ID: 404791007** Collected: 06/03/08 12:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.8**	ug/kg	19.1	1.8	1	06/10/08 09:55	06/11/08 15:24	83-32-9	
Acenaphthylene	**2.2J**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 15:24	208-96-8	
Anthracene	**3.5J**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 15:24	120-12-7	
Benzo(a)anthracene	**14.1J**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 15:24	56-55-3	
Benzo(a)pyrene	**19.0J**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 15:24	50-32-8	
Benzo(b)fluoranthene	**33.9**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 15:24	205-99-2	
Benzo(g,h,i)perylene	**18.2J**	ug/kg	19.1	2.2	1	06/10/08 09:55	06/11/08 15:24	191-24-2	
Benzo(k)fluoranthene	**25.7**	ug/kg	19.1	2.0	1	06/10/08 09:55	06/11/08 15:24	207-08-9	
Chrysene	**32.6**	ug/kg	19.1	2.3	1	06/10/08 09:55	06/11/08 15:24	218-01-9	
Dibenz(a,h)anthracene	**5.7J**	ug/kg	19.1	2.2	1	06/10/08 09:55	06/11/08 15:24	53-70-3	
Fluoranthene	**39.0**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 15:24	206-44-0	
Fluorene	**<1.9**	ug/kg	19.1	1.9	1	06/10/08 09:55	06/11/08 15:24	86-73-7	
Indeno(1,2,3-cd)pyrene	**14.0J**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 15:24	193-39-5	
1-Methylnaphthalene	**<1.6**	ug/kg	19.1	1.6	1	06/10/08 09:55	06/11/08 15:24	90-12-0	
2-Methylnaphthalene	**2.7J**	ug/kg	19.1	1.6	1	06/10/08 09:55	06/11/08 15:24	91-57-6	
Naphthalene	**3.4J**	ug/kg	19.1	1.3	1	06/10/08 09:55	06/11/08 15:24	91-20-3	
Phenanthrene	**10.4J**	ug/kg	19.1	2.1	1	06/10/08 09:55	06/11/08 15:24	85-01-8	
Pyrene	**30.4**	ug/kg	19.1	2.2	1	06/10/08 09:55	06/11/08 15:24	129-00-0	
Nitrobenzene-d5 (S)	68	%	27-117		1	06/10/08 09:55	06/11/08 15:24	4165-60-0	
2-Fluorobiphenyl (S)	63	%	30-98		1	06/10/08 09:55	06/11/08 15:24	321-60-8	
Terphenyl-d14 (S)	61	%	27-90		1	06/10/08 09:55	06/11/08 15:24	1718-51-0	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 15:24	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 15:24	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 15:24	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 15:24	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-4 2-4' **Lab ID: 404791007** Collected: 06/03/08 12:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 15:24	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 15:24	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:24	95-47-6	W
Dibromofluoromethane (S)	124	%	64-140		1	06/10/08 12:09	06/10/08 15:24	1868-53-7	
Toluene-d8 (S)	112	%	67-139		1	06/10/08 12:09	06/10/08 15:24	2037-26-5	
4-Bromofluorobenzene (S)	107	%	64-133		1	06/10/08 12:09	06/10/08 15:24	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.9**	%	0.10	0.10	1		06/07/08 08:31		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-4 12-14' **Lab ID: 404791008** Collected: 06/03/08 12:45 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.9**	ug/kg	20.7	1.9	1	06/10/08 09:55	06/11/08 14:52	83-32-9	
Acenaphthylene	**<2.1**	ug/kg	20.7	2.1	1	06/10/08 09:55	06/11/08 14:52	208-96-8	
Anthracene	**<2.3**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/11/08 14:52	120-12-7	
Benzo(a)anthracene	**7.9J**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/11/08 14:52	56-55-3	
Benzo(a)pyrene	**7.3J**	ug/kg	20.7	2.2	1	06/10/08 09:55	06/11/08 14:52	50-32-8	
Benzo(b)fluoranthene	**27.8**	ug/kg	20.7	2.2	1	06/10/08 09:55	06/11/08 14:52	205-99-2	
Benzo(g,h,i)perylene	**6.7J**	ug/kg	20.7	2.4	1	06/10/08 09:55	06/11/08 14:52	191-24-2	
Benzo(k)fluoranthene	**16.4J**	ug/kg	20.7	2.1	1	06/10/08 09:55	06/11/08 14:52	207-08-9	
Chrysene	**31.3**	ug/kg	20.7	2.5	1	06/10/08 09:55	06/11/08 14:52	218-01-9	
Dibenz(a,h)anthracene	**<2.4**	ug/kg	20.7	2.4	1	06/10/08 09:55	06/11/08 14:52	53-70-3	
Fluoranthene	**57.3**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/11/08 14:52	206-44-0	
Fluorene	**<2.1**	ug/kg	20.7	2.1	1	06/10/08 09:55	06/11/08 14:52	86-73-7	
Indeno(1,2,3-cd)pyrene	**6.4J**	ug/kg	20.7	2.3	1	06/10/08 09:55	06/11/08 14:52	193-39-5	
1-Methylnaphthalene	**<1.7**	ug/kg	20.7	1.7	1	06/10/08 09:55	06/11/08 14:52	90-12-0	
2-Methylnaphthalene	**<1.8**	ug/kg	20.7	1.8	1	06/10/08 09:55	06/11/08 14:52	91-57-6	
Naphthalene	**<1.4**	ug/kg	20.7	1.4	1	06/10/08 09:55	06/11/08 14:52	91-20-3	
Phenanthrene	**3.9J**	ug/kg	20.7	2.2	1	06/10/08 09:55	06/11/08 14:52	85-01-8	
Pyrene	**31.8**	ug/kg	20.7	2.4	1	06/10/08 09:55	06/11/08 14:52	129-00-0	
Nitrobenzene-d5 (S)	67	%	27-117		1	06/10/08 09:55	06/11/08 14:52	4165-60-0	
2-Fluorobiphenyl (S)	66	%	30-98		1	06/10/08 09:55	06/11/08 14:52	321-60-8	
Terphenyl-d14 (S)	57	%	27-90		1	06/10/08 09:55	06/11/08 14:52	1718-51-0	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 15:46	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 15:46	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 15:46	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 15:46	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-4 12-14' **Lab ID: 404791008** Collected: 06/03/08 12:45 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 15:46	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 15:46	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 15:46	95-47-6	W
Dibromofluoromethane (S)	122	%	64-140		1	06/10/08 12:09	06/10/08 15:46	1868-53-7	
Toluene-d8 (S)	110	%	67-139		1	06/10/08 12:09	06/10/08 15:46	2037-26-5	
4-Bromofluorobenzene (S)	105	%	64-133		1	06/10/08 12:09	06/10/08 15:46	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**19.4**	%	0.10	0.10	1		06/10/08 07:55		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-4 3-4' **Lab ID: 404791009** Collected: 06/03/08 12:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.0**	%	0.10	0.10	1		06/10/08 07:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1270**	mg/kg	284	70.6	5		06/18/08 18:01	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-5 2-4' **Lab ID: 404791010** Collected: 06/03/08 13:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**5.6J**	ug/kg	19.8	1.9	1	06/10/08 09:55	06/11/08 02:47	83-32-9	
Acenaphthylene	**13.7J**	ug/kg	19.8	2.0	1	06/10/08 09:55	06/11/08 02:47	208-96-8	
Anthracene	**26.5**	ug/kg	19.8	2.2	1	06/10/08 09:55	06/11/08 02:47	120-12-7	
Benzo(a)anthracene	**192**	ug/kg	19.8	2.2	1	06/10/08 09:55	06/11/08 02:47	56-55-3	
Benzo(a)pyrene	**254**	ug/kg	19.8	2.1	1	06/10/08 09:55	06/11/08 02:47	50-32-8	
Benzo(b)fluoranthene	**241**	ug/kg	19.8	2.1	1	06/10/08 09:55	06/11/08 02:47	205-99-2	
Benzo(g,h,i)perylene	**145**	ug/kg	19.8	2.3	1	06/10/08 09:55	06/11/08 02:47	191-24-2	
Benzo(k)fluoranthene	**214**	ug/kg	19.8	2.0	1	06/10/08 09:55	06/11/08 02:47	207-08-9	
Chrysene	**195**	ug/kg	19.8	2.4	1	06/10/08 09:55	06/11/08 02:47	218-01-9	
Dibenz(a,h)anthracene	**46.5**	ug/kg	19.8	2.3	1	06/10/08 09:55	06/11/08 02:47	53-70-3	
Fluoranthene	**189**	ug/kg	19.8	2.2	1	06/10/08 09:55	06/11/08 02:47	206-44-0	
Fluorene	**5.9J**	ug/kg	19.8	2.0	1	06/10/08 09:55	06/11/08 02:47	86-73-7	
Indeno(1,2,3-cd)pyrene	**137**	ug/kg	19.8	2.2	1	06/10/08 09:55	06/11/08 02:47	193-39-5	
1-Methylnaphthalene	**7.6J**	ug/kg	19.8	1.6	1	06/10/08 09:55	06/11/08 02:47	90-12-0	
2-Methylnaphthalene	**12.4J**	ug/kg	19.8	1.7	1	06/10/08 09:55	06/11/08 02:47	91-57-6	
Naphthalene	**13.0J**	ug/kg	19.8	1.4	1	06/10/08 09:55	06/11/08 02:47	91-20-3	
Phenanthrene	**49.6**	ug/kg	19.8	2.2	1	06/10/08 09:55	06/11/08 02:47	85-01-8	
Pyrene	**211**	ug/kg	19.8	2.3	1	06/10/08 09:55	06/11/08 02:47	129-00-0	
Nitrobenzene-d5 (S)	60	%	27-117		1	06/10/08 09:55	06/11/08 02:47	4165-60-0	
2-Fluorobiphenyl (S)	63	%	30-98		1	06/10/08 09:55	06/11/08 02:47	321-60-8	
Terphenyl-d14 (S)	75	%	27-90		1	06/10/08 09:55	06/11/08 02:47	1718-51-0	
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 16:09	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 16:09	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 16:09	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 16:09	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-5 2-4' **Lab ID: 404791010** Collected: 06/03/08 13:15 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 16:09	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 16:09	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:09	95-47-6	W
Dibromofluoromethane (S)	118	%	64-140		1	06/10/08 12:09	06/10/08 16:09	1868-53-7	
Toluene-d8 (S)	106	%	67-139		1	06/10/08 12:09	06/10/08 16:09	2037-26-5	
4-Bromofluorobenzene (S)	105	%	64-133		1	06/10/08 12:09	06/10/08 16:09	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**15.9**	%	0.10	0.10	1		06/10/08 07:55		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-5 14-16' **Lab ID: 404791011** Collected: 06/03/08 13:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.9**	ug/kg	20.6	1.9	1	06/10/08 09:55	06/10/08 23:23	83-32-9	
Acenaphthylene	**<2.1**	ug/kg	20.6	2.1	1	06/10/08 09:55	06/10/08 23:23	208-96-8	
Anthracene	**<2.3**	ug/kg	20.6	2.3	1	06/10/08 09:55	06/10/08 23:23	120-12-7	
Benzo(a)anthracene	**<2.3**	ug/kg	20.6	2.3	1	06/10/08 09:55	06/10/08 23:23	56-55-3	
Benzo(a)pyrene	**<2.2**	ug/kg	20.6	2.2	1	06/10/08 09:55	06/10/08 23:23	50-32-8	
Benzo(b)fluoranthene	**<2.2**	ug/kg	20.6	2.2	1	06/10/08 09:55	06/10/08 23:23	205-99-2	
Benzo(g,h,i)perylene	**<2.4**	ug/kg	20.6	2.4	1	06/10/08 09:55	06/10/08 23:23	191-24-2	
Benzo(k)fluoranthene	**<2.1**	ug/kg	20.6	2.1	1	06/10/08 09:55	06/10/08 23:23	207-08-9	
Chrysene	**<2.5**	ug/kg	20.6	2.5	1	06/10/08 09:55	06/10/08 23:23	218-01-9	
Dibenz(a,h)anthracene	**<2.4**	ug/kg	20.6	2.4	1	06/10/08 09:55	06/10/08 23:23	53-70-3	
Fluoranthene	**<2.3**	ug/kg	20.6	2.3	1	06/10/08 09:55	06/10/08 23:23	206-44-0	
Fluorene	**<2.1**	ug/kg	20.6	2.1	1	06/10/08 09:55	06/10/08 23:23	86-73-7	
Indeno(1,2,3-cd)pyrene	**<2.3**	ug/kg	20.6	2.3	1	06/10/08 09:55	06/10/08 23:23	193-39-5	
1-Methylnaphthalene	**<1.7**	ug/kg	20.6	1.7	1	06/10/08 09:55	06/10/08 23:23	90-12-0	
2-Methylnaphthalene	**<1.8**	ug/kg	20.6	1.8	1	06/10/08 09:55	06/10/08 23:23	91-57-6	
Naphthalene	**<1.4**	ug/kg	20.6	1.4	1	06/10/08 09:55	06/10/08 23:23	91-20-3	
Phenanthrene	**<2.2**	ug/kg	20.6	2.2	1	06/10/08 09:55	06/10/08 23:23	85-01-8	
Pyrene	**<2.4**	ug/kg	20.6	2.4	1	06/10/08 09:55	06/10/08 23:23	129-00-0	
Nitrobenzene-d5 (S)	80	%	27-117		1	06/10/08 09:55	06/10/08 23:23	4165-60-0	
2-Fluorobiphenyl (S)	73	%	30-98		1	06/10/08 09:55	06/10/08 23:23	321-60-8	
Terphenyl-d14 (S)	90	%	27-90		1	06/10/08 09:55	06/10/08 23:23	1718-51-0	S0
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 16:31	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 16:31	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 16:31	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 16:31	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-5 14-16' **Lab ID: 404791011** Collected: 06/03/08 13:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 16:31	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 16:31	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:31	95-47-6	W
Dibromofluoromethane (S)	115	%	64-140		1	06/10/08 12:09	06/10/08 16:31	1868-53-7	
Toluene-d8 (S)	104	%	67-139		1	06/10/08 12:09	06/10/08 16:31	2037-26-5	
4-Bromofluorobenzene (S)	97	%	64-133		1	06/10/08 12:09	06/10/08 16:31	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**19.1**	%	0.10	0.10	1		06/10/08 07:55		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-6 3-4' **Lab ID: 404791012** Collected: 06/03/08 14:30 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.6**	%	0.10	0.10	1		06/10/08 07:55		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**353**	mg/kg	60.0	14.9	1		06/18/08 01:37	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-7 3-4' **Lab ID: 404791013** Collected: 06/03/08 16:20 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**22.0**	%	0.10	0.10	1		06/10/08 07:56		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**11600**	mg/kg	1280	319	20		06/19/08 18:44	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-8 12-14' **Lab ID: 404791014** Collected: 06/04/08 16:00 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<2.0**	ug/kg	20.9	2.0	1	06/10/08 09:55	06/10/08 23:45	83-32-9	
Acenaphthylene	**<2.2**	ug/kg	20.9	2.2	1	06/10/08 09:55	06/10/08 23:45	208-96-8	
Anthracene	**<2.3**	ug/kg	20.9	2.3	1	06/10/08 09:55	06/10/08 23:45	120-12-7	
Benzo(a)anthracene	**<2.3**	ug/kg	20.9	2.3	1	06/10/08 09:55	06/10/08 23:45	56-55-3	
Benzo(a)pyrene	**<2.2**	ug/kg	20.9	2.2	1	06/10/08 09:55	06/10/08 23:45	50-32-8	
Benzo(b)fluoranthene	**<2.2**	ug/kg	20.9	2.2	1	06/10/08 09:55	06/10/08 23:45	205-99-2	
Benzo(g,h,i)perylene	**<2.4**	ug/kg	20.9	2.4	1	06/10/08 09:55	06/10/08 23:45	191-24-2	
Benzo(k)fluoranthene	**<2.1**	ug/kg	20.9	2.1	1	06/10/08 09:55	06/10/08 23:45	207-08-9	
Chrysene	**<2.6**	ug/kg	20.9	2.6	1	06/10/08 09:55	06/10/08 23:45	218-01-9	
Dibenz(a,h)anthracene	**<2.4**	ug/kg	20.9	2.4	1	06/10/08 09:55	06/10/08 23:45	53-70-3	
Fluoranthene	**<2.3**	ug/kg	20.9	2.3	1	06/10/08 09:55	06/10/08 23:45	206-44-0	
Fluorene	**<2.1**	ug/kg	20.9	2.1	1	06/10/08 09:55	06/10/08 23:45	86-73-7	
Indeno(1,2,3-cd)pyrene	**<2.3**	ug/kg	20.9	2.3	1	06/10/08 09:55	06/10/08 23:45	193-39-5	
1-Methylnaphthalene	**<1.7**	ug/kg	20.9	1.7	1	06/10/08 09:55	06/10/08 23:45	90-12-0	
2-Methylnaphthalene	**<1.8**	ug/kg	20.9	1.8	1	06/10/08 09:55	06/10/08 23:45	91-57-6	
Naphthalene	**<1.5**	ug/kg	20.9	1.5	1	06/10/08 09:55	06/10/08 23:45	91-20-3	
Phenanthrene	**<2.3**	ug/kg	20.9	2.3	1	06/10/08 09:55	06/10/08 23:45	85-01-8	
Pyrene	**<2.4**	ug/kg	20.9	2.4	1	06/10/08 09:55	06/10/08 23:45	129-00-0	
Nitrobenzene-d5 (S)	78	%	27-117		1	06/10/08 09:55	06/10/08 23:45	4165-60-0	
2-Fluorobiphenyl (S)	74	%	30-98		1	06/10/08 09:55	06/10/08 23:45	321-60-8	
Terphenyl-d14 (S)	93	%	27-90		1	06/10/08 09:55	06/10/08 23:45	1718-51-0	S0
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 16:53	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 16:53	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 16:53	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 16:53	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-8 12-14' **Lab ID: 404791014** Collected: 06/04/08 16:00 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 16:53	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 16:53	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 16:53	95-47-6	W
Dibromofluoromethane (S)	123	%	64-140		1	06/10/08 12:09	06/10/08 16:53	1868-53-7	
Toluene-d8 (S)	113	%	67-139		1	06/10/08 12:09	06/10/08 16:53	2037-26-5	
4-Bromofluorobenzene (S)	104	%	64-133		1	06/10/08 12:09	06/10/08 16:53	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**20.4**	%	0.10	0.10	1		06/10/08 07:56		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-9 12-14' **Lab ID: 404791015** Collected: 06/04/08 17:00 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.9**	ug/kg	20.2	1.9	1	06/10/08 09:55	06/11/08 03:10	83-32-9	
Acenaphthylene	**<2.1**	ug/kg	20.2	2.1	1	06/10/08 09:55	06/11/08 03:10	208-96-8	
Anthracene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/11/08 03:10	120-12-7	
Benzo(a)anthracene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/11/08 03:10	56-55-3	
Benzo(a)pyrene	**<2.1**	ug/kg	20.2	2.1	1	06/10/08 09:55	06/11/08 03:10	50-32-8	
Benzo(b)fluoranthene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/11/08 03:10	205-99-2	
Benzo(g,h,i)perylene	**<2.3**	ug/kg	20.2	2.3	1	06/10/08 09:55	06/11/08 03:10	191-24-2	
Benzo(k)fluoranthene	**<2.1**	ug/kg	20.2	2.1	1	06/10/08 09:55	06/11/08 03:10	207-08-9	
Chrysene	**3.1J**	ug/kg	20.2	2.5	1	06/10/08 09:55	06/11/08 03:10	218-01-9	
Dibenz(a,h)anthracene	**<2.3**	ug/kg	20.2	2.3	1	06/10/08 09:55	06/11/08 03:10	53-70-3	
Fluoranthene	**<2.3**	ug/kg	20.2	2.3	1	06/10/08 09:55	06/11/08 03:10	206-44-0	
Fluorene	**<2.0**	ug/kg	20.2	2.0	1	06/10/08 09:55	06/11/08 03:10	86-73-7	
Indeno(1,2,3-cd)pyrene	**<2.2**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/11/08 03:10	193-39-5	
1-Methylnaphthalene	**15.8J**	ug/kg	20.2	1.6	1	06/10/08 09:55	06/11/08 03:10	90-12-0	
2-Methylnaphthalene	**21.4**	ug/kg	20.2	1.7	1	06/10/08 09:55	06/11/08 03:10	91-57-6	
Naphthalene	**7.9J**	ug/kg	20.2	1.4	1	06/10/08 09:55	06/11/08 03:10	91-20-3	
Phenanthrene	**4.2J**	ug/kg	20.2	2.2	1	06/10/08 09:55	06/11/08 03:10	85-01-8	
Pyrene	**<2.4**	ug/kg	20.2	2.4	1	06/10/08 09:55	06/11/08 03:10	129-00-0	
Nitrobenzene-d5 (S)	72	%	27-117		1	06/10/08 09:55	06/11/08 03:10	4165-60-0	
2-Fluorobiphenyl (S)	76	%	30-98		1	06/10/08 09:55	06/11/08 03:10	321-60-8	
Terphenyl-d14 (S)	92	%	27-90		1	06/10/08 09:55	06/11/08 03:10	1718-51-0	S0
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B								
Benzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-27-4	W
Bromoform	**<25.9**	ug/kg	60.0	25.9	1	06/10/08 12:09	06/10/08 17:15	75-25-2	W
Bromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	74-83-9	W
n-Butylbenzene	**<40.4**	ug/kg	60.0	40.4	1	06/10/08 12:09	06/10/08 17:15	104-51-8	W
sec-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	98-06-6	W
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	56-23-5	L3,W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	108-90-7	W
Chloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-00-3	W
Chloroform	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	67-66-3	W
Chloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	74-87-3	W
2-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	106-43-4	W
1,2-Dibromo-3-chloropropane	**<82.3**	ug/kg	250	82.3	1	06/10/08 12:09	06/10/08 17:15	96-12-8	W
Dibromochloromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	124-48-1	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	106-93-4	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	74-95-3	W
1,2-Dichlorobenzene	**<44.4**	ug/kg	60.0	44.4	1	06/10/08 12:09	06/10/08 17:15	95-50-1	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	541-73-1	W

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404791

Sample: GP-9 12-14' **Lab ID: 404791015** Collected: 06/04/08 17:00 Received: 06/06/08 08:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260		Preparation Method: EPA 5035/5030B						
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	106-46-7	W
Dichlorodifluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-71-8	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-34-3	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	107-06-2	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-35-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	156-59-2	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	156-60-5	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	78-87-5	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	142-28-9	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	594-20-7	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	563-58-6	W
cis-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	10061-01-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	10061-02-6	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	100-41-4	W
Hexachloro-1,3-butadiene	**<26.4**	ug/kg	60.0	26.4	1	06/10/08 12:09	06/10/08 17:15	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	98-82-8	W
p-Isopropyltoluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	99-87-6	W
Methylene Chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-09-2	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	1634-04-4	W
Naphthalene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	91-20-3	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	103-65-1	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	100-42-5	W
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	630-20-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	79-34-5	W
Tetrachloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	127-18-4	W
Toluene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	108-88-3	W
1,2,3-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	87-61-6	W
1,2,4-Trichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	120-82-1	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	71-55-6	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	79-00-5	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-69-4	W
1,2,3-Trichloropropane	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	96-18-4	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	95-63-6	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	108-67-8	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	75-01-4	W
m&p-Xylene	**<25.0**	ug/kg	120	25.0	1	06/10/08 12:09	06/10/08 17:15	1330-20-7	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	06/10/08 12:09	06/10/08 17:15	95-47-6	W
Dibromofluoromethane (S)	120	%	64-140		1	06/10/08 12:09	06/10/08 17:15	1868-53-7	
Toluene-d8 (S)	104	%	67-139		1	06/10/08 12:09	06/10/08 17:15	2037-26-5	
4-Bromofluorobenzene (S)	105	%	64-133		1	06/10/08 12:09	06/10/08 17:15	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.3**	%	0.10	0.10	1		06/10/08 07:56		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

QC Batch: PMST/1416 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 404791001, 404791002, 404791003, 404791004, 404791005, 404791006, 404791007

SAMPLE DUPLICATE: 37671

Parameter	Units	404784001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	21.9	22.4	2	10	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

QC Batch: PMST/1417 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 404791008, 404791009, 404791010, 404791011, 404791012, 404791013, 404791014

SAMPLE DUPLICATE: 37673

Parameter	Units	404739003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	6.7	7.7	14	10	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

QC Batch: OEXT/1707 | Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3546 | Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 404791001, 404791002, 404791003, 404791004, 404791005, 404791006, 404791007, 404791008, 404791010, 404791011, 404791014, 404791015

METHOD BLANK: 38140
Associated Lab Samples: 404791001, 404791002, 404791003, 404791004, 404791005, 404791006, 404791007, 404791008, 404791010, 404791011, 404791014, 404791015

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1-Methylnaphthalene	ug/kg	<1.4	16.7	
2-Methylnaphthalene	ug/kg	<1.4	16.7	
Acenaphthene	ug/kg	<1.6	16.7	
Acenaphthylene	ug/kg	<1.7	16.7	
Anthracene	ug/kg	<1.9	16.7	
Benzo(a)anthracene	ug/kg	<1.8	16.7	
Benzo(a)pyrene	ug/kg	<1.8	16.7	
Benzo(b)fluoranthene	ug/kg	<1.8	16.7	
Benzo(g,h,i)perylene	ug/kg	<1.9	16.7	
Benzo(k)fluoranthene	ug/kg	<1.7	16.7	
Chrysene	ug/kg	<2.0	16.7	
Dibenz(a,h)anthracene	ug/kg	<1.9	16.7	
Fluoranthene	ug/kg	<1.9	16.7	
Fluorene	ug/kg	<1.7	16.7	
Indeno(1,2,3-cd)pyrene	ug/kg	<1.8	16.7	
Naphthalene	ug/kg	<1.2	16.7	
Phenanthrene	ug/kg	<1.8	16.7	
Pyrene	ug/kg	<1.9	16.7	
2-Fluorobiphenyl (S)	%	68	30-98	
Nitrobenzene-d5 (S)	%	73	27-117	
Terphenyl-d14 (S)	%	84	27-90	

LABORATORY CONTROL SAMPLE: 38141

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	333	266	80	58-114	
2-Methylnaphthalene	ug/kg	333	265	80	57-113	
Acenaphthene	ug/kg	333	245	73	57-108	
Acenaphthylene	ug/kg	333	249	75	59-106	
Anthracene	ug/kg	333	218	66	54-119	
Benzo(a)anthracene	ug/kg	333	262	79	57-112	
Benzo(a)pyrene	ug/kg	333	281	84	63-113	
Benzo(b)fluoranthene	ug/kg	333	285	86	59-120	
Benzo(g,h,i)perylene	ug/kg	333	238	71	51-118	
Benzo(k)fluoranthene	ug/kg	333	307	92	55-124	
Chrysene	ug/kg	333	260	78	56-116	
Dibenz(a,h)anthracene	ug/kg	333	257	77	62-116	
Fluoranthene	ug/kg	333	270	81	60-117	
Fluorene	ug/kg	333	259	78	61-108	
Indeno(1,2,3-cd)pyrene	ug/kg	333	256	77	60-117	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

LABORATORY CONTROL SAMPLE: 38141

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg	333	246	74	56-104	
Phenanthrene	ug/kg	333	253	76	61-110	
Pyrene	ug/kg	333	290	87	56-113	
2-Fluorobiphenyl (S)	%			71	30-98	
Nitrobenzene-d5 (S)	%			75	27-117	
Terphenyl-d14 (S)	%			86	27-90	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 38142 38143

Parameter	Units	404741001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	8.4J	412	412	280	299	66	71	45-120	7	20	
2-Methylnaphthalene	ug/kg	13.0J	412	412	284	304	66	71	43-120	7	20	
Acenaphthene	ug/kg	36.3	412	412	386	300	85	64	47-107	25	20	R1
Acenaphthylene	ug/kg	6.5J	412	412	282	302	67	72	49-107	7	29	
Anthracene	ug/kg	111	412	412	559	309	109	48	47-112	58	26	R1
Benzo(a)anthracene	ug/kg	347	412	412	896	600	133	62	44-117	40	20	M0,R1
Benzo(a)pyrene	ug/kg	313	412	412	761	625	109	76	45-121	20	23	
Benzo(b)fluoranthene	ug/kg	350	412	412	801	613	109	64	34-139	27	26	R1
Benzo(g,h,i)perylene	ug/kg	134	412	412	542	420	99	69	23-120	25	22	R1
Benzo(k)fluoranthene	ug/kg	281	412	412	744	631	112	85	39-126	16	25	
Chrysene	ug/kg	344	412	412	925	610	141	64	40-118	41	21	M0,R1
Dibenz(a,h)anthracene	ug/kg	52.5	412	412	380	352	79	73	29-122	7	20	
Fluoranthene	ug/kg	900	412	412	1870	889	235	-3	39-131	71	30	M0,R1
Fluorene	ug/kg	36.5	412	412	388	303	85	65	44-113	24	22	R1
Indeno(1,2,3-cd)pyrene	ug/kg	130	412	412	500	427	89	72	27-125	16	21	
Naphthalene	ug/kg	12.4J	412	412	271	288	63	67	40-112	6	22	
Phenanthrene	ug/kg	420	412	412	1240	446	198	6	38-122	94	20	M0,R1
Pyrene	ug/kg	719	412	412	1500	767	190	12	34-126	65	29	M0,R1
2-Fluorobiphenyl (S)	%						63	71	30-98			
Nitrobenzene-d5 (S)	%						65	72	27-117			
Terphenyl-d14 (S)	%						64	68	27-90			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

QC Batch: MSV/1891 | Analysis Method: EPA 8260
QC Batch Method: EPA 5035/5030B | Analysis Description: 8260 MSV Med Level Normal List
Associated Lab Samples: 404791001, 404791002, 404791003, 404791004, 404791005, 404791006, 404791007, 404791008, 404791010, 404791011, 404791014, 404791015

METHOD BLANK: 38388
Associated Lab Samples: 404791001, 404791002, 404791003, 404791004, 404791005, 404791006, 404791007, 404791008, 404791010, 404791011, 404791014, 404791015

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	<25.0	60.0	
1,1,1-Trichloroethane	ug/kg	<25.0	60.0	
1,1,2,2-Tetrachloroethane	ug/kg	<25.0	60.0	
1,1,2-Trichloroethane	ug/kg	<25.0	60.0	
1,1-Dichloroethane	ug/kg	<25.0	60.0	
1,1-Dichloroethene	ug/kg	<25.0	60.0	
1,1-Dichloropropene	ug/kg	<25.0	60.0	
1,2,3-Trichlorobenzene	ug/kg	<25.0	60.0	
1,2,3-Trichloropropane	ug/kg	<25.0	60.0	
1,2,4-Trichlorobenzene	ug/kg	<25.0	60.0	
1,2,4-Trimethylbenzene	ug/kg	<25.0	60.0	
1,2-Dibromo-3-chloropropane	ug/kg	<82.3	250	
1,2-Dibromoethane (EDB)	ug/kg	<25.0	60.0	
1,2-Dichlorobenzene	ug/kg	<44.4	60.0	
1,2-Dichloroethane	ug/kg	<25.0	60.0	
1,2-Dichloropropane	ug/kg	<25.0	60.0	
1,3,5-Trimethylbenzene	ug/kg	<25.0	60.0	
1,3-Dichlorobenzene	ug/kg	<25.0	60.0	
1,3-Dichloropropane	ug/kg	<25.0	60.0	
1,4-Dichlorobenzene	ug/kg	<25.0	60.0	
2,2-Dichloropropane	ug/kg	<25.0	60.0	
2-Chlorotoluene	ug/kg	<25.0	60.0	
4-Chlorotoluene	ug/kg	<25.0	60.0	
Benzene	ug/kg	<25.0	60.0	
Bromobenzene	ug/kg	<25.0	60.0	
Bromochloromethane	ug/kg	<25.0	60.0	
Bromodichloromethane	ug/kg	<25.0	60.0	
Bromoform	ug/kg	<25.9	60.0	
Bromomethane	ug/kg	<25.0	60.0	
Carbon tetrachloride	ug/kg	<25.0	60.0	
Chlorobenzene	ug/kg	<25.0	60.0	
Chloroethane	ug/kg	<25.0	60.0	
Chloroform	ug/kg	<25.0	60.0	
Chloromethane	ug/kg	<25.0	60.0	
cis-1,2-Dichloroethene	ug/kg	<25.0	60.0	
cis-1,3-Dichloropropene	ug/kg	<25.0	60.0	
Dibromochloromethane	ug/kg	<25.0	60.0	
Dibromomethane	ug/kg	<25.0	60.0	
Dichlorodifluoromethane	ug/kg	<25.0	60.0	
Diisopropyl ether	ug/kg	<25.0	60.0	
Ethylbenzene	ug/kg	<25.0	60.0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

METHOD BLANK: 38388

Associated Lab Samples: 404791001, 404791002, 404791003, 404791004, 404791005, 404791006, 404791007, 404791008, 404791010, 404791011, 404791014, 404791015

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Hexachloro-1,3-butadiene	ug/kg	<26.4	60.0	
Isopropylbenzene (Cumene)	ug/kg	<25.0	60.0	
m&p-Xylene	ug/kg	<25.0	120	
Methyl-tert-butyl ether	ug/kg	<25.0	60.0	
Methylene Chloride	ug/kg	<25.0	60.0	
n-Butylbenzene	ug/kg	<40.4	60.0	
n-Propylbenzene	ug/kg	<25.0	60.0	
Naphthalene	ug/kg	<25.0	60.0	
o-Xylene	ug/kg	<25.0	60.0	
p-Isopropyltoluene	ug/kg	<25.0	60.0	
sec-Butylbenzene	ug/kg	<25.0	60.0	
Styrene	ug/kg	<25.0	60.0	
tert-Butylbenzene	ug/kg	<25.0	60.0	
Tetrachloroethene	ug/kg	<25.0	60.0	
Toluene	ug/kg	<25.0	60.0	
trans-1,2-Dichloroethene	ug/kg	<25.0	60.0	
trans-1,3-Dichloropropene	ug/kg	<25.0	60.0	
Trichloroethene	ug/kg	<25.0	60.0	
Trichlorofluoromethane	ug/kg	<25.0	60.0	
Vinyl chloride	ug/kg	<25.0	60.0	
4-Bromofluorobenzene (S)	%	105	64-133	
Dibromofluoromethane (S)	%	120	64-140	
Toluene-d8 (S)	%	106	67-139	

LABORATORY CONTROL SAMPLE & LCSD: 38389 38390

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	2500	2950	3100	118	124	75-125	5	20	
1,1,2,2-Tetrachloroethane	ug/kg	2500	2420	2410	97	96	75-125	.7	20	
1,1,2-Trichloroethane	ug/kg	2500	2480	2480	99	99	75-125	.2	20	
1,1-Dichloroethane	ug/kg	2500	2670	2790	107	112	75-125	5	20	
1,1-Dichloroethene	ug/kg	2500	2790	2780	112	111	54-149	.6	20	
1,2-Dichloroethane	ug/kg	2500	3050	3120	122	125	75-125	2	20	
1,2-Dichloropropane	ug/kg	2500	2430	2400	97	96	75-125	1	20	
Benzene	ug/kg	2500	2330	2350	93	94	75-125	.7	20	
Bromodichloromethane	ug/kg	2500	2830	2760	113	110	75-125	2	20	
Bromoform	ug/kg	2500	3040	2900	122	116	72-125	5	20	
Bromomethane	ug/kg	2500	3300	3250	132	130	40-159	1	20	
Carbon tetrachloride	ug/kg	2500	3320	3320	133	133	75-125	.2	20	
Chlorobenzene	ug/kg	2500	2520	2560	101	103	75-125	2	20	
Chloroethane	ug/kg	2500	3630	3420	145	137	40-179	6	20	
Chloroform	ug/kg	2500	2780	2850	111	114	75-125	3	20	
Chloromethane	ug/kg	2500	2400	2370	96	95	42-125	1	20	
cis-1,2-Dichloroethene	ug/kg	2500	2500	2580	100	103	75-125	3	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

LABORATORY CONTROL SAMPLE & LCSD: 38389 38390

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
cis-1,3-Dichloropropene	ug/kg	2500	2680	2590	107	103	75-125	4	20	
Dibromochloromethane	ug/kg	2500	2820	2810	113	112	75-125	.5	20	
Ethylbenzene	ug/kg	2500	2810	2810	112	112	75-125	.08	20	
m&p-Xylene	ug/kg	5000	5670	5620	113	112	75-127	.9	20	
Methylene Chloride	ug/kg	2500	2670	2630	107	105	58-144	1	20	
o-Xylene	ug/kg	2500	2840	2780	114	111	75-125	2	20	
Styrene	ug/kg	2500	2620	2600	105	104	75-130	.9	20	
Tetrachloroethene	ug/kg	2500	2680	2720	107	109	75-125	1	20	
Toluene	ug/kg	2500	2570	2590	103	103	75-125	.8	20	
trans-1,2-Dichloroethene	ug/kg	2500	2740	2760	110	110	75-125	.7	20	
trans-1,3-Dichloropropene	ug/kg	2500	2680	2780	107	111	75-125	4	20	
Trichloroethene	ug/kg	2500	2730	2650	109	106	75-125	3	20	
Vinyl chloride	ug/kg	2500	2550	2520	102	101	49-125	1	20	
4-Bromofluorobenzene (S)	%				111	111	64-133			
Dibromofluoromethane (S)	%				116	122	64-140			
Toluene-d8 (S)	%				111	112	67-139			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404791

QC Batch: WETA/1755 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 404791009, 404791012, 404791013

METHOD BLANK: 41320
Associated Lab Samples: 404791009, 404791012, 404791013

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Chloride	mg/kg	<12.4	50.0	

LABORATORY CONTROL SAMPLE: 41321

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	200	191	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 41322 41323

Parameter	Units	404791009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/kg	1270	1140	1140	2460	2450	105	104	80-120	.6	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 131994
Pace Project No.: 404791

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

BATCH QUALIFIERS

Batch: MSV/1892

[1]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery was outside laboratory control limits.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
W	Non-detect results are reported on a wet weight basis.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

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

(Please Print Clearly)

Company Name:	SHAW ENVIRONMENTAL
Branch/Location:	MILWAUKEE
Project Contact:	TIM WELCH
Phone:	414-291-2350
Project Number:	131994
Project Name:	
Project State:	WI
Sampled By (Print):	Chuck Zimney
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	TIM WELCH
Mail To Company:	Shaw Env.
Mail To Address:	Milwaukee
Invoice To Contact:	Denise DiChristopher
Invoice To Company:	Shaw Env.
Invoice To Address:	Milwaukee
Invoice To Phone:	

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

FILTERED? (YES/NO) — Y/N
PRESERVATION (CODE)* — Pick Letter

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	VOC (F)	PAH (A)	Chloride (A)	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	GP-1 2-4'	6-3-08	9:00	S	✓	✓			1-4OZ AGA, 1-40ML F	
002	GP-1 12-14'		9:15	S	✓	✓				
003	GP-2 2-4'		10:15	S	✓	✓				
004	GP-2 12-14'		10:30	S	✓	✓				
005	GP-3 6-8'		11:15	S	✓	✓				
006	GP-3 12-14'		11:30	S	✓	✓				
007	GP-4 2-4'		12:30	S	✓	✓				
008	GP-4 12-14'		12:45	S	✓	✓				
009	GP-4 3-4'		12:30	S			✓			
010	GP-5 2-4'		13:15	S	✓	✓			1-40ML F	
011	GP-5 14-16'		13:30	S	✓	✓				
012	GP-6 3-4'		14:30	S			✓			
013	GP-7 3-4'		16:20	S			✓			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
(SHAW)	6-5-08 / 8:30	D. Fenn	6/5/08 1005
D. Fenn	6/5/08 1530	Watco	
Watco	6/6/08 0845	Shelley Busby	6/6/08 0845

PACE Project No. 404791
Receipt Temp = R01 °C
Sample Receipt pH OK / Adjusted NA
Cooler Custody Seal Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27.Jun2006)

ORIGINAL

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

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

(Please Print Clearly)

Company Name:	SHAW ENV.
Branch/Location:	Milwaukee
Project Contact:	Tim Welch
Phone:	414-291-2350
Project Number:	131994
Project Name:	
Project State:	WI
Sampled By (Print):	Chuck Zimmer
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	Tim Welch
Mail To Company:	
Mail To Address:	
Invoice To Contact:	Denise DiChristopher
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: VOC	Analyses Requested: PAH	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
014	GP-8 12-14'	6-4-08	16:00	S		F	✓	✓	1-4 oz amber	1-40ml F	
015	GP-9 12-14'	6-4-08	17:00	S		A	✓	✓			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
SHAW	6-5-08 / 8:30	D. Fennel	6/5/08 1005
D. Fennel	6/5/08 1530	Watto	
Watto	6/6/08 0845	Stanley Buskey	6/6/08 0845

PACE Project No. 404791

Receipt Temp = R01 °C

Sample Receipt pH OK / Adjusted NA

Cooler Custody Seal Present / Not Present (Not Present circled)
Intact / Not Intact

Version 6.0 06/14/06

C019a(27 Jun2006)

ORIGINAL

Sample Condition Upon Receipt

Pace Analytical

Client Name: Shaw Env. Project # 404791

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other WaHCD

Optional
Proj. Due Date:
Proj. Name:

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used NA **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature RDI **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 6/10/08 AB

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A	7.
Sufficient Volume:	☒Yes	☐No	☐N/A	8.
Correct Containers Used:	☒Yes	☐No	☐N/A	9.
-Pace Containers Used:	☒Yes	☐No	☐N/A	
Containers Intact:	☒Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A	11.
Sample Labels match COC:	☒Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: ABWS				
All containers needing preservation have been checked.	☐Yes	☐No	☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed _____ Lot # of added preservative _____
Samples checked for dechlorination:	☐Yes	☐No	☒N/A	14.
Headspace in VOA Vials (>6mm): AB	☐Yes	☒No	☒N/A	15.
Trip Blank Present:	☐Yes	☒No	☒N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: JM **Date:** 6/9/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

June 26, 2008

Tim Welch
Shaw E & I
111 West Pleasant Street
Suite 105
Milwaukee, WI 53212

RE: Project: 131994
Pace Project No.: 404987

Dear Tim Welch:
Enclosed are the analytical results for sample(s) received by the laboratory on June 12, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kang Khang

kang.khang@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 131994
Pace Project No.: 404987

Green Bay Certification IDs

Florida (NELAP) Certification #: E87948
Illinois Certification #: 200050
California Certification #: 06246CA
New York Certification #: 11888
North Dakota Certification #: R-150
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 82
Louisiana Certification #: 04168

Green Bay Volatiles Certification IDs

Florida (NELAP) Certification #: E87951
California Certification #: 06247CA
Illinois Certification #: 200051
New York Certification #: 11887
North Dakota Certification #: R-200
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 83
Louisiana Certification #: 04169

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 131994
Pace Project No.: 404987

Lab ID	Sample ID	Matrix	Date Collected	Date Received
404987001	**GP-3**	Water	06/10/08 10:30	06/12/08 08:45
404987002	**GP-4**	Water	06/10/08 10:50	06/12/08 08:45
404987003	**GP-6**	Water	06/10/08 11:10	06/12/08 08:45
404987004	**GP-7**	Water	06/10/08 11:30	06/12/08 08:45
404987005	**GP-8**	Water	06/10/08 11:50	06/12/08 08:45
404987006	**TRIP BLANK**	Water	06/10/08 12:00	06/12/08 08:45

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 131994
Pace Project No.: 404987

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
404987001	**GP-3**	EPA 8260	SMT	64	PASI-G
404987002	**GP-4**	EPA 300.0	DDY	1	PASI-G
		EPA 8260	SMT	64	PASI-G
404987003	**GP-6**	EPA 300.0	DDY	1	PASI-G
404987004	**GP-7**	EPA 300.0	DDY	1	PASI-G
404987005	**GP-8**	EPA 8260	SMT	64	PASI-G

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-3 **Lab ID: 404987001** Collected: 06/10/08 10:30 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 14:14	71-43-2	
Bromobenzene	**<0.82**	ug/L	1.0	0.82	1		06/13/08 14:14	108-86-1	
Bromochloromethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:14	74-97-5	
Bromodichloromethane	**<0.56**	ug/L	1.9	0.56	1		06/13/08 14:14	75-27-4	
Bromoform	**<0.94**	ug/L	3.1	0.94	1		06/13/08 14:14	75-25-2	
Bromomethane	**<0.91**	ug/L	3.0	0.91	1		06/13/08 14:14	74-83-9	
n-Butylbenzene	**<0.93**	ug/L	1.0	0.93	1		06/13/08 14:14	104-51-8	
sec-Butylbenzene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 14:14	135-98-8	
tert-Butylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:14	98-06-6	
Carbon tetrachloride	**<0.49**	ug/L	1.0	0.49	1		06/13/08 14:14	56-23-5	
Chlorobenzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 14:14	108-90-7	
Chloroethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:14	75-00-3	
Chloroform	**<0.37**	ug/L	1.2	0.37	1		06/13/08 14:14	67-66-3	
Chloromethane	**<0.24**	ug/L	0.80	0.24	1		06/13/08 14:14	74-87-3	
2-Chlorotoluene	**<0.85**	ug/L	1.0	0.85	1		06/13/08 14:14	95-49-8	
4-Chlorotoluene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 14:14	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.87**	ug/L	2.9	0.87	1		06/13/08 14:14	96-12-8	
Dibromochloromethane	**<0.81**	ug/L	1.0	0.81	1		06/13/08 14:14	124-48-1	
1,2-Dibromoethane (EDB)	**<0.56**	ug/L	1.9	0.56	1		06/13/08 14:14	106-93-4	
Dibromomethane	**<0.60**	ug/L	1.0	0.60	1		06/13/08 14:14	74-95-3	
1,2-Dichlorobenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:14	95-50-1	
1,3-Dichlorobenzene	**<0.87**	ug/L	1.0	0.87	1		06/13/08 14:14	541-73-1	
1,4-Dichlorobenzene	**<0.95**	ug/L	1.0	0.95	1		06/13/08 14:14	106-46-7	
Dichlorodifluoromethane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 14:14	75-71-8	
1,1-Dichloroethane	**<0.75**	ug/L	1.0	0.75	1		06/13/08 14:14	75-34-3	
1,2-Dichloroethane	**<0.36**	ug/L	1.0	0.36	1		06/13/08 14:14	107-06-2	
1,1-Dichloroethene	**<0.57**	ug/L	1.0	0.57	1		06/13/08 14:14	75-35-4	
cis-1,2-Dichloroethene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:14	156-59-2	
trans-1,2-Dichloroethene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 14:14	156-60-5	
1,2-Dichloropropane	**<0.46**	ug/L	1.0	0.46	1		06/13/08 14:14	78-87-5	
1,3-Dichloropropane	**<0.61**	ug/L	2.0	0.61	1		06/13/08 14:14	142-28-9	
2,2-Dichloropropane	**<0.62**	ug/L	1.0	0.62	1		06/13/08 14:14	594-20-7	
1,1-Dichloropropene	**<0.75**	ug/L	1.0	0.75	1		06/13/08 14:14	563-58-6	
cis-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 14:14	10061-01-5	
trans-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 14:14	10061-02-6	
Diisopropyl ether	**<0.76**	ug/L	1.0	0.76	1		06/13/08 14:14	108-20-3	
Ethylbenzene	**<0.54**	ug/L	1.0	0.54	1		06/13/08 14:14	100-41-4	
Hexachloro-1,3-butadiene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 14:14	87-68-3	
Isopropylbenzene (Cumene)	**<0.59**	ug/L	1.0	0.59	1		06/13/08 14:14	98-82-8	
p-Isopropyltoluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 14:14	99-87-6	
Methylene Chloride	**<0.43**	ug/L	1.4	0.43	1		06/13/08 14:14	75-09-2	
Methyl-tert-butyl ether	**<0.61**	ug/L	2.0	0.61	1		06/13/08 14:14	1634-04-4	
Naphthalene	**<0.74**	ug/L	5.0	0.74	1		06/13/08 14:14	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	1.0	0.81	1		06/13/08 14:14	103-65-1	
Styrene	**<0.86**	ug/L	1.0	0.86	1		06/13/08 14:14	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.92**	ug/L	1.0	0.92	1		06/13/08 14:14	630-20-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-3 **Lab ID: 404987001** Collected: 06/10/08 10:30 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.20**	ug/L	0.67	0.20	1		06/13/08 14:14	79-34-5	
Tetrachloroethene	**<0.45**	ug/L	1.0	0.45	1		06/13/08 14:14	127-18-4	
Toluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 14:14	108-88-3	
1,2,3-Trichlorobenzene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 14:14	87-61-6	
1,2,4-Trichlorobenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:14	120-82-1	
1,1,1-Trichloroethane	**<0.90**	ug/L	1.0	0.90	1		06/13/08 14:14	71-55-6	
1,1,2-Trichloroethane	**<0.42**	ug/L	1.4	0.42	1		06/13/08 14:14	79-00-5	
Trichloroethene	**<0.48**	ug/L	1.0	0.48	1		06/13/08 14:14	79-01-6	
Trichlorofluoromethane	**<0.79**	ug/L	1.0	0.79	1		06/13/08 14:14	75-69-4	
1,2,3-Trichloropropane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 14:14	96-18-4	
1,2,4-Trimethylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:14	95-63-6	
1,3,5-Trimethylbenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:14	108-67-8	
Vinyl chloride	**<0.18**	ug/L	0.60	0.18	1		06/13/08 14:14	75-01-4	
m&p-Xylene	**<1.8**	ug/L	2.0	1.8	1		06/13/08 14:14	1330-20-7	
o-Xylene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:14	95-47-6	
4-Bromofluorobenzene (S)	102	%	64-132		1		06/13/08 14:14	460-00-4	
Dibromofluoromethane (S)	104	%	68-122		1		06/13/08 14:14	1868-53-7	
Toluene-d8 (S)	109	%	73-127		1		06/13/08 14:14	2037-26-5	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-4 **Lab ID: 404987002** Collected: 06/10/08 10:50 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 14:37	71-43-2	
Bromobenzene	**<0.82**	ug/L	1.0	0.82	1		06/13/08 14:37	108-86-1	
Bromochloromethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:37	74-97-5	
Bromodichloromethane	**<0.56**	ug/L	1.9	0.56	1		06/13/08 14:37	75-27-4	
Bromoform	**<0.94**	ug/L	3.1	0.94	1		06/13/08 14:37	75-25-2	
Bromomethane	**<0.91**	ug/L	3.0	0.91	1		06/13/08 14:37	74-83-9	
n-Butylbenzene	**<0.93**	ug/L	1.0	0.93	1		06/13/08 14:37	104-51-8	
sec-Butylbenzene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 14:37	135-98-8	
tert-Butylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:37	98-06-6	
Carbon tetrachloride	**<0.49**	ug/L	1.0	0.49	1		06/13/08 14:37	56-23-5	
Chlorobenzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 14:37	108-90-7	
Chloroethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:37	75-00-3	
Chloroform	**<0.37**	ug/L	1.2	0.37	1		06/13/08 14:37	67-66-3	
Chloromethane	**<0.24**	ug/L	0.80	0.24	1		06/13/08 14:37	74-87-3	
2-Chlorotoluene	**<0.85**	ug/L	1.0	0.85	1		06/13/08 14:37	95-49-8	
4-Chlorotoluene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 14:37	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.87**	ug/L	2.9	0.87	1		06/13/08 14:37	96-12-8	
Dibromochloromethane	**<0.81**	ug/L	1.0	0.81	1		06/13/08 14:37	124-48-1	
1,2-Dibromoethane (EDB)	**<0.56**	ug/L	1.9	0.56	1		06/13/08 14:37	106-93-4	
Dibromomethane	**<0.60**	ug/L	1.0	0.60	1		06/13/08 14:37	74-95-3	
1,2-Dichlorobenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:37	95-50-1	
1,3-Dichlorobenzene	**<0.87**	ug/L	1.0	0.87	1		06/13/08 14:37	541-73-1	
1,4-Dichlorobenzene	**<0.95**	ug/L	1.0	0.95	1		06/13/08 14:37	106-46-7	
Dichlorodifluoromethane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 14:37	75-71-8	
1,1-Dichloroethane	**<0.75**	ug/L	1.0	0.75	1		06/13/08 14:37	75-34-3	
1,2-Dichloroethane	**<0.36**	ug/L	1.0	0.36	1		06/13/08 14:37	107-06-2	
1,1-Dichloroethene	**<0.57**	ug/L	1.0	0.57	1		06/13/08 14:37	75-35-4	
cis-1,2-Dichloroethene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:37	156-59-2	
trans-1,2-Dichloroethene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 14:37	156-60-5	
1,2-Dichloropropane	**<0.46**	ug/L	1.0	0.46	1		06/13/08 14:37	78-87-5	
1,3-Dichloropropane	**<0.61**	ug/L	2.0	0.61	1		06/13/08 14:37	142-28-9	
2,2-Dichloropropane	**<0.62**	ug/L	1.0	0.62	1		06/13/08 14:37	594-20-7	
1,1-Dichloropropene	**<0.75**	ug/L	1.0	0.75	1		06/13/08 14:37	563-58-6	
cis-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 14:37	10061-01-5	
trans-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 14:37	10061-02-6	
Diisopropyl ether	**<0.76**	ug/L	1.0	0.76	1		06/13/08 14:37	108-20-3	
Ethylbenzene	**<0.54**	ug/L	1.0	0.54	1		06/13/08 14:37	100-41-4	
Hexachloro-1,3-butadiene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 14:37	87-68-3	
Isopropylbenzene (Cumene)	**<0.59**	ug/L	1.0	0.59	1		06/13/08 14:37	98-82-8	
p-Isopropyltoluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 14:37	99-87-6	
Methylene Chloride	**<0.43**	ug/L	1.4	0.43	1		06/13/08 14:37	75-09-2	
Methyl-tert-butyl ether	**<0.61**	ug/L	2.0	0.61	1		06/13/08 14:37	1634-04-4	
Naphthalene	**<0.74**	ug/L	5.0	0.74	1		06/13/08 14:37	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	1.0	0.81	1		06/13/08 14:37	103-65-1	
Styrene	**<0.86**	ug/L	1.0	0.86	1		06/13/08 14:37	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.92**	ug/L	1.0	0.92	1		06/13/08 14:37	630-20-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-4 **Lab ID: 404987002** Collected: 06/10/08 10:50 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.20**	ug/L	0.67	0.20	1		06/13/08 14:37	79-34-5	
Tetrachloroethene	**<0.45**	ug/L	1.0	0.45	1		06/13/08 14:37	127-18-4	
Toluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 14:37	108-88-3	
1,2,3-Trichlorobenzene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 14:37	87-61-6	
1,2,4-Trichlorobenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:37	120-82-1	
1,1,1-Trichloroethane	**<0.90**	ug/L	1.0	0.90	1		06/13/08 14:37	71-55-6	
1,1,2-Trichloroethane	**<0.42**	ug/L	1.4	0.42	1		06/13/08 14:37	79-00-5	
Trichloroethene	**<0.48**	ug/L	1.0	0.48	1		06/13/08 14:37	79-01-6	
Trichlorofluoromethane	**<0.79**	ug/L	1.0	0.79	1		06/13/08 14:37	75-69-4	
1,2,3-Trichloropropane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 14:37	96-18-4	
1,2,4-Trimethylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 14:37	95-63-6	
1,3,5-Trimethylbenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:37	108-67-8	
Vinyl chloride	**<0.18**	ug/L	0.60	0.18	1		06/13/08 14:37	75-01-4	
m&p-Xylene	**<1.8**	ug/L	2.0	1.8	1		06/13/08 14:37	1330-20-7	
o-Xylene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 14:37	95-47-6	
4-Bromofluorobenzene (S)	100	%	64-132		1		06/13/08 14:37	460-00-4	
Dibromofluoromethane (S)	106	%	68-122		1		06/13/08 14:37	1868-53-7	
Toluene-d8 (S)	108	%	73-127		1		06/13/08 14:37	2037-26-5	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3350**	mg/L	500	106	100		06/20/08 20:33	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-6 **Lab ID: 404987003** Collected: 06/10/08 11:10 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1690**	mg/L	500	106	100		06/20/08 20:47	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-7 **Lab ID: 404987004** Collected: 06/10/08 11:30 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**17800**	mg/L	5000	1060	1000		06/24/08 17:38	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-8 **Lab ID: 404987005** Collected: 06/10/08 11:50 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 15:00	71-43-2	
Bromobenzene	**<0.82**	ug/L	1.0	0.82	1		06/13/08 15:00	108-86-1	
Bromochloromethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 15:00	74-97-5	
Bromodichloromethane	**<0.56**	ug/L	1.9	0.56	1		06/13/08 15:00	75-27-4	
Bromoform	**<0.94**	ug/L	3.1	0.94	1		06/13/08 15:00	75-25-2	
Bromomethane	**<0.91**	ug/L	3.0	0.91	1		06/13/08 15:00	74-83-9	
n-Butylbenzene	**<0.93**	ug/L	1.0	0.93	1		06/13/08 15:00	104-51-8	
sec-Butylbenzene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 15:00	135-98-8	
tert-Butylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 15:00	98-06-6	
Carbon tetrachloride	**<0.49**	ug/L	1.0	0.49	1		06/13/08 15:00	56-23-5	
Chlorobenzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 15:00	108-90-7	
Chloroethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 15:00	75-00-3	
Chloroform	**<0.37**	ug/L	1.2	0.37	1		06/13/08 15:00	67-66-3	
Chloromethane	**<0.24**	ug/L	0.80	0.24	1		06/13/08 15:00	74-87-3	
2-Chlorotoluene	**<0.85**	ug/L	1.0	0.85	1		06/13/08 15:00	95-49-8	
4-Chlorotoluene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 15:00	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.87**	ug/L	2.9	0.87	1		06/13/08 15:00	96-12-8	
Dibromochloromethane	**<0.81**	ug/L	1.0	0.81	1		06/13/08 15:00	124-48-1	
1,2-Dibromoethane (EDB)	**<0.56**	ug/L	1.9	0.56	1		06/13/08 15:00	106-93-4	
Dibromomethane	**<0.60**	ug/L	1.0	0.60	1		06/13/08 15:00	74-95-3	
1,2-Dichlorobenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 15:00	95-50-1	
1,3-Dichlorobenzene	**<0.87**	ug/L	1.0	0.87	1		06/13/08 15:00	541-73-1	
1,4-Dichlorobenzene	**<0.95**	ug/L	1.0	0.95	1		06/13/08 15:00	106-46-7	
Dichlorodifluoromethane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 15:00	75-71-8	
1,1-Dichloroethane	**<0.75**	ug/L	1.0	0.75	1		06/13/08 15:00	75-34-3	
1,2-Dichloroethane	**<0.36**	ug/L	1.0	0.36	1		06/13/08 15:00	107-06-2	
1,1-Dichloroethene	**<0.57**	ug/L	1.0	0.57	1		06/13/08 15:00	75-35-4	
cis-1,2-Dichloroethene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 15:00	156-59-2	
trans-1,2-Dichloroethene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 15:00	156-60-5	
1,2-Dichloropropane	**<0.46**	ug/L	1.0	0.46	1		06/13/08 15:00	78-87-5	
1,3-Dichloropropane	**<0.61**	ug/L	2.0	0.61	1		06/13/08 15:00	142-28-9	
2,2-Dichloropropane	**<0.62**	ug/L	1.0	0.62	1		06/13/08 15:00	594-20-7	
1,1-Dichloropropene	**<0.75**	ug/L	1.0	0.75	1		06/13/08 15:00	563-58-6	
cis-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 15:00	10061-01-5	
trans-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 15:00	10061-02-6	
Diisopropyl ether	**<0.76**	ug/L	1.0	0.76	1		06/13/08 15:00	108-20-3	
Ethylbenzene	**<0.54**	ug/L	1.0	0.54	1		06/13/08 15:00	100-41-4	
Hexachloro-1,3-butadiene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 15:00	87-68-3	
Isopropylbenzene (Cumene)	**<0.59**	ug/L	1.0	0.59	1		06/13/08 15:00	98-82-8	
p-Isopropyltoluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 15:00	99-87-6	
Methylene Chloride	**<0.43**	ug/L	1.4	0.43	1		06/13/08 15:00	75-09-2	
Methyl-tert-butyl ether	**<0.61**	ug/L	2.0	0.61	1		06/13/08 15:00	1634-04-4	
Naphthalene	**<0.74**	ug/L	5.0	0.74	1		06/13/08 15:00	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	1.0	0.81	1		06/13/08 15:00	103-65-1	
Styrene	**<0.86**	ug/L	1.0	0.86	1		06/13/08 15:00	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.92**	ug/L	1.0	0.92	1		06/13/08 15:00	630-20-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: GP-8 **Lab ID: 404987005** Collected: 06/10/08 11:50 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.20**	ug/L	0.67	0.20	1		06/13/08 15:00	79-34-5	
Tetrachloroethene	**<0.45**	ug/L	1.0	0.45	1		06/13/08 15:00	127-18-4	
Toluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 15:00	108-88-3	
1,2,3-Trichlorobenzene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 15:00	87-61-6	
1,2,4-Trichlorobenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 15:00	120-82-1	
1,1,1-Trichloroethane	**<0.90**	ug/L	1.0	0.90	1		06/13/08 15:00	71-55-6	
1,1,2-Trichloroethane	**<0.42**	ug/L	1.4	0.42	1		06/13/08 15:00	79-00-5	
Trichloroethene	**<0.48**	ug/L	1.0	0.48	1		06/13/08 15:00	79-01-6	
Trichlorofluoromethane	**<0.79**	ug/L	1.0	0.79	1		06/13/08 15:00	75-69-4	
1,2,3-Trichloropropane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 15:00	96-18-4	
1,2,4-Trimethylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 15:00	95-63-6	
1,3,5-Trimethylbenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 15:00	108-67-8	
Vinyl chloride	**<0.18**	ug/L	0.60	0.18	1		06/13/08 15:00	75-01-4	
m&p-Xylene	**<1.8**	ug/L	2.0	1.8	1		06/13/08 15:00	1330-20-7	
o-Xylene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 15:00	95-47-6	
4-Bromofluorobenzene (S)	98	%	64-132		1		06/13/08 15:00	460-00-4	
Dibromofluoromethane (S)	104	%	68-122		1		06/13/08 15:00	1868-53-7	
Toluene-d8 (S)	105	%	73-127		1		06/13/08 15:00	2037-26-5	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: TRIP BLANK **Lab ID: 404987006** Collected: 06/10/08 12:00 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
	Analytical Method: EPA 8260								
Benzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 13:52	71-43-2	
Bromobenzene	**<0.82**	ug/L	1.0	0.82	1		06/13/08 13:52	108-86-1	
Bromochloromethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 13:52	74-97-5	
Bromodichloromethane	**<0.56**	ug/L	1.9	0.56	1		06/13/08 13:52	75-27-4	
Bromoform	**<0.94**	ug/L	3.1	0.94	1		06/13/08 13:52	75-25-2	
Bromomethane	**<0.91**	ug/L	3.0	0.91	1		06/13/08 13:52	74-83-9	
n-Butylbenzene	**<0.93**	ug/L	1.0	0.93	1		06/13/08 13:52	104-51-8	
sec-Butylbenzene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 13:52	135-98-8	
tert-Butylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 13:52	98-06-6	
Carbon tetrachloride	**<0.49**	ug/L	1.0	0.49	1		06/13/08 13:52	56-23-5	
Chlorobenzene	**<0.41**	ug/L	1.0	0.41	1		06/13/08 13:52	108-90-7	
Chloroethane	**<0.97**	ug/L	1.0	0.97	1		06/13/08 13:52	75-00-3	
Chloroform	**<0.37**	ug/L	1.2	0.37	1		06/13/08 13:52	67-66-3	
Chloromethane	**<0.24**	ug/L	0.80	0.24	1		06/13/08 13:52	74-87-3	
2-Chlorotoluene	**<0.85**	ug/L	1.0	0.85	1		06/13/08 13:52	95-49-8	
4-Chlorotoluene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 13:52	106-43-4	
1,2-Dibromo-3-chloropropane	**<0.87**	ug/L	2.9	0.87	1		06/13/08 13:52	96-12-8	
Dibromochloromethane	**<0.81**	ug/L	1.0	0.81	1		06/13/08 13:52	124-48-1	
1,2-Dibromoethane (EDB)	**<0.56**	ug/L	1.9	0.56	1		06/13/08 13:52	106-93-4	
Dibromomethane	**<0.60**	ug/L	1.0	0.60	1		06/13/08 13:52	74-95-3	
1,2-Dichlorobenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 13:52	95-50-1	
1,3-Dichlorobenzene	**<0.87**	ug/L	1.0	0.87	1		06/13/08 13:52	541-73-1	
1,4-Dichlorobenzene	**<0.95**	ug/L	1.0	0.95	1		06/13/08 13:52	106-46-7	
Dichlorodifluoromethane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 13:52	75-71-8	
1,1-Dichloroethane	**<0.75**	ug/L	1.0	0.75	1		06/13/08 13:52	75-34-3	
1,2-Dichloroethane	**<0.36**	ug/L	1.0	0.36	1		06/13/08 13:52	107-06-2	
1,1-Dichloroethene	**<0.57**	ug/L	1.0	0.57	1		06/13/08 13:52	75-35-4	
cis-1,2-Dichloroethene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 13:52	156-59-2	
trans-1,2-Dichloroethene	**<0.89**	ug/L	1.0	0.89	1		06/13/08 13:52	156-60-5	
1,2-Dichloropropane	**<0.46**	ug/L	1.0	0.46	1		06/13/08 13:52	78-87-5	
1,3-Dichloropropane	**<0.61**	ug/L	2.0	0.61	1		06/13/08 13:52	142-28-9	
2,2-Dichloropropane	**<0.62**	ug/L	1.0	0.62	1		06/13/08 13:52	594-20-7	
1,1-Dichloropropene	**<0.75**	ug/L	1.0	0.75	1		06/13/08 13:52	563-58-6	
cis-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 13:52	10061-01-5	
trans-1,3-Dichloropropene	**<0.19**	ug/L	0.63	0.19	1		06/13/08 13:52	10061-02-6	
Diisopropyl ether	**<0.76**	ug/L	1.0	0.76	1		06/13/08 13:52	108-20-3	
Ethylbenzene	**<0.54**	ug/L	1.0	0.54	1		06/13/08 13:52	100-41-4	
Hexachloro-1,3-butadiene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 13:52	87-68-3	
Isopropylbenzene (Cumene)	**<0.59**	ug/L	1.0	0.59	1		06/13/08 13:52	98-82-8	
p-Isopropyltoluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 13:52	99-87-6	
Methylene Chloride	**1.2J**	ug/L	1.4	0.43	1		06/13/08 13:52	75-09-2	
Methyl-tert-butyl ether	**<0.61**	ug/L	2.0	0.61	1		06/13/08 13:52	1634-04-4	
Naphthalene	**<0.74**	ug/L	5.0	0.74	1		06/13/08 13:52	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	1.0	0.81	1		06/13/08 13:52	103-65-1	
Styrene	**<0.86**	ug/L	1.0	0.86	1		06/13/08 13:52	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.92**	ug/L	1.0	0.92	1		06/13/08 13:52	630-20-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 404987

Sample: TRIP BLANK **Lab ID: 404987006** Collected: 06/10/08 12:00 Received: 06/12/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.20**	ug/L	0.67	0.20	1		06/13/08 13:52	79-34-5	
Tetrachloroethene	**<0.45**	ug/L	1.0	0.45	1		06/13/08 13:52	127-18-4	
Toluene	**<0.67**	ug/L	1.0	0.67	1		06/13/08 13:52	108-88-3	
1,2,3-Trichlorobenzene	**<0.74**	ug/L	1.0	0.74	1		06/13/08 13:52	87-61-6	
1,2,4-Trichlorobenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 13:52	120-82-1	
1,1,1-Trichloroethane	**<0.90**	ug/L	1.0	0.90	1		06/13/08 13:52	71-55-6	
1,1,2-Trichloroethane	**<0.42**	ug/L	1.4	0.42	1		06/13/08 13:52	79-00-5	
Trichloroethene	**<0.48**	ug/L	1.0	0.48	1		06/13/08 13:52	79-01-6	
Trichlorofluoromethane	**<0.79**	ug/L	1.0	0.79	1		06/13/08 13:52	75-69-4	
1,2,3-Trichloropropane	**<0.99**	ug/L	1.0	0.99	1		06/13/08 13:52	96-18-4	
1,2,4-Trimethylbenzene	**<0.97**	ug/L	1.0	0.97	1		06/13/08 13:52	95-63-6	
1,3,5-Trimethylbenzene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 13:52	108-67-8	
Vinyl chloride	**<0.18**	ug/L	0.60	0.18	1		06/13/08 13:52	75-01-4	
m&p-Xylene	**<1.8**	ug/L	2.0	1.8	1		06/13/08 13:52	1330-20-7	
o-Xylene	**<0.83**	ug/L	1.0	0.83	1		06/13/08 13:52	95-47-6	
4-Bromofluorobenzene (S)	98	%	64-132		1		06/13/08 13:52	460-00-4	
Dibromofluoromethane (S)	106	%	68-122		1		06/13/08 13:52	1868-53-7	
Toluene-d8 (S)	106	%	73-127		1		06/13/08 13:52	2037-26-5	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404987

QC Batch: MSV/1918 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV
Associated Lab Samples: 404987001, 404987002, 404987005, 404987006

METHOD BLANK: 39819
Associated Lab Samples: 404987001, 404987002, 404987005, 404987006

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.92	1.0	
1,1,1-Trichloroethane	ug/L	<0.90	1.0	
1,1,2,2-Tetrachloroethane	ug/L	<0.20	0.67	
1,1,2-Trichloroethane	ug/L	<0.42	1.4	
1,1-Dichloroethane	ug/L	<0.75	1.0	
1,1-Dichloroethene	ug/L	<0.57	1.0	
1,1-Dichloropropene	ug/L	<0.75	1.0	
1,2,3-Trichlorobenzene	ug/L	<0.74	1.0	
1,2,3-Trichloropropane	ug/L	<0.99	1.0	
1,2,4-Trichlorobenzene	ug/L	<0.97	1.0	
1,2,4-Trimethylbenzene	ug/L	<0.97	1.0	
1,2-Dibromo-3-chloropropane	ug/L	<0.87	2.9	
1,2-Dibromoethane (EDB)	ug/L	<0.56	1.9	
1,2-Dichlorobenzene	ug/L	<0.83	1.0	
1,2-Dichloroethane	ug/L	<0.36	1.0	
1,2-Dichloropropane	ug/L	<0.46	1.0	
1,3,5-Trimethylbenzene	ug/L	<0.83	1.0	
1,3-Dichlorobenzene	ug/L	<0.87	1.0	
1,3-Dichloropropane	ug/L	<0.61	2.0	
1,4-Dichlorobenzene	ug/L	<0.95	1.0	
2,2-Dichloropropane	ug/L	<0.62	1.0	
2-Chlorotoluene	ug/L	<0.85	1.0	
4-Chlorotoluene	ug/L	<0.74	1.0	
Benzene	ug/L	<0.41	1.0	
Bromobenzene	ug/L	<0.82	1.0	
Bromochloromethane	ug/L	<0.97	1.0	
Bromodichloromethane	ug/L	<0.56	1.9	
Bromoform	ug/L	<0.94	3.1	
Bromomethane	ug/L	<0.91	3.0	
Carbon tetrachloride	ug/L	<0.49	1.0	
Chlorobenzene	ug/L	<0.41	1.0	
Chloroethane	ug/L	<0.97	1.0	
Chloroform	ug/L	<0.37	1.2	
Chloromethane	ug/L	<0.24	0.80	
cis-1,2-Dichloroethene	ug/L	<0.83	1.0	
cis-1,3-Dichloropropene	ug/L	<0.19	0.63	
Dibromochloromethane	ug/L	<0.81	1.0	
Dibromomethane	ug/L	<0.60	1.0	
Dichlorodifluoromethane	ug/L	<0.99	1.0	
Diisopropyl ether	ug/L	<0.76	1.0	
Ethylbenzene	ug/L	<0.54	1.0	
Hexachloro-1,3-butadiene	ug/L	<0.67	1.0	
Isopropylbenzene (Cumene)	ug/L	<0.59	1.0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404987

METHOD BLANK: 39819

Associated Lab Samples: 404987001, 404987002, 404987005, 404987006

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
m&p-Xylene	ug/L	<1.8	2.0	
Methyl-tert-butyl ether	ug/L	<0.61	2.0	
Methylene Chloride	ug/L	<0.43	1.4	
n-Butylbenzene	ug/L	<0.93	1.0	
n-Propylbenzene	ug/L	<0.81	1.0	
Naphthalene	ug/L	<0.74	5.0	
o-Xylene	ug/L	<0.83	1.0	
p-Isopropyltoluene	ug/L	<0.67	1.0	
sec-Butylbenzene	ug/L	<0.89	1.0	
Styrene	ug/L	<0.86	1.0	
tert-Butylbenzene	ug/L	<0.97	1.0	
Tetrachloroethene	ug/L	<0.45	1.0	
Toluene	ug/L	<0.67	1.0	
trans-1,2-Dichloroethene	ug/L	<0.89	1.0	
trans-1,3-Dichloropropene	ug/L	<0.19	0.63	
Trichloroethene	ug/L	<0.48	1.0	
Trichlorofluoromethane	ug/L	<0.79	1.0	
Vinyl chloride	ug/L	<0.18	0.60	
4-Bromofluorobenzene (S)	%	101	64-132	
Dibromofluoromethane (S)	%	104	68-122	
Toluene-d8 (S)	%	105	73-127	

LABORATORY CONTROL SAMPLE & LCSD: 39820 39821

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	50	50.5	51.6	101	103	75-128	2	20	
1,1,2,2-Tetrachloroethane	ug/L	50	50.3	51.8	101	104	67-125	3	20	
1,1,2-Trichloroethane	ug/L	50	50.8	50.1	102	100	75-125	1	20	
1,1-Dichloroethane	ug/L	50	49.5	51.4	99	103	71-130	4	20	
1,1-Dichloroethene	ug/L	50	52.8	55.8	106	112	75-125	5	20	
1,2-Dichloroethane	ug/L	50	50.0	51.5	100	103	71-132	3	20	
1,2-Dichloropropane	ug/L	50	48.8	49.7	98	99	73-125	2	20	
Benzene	ug/L	50	49.9	51.5	100	103	75-125	3	20	
Bromodichloromethane	ug/L	50	47.0	48.6	94	97	75-125	3	20	
Bromoform	ug/L	50	45.8	46.5	92	93	75-125	2	20	
Bromomethane	ug/L	50	46.5	50.7	93	101	66-125	9	20	
Carbon tetrachloride	ug/L	50	50.9	53.3	102	107	75-125	5	20	
Chlorobenzene	ug/L	50	49.2	50.9	98	102	75-125	3	20	
Chloroethane	ug/L	50	53.0	56.5	106	113	72-126	7	20	
Chloroform	ug/L	50	49.3	49.9	99	100	75-125	1	20	
Chloromethane	ug/L	50	49.0	52.0	98	104	46-143	6	20	
cis-1,2-Dichloroethene	ug/L	50	50.4	52.1	101	104	75-125	3	20	
cis-1,3-Dichloropropene	ug/L	50	48.7	49.9	97	100	75-125	2	20	
Dibromochloromethane	ug/L	50	48.3	49.4	97	99	75-125	2	20	
Ethylbenzene	ug/L	50	49.6	51.2	99	102	75-125	3	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404987

LABORATORY CONTROL SAMPLE & LCSD: 39820 39821

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
m&p-Xylene	ug/L	100	98.3	106	98	106	75-125	7	20	
Methylene Chloride	ug/L	50	51.5	52.5	103	105	75-125	2	20	
o-Xylene	ug/L	50	49.2	51.6	98	103	75-125	5	20	
Styrene	ug/L	50	46.7	48.9	93	98	75-125	5	20	
Tetrachloroethene	ug/L	50	49.4	49.7	99	99	75-130	.5	20	
Toluene	ug/L	50	49.5	52.2	99	104	75-125	5	20	
trans-1,2-Dichloroethene	ug/L	50	49.2	51.4	98	103	75-125	4	20	
trans-1,3-Dichloropropene	ug/L	50	49.3	48.1	99	96	75-125	3	20	
Trichloroethene	ug/L	50	50.5	51.5	101	103	75-125	2	20	
Vinyl chloride	ug/L	50	52.3	54.9	105	110	65-130	5	20	
4-Bromofluorobenzene (S)	%				103	102	64-132			
Dibromofluoromethane (S)	%				104	105	68-122			
Toluene-d8 (S)	%				108	109	73-127			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39822 39823

Parameter	Units	405006007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	<0.90	50	50	50.4	49.8	101	100	70-130	1	30	
1,1,2,2-Tetrachloroethane	ug/L	<0.20	50	50	52.3	50.9	105	102	70-130	3	30	
1,1,2-Trichloroethane	ug/L	<0.42	50	50	51.9	51.2	104	102	70-130	1	30	
1,1-Dichloroethane	ug/L	<0.75	50	50	50.6	50.8	101	102	70-130	.4	30	
1,1-Dichloroethene	ug/L	<0.57	50	50	55.2	55.5	110	111	70-135	.4	30	
1,2-Dichloroethane	ug/L	<0.36	50	50	51.0	49.9	102	100	70-130	2	30	
1,2-Dichloropropane	ug/L	<0.46	50	50	49.5	50.4	99	101	70-130	2	30	
Benzene	ug/L	5.5	50	50	57.3	56.0	104	101	70-130	2	30	
Bromodichloromethane	ug/L	<0.56	50	50	47.2	48.3	94	97	70-130	2	30	
Bromoform	ug/L	<0.94	50	50	46.7	46.2	93	92	70-130	1	30	
Bromomethane	ug/L	<0.91	50	50	51.7	51.5	103	103	63-147	.5	30	
Carbon tetrachloride	ug/L	<0.49	50	50	53.0	51.8	106	104	70-131	2	30	
Chlorobenzene	ug/L	9.4	50	50	58.9	59.0	99	99	70-130	.2	30	
Chloroethane	ug/L	<0.97	50	50	55.5	55.0	111	110	67-138	.9	30	
Chloroform	ug/L	<0.37	50	50	49.9	50.0	100	100	70-130	.2	30	
Chloromethane	ug/L	<0.24	50	50	50.9	49.6	102	99	43-150	3	30	
cis-1,2-Dichloroethene	ug/L	<0.83	50	50	52.2	52.1	104	104	70-130	.3	30	
cis-1,3-Dichloropropene	ug/L	<0.19	50	50	49.0	49.7	98	99	70-130	1	30	
Dibromochloromethane	ug/L	<0.81	50	50	49.3	49.1	99	98	70-130	.4	30	
Ethylbenzene	ug/L	<0.54	50	50	51.5	51.0	102	101	70-136	.9	30	
m&p-Xylene	ug/L	<1.8	100	100	106	102	105	101	70-137	4	30	
Methylene Chloride	ug/L	<0.43	50	50	52.3	50.3	105	101	70-130	4	30	
o-Xylene	ug/L	<0.83	50	50	51.9	51.4	104	103	70-130	1	30	
Styrene	ug/L	<0.86	50	50	47.6	44.8	95	90	70-130	6	30	
Tetrachloroethene	ug/L	<0.45	50	50	50.7	50.4	101	101	70-130	.7	30	
Toluene	ug/L	<0.67	50	50	53.6	52.5	106	104	70-130	2	30	
trans-1,2-Dichloroethene	ug/L	<0.89	50	50	53.2	51.4	106	103	70-130	3	30	
trans-1,3-Dichloropropene	ug/L	<0.19	50	50	49.5	50.1	99	100	70-130	1	30	
Trichloroethene	ug/L	<0.48	50	50	51.6	51.1	103	102	70-130	1	30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404987

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39822 39823

Parameter	Units	405006007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Vinyl chloride	ug/L	<0.18	50	50	54.6	54.2	109	108	62-138	.6	30	
4-Bromofluorobenzene (S)	%						102	104	64-132			
Dibromofluoromethane (S)	%						106	104	68-122			
Toluene-d8 (S)	%						109	109	73-127			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404987

QC Batch: WETA/1773 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 404987002, 404987003

METHOD BLANK: 42406
Associated Lab Samples: 404987002, 404987003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Chloride	mg/L	<1.1	5.0	

LABORATORY CONTROL SAMPLE: 42407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	18.8	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 42410 42411

Parameter	Units	404917001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	29.6	20	20	50.5	50.4	105	104	90-110	.2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 42458 42459

Parameter	Units	1075011002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	16.6	20	20	36.8	36.4	101	99	90-110	1	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 404987

QC Batch: WETA/1798
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 404987004

METHOD BLANK: 43771
Associated Lab Samples: 404987004

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Chloride	mg/L	<1.1	5.0	

LABORATORY CONTROL SAMPLE: 43772

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	18.9	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 43773 43774

Parameter	Units	404990001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	106	100	100	209	209	103	103	90-110	.2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 43775 43776

Parameter	Units	9221794001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	20	20	22.4	22.3	89	89	90-110	.7	20	M0

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 131994
Pace Project No.: 404987

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

M0	Matrix spike recovery was outside laboratory control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

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

(Please Print Clearly)

Company Name:	Shaw Env.
Branch/Location:	Milwaukee
Project Contact:	Tim Welch
Phone:	414-291-2350
Project Number:	131994
Project Name:	
Project State:	WI
Sampled By (Print):	Chuck Zimney
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	Tim Welch
Mail To Company:	Shaw Env.
Mail To Address:	Milwaukee
Invoice To Contact:	Denise DiChristopher
Invoice To Company:	Shaw Env.
Invoice To Address:	Milwaukee
Invoice To Phone:	

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	VOC	Chloride	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					N	N					
					B	A					
001	GP-3	6-10-08	10:30	GW	✓				3-40 ml B		
002	GP-4	↓	10:50	GW	✓	✓			+	1-250 ml A	
003	GP-6	↓	11:10	GW		✓				↓	
004	GP-7	↓	11:30	GW		✓					
005	GP-8	↓	11:50	GW	✓				3-40 ml B		
006	Trip Blank	↓	12:00	W	✓				2-40 ml TB		

Analyses Requested

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	6/10/08 17:00	D. Fenel	6/11/08 0905
D. Fenel	6/11/08 1555	Walto	
Walto	6/12/08 0845	[signature]	6/12/08 0845

PACE Project No. 404987

Receipt Temp = 2.01 °C

Sample Receipt pH OK / Adjusted NA

Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Sample Condition Upon Receipt

Pace Analytical

Client Name: Shaw Env. Project # 404987

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other Walter

Optional
Proj. Due Date:
Proj. Name:

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used NA **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature R01 **Biological Tissue is Frozen:** Yes No

Date and Initials of person examining contents: 6/12/08 AB

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed ____ Lot # of added preservative ____
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☒No ☐N/A	15.
Trip Blank Present:	☒Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☒Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 6/12/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

August 29, 2008

Dave Turriff
Chemisphere
712 North Quincy Street
Green Bay, WI 54302

RE: Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Dear Dave Turriff:
Enclosed are the analytical results for sample(s) received by the laboratory on August 18, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Laurie Woelfel

Laurie Woelfel

laurie.woelfel@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Green Bay Certification IDs

Louisiana Certification #: 04168
Kentucky Certification #: 82
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-150
New York Certification #: 11888
Illinois Certification #: 200050
Florida (NELAP) Certification #: E87948

Green Bay Volatiles Certification IDs

Louisiana Certification #: 04169
Kentucky Certification #: 83
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-200
New York Certification #: 11887
Illinois Certification #: 200051
Florida (NELAP) Certification #: E87951

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Lab ID	Sample ID	Matrix	Date Collected	Date Received
407893001	**B-1 SS-5 8.5'**	Solid	08/14/08 15:57	08/18/08 15:10
407893002	**B-3 SS-4 7'**	Solid	08/14/08 14:43	08/18/08 15:10
407893003	**B-5 SS-5 9'**	Solid	08/14/08 13:30	08/18/08 15:10
407893004	**B-4 SS-5 8'**	Solid	08/14/08 12:17	08/18/08 15:10
407893005	**B-2 (MW-2) 6-8'**	Solid	08/15/08 08:30	08/18/08 15:10
407893006	**GP-10 2-4'**	Solid	08/15/08 08:45	08/18/08 15:10
407893007	**GP-11 2-4'**	Solid	08/15/08 09:00	08/18/08 15:10
407893008	**GP-12 2-4'**	Solid	08/15/08 09:15	08/18/08 15:10
407893009	**GP-13 2-4'**	Solid	08/15/08 09:30	08/18/08 15:10
407893010	**GP-14 2-4'**	Solid	08/15/08 09:45	08/18/08 15:10
407893011	**GP-15 2-4'**	Solid	08/15/08 10:00	08/18/08 15:10
407893012	**GP-16 2-4'**	Solid	08/15/08 10:15	08/18/08 15:10
407893013	**GP-17 2-4'**	Solid	08/15/08 10:30	08/18/08 15:10
407893014	**GP-18 2-4'**	Solid	08/15/08 10:45	08/18/08 15:10
407893015	**GP-19 2-4'**	Solid	08/15/08 11:00	08/18/08 15:10
407893016	**GP-20 2-4'**	Solid	08/15/08 11:15	08/18/08 15:10
407893017	**GP-21 2-4'**	Solid	08/15/08 11:30	08/18/08 15:10
407893018	**GP-22 2-4'**	Solid	08/15/08 11:45	08/18/08 15:10
407893019	**GP-23 2-4'**	Solid	08/15/08 12:00	08/18/08 15:10

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
407893001	**B-1 SS-5 8.5'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
407893002	**B-3 SS-4 7'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
407893003	**B-5 SS-5 9'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
407893004	**B-4 SS-5 8'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
407893005	**B-2 (MW-2) 6-8'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 300.0	DDY	1	PASI-G
407893006	**GP-10 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893007	**GP-11 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893008	**GP-12 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893009	**GP-13 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893010	**GP-14 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893011	**GP-15 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893012	**GP-16 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893013	**GP-17 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893014	**GP-18 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893015	**GP-19 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893016	**GP-20 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893017	**GP-21 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893018	**GP-22 2-4'**	ASTM D2974-87	JKS	1	PASI-G
		EPA 8270 by SIM	ARO	21	PASI-G
407893019	**GP-23 2-4'**	ASTM D2974-87	JKS	1	PASI-G

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8270 by SIM	ARO	21	PASI-G

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: B-1 SS-5 8.5' **Lab ID: 407893001** Collected: 08/14/08 15:57 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.2**	%	0.10	0.10	1		08/26/08 07:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**104**	mg/kg	61.1	15.2	1		08/26/08 23:46	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: B-3 SS-4 7' **Lab ID: 407893002** Collected: 08/14/08 14:43 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.8**	%	0.10	0.10	1		08/26/08 07:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**691**	mg/kg	61.5	15.3	1		08/27/08 00:57	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: B-5 SS-5 9' **Lab ID: 407893003** Collected: 08/14/08 13:30 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**20.9**	%	0.10	0.10	1		08/26/08 07:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**727**	mg/kg	63.2	15.7	1		08/27/08 01:11	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: B-4 SS-5 8' **Lab ID: 407893004** Collected: 08/14/08 12:17 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.1**	%	0.10	0.10	1		08/26/08 07:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2070**	mg/kg	298	74.1	5		08/27/08 18:59	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: B-2 (MW-2) 6-8' **Lab ID: 407893005** Collected: 08/15/08 08:30 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**23.3**	%	0.10	0.10	1		08/26/08 07:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2860**	mg/kg	326	81.1	5		08/27/08 19:13	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-10 2-4' **Lab ID: 407893006** Collected: 08/15/08 08:45 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**19.5J**	ug/kg	27.9	1.5	1	08/22/08 16:45	08/22/08 21:00	83-32-9	
Acenaphthylene	**11.8J**	ug/kg	27.9	2.8	1	08/22/08 16:45	08/22/08 21:00	208-96-8	
Anthracene	**92.1**	ug/kg	27.9	7.6	1	08/22/08 16:45	08/22/08 21:00	120-12-7	
Benzo(a)anthracene	**185**	ug/kg	27.9	14.0	1	08/22/08 16:45	08/22/08 21:00	56-55-3	L2
Benzo(a)pyrene	**193**	ug/kg	27.9	6.1	1	08/22/08 16:45	08/22/08 21:00	50-32-8	
Benzo(b)fluoranthene	**217**	ug/kg	27.9	9.5	1	08/22/08 16:45	08/22/08 21:00	205-99-2	
Benzo(g,h,i)perylene	**94.5**	ug/kg	27.9	7.0	1	08/22/08 16:45	08/22/08 21:00	191-24-2	
Benzo(k)fluoranthene	**173**	ug/kg	27.9	10.4	1	08/22/08 16:45	08/22/08 21:00	207-08-9	
Chrysene	**189**	ug/kg	27.9	5.7	1	08/22/08 16:45	08/22/08 21:00	218-01-9	
Dibenz(a,h)anthracene	**37.4**	ug/kg	27.9	7.8	1	08/22/08 16:45	08/22/08 21:00	53-70-3	
Fluoranthene	**523**	ug/kg	27.9	1.8	1	08/22/08 16:45	08/22/08 21:00	206-44-0	
Fluorene	**34.0**	ug/kg	27.9	1.5	1	08/22/08 16:45	08/22/08 21:00	86-73-7	
Indeno(1,2,3-cd)pyrene	**88.9**	ug/kg	27.9	7.0	1	08/22/08 16:45	08/22/08 21:00	193-39-5	
1-Methylnaphthalene	**12.8J**	ug/kg	27.9	3.1	1	08/22/08 16:45	08/22/08 21:00	90-12-0	
2-Methylnaphthalene	**18.7J**	ug/kg	27.9	3.1	1	08/22/08 16:45	08/22/08 21:00	91-57-6	
Naphthalene	**24.5J**	ug/kg	27.9	2.1	1	08/22/08 16:45	08/22/08 21:00	91-20-3	
Phenanthrene	**300**	ug/kg	27.9	3.3	1	08/22/08 16:45	08/22/08 21:00	85-01-8	
Pyrene	**313**	ug/kg	27.9	1.7	1	08/22/08 16:45	08/22/08 21:00	129-00-0	
Nitrobenzene-d5 (S)	37	%	39-96		1	08/22/08 16:45	08/22/08 21:00	4165-60-0	S0
2-Fluorobiphenyl (S)	46	%	39-98		1	08/22/08 16:45	08/22/08 21:00	321-60-8	
Terphenyl-d14 (S)	38	%	28-117		1	08/22/08 16:45	08/22/08 21:00	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**40.2**	%	0.10	0.10	1		08/26/08 07:14		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-11 2-4' **Lab ID: 407893007** Collected: 08/15/08 09:00 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**<1.1**	ug/kg	20.2	1.1	1	08/22/08 16:45	08/22/08 21:22	83-32-9	
Acenaphthylene	**<2.1**	ug/kg	20.2	2.1	1	08/22/08 16:45	08/22/08 21:22	208-96-8	
Anthracene	**<5.5**	ug/kg	20.2	5.5	1	08/22/08 16:45	08/22/08 21:22	120-12-7	
Benzo(a)anthracene	**<10.1**	ug/kg	20.2	10.1	1	08/22/08 16:45	08/22/08 21:22	56-55-3	L2
Benzo(a)pyrene	**<4.4**	ug/kg	20.2	4.4	1	08/22/08 16:45	08/22/08 21:22	50-32-8	
Benzo(b)fluoranthene	**<6.9**	ug/kg	20.2	6.9	1	08/22/08 16:45	08/22/08 21:22	205-99-2	
Benzo(g,h,i)perylene	**<5.1**	ug/kg	20.2	5.1	1	08/22/08 16:45	08/22/08 21:22	191-24-2	
Benzo(k)fluoranthene	**<7.5**	ug/kg	20.2	7.5	1	08/22/08 16:45	08/22/08 21:22	207-08-9	
Chrysene	**7.4J**	ug/kg	20.2	4.2	1	08/22/08 16:45	08/22/08 21:22	218-01-9	
Dibenz(a,h)anthracene	**<5.6**	ug/kg	20.2	5.6	1	08/22/08 16:45	08/22/08 21:22	53-70-3	
Fluoranthene	**11.6J**	ug/kg	20.2	1.3	1	08/22/08 16:45	08/22/08 21:22	206-44-0	
Fluorene	**<1.1**	ug/kg	20.2	1.1	1	08/22/08 16:45	08/22/08 21:22	86-73-7	
Indeno(1,2,3-cd)pyrene	**<5.1**	ug/kg	20.2	5.1	1	08/22/08 16:45	08/22/08 21:22	193-39-5	
1-Methylnaphthalene	**<2.2**	ug/kg	20.2	2.2	1	08/22/08 16:45	08/22/08 21:22	90-12-0	
2-Methylnaphthalene	**<2.2**	ug/kg	20.2	2.2	1	08/22/08 16:45	08/22/08 21:22	91-57-6	
Naphthalene	**1.8J**	ug/kg	20.2	1.5	1	08/22/08 16:45	08/22/08 21:22	91-20-3	
Phenanthrene	**7.0J**	ug/kg	20.2	2.4	1	08/22/08 16:45	08/22/08 21:22	85-01-8	
Pyrene	**7.7J**	ug/kg	20.2	1.2	1	08/22/08 16:45	08/22/08 21:22	129-00-0	
Nitrobenzene-d5 (S)	44	%	39-96		1	08/22/08 16:45	08/22/08 21:22	4165-60-0	
2-Fluorobiphenyl (S)	56	%	39-98		1	08/22/08 16:45	08/22/08 21:22	321-60-8	
Terphenyl-d14 (S)	51	%	28-117		1	08/22/08 16:45	08/22/08 21:22	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.5**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-12 2-4' **Lab ID: 407893008** Collected: 08/15/08 09:15 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**11.4J**	ug/kg	20.7	1.1	1	08/22/08 16:45	08/25/08 18:15	83-32-9	
Acenaphthylene	**30.1**	ug/kg	20.7	2.1	1	08/22/08 16:45	08/25/08 18:15	208-96-8	
Anthracene	**66.4**	ug/kg	20.7	5.7	1	08/22/08 16:45	08/25/08 18:15	120-12-7	
Benzo(a)anthracene	**167**	ug/kg	20.7	10.4	1	08/22/08 16:45	08/25/08 18:15	56-55-3	L2
Benzo(a)pyrene	**218**	ug/kg	20.7	4.5	1	08/22/08 16:45	08/25/08 18:15	50-32-8	
Benzo(b)fluoranthene	**308**	ug/kg	20.7	7.0	1	08/22/08 16:45	08/25/08 18:15	205-99-2	
Benzo(g,h,i)perylene	**113**	ug/kg	20.7	5.2	1	08/22/08 16:45	08/25/08 18:15	191-24-2	
Benzo(k)fluoranthene	**193**	ug/kg	20.7	7.7	1	08/22/08 16:45	08/25/08 18:15	207-08-9	
Chrysene	**189**	ug/kg	20.7	4.3	1	08/22/08 16:45	08/25/08 18:15	218-01-9	
Dibenz(a,h)anthracene	**34.6**	ug/kg	20.7	5.8	1	08/22/08 16:45	08/25/08 18:15	53-70-3	
Fluoranthene	**450**	ug/kg	20.7	1.4	1	08/22/08 16:45	08/25/08 18:15	206-44-0	
Fluorene	**15.9J**	ug/kg	20.7	1.1	1	08/22/08 16:45	08/25/08 18:15	86-73-7	
Indeno(1,2,3-cd)pyrene	**108**	ug/kg	20.7	5.2	1	08/22/08 16:45	08/25/08 18:15	193-39-5	
1-Methylnaphthalene	**17.2J**	ug/kg	20.7	2.3	1	08/22/08 16:45	08/25/08 18:15	90-12-0	
2-Methylnaphthalene	**26.2**	ug/kg	20.7	2.3	1	08/22/08 16:45	08/25/08 18:15	91-57-6	
Naphthalene	**30.3**	ug/kg	20.7	1.5	1	08/22/08 16:45	08/25/08 18:15	91-20-3	
Phenanthrene	**189**	ug/kg	20.7	2.5	1	08/22/08 16:45	08/25/08 18:15	85-01-8	
Pyrene	**278**	ug/kg	20.7	1.3	1	08/22/08 16:45	08/25/08 18:15	129-00-0	
Nitrobenzene-d5 (S)	61	%	39-96		1	08/22/08 16:45	08/25/08 18:15	4165-60-0	
2-Fluorobiphenyl (S)	61	%	39-98		1	08/22/08 16:45	08/25/08 18:15	321-60-8	
Terphenyl-d14 (S)	54	%	28-117		1	08/22/08 16:45	08/25/08 18:15	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**19.5**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-13 2-4' **Lab ID: 407893009** Collected: 08/15/08 09:30 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**9.5J**	ug/kg	21.6	1.2	1	08/22/08 16:45	08/25/08 19:45	83-32-9	
Acenaphthylene	**11.6J**	ug/kg	21.6	2.2	1	08/22/08 16:45	08/25/08 19:45	208-96-8	
Anthracene	**45.3**	ug/kg	21.6	5.9	1	08/22/08 16:45	08/25/08 19:45	120-12-7	
Benzo(a)anthracene	**126**	ug/kg	21.6	10.8	1	08/22/08 16:45	08/25/08 19:45	56-55-3	L2
Benzo(a)pyrene	**142**	ug/kg	21.6	4.7	1	08/22/08 16:45	08/25/08 19:45	50-32-8	
Benzo(b)fluoranthene	**202**	ug/kg	21.6	7.3	1	08/22/08 16:45	08/25/08 19:45	205-99-2	
Benzo(g,h,i)perylene	**60.4**	ug/kg	21.6	5.5	1	08/22/08 16:45	08/25/08 19:45	191-24-2	
Benzo(k)fluoranthene	**111**	ug/kg	21.6	8.0	1	08/22/08 16:45	08/25/08 19:45	207-08-9	
Chrysene	**133**	ug/kg	21.6	4.5	1	08/22/08 16:45	08/25/08 19:45	218-01-9	
Dibenz(a,h)anthracene	**20.7J**	ug/kg	21.6	6.0	1	08/22/08 16:45	08/25/08 19:45	53-70-3	
Fluoranthene	**338**	ug/kg	21.6	1.4	1	08/22/08 16:45	08/25/08 19:45	206-44-0	
Fluorene	**12.3J**	ug/kg	21.6	1.2	1	08/22/08 16:45	08/25/08 19:45	86-73-7	
Indeno(1,2,3-cd)pyrene	**61.1**	ug/kg	21.6	5.4	1	08/22/08 16:45	08/25/08 19:45	193-39-5	
1-Methylnaphthalene	**11.5J**	ug/kg	21.6	2.4	1	08/22/08 16:45	08/25/08 19:45	90-12-0	
2-Methylnaphthalene	**15.5J**	ug/kg	21.6	2.4	1	08/22/08 16:45	08/25/08 19:45	91-57-6	
Naphthalene	**23.0**	ug/kg	21.6	1.6	1	08/22/08 16:45	08/25/08 19:45	91-20-3	
Phenanthrene	**167**	ug/kg	21.6	2.6	1	08/22/08 16:45	08/25/08 19:45	85-01-8	
Pyrene	**220**	ug/kg	21.6	1.3	1	08/22/08 16:45	08/25/08 19:45	129-00-0	
Nitrobenzene-d5 (S)	69	%	39-96		1	08/22/08 16:45	08/25/08 19:45	4165-60-0	
2-Fluorobiphenyl (S)	67	%	39-98		1	08/22/08 16:45	08/25/08 19:45	321-60-8	
Terphenyl-d14 (S)	61	%	28-117		1	08/22/08 16:45	08/25/08 19:45	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**22.8**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-14 2-4' **Lab ID: 407893010** Collected: 08/15/08 09:45 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**2.7J**	ug/kg	20.0	1.1	1	08/22/08 16:45	08/25/08 16:23	83-32-9	
Acenaphthylene	**8.4J**	ug/kg	20.0	2.0	1	08/22/08 16:45	08/25/08 16:23	208-96-8	
Anthracene	**21.8**	ug/kg	20.0	5.5	1	08/22/08 16:45	08/25/08 16:23	120-12-7	
Benzo(a)anthracene	**64.7**	ug/kg	20.0	10.0	1	08/22/08 16:45	08/25/08 16:23	56-55-3	L2
Benzo(a)pyrene	**79.1**	ug/kg	20.0	4.4	1	08/22/08 16:45	08/25/08 16:23	50-32-8	
Benzo(b)fluoranthene	**79.8**	ug/kg	20.0	6.8	1	08/22/08 16:45	08/25/08 16:23	205-99-2	
Benzo(g,h,i)perylene	**38.2**	ug/kg	20.0	5.1	1	08/22/08 16:45	08/25/08 16:23	191-24-2	
Benzo(k)fluoranthene	**73.1**	ug/kg	20.0	7.4	1	08/22/08 16:45	08/25/08 16:23	207-08-9	
Chrysene	**65.3**	ug/kg	20.0	4.1	1	08/22/08 16:45	08/25/08 16:23	218-01-9	
Dibenz(a,h)anthracene	**11.6J**	ug/kg	20.0	5.6	1	08/22/08 16:45	08/25/08 16:23	53-70-3	
Fluoranthene	**164**	ug/kg	20.0	1.3	1	08/22/08 16:45	08/25/08 16:23	206-44-0	
Fluorene	**2.6J**	ug/kg	20.0	1.1	1	08/22/08 16:45	08/25/08 16:23	86-73-7	
Indeno(1,2,3-cd)pyrene	**35.5**	ug/kg	20.0	5.0	1	08/22/08 16:45	08/25/08 16:23	193-39-5	
1-Methylnaphthalene	**<2.2**	ug/kg	20.0	2.2	1	08/22/08 16:45	08/25/08 16:23	90-12-0	
2-Methylnaphthalene	**2.5J**	ug/kg	20.0	2.2	1	08/22/08 16:45	08/25/08 16:23	91-57-6	
Naphthalene	**4.8J**	ug/kg	20.0	1.5	1	08/22/08 16:45	08/25/08 16:23	91-20-3	
Phenanthrene	**57.6**	ug/kg	20.0	2.4	1	08/22/08 16:45	08/25/08 16:23	85-01-8	
Pyrene	**100**	ug/kg	20.0	1.2	1	08/22/08 16:45	08/25/08 16:23	129-00-0	
Nitrobenzene-d5 (S)	72	%	39-96		1	08/22/08 16:45	08/25/08 16:23	4165-60-0	
2-Fluorobiphenyl (S)	69	%	39-98		1	08/22/08 16:45	08/25/08 16:23	321-60-8	
Terphenyl-d14 (S)	62	%	28-117		1	08/22/08 16:45	08/25/08 16:23	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.8**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-15 2-4' **Lab ID: 407893011** Collected: 08/15/08 10:00 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**1.6J**	ug/kg	19.7	1.1	1	08/22/08 16:45	08/22/08 21:45	83-32-9	
Acenaphthylene	**2.3J**	ug/kg	19.7	2.0	1	08/22/08 16:45	08/22/08 21:45	208-96-8	
Anthracene	**8.5J**	ug/kg	19.7	5.4	1	08/22/08 16:45	08/22/08 21:45	120-12-7	
Benzo(a)anthracene	**17.7J**	ug/kg	19.7	9.9	1	08/22/08 16:45	08/22/08 21:45	56-55-3	L2
Benzo(a)pyrene	**20.7**	ug/kg	19.7	4.3	1	08/22/08 16:45	08/22/08 21:45	50-32-8	
Benzo(b)fluoranthene	**22.8**	ug/kg	19.7	6.7	1	08/22/08 16:45	08/22/08 21:45	205-99-2	
Benzo(g,h,i)perylene	**12.8J**	ug/kg	19.7	5.0	1	08/22/08 16:45	08/22/08 21:45	191-24-2	
Benzo(k)fluoranthene	**22.2**	ug/kg	19.7	7.3	1	08/22/08 16:45	08/22/08 21:45	207-08-9	
Chrysene	**24.4**	ug/kg	19.7	4.1	1	08/22/08 16:45	08/22/08 21:45	218-01-9	
Dibenz(a,h)anthracene	**<5.5**	ug/kg	19.7	5.5	1	08/22/08 16:45	08/22/08 21:45	53-70-3	
Fluoranthene	**53.5**	ug/kg	19.7	1.3	1	08/22/08 16:45	08/22/08 21:45	206-44-0	
Fluorene	**1.7J**	ug/kg	19.7	1.1	1	08/22/08 16:45	08/22/08 21:45	86-73-7	
Indeno(1,2,3-cd)pyrene	**9.7J**	ug/kg	19.7	5.0	1	08/22/08 16:45	08/22/08 21:45	193-39-5	
1-Methylnaphthalene	**<2.2**	ug/kg	19.7	2.2	1	08/22/08 16:45	08/22/08 21:45	90-12-0	
2-Methylnaphthalene	**2.7J**	ug/kg	19.7	2.2	1	08/22/08 16:45	08/22/08 21:45	91-57-6	
Naphthalene	**3.1J**	ug/kg	19.7	1.5	1	08/22/08 16:45	08/22/08 21:45	91-20-3	
Phenanthrene	**22.9**	ug/kg	19.7	2.3	1	08/22/08 16:45	08/22/08 21:45	85-01-8	
Pyrene	**33.7**	ug/kg	19.7	1.2	1	08/22/08 16:45	08/22/08 21:45	129-00-0	
Nitrobenzene-d5 (S)	49	%	39-96		1	08/22/08 16:45	08/22/08 21:45	4165-60-0	
2-Fluorobiphenyl (S)	46	%	39-98		1	08/22/08 16:45	08/22/08 21:45	321-60-8	
Terphenyl-d14 (S)	46	%	28-117		1	08/22/08 16:45	08/22/08 21:45	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**15.3**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-16 2-4' **Lab ID: 407893012** Collected: 08/15/08 10:15 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**1.8J**	ug/kg	19.9	1.1	1	08/22/08 16:45	08/23/08 14:57	83-32-9	
Acenaphthylene	**<2.0**	ug/kg	19.9	2.0	1	08/22/08 16:45	08/23/08 14:57	208-96-8	
Anthracene	**7.2J**	ug/kg	19.9	5.5	1	08/22/08 16:45	08/23/08 14:57	120-12-7	
Benzo(a)anthracene	**17.4J**	ug/kg	19.9	10	1	08/22/08 16:45	08/23/08 14:57	56-55-3	L2
Benzo(a)pyrene	**19.2J**	ug/kg	19.9	4.3	1	08/22/08 16:45	08/23/08 14:57	50-32-8	
Benzo(b)fluoranthene	**23.1**	ug/kg	19.9	6.8	1	08/22/08 16:45	08/23/08 14:57	205-99-2	
Benzo(g,h,i)perylene	**14.9J**	ug/kg	19.9	5.0	1	08/22/08 16:45	08/23/08 14:57	191-24-2	
Benzo(k)fluoranthene	**16.4J**	ug/kg	19.9	7.4	1	08/22/08 16:45	08/23/08 14:57	207-08-9	
Chrysene	**23.2**	ug/kg	19.9	4.1	1	08/22/08 16:45	08/23/08 14:57	218-01-9	
Dibenz(a,h)anthracene	**<5.6**	ug/kg	19.9	5.6	1	08/22/08 16:45	08/23/08 14:57	53-70-3	
Fluoranthene	**46.4**	ug/kg	19.9	1.3	1	08/22/08 16:45	08/23/08 14:57	206-44-0	
Fluorene	**2.0J**	ug/kg	19.9	1.1	1	08/22/08 16:45	08/23/08 14:57	86-73-7	
Indeno(1,2,3-cd)pyrene	**10.5J**	ug/kg	19.9	5.0	1	08/22/08 16:45	08/23/08 14:57	193-39-5	
1-Methylnaphthalene	**<2.2**	ug/kg	19.9	2.2	1	08/22/08 16:45	08/23/08 14:57	90-12-0	
2-Methylnaphthalene	**<2.2**	ug/kg	19.9	2.2	1	08/22/08 16:45	08/23/08 14:57	91-57-6	
Naphthalene	**2.4J**	ug/kg	19.9	1.5	1	08/22/08 16:45	08/23/08 14:57	91-20-3	
Phenanthrene	**23.5**	ug/kg	19.9	2.4	1	08/22/08 16:45	08/23/08 14:57	85-01-8	
Pyrene	**32.8**	ug/kg	19.9	1.2	1	08/22/08 16:45	08/23/08 14:57	129-00-0	
Nitrobenzene-d5 (S)	49	%	39-96		1	08/22/08 16:45	08/23/08 14:57	4165-60-0	
2-Fluorobiphenyl (S)	48	%	39-98		1	08/22/08 16:45	08/23/08 14:57	321-60-8	
Terphenyl-d14 (S)	44	%	28-117		1	08/22/08 16:45	08/23/08 14:57	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.4**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-17 2-4' **Lab ID: 407893013** Collected: 08/15/08 10:30 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**3.1J**	ug/kg	20.1	1.1	1	08/22/08 16:45	08/23/08 22:44	83-32-9	
Acenaphthylene	**2.4J**	ug/kg	20.1	2.0	1	08/22/08 16:45	08/23/08 22:44	208-96-8	
Anthracene	**13.2J**	ug/kg	20.1	5.5	1	08/22/08 16:45	08/23/08 22:44	120-12-7	
Benzo(a)anthracene	**32.0**	ug/kg	20.1	10.1	1	08/22/08 16:45	08/23/08 22:44	56-55-3	L2
Benzo(a)pyrene	**36.2**	ug/kg	20.1	4.4	1	08/22/08 16:45	08/23/08 22:44	50-32-8	
Benzo(b)fluoranthene	**40.8**	ug/kg	20.1	6.8	1	08/22/08 16:45	08/23/08 22:44	205-99-2	
Benzo(g,h,i)perylene	**20.2**	ug/kg	20.1	5.1	1	08/22/08 16:45	08/23/08 22:44	191-24-2	
Benzo(k)fluoranthene	**34.4**	ug/kg	20.1	7.5	1	08/22/08 16:45	08/23/08 22:44	207-08-9	
Chrysene	**35.6**	ug/kg	20.1	4.1	1	08/22/08 16:45	08/23/08 22:44	218-01-9	
Dibenz(a,h)anthracene	**6.3J**	ug/kg	20.1	5.6	1	08/22/08 16:45	08/23/08 22:44	53-70-3	
Fluoranthene	**89.8**	ug/kg	20.1	1.3	1	08/22/08 16:45	08/23/08 22:44	206-44-0	
Fluorene	**5.1J**	ug/kg	20.1	1.1	1	08/22/08 16:45	08/23/08 22:44	86-73-7	
Indeno(1,2,3-cd)pyrene	**16.8J**	ug/kg	20.1	5.1	1	08/22/08 16:45	08/23/08 22:44	193-39-5	
1-Methylnaphthalene	**2.5J**	ug/kg	20.1	2.2	1	08/22/08 16:45	08/23/08 22:44	90-12-0	
2-Methylnaphthalene	**4.0J**	ug/kg	20.1	2.2	1	08/22/08 16:45	08/23/08 22:44	91-57-6	
Naphthalene	**5.8J**	ug/kg	20.1	1.5	1	08/22/08 16:45	08/23/08 22:44	91-20-3	
Phenanthrene	**49.4**	ug/kg	20.1	2.4	1	08/22/08 16:45	08/23/08 22:44	85-01-8	
Pyrene	**54.7**	ug/kg	20.1	1.2	1	08/22/08 16:45	08/23/08 22:44	129-00-0	
Nitrobenzene-d5 (S)	55	%	39-96		1	08/22/08 16:45	08/23/08 22:44	4165-60-0	
2-Fluorobiphenyl (S)	54	%	39-98		1	08/22/08 16:45	08/23/08 22:44	321-60-8	
Terphenyl-d14 (S)	44	%	28-117		1	08/22/08 16:45	08/23/08 22:44	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.9**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-18 2-4' **Lab ID: 407893014** Collected: 08/15/08 10:45 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**3.3J**	ug/kg	20.3	1.1	1	08/22/08 16:45	08/24/08 00:35	83-32-9	
Acenaphthylene	**3.4J**	ug/kg	20.3	2.1	1	08/22/08 16:45	08/24/08 00:35	208-96-8	
Anthracene	**8.8J**	ug/kg	20.3	5.6	1	08/22/08 16:45	08/24/08 00:35	120-12-7	
Benzo(a)anthracene	**25.5**	ug/kg	20.3	10.2	1	08/22/08 16:45	08/24/08 00:35	56-55-3	L2
Benzo(a)pyrene	**31.1**	ug/kg	20.3	4.4	1	08/22/08 16:45	08/24/08 00:35	50-32-8	
Benzo(b)fluoranthene	**38.8**	ug/kg	20.3	6.9	1	08/22/08 16:45	08/24/08 00:35	205-99-2	
Benzo(g,h,i)perylene	**19.7J**	ug/kg	20.3	5.1	1	08/22/08 16:45	08/24/08 00:35	191-24-2	
Benzo(k)fluoranthene	**33.7**	ug/kg	20.3	7.5	1	08/22/08 16:45	08/24/08 00:35	207-08-9	
Chrysene	**36.6**	ug/kg	20.3	4.2	1	08/22/08 16:45	08/24/08 00:35	218-01-9	
Dibenz(a,h)anthracene	**6.7J**	ug/kg	20.3	5.7	1	08/22/08 16:45	08/24/08 00:35	53-70-3	
Fluoranthene	**69.8**	ug/kg	20.3	1.3	1	08/22/08 16:45	08/24/08 00:35	206-44-0	
Fluorene	**4.8J**	ug/kg	20.3	1.1	1	08/22/08 16:45	08/24/08 00:35	86-73-7	
Indeno(1,2,3-cd)pyrene	**15.7J**	ug/kg	20.3	5.1	1	08/22/08 16:45	08/24/08 00:35	193-39-5	
1-Methylnaphthalene	**2.9J**	ug/kg	20.3	2.2	1	08/22/08 16:45	08/24/08 00:35	90-12-0	
2-Methylnaphthalene	**5.0J**	ug/kg	20.3	2.3	1	08/22/08 16:45	08/24/08 00:35	91-57-6	
Naphthalene	**7.8J**	ug/kg	20.3	1.5	1	08/22/08 16:45	08/24/08 00:35	91-20-3	
Phenanthrene	**39.0**	ug/kg	20.3	2.4	1	08/22/08 16:45	08/24/08 00:35	85-01-8	
Pyrene	**46.4**	ug/kg	20.3	1.2	1	08/22/08 16:45	08/24/08 00:35	129-00-0	
Nitrobenzene-d5 (S)	70	%	39-96		1	08/22/08 16:45	08/24/08 00:35	4165-60-0	
2-Fluorobiphenyl (S)	72	%	39-98		1	08/22/08 16:45	08/24/08 00:35	321-60-8	
Terphenyl-d14 (S)	66	%	28-117		1	08/22/08 16:45	08/24/08 00:35	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.9**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-19 2-4' **Lab ID: 407893015** Collected: 08/15/08 11:00 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**6.2J**	ug/kg	20.1	1.1	1	08/22/08 16:45	08/25/08 13:02	83-32-9	
Acenaphthylene	**10.3J**	ug/kg	20.1	2.1	1	08/22/08 16:45	08/25/08 13:02	208-96-8	
Anthracene	**25.7**	ug/kg	20.1	5.5	1	08/22/08 16:45	08/25/08 13:02	120-12-7	
Benzo(a)anthracene	**71.1**	ug/kg	20.1	10.1	1	08/22/08 16:45	08/25/08 13:02	56-55-3	L2
Benzo(a)pyrene	**84.8**	ug/kg	20.1	4.4	1	08/22/08 16:45	08/25/08 13:02	50-32-8	
Benzo(b)fluoranthene	**119**	ug/kg	20.1	6.8	1	08/22/08 16:45	08/25/08 13:02	205-99-2	
Benzo(g,h,i)perylene	**57.4**	ug/kg	20.1	5.1	1	08/22/08 16:45	08/25/08 13:02	191-24-2	
Benzo(k)fluoranthene	**76.7**	ug/kg	20.1	7.5	1	08/22/08 16:45	08/25/08 13:02	207-08-9	
Chrysene	**90.1**	ug/kg	20.1	4.1	1	08/22/08 16:45	08/25/08 13:02	218-01-9	
Dibenz(a,h)anthracene	**18.1J**	ug/kg	20.1	5.6	1	08/22/08 16:45	08/25/08 13:02	53-70-3	
Fluoranthene	**187**	ug/kg	20.1	1.3	1	08/22/08 16:45	08/25/08 13:02	206-44-0	
Fluorene	**10.0J**	ug/kg	20.1	1.1	1	08/22/08 16:45	08/25/08 13:02	86-73-7	
Indeno(1,2,3-cd)pyrene	**53.0**	ug/kg	20.1	5.1	1	08/22/08 16:45	08/25/08 13:02	193-39-5	
1-Methylnaphthalene	**4.5J**	ug/kg	20.1	2.2	1	08/22/08 16:45	08/25/08 13:02	90-12-0	
2-Methylnaphthalene	**7.6J**	ug/kg	20.1	2.2	1	08/22/08 16:45	08/25/08 13:02	91-57-6	
Naphthalene	**12.0J**	ug/kg	20.1	1.5	1	08/22/08 16:45	08/25/08 13:02	91-20-3	
Phenanthrene	**91.2**	ug/kg	20.1	2.4	1	08/22/08 16:45	08/25/08 13:02	85-01-8	
Pyrene	**113**	ug/kg	20.1	1.2	1	08/22/08 16:45	08/25/08 13:02	129-00-0	
Nitrobenzene-d5 (S)	48	%	39-96		1	08/22/08 16:45	08/25/08 13:02	4165-60-0	
2-Fluorobiphenyl (S)	54	%	39-98		1	08/22/08 16:45	08/25/08 13:02	321-60-8	
Terphenyl-d14 (S)	44	%	28-117		1	08/22/08 16:45	08/25/08 13:02	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.2**	%	0.10	0.10	1		08/26/08 07:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-20 2-4' **Lab ID: 407893016** Collected: 08/15/08 11:15 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**5.5J**	ug/kg	20.2	1.1	1	08/22/08 16:45	08/25/08 14:32	83-32-9	
Acenaphthylene	**37.5**	ug/kg	20.2	2.1	1	08/22/08 16:45	08/25/08 14:32	208-96-8	
Anthracene	**36.5**	ug/kg	20.2	5.5	1	08/22/08 16:45	08/25/08 14:32	120-12-7	
Benzo(a)anthracene	**103**	ug/kg	20.2	10.1	1	08/22/08 16:45	08/25/08 14:32	56-55-3	L2
Benzo(a)pyrene	**146**	ug/kg	20.2	4.4	1	08/22/08 16:45	08/25/08 14:32	50-32-8	
Benzo(b)fluoranthene	**195**	ug/kg	20.2	6.9	1	08/22/08 16:45	08/25/08 14:32	205-99-2	
Benzo(g,h,i)perylene	**108**	ug/kg	20.2	5.1	1	08/22/08 16:45	08/25/08 14:32	191-24-2	
Benzo(k)fluoranthene	**134**	ug/kg	20.2	7.5	1	08/22/08 16:45	08/25/08 14:32	207-08-9	
Chrysene	**126**	ug/kg	20.2	4.2	1	08/22/08 16:45	08/25/08 14:32	218-01-9	
Dibenz(a,h)anthracene	**31.4**	ug/kg	20.2	5.7	1	08/22/08 16:45	08/25/08 14:32	53-70-3	
Fluoranthene	**259**	ug/kg	20.2	1.3	1	08/22/08 16:45	08/25/08 14:32	206-44-0	
Fluorene	**7.9J**	ug/kg	20.2	1.1	1	08/22/08 16:45	08/25/08 14:32	86-73-7	
Indeno(1,2,3-cd)pyrene	**99.5**	ug/kg	20.2	5.1	1	08/22/08 16:45	08/25/08 14:32	193-39-5	
1-Methylnaphthalene	**5.1J**	ug/kg	20.2	2.2	1	08/22/08 16:45	08/25/08 14:32	90-12-0	
2-Methylnaphthalene	**9.2J**	ug/kg	20.2	2.3	1	08/22/08 16:45	08/25/08 14:32	91-57-6	
Naphthalene	**17.8J**	ug/kg	20.2	1.5	1	08/22/08 16:45	08/25/08 14:32	91-20-3	
Phenanthrene	**94.8**	ug/kg	20.2	2.4	1	08/22/08 16:45	08/25/08 14:32	85-01-8	
Pyrene	**159**	ug/kg	20.2	1.2	1	08/22/08 16:45	08/25/08 14:32	129-00-0	
Nitrobenzene-d5 (S)	45	%	39-96		1	08/22/08 16:45	08/25/08 14:32	4165-60-0	
2-Fluorobiphenyl (S)	64	%	39-98		1	08/22/08 16:45	08/25/08 14:32	321-60-8	
Terphenyl-d14 (S)	59	%	28-117		1	08/22/08 16:45	08/25/08 14:32	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.6**	%	0.10	0.10	1		08/26/08 07:16		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-21 2-4' **Lab ID: 407893017** Collected: 08/15/08 11:30 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**1.6J**	ug/kg	21.0	1.2	1	08/22/08 16:45	08/24/08 00:13	83-32-9	
Acenaphthylene	**2.2J**	ug/kg	21.0	2.1	1	08/22/08 16:45	08/24/08 00:13	208-96-8	
Anthracene	**7.3J**	ug/kg	21.0	5.8	1	08/22/08 16:45	08/24/08 00:13	120-12-7	
Benzo(a)anthracene	**19.8J**	ug/kg	21.0	10.5	1	08/22/08 16:45	08/24/08 00:13	56-55-3	L2
Benzo(a)pyrene	**24.5**	ug/kg	21.0	4.6	1	08/22/08 16:45	08/24/08 00:13	50-32-8	
Benzo(b)fluoranthene	**31.9**	ug/kg	21.0	7.1	1	08/22/08 16:45	08/24/08 00:13	205-99-2	
Benzo(g,h,i)perylene	**13.5J**	ug/kg	21.0	5.3	1	08/22/08 16:45	08/24/08 00:13	191-24-2	
Benzo(k)fluoranthene	**26.4**	ug/kg	21.0	7.8	1	08/22/08 16:45	08/24/08 00:13	207-08-9	
Chrysene	**27.8**	ug/kg	21.0	4.3	1	08/22/08 16:45	08/24/08 00:13	218-01-9	
Dibenz(a,h)anthracene	**<5.9**	ug/kg	21.0	5.9	1	08/22/08 16:45	08/24/08 00:13	53-70-3	
Fluoranthene	**67.9**	ug/kg	21.0	1.4	1	08/22/08 16:45	08/24/08 00:13	206-44-0	
Fluorene	**1.8J**	ug/kg	21.0	1.1	1	08/22/08 16:45	08/24/08 00:13	86-73-7	
Indeno(1,2,3-cd)pyrene	**11.6J**	ug/kg	21.0	5.3	1	08/22/08 16:45	08/24/08 00:13	193-39-5	
1-Methylnaphthalene	**2.6J**	ug/kg	21.0	2.3	1	08/22/08 16:45	08/24/08 00:13	90-12-0	
2-Methylnaphthalene	**4.9J**	ug/kg	21.0	2.3	1	08/22/08 16:45	08/24/08 00:13	91-57-6	
Naphthalene	**8.4J**	ug/kg	21.0	1.6	1	08/22/08 16:45	08/24/08 00:13	91-20-3	
Phenanthrene	**37.3**	ug/kg	21.0	2.5	1	08/22/08 16:45	08/24/08 00:13	85-01-8	
Pyrene	**38.7**	ug/kg	21.0	1.3	1	08/22/08 16:45	08/24/08 00:13	129-00-0	
Nitrobenzene-d5 (S)	62	%	39-96		1	08/22/08 16:45	08/24/08 00:13	4165-60-0	
2-Fluorobiphenyl (S)	61	%	39-98		1	08/22/08 16:45	08/24/08 00:13	321-60-8	
Terphenyl-d14 (S)	52	%	28-117		1	08/22/08 16:45	08/24/08 00:13	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**20.7**	%	0.10	0.10	1		08/26/08 07:16		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-22 2-4' **Lab ID: 407893018** Collected: 08/15/08 11:45 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**2.7J**	ug/kg	20.4	1.1	1	08/22/08 16:45	08/25/08 16:46	83-32-9	
Acenaphthylene	**6.8J**	ug/kg	20.4	2.1	1	08/22/08 16:45	08/25/08 16:46	208-96-8	
Anthracene	**13.5J**	ug/kg	20.4	5.6	1	08/22/08 16:45	08/25/08 16:46	120-12-7	
Benzo(a)anthracene	**39.5**	ug/kg	20.4	10.2	1	08/22/08 16:45	08/25/08 16:46	56-55-3	L2
Benzo(a)pyrene	**54.8**	ug/kg	20.4	4.4	1	08/22/08 16:45	08/25/08 16:46	50-32-8	
Benzo(b)fluoranthene	**63.5**	ug/kg	20.4	6.9	1	08/22/08 16:45	08/25/08 16:46	205-99-2	
Benzo(g,h,i)perylene	**28.5**	ug/kg	20.4	5.1	1	08/22/08 16:45	08/25/08 16:46	191-24-2	
Benzo(k)fluoranthene	**58.4**	ug/kg	20.4	7.6	1	08/22/08 16:45	08/25/08 16:46	207-08-9	
Chrysene	**55.9**	ug/kg	20.4	4.2	1	08/22/08 16:45	08/25/08 16:46	218-01-9	
Dibenz(a,h)anthracene	**9.3J**	ug/kg	20.4	5.7	1	08/22/08 16:45	08/25/08 16:46	53-70-3	
Fluoranthene	**134**	ug/kg	20.4	1.3	1	08/22/08 16:45	08/25/08 16:46	206-44-0	
Fluorene	**5.4J**	ug/kg	20.4	1.1	1	08/22/08 16:45	08/25/08 16:46	86-73-7	
Indeno(1,2,3-cd)pyrene	**25.2**	ug/kg	20.4	5.1	1	08/22/08 16:45	08/25/08 16:46	193-39-5	
1-Methylnaphthalene	**4.2J**	ug/kg	20.4	2.3	1	08/22/08 16:45	08/25/08 16:46	90-12-0	
2-Methylnaphthalene	**6.3J**	ug/kg	20.4	2.3	1	08/22/08 16:45	08/25/08 16:46	91-57-6	
Naphthalene	**8.8J**	ug/kg	20.4	1.5	1	08/22/08 16:45	08/25/08 16:46	91-20-3	
Phenanthrene	**66.1**	ug/kg	20.4	2.4	1	08/22/08 16:45	08/25/08 16:46	85-01-8	
Pyrene	**82.3**	ug/kg	20.4	1.2	1	08/22/08 16:45	08/25/08 16:46	129-00-0	
Nitrobenzene-d5 (S)	60	%	39-96		1	08/22/08 16:45	08/25/08 16:46	4165-60-0	
2-Fluorobiphenyl (S)	58	%	39-98		1	08/22/08 16:45	08/25/08 16:46	321-60-8	
Terphenyl-d14 (S)	48	%	28-117		1	08/22/08 16:45	08/25/08 16:46	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.3**	%	0.10	0.10	1		08/26/08 07:16		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

Sample: GP-23 2-4' **Lab ID: 407893019** Collected: 08/15/08 12:00 Received: 08/18/08 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546								
Acenaphthene	**3.1J**	ug/kg	20.1	1.1	1	08/22/08 16:45	08/26/08 16:35	83-32-9	
Acenaphthylene	**15.2J**	ug/kg	20.1	2.1	1	08/22/08 16:45	08/26/08 16:35	208-96-8	
Anthracene	**20.2**	ug/kg	20.1	5.5	1	08/22/08 16:45	08/26/08 16:35	120-12-7	
Benzo(a)anthracene	**53.1**	ug/kg	20.1	10.1	1	08/22/08 16:45	08/26/08 16:35	56-55-3	L2
Benzo(a)pyrene	**73.7**	ug/kg	20.1	4.4	1	08/22/08 16:45	08/26/08 16:35	50-32-8	
Benzo(b)fluoranthene	**108**	ug/kg	20.1	6.8	1	08/22/08 16:45	08/26/08 16:35	205-99-2	
Benzo(g,h,i)perylene	**41.1**	ug/kg	20.1	5.1	1	08/22/08 16:45	08/26/08 16:35	191-24-2	
Benzo(k)fluoranthene	**59.1**	ug/kg	20.1	7.5	1	08/22/08 16:45	08/26/08 16:35	207-08-9	
Chrysene	**73.4**	ug/kg	20.1	4.1	1	08/22/08 16:45	08/26/08 16:35	218-01-9	
Dibenz(a,h)anthracene	**15.9J**	ug/kg	20.1	5.6	1	08/22/08 16:45	08/26/08 16:35	53-70-3	
Fluoranthene	**145**	ug/kg	20.1	1.3	1	08/22/08 16:45	08/26/08 16:35	206-44-0	
Fluorene	**6.6J**	ug/kg	20.1	1.1	1	08/22/08 16:45	08/26/08 16:35	86-73-7	
Indeno(1,2,3-cd)pyrene	**39.3**	ug/kg	20.1	5.1	1	08/22/08 16:45	08/26/08 16:35	193-39-5	
1-Methylnaphthalene	**<2.2**	ug/kg	20.1	2.2	1	08/22/08 16:45	08/26/08 16:35	90-12-0	
2-Methylnaphthalene	**3.5J**	ug/kg	20.1	2.2	1	08/22/08 16:45	08/26/08 16:35	91-57-6	
Naphthalene	**7.2J**	ug/kg	20.1	1.5	1	08/22/08 16:45	08/26/08 16:35	91-20-3	
Phenanthrene	**66.5**	ug/kg	20.1	2.4	1	08/22/08 16:45	08/26/08 16:35	85-01-8	
Pyrene	**90.6**	ug/kg	20.1	1.2	1	08/22/08 16:45	08/26/08 16:35	129-00-0	
Nitrobenzene-d5 (S)	62	%	39-96		1	08/22/08 16:45	08/26/08 16:35	4165-60-0	
2-Fluorobiphenyl (S)	59	%	39-98		1	08/22/08 16:45	08/26/08 16:35	321-60-8	
Terphenyl-d14 (S)	55	%	28-117		1	08/22/08 16:45	08/26/08 16:35	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.2**	%	0.10	0.10	1		08/26/08 07:16		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

QC Batch: OEXT/2404 | Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3546 | Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 407893006, 407893007, 407893008, 407893009, 407893010, 407893011, 407893012, 407893013, 407893014, 407893015, 407893016, 407893017, 407893018, 407893019

METHOD BLANK: 68127 | Matrix: Solid
Associated Lab Samples: 407893006, 407893007, 407893008, 407893009, 407893010, 407893011, 407893012, 407893013, 407893014, 407893015, 407893016, 407893017, 407893018, 407893019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	<1.8	16.7	08/22/08 18:24	
2-Methylnaphthalene	ug/kg	<1.9	16.7	08/22/08 18:24	
Acenaphthene	ug/kg	<0.93	16.7	08/22/08 18:24	
Acenaphthylene	ug/kg	<1.7	16.7	08/22/08 18:24	
Anthracene	ug/kg	<4.6	16.7	08/22/08 18:24	
Benzo(a)anthracene	ug/kg	<8.4	16.7	08/22/08 18:24	
Benzo(a)pyrene	ug/kg	<3.6	16.7	08/22/08 18:24	
Benzo(b)fluoranthene	ug/kg	<5.7	16.7	08/22/08 18:24	
Benzo(g,h,i)perylene	ug/kg	<4.2	16.7	08/22/08 18:24	
Benzo(k)fluoranthene	ug/kg	<6.2	16.7	08/22/08 18:24	
Chrysene	ug/kg	<3.4	16.7	08/22/08 18:24	
Dibenz(a,h)anthracene	ug/kg	<4.7	16.7	08/22/08 18:24	
Fluoranthene	ug/kg	<1.1	16.7	08/22/08 18:24	
Fluorene	ug/kg	<0.91	16.7	08/22/08 18:24	
Indeno(1,2,3-cd)pyrene	ug/kg	<4.2	16.7	08/22/08 18:24	
Naphthalene	ug/kg	<1.2	16.7	08/22/08 18:24	
Phenanthrene	ug/kg	<2.0	16.7	08/22/08 18:24	
Pyrene	ug/kg	<1.0	16.7	08/22/08 18:24	
2-Fluorobiphenyl (S)	%	71	39-98	08/22/08 18:24	
Nitrobenzene-d5 (S)	%	79	39-96	08/22/08 18:24	
Terphenyl-d14 (S)	%	80	28-117	08/22/08 18:24	

LABORATORY CONTROL SAMPLE: 68128

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	333	204	61	52-106	
2-Methylnaphthalene	ug/kg	333	208	63	53-107	
Acenaphthene	ug/kg	333	201	60	50-113	
Acenaphthylene	ug/kg	333	206	62	51-114	
Anthracene	ug/kg	333	251	75	44-128	
Benzo(a)anthracene	ug/kg	333	160	48	53-122	L0
Benzo(a)pyrene	ug/kg	333	244	73	52-130	
Benzo(b)fluoranthene	ug/kg	333	217	65	53-133	
Benzo(g,h,i)perylene	ug/kg	333	182	55	48-123	
Benzo(k)fluoranthene	ug/kg	333	248	74	53-136	
Chrysene	ug/kg	333	211	63	53-124	
Dibenz(a,h)anthracene	ug/kg	333	190	57	47-126	
Fluoranthene	ug/kg	333	220	66	53-129	
Fluorene	ug/kg	333	216	65	50-120	
Indeno(1,2,3-cd)pyrene	ug/kg	333	189	57	50-126	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

LABORATORY CONTROL SAMPLE: 68128

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg	333	191	57	49-105	
Phenanthrene	ug/kg	333	192	58	51-121	
Pyrene	ug/kg	333	179	54	54-131	
2-Fluorobiphenyl (S)	%			57	39-98	
Nitrobenzene-d5 (S)	%			63	39-96	
Terphenyl-d14 (S)	%			63	28-117	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 68214 68215

Parameter	Units	407958013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	4.1J	609	609	338	235	55	38	45-120	36	20	M0,R1
2-Methylnaphthalene	ug/kg	6.2J	609	609	376	264	61	42	43-120	35	20	M0,R1
Acenaphthene	ug/kg	<1.7	609	609	344	243	56	40	47-107	34	20	M0,R1
Acenaphthylene	ug/kg	9.6J	609	609	359	256	57	40	49-107	34	29	M0,R1
Anthracene	ug/kg	15.5J	609	609	413	300	65	47	47-112	32	26	R1
Benzo(a)anthracene	ug/kg	51.7	609	609	357	244	50	32	44-117	38	20	M0,R1
Benzo(a)pyrene	ug/kg	68.6	609	609	452	311	63	40	45-121	37	23	M0,R1
Benzo(b)fluoranthene	ug/kg	76.9	609	609	467	317	64	39	34-139	38	26	R1
Benzo(g,h,i)perylene	ug/kg	40.5	609	609	316	209	45	28	23-120	41	22	R1
Benzo(k)fluoranthene	ug/kg	66.2	609	609	456	301	64	39	39-126	41	25	R1
Chrysene	ug/kg	59.7	609	609	341	233	46	28	40-118	38	21	M0,R1
Dibenz(a,h)anthracene	ug/kg	11.4J	609	609	304	211	48	33	29-122	36	20	R1
Fluoranthene	ug/kg	132	609	609	544	357	68	37	39-131	42	30	M0,R1
Fluorene	ug/kg	2.0J	609	609	356	266	58	43	44-113	29	22	M0,R1
Indeno(1,2,3-cd)pyrene	ug/kg	30.8	609	609	322	220	48	31	27-125	38	21	R1
Naphthalene	ug/kg	6.9J	609	609	331	242	53	39	40-112	31	22	M0,R1
Phenanthrene	ug/kg	49.5	609	609	448	288	65	39	38-122	43	20	R1
Pyrene	ug/kg	89.7	609	609	388	253	49	27	34-126	42	29	M0,R1
2-Fluorobiphenyl (S)	%						59	42	39-98			
Nitrobenzene-d5 (S)	%						51	43	39-96			
Terphenyl-d14 (S)	%						57	39	28-117			

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

QC Batch: PMST/1757 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 407893001, 407893002, 407893003, 407893004, 407893005, 407893006, 407893007, 407893008, 407893009, 407893010, 407893011, 407893012, 407893013, 407893014, 407893015, 407893016, 407893017, 407893018, 407893019

SAMPLE DUPLICATE: 68944

Parameter	Units	407889001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	11.5	9.2	23	10	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

QC Batch: WETA/2195 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 407893001, 407893002, 407893003, 407893004, 407893005

METHOD BLANK: 69181 Matrix: Solid
Associated Lab Samples: 407893001, 407893002, 407893003, 407893004, 407893005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/kg	<12.4	50.0	08/26/08 22:49	

LABORATORY CONTROL SAMPLE: 69182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/kg	200	189	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 69183 69184

Parameter	Units	407893001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/kg	104	244	244	329	333	92	94	80-120	1	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 131994 7222+7318 W FOND DU LAC
Pace Project No.: 407893

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results may be biased low.
M0	Matrix spike recovery was outside laboratory control limits.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

(Please Print Legibly)
Company Name: Shaw E & I
Branch or Location: Milwaukee, WI
Project Contact: Tim Welch
Telephone: 414-291-2350
Project Number: 131994
Project Name: 7222+7318 W. Fond du Lac Ave.
Project State: WI
Sampled By (Print): Chris Pestell
PO #:

CHEMISPHERE INC
1819 Saint George Street • Green Bay, WI 54302

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

CHAIN OF CUSTODY No. 137411

Page 1 of 2
Quote #:
Mail Report To: Tim Welch
Company: Shaw E & I
Address: 111 W. Pleasant St. Suite 1, Milwaukee, WI 53212
Invoice To: Dave Dichristopher
Company: as above
Address:
Mail Invoice To:

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

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

Regulatory Program: UST, RCRA, SDWA, NPDES, CERCLA

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

	LABORATORY ID (Lab Use Only)	FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Chloride	PAH							CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)
		FILTERED? (YES/NO)	N												
		PRESERVATION (CODE)*	A	A											
001	~~B-10~~ Lab 8/19/08	B-1 SS-5 8.5'	8-14	3:57	S	X								1-4oz poly	
002		B-3 SS-4 7'	8-14	2:43	S	X								↓	
003	~~Sample~~	B-5 SS-5 9'	8-14	1:30	S	X								↓	
004		B-4 SS-5 8'	8-14	12:17	S	X								↓	
005	Sample Lab 8/19/08	B-2 (MW-2) 6-8'	8-15	8:30	S	X								↓	
006		GP-10 2-4'	8-15	8:45	S		✓							1-4oz ag	
007		GP-11 2-4'	8-15	9:00	S		✓							↓	
008		GP-12 2-4'	8-15	9:15	S		✓							↓	
009		GP-13 2-4'	8-15	9:30	S		✓							↓	
010		GP-14 2-4'	8-15	9:45	S		✓							↓	
011		GP-15 2-4'	8-15	10:00	S		✓							↓	
012		GP-16 2-4'	8-15	10:15	S		✓							↓	

Rush Turnaround Time Requested (TAT) - Prelim
(Rush TAT subject to approval/surcharge)
Date Needed:
Transmit Prelim Rush Results by (circle):
Phone Fax E-mail
Phone #:
Fax #:
E-Mail Address:

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature] / SHAW	8-15-08 / 16:00	[signature]	8/18/08 11:35
[signature]	8/18/08 15:10	[signature]	8/18/08 1510

En Chem Project No. 407893
Sample Receipt Temp. R01
Sample Receipt pH (Wet/Metals) NA
Cooler Custody Seal
Present / Not Present
Intact / Not intact

Version 4.0: 09/04

(Please Print Legibly)
Company Name: SHAW E + I
Branch or Location: Milwaukee
Project Contact: Tim Welch
Telephone: 414-291-2350
Project Number: 131994
Project Name:
Project State: WI
Sampled By (Print): Chuck Zimney
PO #:

CHEMISPHERE INC
1819 Saint George Street • Green Bay, WI 54302

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

CHAIN OF CUSTODY No. 137424

Page 2 of 2
Quote #:
Mail Report To: Tim Welch
Company: Shaw E + I
Address: 111 W. Pleasant St.
Milwaukee, WI 53212
Invoice To: Denise D. Christopher
Company:
Address:
Mail Invoice To:

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

Regulatory Program: UST, RCRA, SDWA, NPDES, CERCLA

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

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

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

LABORATORY ID (Lab Use Only)	FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	ANALYSES REQUESTED: PAH								TOTAL # OF BOTTLES SENT	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)
013	GP-17 2-4'	8/15	10:30	S	✓									1-4oz agt	
014	GP-18 2-4'		10:45	S	✓										
015	GP-19 2-4'		11:00	S	✓										
016	GP-20 2-4'		11:15	S	✓										
017	GP-21 2-4'		11:30	S	✓										
018	GP-22 2-4'		11:45	S	✓										
019	GP-23 2-4		12:00	S	✓										

Rush Turnaround Time Requested (TAT) - Prelim
(Rush TAT subject to approval/surcharge)
Date Needed:
Transmit Prelim Rush Results by (circle):
Phone Fax E-mail
Phone #:
Fax #:
E-Mail Address:

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
SHAW	8-15-08 / 16:00	D. Mell	8/18/08 11:35
D. Mell	8/18/08 15:10	Ashley Busky	8/18/08 1510

En Chem Project No. 407893
Sample Receipt Temp. R01
Sample Receipt pH (Wet/Metals) NA
Cooler Custody Seal Present / Not Present
Intact / Not intact

Version 4.0: 09/04

Sample Condition Upon Receipt

Pace Analytical

Client Name: Shaw E&I Project # 407893

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used NA **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature RDI **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 8/18/08 AB

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: S		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: CW **Date:** 8/19/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

September 08, 2008

Tim Welch
Shaw E & I
111 West Pleasant Street
Suite 105
Milwaukee, WI 53212

RE: Project: 131994
Pace Project No.: 408157

Dear Tim Welch:
Enclosed are the analytical results for sample(s) received by the laboratory on August 26, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kang Khang

kang.khang@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 131994
Pace Project No.: 408157

Green Bay Certification IDs

Louisiana Certification #: 04168
Kentucky Certification #: 82
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-150
New York Certification #: 11888
Illinois Certification #: 200050
Florida (NELAP) Certification #: E87948

Green Bay Volatiles Certification IDs

Louisiana Certification #: 04169
Kentucky Certification #: 83
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-200
New York Certification #: 11887
Illinois Certification #: 200051
Florida (NELAP) Certification #: E87951

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 131994
Pace Project No.: 408157

Lab ID	Sample ID	Matrix	Date Collected	Date Received
408157001	**MW-2**	Water	08/21/08 13:40	08/26/08 09:05
408157002	**MW-4**	Water	08/21/08 12:55	08/26/08 09:05

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 131994
Pace Project No.: 408157

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
408157001	**MW-2**	EPA 300.0	DDY	1	PASI-G
408157002	**MW-4**	EPA 300.0	DDY	1	PASI-G

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 408157

Sample: MW-2 **Lab ID: 408157001** Collected: 08/21/08 13:40 Received: 08/26/08 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9250**	mg/L	500	106	100		09/05/08 18:49	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994
Pace Project No.: 408157

Sample: MW-4 **Lab ID: 408157002** Collected: 08/21/08 12:55 Received: 08/26/08 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**9200**	mg/L	500	106	100		09/05/08 19:04	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994
Pace Project No.: 408157

QC Batch: WETA/2260 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 408157001, 408157002

METHOD BLANK: 72703 — Matrix: Water
Associated Lab Samples: 408157001, 408157002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.1	5.0	09/04/08 16:23	

LABORATORY CONTROL SAMPLE: 72704

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.3	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 72705 72706

Parameter	Units	408111016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	171	100	100	275	275	104	104	90-110	.2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 72707 72708

Parameter	Units	9226790001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	7.2	20	20	25.5	25.7	91	92	90-110	1	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 131994
Pace Project No.: 408157

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

UPPER MIDWEST REGION
MN: 612-607-1700 **WI:** 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

(Please Print Clearly)	
Company Name:	SHAW ENV.
Branch/Location:	Milwaukee
Project Contact:	Tim Welch
Phone:	414-291-2350
Project Number:	131994
Project Name:	
Project State:	WI
Sampled By (Print):	Chuck Zimney
Sampled By (Sign):	
PO #:	Regulatory Program:

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

Quote #:	
Mail To Contact:	Tim Welch
Mail To Company:	Shaw-Env.
Mail To Address:	Milwaukee
Invoice To Contact:	Denise D. Christopher
Invoice To Company:	Shaw Env.
Invoice To Address:	Milwaukee
Invoice To Phone:	

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analysis Requested: Chloride	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW-2	8/21/08	13:40	GW	N	A	✓		1-250mL*	
002	MW-4	↓	12:55	GW			✓		↓	

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
(SHAW)	8-21-08 / 16:00	D. Fornual	8/22/08 1100
D. Fornual	8/22/08 1700		
L. Walter	8/26/08 9:05	L. Moore	8/26/08 9:05

PACE Project No. 408157
Receipt Temp = ROI °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06
C019a(27Jun2006)
ORIGINAL

Pace Analytical

Sample Condition Upon Receipt

Client Name: Show End. Project # 408157

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ Commercial ☐ Pace Other _____

Tracking #: _____

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used NA Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 10°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments: AN

Date and Initials of person examining contents: LI 8/26/08

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.	
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.	
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.	
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.	
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.	
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.	
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.	
Sufficient Volume:	☒Yes ☐No ☐N/A	8.	
Correct Containers Used:	☒Yes ☐No ☐N/A	9.	
-Pace Containers Used:	☒Yes ☐No ☐N/A		
Containers Intact:	☒Yes ☐No ☐N/A	10.	
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.	
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.	
-Includes date/time/ID/Analysis Matrix: W			
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.	
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.	
Trip Blank Present:	☐Yes ☐No ☒N/A	16.	
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A		
Pace Trip Blank Lot # (if purchased): _____			

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: LL **Date:** 8/26/08

ote: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR ertification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

September 22, 2008

Tim Welch
Shaw E & I
111 West Pleasant Street
Suite 105
Milwaukee, WI 53212

RE: Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

Dear Tim Welch:
Enclosed are the analytical results for sample(s) received by the laboratory on September 09, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kang Khang

kang.khang@pacelabs.com
Project Manager

Enclosures

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

Green Bay Certification IDs

Louisiana Certification #: 04168
Kentucky Certification #: 82
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-150
New York Certification #: 11888
Illinois Certification #: 200050
Florida (NELAP) Certification #: E87948

Green Bay Volatiles Certification IDs

Louisiana Certification #: 04169
Kentucky Certification #: 83
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-200
New York Certification #: 11887
Illinois Certification #: 200051
Florida (NELAP) Certification #: E87951

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

Lab ID	Sample ID	Matrix	Date Collected	Date Received
408690001	**MW 5**	Water	09/05/08 11:45	09/09/08 08:45
408690002	**MW 3**	Water	09/05/08 11:55	09/09/08 08:45
408690003	**MW 1**	Water	09/05/08 12:10	09/09/08 08:45

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
408690001	**MW 5**	EPA 300.0	DDY	1	PASI-G
408690002	**MW 3**	EPA 300.0	DDY	1	PASI-G
408690003	**MW 1**	EPA 300.0	DDY	1	PASI-G

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

Sample: MW 5 **Lab ID: 408690001** Collected: 09/05/08 11:45 Received: 09/09/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**80.2**	mg/L	50.0	10.6	10		09/15/08 17:52	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

Sample: MW 3 **Lab ID: 408690002** Collected: 09/05/08 11:55 Received: 09/09/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**127**	mg/L	25.0	5.3	5		09/16/08 19:22	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

Sample: MW 1 **Lab ID: 408690003** Collected: 09/05/08 12:10 Received: 09/09/08 08:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**901**	mg/L	100	21.2	20		09/16/08 19:36	16887-00-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

QC Batch: WETA/2319 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 408690001, 408690002, 408690003

METHOD BLANK: 76651 | Matrix: Water
Associated Lab Samples: 408690001, 408690002, 408690003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.1	5.0	09/15/08 16:26	

LABORATORY CONTROL SAMPLE: 76652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	18.8	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 76653 76654

Parameter	Units	408673001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	27.7	100	100	111	114	84	86	90-110	2	20	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 76655 76656

Parameter	Units	408690001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	80.2	200	200	263	264	92	92	90-110	.2	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 131994 DPW-FOND DU LAC
Pace Project No.: 408690

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

M0	Matrix spike recovery was outside laboratory control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

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

(Please Print Clearly)

Company Name:	Shaw
Branch/Location:	Milwaukee, WI
Project Contact:	Tim Welch
Phone:	414-291-2350
Project Number:	131994
Project Name:	DPW - Fond du Lac
Project State:	WI
Sampled By (Print):	Chris Pestlet
Sampled By (Sign):	
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	Tim Welch
Mail To Company:	Shaw
Mail To Address:	111 W. Pleasant St. Suite 10 Milwaukee, WI 53212
Invoice To Contact:	Denise Dichristopher
Invoice To Company:	
Invoice To Address:	as above
Invoice To Phone:	414-291-2350

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☐ On your sample (billable)
- ☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: Chloride	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW 5	9-5-08	1145	GW	N	A	X		1-250 mL Poly *	
002	MW 3	↓	1155	↓			X		↓	
003	MW 1	↓	1210	↓			X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	9-5-08 1400	D. Fennimore	9/8/08 0930
D. Fennimore	9/8/08 1700	WATCO	
WATCO	9/9/08 845	[signature]	9/9/08 845

PACE Project No. 408690

Receipt Temp = RAT °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Sample Condition Upon Receipt

Pace Analytical

Client Name: SHAW Project # 408690

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial (WALTCO) ☐ Pace Other _____

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

Thermometer Used N/A **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature ROI **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 9/9/08 KL

Comments:

Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W				
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes	☐No	☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☑N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: JLL **Date:** 9/9/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)