



# TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology  
and  
Environmental Earth Sciences

**RECEIVED**

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DEPT OF ECOLOGY October 12, 2011  
TCP-NWRO Project No. T-6552

HALCO PROPERTIES, LLC  
Mr. Brett Cowman  
c/o Betts, Patterson & Mines, P.S.  
701 Pike Street, Suite 1400  
Seattle, Washington 98101-3927

Subject: Technical Memo-Fall 2011 Quarterly Sampling  
5221 Ballard Avenue NW  
Seattle, Washington

Reference: Phase II Environmental Site Assessment, prepared by Terra Associates, dated July 29, 2011

Dear Mr. Cowman:

As requested, we have completed the fall 2011 quarterly sampling of the four monitoring wells constructed to document groundwater conditions at 5221 Ballard Avenue NW in Seattle, Washington.

The attached memo presents the results of analytical testing and our current conclusions in more detail.

We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Respectfully submitted,  
**TERRA ASSOCIATES, INC.**

  
Charles R. Eie, L.H.G.  
Project Manager

cc: Mr. Livingston Wernecke, Betts, Patterson & Mines, P.S.  
Mr. Steve Cowman  
Ms. Audrey Heisey, NWRO WDOE

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Analytical Laboratory Report

**Fall Quarter 2011 Groundwater Sampling  
5221 Ballard Avenue NW  
Seattle, Washington  
VCP NW 2496**

## **1.0 EXECUTIVE SUMMARY**

This memo summarized the fall quarter sampling for 2011 for the parcel at 5221 Ballard Avenue NW in Seattle, Washington. This parcel is being sampled separately from the parcels that comprise the southern portion of the Cowman Campbell Paint site. The UST cluster on the 5221 site is a distinctly separate site relative to the former UST cluster on the parcels that front on Shilshole Avenue NW. Based on the data collected over the past 15 years, it is our opinion that the plumes from the two UST clusters do not overlap.

## **2.0 SCOPE OF WORK**

Our scope of work for this supplemental report consisted of the following:

- Sampling groundwater from Monitoring Wells MW-101 through MW-104.
- Subcontracting analytical testing of groundwater samples.
- Appropriate analysis of the data.
- Preparation of this report.

## **3.0 SITE CONDITIONS**

### **3.1 Surface**

The site is located at 5221 Ballard Avenue NW in Seattle, Washington. The site location is shown on Figures 1 and 2. The site layout is shown on Figure 3.

### **3.2 Groundwater**

Table 1 summarizes the current and previous groundwater measurements. The current groundwater gradient is towards the southwest consistent with the previous measurements. The gradient has flattened. The static water level has decreased as would be expected during the drier summer months.

**Table 1  
Groundwater Measurements**

Monitoring Well	Surface Elev	MP Elev.	5/6/11		5/10/2011		6/29/2011		9/29/11	
			Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
MW-101	36.77	36.37	10.3	26.07	10.45	25.92	10.78	25.59	11.63	24.74
MW-102	36.35	35.93	10.25	25.68	9.81	26.12	10.08	25.85	11	24.93
MW-103	36.13	35.79	10.25	25.54	9.38	26.41	9.74	26.05	10.86	24.93
MW-104	28.23	27.98					2.76	25.22	3.55	24.43

**Notes:** MP is the north side of the top of the PVC casing within the surface monument.  
Ground surface elevations are from a survey by Jim Hart and Associates.

#### **4.0 FIELD SAMPLING**

Groundwater monitoring wells were constructed in each of the borings conducted for this study. The wells are built with two-inch diameter PVC well materials. The screens are factory slotted with 0.01-inch openings. The screen segments were backfilled with silica sand. All wells were constructed in accordance with Washington State well construction requirements.

All samples are obtained using a peristaltic pump and low flow pump rates. A minimum of three casing volumes are removed prior to sampling. Groundwater parameters are monitored during purging to verify that stable groundwater conditions have been reached prior to sampling.

All groundwater samples were placed into laboratory-prepared glassware. Each sample was given unique sample identification. All samples were kept refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. Chain of custody protocols were followed for all samples.

#### **5.0 LABORATORY TESTING**

##### **5.1 General**

The constituents of concern (COCs) are paint thinners, petroleum hydrocarbons including Diesel No. 2 (Heating oil), and volatile organic compounds. The COCs are based on the past use of the land and previous sampling by others documented in the reports listed in our referenced Phase II ESA report. Groundwater samples were analyzed for the following analytes:

- Total petroleum hydrocarbons (TPH) in the gasoline through heavy oil range.
- Volatile organic compounds.

All testing was performed within the designated holding times. At the laboratory, standard quality control procedures were followed. The procedures consisted of sample blanks, duplicates, and matrix spikes. All testing was within normal standards. OnSite Environmental Inc. has accreditation from Ecology for all of the testing performed during this project.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use. The laboratory report is attached to this memo.

##### **5.2 Groundwater**

The following tables are cumulative for Monitoring Wells MW-101 through MW-104.

**Table 3**  
**Total Petroleum Hydrocarbons**  
**Groundwater**

Well Number	Date	TPH Gas Range	TPH Diesel Range	TPH Oil Range
MW-101	5/10/11	0.16	0.26U	0.41U
	9/29/11	0.29	0.26U	0.42U
MW-102	5/10/11	0.5U	0.27U	0.41U
	9/29/11	0.59	0.26U	0.41U
MW-103	5/10/11	<b>0.94</b>	<b>0.7U</b>	0.42U
	9/29/11	0.27	0.26U	0.41U
MW-104	6/29/11	0.1U	0.41U	0.26U
	9/29/11	0.1U	0.26U	0.41U
MTCA		0.8 (1.0)	0.5	0.5

**Notes:** All units are ppm.

U modifier indicates that the compound was not present at the PQL.

Cleanup value of 1.0 for TPHG is applicable when no BETX is present.

**Table 4**  
**Volatile Organic Compounds**  
**Groundwater**

Well Number	Date	Benzene	Ethyl benzene	Toluene	m,p-Xylene	o-Xylene
MW-101	5/10/11	1.3	0.95	1.0U	1.5	0.2U
	9/29/11	2.8	1.2	1.0U	0.4U	0.2U
MW-102	5/10/11	0.2U	0.2U	1.0U	0.4U	0.2U
	9/29/11	0.2U	0.2U	1.0U	0.4U	0.2U
MW-103	5/10/11	0.2U	0.2U	1.0U	0.4U	0.2U
	9/29/11	0.2U	0.2U	1.0U	0.4U	0.2U
MW-104	6/29/11	0.27	0.2U	1.0U	0.4U	0.2U
	9/29/11	0.21	0.2U	1.0U	0.4U	0.2U
MTCA		5.0	700	1,000	1,000	

**Table 4 (continued)**  
**Volatile Organic Compounds**  
**Groundwater**

Well Number	Date	Vinyl Chloride	1,1-Dichloroethane	(cis) 1,2-Dichloroethene	Trichloroethylene	Tetrachloroethylene
MW-101	5/10/11	0.2U	0.49	0.39	0.2U	0.2U
	9/29/11	0.2U	0.46	0.31	0.2U	0.2U
MW-102	5/10/11	0.2U	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.2U	0.2U	0.2U	0.2U	0.2U
MW-103	5/10/11	0.2U	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.2U	0.2U	0.2U	0.2U	0.2U
MW-104	6/29/11	0.2U	0.23	0.2U	0.2U	0.2U
	9/29/11	0.2U	0.2U	0.2U	0.2U	0.2U
MTCA		0.2	<i>1,600</i>	<i>16</i>	5.0	5.0

Well Number	Date	Isopropyl benzene	n-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene
MW-101	5/10/11	1.1	1.1	0.77	5.2
	9/29/11	3.2	3.4	0.2U	0.9
MW-102	5/10/11	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.22	0.2U	0.2U	0.2U
MW-103	5/10/11	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.2U	0.2U	0.2U	0.2U
MW-104	6/29/11	0.2U	0.2U	0.2U	0.2U
	9/29/11	0.2U	0.2U	0.2U	0.2U
MTCA		NP	<i>800</i>	<i>80</i>	<i>15</i>

**Notes:**

All units are parts per billion, ppb.

Cleanup values are Method A; values in italics are Method B or EPA PRG Region 9 values.

U modifier indicates that the analyte was not present at the numerical practical quantitation limit.

NP indicates that there is no screening level of cleanup level posted for the individual compound.

**Table 5**  
**Groundwater Parameters**

Well Number	Date	pH	Conductivity	DO	ORP	Temp.
MW-101	5/10/11	NM	NM	NM	NM	15.3
	7/6/11	6.55	148	0.32	-10	16.0
	9/29/11	6.4	699	3.84	-115	16.7
MW-102	5/10/11	NM	NM	NM	NM	15.2
	9/29/11	6.44	483	1.7	-117	17.4
MW-103	5/10/11	NM	NM	NM	NM	16.1
	7/6/11	6.49	113	0.3	-45	16.6
	9/29/11	6.39	455	1.8	-120	18
MW-104	9/29/11	6.35	794	1.7	-99	17.4

**Notes:** DO is measured in ppm.  
ORP is measured in milli volts.  
Conductivity is measured in micro Siemens.  
pH is in standard units.  
Temperature is in degrees Celsius.

## 6.0 DISCUSSION

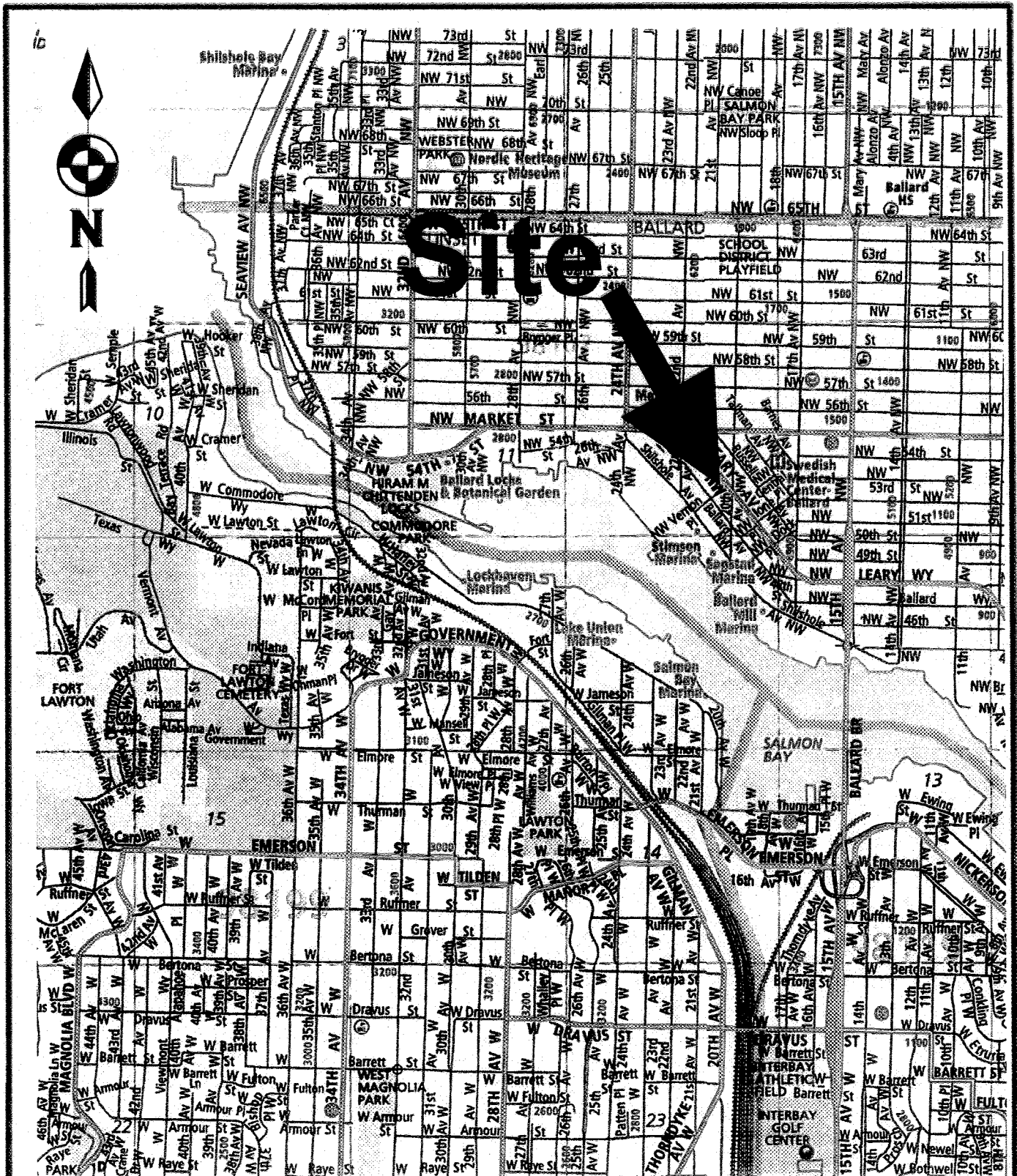
As can be seen in the tables there are no exceedances of the MTCA cleanup values in the groundwater samples from the 4 wells placed to document the USTs on the 5221 Ballard Avenue NW site.

## 7.0 LIMITATIONS

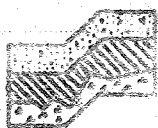
This memo is the copyrighted property of Terra Associates, Inc. and was prepared in accordance with generally accepted local geo-environmental engineering practices and within the limitations of time and budget. Analytical testing of samples was based on our understanding of past land uses documented in reports by others and the tax records. In the event additional information regarding site history or current site uses is found, the information should be brought to our attention, as it may affect our conclusions.

This memo is intended for specific application to the 5221 Ballard Avenue NW project, and is for the exclusive use of Halco Properties, LLC and their authorized representatives. No other warranty, expressed or implied, is made.

The analyses and recommendations presented in this report are based on information prepared by others together with data obtained from explorations advanced on the site, and selected analyses of soils samples for this study. The conclusions reached in this report are our opinions based on the previous and current explorations and analytical test data summarized and discussed in this report. Subsurface conditions may vary and seasonal variations in groundwater may occur.



Reference: Thomas Bros King County Road Atlas. NOT TO SCALE



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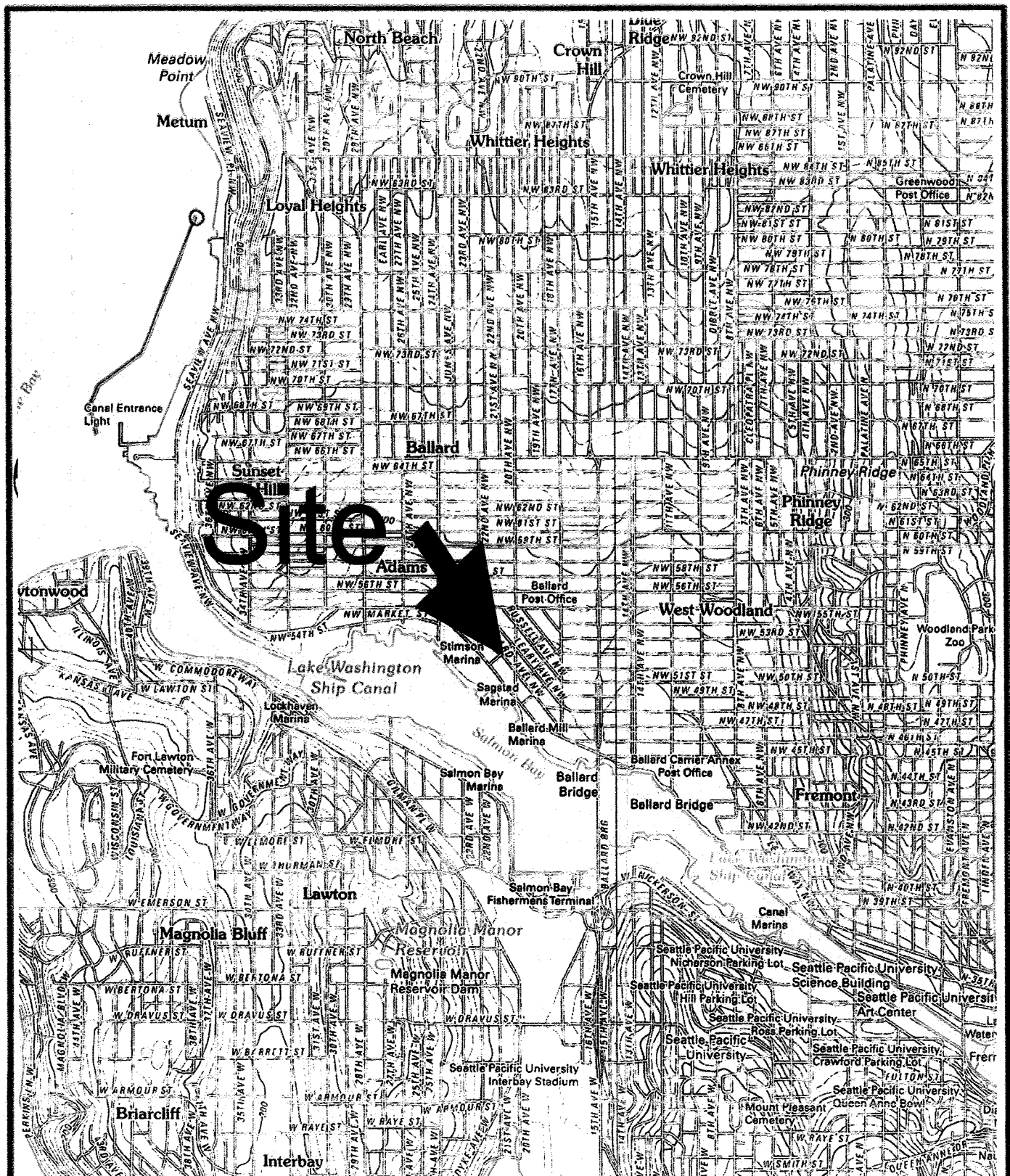
Vicinity Map  
5221 Ballard Ave NW  
Seattle, Washington

Proj. No T-6552

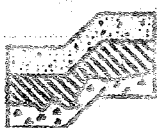
Date Oct 2011

Figure 1





Reference: Seattle North and Shilshole Bay USGS Quadrangles



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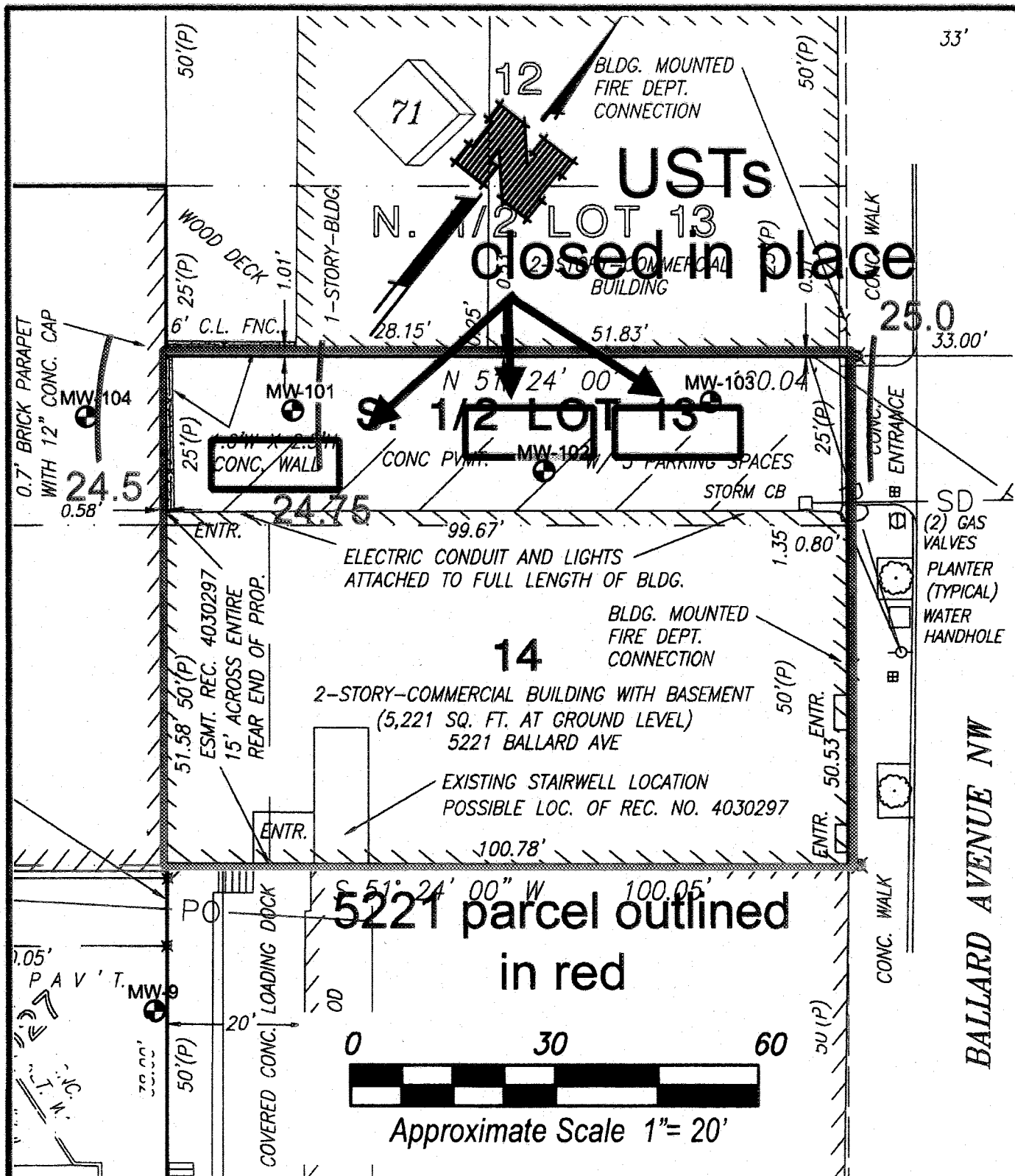
Geotechnical Consultants

Topographic Vicinity Map  
5221 Ballard Ave NW  
Seattle, Washington

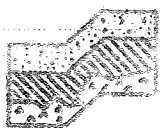
Proj. No T-6552

Date Oct 2011

Figure 2



Reference: Site Survey by Hart Associates and Terra Associates field notes



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Sept 29 2011 Static Water Level Summary

5221 Ballard Ave NW  
Seattle, Washington

Proj. No T-6552

Date Oct 2011

Figure 3



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

October 7, 2011

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1109-207

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 29, 2011.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: October 7, 2011  
Samples Submitted: September 29, 2011  
Laboratory Reference: 1109-207  
Project: 6552

### **Case Narrative**

Samples were collected on September 29, 2011 and received by the laboratory on September 29, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

# **NWTPH-Gx**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>MW-101</b>					
<b>Laboratory ID:</b>	09-207-01					
Gasoline	<b>290</b>	100	NWTPH-Gx	10-4-11	10-4-11	O
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	87	73-121				
<b>Client ID:</b>	<b>MW-102</b>					
<b>Laboratory ID:</b>	09-207-02					
Gasoline	<b>590</b>	100	NWTPH-Gx	10-4-11	10-4-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	92	73-121				
<b>Client ID:</b>	<b>MW-103</b>					
<b>Laboratory ID:</b>	09-207-03					
Gasoline	<b>270</b>	100	NWTPH-Gx	10-4-11	10-4-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	89	73-121				
<b>Client ID:</b>	<b>MW-201</b>					
<b>Laboratory ID:</b>	09-207-04					
Gasoline	<b>ND</b>	100	NWTPH-Gx	10-4-11	10-4-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	91	73-121				

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**NWTPH-Gx  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1004W3					
Gasoline	ND	100	NWTPH-Gx	10-4-11	10-4-11	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	88	73-121				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	09-207-04							
	ORIG	DUP						
Gasoline	ND	ND	NA	NA	NA	NA	NA	30
Surrogate:								
Fluorobenzene	91 87 73-121							

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**NWTPH-Dx**  
**(with acid/silica gel clean-up)**

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-101</b>					
<b>Laboratory ID:</b>	09-207-01					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	10-3-11	10-3-11	
Lube Oil Range Organics	<b>ND</b>	0.42	NWTPH-Dx	10-3-11	10-3-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	98	50-150				

<b>Client ID:</b>	<b>MW-102</b>					
<b>Laboratory ID:</b>	09-207-02					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	10-3-11	10-3-11	
Lube Oil Range Organics	<b>ND</b>	0.41	NWTPH-Dx	10-3-11	10-3-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	107	50-150				

<b>Client ID:</b>	<b>MW-103</b>					
<b>Laboratory ID:</b>	09-207-03					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	10-3-11	10-3-11	
Lube Oil Range Organics	<b>ND</b>	0.41	NWTPH-Dx	10-3-11	10-3-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	94	50-150				

<b>Client ID:</b>	<b>MW-201</b>					
<b>Laboratory ID:</b>	09-207-04					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	10-3-11	10-3-11	
Lube Oil Range Organics	<b>ND</b>	0.41	NWTPH-Dx	10-3-11	10-3-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	102	50-150				

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**NWTPH-Dx  
 QUALITY CONTROL  
 (with acid/silica gel clean-up)**

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1003W1					
Diesel Range Organics	ND	0.25	NWTPH-Dx	10-3-11	10-3-11	
Lube Oil Range Organics	ND	0.40	NWTPH-Dx	10-3-11	10-3-11	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	103	50-150				

Analyte	Result		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	09-207-01							
	ORIG	DUP						
Diesel Range Organics	ND	ND					NA	NA
Lube Oil Range Organics	ND	ND					NA	NA
Surrogate:								
o-Terphenyl			98	100	50-150			



Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**VOLATILES by EPA 8260B**  
 page 1 of 2

Matrix: Water  
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-101</b>					
<b>Laboratory ID:</b>	<b>09-207-01</b>					
Dichlorodifluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloromethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Vinyl Chloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Acetone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Iodomethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Carbon Disulfide	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methylene Chloride	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl t-Butyl Ether	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethane	0.46	0.20	EPA 8260	10-3-11	10-3-11	
Vinyl Acetate	ND	2.0	EPA 8260	10-3-11	10-3-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
(cis) 1,2-Dichloroethene	0.31	0.20	EPA 8260	10-3-11	10-3-11	
2-Butanone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Bromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroform	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Benzene	2.8	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Trichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Dibromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromodichloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	10-3-11	10-3-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Toluene	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**VOLATILES by EPA 8260B**  
 page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-101</b>					
<b>Laboratory ID:</b>	<b>09-207-01</b>					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Tetrachloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Hexanone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Dibromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Ethylbenzene	1.2	0.20	EPA 8260	10-3-11	10-3-11	
m,p-Xylene	ND	0.40	EPA 8260	10-3-11	10-3-11	
o-Xylene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Styrene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromoform	ND	1.0	EPA 8260	10-3-11	10-3-11	
Isopropylbenzene	3.2	0.20	EPA 8260	10-3-11	10-3-11	
Bromobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Propylbenzene	3.4	0.20	EPA 8260	10-3-11	10-3-11	
2-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
4-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
tert-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,4-Trimethylbenzene	0.90	0.20	EPA 8260	10-3-11	10-3-11	
sec-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
p-Isopropyltoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Naphthalene	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>87</i>	<i>68-120</i>				
<i>Toluene-d8</i>	<i>86</i>	<i>73-120</i>				
<i>4-Bromofluorobenzene</i>	<i>82</i>	<i>65-120</i>				

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**VOLATILES by EPA 8260B**  
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Matrix: Water  
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-102</b>					
<b>Laboratory ID:</b>	<b>09-207-02</b>					
Dichlorodifluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloromethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Vinyl Chloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Acetone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Iodomethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Carbon Disulfide	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methylene Chloride	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl t-Butyl Ether	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Vinyl Acetate	ND	2.0	EPA 8260	10-3-11	10-3-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Butanone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Bromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroform	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Benzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Trichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Dibromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromodichloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	10-3-11	10-3-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Toluene	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-102</b>					
<b>Laboratory ID:</b>	<b>09-207-02</b>					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Tetrachloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Hexanone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Dibromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Ethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
m,p-Xylene	ND	0.40	EPA 8260	10-3-11	10-3-11	
o-Xylene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Styrene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromoform	ND	1.0	EPA 8260	10-3-11	10-3-11	
Isopropylbenzene	0.22	0.20	EPA 8260	10-3-11	10-3-11	
Bromobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Propylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
4-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
tert-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
sec-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
p-Isopropyltoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Naphthalene	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
<b>Surrogate:</b>	<b>Percent Recovery</b>	<b>Control Limits</b>				
Dibromofluoromethane	86	68-120				
Toluene-d8	85	73-120				
4-Bromofluorobenzene	81	65-120				

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

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Matrix: Water

Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-103</b>					
<b>Laboratory ID:</b>	<b>09-207-03</b>					
Dichlorodifluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloromethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Vinyl Chloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Acetone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Iodomethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Carbon Disulfide	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methylene Chloride	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl t-Butyl Ether	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Vinyl Acetate	ND	2.0	EPA 8260	10-3-11	10-3-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Butanone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Bromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroform	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Benzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Trichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Dibromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromodichloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	10-3-11	10-3-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Toluene	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-103</b>					
<b>Laboratory ID:</b>	<b>09-207-03</b>					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Tetrachloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Hexanone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Dibromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Ethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
m,p-Xylene	ND	0.40	EPA 8260	10-3-11	10-3-11	
o-Xylene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Styrene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromoform	ND	1.0	EPA 8260	10-3-11	10-3-11	
Isopropylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Propylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
4-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
tert-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
sec-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
p-Isopropyltoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Naphthalene	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
<b>Surrogate:</b>	<b>Percent Recovery</b>	<b>Control Limits</b>				
Dibromofluoromethane	84	68-120				
Toluene-d8	86	73-120				
4-Bromofluorobenzene	81	65-120				

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
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 Project: 6552

**VOLATILES by EPA 8260B**  
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Matrix: Water  
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-201					
Laboratory ID:	09-207-04					
Dichlorodifluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloromethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Vinyl Chloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Acetone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Iodomethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Carbon Disulfide	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methylene Chloride	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl t-Butyl Ether	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethane	0.26	0.20	EPA 8260	10-3-11	10-3-11	
Vinyl Acetate	ND	2.0	EPA 8260	10-3-11	10-3-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Butanone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Bromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroform	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Benzene	0.21	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Trichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Dibromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromodichloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	10-3-11	10-3-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Toluene	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
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 Project: 6552

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-201</b>					
<b>Laboratory ID:</b>	<b>09-207-04</b>					
1,1,2-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Tetrachloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Hexanone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Dibromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Ethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
m,p-Xylene	ND	0.40	EPA 8260	10-3-11	10-3-11	
o-Xylene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Styrene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromoform	ND	1.0	EPA 8260	10-3-11	10-3-11	
Isopropylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Propylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
4-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
tert-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
sec-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
p-Isopropyltoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Naphthalene	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
<b>Surrogate:</b>	<b>Percent Recovery</b>	<b>Control Limits</b>				
Dibromofluoromethane	84	68-120				
Toluene-d8	85	73-120				
4-Bromofluorobenzene	80	65-120				



Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**VOLATILES by EPA 8260B**  
**METHOD BLANK QUALITY CONTROL**  
 page 1 of 2

Matrix: Water

Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<hr/>						
Laboratory ID:	MB1003W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloromethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Vinyl Chloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Trichlorofluoromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Acetone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Iodomethane	ND	1.0	EPA 8260	10-3-11	10-3-11	
Carbon Disulfide	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methylene Chloride	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl t-Butyl Ether	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Vinyl Acetate	ND	2.0	EPA 8260	10-3-11	10-3-11	
2,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Butanone	ND	5.0	EPA 8260	10-3-11	10-3-11	
Bromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chloroform	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Carbon Tetrachloride	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Benzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Trichloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Dibromomethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromodichloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260	10-3-11	10-3-11	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Toluene	ND	1.0	EPA 8260	10-3-11	10-3-11	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260	10-3-11	10-3-11	

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**VOLATILES by EPA 8260B**  
**METHOD BLANK QUALITY CONTROL**  
 page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID: MB1003W1						
1,1,2-Trichloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Tetrachloroethene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Hexanone	ND	2.0	EPA 8260	10-3-11	10-3-11	
Dibromochloromethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromoethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Chlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
Ethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
m,p-Xylene	ND	0.40	EPA 8260	10-3-11	10-3-11	
o-Xylene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Styrene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromoform	ND	1.0	EPA 8260	10-3-11	10-3-11	
Isopropylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Bromobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichloropropane	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Propylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
2-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
4-Chlorotoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
tert-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
sec-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,3-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
p-Isopropyltoluene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,4-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
n-Butylbenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Hexachlorobutadiene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Naphthalene	ND	1.0	EPA 8260	10-3-11	10-3-11	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260	10-3-11	10-3-11	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	87	68-120				
Toluene-d8	85	73-120				
4-Bromofluorobenzene	81	65-120				

Date of Report: October 7, 2011  
 Samples Submitted: September 29, 2011  
 Laboratory Reference: 1109-207  
 Project: 6552

**VOLATILES by EPA 8260B**  
**SB/SBD QUALITY CONTROL**

Matrix: Water

Units: ug/L

Analyte	Result		Spike Level		Percent	Recovery	RPD		Flags
					Recovery	Limits			
SPIKE BLANKS									
Laboratory ID:	SB1003W1								
	SB	SBD	SB	SBD	SB	SBD			
1,1-Dichloroethene	8.63	8.50	10.0	10.0	86	85	70-130	2	11
Benzene	8.81	8.84	10.0	10.0	88	88	75-123	0	8
Trichloroethene	9.49	9.29	10.0	10.0	95	93	80-113	2	9
Toluene	9.25	9.21	10.0	10.0	93	92	80-113	0	8
Chlorobenzene	9.89	9.55	10.0	10.0	99	96	80-111	3	8
Surrogate:									
Dibromofluoromethane					81	79	68-120		
Toluene-d8					84	79	73-120		
4-Bromofluorobenzene					78	74	65-120		



#### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- Y - Sample extract treated with an acid/silica gel cleanup procedure.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference

# Chain of Custody

Company: Terra Associates  
 Project Number: 6552  
 Project Name: \_\_\_\_\_  
 Project Manager: Chuck Lie  
 Sampled by: Nicolas R. Hoffman

**Turnaround Request**  
 (in working days)

(Check One)

☐ Same Day ☐ 1 Day  
☐ 2 Days ☐ 3 Days  
☒ Standard (7 Days)  
 (TPH analysis 5 Days)  
☐ (other) \_\_\_\_\_

Laboratory Number:

**09-207**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	% Moisture
1	MW-101	9/29/11	9:20	W	5			X	X	X											
2	MW-102		10:10					X	X	X											
3	MW-103		10:55					X	X	X											
4	MW-201		11:45					X	X	X											

Signature	Company	Date	Time	Comments/Special Instructions
<u>[Signature]</u>	<u>Terra Associates</u>	<u>9/29/11</u>	<u>14:36</u>	
<u>[Signature]</u>	<u>[Signature]</u>	<u>9/29/11</u>	<u>14:36</u>	
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Chromatograms with final report <input type="checkbox"/>		