



**Conestoga-Rovers & Associates**  
8615 W. Bryn Mawr Avenue  
Chicago, Illinois 60631  
(773) 380-9933 Office (773) 380-6421 Fax

April 15, 1999

Reference No. 12867

Mr. Ronald W. Timm  
State of Washington  
Department of Ecology  
Northwest Regional Office  
3190 - 160<sup>th</sup> Avenue S.E.  
Bellevue, Washington 98008-5452

RECEIVED

APR 16 1999

DEPT OF ECOLOGY

Dear Mr. Timm:

Re: Additional Information  
Review of Independent Remedial Action  
Acacia Memorial Park  
14951 Bothell Way N.E.  
Seattle, Washington  
TCP ID # NW0082

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Conestoga-Rovers & Associates, on behalf of the Loewen Group, Inc. herewith submits additional information as requested by the Washington State Department of Ecology's (WDOE) Toxics Cleanup Program letter prepared by Mr. Ronald Timm and dated September 28, 1998. A copy of the letter is provided in Attachment A. WDOE items of concern are summarized as the following:

1. Contaminated soil that was removed and staged during the 1994 UST closure by removal was remediated ex-situ using landfarming techniques. However, previous sampling has revealed that the portion of the soil stockpile containing heavy oil has concentrations of TPH that exceed Model Toxics Control Act (MTCA) Method A limits. Further soil sampling is required to verify that the concentrations of TPH in the soil are below the Interim TPH Policy Method B maximum allowable concentrations. (Item 2 in WDOE letter dated 9/28/98)
2. A monitoring well should be installed at a downgradient location to the underground storage tanks closed by removal in 1994 and a groundwater sample collected. The water sample should be analyzed to evaluate the extent of impact the UST's, that had contained petroleum products, had on the groundwater quality. Samples are to be analyzed using Washington State Department of Ecology Interim TPH Policy criteria. A detailed map with scale displaying the locations and depths of each sample as well as hydrogeology displayed as groundwater elevation contours or cross-sectional data is to be provided. (Combines items 1 and 3 from WDOE letter dated 9/28/98)

#### **1994 UST Closure Related Soil Stockpile**

As recommended in the September 28, 1998 Washington Department of Ecology (WDOE) letter, listed as concern item 2 in WDOE letter and paraphrased above as item 1, the southern third of the soil stockpile, which contains the heavy oil contaminated soils, was resampled on

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November 10, 1998. The composite soil sample (S-12867-111098-DG01) was analyzed by North Creek Analytical (NCA) of Bothell, Washington for volatile petroleum hydrocarbons by modified WDOE Interim TPH Policy Method; benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tert-butyl ether (MTBE), and naphthalene by WDOE Interim TPH Policy Method; extractable petroleum hydrocarbons by modified WDOE Interim TPH Policy Method; polynuclear aromatic hydrocarbons; and lead.

Lead was detected in the soil sample at a concentration of 1.40 milligrams per kilogram (mg/kg). No other analytes were detected in the soil sample. Based on these data, we believe that the stockpiled soils are suitable for on-Site use.

Laboratory analytical data for the soil sample is summarized in Table B.1 in Attachment B. A copy of the laboratory analytical data report is provided in Attachment B. The location of the soil stockpile is provided on Figure 1 in Attachment C.

### Monitoring Well Installation and Groundwater Sampling

The groundwater monitoring activities were undertaken to address the WDOE concerns listed as items 1 and 3 in the September 28, 1998 letter produced by Mr. Ronald Timm. These concerns are summarized above in item 2.

On November 10, 1998, Tacoma Pump and Drilling Co., Inc. of Spanaway, Washington, under the direction of CRA, advanced one soil boring downgradient (east) of the former maintenance area UST's closed by removal in 1994, using 4¼-inch inside-diameter hollow-stem augers. Soil samples were collected at 2.5-foot intervals using a 2-foot long split spoon sampler. CRA described the soil and examined the soil samples for evidence of petroleum impact. CRA did not observe evidence of soil staining. The soil boring was advanced to a depth of 27 feet below ground surface (bgs) and completed as monitoring well MW-2 using a 10-foot length of No. 10 slot, 2-inch diameter PVC well screen connected to a 2-inch diameter flush threaded PVC riser pipe. A silica sand pack was placed around the well screen to approximately 3 feet above the top of the screen. Bentonite chips were placed over the top of the sand pack, and the monitoring well was completed with a flushmount road box set in concrete. The monitoring well was developed by removing 4 liters of water, with field parameters of temperature, conductivity, and pH recorded periodically. The monitoring well is screened from 10.5 to 20.5 feet bgs. Prior to well development, the depth to groundwater in the monitoring well was measured at 19.47 feet bgs. The stratigraphic and instrumentation log is provided in Attachment C.

A groundwater sample (W-12867-111098-DG01) was collected from monitoring well MW-2 and analyzed by NCA for target compound list volatile organic compounds, polynuclear aromatic

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hydrocarbons, gasoline hydrocarbons by WTPH-G, diesel hydrocarbons and heavy oil by WTPH-D, and dissolved lead.

Diesel range hydrocarbons were detected at a concentration of 0.581 milligrams per liter (mg/L), which is below the MTCA Method A Petroleum Cleanup Level of 1.000 mg/L. No other analytes were detected in the groundwater sample. A copy of the laboratory analytical data report is provided in Attachment B.

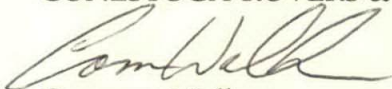
On February 23, 1999, Bush, Roed & Hitchings, Inc. of Seattle, Washington, under the direction of CRA, performed surveying services consisting of top of well casing relative elevation determinations and exact location measurements for the four on-Site monitoring wells. The relative well casing elevations and locations of the monitoring wells in relation to the UST area and adjacent buildings are provided on figure 2 in Attachment C. On Friday, March 6, 1999, CRA measured the depth to groundwater in the four monitoring wells. The relative groundwater elevations of the wells as compared to the reference well (MW-4 well casing at reference elevation of 100 feet) are provided on figure 3 in Attachment C. The groundwater depths, measured by CRA on March 6, 1999, are presented in Attachment D. From the groundwater elevation data, CRA extrapolated the groundwater elevation contours and concluded the downgradient direction is pointed east. We conclude that the monitoring well was installed downgradient from the USTs closed by removal in 1994, and that the analytical data for water samples collected from monitoring well MW-2 are representative of the former UST's affect on groundwater quality.

Based on the analytical data provided, we are respectfully requesting a No Further Action determination, by the WDOE, for the former maintenance area UST's.

Please contact us if you have any questions or require anything further.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES



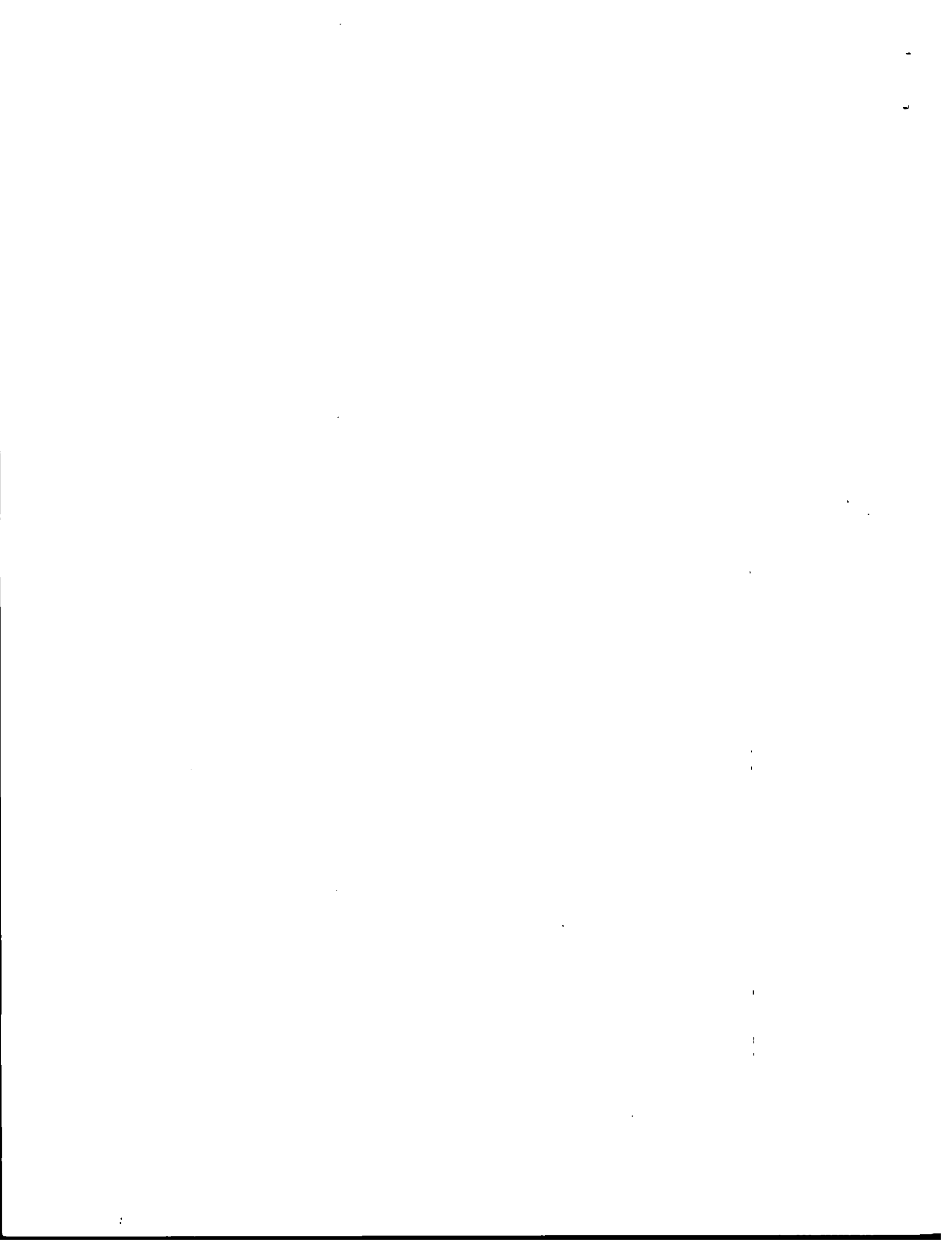
Cameron Walker

CW/ko/4  
Attachments

c.c.: A. Williamson  
S. Norton  
R. Shepherd

ATTACHMENT A

WASHINGTON STATE DEPARTMENT OF ECOLOGY LETTER  
DATED SEPTEMBER 28, 1998





12507

Rec'd CRA

SEP 30 1998

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (425) 649-7000

September 28, 1998

Cameron Walker  
Conestoga-Rovers & Associates  
8615 West Bryn Mawr  
Chicago, IL. 60631

Dear Mr. Walker;

Re: Request for Review of a Voluntary Cleanup  
Acacia Memorial Park, Seattle, WA

Thank you for submitting your reports for Ecology's review. Ecology appreciates your initiative in pursuing a voluntary cleanup under the Model Toxics Control Act.

The Washington State Department of Ecology's Toxics Cleanup Program has reviewed the following information regarding the Acacia Memorial Park, located at 14951 Bothell Way NE, Seattle, WA.:

1. Report titled "Summary Report: Underground Storage Tank and Contaminated Soil Removal Project", prepared by James P. Hurley Co., P.O. Box, 82206, Kenmore, WA., for Acacia Memorial Park, and dated January 24, 1994.
2. Report titled "Additional Information, Review of Independent Remedial Action; Acacia Memorial Park, 149651 Bothell Way N.E., Seattle, WA.; TCP ID # NW0082", prepared by Conestoga-Rovers & Associates (CRA), Chicago, IL., for Acacia Memorial Park, and dated September 22, 1998.

Based upon the information listed above, Ecology has identified a number of concerns that must be addressed prior to issuance of a "no further action" determination. The following is a summary of Ecology's concerns:



1. Groundwater may have been impacted by the leaking tank(s), as indicated by sample W-1 (taken from the excavation a week after removal of the contaminated soil), and further investigation is required. A monitoring well should be installed at a downgradient location to the tanks removed in 1994, with a groundwater elevation and sample collected; future analytical tests of the groundwater and soil should evaluate the extent of petroleum fuel contamination - UST 1 contained unleaded fuel - as well as for organic compounds found in solvents - UST-3 reportedly may have contained waste motor oil, paint thinner, and carburetor cleaner. Additional groundwater monitoring and analyses may be required depending upon the results of initial testing.
2. The contaminated soil that was removed from the excavation was remediated on-site by landfarming, which included initial fertilization and tilling. However, recent sampling indicates that the portion of the stockpile containing heavy oil still has concentrations of TPH that exceed MTCA Method A limits for soil contamination. Further soil sampling is required to verify that the concentrations of TPH are protective of human health by direct contact, and protective of groundwater, using the Interim TPH Policy Method B.
3. Analytical results should include chromatograms and chain-of-custody for every sample. The locations and depths of each sample should be provided on a detailed map with a scale. Also, hydrogeology should be displayed with groundwater elevations and contours, or with a cross-section.

Please note that because your actions were not, or will not be conducted under a consent decree with Ecology, this letter is not a settlement by the state under RCW 70.105D.040(4) and is not binding on the agency. Further action could be required at your site regardless of how strictly you follow Ecology's advice.

The opinions presented by Ecology in this letter are made only with respect to the information provided in the reports, documents, and telephone conversations listed above.

This opinion is only applicable to the specified site or area of site and may not be used to justify action at another site or area of the site.

Ecology does not assume any liability for any release, threatened release or other conditions at the site, or for any actions taken or omitted by any person or his/her agents or employees with regard to the release, threatened release, or other conditions at the site.

Mr. Cameron Walker

9/28/98

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Again, thank you for taking the initiative to voluntarily address the contamination at your site. Your efforts are recognized by Ecology as a positive step in our work to protect human health and the environment in Washington State.

Enclosed are some helpful Ecology reports that may assist you. If you have any questions regarding this letter, please contact Ronald W. Timm at 425-649-7185.

Sincerely,

A handwritten signature in cursive script that reads "Ronald W. Timm". The signature is written in dark ink and is positioned below the word "Sincerely,".

Ronald W. Timm

Hydrogeologist

Toxics Cleanup Program

RWT

ATTACHMENT B

SUMMARY OF STOCKPILED SOIL ANALYTICAL DATA,  
SUMMARY OF GROUNDWATER ANALYTICAL DATA,  
AND  
LABORATORY ANALYTICAL DATA REPORT

TABLE B.1

SUMMARY OF STOCKPILED SOIL ANALYTICAL DATA  
ACACIA MEMORIAL PARK  
SEATTLE, WASHINGTON

<i>Sample ID</i>		<i>S-DG01</i>	
<i>Sample Location</i>		<i>Stockpile</i>	<i>Washington</i>
<i>Sample Depth (ft bgs)</i>		<i>0-2</i>	<i>Interim TPH Policy</i>
<i>Sample Date</i>	<i>Units</i> <sup>1</sup>	<i>11/10/98</i>	<i>Soil Levels</i> <sup>2</sup>
<i>Parameters</i>			
Extractable Petroleum Hydrocarbons	mg/kg	ND (5.00) <sup>3</sup>	200.0
Volatile Petroleum Hydrocarbons	mg/kg	ND (5.00)	100.0
Polynuclear Aromatic Hydrocarbons	mg/kg	ND (0.0100)	NS <sup>4</sup>
Lead	mg/kg	1.40	NS
Volatile Organic Compounds			
Benzene	mg/kg	ND (0.100)	0.5
Toluene	mg/kg	ND (0.100)	40.0
Ethylbenzene	mg/kg	ND (0.100)	20.0
m,p-Xylene	mg/kg	ND (0.200)	20.0
o-Xylene	mg/kg	ND (0.100)	20.0
Naphthalene	mg/kg	ND (0.100)	NS
Methyl tert-butyl ether	mg/kg	ND (1.00)	NS

<sup>1</sup> mg/kg - milligrams per kilogram

<sup>2</sup> Washington Interim TPH Policy MTCA Method A Petroleum Cleanup Levels

<sup>3</sup> ND ( ) - parameter shown in parentheses not detected above method detection limit

<sup>4</sup> NS - no standard

TABLE B.2

SUMMARY OF GROUNDWATER ANALYTICAL DATA  
ACACIA MEMORIAL PARK  
SEATTLE, WASHINGTON

<i>Sample ID</i>		<i>W-DG01</i>	<i>Washington</i>
<i>Sample Location</i>		<i>MW5-98</i>	<i>Interim TPH Policy</i>
<i>Sample Date</i>	<i>Units</i> <sup>1</sup>	<i>11/10/98</i>	<i>Groundwater Levels</i> <sup>2</sup>
<i>Parameters</i>			
Gasoline Range Hydrocarbons	µg/L	ND (50.0) <sup>3</sup>	1,000
Diesel Range Hydrocarbons	mg/L	0.581	1.00
Heavy Oil Range Hydrocarbons	mg/L	ND (0.750)	1.00
Volatile Organic Compounds (VOCs)	µg/L	ND <sup>4</sup>	Various <sup>5</sup>
Polynuclear Aromatic Compounds	µg/L	ND	NS <sup>6</sup>
Lead (dissolved)	mg/L	ND (0.001)	NS

<sup>1</sup> µg/L - microgram per liter

mg/L - milligram per liter

<sup>2</sup> Washington Interim TPH Policy MTCA Method A Petroleum Cleanup Levels

<sup>3</sup> ND ( ) - parameter shown in parentheses not detected above method detection limit

<sup>4</sup> ND - not detected at various detection limits

<sup>5</sup> VOC Cleanup Levels: benzene - 5 µg/L, ethylbenzene - 30 µg/L, toluene - 40 µg/L, xylenes - 20 µg/L

<sup>6</sup> NS - no standard



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SPOKANE ☎ (509) 924-9200 ☎ FAX 924-9290  
PORTLAND ☎ (503) 906-9200 ☎ FAX 906-9210

Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**ANALYTICAL REPORT FOR SAMPLES:**

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
S-12867-111098-DG01	B811207-01	Soil	11/10/98
W-12867-111098-DG01	B811207-02	Water	11/10/98
Lab Trip Blank	B811207-03	Water	11/10/98

North Creek Analytical - Bothell

Kirk Gendron, Project Manager

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

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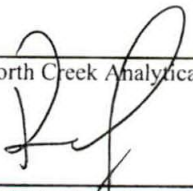
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Gasoline Hydrocarbons (Toluene to Dodecane) by WTPH-G  
North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>W-12867-111098-DG01</b>				<b>B811207-02</b>			<b>Water</b>	
Gasoline Range Hydrocarbons	1180439	11/12/98	11/12/98		50.0	ND	ug/l	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		90.4	%	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

  
Kirk Gendron, Project Manager

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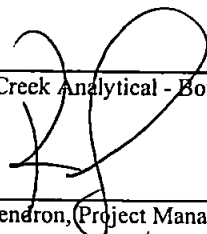
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## Volatile Petroleum Hydrocarbons by modified WDOE Interim TPH Policy Method North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>S-12867-111098-DG01</b>				<b>B811207-01</b>			<b>Soil</b>	
C5-C6 Aliphatics	1180531	11/16/98	11/16/98		5.00	ND	mg/kg dry	
C6-C8 Aliphatics	"	"	"		5.00	ND	"	
C8-C10 Aliphatics	"	"	"		5.00	ND	"	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C8-C10 Aromatics	"	"	"		5.00	ND	"	
C10-C12 Aromatics	"	"	"		5.00	ND	"	
C12-C13 Aromatics	"	"	"		5.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	60.0-140		97.9	%	
Surrogate: 4-BFB (PID)	"	"	"	60.0-140		101	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

  
Kirk Gendron, Project Manager

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**BTEX, MTBE and Naphthalene by WDOE Interim TPH Policy Method using GC/MS**  
North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>S-12867-111098-DG01</b>				<b>B811207-01</b>			<b>Soil</b>	
Methyl tert-butyl ether	1180498	11/13/98	11/13/98		1.00	ND	mg/kg dry	
Benzene	"	"	"		0.100	ND	"	
Toluene	"	"	"		0.100	ND	"	
Ethylbenzene	"	"	"		0.100	ND	"	
m,p-Xylene	"	"	"		0.200	ND	"	
o-Xylene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.100	ND	"	
Surrogate: 2-Bromopropene	"	"	"	70.0-130		95.4	%	
Surrogate: 1,2-DCA-d4	"	"	"	70.0-130		93.5	"	
Surrogate: Toluene-d8	"	"	"	70.0-130		100	"	
Surrogate: 4-BFB	"	"	"	70.0-130		101	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Kirk Gendron, Project Manager

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**Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)**  
North Creek Analytical - Bothell


Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<u>W-12867-111098-DG01</u>				<u>B811207-02</u>				
Diesel Range Hydrocarbons	1180429	11/12/98	11/13/98		0.250	<b>0.581</b>	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		73.5	%	

*water*

*< / ppm  
OK*

*BTEK'S?  
NO*

North Creek Analytical - Bothell



Kirk Gendron, Project Manager

*\*Refer to end of report for text of notes and definitions.*



# NORTH CREEK ANALYTICAL

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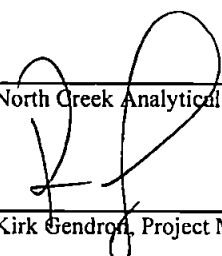
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## Extractable Petroleum Hydrocarbons by modified WDOE Interim TPH Policy Method North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b><u>S-12867-111098-DG01</u></b>				<b><u>B811207-01</u></b>			<b><u>Soil</u></b>	
C8-C10 Aliphatics	1180421	11/12/98	11/14/98		5.00	ND	mg/kg dry	
C10-C12 Aliphatics	"	"	"		5.00	ND	"	
C12-C16 Aliphatics	"	"	"		5.00	ND	"	
C16-C21 Aliphatics	"	"	"		5.00	ND	"	
C21-C34 Aliphatics	"	"	"		5.00	ND	"	
C10-C12 Aromatics	"	"	11/17/98		5.00	ND	"	
C12-C16 Aromatics	"	"	"		5.00	ND	"	
C16-C21 Aromatics	"	"	"		5.00	ND	"	
C21-C34 Aromatics	"	"	"		5.00	ND	"	
Extractable Petroleum Hydrocarbons	"	"	"			ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		82.3	%	
Surrogate: Octacosane	"	"	11/14/98	50.0-150		94.7	"	
Surrogate: Undecane	"	"	"	30.0-150		74.8	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

  
 Kirk Gendron, Project Manager

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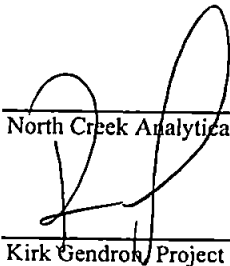
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## Polynuclear Aromatic Hydrocarbons by GC/MS-SIM North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>S-12867-111098-DG01</b>				<b>B811207-01</b>			<b>Soil</b>	
Acenaphthene	1180421	11/12/98	11/19/98		0.0100	ND	mg/kg dry	
Acenaphthylene	"	"	"		0.0100	ND	"	
Anthracene	"	"	"		0.0100	ND	"	
Benzo (a) anthracene	"	"	"		0.0100	ND	"	
Benzo (a) pyrene	"	"	"		0.0100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.0100	ND	"	
Benzo (ghi) perylene	"	"	"		0.0100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.0100	ND	"	
Chrysene	"	"	"		0.0100	ND	"	
Dibenz (a,h) anthracene	"	"	"		0.0100	ND	"	
Fluoranthene	"	"	"		0.0100	ND	"	
Fluorene	"	"	"		0.0100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.0100	ND	"	
2-Methylnaphthalene	"	"	"		0.0100	ND	"	
Naphthalene	"	"	"		0.0100	ND	"	
Phenanthrene	"	"	"		0.0100	ND	"	
Pyrene	"	"	"		0.0100	ND	"	
Surrogate: p-Terphenyl-d14	"	"	"	30.0-150		121	%	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

  
Kirk Gendron, Project Manager

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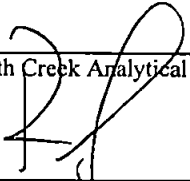
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Total Metals by EPA 6000/7000 Series Methods  
North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>S-12867-111098-DG01</u> Lead	1180585	11/17/98	11/17/98	<u>B811207-01</u> EPA 6020	0.500	1.40	<u>Soil</u> mg/kg dry	

North Creek Analytical - Bothell

*\*Refer to end of report for text of notes and definitions.*

  
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# NORTH CREEK ANALYTICAL

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Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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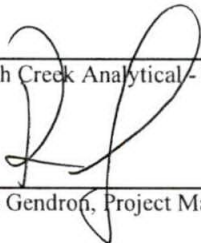
**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>W-12867-111098-DG01</u> Lead	1180392	11/18/98	11/20/98	EPA 6020	0.00100	ND	mg/l	

*Water*

North Creek Analytical- Bothell

*\*Refer to end of report for text of notes and definitions.*

  
 Kirk Gendron, Project Manager

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Conestoga-Rovers and Associates - IL  
8615 W. Bryn Mawr Avenue  
Chicago, IL 60631

Project: 12867  
Project Number: Not Provided  
Project Manager: Nancy Bergstrom

Sampled: 11/10/98  
Received: 11/10/98  
Reported: 12/2/98 11:39

## Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>W-12867-111098-DG01</b>				<b>B811207-02</b>			<b>Water</b>	
Acetone	1180593	11/17/98	11/17/98		10.0	ND	ug/l	
Benzene	"	"	"		1.00	ND	"	
Bromobenzene	"	"	"		1.00	ND	"	
Bromochloromethane	"	"	"		1.00	ND	"	
Bromodichloromethane	"	"	"		1.00	ND	"	
Bromoform	"	"	"		1.00	ND	"	
Bromomethane	"	"	"		1.00	ND	"	
2-Butanone	"	"	"		10.0	ND	"	
n-Butylbenzene	"	"	"		1.00	ND	"	
sec-Butylbenzene	"	"	"		1.00	ND	"	
tert-Butylbenzene	"	"	"		1.00	ND	"	
Carbon disulfide	"	"	"		1.00	ND	"	
Carbon tetrachloride	"	"	"		1.00	ND	"	
Chlorobenzene	"	"	"		1.00	ND	"	
Chloroethane	"	"	"		1.00	ND	"	
Chloroform	"	"	"		1.00	ND	"	
Chloromethane	"	"	"		5.00	ND	"	
2-Chlorotoluene	"	"	"		1.00	ND	"	
4-Chlorotoluene	"	"	"		1.00	ND	"	
Dibromochloromethane	"	"	"		1.00	ND	"	
1,2-Dibromo-3-chloropropane	"	"	"		5.00	ND	"	
1,2-Dibromoethane	"	"	"		1.00	ND	"	
Dibromomethane	"	"	"		1.00	ND	"	
1,2-Dichlorobenzene	"	"	"		1.00	ND	"	
1,3-Dichlorobenzene	"	"	"		1.00	ND	"	
1,4-Dichlorobenzene	"	"	"		1.00	ND	"	
Dichlorodifluoromethane	"	"	"		1.00	ND	"	
1,1-Dichloroethane	"	"	"		1.00	ND	"	
1,2-Dichloroethane	"	"	"		1.00	ND	"	
1,1-Dichloroethene	"	"	"		1.00	ND	"	
cis-1,2-Dichloroethene	"	"	"		1.00	ND	"	
trans-1,2-Dichloroethene	"	"	"		1.00	ND	"	
1,2-Dichloropropane	"	"	"		1.00	ND	"	
1,3-Dichloropropane	"	"	"		1.00	ND	"	
2,2-Dichloropropane	"	"	"		1.00	ND	"	
1,1-Dichloropropene	"	"	"		1.00	ND	"	
cis-1,3-Dichloropropene	"	"	"		1.00	ND	"	
trans-1,3-Dichloropropene	"	"	"		1.00	ND	"	

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Volatile Organic Compounds by EPA Method 8260B**  
**North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<u>W-12867-111098-DG01 (continued)</u>				<u>B811207-02</u>			<u>Water</u>	
Ethylbenzene	1180593	11/17/98	11/17/98		1.00	ND	ug/l	
Hexachlorobutadiene	"	"	"		1.00	ND	"	
2-Hexanone	"	"	"		10.0	ND	"	
Isopropylbenzene	"	"	"		1.00	ND	"	
p-Isopropyltoluene	"	"	"		1.00	ND	"	
Methylene chloride	"	"	"		5.00	ND	"	
4-Methyl-2-pentanone	"	"	"		10.0	ND	"	
Naphthalene	"	"	"		1.00	ND	"	
n-Propylbenzene	"	"	"		1.00	ND	"	
Styrene	"	"	"		1.00	ND	"	
1,1,1,2-Tetrachloroethane	"	"	"		1.00	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		1.00	ND	"	
Tetrachloroethene	"	"	"		1.00	ND	"	
Toluene	"	"	"		1.00	ND	"	
1,2,3-Trichlorobenzene	"	"	"		1.00	ND	"	
1,2,4-Trichlorobenzene	"	"	"		1.00	ND	"	
1,1,1-Trichloroethane	"	"	"		1.00	ND	"	
1,1,2-Trichloroethane	"	"	"		1.00	ND	"	
Trichloroethene	"	"	"		1.00	ND	"	
Trichlorofluoromethane	"	"	"		1.00	ND	"	
1,2,3-Trichloropropane	"	"	"		1.00	ND	"	
1,2,4-Trimethylbenzene	"	"	"		1.00	ND	"	
1,3,5-Trimethylbenzene	"	"	"		1.00	ND	"	
Vinyl chloride	"	"	"		1.00	ND	"	
m,p-Xylene	"	"	"		2.00	ND	"	
o-Xylene	"	"	"		1.00	ND	"	
Surrogate: 2-Bromopropene	"	"	"	80.0-120		97.0	%	
Surrogate: 1,2-DCA-d4	"	"	"	80.0-120		91.5	"	
Surrogate: Toluene-d8	"	"	"	80.0-120		102	"	
Surrogate: 4-BFB	"	"	"	80.0-120		103	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Kirk Gendron, Project Manager

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Conestoga-Rovers and Associates - IL  
 8615 W. Bryn Mawr Avenue  
 Chicago, IL 60631

Project: 12867  
 Project Number: Not Provided  
 Project Manager: Nancy Bergstrom

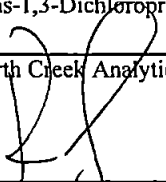
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 Reported: 12/2/98 11:39

## Volatile Organic Compounds by EPA Method 8260B North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<u>Lab Trip Blank</u>				<u>B811207-03</u>			<u>Water</u>	
Acetone	1180593	11/17/98	11/17/98		10.0	ND	ug/l	
Benzene	"	"	"		1.00	ND	"	
Bromobenzene	"	"	"		1.00	ND	"	
Bromochloromethane	"	"	"		1.00	ND	"	
Bromodichloromethane	"	"	"		1.00	ND	"	
Bromoform	"	"	"		1.00	ND	"	
Bromomethane	"	"	"		1.00	ND	"	
2-Butanone	"	"	"		10.0	ND	"	
n-Butylbenzene	"	"	"		1.00	ND	"	
sec-Butylbenzene	"	"	"		1.00	ND	"	
tert-Butylbenzene	"	"	"		1.00	ND	"	
Carbon disulfide	"	"	"		1.00	ND	"	
Carbon tetrachloride	"	"	"		1.00	ND	"	
Chlorobenzene	"	"	"		1.00	ND	"	
Chloroethane	"	"	"		1.00	ND	"	
Chloroform	"	"	"		1.00	ND	"	
Chloromethane	"	"	"		5.00	ND	"	
2-Chlorotoluene	"	"	"		1.00	ND	"	
4-Chlorotoluene	"	"	"		1.00	ND	"	
Dibromochloromethane	"	"	"		1.00	ND	"	
1,2-Dibromo-3-chloropropane	"	"	"		5.00	ND	"	
1,2-Dibromoethane	"	"	"		1.00	ND	"	
Dibromomethane	"	"	"		1.00	ND	"	
1,2-Dichlorobenzene	"	"	"		1.00	ND	"	
1,3-Dichlorobenzene	"	"	"		1.00	ND	"	
1,4-Dichlorobenzene	"	"	"		1.00	ND	"	
Dichlorodifluoromethane	"	"	"		1.00	ND	"	
1,1-Dichloroethane	"	"	"		1.00	ND	"	
1,2-Dichloroethane	"	"	"		1.00	ND	"	
1,1-Dichloroethene	"	"	"		1.00	ND	"	
cis-1,2-Dichloroethene	"	"	"		1.00	ND	"	
trans-1,2-Dichloroethene	"	"	"		1.00	ND	"	
1,2-Dichloropropane	"	"	"		1.00	ND	"	
1,3-Dichloropropane	"	"	"		1.00	ND	"	
2,2-Dichloropropane	"	"	"		1.00	ND	"	
1,1-Dichloropropene	"	"	"		1.00	ND	"	
cis-1,3-Dichloropropene	"	"	"		1.00	ND	"	
trans-1,3-Dichloropropene	"	"	"		1.00	ND	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

  
 Kirk Gendron Project Manager

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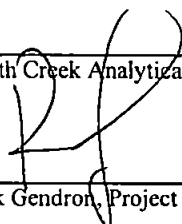
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Volatile Organic Compounds by EPA Method 8260B  
North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<u>Lab Trip Blank (continued)</u>				<u>B811207-03</u>			<u>Water</u>	
Ethylbenzene	1180593	11/17/98	11/17/98		1.00	ND	ug/l	
Hexachlorobutadiene	"	"	"		1.00	ND	"	
2-Hexanone	"	"	"		10.0	ND	"	
Isopropylbenzene	"	"	"		1.00	ND	"	
p-Isopropyltoluene	"	"	"		1.00	ND	"	
Methylene chloride	"	"	"		5.00	ND	"	
4-Methyl-2-pentanone	"	"	"		10.0	ND	"	
Naphthalene	"	"	"		1.00	ND	"	
n-Propylbenzene	"	"	"		1.00	ND	"	
Styrene	"	"	"		1.00	ND	"	
1,1,1,2-Tetrachloroethane	"	"	"		1.00	ND	"	
1,1,1,2,2-Tetrachloroethane	"	"	"		1.00	ND	"	
Tetrachloroethene	"	"	"		1.00	ND	"	
Toluene	"	"	"		1.00	ND	"	
1,2,3-Trichlorobenzene	"	"	"		1.00	ND	"	
1,2,4-Trichlorobenzene	"	"	"		1.00	ND	"	
1,1,1-Trichloroethane	"	"	"		1.00	ND	"	
1,1,2-Trichloroethane	"	"	"		1.00	ND	"	
Trichloroethene	"	"	"		1.00	ND	"	
Trichlorofluoromethane	"	"	"		1.00	ND	"	
1,2,3-Trichloropropane	"	"	"		1.00	ND	"	
1,2,4-Trimethylbenzene	"	"	"		1.00	ND	"	
1,3,5-Trimethylbenzene	"	"	"		1.00	ND	"	
Vinyl chloride	"	"	"		1.00	ND	"	
m,p-Xylene	"	"	"		2.00	ND	"	
o-Xylene	"	"	"		1.00	ND	"	
Surrogate: 2-Bromopropene	"	"	"	80.0-120		96.5	%	
Surrogate: 1,2-DCA-d4	"	"	"	80.0-120		95.0	"	
Surrogate: Toluene-d8	"	"	"	80.0-120		101	"	
Surrogate: 4-BFB	"	"	"	80.0-120		97.0	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.



Kirk Gendron, Project Manager



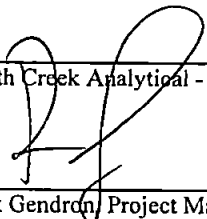
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring  
North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>W-12867-111098-DG01</b>				<b>B811207-02</b>			<b>Water</b>	
Acenaphthene	1180473	11/13/98	11/22/98		0.100	ND	ug/l	
Acenaphthylene	"	"	"		0.100	ND	"	
Anthracene	"	"	"		0.100	ND	"	
Benzo (a) anthracene	"	"	"		0.100	ND	"	
Benzo (a) pyrene	"	"	"		0.100	ND	"	
Benzo (b) fluoranthene	"	"	"		0.100	ND	"	
Benzo (ghi) perylene	"	"	"		0.100	ND	"	
Benzo (k) fluoranthene	"	"	"		0.100	ND	"	
Chrysene	"	"	"		0.100	ND	"	
Dibenz (a,h) anthracene	"	"	"		0.100	ND	"	
Fluoranthene	"	"	"		0.300	ND	"	
Fluorene	"	"	"		0.100	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		0.100	ND	"	
Naphthalene	"	"	"		0.300	ND	"	
Phenanthrene	"	"	"		0.100	ND	"	
Pyrene	"	"	"		0.300	ND	"	
Surrogate: 2-FBP	"	"	"	30.0-150		79.3	%	
Surrogate: Nitrobenzene-d5	"	"	"	30.0-150		69.1	"	
Surrogate: p-Terphenyl-d14	"	"	"	30.0-150		59.0	"	

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

  
Kirk Gendron, Project Manager



# NORTH CREEK ANALYTICAL

Environmental Laboratory Services

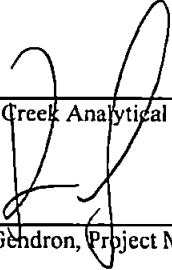
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PORTLAND ▫ (503) 906-9200 ▫ FAX 906-9210

Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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### Dry Weight Determination North Creek Analytical - Bothell

Sample Name	Lab ID	Matrix	Result	Units
S-12867-111098-DG01	B811207-01	Soil	92.4	%

North Creek Analytical - Bothell

  
Kirk Gendron, Project Manager

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Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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## Gasoline Hydrocarbons (Toluene to Dodecane) by WTPH-G/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180439</b>			<b>Date Prepared: 11/12/98</b>			<b>Extraction Method: EPA 5030B (P/T)</b>				
<b>Blank</b>			<b>1180439-BLK1</b>							
Gasoline Range Hydrocarbons	11/12/98			ND	ug/l	50.0				
Surrogate: 4-BFB (FID)	"	48.0		42.8	"	50.0-150	89.2			
<b>LCS</b>			<b>1180439-BS1</b>							
Gasoline Range Hydrocarbons	11/12/98	500		521	ug/l	70.0-130	104			
Surrogate: 4-BFB (FID)	"	48.0		50.2	"	50.0-150	105			
<b>Duplicate</b>			<b>1180439-DUP1 B811230-05</b>							
Gasoline Range Hydrocarbons	11/12/98		2650	2670	ug/l			25.0	0.752	
Surrogate: 4-BFB (FID)	"	48.0		63.8	"	50.0-150	133			

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Kirk Gendron, Project Manager

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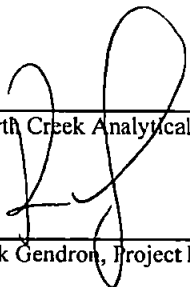
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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## Volatile Petroleum Hydrocarbons by modified WDOE Interim TPH Policy Method/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180531</b>			<b>Date Prepared: 11/16/98</b>		<b>Extraction Method: EPA 5030B (P/T)</b>					
<b>Blank</b>			<b>1180531-BLK1</b>							
C5-C6 Aliphatics	11/16/98			ND	mg/kg dry	5.00				
C6-C8 Aliphatics	"			ND	"	5.00				
C8-C10 Aliphatics	"			ND	"	5.00				
C10-C12 Aliphatics	"			ND	"	5.00				
C8-C10 Aromatics	"			ND	"	5.00				
C10-C12 Aromatics	"			ND	"	5.00				
C12-C13 Aromatics	"			ND	"	5.00				
Surrogate: 4-BFB (FID)	"	4.00		4.05	"	60.0-140	101			
Surrogate: 4-BFB (PID)	"	4.00		4.19	"	60.0-140	105			
<b>LCS</b>			<b>1180531-BS1</b>							
C5-C6 Aliphatics	11/16/98	2.00		1.59	mg/kg dry	70.0-130	79.5			
C6-C8 Aliphatics	"	1.00		0.969	"	70.0-130	96.9			
C8-C10 Aliphatics	"	1.00		0.991	"	70.0-130	99.1			
C10-C12 Aliphatics	"	1.00		1.04	"	70.0-130	104			
C8-C10 Aromatics	"	4.00		4.13	"	70.0-130	103			
C10-C12 Aromatics	"	1.00		1.01	"	70.0-130	101			
C12-C13 Aromatics	"	2.00		1.98	"	70.0-130	99.0			
Surrogate: 4-BFB (FID)	"	4.00		4.45	"	60.0-140	111			
Surrogate: 4-BFB (PID)	"	4.00		4.27	"	60.0-140	107			
<b>Duplicate</b>			<b>1180531-DUP1</b>		<b>B811146-01</b>					
C5-C6 Aliphatics	11/16/98		ND	ND	mg/kg dry				25.0	
C6-C8 Aliphatics	"		ND	ND	"				25.0	
C8-C10 Aliphatics	"		ND	ND	"				25.0	
C10-C12 Aliphatics	"		ND	ND	"				25.0	
C8-C10 Aromatics	"		ND	ND	"				25.0	
C10-C12 Aromatics	"		ND	ND	"				25.0	
C12-C13 Aromatics	"		ND	ND	"				25.0	
Surrogate: 4-BFB (FID)	"	4.15		4.02	"	60.0-140	96.9			
Surrogate: 4-BFB (PID)	"	4.15		4.28	"	60.0-140	103			

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\*Refer to end of report for text of notes and definitions.

  
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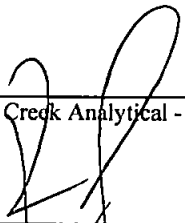
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**BTEX, MTBE and Naphthalene by WDOE Interim TPH Policy Method using GC/MS/Quality Control  
North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180498</b>			<b>Date Prepared: 11/13/98</b>			<b>Extraction Method: EPA 5030B [MeOH]</b>				
<b>Blank</b>			<b>1180498-BLK1</b>							
Methyl tert-butyl ether	11/16/98			ND	mg/kg dry	1.00				
Benzene	"			ND	"	0.100				
Toluene	"			ND	"	0.100				
Ethylbenzene	"			ND	"	0.100				
m,p-Xylene	"			ND	"	0.200				
o-Xylene	"			ND	"	0.100				
Naphthalene	"			ND	"	0.100				
Surrogate: 2-Bromopropene	"	2.00		1.95	"	70.0-130	97.5			
Surrogate: 1,2-DCA-d4	"	2.00		1.72	"	70.0-130	86.0			
Surrogate: Toluene-d8	"	2.00		2.14	"	70.0-130	107			
Surrogate: 4-BFB	"	2.00		1.92	"	70.0-130	96.0			
<b>LCS</b>			<b>1180498-BS1</b>							
Benzene	11/13/98	1.00		0.887	mg/kg dry	70.0-130	88.7			
Toluene	"	1.00		0.853	"	70.0-130	85.3			
Surrogate: 2-Bromopropene	"	2.00		1.86	"	70.0-130	93.0			
Surrogate: 1,2-DCA-d4	"	2.00		1.89	"	70.0-130	94.5			
Surrogate: Toluene-d8	"	2.00		1.83	"	70.0-130	91.5			
Surrogate: 4-BFB	"	2.00		2.02	"	70.0-130	101			
<b>Matrix Spike</b>			<b>1180498-MS1</b>		<b>B811132-06</b>					
Benzene	11/13/98	1.07	ND	0.896	mg/kg dry	70.0-130	83.7			
Toluene	"	1.07	ND	0.844	"	70.0-130	78.9			
Surrogate: 2-Bromopropene	"	2.13		1.75	"	70.0-130	82.2			
Surrogate: 1,2-DCA-d4	"	2.13		1.88	"	70.0-130	88.3			
Surrogate: Toluene-d8	"	2.13		1.92	"	70.0-130	90.1			
Surrogate: 4-BFB	"	2.13		1.97	"	70.0-130	92.5			
<b>Matrix Spike Dup</b>			<b>1180498-MSD1</b>		<b>B811132-06</b>					
Benzene	11/16/98	1.07	ND	1.07	mg/kg dry	70.0-130	100	20.0	17.7	
Toluene	"	1.07	ND	0.909	"	70.0-130	85.0	20.0	7.44	
Surrogate: 2-Bromopropene	"	2.13		2.02	"	70.0-130	94.8			
Surrogate: 1,2-DCA-d4	"	2.13		1.83	"	70.0-130	85.9			
Surrogate: Toluene-d8	"	2.13		2.03	"	70.0-130	95.3			
Surrogate: 4-BFB	"	2.13		1.98	"	70.0-130	93.0			

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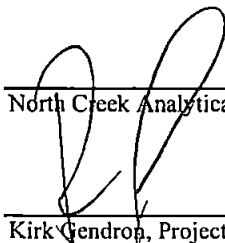
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**Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)/Quality Control  
North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180429</b>		<b>Date Prepared: 11/12/98</b>			<b>Extraction Method: EPA 3520C/600 Series</b>					
<b>Blank</b>		<b>1180429-BLK1</b>								
Diesel Range Hydrocarbons	11/13/98			ND	mg/l	0.250				
Heavy Oil Range Hydrocarbons	"			ND	"	0.750				
Surrogate: 2-FBP	"	0.320		0.256	"	50.0-150	80.0			
<b>LCS</b>		<b>1180429-BS1</b>								
Diesel Range Hydrocarbons	11/13/98	2.00		1.73	mg/l	60.0-140	86.5			
Surrogate: 2-FBP	"	0.320		0.219	"	50.0-150	68.4			
<b>Duplicate</b>		<b>1180429-DUP1 B811144-02</b>								
Diesel Range Hydrocarbons	11/13/98		ND	ND	mg/l				44.0	
Heavy Oil Range Hydrocarbons	"		ND	ND	"				44.0	
Surrogate: 2-FBP	"	0.605		0.382	"	50.0-150	63.1			

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## Extractable Petroleum Hydrocarbons by modified WDOE Interim TPH Policy Method/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180421</b>			<b>Date Prepared: 11/12/98</b>			<b>Extraction Method: EPA 3550B</b>				
<b>Blank</b>			<b>1180421-BLK1</b>							
C8-C10 Aliphatics	11/13/98			ND	mg/kg dry	5.00				
C10-C12 Aliphatics	"			ND	"	5.00				
C12-C16 Aliphatics	"			ND	"	5.00				
C16-C21 Aliphatics	"			ND	"	5.00				
C21-C34 Aliphatics	"			ND	"	5.00				
C10-C12 Aromatics	11/16/98			ND	"	5.00				
C12-C16 Aromatics	"			ND	"	5.00				
C16-C21 Aromatics	"			ND	"	5.00				
C21-C34 Aromatics	"			ND	"	5.00				
Extractable Petroleum Hydrocarbons	"			ND	"					
Surrogate: 2-FBP	"	12.0		9.53	"	50.0-150	79.4			
Surrogate: Octacosane	11/13/98	12.3		11.4	"	50.0-150	92.7			
Surrogate: Undecane	"	13.3		9.75	"	30.0-150	73.3			
<b>LCS</b>			<b>1180421-BS1</b>							
Extractable Petroleum Hydrocarbons	11/16/98	167		91.5	mg/kg dry	30.0-120	54.8			
Surrogate: 2-FBP	"	12.0		8.08	"	50.0-150	67.3			
Surrogate: Octacosane	11/13/98	12.3		11.0	"	50.0-150	89.4			
Surrogate: Undecane	"	13.3		9.83	"	30.0-150	73.9			
<b>LCS Dup</b>			<b>1180421-BSD1</b>							
Extractable Petroleum Hydrocarbons	11/17/98	167		88.0	mg/kg dry	30.0-120	52.7	40.0	3.91	
Surrogate: 2-FBP	"	12.0		8.05	"	50.0-150	67.1			
Surrogate: Octacosane	"	12.3		10.6	"	50.0-150	86.2			
Surrogate: Undecane	"	13.3		8.86	"	30.0-150	66.6			
<b>Matrix Spike</b>			<b>1180421-MS1</b>		<b>B811207-01</b>					
Extractable Petroleum Hydrocarbons	11/16/98	180	ND	96.2	mg/kg dry	30.0-120	53.4			
Surrogate: 2-FBP	"	13.0		10.0	"	50.0-150	76.9			
Surrogate: Octacosane	11/13/98	13.3		11.9	"	50.0-150	89.5			
Surrogate: Undecane	"	14.3		11.0	"	30.0-150	76.9			

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## Polynuclear Aromatic Hydrocarbons by GC/MS-SIM/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180421</b>		<b>Date Prepared: 11/12/98</b>		<b>Extraction Method: EPA 3550B</b>					
<b>Blank</b>		<b>1180421-BLK1</b>							
Acenaphthene	11/19/98			ND	mg/kg dry	0.0100			
Acenaphthylene	"			ND	"	0.0100			
Anthracene	"			ND	"	0.0100			
Benzo (a) anthracene	"			ND	"	0.0100			
Benzo (a) pyrene	"			ND	"	0.0100			
Benzo (b) fluoranthene	"			ND	"	0.0100			
Benzo (ghi) perylene	"			ND	"	0.0100			
Benzo (k) fluoranthene	"			ND	"	0.0100			
Chrysene	"			ND	"	0.0100			
Dibenz (a,h) anthracene	"			ND	"	0.0100			
Fluoranthene	"			ND	"	0.0100			
Fluorene	"			ND	"	0.0100			
Indeno (1,2,3-cd) pyrene	"			ND	"	0.0100			
2-Methylnaphthalene	"			ND	"	0.0100			
Naphthalene	"			ND	"	0.0100			
Phenanthrene	"			ND	"	0.0100			
Pyrene	"			ND	"	0.0100			
Surrogate: p-Terphenyl-d14	"	0.267		0.323	"	30.0-150	121		
<b>LCS</b>		<b>1180421-BS1</b>							
Chrysene	11/19/98	0.333		0.181	mg/kg dry	10.0-125	54.4		
Fluorene	"	0.333		0.161	"	11.0-116	48.3		
Indeno (1,2,3-cd) pyrene	"	0.333		0.262	"	10.0-147	78.7		
Surrogate: p-Terphenyl-d14	"	0.267		0.241	"	30.0-150	90.3		
<b>LCS Dup</b>		<b>1180421-BSD1</b>							
Chrysene	11/19/98	0.333		0.197	mg/kg dry	10.0-125	59.2	28.0	8.45
Fluorene	"	0.333		0.165	"	11.0-116	49.5	32.0	2.45
Indeno (1,2,3-cd) pyrene	"	0.333		0.277	"	10.0-147	83.2	34.0	5.56
Surrogate: p-Terphenyl-d14	"	0.267		0.261	"	30.0-150	97.8		
<b>Matrix Spike</b>		<b>1180421-MS1</b>		<b>B811207-01</b>					
Chrysene	11/19/98	0.361	ND	0.195	mg/kg dry	10.0-125	54.0		
Fluorene	"	0.361	ND	0.195	"	10.0-154	54.0		
Indeno (1,2,3-cd) pyrene	"	0.361	ND	0.252	"	10.0-144	69.8		
Surrogate: p-Terphenyl-d14	"	0.289		0.238	"	30.0-150	82.4		

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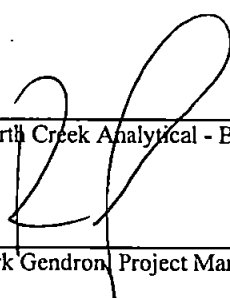
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Total Metals by EPA 6000/7000 Series Methods/Quality Control  
 North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180585</b>		<b>Date Prepared: 11/17/98</b>			<b>Extraction Method: EPA 3050B</b>					
<b>Blank</b>										
Lead	11/17/98			ND	mg/kg dry	0.500				
<b>LCS</b>										
Lead	11/17/98	25.0		24.4	mg/kg dry	80.0-120	97.6			
<b>Duplicate</b>		<b>1180585-DUP1</b>		<b>B811301-08</b>						
Lead	11/17/98		30.6	36.1	mg/kg dry			20.0	16.5	
<b>Matrix Spike</b>		<b>1180585-MS1</b>		<b>B811301-08</b>						
Lead	11/17/98	26.8	30.6	55.2	mg/kg dry	70.0-130	91.8			

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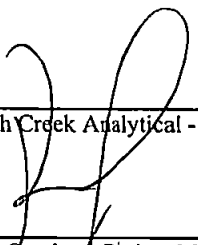
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control  
North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180392</b>	<b>Date Prepared: 11/10/98</b>			<b>Extraction Method: EPA 3005A</b>						
<b>Blank</b>	<b>1180392-BLK1</b>									
Lead	11/19/98			ND	mg/l	0.00100				
<b>LCS</b>	<b>1180392-BS1</b>									
Lead	11/19/98	0.200		0.203	mg/l	80.0-120	101			
<b>Duplicate</b>	<b>1180392-DUP1</b>		<b>B811137-01</b>							
Lead	11/20/98		ND	ND	mg/l				20.0	
<b>Matrix Spike</b>	<b>1180392-MS1</b>		<b>B811137-01</b>							
Lead	11/20/98	0.200	ND	0.229	mg/l	75.0-125	114			

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Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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## Volatile Organic Compounds by EPA Method 8260B/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 1180593</b>	<b>Date Prepared: 11/17/98</b>					<b>Extraction Method: EPA 5030B [P/T]</b>				
<b>Blank</b>	<b>1180593-BLK1</b>									
Acetone	11/17/98			ND	ug/l	10.0				
Benzene	"			ND	"	1.00				
Bromobenzene	"			ND	"	1.00				
Bromochloromethane	"			ND	"	1.00				
Bromodichloromethane	"			ND	"	1.00				
Bromoform	"			ND	"	1.00				
Bromomethane	"			ND	"	1.00				
2-Butanone	"			ND	"	10.0				
n-Butylbenzene	"			ND	"	1.00				
sec-Butylbenzene	"			ND	"	1.00				
tert-Butylbenzene	"			ND	"	1.00				
Carbon disulfide	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	1.00				
Chlorobenzene	"			ND	"	1.00				
Chloroethane	"			ND	"	1.00				
Chloroform	"			ND	"	1.00				
Chloromethane	"			ND	"	5.00				
2-Chlorotoluene	"			ND	"	1.00				
4-Chlorotoluene	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	1.00				
1,2-Dibromo-3-chloropropane	"			ND	"	5.00				
1,2-Dibromoethane	"			ND	"	1.00				
Dibromomethane	"			ND	"	1.00				
1,2-Dichlorobenzene	"			ND	"	1.00				
1,3-Dichlorobenzene	"			ND	"	1.00				
1,4-Dichlorobenzene	"			ND	"	1.00				
Dichlorodifluoromethane	"			ND	"	1.00				
1,1-Dichloroethane	"			ND	"	1.00				
1,2-Dichloroethane	"			ND	"	1.00				
1,1-Dichloroethene	"			ND	"	1.00				
cis-1,2-Dichloroethene	"			ND	"	1.00				
trans-1,2-Dichloroethene	"			ND	"	1.00				
1,2-Dichloropropane	"			ND	"	1.00				
1,3-Dichloropropane	"			ND	"	1.00				
2,2-Dichloropropane	"			ND	"	1.00				
1,1-Dichloropropene	"			ND	"	1.00				
cis-1,3-Dichloropropene	"			ND	"	1.00				

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Kirk Gendron, Project Manager

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**NORTH  
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ANALYTICAL**  
Environmental Laboratory Services

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SPOKANE ☐ (509) 924-9200 ☐ FAX 924-9290  
PORTLAND ☐ (503) 906-9200 ☐ FAX 906-9210

Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Volatile Organic Compounds by EPA Method 8260B/Quality Control  
North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued)</b>	<b>1180593-BLK1</b>									
trans-1,3-Dichloropropene	11/17/98			ND	ug/l	1.00				
Ethylbenzene	"			ND	"	1.00				
Hexachlorobutadiene	"			ND	"	1.00				
2-Hexanone	"			ND	"	10.0				
Isopropylbenzene	"			ND	"	1.00				
p-Isopropyltoluene	"			ND	"	1.00				
Methylene chloride	"			ND	"	5.00				
4-Methyl-2-pentanone	"			ND	"	10.0				
Naphthalene	"			ND	"	1.00				
n-Propylbenzene	"			ND	"	1.00				
Styrene	"			ND	"	1.00				
1,1,1,2-Tetrachloroethane	"			ND	"	1.00				
1,1,2,2-Tetrachloroethane	"			ND	"	1.00				
Tetrachloroethene	"			ND	"	1.00				
Toluene	"			ND	"	1.00				
1,2,3-Trichlorobenzene	"			ND	"	1.00				
1,2,4-Trichlorobenzene	"			ND	"	1.00				
1,1,1-Trichloroethane	"			ND	"	1.00				
1,1,2-Trichloroethane	"			ND	"	1.00				
Trichloroethene	"			ND	"	1.00				
Trichlorofluoromethane	"			ND	"	1.00				
1,2,3-Trichloropropane	"			ND	"	1.00				
1,2,4-Trimethylbenzene	"			ND	"	1.00				
1,3,5-Trimethylbenzene	"			ND	"	1.00				
Vinyl chloride	"			ND	"	1.00				
m,p-Xylene	"			ND	"	2.00				
o-Xylene	"			ND	"	1.00				
Surrogate: 2-Bromopropene	"	20.0		18.3	"	80.0-120	91.5			
Surrogate: 1,2-DCA-d4	"	20.0		18.5	"	80.0-120	92.5			
Surrogate: Toluene-d8	"	20.0		20.4	"	80.0-120	102			
Surrogate: 4-BFB	"	20.0		20.6	"	80.0-120	103			

<b>Blank</b>	<b>1180593-BLK2</b>									
Acetone	11/18/98			ND	ug/l	10.0				
Benzene	"			ND	"	1.00				
Bromobenzene	"			ND	"	1.00				
Bromochloromethane	"			ND	"	1.00				
Bromodichloromethane	"			ND	"	1.00				

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

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Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Volatile Organic Compounds by EPA Method 8260B/Quality Control  
 North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued)</b>	<b>1180593-BLK2</b>									
Bromoform	11/18/98			ND	ug/l	1.00				
Bromomethane	"			ND	"	1.00				
2-Butanone	"			ND	"	10.0				
n-Butylbenzene	"			ND	"	1.00				
sec-Butylbenzene	"			ND	"	1.00				
tert-Butylbenzene	"			ND	"	1.00				
Carbon disulfide	"			ND	"	1.00				
Carbon tetrachloride	"			ND	"	1.00				
Chlorobenzene	"			ND	"	1.00				
Chloroethane	"			ND	"	1.00				
Chloroform	"			ND	"	1.00				
Chloromethane	"			ND	"	5.00				
2-Chlorotoluene	"			ND	"	1.00				
4-Chlorotoluene	"			ND	"	1.00				
Dibromochloromethane	"			ND	"	1.00				
1,2-Dibromo-3-chloropropane	"			ND	"	5.00				
1,2-Dibromoethane	"			ND	"	1.00				
Dibromomethane	"			ND	"	1.00				
1,2-Dichlorobenzene	"			ND	"	1.00				
1,3-Dichlorobenzene	"			ND	"	1.00				
1,4-Dichlorobenzene	"			ND	"	1.00				
Dichlorodifluoromethane	"			ND	"	1.00				
1,1-Dichloroethane	"			ND	"	1.00				
1,2-Dichloroethane	"			ND	"	1.00				
1,1-Dichloroethene	"			ND	"	1.00				
cis-1,2-Dichloroethene	"			ND	"	1.00				
trans-1,2-Dichloroethene	"			ND	"	1.00				
1,2-Dichloropropane	"			ND	"	1.00				
1,3-Dichloropropane	"			ND	"	1.00				
2,2-Dichloropropane	"			ND	"	1.00				
1,1-Dichloropropene	"			ND	"	1.00				
cis-1,3-Dichloropropene	"			ND	"	1.00				
trans-1,3-Dichloropropene	"			ND	"	1.00				
Ethylbenzene	"			ND	"	1.00				
Hexachlorobutadiene	"			ND	"	1.00				
2-Hexanone	"			ND	"	10.0				
Isopropylbenzene	"			ND	"	1.00				
p-Isopropyltoluene	"			ND	"	1.00				

North Creek Analytical - Bothell

\*Refer to end of report for text of notes and definitions.

Kirk Gendron, Project Manager

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# NORTH CREEK ANALYTICAL

Environmental Laboratory Services

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Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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## Volatile Organic Compounds by EPA Method 8260B/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued)</b>		<b>1180593-BLK2</b>								
Methylene chloride	11/18/98			ND	ug/l	5.00				
4-Methyl-2-pentanone	"			ND	"	10.0				
Naphthalene	"			ND	"	1.00				
n-Propylbenzene	"			ND	"	1.00				
Styrene	"			ND	"	1.00				
1,1,1,2-Tetrachloroethane	"			ND	"	1.00				
1,1,1,2,2-Tetrachloroethane	"			ND	"	1.00				
Tetrachloroethene	"			ND	"	1.00				
Toluene	"			ND	"	1.00				
1,2,3-Trichlorobenzene	"			ND	"	1.00				
1,2,4-Trichlorobenzene	"			ND	"	1.00				
1,1,1-Trichloroethane	"			ND	"	1.00				
1,1,2-Trichloroethane	"			ND	"	1.00				
Trichloroethene	"			ND	"	1.00				
Trichlorofluoromethane	"			ND	"	1.00				
1,2,3-Trichloropropane	"			ND	"	1.00				
1,2,4-Trimethylbenzene	"			ND	"	1.00				
1,3,5-Trimethylbenzene	"			ND	"	1.00				
Vinyl chloride	"			ND	"	1.00				
m,p-Xylene	"			ND	"	2.00				
o-Xylene	"			ND	"	1.00				
Surrogate: 2-Bromopropene	"	20.0		17.7	"	80.0-120	88.5			
Surrogate: 1,2-DCA-d4	"	20.0		17.6	"	80.0-120	88.0			
Surrogate: Toluene-d8	"	20.0		20.4	"	80.0-120	102			
Surrogate: 4-BFB	"	20.0		21.2	"	80.0-120	106			
<b>LCS</b>		<b>1180593-BS1</b>								
Benzene	11/17/98	10.0		9.97	ug/l	80.0-120	99.7			
Chlorobenzene	"	10.0		10.3	"	80.0-120	103			
1,1-Dichloroethene	"	10.0		9.17	"	80.0-120	91.7			
Toluene	"	10.0		9.45	"	80.0-120	94.5			
Trichloroethene	"	10.0		9.93	"	80.0-120	99.3			
Surrogate: 2-Bromopropene	"	20.0		15.9	"	80.0-120	79.5			1
Surrogate: 1,2-DCA-d4	"	20.0		16.0	"	80.0-120	80.0			
Surrogate: Toluene-d8	"	20.0		18.1	"	80.0-120	90.5			
Surrogate: 4-BFB	"	20.0		17.2	"	80.0-120	86.0			

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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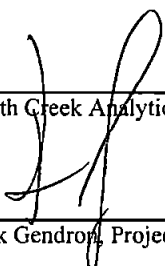
Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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**Volatile Organic Compounds by EPA Method 8260B/Quality Control  
 North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Matrix Spike</b>		<b>1180593-MS1</b>	<b>B811203-03</b>							
Benzene	11/18/98	10.0	ND	9.69	ug/l	80.0-120	96.9			
Chlorobenzene	"	10.0	ND	10.2	"	80.0-120	102			
1,1-Dichloroethene	"	10.0	ND	9.76	"	80.0-120	97.6			
Toluene	"	10.0	ND	9.62	"	80.0-120	96.2			
Trichloroethene	"	10.0	ND	9.54	"	80.0-120	95.4			
Surrogate: 2-Bromopropene	"	20.0		19.9	"	80.0-120	99.5			
Surrogate: 1,2-DCA-d4	"	20.0		19.0	"	80.0-120	95.0			
Surrogate: Toluene-d8	"	20.0		20.2	"	80.0-120	101			
Surrogate: 4-BFB	"	20.0		19.5	"	80.0-120	97.5			
<b>Matrix Spike Dup</b>		<b>1180593-MSD1</b>	<b>B811203-03</b>							
Benzene	11/18/98	10.0	ND	9.85	ug/l	80.0-120	98.5	15.0	1.64	
Chlorobenzene	"	10.0	ND	10.3	"	80.0-120	103	15.0	0.976	
1,1-Dichloroethene	"	10.0	ND	9.50	"	80.0-120	95.0	15.0	2.70	
Toluene	"	10.0	ND	9.21	"	80.0-120	92.1	15.0	4.35	
Trichloroethene	"	10.0	ND	9.69	"	80.0-120	96.9	15.0	1.56	
Surrogate: 2-Bromopropene	"	20.0		19.5	"	80.0-120	97.5			
Surrogate: 1,2-DCA-d4	"	20.0		19.8	"	80.0-120	99.0			
Surrogate: Toluene-d8	"	20.0		20.0	"	80.0-120	100			
Surrogate: 4-BFB	"	20.0		19.0	"	80.0-120	95.0			

North Creek Analytical - Bothell

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 Kirk Gendron, Project Manager

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# NORTH CREEK ANALYTICAL

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Conestoga-Rovers and Associates - IL 8615 W. Bryn Mawr Avenue Chicago, IL 60631	Project: 12867 Project Number: Not Provided Project Manager: Nancy Bergstrom	Sampled: 11/10/98 Received: 11/10/98 Reported: 12/2/98 11:39
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## Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
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**Batch: 1180473**

**Date Prepared: 11/13/98**

**Extraction Method: EPA 3520C/600 Series**

**Blank**

**1180473-BLK1**

Acenaphthene	11/22/98			ND	ug/l	0.100				
Acenaphthylene	"			ND	"	0.100				
Anthracene	"			ND	"	0.100				
Benzo (a) anthracene	"			ND	"	0.100				
Benzo (a) pyrene	"			ND	"	0.100				
Benzo (b) fluoranthene	"			ND	"	0.100				
Benzo (ghi) perylene	"			ND	"	0.100				
Benzo (k) fluoranthene	"			ND	"	0.100				
Chrysene	"			ND	"	0.100				
Dibenz (a,h) anthracene	"			ND	"	0.100				
Fluoranthene	"			ND	"	0.300				
Fluorene	"			ND	"	0.100				
Indeno (1,2,3-cd) pyrene	"			ND	"	0.100				
Naphthalene	"			ND	"	0.300				
Phenanthrene	"			ND	"	0.100				
Pyrene	"			ND	"	0.300				
Surrogate: 2-FBP	"	50.0		42.3	"	30.0-150	84.6			
Surrogate: Nitrobenzene-d5	"	50.0		40.0	"	30.0-150	80.0			
Surrogate: p-Terphenyl-d14	"	50.0		56.2	"	30.0-150	112			

**LCS**

**1180473-BS1**

Chrysene	11/22/98	10.0		8.58	ug/l	50.0-150	85.8			
Fluorene	"	10.0		8.10	"	50.0-150	81.0			
Indeno (1,2,3-cd) pyrene	"	10.0		7.80	"	50.0-150	78.0			
Surrogate: 2-FBP	"	50.0		43.4	"	30.0-150	86.8			
Surrogate: Nitrobenzene-d5	"	50.0		45.2	"	30.0-150	90.4			
Surrogate: p-Terphenyl-d14	"	50.0		47.6	"	30.0-150	95.2			

**LCS Dup**

**1180473-BSD1**

Chrysene	11/22/98	10.0		7.78	ug/l	50.0-150	77.8	25.0	9.78	
Fluorene	"	10.0		7.24	"	50.0-150	72.4	25.0	11.2	
Indeno (1,2,3-cd) pyrene	"	10.0		6.82	"	50.0-150	68.2	25.0	13.4	
Surrogate: 2-FBP	"	50.0		39.9	"	30.0-150	79.8			
Surrogate: Nitrobenzene-d5	"	50.0		42.2	"	30.0-150	84.4			
Surrogate: p-Terphenyl-d14	"	50.0		51.7	"	30.0-150	103			

North Creek Analytical - Bothell

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Kirk Gendron, Project Manager

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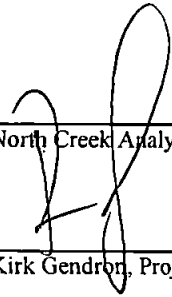


Conestoga-Rovers and Associates - IL	Project: 12867	Sampled: 11/10/98
8615 W. Bryn Mawr Avenue	Project Number: Not Provided	Received: 11/10/98
Chicago, IL 60631	Project Manager: Nancy Bergstrom	Reported: 12/2/98 11:39

**Notes and Definitions**

#	Note
1	The surrogate recovery for this sample is outside of established control limits. Review of associated QC indicates the recovery for this surrogate does not represent an out-of-control condition.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

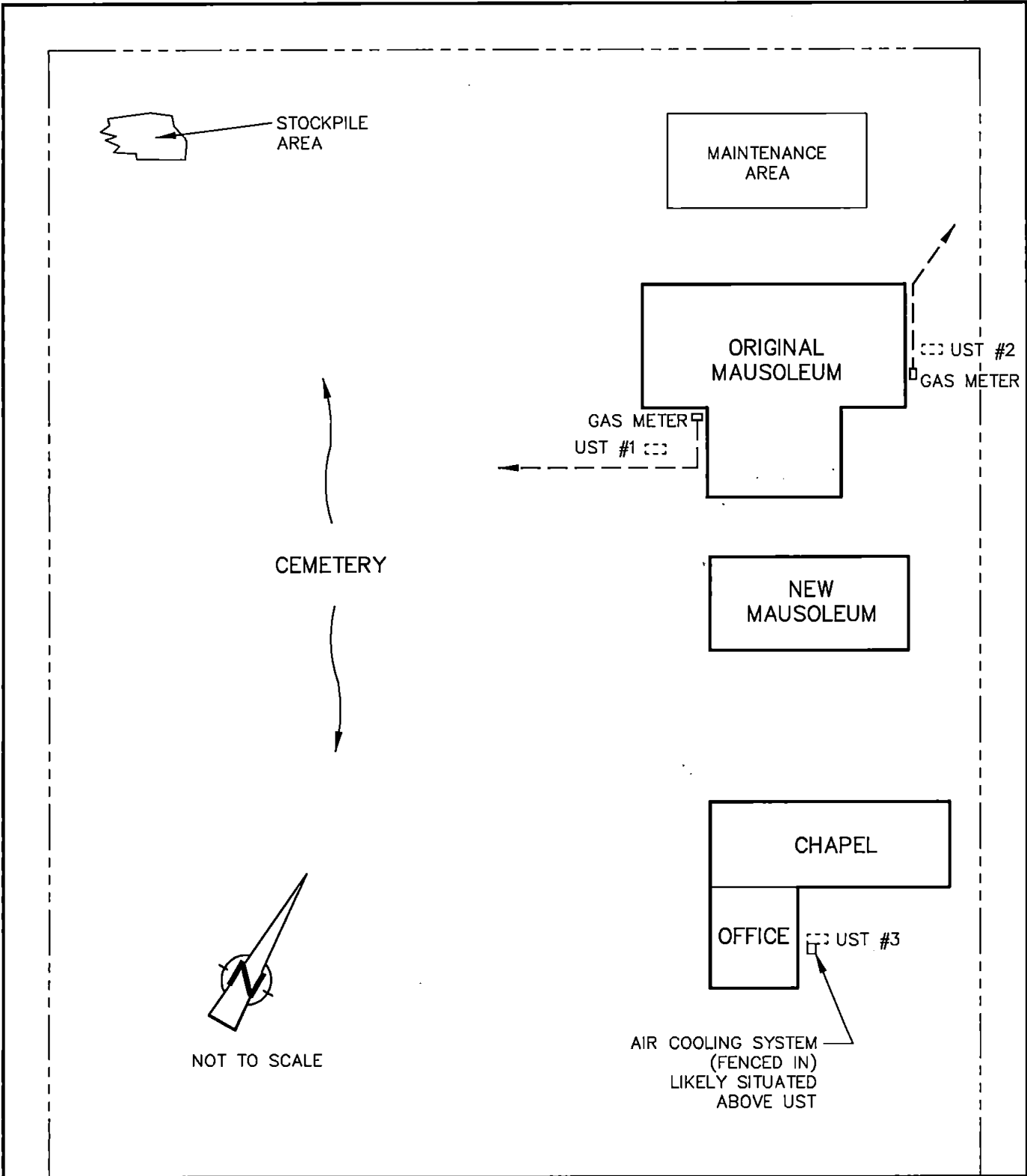
North Creek Analytical - Bothell

  
Kirk Gendron, Project Manager



ATTACHMENT C

SITE PLAN WITH STOCKPILED SOIL LOCATION,  
SCALED SITE PLAN WITH TOP OF WELL CASING ELEVATIONS AND LOCATIONS,  
SCALED SITE PLAN WITH RELATIVE GROUNDWATER DEPTHS AND GROUNDWATER  
ELEVATION CONTOURS,  
AND  
STRATIGRAPHIC AND INSTRUMENTATION LOG



BOTHELL WAY

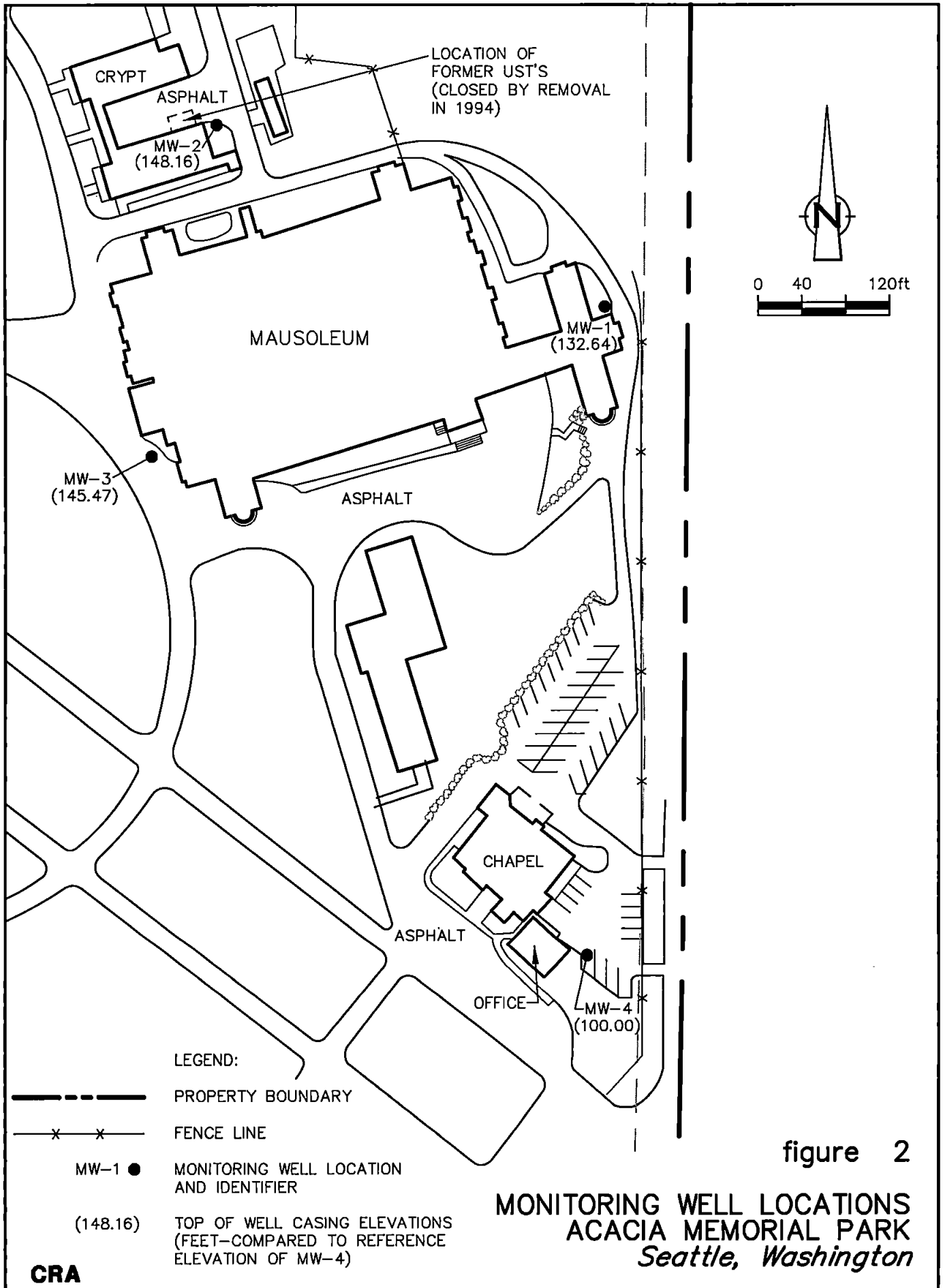
LEGEND:

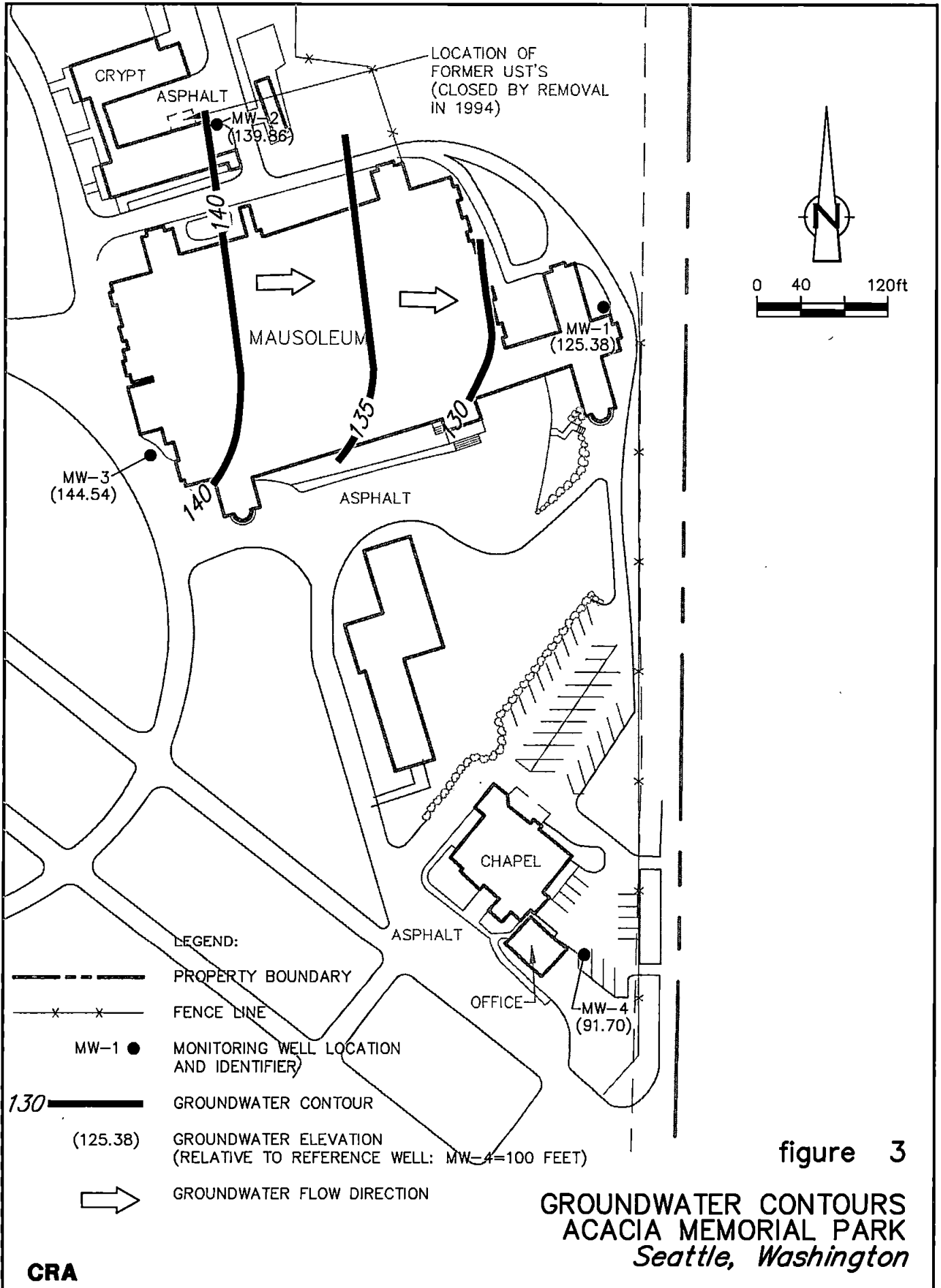
- PROPERTY LINE
- ←----- NATURAL GAS LINE

figure 1

GENERAL SITE PLAN  
ACACIA MEMORIAL PARK  
*Seattle, Washington*

**CRA**





MW-2

# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(CL-01)  
Page 1 of 1

PROJECT NAME: ACACIA MEMORIAL PARK  
 PROJECT NUMBER: 12867  
 CLIENT: THE LOEWEN GROUP INC.  
 LOCATION: SEATTLE, WASHINGTON  
 DRILLING CONTRACTOR: TACOMA PUMP & DRILL

HOLE DESIGNATION: MW5-98  
 DATE COMPLETED: NOVEMBER 10, 1998  
 DRILLING METHOD: 4 1/4" ID HSA  
 CRA SUPERVISOR: D. GRAY/G. SINNETT  
 DRILLER: ERIC

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
2.5	SW/GW-SAND AND GRAVEL (FILL), trace silt, very dense, fine to coarse grained, well graded, brown, moist - cobble (at 1 ft. BGS)		<p style="font-size: small;">CONCRETE 2' Ø WELL CASING BENTONITE CHIPS 8" Ø BOREHOLE WELL SCREEN SAND PACK BENTONITE CHIPS</p>	1SS	X	>50	
5.0	ML-SANDY SILT, trace clay, dense, low plasticity, grey, moist SM-SILTY SAND, trace gravel, very dense, fine to coarse grained, grey, moist			2SS	X	40	
7.5	- trace oxidation			3SS	X	50	
10.0	- cobble			4SS	X	>87	
12.5				5SS	X	>50	
15.0				6SS	X	>50	
17.5				7SS	X	>54	
20.0				8SS	X	>50	
22.5	ML-SILT, with fine sand, hard, low plasticity, grey, moist			9SS	X	>50	
25.0				10SS	X	>50	
27.5	END OF HOLE @ 27.0ft BGS - NOTE: - PID MALFUNCTION RESULTED IN RANDOM PID READINGS			11SS	X	>50	
30.0							
32.5							

**SCREEN DETAILS**  
 Screened Interval:  
 10.5 to 20.5ft BGS  
 Length: 10.0ft  
 Diameter: 2"  
 Slot Size: #10  
 Material: SCH 40 PVC  
 Sand Pack:  
 7.5 to 20.5ft BGS  
 Material: 10 X 20 Sand

**NOTES:** MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE  
 WATER FOUND ▼ STATIC WATER LEVEL ▼

ATTACHMENT D

LISTING OF GROUNDWATER DEPTH MEASUREMENTS

# FAIRFIELD Marriott INN.

Portland West/Beaverton  
15583 NW Gateway Ct.  
Beaverton, OR 97006  
Phone (503)972-0048  
Fax (503)972-0049

Please deliver the following pages to:

Name: Cam Walker  
Office: CRA Chicago  
Fax number: (773) 380-6421  
Date: 3/8/99

Sent By:

Name: Dan Robinson  
Room: 204

Number of pages (including cover sheet) 3

Water Levels + Total Depths - Acacia M.P.

Remarks:

	<u>Well</u>	<u>Location</u>	<u>W.L</u>	<u>T.D</u>
*	MW#1	(East of Original Mausoleum)	7.26	19.00
*	MW#2	(East of Maintenance Building)	8.30	20.39
*	MW#3	(West of Original Mausoleum)	0.93	17.05
*	MW#4	(East of Cemetery Office)	2.98	11.06

If you had difficulty reading this transmission, please call our front desk associates. They will be happy to retransmit. Thank you and we hope you have a terrific day.