



P.O. Box 1247 ☆ Ft. Morgan, Colorado 80701 ☆ (970) 867-9507 ☆ Fax (970) 542-0765

Mr. John Axelson  
Colorado Oil and Gas Conservation Commission  
9203 E. 155<sup>th</sup> Drive  
Brighton, Colorado 80602

October 31, 2008

Re: McClellan 3-1, 3-32, 3-35 Tank Battery  
Groundwater Monitoring Report and Request for Site Closure  
NWSW Section 3, Twn 4N, Range 65W  
API # 05-123-16819  
Weld County, Colorado

Dear Mr. Axelson;

On behalf of Petro-Canada Resources (USA) Inc. (Petro-Canada), Western Clean Up Corporation (Western) is pleased to present this groundwater monitoring report. A Form 19 "Spill Report" was completed by Petro Canada and submitted to the Colorado Oil and Gas Conservation Commission (COGCC). This report provides a brief site history and a summary of excavation clean up activities, groundwater monitoring data and conclusions.

#### **Background**

Reportedly, on October 31, 2007 an approximate four (4) barrel release of condensate occurred due to transport driver error during loading operations from the crude oil condensate tank to the transport truck impacting soil and shallow groundwater. On November 1, 2007 approximately 100 cubic yards of petroleum-impacted soil was excavated and transported to Petro-Canada's landfarm in Weld County. Free petroleum product was not observed in the excavation during excavation activities. Soil samples were collected during excavation activities to define the extent of impacted soil. All soil samples were analyzed with a photo-ionization detector (PID) calibrated to an isobutylene standard of 100 ppm to determine petroleum-impacted soils requiring excavation. Soil samples were placed in the ziplock baggies, and then placed in the sun for a period of ten to fifteen minutes to allow the volatile organic petroleum vapors to equilibrate inside the baggie. The tip of the PID was then inserted into the baggie, and then the maximum PID measurement was recorded.

Five (5) confirmation soil samples were collected around the perimeter of the excavation. The soil samples were transported by standard chain-of-custody (COC) procedures to Evergreen Analytical Laboratory in Wheat Ridge, Colorado. The soil samples were analyzed for total recoverable petroleum hydrocarbons (TRPH) using EPA method 418.1. Soil sample results document that TRPH concentrations were below COGCC's clean up levels for a sensitive area (1,000 mg/Kg) at the perimeter and depth of the excavation. TRPH concentrations ranged from 7.0 to 39.8 mg/Kg.

The excavation remained open from November 1 to 14, 2007 to facilitate the removal of impacted groundwater via vacuum trucks. Evacuation activities were conducted on November 3, 4, 5, and 7, 2007. A total of approximately 100 bbls of impacted groundwater (25 bbls per event) were evacuated and disposed of the fluids into a Class V re-injection well operated by Conquest Disposal located at 22625 County Road 64 in Weld County. During clean up activities groundwater samples were collected from the excavation. Groundwater samples were submitted to EAL for submitted for laboratory analysis for benzene, toluene, ethylbenzene and xylene (BTEX) using EPA method 8021. Benzene and toluene in groundwater exceeded GOGCC's limit on November 1 and 4, 2007. Benzene and toluene concentrations in the excavated pit diminished due to remedial activities. On November 5 and 6, 2007, toluene concentrations were documented at 390 and 370 micrograms per liter ( $\mu\text{g/l}$ ) which are below COGCC's limit, and benzene concentrations were documented at of 46  $\mu\text{g/l}$  and 44  $\mu\text{g/l}$ , respectively, which exceed COGCC's standard of 5  $\mu\text{g/L}$ . Groundwater concentrations in the excavated pit are summarized in Table 2 in Attachment B.

#### **Monitoring Well Installation**

On November 9, 2007 Western mobilized to the site and installed five (5) 2-inch diameter monitoring wells (MW-1 through MW-5). The wells were completed with 10-slot screen set approximately 1-foot above the water table. Bentonite pellets with used for the seal for the surface completion for monitoring wells MW-1, MW-4, and MW-5, and a cement grout mixture for monitoring wells MW-2 and MW-3. The monitoring wells were developed on November 9, 2007.

#### **Groundwater Sampling**

Western mobilized to the site on August 12, 2008 to collect groundwater samples. A clean, disposable bailer was used to sample each monitoring well. Groundwater samples were collected in the appropriate sampling containers (40 ml VOA/VOC vials) and all samples were immediately labeled and stored in an iced cooler. Preservatives were used in all water samples to reduce degradation effects, and it was insured that bubbles or headspace were not present in the sample bottles. Groundwater samples were submitted for laboratory analysis for benzene, toluene, ethylbenzene and toluene (BTEX) using EPA method 8260B. The samples were transported in an iced cooler under standard chain-of-custody procedures to Origins Laboratory in Denver, Colorado, and were received within QA/QC parameters.

#### **HYDROGEOLOGY**

The wells have not been surveyed. On August 12, 2008 groundwater ranged from 2.56 to 4.35 ft below ground surface and is estimated to flow in a north-northeasterly direction toward the Lower Latham Reservoir.

#### **FREE PHASE PRODUCT**

Liquid phase hydrocarbons were not detected in any of the monitoring wells during the monitoring event.

#### **GROUNDWATER ANALYTICAL RESULTS**

BTEX was not measured above the laboratory detection limits in monitoring wells MW-1 through MW-5. Figure 1 in Attachment A presents a groundwater analytical data map and Table 2 in Attachment B presents groundwater analytical data. Attachment C contains a copy of the laboratory analytical report.

**CONCLUSIONS**

The groundwater analytical data indicates that the site remedial efforts have been successful and that the dissolved groundwater plume has attenuated.

Should you have any questions or require any additional information, please feel free to contact Ron Greene at Western's Fort Morgan office at (970) 876-9507, or myself at (303) 562-8854.

Should you have any questions about the changes or require any additional information, please feel free to contact me at (303) 562-8854.

Sincerely,



Nick Fischer  
Project/Chemical Engineer

C:  
File  
Rick Eggleston, Petro-Canada Resources (USA)

Enc.

**Attachment A**  
Figure 1 - Site Map / Groundwater Results Diagram

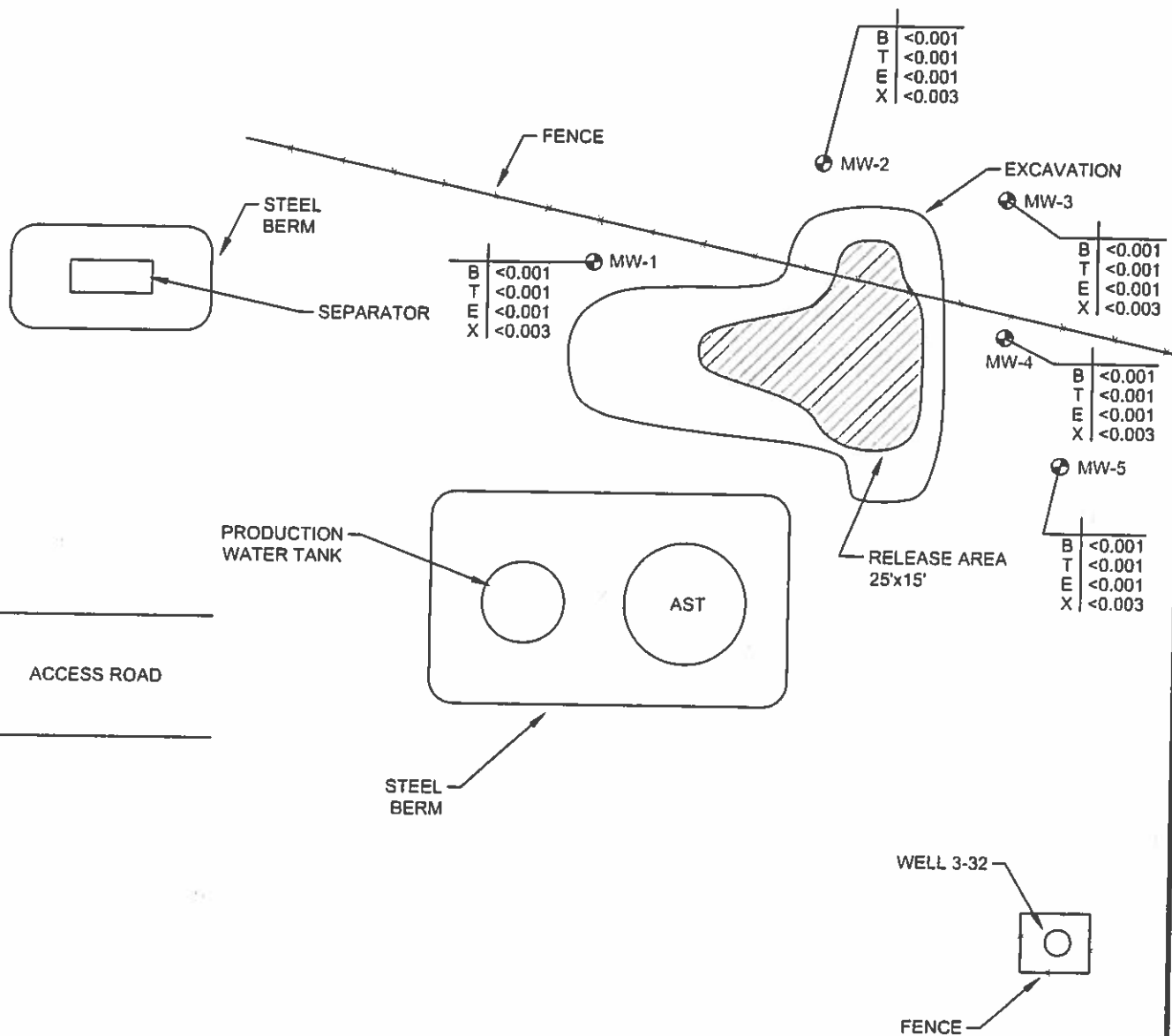
**Attachment B**  
Table 1 - Groundwater Elevation Data  
Table 2 - Groundwater Analytical Results

**Attachment C**  
Laboratory Data

# **ATTACHMENT A**

## **Figures**

M:\CLIENTS\WESTERN-CLEANUP\WELD-CO\MCCLELLAN\MCCLELLAN-A808.DWG-LAYOUT1 08/18/2008 8:56AM



### LEGEND


● MONITORING WELL

CHEMICAL DATA  
(ALL VALUES ARE IN µg/l)

B = BENZENE  
T = TOLUENE  
E = ETHYLBENZENE  
X = XYLENES



NOT TO SCALE

 <b>AQUIFER TECHNOLOGY</b> ENVIRONMENTAL CONSULTING			
Project No.	Date Map Generated: 8/18/08	Date Data Collected: 8/12/08	Figure No. 1
Authored <b>NMF</b>	Title: <b>GROUNDWATER ANALYTICAL RESULTS MAP</b> <b>McCLELLAN 3-1, 3-32, &amp; 3-35</b> <b>NWSW SECTION 3, T4N-R65W</b>		
Checked <b>NMF</b>			
Detailed <b>RJV</b>	Client: Western Cleanup Corp.	Location: Weld County, Colorado	
	ACAD File: McClellan-A808.dwg		

# **ATTACHMENT B**

## **Tables**

**TABLE 1**  
**Groundwater Elevation Data**  
Petro-Canada McClellan 3-1, 3-32, 3-35 Tank Battery  
Weld County, Colorado

Well	Date	TOC to Ground Level (feet)	Depth to Product (feet)	Depth to Water from TOC	Product Thickness (feet)	Ground Level to Ground Water Elevation
MW-1	11/6/07	2.3	ND	5.28	0.00	2.98
MW-1	2/15/08	2.3	ND	5.52	0.00	3.22
MW-1	5/7/08	1.7	ND	5.73	0.00	4.03
MW-1	8/12/08	1.7	ND	6.05	0.00	4.35
MW-2	11/6/07	3.0	ND	5.03	0.00	2.03
MW-2	2/15/08	2.6	ND	5.14	0.00	2.54
MW-2	5/7/08	3.0	ND	5.35	0.00	2.35
MW-2	8/12/08	2.9	ND	5.90	0.00	3.00
MW-3	11/6/07	3.0	ND	5.08	0.00	2.08
MW-3	2/15/08	2.3	ND	5.18	0.00	2.88
MW-3	5/7/08	2.6	ND	4.85	0.00	2.25
MW-3	8/12/08	2.6	ND	5.16	0.00	2.56
MW-4	11/6/07	1.8	ND	4.89	0.00	3.09
MW-4	2/15/08	2.4	ND	4.96	0.00	2.56
MW-4	5/7/08	2.5	ND	5.11	0.00	2.61
MW-4	8/12/08	2.4	ND	5.43	0.00	3.03
MW-5	11/6/07	1.9	ND	4.76	0.00	2.86
MW-5	2/15/08	2.4	ND	4.88	0.00	2.48
MW-5	5/7/08	2.4	ND	5.06	0.00	2.66
MW-5	8/12/08	2.3	ND	5.38	0.00	3.08

**Notes**

ND = Not Detected

NM = Not Measured

**TABLE 2**  
Groundwater Analytical Data  
McClellan 3-1, 3-32, 3-35 Tank Battery  
NWSW Sec 3, T4N, R 65W  
Weld County, Colorado

Sample ID	Date	Benzene (µg/l)	Toluene (µg/l)	E-benzene (µg/l)	Xylenes (µg/l)
COGCC's Allowable Limits		5	1,000	680	10,000
East side of excavation	11/1/07	1,500	4,700	160	2,500
West side of excavation	11/1/07	2,000	7,200	220	3,500
Excavation pit water	11/4/07	1,200	4,300	140	2,400
Excavation pit water	11/5/07	46	390	30	510
Excavation pit water	11/6/07	44	370	28	513
MW-1	11/6/07	<1.0	<2.0	<2.0	<4.0
MW-1	2/15/08	<1.0	<1.0	<1.0	<3.0
MW-1	5/7/08	<1.0	<1.0	<1.0	<3.0
MW-1	8/12/08	<1.0	<1.0	<1.0	<3.0
MW-2	11/6/07	<1.0	<2.0	<2.0	<4.0
MW-2	2/15/08	<1.0	<1.0	<1.0	<3.0
MW-2	5/7/08	<1.0	<1.0	<1.0	<3.0
MW-2	8/12/08	<1.0	<1.0	<1.0	<3.0
MW-3	11/6/07	<1.0	<2.0	<2.0	<4.0
MW-3	2/15/08	<1.0	<1.0	<1.0	<3.0
MW-3	5/7/08	<1.0	<1.0	<1.0	<3.0
MW-3	8/12/08	<1.0	<1.0	<1.0	<3.0
MW-4	11/6/07	<1.0	<2.0	<2.0	<4.0
MW-4	2/15/08	<1.0	<1.0	<1.0	<3.0
MW-4	5/7/08	<1.0	<1.0	<1.0	<3.0
MW-4	8/12/08	<1.0	<1.0	<1.0	<3.0
MW-5	11/6/07	<1.0	<2.0	<2.0	<4.0
MW-5	2/15/08	<1.0	<1.0	<1.0	<3.0
MW-5	5/7/08	<1.0	<1.0	<1.0	<3.0
MW-5	8/12/08	<1.0	<1.0	<1.0	<3.0



## **ATTACHMENT C**

### **Laboratory Reports**



4640 Pecos Street Unit C Denver, Colorado 80211  
303.433.1322 Phone 303.265.9645 Fax

---

August 15, 2008

---

Western Clean Up Corporation  
P.O Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

---

Attached are the analytical results for Petro Canada - McClellan received by Origins Laboratory, Inc. 8/12/2008 2:22:00PM. Please let us know if you have any questions, or if we can help with anything at all.

Laboratory Manager  
Noelle E Doyle

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. This laboratory report is intended solely for the above addressee and it is only to be used and or reproduced in its entirety.

4640 Pecos Street Unit C  
Denver, Colorado 80211  
303.433.1322 Laboratory  
303.265.9645 Fax



Western Clean Up Corporation  
P.O Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

#### CROSS REFERENCE REPORT

Laboratory ID	Sample ID	Matrix	Sampled	Date Received
MW-1	X808025-01	Water	8/12/2008 12:00:00AM	08/12/2008 14:22
MW-2	X808025-02	Water	8/12/2008 12:00:00AM	08/12/2008 14:22
MW-3	X808025-03	Water	8/12/2008 12:00:00AM	08/12/2008 14:22
MW-4	X808025-04	Water	8/12/2008 12:00:00AM	08/12/2008 14:22
MW-5	X808025-05	Water	8/12/2008 12:00:00AM	08/12/2008 14:22

Origins Laboratory, Inc.

*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.*

Noelle E Doyle, Laboratory Manager

4640 Pecos Street Unit C  
 Denver, Colorado 80211  
 303.433.1322 Laboratory  
 303.265.9645 Fax



Western Clean Up Corporation  
 P.O. Box 1247  
 Fort Morgan CO 80701

Ron Greene  
 Project Number: Petro Canada  
 Project: Petro Canada - McClellan

page 1 of 1

**ORIGINS**  
LABORATORY, INC.

Client: Western Clean Up Corporation  
 Address: P.O. Box 1247  
 Telephone Number: 303.433.1322  
 E-Mail Address: c.w.c@wcu.com

Project Manager: Ron Greene  
 Project Name: Petro Canada - McClellan  
 Project Number: 100025  
 Samples Collected by: Nick Fiske

original@originslab.com

Sample ID	Date Sampled	Time Sampled	Number of Containers	Preservative	Matrix	Analysis	Sample Instructions
1000-1	12/12		1	None	Soil	GC/MS	
1000-2			1	None	Soil	GC/MS	
1000-3			1	None	Soil	GC/MS	
1000-4			1	None	Soil	GC/MS	
1000-5			1	None	Soil	GC/MS	
1000-6			1	None	Soil	GC/MS	
1000-7			1	None	Soil	GC/MS	
1000-8			1	None	Soil	GC/MS	
1000-9			1	None	Soil	GC/MS	
1000-10			1	None	Soil	GC/MS	
1000-11			1	None	Soil	GC/MS	
1000-12			1	None	Soil	GC/MS	
1000-13			1	None	Soil	GC/MS	
1000-14			1	None	Soil	GC/MS	
1000-15			1	None	Soil	GC/MS	
1000-16			1	None	Soil	GC/MS	
1000-17			1	None	Soil	GC/MS	
1000-18			1	None	Soil	GC/MS	
1000-19			1	None	Soil	GC/MS	
1000-20			1	None	Soil	GC/MS	
1000-21			1	None	Soil	GC/MS	
1000-22			1	None	Soil	GC/MS	
1000-23			1	None	Soil	GC/MS	
1000-24			1	None	Soil	GC/MS	
1000-25			1	None	Soil	GC/MS	
1000-26			1	None	Soil	GC/MS	
1000-27			1	None	Soil	GC/MS	
1000-28			1	None	Soil	GC/MS	
1000-29			1	None	Soil	GC/MS	
1000-30			1	None	Soil	GC/MS	
1000-31			1	None	Soil	GC/MS	
1000-32			1	None	Soil	GC/MS	
1000-33			1	None	Soil	GC/MS	
1000-34			1	None	Soil	GC/MS	
1000-35			1	None	Soil	GC/MS	
1000-36			1	None	Soil	GC/MS	
1000-37			1	None	Soil	GC/MS	
1000-38			1	None	Soil	GC/MS	
1000-39			1	None	Soil	GC/MS	
1000-40			1	None	Soil	GC/MS	
1000-41			1	None	Soil	GC/MS	
1000-42			1	None	Soil	GC/MS	
1000-43			1	None	Soil	GC/MS	
1000-44			1	None	Soil	GC/MS	
1000-45			1	None	Soil	GC/MS	
1000-46			1	None	Soil	GC/MS	
1000-47			1	None	Soil	GC/MS	
1000-48			1	None	Soil	GC/MS	
1000-49			1	None	Soil	GC/MS	
1000-50			1	None	Soil	GC/MS	
1000-51			1	None	Soil	GC/MS	
1000-52			1	None	Soil	GC/MS	
1000-53			1	None	Soil	GC/MS	
1000-54			1	None	Soil	GC/MS	
1000-55			1	None	Soil	GC/MS	
1000-56			1	None	Soil	GC/MS	
1000-57			1	None	Soil	GC/MS	
1000-58			1	None	Soil	GC/MS	
1000-59			1	None	Soil	GC/MS	
1000-60			1	None	Soil	GC/MS	
1000-61			1	None	Soil	GC/MS	
1000-62			1	None	Soil	GC/MS	
1000-63			1	None	Soil	GC/MS	
1000-64			1	None	Soil	GC/MS	
1000-65			1	None	Soil	GC/MS	
1000-66			1	None	Soil	GC/MS	
1000-67			1	None	Soil	GC/MS	
1000-68			1	None	Soil	GC/MS	
1000-69			1	None	Soil	GC/MS	
1000-70			1	None	Soil	GC/MS	
1000-71			1	None	Soil	GC/MS	
1000-72			1	None	Soil	GC/MS	
1000-73			1	None	Soil	GC/MS	
1000-74			1	None	Soil	GC/MS	
1000-75			1	None	Soil	GC/MS	
1000-76			1	None	Soil	GC/MS	
1000-77			1	None	Soil	GC/MS	
1000-78			1	None	Soil	GC/MS	
1000-79			1	None	Soil	GC/MS	
1000-80			1	None	Soil	GC/MS	
1000-81			1	None	Soil	GC/MS	
1000-82			1	None	Soil	GC/MS	
1000-83			1	None	Soil	GC/MS	
1000-84			1	None	Soil	GC/MS	
1000-85			1	None	Soil	GC/MS	
1000-86			1	None	Soil	GC/MS	
1000-87			1	None	Soil	GC/MS	
1000-88			1	None	Soil	GC/MS	
1000-89			1	None	Soil	GC/MS	
1000-90			1	None	Soil	GC/MS	
1000-91			1	None	Soil	GC/MS	
1000-92			1	None	Soil	GC/MS	
1000-93			1	None	Soil	GC/MS	
1000-94			1	None	Soil	GC/MS	
1000-95			1	None	Soil	GC/MS	
1000-96			1	None	Soil	GC/MS	
1000-97			1	None	Soil	GC/MS	
1000-98			1	None	Soil	GC/MS	
1000-99			1	None	Soil	GC/MS	
1000-100			1	None	Soil	GC/MS	

Origins Laboratory, Inc.

*Noelle E Doyle*

Noelle E Doyle, Laboratory 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.

4640 Pecos Street | Unit C  
Denver, Colorado 80211  
303.433.1322 | Laboratory  
303.265.9645 | Fax



Western Clean Up Corporation  
P.O Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

MW-1

X808025-01 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

**BTEX by EPA 8260B**

Benzene	ND	1.00	ug/L	1	8H13001	08/13/2008	08/13/2008
Toluene	ND	1.00	"	"	"	"	"
Ethylbenzene	ND	1.00	"	"	"	"	"
o-Xylene	ND	1.00	"	"	"	"	"
m,p-Xylene	ND	2.00	"	"	"	"	"

Surrogate 1,2-Dichloroethane-d4	85.0 %	70.3-123	"	"	"	"	"
Surrogate Toluene-d8	102 %	75.9-123	"	"	"	"	"
Surrogate 4-Bromofluorobenzene	94.9 %	83-123	"	"	"	"	"

Origins Laboratory, Inc.

*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.*

Noelle E Doyle, Laboratory Manager

4640 Pecos Street Unit C  
Denver, Colorado 80211  
303.433.1322 Laboratory  
303.265.9645 Fax



Western Clean Up Corporation  
P.O Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

MW-2

X808025-02 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	1.00	ug/L	1	8H13001	08/13/2008	08/13/2008
Toluene	ND	1.00	"	"	"	"	"
Ethylbenzene	ND	1.00	"	"	"	"	"
o-Xylene	ND	1.00	"	"	"	"	"
m,p-Xylene	ND	2.00	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	74.0 %	70.3-123			"	"	"
Surrogate: Toluene-d8	102 %	75.9-123			"	"	"
Surrogate: 4-Bromofluorobenzene	97.4 %	83-123			"	"	"

Origins Laboratory, Inc.

*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*

Noelle E Doyle, Laboratory Manager

4640 Pecos Street Unit C  
Denver, Colorado 80211  
303.433.1322 Laboratory  
303.265.9645 Fax



Western Clean Up Corporation  
P.O. Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

MW-3

X808025-03 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	1.00	ug/L	1	8H13001	08/13/2008	08/13/2008
Toluene	ND	1.00	"	"	"	"	"
Ethylbenzene	ND	1.00	"	"	"	"	"
o-Xylene	ND	1.00	"	"	"	"	"
m,p-Xylene	ND	2.00	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	80.1 %	70.3-123	"	"	"	"	"
Surrogate: Toluene-d8	101 %	75.9-123	"	"	"	"	"
Surrogate: 4-Bromofluorobenzene	96.6 %	83-123	"	"	"	"	"

Origins Laboratory, Inc.

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.

Noelle E Doyle, Laboratory Manager

4640 Pecos Street | Unit C  
Denver, Colorado 80211  
303.433.1322 | Laboratory  
303.265.9645 | Fax



Western Clean Up Corporation  
P.O Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

MW-4

X808025-04 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	1.00	ug/L	1	8H13001	08/13/2008	08/13/2008
Toluene	ND	1.00	"	"	"	"	"
Ethylbenzene	ND	1.00	"	"	"	"	"
o-Xylene	ND	1.00	"	"	"	"	"
m,p-Xylene	ND	2.00	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	78.0 %	70.3-123			"	"	"
Surrogate: Toluene-d8	103 %	75.9-123			"	"	"
Surrogate: 4-Bromofluorobenzene	97.6 %	83-123			"	"	"

Origins Laboratory, Inc.

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.

Noelle E Doyle, Laboratory Manager



4640 Pecos Street Unit C  
Denver, Colorado 80211  
303.433.1322 Laboratory  
303.265.9645 Fax



Western Clean Up Corporation  
P.O Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

MW-5

X808025-05 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	1.00	ug/L	1	8H13001	08/13/2008	08/13/2008
Toluene	ND	1.00	"	"	"	"	"
Ethylbenzene	ND	1.00	"	"	"	"	"
o-Xylene	ND	1.00	"	"	"	"	"
m,p-Xylene	ND	2.00	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	92.2 %	70.3-123			"	"	"
Surrogate: Toluene-d8	103 %	75.9-123			"	"	"
Surrogate: 4-Bromofluorobenzene	97.7 %	83-123			"	"	"

Origins Laboratory, Inc.

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.

Noelle E Doyle, Laboratory Manager

4640 Pecos Street | Unit C  
 Denver, Colorado 80211  
 303.433.1322 | Laboratory  
 303.265.9645 | Fax



Western Clean Up Corporation  
 P.O. Box 1247  
 Fort Morgan CO 80701

Ron Greene  
 Project Number: Petro Canada  
 Project: Petro Canada - McClellan

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 8H13001 - EPA 5030B**

**Blank (8H13001-BLK1)**

Prepared: 08/13/2008 Analyzed: 08/13/2008

Benzene	ND	1.00	ug/L							
Toluene	ND	1.00	"							
Ethylbenzene	ND	1.00	"							
o-Xylene	ND	1.00	"							
m,p-Xylene	ND	2.00	"							
Surrogate: 1,2-Dichloroethane-d4	51.2		"	62.5		81.9	70.3-123			
Surrogate: Toluene-d8	65.7		"	62.5		105	75.9-123			
Surrogate: 4-Bromofluorobenzene	61.0		"	62.5		97.6	83-123			

**LCS (8H13001-BS1)**

Prepared: 08/13/2008 Analyzed: 08/13/2008

Benzene	54.0	1.00	ug/L	50.0		108	64.2-124			
Toluene	56.1	1.00	"	50.0		112	63.9-119			
Surrogate: 1,2-Dichloroethane-d4	50.0		"	62.5		80.0	70.3-123			
Surrogate: Toluene-d8	65.7		"	62.5		105	75.9-123			
Surrogate: 4-Bromofluorobenzene	59.5		"	62.5		95.2	83-123			

**Matrix Spike (8H13001-MS1)**

Source: X808024-01

Prepared: 08/13/2008 Analyzed: 08/13/2008

Benzene	53.4	1.00	ug/L	50.0	ND	107	64.2-124			
Toluene	53.7	1.00	"	50.0	ND	107	63.9-119			
Surrogate: 1,2-Dichloroethane-d4	47.1		"	62.5		75.3	70.3-123			
Surrogate: Toluene-d8	65.0		"	62.5		104	75.9-123			
Surrogate: 4-Bromofluorobenzene	60.9		"	62.5		97.4	83-123			

**Matrix Spike Dup (8H13001-MSD1)**

Source: X808024-01

Prepared: 08/13/2008 Analyzed: 08/13/2008

Benzene	54.2	1.00	ug/L	50.0	ND	108	64.2-124	1.51	25	
Toluene	53.6	1.00	"	50.0	ND	107	63.9-119	0.205	25	
Surrogate: 1,2-Dichloroethane-d4	48.2		"	62.5		77.2	70.3-123			
Surrogate: Toluene-d8	64.6		"	62.5		103	75.9-123			
Surrogate: 4-Bromofluorobenzene	60.7		"	62.5		97.2	83-123			

Origins Laboratory, Inc.

*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.*

Noelle E Doyle, Laboratory Manager

4640 Pecos Street Unit C  
Denver, Colorado 80211  
303.433.1322 Laboratory  
303.265.9645 Fax



Western Clean Up Corporation  
P.O Box 1247  
Fort Morgan CO 80701

Ron Greene  
Project Number: Petro Canada  
Project: Petro Canada - McClellan

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit  
RPD Relative Percent Difference

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory 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.*