

Mr. Rick Eggleston - Senior Advisor, TLM  
Petro-Canada Resources (USA), Inc.  
999 18th Street, Suite 600  
Denver, Colorado 80202

**SPILL CLEANUP REPORT  
PETRO-CANADA RESOURCES (USA) - FAFOUTIS #17-32 TANK BATTERY SITE  
TOWNSHIP 5 NORTH, RANGE 66 WEST, SECTION 17  
WELD COUNTY, COLORADO**

Western Project #08149

January 27, 2009

Dear Mr. Eggleston:

Western Environmental Technologies, Inc. (Western) managed and documented the cleanup of an accidental petroleum release at the subject site. The site area includes three producing oil and gas wells, gathering lines, separator equipment and a tank battery. The site is located approximately two miles west of the City of Greeley, Colorado. The wells are operated by Petro-Canada Resources (USA), Inc. (PCR).

When field crews were upgrading the tank battery systems, a leak of produced water was discovered from a buried concrete water tank. PCR personnel immediately shut in all wells and flow lines to prevent further spills. The buried concrete water pit was removed. The aboveground oil storage tank was removed from the area.

## **SOIL CLEANUP**

PCR mobilized heavy equipment and personnel to the site to remove and dispose of petroleum soil near the leak area. Western personnel also mobilized to the spill site to direct and manage the site remediation. Western personnel performed field testing for hydrocarbons during soil removals. A calibrated Photoionization detector was used to screen subsurface soil for petroleum compounds.

J&F Services, Inc. of Fort Lupton, Colorado provided tandem trucks to haul soil. Soil was removed from the cleanup excavation using a large capacity John Deere 270C trackhoe. Each load of soil was transported and disposed using a non-hazardous waste manifest. The Exploration and Production waste was accepted for disposal at the licensed landfill. A total of 800 cubic yards of petroleum contaminated soil was removed from the site and transported to the Buffalo Ridge Landfill, located near Keenesburg, Colorado.

Western personnel performed two soil sampling events during and after the site cleanup. Soil from the cleanup excavation was sampled first on December 17, 2008. Soil removed from the excavation was a fine sandy silt with occasional clay lenses. The soil samples were submitted to Technology Laboratory, Inc. located in Fort Collins, Colorado. All samples were acquired using laboratory chain-of-custody documentation.

All samples were analyzed within allowable holding times. There were no data quality issues noted by the testing laboratory. Each soil sample was analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH). EPA method #418.1 was used to prepare and analyze the samples. A total of 13 samples were obtained at the site on December 17, 2008. Rush testing was performed.

Western personnel reviewed testing results. Additional soil would have to be removed from the spill area to achieve desired cleanup goals. J&F Services removed additional petroleum contaminated soil from the west, east and south sides of the cleanup area. No further excavating could be performed on the north side of the excavation due to a buried gas line and fencing.

After additional removals on December 18, 2008, more testing was performed. Three soil samples were obtained from the new removal areas. Western then submitted these samples for testing. Technology Laboratory also performed the analyses. The final soil samples tested to be well within Colorado Oil & Gas Conservation Commission (COGCC) soil quality standards for a non-sensitive area site. Ground water did not appear to be impacted by this spill event. No ground water was observed in the soil cleanup excavation.

Clean soil was imported from the PCR land farm for use as excavation backfill. The site has been reconfigured and upgraded. A new tank and lines have been installed along with geomembrane liners. The oil and gas wells are now producing again. PCR is requesting closure for this spill event.

Please contact us with any questions which you may have.

Sincerely,



Mark H. Bailey, CHMM, REP, PG - Senior Environmental Scientist  
Western Environmental Technologies, Inc,

xc: Mr. John Axelson - Colorado Oil & Gas Conservation Commission

Attachments:	Site Location And Area Topographic Map	(1 page)
	Site Features Map	(1 page)
	Sample Location Map	(1 page)
	Analytical Results Summary Tables One, Two and Three	(2 pages)
	Technology Labs Data Reports	(4 pages)

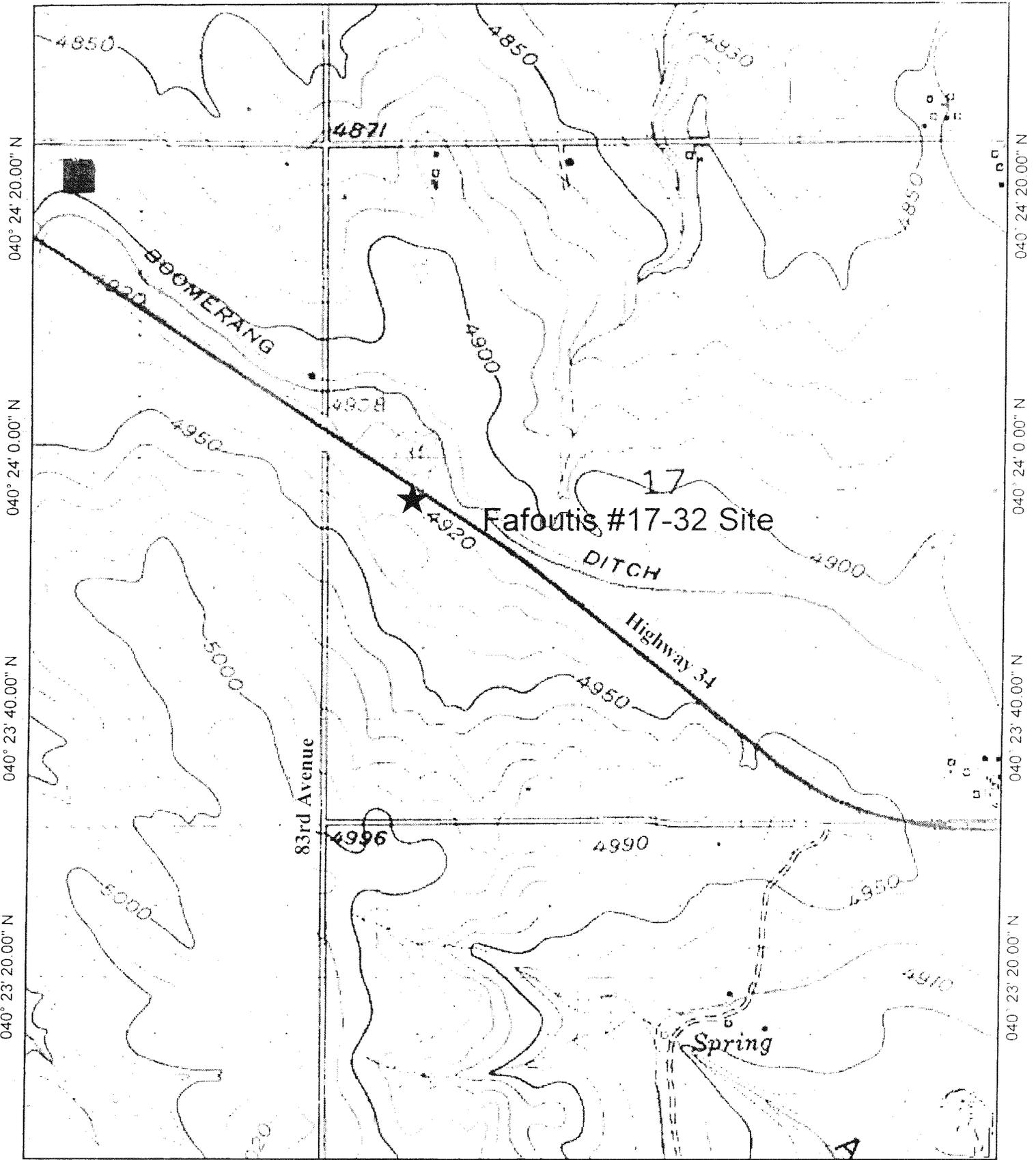
104° 49' 0.00" W

104° 48' 40.00" W

104° 48' 20.00" W

104° 48' 0.00" W

104° 47' 40.00" W



040° 24' 20.00" N

040° 24' 0.00" N

040° 23' 40.00" N

040° 23' 20.00" N

040° 24' 20.00" N

040° 24' 0.00" N

040° 23' 40.00" N

040° 23' 20.00" N

104° 49' 0.00" W

104° 48' 40.00" W

104° 48' 20.00" W

104° 48' 0.00" W

104° 47' 40.00" W

<Default> - 1 Markers, Length = 0 feet

Fafoutis #17-32 Site - 040° 23' 56.4" N, 104° 48' 36.9" W

Site Location and Area Topographic Map  
 Petro-Canada Resources (USA) Fafoutis 17-32 Tank Battery  
 Township-5 North, Range 66 West, SE/SW Section 17, Weld County, Colorado  
 Western Project #08149

Map Scale 1 inch = 1,000 feet

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US Highway 34

Barbed Wire Fence

Access Road (Gravel)

Separator  
Meter House

Flare

Cleanup  
Excavation

Fafoutis 17-32  
Well Head

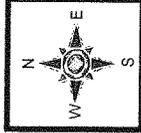
819-Stemaps-Petro-Fafoutis1.cdr

### SITE FEATURES MAP

Petro Canada Resources (USA), Inc.  
FAFOUTIS 17-32, 17-33, 17-34 Location  
T.6N, R.66W, SE-SW, Sec 17  
Weld County, Colorado

Project No. 08148	Prepared By CCC	
Date 01/02/09	Reviewed By MHB	

Map Scale  
1" = 20 ft.



US Highway 34

Barbed Wire Fence

Meter House  
Separator

Access Road (Gravel)

Flare

Concrete Produced Water Tank (Removed)

Cleanup Excavation

Removed Soil Stockpile

Fafoutis 17-32 Well Head

REW-26'

REE-19-26'

REF-28'

REE-26'

RES-27'

RESA-28'

SS1

SS2

SS3

SS4

SS5

SS6

SS7

SS8

819n.Location\PetroProd\slr.cdr

**SAMPLE LOCATION MAP**  
 Petro Canada Resources (USA), Inc.  
 FAFOUTIS 17-32, 17-33, 17-34 Location  
 T5N, R66W, SE-SW, Sec 17  
 Weld County, Colorado

Project No.	08149	Prepared By	CCC
Date	01/02/09	Reviewed By	MHB

**WESTERN**  
AN IRVING COMPANY

Map Scale  
1" = 20 ft.



TABLE ONE - DECEMBER, 2008  
CLEANUP EXCAVATION SOIL TEST RESULTS SUMMARY TABLE  
PETRO-CANADA RESOURCES (USA) FAFOUTIS 17-32 TANK BATTERY SITE  
TOWNSHIP 5 NORTH, RANGE 66 WEST, SECTION 17, WELD COUNTY, COLORADO

Sample Number	Sample Date	Location of Sample	TRPH in mg/Kg
REN-26'	12/17/08	Soil from floor of north side of cleanup excavation	517
REE-26'	12/17/08	Soil from bottom of east side of cleanup excavation	5,847
REW-25'	12/17/08	Soil from bottom of excavation on west side	1,259
RES-27'	12/17/088	Soil from floor of excavation on the south side	12,929

TABLE TWO - DECEMBER, 2008  
PETROLEUM SOIL STOCKPILES TEST RESULTS SUMMARY TABLE  
PETRO-CANADA RESOURCES (USA) FAFOUTIS 17-32 TANK BATTERY SITE  
TOWNSHIP 5 NORTH, RANGE 66 WEST, SECTION 17, WELD COUNTY, COLORADO

Sample Number	Sample Date	Location of Sample	TRPH in mg/Kg
SS1	12/17/08	Northwest corner of stockpiles	7,801
SS2	12/17/08	Southwest corner of stockpiles	4,823
SS3	12/17/08	Northwest center of soil stockpiles	3,914
SS4	12/17/08	Southwest center of soil stockpiles	2,109
SS5	12/17/08	Northeast center of stockpiles	2,519
SS6	12/17/08	Southeast center of stockpiles	547
SS7	12/17/08	Northeast corner of stockpiles	2,361
SS8	12/17/08	Southeast corner of stockpiles	1,489

TABLE THREE - DECEMBER, 2008  
 FINAL SAMPLES FROM REMOVAL EXCAVATION SUMMARY TABLE  
 PETRO-CANADA RESOURCES (USA) FAFOUTIS 17-32 TANK BATTERY SITE  
 TOWNSHIP 5 NORTH, RANGE 66 WEST, SECTION 17, WELD COUNTY, COLORADO

Sample Number	Sample Date	Location of Sample	TRPH in mg/Kg
REWA-26'	12/18/08	West wall of excavation after soil removals	36.7
RESA-28'	12/18/08	South wall of excavation after all removals	ND*
REEA-26'	12/18/08	East wall of excavation after excavating	ND

ND\* = Compound analyzed for but not detected in soil sample.





# TECHNOLOGY LABORATORY, INC.

## CENTRE PROFESSIONAL PARK

1012 Centre Avenue  
Fort Collins, Colorado 80526  
(970) 490-1414

### CERTIFICATE OF ANALYSIS

Western Environmental Technologies, Inc.  
2060 West Littleton Blvd  
Littleton, CO 80120

Date Received: 12/17/08

Matrix: Soil

Project No.: 08149

<u>Lab ID</u>	<u>Sample ID</u>	<u>Date Sampled</u>	<u>Date Analyzed</u>	<u>TRPH mg/Kg</u>
7509-01	SS1	12/17/08	12/18/08	7801
7509-02	SS2	12/17/08	12/18/08	4823
7509-03	SS3	12/17/08	12/18/08	3914
7509-04	SS4	12/17/08	12/18/08	2109
7509-05	SS5	12/17/08	12/18/08	2519
7509-06	SS6	12/17/08	12/18/08	547
7509-07	REN-26'	12/17/08	12/18/08	517
7509-08	REF-28'	12/17/08	12/18/08	198
7509-09	REW-25'	12/17/08	12/18/08	1259
7509-10	REE-26'	12/17/08	12/18/08	5847
7509-11	RES-27'	12/17/08	12/18/08	12929
7509-12	SS7	12/17/08	12/18/08	2361
7509-13	SS8	12/17/08	12/18/08	1489

TRPH Method:

EPA-418.1



**TECHNOLOGY LABORATORY, INC.**  
 1012 CENTRE AVENUE  
 FORT COLLINS, CO 80526  
 Phone: (970) 490-1414 Fax: (970) 472 5488  
 www.techlabusa.com sales@techlabusa.com

W.O. NUMBER 7516  
**CHAIN-OF-CUSTODY REPORT**

COMPANY NAME <u>Western Environmental Technologies, Inc</u>		ANALYSIS REQUESTED												OTHER	
PROJECT MANAGER <u>Mark Bailey</u>		BTEX / MTBE / TPHP												HOLD AFTER ANALYSIS	
PROJECT NUMBER <u>#08147</u>		NUMBER OF CONTAINERS												HOLD, DON'T ANALYZE	
PROJECT LOCATION OR NAME <u>Petro-Canada Fountains 17-32 Site, TSN-R66W-Sec 17</u>		SAMPLE MATRIX: SOIL (S) AIR (A) AQUEOUS (W) OTHER (O)													
SAMPLERS SIGNATURE 		OIL & GREASE 413.1 / 1664													
		TRPH 418.1													
		VOC 624 / 8260 TOTAL / TCLP													
		SVOC 625 / 8270 / PAH													
		pH / TSS													
		RCRA 8 METALS (TOTAL / TCLP / DISSOLVED)													
		React. / Ignite. / Corr. / Paint Filter													
		TO-1 / TO-14 / TO-15 / TVPH													
		NITRATE / NITRITE / AMMONIA													
		BOD / COD													
		FIXED GASES (N <sub>2</sub> , O <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> )													
		PCBs													

LOGGED IN BY: Jana Kunn Sample Preservative:  4°C  None  Other

DATE: 12-18-08 RECEIVE BY: Mark Bailey  Acid

TIME: 1500 COMPANY: Western Env Tech, Inc

DATE: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_

TIME: \_\_\_\_\_ COMPANY: \_\_\_\_\_

COMMENTS:

RELINQUISHED BY: Mark Bailey

COMPANY: Western Env Tech, Inc

RELINQUISHED BY: \_\_\_\_\_

COMPANY: \_\_\_\_\_

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TURNAROUND TIME

Normal (5-10 working days)

3 day (1.5x Normal Rates)

24 hr (2x Normal Rates)

Same day (4x Normal Rates)



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Matrix: Soil

Project No.: 08149

<u>Lab ID</u>	<u>Sample ID</u>	<u>Date Sampled</u>	<u>Date Analyzed</u>	<u>TRPH mg/Kg</u>
7516-01	REWA-26'	12/18/08	12/18/08	36.7
7516-02	RESA-28'	12/18/08	12/18/08	< 5.0
7516-03	REEA-26'	12/18/08	12/18/08	< 5.0

TRPH Method:

EPA-418.1

*Bill Emery*