



E34 496 (Location: 335928)
Pit (Facility: 414551)
Encana Oil & Gas (USA) Inc. (Operator: 100185)

REPORT OF WORK COMPLETED

- Form 27 (Doc: 32522041) (Rem: 5355)
- Form 19 (Spill Doc: Unknown – submitted 09/29/2010)

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 (Report of Work Completed and Notification of Completion) to document closure of a lined earthen pit on a well pad in the North Parachute area of operation in Garfield County.

Initial pit closure and characterization efforts were carried out in July, 2010. The pit was drained, and the liner and above liner solids were removed for offsite disposal. Below-liner soil conditions were assessed with field observations and each cell of the pit was characterized with a 5-point composite sample of the pit bottom submitted to a laboratory for analysis. Sample results identified concentrations/levels above the allowable limits in COGCC Table 910-1 for TPH, SAR, pH, and arsenic. A Form 19 was submitted to document discovery of impacted soils beneath the liner.

Following identification of below-liner impacts, both pit cells were excavated to remove impacted soils. Excavated material was blended and stockpiled on location. Both pit bottom cells and the soil stockpile were composite sampled for characterization. Additional excavation, including removal of the weir between the pit cells, was completed after lab results with elevated TPH concentrations were received.

Analytical results are provided in the attached summary table and laboratory reports.

NOTIFICATION OF COMPLETION

The final composite sample collected from the pit excavation was within COGCC Table 910-1 allowable concentration for TPH. Arsenic concentrations in the pit bottom and stockpile were above the allowable concentration in Table 910-1, but are within the range of background values for this area. Based on these results and Footnote 1 to COGCC Table 910-1, Encana requests that the COGCC consider the higher range of background arsenic values as the allowable concentration for this constituent. With regards to the inorganic constituents (SAR, EC, pH), the material represented by these samples are within the former pit footprint, are greater than five feet below the current working surface, and will be at an even greater depth below the final reclaimed working surface where the constituents will have no effect on revegetation efforts.

Upon receipt of laboratory results demonstrating compliance of the pit excavation, the stockpiled material from the pit excavations was laid out to support bioremediation of hydrocarbon impacts. The pit excavation and soil stockpile were left open on location through the winter months. In 2011, the pit bottom stockpile, approximately 1000 cubic yards, was transported to the K04 596 well pad (Location ID: 335690) for remediation and final burial with a pit closure project at that location. Both locations and connecting roads occur on Encana owned surface. Final clearance and burial information for transported material will be provided with remediation project 7768.

If the information provided here is satisfactory, please close the associated remediation project, and pit facility, and provide documentation of these record closures.

ATTACHMENTS

1. Topographic Location Map
2. Laboratory Results Summary Table
3. Laboratory Reports



North Parachute Mountain
Garfield County, Colorado

0 3,200 6,400 Feet
1 inch = 3,000 feet



E34 Well Pad and Pit
Location ID: 335928
Facility ID: 414551
Rem #: 5355

- Encana Site Boundary
- Access Road
- Township Boundary
- Surface Ownership**
 - Not Identified Below (clear)
 - EnCana (transparent)
 - USFS (transparent)
 - BLM (transparent)

Analytes (BDL = Below Detection Limit; ND = Non Detect)

Allowable Concentration -->				Organic Compounds in Soil (mg/kg [ppm])																	Inorganics in Soil			Metals in Soil (mg/kg [ppm])														
Location	Sample Date:	Sample Matrix	Matrix Notes	500			0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
				TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene	Naphthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nickel (soluble salts)	Selenium	Silver	Zinc
E34	07/29/10	Pit	N pit bottom	3707.6	7.6	3700	0.084	0.19	0.021	0.3	0.18	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.78	BDL	0.81	BDL	3.6	26	12	8.7	5400	0.92	20	BDL	15	53	0.021	13	BDL	BDL	67
E34	07/29/10	Pit	S pit bottom	1212	12	1200	BDL	BDL	0.0044	0.02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1.1	20	8.2	2.2	350	BDL	54	BDL	8.3	9.6	BDL	20	1.6	BDL	31
E34	08/17/10	Pit	N pit bottom	5320	20	5300																					6.5											
E34	08/17/10	Pit	S pit bottom	2500	BDL	2500																																
E34	08/17/10	Pit	spoil	3130	30	3100																					6.6											
E34	09/13/10	Pit	N pit bottom	1400	BDL	1400																																
E34	09/13/10	Pit	S pit bottom	780	BDL	780																																
E34	09/28/10	Pit	spoil	2494.9	14.9	2480																					7.1											
E34	10/27/10	Pit	pit bottom (N&S after weir removed)	160	BDL	160																																
E34	10/27/10	Pit	spoil	1300	BDL	1300																																



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Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

Report Summary

Friday August 06, 2010

Report Number: L471362

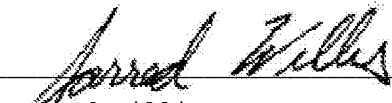
Samples Received: 07/30/10

Client Project: E34 Pit Closure

Description: E34 Pit Closure

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 06, 2010

Date Received : July 30, 2010
Description : E34 Pit Closure
Sample ID : E34-NW BACK 072910
Collected By : Blair Rollins
Collection Date : 07/29/10 12:00

ESC Sample # : L471362-01

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.1	1.0	mg/kg	6010B	08/01/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/06/10 17:10 Printed: 08/06/10 17:11

REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 06, 2010

Date Received : July 30, 2010
Description : E34 Pit Closure
Sample ID : E34-SW BACK 072910
Collected By : Blair Rollins
Collection Date : 07/29/10 12:05

ESC Sample # : L471362-02

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	10.	mg/kg	3060A/7196A	08/03/10	5
Chromium, Trivalent	56.	0.50	mg/kg	Calc.	08/01/10	1
ORP	270		mV	2580	08/03/10	1
pH	7.0		su	9045D	08/03/10	1
Sodium Adsorption Ratio	0.38			Calc.	08/04/10	1
Specific Conductance	70.		umhos/cm	9050AMod	08/04/10	1
Mercury	0.027	0.020	mg/kg	7471	08/03/10	1
Arsenic	4.4	1.0	mg/kg	6010B	08/01/10	1
Barium	350	0.25	mg/kg	6010B	08/01/10	1
Cadmium	0.30	0.25	mg/kg	6010B	08/01/10	1
Chromium	56.	0.50	mg/kg	6010B	08/01/10	1
Copper	11.	1.0	mg/kg	6010B	08/01/10	1
Lead	0.78	0.25	mg/kg	6010B	08/01/10	1
Nickel	25.	1.0	mg/kg	6010B	08/01/10	1
Selenium	4.8	1.0	mg/kg	6010B	08/01/10	1
Silver	BDL	0.50	mg/kg	6010B	08/01/10	1
Zinc	39.	1.5	mg/kg	6010B	08/01/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/31/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/31/10	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/31/10	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/31/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/31/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.3		% Rec.	8021/8015	07/31/10	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	07/31/10	5
TPH (GC/FID) High Fraction	32.	4.0	mg/kg	3546/DRO	08/02/10	1
Surrogate recovery(%)						
o-Terphenyl	75.6		% Rec.	3546/DRO	08/02/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L471362-02 (PH) - 7.0@24.1c



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August 06, 2010

Date Received : July 30, 2010
Description : E34 Pit Closure

Sample ID : E34-SW BACK 072910

Collected By : Blair Rollins
Collection Date : 07/29/10 12:05

ESC Sample # : L471362-02

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	08/04/10	1
Surrogate Recovery						
Nitrobenzene-d5	103.		% Rec.	8270C-SIM	08/04/10	1
2-Fluorobiphenyl	80.9		% Rec.	8270C-SIM	08/04/10	1
p-Terphenyl-d14	95.3		% Rec.	8270C-SIM	08/04/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L471362-02 (PH) - 7.0@24.1c

REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 06, 2010

Date Received : July 30, 2010
Description : E34 Pit Closure
Sample ID : E34-S. PIT 072910
Collected By : Blair Rollins
Collection Date : 07/29/10 12:25

ESC Sample # : L471362-03

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/03/10	1
Chromium, Trivalent	54.	0.50	mg/kg	Calc.	08/01/10	1
ORP	190		mV	2580	08/03/10	1
pH	8.2		su	9045D	08/03/10	1
Sodium Adsorption Ratio	20.			Calc.	08/04/10	1
Specific Conductance	1100		umhos/cm	9050AMod	08/04/10	1
Mercury	BDL	0.020	mg/kg	7471	08/03/10	1
Arsenic	2.2	1.0	mg/kg	6010B	08/01/10	1
Barium	350	0.25	mg/kg	6010B	08/01/10	1
Cadmium	BDL	0.25	mg/kg	6010B	08/01/10	1
Chromium	54.	0.50	mg/kg	6010B	08/01/10	1
Copper	8.3	1.0	mg/kg	6010B	08/01/10	1
Lead	9.6	0.25	mg/kg	6010B	08/01/10	1
Nickel	20.	1.0	mg/kg	6010B	08/01/10	1
Selenium	1.6	1.0	mg/kg	6010B	08/01/10	1
Silver	BDL	0.50	mg/kg	6010B	08/01/10	1
Zinc	31.	1.5	mg/kg	6010B	08/01/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/31/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/31/10	5
Ethylbenzene	0.0044	0.0025	mg/kg	8021/8015	07/31/10	5
Total Xylene	0.020	0.0075	mg/kg	8021/8015	07/31/10	5
TPH (GC/FID) Low Fraction	12.	0.50	mg/kg	GRO	07/31/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.7		% Rec.	8021/8015	07/31/10	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	07/31/10	5
TPH (GC/FID) High Fraction	1200	80.	mg/kg	3546/DRO	08/02/10	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/02/10	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L471362-03 (CR6) - diluted due to dark sample, used sample blank

L471362-03 (SV8270PAHSIM) - Previous run also had high SURR recovery. Matrix effect. Diluted due to mat

L471362-03 (PH) - 8.2@24.3c



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Parachute, CO 81635

August 06, 2010

Date Received : July 30, 2010
Description : E34 Pit Closure

Sample ID : E34-S. PIT 072910

Collected By : Blair Rollins
Collection Date : 07/29/10 12:25

ESC Sample # : L471362-03

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Naphthalene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Phenanthrene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
1-Methylnaphthalene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
2-Methylnaphthalene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
2-Chloronaphthalene	BDL	0.060	mg/kg	8270C-SIM	08/06/10	10
Surrogate Recovery						
Nitrobenzene-d5	418.		% Rec.	8270C-SIM	08/06/10	10
2-Fluorobiphenyl	105.		% Rec.	8270C-SIM	08/06/10	10
p-Terphenyl-d14	104.		% Rec.	8270C-SIM	08/06/10	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L471362-03 (CR6) - diluted due to dark sample, used sample blank

L471362-03 (SV8270PAHSIM) - Previous run also had high SURR recovery. Matrix effect. Diluted due to mat

L471362-03 (PH) - 8.2@24.3c

REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 06, 2010

Date Received : July 30, 2010
Description : E34 Pit Closure
Sample ID : E34-N. PIT 072910
Collected By : Blair Rollins
Collection Date : 07/29/10 13:30

ESC Sample # : L471362-04

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/03/10	1
Chromium, Trivalent	20.	0.50	mg/kg	Calc.	08/01/10	1
ORP	340		mV	2580	08/03/10	1
pH	12.		su	9045D	08/03/10	1
Sodium Adsorption Ratio	26.			Calc.	08/04/10	1
Specific Conductance	3600		umhos/cm	9050AMod	08/04/10	1
Mercury	0.021	0.020	mg/kg	7471	08/03/10	1
Arsenic	8.7	5.0	mg/kg	6010B	08/01/10	5
Barium	5400	0.25	mg/kg	6010B	08/01/10	1
Cadmium	0.92	0.25	mg/kg	6010B	08/01/10	1
Chromium	20.	0.50	mg/kg	6010B	08/01/10	1
Copper	15.	1.0	mg/kg	6010B	08/01/10	1
Lead	53.	1.2	mg/kg	6010B	08/01/10	5
Nickel	13.	1.0	mg/kg	6010B	08/01/10	1
Selenium	BDL	5.0	mg/kg	6010B	08/01/10	5
Silver	BDL	0.50	mg/kg	6010B	08/01/10	1
Zinc	67.	7.5	mg/kg	6010B	08/01/10	5
Benzene	0.084	0.0025	mg/kg	8021/8015	07/31/10	5
Toluene	0.19	0.025	mg/kg	8021/8015	07/31/10	5
Ethylbenzene	0.021	0.0025	mg/kg	8021/8015	07/31/10	5
Total Xylene	0.30	0.0075	mg/kg	8021/8015	07/31/10	5
TPH (GC/FID) Low Fraction	7.6	0.50	mg/kg	GRO	07/31/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.5		% Rec.	8021/8015	07/31/10	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	07/31/10	5
TPH (GC/FID) High Fraction	3700	80.	mg/kg	3546/DRO	08/03/10	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/03/10	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Acenaphthene	0.18	0.12	mg/kg	8270C-SIM	08/03/10	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L471362-04 (PH) - 12.0@24.0c



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August 06, 2010

Date Received : July 30, 2010
Description : E34 Pit Closure

Sample ID : E34-N. PIT 072910

Collected By : Blair Rollins
Collection Date : 07/29/10 13:30

ESC Sample # : L471362-04

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Fluorene	0.78	0.12	mg/kg	8270C-SIM	08/03/10	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Naphthalene	0.81	0.12	mg/kg	8270C-SIM	08/03/10	20
Phenanthrene	0.52	0.12	mg/kg	8270C-SIM	08/03/10	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
1-Methylnaphthalene	1.0	0.12	mg/kg	8270C-SIM	08/03/10	20
2-Methylnaphthalene	3.4	0.12	mg/kg	8270C-SIM	08/03/10	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	08/03/10	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	08/03/10	20
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	08/03/10	20
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	08/03/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/06/10 17:10 Printed: 08/06/10 17:11
L471362-04 (PH) - 12.0@24.0c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L471362-03	WG492100	SAMP	Anthracene	R1318649	O
	WG492100	SAMP	Acenaphthene	R1318649	O
	WG492100	SAMP	Acenaphthylene	R1318649	O
	WG492100	SAMP	Benzo(a)anthracene	R1318649	O
	WG492100	SAMP	Benzo(a)pyrene	R1318649	O
	WG492100	SAMP	Benzo(b)fluoranthene	R1318649	O
	WG492100	SAMP	Benzo(g,h,i)perylene	R1318649	O
	WG492100	SAMP	Benzo(k)fluoranthene	R1318649	O
	WG492100	SAMP	Chrysene	R1318649	O
	WG492100	SAMP	Dibenz(a,h)anthracene	R1318649	O
	WG492100	SAMP	Fluoranthene	R1318649	O
	WG492100	SAMP	Fluorene	R1318649	O
	WG492100	SAMP	Indeno(1,2,3-cd)pyrene	R1318649	O
	WG492100	SAMP	Naphthalene	R1318649	O
	WG492100	SAMP	Phenanthrene	R1318649	O
	WG492100	SAMP	Pyrene	R1318649	O
	WG492100	SAMP	1-Methylnaphthalene	R1318649	O
	WG492100	SAMP	2-Methylnaphthalene	R1318649	O
	WG492100	SAMP	2-Chloronaphthalene	R1318649	O
	WG492100	SAMP	Nitrobenzene-d5	R1318649	J1
L471362-04	WG491253	SAMP	o-Terphenyl	R1309288	J7
	WG491238	SAMP	Selenium	R1307316	O
	WG491255	SAMP	Nitrobenzene-d5	R1307009	J7
	WG491255	SAMP	2-Fluorobiphenyl	R1307009	J7
	WG491255	SAMP	p-Terphenyl-d14	R1307009	J7
	WG491253	SAMP	o-Terphenyl	R1309288	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
08/06/10 at 17:11:15

TSR Signing Reports: 358
R4 - Rush: Three Day

Create p-key for each project, and enter "project description" as Project Number and Project Name. Log all samples to separate L#s. Log all PAHs as SV8270PAHSIM. Log all BTEX samples by 8021.

Sample: L471362-01 Account: ENCANACO Received: 07/30/10 09:00 Due Date: 08/05/10 00:00 RPT Date: 08/06/10 17:10

Sample: L471362-02 Account: ENCANACO Received: 07/30/10 09:00 Due Date: 08/05/10 00:00 RPT Date: 08/06/10 17:10

Sample: L471362-03 Account: ENCANACO Received: 07/30/10 09:00 Due Date: 08/05/10 00:00 RPT Date: 08/06/10 17:10

Sample: L471362-04 Account: ENCANACO Received: 07/30/10 09:00 Due Date: 08/05/10 00:00 RPT Date: 08/06/10 17:10



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Quality Assurance Report
Level II

L471362

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(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

August 06, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG491279	07/31/10 05:03
Ethylbenzene	< .0005	mg/kg			WG491279	07/31/10 05:03
Toluene	< .005	mg/kg			WG491279	07/31/10 05:03
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG491279	07/31/10 05:03
Total Xylene	< .0015	mg/kg			WG491279	07/31/10 05:03
a,a,a-Trifluorotoluene(FID)		% Rec.	100.2	59-128	WG491279	07/31/10 05:03
a,a,a-Trifluorotoluene(PID)		% Rec.	104.5	54-144	WG491279	07/31/10 05:03
1-Methylnaphthalene	< .006	mg/kg			WG491255	08/01/10 11:05
2-Chloronaphthalene	< .006	mg/kg			WG491255	08/01/10 11:05
2-Methylnaphthalene	< .006	mg/kg			WG491255	08/01/10 11:05
Acenaphthene	< .006	mg/kg			WG491255	08/01/10 11:05
Acenaphthylene	< .006	mg/kg			WG491255	08/01/10 11:05
Anthracene	< .006	mg/kg			WG491255	08/01/10 11:05
Benzo(a)anthracene	< .006	mg/kg			WG491255	08/01/10 11:05
Benzo(a)pyrene	< .006	mg/kg			WG491255	08/01/10 11:05
Benzo(b)fluoranthene	< .006	mg/kg			WG491255	08/01/10 11:05
Benzo(g,h,i)perylene	< .006	mg/kg			WG491255	08/01/10 11:05
Benzo(k)fluoranthene	< .006	mg/kg			WG491255	08/01/10 11:05
Chrysene	< .006	mg/kg			WG491255	08/01/10 11:05
Dibenz(a,h)anthracene	< .006	mg/kg			WG491255	08/01/10 11:05
Fluoranthene	< .006	mg/kg			WG491255	08/01/10 11:05
Fluorene	< .006	mg/kg			WG491255	08/01/10 11:05
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG491255	08/01/10 11:05
Naphthalene	< .006	mg/kg			WG491255	08/01/10 11:05
Phenanthrene	< .006	mg/kg			WG491255	08/01/10 11:05
Pyrene	< .006	mg/kg			WG491255	08/01/10 11:05
2-Fluorobiphenyl		% Rec.	73.36	21-120	WG491255	08/01/10 11:05
Nitrobenzene-d5		% Rec.	62.62	33-114	WG491255	08/01/10 11:05
p-Terphenyl-d14		% Rec.	100.1	18-142	WG491255	08/01/10 11:05
Arsenic	< 1	mg/kg			WG491238	08/01/10 17:26
Barium	< .25	mg/kg			WG491238	08/01/10 17:26
Cadmium	< .25	mg/kg			WG491238	08/01/10 17:26
Chromium	< .5	mg/kg			WG491238	08/01/10 17:26
Copper	< 1	mg/kg			WG491238	08/01/10 17:26
Lead	< .25	mg/kg			WG491238	08/01/10 17:26
Nickel	< 1	mg/kg			WG491238	08/01/10 17:26
Selenium	< 1	mg/kg			WG491238	08/01/10 17:26
Silver	< .5	mg/kg			WG491238	08/01/10 17:26
Zinc	< 1.5	mg/kg			WG491238	08/01/10 17:26
TPH (GC/FID) High Fraction	< 4	ppm			WG491253	08/02/10 14:21
o-Terphenyl		% Rec.	80.11	50-150	WG491253	08/02/10 14:21
Mercury	< .02	mg/kg			WG491179	08/03/10 09:09
pH	6.50	su			WG491330	08/03/10 15:52
Chromium,Hexavalent	< 2	mg/kg			WG491136	08/03/10 16:21
Specific Conductance	2.05	umhos/cm			WG491636	08/04/10 15:00
* Performance of this Analyte is outside of established criteria.						
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'						



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Est. 1970

August 06, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
1-Methylnaphthalene	< .006	mg/kg			WG492100	08/05/10 16:25
2-Chloronaphthalene	< .006	mg/kg			WG492100	08/05/10 16:25
2-Methylnaphthalene	< .006	mg/kg			WG492100	08/05/10 16:25
Acenaphthene	< .006	mg/kg			WG492100	08/05/10 16:25
Acenaphthylene	< .006	mg/kg			WG492100	08/05/10 16:25
Anthracene	< .006	mg/kg			WG492100	08/05/10 16:25
Benzo(a)anthracene	< .006	mg/kg			WG492100	08/05/10 16:25
Benzo(a)pyrene	< .006	mg/kg			WG492100	08/05/10 16:25
Benzo(b)fluoranthene	< .006	mg/kg			WG492100	08/05/10 16:25
Benzo(g,h,i)perylene	< .006	mg/kg			WG492100	08/05/10 16:25
Benzo(k)fluoranthene	< .006	mg/kg			WG492100	08/05/10 16:25
Chrysene	< .006	mg/kg			WG492100	08/05/10 16:25
Dibenz(a,h)anthracene	< .006	mg/kg			WG492100	08/05/10 16:25
Fluoranthene	< .006	mg/kg			WG492100	08/05/10 16:25
Fluorene	< .006	mg/kg			WG492100	08/05/10 16:25
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG492100	08/05/10 16:25
Naphthalene	< .006	mg/kg			WG492100	08/05/10 16:25
Phenanthrene	< .006	mg/kg			WG492100	08/05/10 16:25
Pyrene	< .006	mg/kg			WG492100	08/05/10 16:25
2-Fluorobiphenyl		% Rec.	117.2	21-120	WG492100	08/05/10 16:25
Nitrobenzene-d5		% Rec.	113.1	33-114	WG492100	08/05/10 16:25
p-Terphenyl-d14		% Rec.	107.5	18-142	WG492100	08/05/10 16:25

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Arsenic	mg/kg	9.40	9.00	3.92	20		L471390-04	WG491238
Barium	mg/kg	130.	120.	8.00	20		L471390-04	WG491238
Cadmium	mg/kg	0.410	0.390	4.02	20		L471390-04	WG491238
Chromium	mg/kg	13.0	13.0	3.03	20		L471390-04	WG491238
Copper	mg/kg	17.0	16.5	4.15	20		L471390-04	WG491238
Lead	mg/kg	24.0	20.0	19.8	20		L471390-04	WG491238
Nickel	mg/kg	18.0	18.3	1.65	20		L471390-04	WG491238
Selenium	mg/kg	3.60	4.40	18.6	20		L471390-04	WG491238
Silver	mg/kg	0	0	0	20		L471390-04	WG491238
Zinc	mg/kg	56.0	58.0	2.62	20		L471390-04	WG491238
Mercury	mg/kg	0.0320	0.0330	2.45	20		L471200-04	WG491179
pH	su	7.10	7.10	0	1		L471213-01	WG491330
pH	su	0	0	0	1		L471427-01	WG491330
Chromium,Hexavalent	mg/kg	0	0	0	20		L471047-01	WG491136
Chromium,Hexavalent	mg/kg	0	0	0	20		L471362-04	WG491136
ORP	mV	220.	220.	0	20		L471045-01	WG491167
ORP	mV	200.	200.	1.49	20		L471333-01	WG491167
Specific Conductance	umhos/cm	3700	3640	2.17	20		L471362-04	WG491636

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0527	105.	76-113	WG491279

* Performance of this Analyte is outside of established criteria.
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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Ethylbenzene	mg/kg	.05	0.0534	107.	78-115	WG491279
Toluene	mg/kg	.05	0.0534	107.	76-114	WG491279
Total Xylene	mg/kg	.15	0.166	111.	81-118	WG491279
a,a,a-Trifluorotoluene(FID)				99.70	59-128	WG491279
a,a,a-Trifluorotoluene(PID)				103.0	54-144	WG491279
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.00	109.	67-135	WG491279
a,a,a-Trifluorotoluene(FID)				94.17	59-128	WG491279
a,a,a-Trifluorotoluene(PID)				107.7	54-144	WG491279
1-Methylnaphthalene	mg/kg	.033	0.0254	77.1	41-110	WG491255
2-Chloronaphthalene	mg/kg	.033	0.0264	80.1	43-109	WG491255
2-Methylnaphthalene	mg/kg	.033	0.0259	78.4	38-104	WG491255
Acenaphthene	mg/kg	.033	0.0246	74.5	48-103	WG491255
Acenaphthylene	mg/kg	.033	0.0237	71.7	43-106	WG491255
Anthracene	mg/kg	.033	0.0247	74.9	51-110	WG491255
Benzo(a)anthracene	mg/kg	.033	0.0253	76.7	38-126	WG491255
Benzo(a)pyrene	mg/kg	.033	0.0223	67.5	47-118	WG491255
Benzo(b)fluoranthene	mg/kg	.033	0.0223	67.4	47-118	WG491255
Benzo(g,h,i)perylene	mg/kg	.033	0.0225	68.1	40-125	WG491255
Benzo(k)fluoranthene	mg/kg	.033	0.0273	82.6	45-121	WG491255
Chrysene	mg/kg	.033	0.0248	75.2	35-135	WG491255
Dibenz(a,h)anthracene	mg/kg	.033	0.0222	67.4	41-124	WG491255
Fluoranthene	mg/kg	.033	0.0222	67.2	50-114	WG491255
Fluorene	mg/kg	.033	0.0247	74.8	49-109	WG491255
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0222	67.1	40-126	WG491255
Naphthalene	mg/kg	.033	0.0253	76.8	36-100	WG491255
Phenanthrene	mg/kg	.033	0.0242	73.4	46-108	WG491255
Pyrene	mg/kg	.033	0.0263	79.6	30-136	WG491255
2-Fluorobiphenyl				94.93	21-120	WG491255
Nitrobenzene-d5				83.61	33-114	WG491255
p-Terphenyl-d14				105.2	18-142	WG491255
Arsenic	mg/kg	192	167.	87.0	78.6-120.8	WG491238
Barium	mg/kg	420	392.	93.3	78.8-121.4	WG491238
Cadmium	mg/kg	70.1	62.7	89.4	78.5-121.5	WG491238
Chromium	mg/kg	168	157.	93.5	80.4-120.2	WG491238
Copper	mg/kg	122	114.	93.4	81.6-119.7	WG491238
Lead	mg/kg	113	93.4	82.7	77.3-122.1	WG491238
Nickel	mg/kg	74.1	75.4	102.	78.8-121.2	WG491238
Selenium	mg/kg	176	159.	90.3	75.6-125.0	WG491238
Silver	mg/kg	115	105.	91.3	66-133.9	WG491238
Zinc	mg/kg	437	394.	90.2	78.5-121.7	WG491238
TPH (GC/FID) High Fraction	ppm	60	49.7	82.8	50-150	WG491253
o-Terphenyl				101.9	50-150	WG491253
Mercury	mg/kg	8.77	10.4	119.	71.6-127.7	WG491179
pH	su	9.68	9.60	99.2	98.9-102.0	WG491330
Chromium,Hexavalent	mg/kg	100	95.5	95.5	50-143	WG491136

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Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
ORP	mV	229		220.	96.1	95.6-104.37	WG491167
Specific Conductance	umhos/cm	406		425.	105.	85-115	WG491636
1-Methylnaphthalene	mg/kg	.033		0.0294	89.2	41-110	WG492100
2-Chloronaphthalene	mg/kg	.033		0.0281	85.1	43-109	WG492100
2-Methylnaphthalene	mg/kg	.033		0.0294	89.2	38-104	WG492100
Acenaphthene	mg/kg	.033		0.0319	96.7	48-103	WG492100
Acenaphthylene	mg/kg	.033		0.0329	99.7	43-106	WG492100
Anthracene	mg/kg	.033		0.0307	93.2	51-110	WG492100
Benzo(a)anthracene	mg/kg	.033		0.0341	103.	38-126	WG492100
Benzo(a)pyrene	mg/kg	.033		0.0323	97.9	47-118	WG492100
Benzo(b)fluoranthene	mg/kg	.033		0.0300	91.0	47-118	WG492100
Benzo(g,h,i)perylene	mg/kg	.033		0.0362	110.	40-125	WG492100
Benzo(k)fluoranthene	mg/kg	.033		0.0347	105.	45-121	WG492100
Chrysene	mg/kg	.033		0.0334	101.	35-135	WG492100
Dibenz(a,h)anthracene	mg/kg	.033		0.0349	106.	41-124	WG492100
Fluoranthene	mg/kg	.033		0.0371	112.	50-114	WG492100
Fluorene	mg/kg	.033		0.0315	95.4	49-109	WG492100
Indeno(1,2,3-cd)pyrene	mg/kg	.033		0.0352	107.	40-126	WG492100
Naphthalene	mg/kg	.033		0.0292	88.4	36-100	WG492100
Phenanthrene	mg/kg	.033		0.0311	94.4	46-108	WG492100
Pyrene	mg/kg	.033		0.0298	90.3	30-136	WG492100
2-Fluorobiphenyl					122.4*	21-120	WG492100
Nitrobenzene-d5					104.3	33-114	WG492100
p-Terphenyl-d14					112.2	18-142	WG492100

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0518	0.0527	104.	76-113	1.63	20	WG491279
Ethylbenzene	mg/kg	0.0527	0.0534	105.	78-115	1.42	20	WG491279
Toluene	mg/kg	0.0522	0.0534	104.	76-114	2.25	20	WG491279
Total Xylene	mg/kg	0.164	0.166	109.	81-118	1.41	20	WG491279
a,a,a-Trifluorotoluene(FID)				98.76	59-128			WG491279
a,a,a-Trifluorotoluene(PID)				102.0	54-144			WG491279
TPH (GC/FID) Low Fraction	mg/kg	6.29	6.00	114.	67-135	4.68	20	WG491279
a,a,a-Trifluorotoluene(FID)				96.42	59-128			WG491279
a,a,a-Trifluorotoluene(PID)				108.4	54-144			WG491279
1-Methylnaphthalene	mg/kg	0.0260	0.0254	79.0	41-110	2.29	24	WG491255
2-Chloronaphthalene	mg/kg	0.0267	0.0264	81.0	43-109	0.895	21	WG491255
2-Methylnaphthalene	mg/kg	0.0253	0.0259	77.0	38-104	2.12	24	WG491255
Acenaphthene	mg/kg	0.0249	0.0246	76.0	48-103	1.41	20	WG491255
Acenaphthylene	mg/kg	0.0240	0.0237	73.0	43-106	1.34	20	WG491255
Anthracene	mg/kg	0.0249	0.0247	75.0	51-110	0.737	22	WG491255
Benzo(a)anthracene	mg/kg	0.0247	0.0253	75.0	38-126	2.31	20	WG491255
Benzo(a)pyrene	mg/kg	0.0234	0.0223	71.0	47-118	4.97	20	WG491255
Benzo(b)fluoranthene	mg/kg	0.0239	0.0223	72.0	47-118	7.13	29	WG491255
Benzo(g,h,i)perylene	mg/kg	0.0223	0.0225	68.0	40-125	0.652	20	WG491255
Benzo(k)fluoranthene	mg/kg	0.0297	0.0273	90.0	45-121	8.41	31	WG491255
Chrysene	mg/kg	0.0267	0.0248	81.0	35-135	7.45	20	WG491255
Dibenz(a,h)anthracene	mg/kg	0.0220	0.0222	67.0	41-124	0.938	20	WG491255
Fluoranthene	mg/kg	0.0269	0.0222	81.0	50-114	19.3	20	WG491255
Fluorene	mg/kg	0.0248	0.0247	75.0	49-109	0.493	19	WG491255
Indeno(1,2,3-cd)pyrene	mg/kg	0.0219	0.0222	66.0	40-126	0.976	20	WG491255

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Quality Assurance Report
Level II

L471362

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

August 06, 2010

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Naphthalene	mg/kg	0.0255	0.0253	77.0		36-100	0.748	24	WG491255
Phenanthrene	mg/kg	0.0241	0.0242	73.0		46-108	0.469	21	WG491255
Pyrene	mg/kg	0.0254	0.0263	77.0		30-136	3.24	20	WG491255
2-Fluorobiphenyl				102.8		21-120			WG491255
Nitrobenzene-d5				87.80		33-114			WG491255
p-Terphenyl-d14				114.6		18-142			WG491255
TPH (GC/FID) High Fraction	ppm	48.1	49.7	80.0		50-150	3.19	25	WG491253
o-Terphenyl				97.19		50-150			WG491253
pH	su	9.60	9.60	99.0		98.9-102.0	0	20	WG491330
Chromium, Hexavalent	mg/kg	95.0	95.5	95.0		50-143	0.525	20	WG491136
ORP	mV	220.	220.	96.0		95.6-104.37	0	20	WG491167
Specific Conductance	umhos/	425.	425.	105.		85-115	0	20	WG491636
1-Methylnaphthalene	mg/kg	0.0327	0.0294	99.0		41-110	10.6	24	WG492100
2-Chloronaphthalene	mg/kg	0.0306	0.0281	93.0		43-109	8.65	21	WG492100
2-Methylnaphthalene	mg/kg	0.0327	0.0294	99.0		38-104	10.4	24	WG492100
Acenaphthene	mg/kg	0.0339	0.0319	103.		48-103	6.12	20	WG492100
Acenaphthylene	mg/kg	0.0345	0.0329	104.		43-106	4.71	20	WG492100
Anthracene	mg/kg	0.0325	0.0307	98.0		51-110	5.50	22	WG492100
Benzo(a)anthracene	mg/kg	0.0365	0.0341	110.		38-126	6.76	20	WG492100
Benzo(a)pyrene	mg/kg	0.0338	0.0323	102.		47-118	4.51	20	WG492100
Benzo(b)fluoranthene	mg/kg	0.0342	0.0300	104.		47-118	13.1	29	WG492100
Benzo(g,h,i)perylene	mg/kg	0.0368	0.0362	111.		40-125	1.52	20	WG492100
Benzo(k)fluoranthene	mg/kg	0.0338	0.0347	102.		45-121	2.54	31	WG492100
Chrysene	mg/kg	0.0350	0.0334	106.		35-135	4.62	20	WG492100
Dibenz(a,h)anthracene	mg/kg	0.0357	0.0349	108.		41-124	2.41	20	WG492100
Fluoranthene	mg/kg	0.0351	0.0371	106.		50-114	5.57	20	WG492100
Fluorene	mg/kg	0.0341	0.0315	103.		49-109	7.93	19	WG492100
Indeno(1,2,3-cd)pyrene	mg/kg	0.0358	0.0352	108.		40-126	1.79	20	WG492100
Naphthalene	mg/kg	0.0316	0.0292	96.0		36-100	8.15	24	WG492100
Phenanthrene	mg/kg	0.0332	0.0311	100.		46-108	6.27	21	WG492100
Pyrene	mg/kg	0.0344	0.0298	104.		30-136	14.5	20	WG492100
2-Fluorobiphenyl				106.8		21-120			WG492100
Nitrobenzene-d5				123.6*		33-114			WG492100
p-Terphenyl-d14				120.9		18-142			WG492100

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.239	0	.05	95.6	32-137	L471362-02	WG491279
Ethylbenzene	mg/kg	0.224	0	.05	89.7	10-150	L471362-02	WG491279
Toluene	mg/kg	0.233	0	.05	93.4	20-142	L471362-02	WG491279
Total Xylene	mg/kg	0.701	0	.15	93.4	16-141	L471362-02	WG491279
a,a,a-Trifluorotoluene(FID)					97.83	59-128		WG491279
a,a,a-Trifluorotoluene(PID)					101.6	54-144		WG491279
TPH (GC/FID) Low Fraction	mg/kg	25.2	0	5.5	91.6	55-109	L471362-02	WG491279
a,a,a-Trifluorotoluene(FID)					93.28	59-128		WG491279
a,a,a-Trifluorotoluene(PID)					106.1	54-144		WG491279

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
1-Methylnaphthalene	mg/kg	0.0337	0	.033	102.	19-131	L471241-05	WG491255
2-Chloronaphthalene	mg/kg	0.0342	0	.033	104.	38-117	L471241-05	WG491255
2-Methylnaphthalene	mg/kg	0.0345	0	.033	104.	18-125	L471241-05	WG491255
Acenaphthene	mg/kg	0.0323	0	.033	98.0	31-120	L471241-05	WG491255
Acenaphthylene	mg/kg	0.0314	0	.033	95.2	34-116	L471241-05	WG491255
Anthracene	mg/kg	0.0316	0	.033	95.7	32-131	L471241-05	WG491255
Benzo(a)anthracene	mg/kg	0.0318	0	.033	96.4	32-131	L471241-05	WG491255
Benzo(a)pyrene	mg/kg	0.0311	0	.033	94.2	28-130	L471241-05	WG491255
Benzo(b)fluoranthene	mg/kg	0.0293	0	.033	88.7	37-130	L471241-05	WG491255
Benzo(g,h,i)perylene	mg/kg	0.0366	0	.033	111.	10-134	L471241-05	WG491255
Benzo(k)fluoranthene	mg/kg	0.0325	0	.033	98.5	31-129	L471241-05	WG491255
Chrysene	mg/kg	0.0319	0	.033	96.8	25-137	L471241-05	WG491255
Dibenz(a,h)anthracene	mg/kg	0.0341	0	.033	103.	20-134	L471241-05	WG491255
Fluoranthene	mg/kg	0.0286	0	.033	86.6	27-138	L471241-05	WG491255
Fluorene	mg/kg	0.0313	0	.033	94.9	26-136	L471241-05	WG491255
Indeno(1,2,3-cd)pyrene	mg/kg	0.0349	0	.033	106.	16-135	L471241-05	WG491255
Naphthalene	mg/kg	0.0330	0	.033	100.	22-121	L471241-05	WG491255
Phenanthrene	mg/kg	0.0341	0	.033	103.	27-133	L471241-05	WG491255
Pyrene	mg/kg	0.0376	0	.033	114.	22-133	L471241-05	WG491255
2-Fluorobiphenyl					119.7	21-120		WG491255
Nitrobenzene-d5					114.8*	33-114		WG491255
p-Terphenyl-d14					149.7*	18-142		WG491255
Arsenic	mg/kg	51.2	9.00	50	84.4	75-125	L471390-04	WG491238
Barium	mg/kg	182.	120.	50	124.	75-125	L471390-04	WG491238
Cadmium	mg/kg	41.0	0.390	50	81.2	75-125	L471390-04	WG491238
Chromium	mg/kg	56.7	13.0	50	87.4	75-125	L471390-04	WG491238
Copper	mg/kg	61.8	16.5	50	90.6	75-125	L471390-04	WG491238
Lead	mg/kg	69.1	20.0	50	98.2	75-125	L471390-04	WG491238
Nickel	mg/kg	61.0	18.3	50	85.4	75-125	L471390-04	WG491238
Selenium	mg/kg	44.6	4.40	50	80.4	75-125	L471390-04	WG491238
Silver	mg/kg	43.2	0	50	86.4	75-125	L471390-04	WG491238
Zinc	mg/kg	100.	58.0	50	84.0	75-125	L471390-04	WG491238
TPH (GC/FID) High Fraction	ppm	95.6	77.0	60	31.0*	50-150	L470771-03	WG491253
o-Terphenyl					84.43	50-150		WG491253
Mercury	mg/kg	0.251	0.0330	.25	87.2	70-130	L471200-04	WG491179
Chromium, Hexavalent	mg/kg	19.5	0	20	97.5	50-150	L471045-01	WG491136

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.234	0.239	93.5	32-137	2.19	39	L471362-02	WG491279
Ethylbenzene	mg/kg	0.222	0.224	89.0	10-150	0.740	44	L471362-02	WG491279
Toluene	mg/kg	0.230	0.233	91.8	20-142	1.67	42	L471362-02	WG491279
Total Xylene	mg/kg	0.691	0.701	92.1	16-141	1.39	46	L471362-02	WG491279
a,a,a-Trifluorotoluene(FID)				97.49	59-128				WG491279
a,a,a-Trifluorotoluene(PID)				101.1	54-144				WG491279
TPH (GC/FID) Low Fraction	mg/kg	23.8	25.2	86.5	55-109	5.70	20	L471362-02	WG491279
a,a,a-Trifluorotoluene(FID)				93.25	59-128				WG491279
a,a,a-Trifluorotoluene(PID)				106.0	54-144				WG491279

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Quality Assurance Report
Level II

Parachute, CO 81635

L471362

August 06, 2010

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
1-Methylnaphthalene	mg/kg	0.0221	0.0337	66.9	19-131	41.9*	30	L471241-05	WG491255
2-Chloronaphthalene	mg/kg	0.0211	0.0342	63.8	38-117	47.6*	26	L471241-05	WG491255
2-Methylnaphthalene	mg/kg	0.0224	0.0345	67.8	18-125	42.5*	29	L471241-05	WG491255
Acenaphthene	mg/kg	0.0214	0.0323	64.8	31-120	40.8*	30	L471241-05	WG491255
Acenaphthylene	mg/kg	0.0207	0.0314	62.6	34-116	41.3*	29	L471241-05	WG491255
Anthracene	mg/kg	0.0219	0.0316	66.5	32-131	36.1*	26	L471241-05	WG491255
Benzo(a)anthracene	mg/kg	0.0212	0.0318	64.3	32-131	39.9*	31	L471241-05	WG491255
Benzo(a)pyrene	mg/kg	0.0214	0.0311	64.7	28-130	37.1*	28	L471241-05	WG491255
Benzo(b)fluoranthene	mg/kg	0.0213	0.0293	64.4	37-130	31.7	41	L471241-05	WG491255
Benzo(g,h,i)perylene	mg/kg	0.0244	0.0366	73.8	10-134	40.2*	26	L471241-05	WG491255
Benzo(k)fluoranthene	mg/kg	0.0210	0.0325	63.7	31-129	42.9*	42	L471241-05	WG491255
Chrysene	mg/kg	0.0221	0.0319	67.1	25-137	36.3*	22	L471241-05	WG491255
Dibenz(a,h)anthracene	mg/kg	0.0227	0.0341	68.7	20-134	40.2*	25	L471241-05	WG491255
Fluoranthene	mg/kg	0.0229	0.0286	69.2	27-138	22.2	35	L471241-05	WG491255
Fluorene	mg/kg	0.0221	0.0313	66.9	26-136	34.6*	30	L471241-05	WG491255
Indeno(1,2,3-cd)pyrene	mg/kg	0.0229	0.0349	69.3	16-135	41.6*	26	L471241-05	WG491255
Naphthalene	mg/kg	0.0220	0.0330	66.6	22-121	40.1*	30	L471241-05	WG491255
Phenanthrene	mg/kg	0.0245	0.0341	74.3	27-133	32.7	36	L471241-05	WG491255
Pyrene	mg/kg	0.0229	0.0376	69.4	22-133	48.4*	33	L471241-05	WG491255
2-Fluorobiphenyl				79.53	21-120				WG491255
Nitrobenzene-d5				72.86	33-114				WG491255
p-Terphenyl-d14				90.34	18-142				WG491255
Arsenic	mg/kg	55.2	51.2	92.4	75-125	7.52	20	L471390-04	WG491238
Barium	mg/kg	192.	182.	144.*	75-125	5.35	20	L471390-04	WG491238
Cadmium	mg/kg	44.5	41.0	88.2	75-125	8.19	20	L471390-04	WG491238
Chromium	mg/kg	61.2	56.7	96.4	75-125	7.63	20	L471390-04	WG491238
Copper	mg/kg	66.5	61.8	100.	75-125	7.33	20	L471390-04	WG491238
Lead	mg/kg	69.0	69.1	98.0	75-125	0.145	20	L471390-04	WG491238
Nickel	mg/kg	65.9	61.0	95.2	75-125	7.72	20	L471390-04	WG491238
Selenium	mg/kg	47.3	44.6	85.8	75-125	5.88	20	L471390-04	WG491238
Silver	mg/kg	46.6	43.2	93.2	75-125	7.57	20	L471390-04	WG491238
Zinc	mg/kg	105.	100.	94.0	75-125	4.88	20	L471390-04	WG491238
TPH (GC/FID) High Fraction	ppm	84.9	95.6	13.1*	50-150	11.9	25	L470771-03	WG491253
o-Terphenyl				81.67	50-150				WG491253
Mercury	mg/kg	0.249	0.251	86.4	70-130	0.800	20	L471200-04	WG491179
Chromium, Hexavalent	mg/kg	18.3	19.5	91.5	50-150	6.35	20	L471045-01	WG491136

Batch number /Run number / Sample number cross reference

WG491279: R1306750: L471362-02 03 04
WG491255: R1307009: L471362-02 04
WG491238: R1307316: L471362-01 02 03 04
WG491253: R1309288: L471362-02 03 04
WG491179: R1310329: L471362-02 03 04
WG491167: R1310928: L471362-02 03 04
WG491330: R1311008: L471362-02 03 04
WG491136: R1311089: L471362-02 03 04
WG491466: R1312148: L471362-02 03 04
WG491636: R1313928: L471362-02 03 04
WG492100: R1318649: L471362-03

* * Calculations are performed prior to rounding of reported values .
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Report Summary

Tuesday August 24, 2010

Report Number: L474582

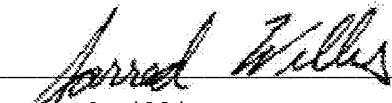
Samples Received: 08/19/10

Client Project: E34 Pit Closure

Description: E34 Pit Closure

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-SE BACK-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 11:15

ESC Sample # : L474582-01

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.7	1.0	mg/kg	6010B	08/20/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Fax (615) 758-5859

Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-E BACK-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 11:20

ESC Sample # : L474582-02

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.2	1.0	mg/kg	6010B	08/20/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-NE BACK-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 11:30

ESC Sample # : L474582-03

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.6	1.0	mg/kg	6010B	08/20/10	1

BDL - Below Detection Limit

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Chris Hines
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2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-N PIT-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 11:50

ESC Sample # : L474582-04

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	6.5	1.0	mg/kg	6010B	08/20/10	1
TPH (GC/FID) Low Fraction	20.	5.0	mg/kg	8015D/GRO	08/20/10	50
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	119.		% Rec.	602/8015	08/20/10	50
TPH (GC/FID) High Fraction	5300	200	mg/kg	3546/DRO	08/22/10	50
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/22/10	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Chris Hines
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2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-S PIT-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 12:10

ESC Sample # : L474582-05

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/20/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	119.		% Rec.	602/8015	08/20/10	5
TPH (GC/FID) High Fraction	2500	80.	mg/kg	3546/DRO	08/22/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/22/10	20

BDL - Below Detection Limit

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Chris Hines
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2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-SPOILS-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 12:25

ESC Sample # : L474582-06

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	6.6	1.0	mg/kg	6010B	08/20/10	1
TPH (GC/FID) Low Fraction	30.	5.0	mg/kg	8015D/GRO	08/20/10	50
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	119.		% Rec.	602/8015	08/20/10	50
TPH (GC/FID) High Fraction	3100	80.	mg/kg	3546/DRO	08/22/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/22/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-N CUTTINGS-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 12:45

ESC Sample # : L474582-07

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	5.3	2.0	mg/kg	3060A/7196A	08/20/10	1
Chromium, Trivalent	16.	2.0	mg/kg	Calc.	08/20/10	1
ORP	-66.		mV	2580	08/21/10	1
pH	12.		su	9045D	08/20/10	1
Sodium Adsorption Ratio	310			Calc.	08/23/10	10
Specific Conductance	1200		umhos/cm	9050AMod	08/21/10	1
Mercury	0.024	0.020	mg/kg	7471	08/20/10	1
Arsenic	8.2	1.0	mg/kg	6010B	08/20/10	1
Barium	4200	0.25	mg/kg	6010B	08/20/10	1
Cadmium	1.6	0.25	mg/kg	6010B	08/20/10	1
Chromium	21.	0.50	mg/kg	6010B	08/20/10	1
Copper	23.	1.0	mg/kg	6010B	08/20/10	1
Lead	27.	0.25	mg/kg	6010B	08/20/10	1
Nickel	38.	5.0	mg/kg	6010B	08/20/10	5
Selenium	BDL	1.0	mg/kg	6010B	08/20/10	1
Silver	BDL	0.50	mg/kg	6010B	08/20/10	1
Zinc	110	7.5	mg/kg	6010B	08/20/10	5
Benzene	BDL	0.0025	mg/kg	8021/8015	08/19/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/19/10	5
Ethylbenzene	0.0051	0.0025	mg/kg	8021/8015	08/19/10	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/19/10	5
TPH (GC/FID) Low Fraction	2.2	0.50	mg/kg	GRO	08/19/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	8021/8015	08/19/10	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	08/19/10	5
TPH (GC/FID) High Fraction	300	4.0	mg/kg	3546/DRO	08/20/10	1
Surrogate recovery(%)						
o-Terphenyl	67.4		% Rec.	3546/DRO	08/20/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Acenaphthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L474582-07 (PH) - 12.0@21.2c



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August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-N CUTTINGS-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 12:45

ESC Sample # : L474582-07

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Fluorene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Naphthalene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Phenanthrene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
1-Methylnaphthalene	0.13	0.12	mg/kg	8270C-SIM	08/23/10	20
2-Methylnaphthalene	0.26	0.12	mg/kg	8270C-SIM	08/23/10	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	08/23/10	20
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	08/23/10	20
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	08/23/10	20

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L474582-07 (PH) - 12.0@21.2c

REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-S CUTTINGS-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 13:05

ESC Sample # : L474582-08

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/20/10	1
Chromium, Trivalent	6.7	2.0	mg/kg	Calc.	08/20/10	1
ORP	-79.		mV	2580	08/21/10	1
pH	8.6		su	9045D	08/20/10	1
Sodium Adsorption Ratio	46.			Calc.	08/23/10	10
Specific Conductance	2900		umhos/cm	9050AMod	08/21/10	1
Mercury	BDL	0.020	mg/kg	7471	08/20/10	1
Arsenic	2.7	1.0	mg/kg	6010B	08/20/10	1
Barium	7000	0.25	mg/kg	6010B	08/20/10	1
Cadmium	BDL	0.25	mg/kg	6010B	08/20/10	1
Chromium	6.7	0.50	mg/kg	6010B	08/20/10	1
Copper	10.	1.0	mg/kg	6010B	08/20/10	1
Lead	7.2	0.25	mg/kg	6010B	08/20/10	1
Nickel	3.5	1.0	mg/kg	6010B	08/20/10	1
Selenium	BDL	1.0	mg/kg	6010B	08/20/10	1
Silver	BDL	0.50	mg/kg	6010B	08/20/10	1
Zinc	27.	1.5	mg/kg	6010B	08/20/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	08/19/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	08/19/10	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	08/19/10	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	08/19/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/19/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	8021/8015	08/19/10	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	08/19/10	5
TPH (GC/FID) High Fraction	65.	4.0	mg/kg	3546/DRO	08/20/10	1
Surrogate recovery(%)						
o-Terphenyl	86.3		% Rec.	3546/DRO	08/20/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Acenaphthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L474582-08 (PH) - 8.6@21.2c



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August 24, 2010

Date Received : August 19, 2010
Description : E34 Pit Closure
Sample ID : E34-S CUTTINGS-081710
Collected By : Blair Rollins
Collection Date : 08/17/10 13:05

ESC Sample # : L474582-08

Site ID :

Project # : E34 Pit Closure

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Fluorene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Naphthalene	0.21	0.12	mg/kg	8270C-SIM	08/23/10	20
Phenanthrene	0.16	0.12	mg/kg	8270C-SIM	08/23/10	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
1-Methylnaphthalene	0.18	0.12	mg/kg	8270C-SIM	08/23/10	20
2-Methylnaphthalene	0.33	0.12	mg/kg	8270C-SIM	08/23/10	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	08/23/10	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	08/23/10	20
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	08/23/10	20
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	08/23/10	20

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L474582-08 (PH) - 8.6@21.2c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L474582-04	WG494373	SAMP	o-Terphenyl	R1338829	J7
L474582-05	WG494373	SAMP	o-Terphenyl	R1338829	J7
L474582-06	WG494373	SAMP	o-Terphenyl	R1338829	J7
L474582-07	WG494473	SAMP	Nitrobenzene-d5	R1341788	J7
	WG494473	SAMP	2-Fluorobiphenyl	R1341788	J7
	WG494473	SAMP	p-Terphenyl-d14	R1341788	J7
L474582-08	WG494473	SAMP	Nitrobenzene-d5	R1341788	J7
	WG494473	SAMP	2-Fluorobiphenyl	R1341788	J7
	WG494473	SAMP	p-Terphenyl-d14	R1341788	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
08/24/10 at 16:05:00

TSR Signing Reports: 358
R4 - Rush: Three Day

Create p-keys for projects. Enter project name as Project Number and Project Name. Log all samples to separate L#s. See L471333 when COC says see attached list. PAHs = SV8270PAHSIM. BTEX = 8021.

Sample: L474582-01 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04
Sample: L474582-02 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04
Sample: L474582-03 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04
Sample: L474582-04 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04
Sample: L474582-05 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04
Sample: L474582-06 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04
Sample: L474582-07 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04
Sample: L474582-08 Account: ENCANACO Received: 08/19/10 09:00 Due Date: 08/24/10 00:00 RPT Date: 08/24/10 16:04



YOUR LAB OF CHOICE

EnCana Oil & Gas Inc. - CO
Chris Hines
2717 County Road 215, Suite 100
Parachute, CO 81635

Quality Assurance Report
Level II

L474582

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Est. 1970

August 24, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG494211	08/19/10 14:24
Ethylbenzene	< .0005	mg/kg			WG494211	08/19/10 14:24
Toluene	< .005	mg/kg			WG494211	08/19/10 14:24
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG494211	08/19/10 14:24
Total Xylene	< .0015	mg/kg			WG494211	08/19/10 14:24
a,a,a-Trifluorotoluene(FID)		% Rec.	103.3	59-128	WG494211	08/19/10 14:24
a,a,a-Trifluorotoluene(PID)		% Rec.	106.9	54-144	WG494211	08/19/10 14:24
TPH (GC/FID) High Fraction	< 4	ppm			WG494373	08/20/10 08:06
o-Terphenyl		% Rec.	96.56	50-150	WG494373	08/20/10 08:06
Arsenic	< 1	mg/kg			WG494363	08/20/10 11:22
Barium	< .25	mg/kg			WG494363	08/20/10 11:22
Cadmium	< .25	mg/kg			WG494363	08/20/10 11:22
Chromium	< .5	mg/kg			WG494363	08/20/10 11:22
Copper	< 1	mg/kg			WG494363	08/20/10 11:22
Lead	< .25	mg/kg			WG494363	08/20/10 11:22
Nickel	< 1	mg/kg			WG494363	08/20/10 11:22
Selenium	< 1	mg/kg			WG494363	08/20/10 11:22
Silver	< .5	mg/kg			WG494363	08/20/10 11:22
Zinc	< 1.5	mg/kg			WG494363	08/20/10 11:22
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG494250	08/19/10 15:02
a,a,a-Trifluorotoluene(FID)		% Rec.	117.4	59-128	WG494250	08/19/10 15:02
Mercury	< .02	mg/kg			WG494206	08/20/10 13:39
Chromium,Hexavalent	< 2	mg/kg			WG494417	08/20/10 16:21
Specific Conductance	0.750	umhos/cm			WG494637	08/21/10 10:39
1-Methylnaphthalene	< .006	mg/kg			WG494473	08/23/10 11:07
2-Chloronaphthalene	< .006	mg/kg			WG494473	08/23/10 11:07
2-Methylnaphthalene	< .006	mg/kg			WG494473	08/23/10 11:07
Acenaphthene	< .006	mg/kg			WG494473	08/23/10 11:07
Acenaphthylene	< .006	mg/kg			WG494473	08/23/10 11:07
Anthracene	< .006	mg/kg			WG494473	08/23/10 11:07
Benzo(a)anthracene	< .006	mg/kg			WG494473	08/23/10 11:07
Benzo(a)pyrene	< .006	mg/kg			WG494473	08/23/10 11:07
Benzo(b)fluoranthene	< .006	mg/kg			WG494473	08/23/10 11:07
Benzo(g,h,i)perylene	< .006	mg/kg			WG494473	08/23/10 11:07
Benzo(k)fluoranthene	< .006	mg/kg			WG494473	08/23/10 11:07
Chrysene	< .006	mg/kg			WG494473	08/23/10 11:07
Dibenz(a,h)anthracene	< .006	mg/kg			WG494473	08/23/10 11:07
Fluoranthene	< .006	mg/kg			WG494473	08/23/10 11:07
Fluorene	< .006	mg/kg			WG494473	08/23/10 11:07
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG494473	08/23/10 11:07
Naphthalene	< .006	mg/kg			WG494473	08/23/10 11:07
Phenanthrene	< .006	mg/kg			WG494473	08/23/10 11:07
Pyrene	< .006	mg/kg			WG494473	08/23/10 11:07
2-Fluorobiphenyl		% Rec.	79.56	21-120	WG494473	08/23/10 11:07
Nitrobenzene-d5		% Rec.	77.02	33-114	WG494473	08/23/10 11:07

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Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
p-Terphenyl-d14		% Rec.	99.45		18-142		08/23/10 11:07

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Arsenic	mg/kg	4.20	4.31	2.35	20	L474594-04	WG494363
Barium	mg/kg	120.	140.	12.1	20	L474594-04	WG494363
Cadmium	mg/kg	0.310	0.329	5.95	20	L474594-04	WG494363
Chromium	mg/kg	10.0	10.7	5.77	20	L474594-04	WG494363
Copper	mg/kg	8.60	8.88	2.74	20	L474594-04	WG494363
Lead	mg/kg	7.60	7.90	3.61	20	L474594-04	WG494363
Nickel	mg/kg	4.60	4.39	3.58	20	L474594-04	WG494363
Selenium	mg/kg	0	0	0	20	L474594-04	WG494363
Silver	mg/kg	0	0	0	20	L474594-04	WG494363
Zinc	mg/kg	34.0	34.9	4.09	20	L474594-04	WG494363
Mercury	mg/kg	0.0160	0.0150	6.45	20	L474414-10	WG494206
Chromium,Hexavalent	mg/kg	0	0	0	20	L474578-01	WG494417
Specific Conductance	umhos/cm	200.	200.	0.753	20	L474297-01	WG494637
Specific Conductance	umhos/cm	180.	180.	1.32	20	L474701-28	WG494637
ORP	mV	0	0	0	20	L474582-07	WG494729

Analyte	Units	Known Val	Control Sample Result	% Rec	Limit	Batch
Benzene	mg/kg	.05	0.0539	108.	76-113	WG494211
Ethylbenzene	mg/kg	.05	0.0539	108.	78-115	WG494211
Toluene	mg/kg	.05	0.0524	105.	76-114	WG494211
Total Xylene	mg/kg	.15	0.156	104.	81-118	WG494211
a,a,a-Trifluorotoluene(PID)				106.9	54-144	WG494211
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.53	101.	67-135	WG494211
a,a,a-Trifluorotoluene(FID)				108.0	59-128	WG494211
TPH (GC/FID) High Fraction	ppm	60	47.6	79.3	50-150	WG494373
o-Terphenyl				99.69	50-150	WG494373
Arsenic	mg/kg	192	163.	84.9	78.6-120.8	WG494363
Barium	mg/kg	420	370.	88.1	78.8-121.4	WG494363
Cadmium	mg/kg	70.1	58.5	83.5	78.5-121.5	WG494363
Chromium	mg/kg	168	147.	87.5	80.4-120.2	WG494363
Copper	mg/kg	122	115.	94.3	81.6-119.7	WG494363
Lead	mg/kg	113	99.9	88.4	77.3-122.1	WG494363
Nickel	mg/kg	74.1	58.7	79.2	78.8-121.2	WG494363
Selenium	mg/kg	176	145.	82.4	75.6-125.0	WG494363
Silver	mg/kg	115	101.	87.8	66-133.9	WG494363
Zinc	mg/kg	437	376.	86.0	78.5-121.7	WG494363
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.90	89.1	67-135	WG494250
a,a,a-Trifluorotoluene(FID)				77.10	59-128	WG494250

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Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Mercury	mg/kg	8.77	10.6	121.	71.6-127.7	WG494206
Chromium, Hexavalent	mg/kg	100	65.2	65.2	50-143	WG494417
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG494637
ORP	mV	229	220.	96.1	95.6-104.37	WG494729
1-Methylnaphthalene	mg/kg	.033	0.0255	77.2	41-110	WG494473
2-Chloronaphthalene	mg/kg	.033	0.0271	82.3	43-109	WG494473
2-Methylnaphthalene	mg/kg	.033	0.0267	81.0	38-104	WG494473
Acenaphthene	mg/kg	.033	0.0268	81.1	48-103	WG494473
Acenaphthylene	mg/kg	.033	0.0263	79.5	43-106	WG494473
Anthracene	mg/kg	.033	0.0296	89.6	51-110	WG494473
Benzo(a)anthracene	mg/kg	.033	0.0285	86.4	38-126	WG494473
Benzo(a)pyrene	mg/kg	.033	0.0275	83.5	47-118	WG494473
Benzo(b)fluoranthene	mg/kg	.033	0.0275	83.2	47-118	WG494473
Benzo(g,h,i)perylene	mg/kg	.033	0.0273	82.7	40-125	WG494473
Benzo(k)fluoranthene	mg/kg	.033	0.0287	87.1	45-121	WG494473
Chrysene	mg/kg	.033	0.0283	85.6	35-135	WG494473
Dibenz(a,h)anthracene	mg/kg	.033	0.0269	81.6	41-124	WG494473
Fluoranthene	mg/kg	.033	0.0302	91.5	50-114	WG494473
Fluorene	mg/kg	.033	0.0279	84.6	49-109	WG494473
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0273	82.8	40-126	WG494473
Naphthalene	mg/kg	.033	0.0230	69.8	36-100	WG494473
Phenanthrene	mg/kg	.033	0.0301	91.3	46-108	WG494473
Pyrene	mg/kg	.033	0.0277	83.9	30-136	WG494473
2-Fluorobiphenyl				84.37	21-120	WG494473
Nitrobenzene-d5				78.37	33-114	WG494473
p-Terphenyl-d14				98.95	18-142	WG494473

Analyte	Units	Laboratory Control Result	Ref	Sample Duplicate %Rec	Limit	RPD	Limit	Batch
Benzene	mg/kg	0.0550	0.0539	110.	76-113	2.06	20	WG494211
Ethylbenzene	mg/kg	0.0536	0.0539	107.	78-115	0.590	20	WG494211
Toluene	mg/kg	0.0528	0.0524	106.	76-114	0.750	20	WG494211
Total Xylene	mg/kg	0.155	0.156	103.	81-118	0.640	20	WG494211
a,a,a-Trifluorotoluene(PID)				107.5	54-144			WG494211
TPH (GC/FID) Low Fraction	mg/kg	6.15	5.53	112.	67-135	10.7	20	WG494211
a,a,a-Trifluorotoluene(FID)				107.6	59-128			WG494211
TPH (GC/FID) High Fraction	ppm	47.2	47.6	79.0	50-150	0.877	25	WG494373
o-Terphenyl				102.4	50-150			WG494373
TPH (GC/FID) Low Fraction	mg/kg	5.00	4.90	91.0	67-135	1.95	20	WG494250
a,a,a-Trifluorotoluene(FID)				76.64	59-128			WG494250
Chromium, Hexavalent	mg/kg	70.9	65.2	71.0	50-143	8.38	20	WG494417
Specific Conductance	umhos/	420.	420.	103.	85-115	0	20	WG494637

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
ORP	mV	220.	220.	96.0		95.6-104.37	0	20	WG494729
1-Methylnaphthalene	mg/kg	0.0249	0.0255	75.0		41-110	2.42	24	WG494473
2-Chloronaphthalene	mg/kg	0.0280	0.0271	85.0		43-109	3.19	21	WG494473
2-Methylnaphthalene	mg/kg	0.0255	0.0267	77.0		38-104	4.84	24	WG494473
Acenaphthene	mg/kg	0.0260	0.0268	79.0		48-103	2.81	20	WG494473
Acenaphthylene	mg/kg	0.0255	0.0263	77.0		43-106	2.73	20	WG494473
Anthracene	mg/kg	0.0256	0.0296	78.0		51-110	14.2	22	WG494473
Benzo(a)anthracene	mg/kg	0.0264	0.0285	80.0		38-126	7.63	20	WG494473
Benzo(a)pyrene	mg/kg	0.0257	0.0275	78.0		47-118	6.87	20	WG494473
Benzo(b)fluoranthene	mg/kg	0.0280	0.0275	85.0		47-118	1.74	29	WG494473
Benzo(g,h,i)perylene	mg/kg	0.0252	0.0273	76.0		40-125	8.10	20	WG494473
Benzo(k)fluoranthene	mg/kg	0.0261	0.0287	79.0		45-121	9.51	31	WG494473
Chrysene	mg/kg	0.0264	0.0283	80.0		35-135	6.80	20	WG494473
Dibenz(a,h)anthracene	mg/kg	0.0254	0.0269	77.0		41-124	5.95	20	WG494473
Fluoranthene	mg/kg	0.0287	0.0302	87.0		50-114	4.90	20	WG494473
Fluorene	mg/kg	0.0280	0.0279	85.0		49-109	0.327	19	WG494473
Indeno(1,2,3-cd)pyrene	mg/kg	0.0251	0.0273	76.0		40-126	8.69	20	WG494473
Naphthalene	mg/kg	0.0229	0.0230	69.0		36-100	0.536	24	WG494473
Phenanthrene	mg/kg	0.0283	0.0301	86.0		46-108	6.31	21	WG494473
Pyrene	mg/kg	0.0241	0.0277	73.0		30-136	13.8	20	WG494473
2-Fluorobiphenyl				81.75		21-120			WG494473
Nitrobenzene-d5				76.93		33-114			WG494473
p-Terphenyl-d14				89.13		18-142			WG494473

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.224	0.00110	.05	89.2	32-137	L474297-01	WG494211
Ethylbenzene	mg/kg	0.172	0	.05	68.9	10-150	L474297-01	WG494211
Toluene	mg/kg	0.175	0	.05	69.9	20-142	L474297-01	WG494211
Total Xylene	mg/kg	0.510	0.0200	.15	65.3	16-141	L474297-01	WG494211
a,a,a-Trifluorotoluene(PID)					106.2	54-144		WG494211
TPH (GC/FID) Low Fraction	mg/kg	25.5	5.40	5.5	73.1	55-109	L474297-01	WG494211
a,a,a-Trifluorotoluene(FID)					104.7	59-128		WG494211
Arsenic	mg/kg	47.7	4.31	50	86.8	75-125	L474594-04	WG494363
Barium	mg/kg	178.	140.	50	76.0	75-125	L474594-04	WG494363
Cadmium	mg/kg	43.2	0.329	50	85.7	75-125	L474594-04	WG494363
Chromium	mg/kg	56.1	10.7	50	90.8	75-125	L474594-04	WG494363
Copper	mg/kg	55.4	8.88	50	93.0	75-125	L474594-04	WG494363
Lead	mg/kg	51.7	7.90	50	87.6	75-125	L474594-04	WG494363
Nickel	mg/kg	50.5	4.39	50	92.2	75-125	L474594-04	WG494363
Selenium	mg/kg	39.9	0	50	79.8	75-125	L474594-04	WG494363
Silver	mg/kg	44.2	0	50	88.4	75-125	L474594-04	WG494363
Zinc	mg/kg	77.6	34.9	50	85.4	75-125	L474594-04	WG494363
TPH (GC/FID) Low Fraction	mg/kg	4.48	0.295	5.5	76.0	55-109	L474454-03	WG494250
a,a,a-Trifluorotoluene(FID)					81.92	59-128		WG494250
Mercury	mg/kg	0.258	0.0150	.25	97.2	70-130	L474414-10	WG494206
Chromium, Hexavalent	mg/kg	3.30	0	20	16.5*	50-150	L474578-02	WG494417

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.233	0.224	92.7	32-137	3.79	39	L474297-01	WG494211
Ethylbenzene	mg/kg	0.182	0.172	73.0	10-150	5.76	44	L474297-01	WG494211
Toluene	mg/kg	0.180	0.175	72.0	20-142	2.88	42	L474297-01	WG494211
Total Xylene	mg/kg	0.528	0.510	67.7	16-141	3.47	46	L474297-01	WG494211
a,a,a-Trifluorotoluene(PID)				107.0	54-144				WG494211
TPH (GC/FID) Low Fraction	mg/kg	24.0	25.5	67.6	55-109	6.14	20	L474297-01	WG494211
a,a,a-Trifluorotoluene(FID)				104.6	59-128				WG494211
Arsenic	mg/kg	46.3	47.7	84.0	75-125	2.98	20	L474594-04	WG494363
Barium	mg/kg	162.	178.	44.0*	75-125	9.41	20	L474594-04	WG494363
Cadmium	mg/kg	42.0	43.2	83.3	75-125	2.82	20	L474594-04	WG494363
Chromium	mg/kg	55.6	56.1	89.8	75-125	0.895	20	L474594-04	WG494363
Copper	mg/kg	55.1	55.4	92.4	75-125	0.543	20	L474594-04	WG494363
Lead	mg/kg	50.4	51.7	85.0	75-125	2.55	20	L474594-04	WG494363
Nickel	mg/kg	48.4	50.5	88.0	75-125	4.25	20	L474594-04	WG494363
Selenium	mg/kg	38.6	39.9	77.2	75-125	3.31	20	L474594-04	WG494363
Silver	mg/kg	43.9	44.2	87.8	75-125	0.681	20	L474594-04	WG494363
Zinc	mg/kg	76.1	77.6	82.4	75-125	1.95	20	L474594-04	WG494363
TPH (GC/FID) Low Fraction	mg/kg	4.66	4.48	79.4	55-109	4.02	20	L474454-03	WG494250
a,a,a-Trifluorotoluene(FID)				82.92	59-128				WG494250
Mercury	mg/kg	0.240	0.258	90.0	70-130	7.23	20	L474414-10	WG494206
Chromium,Hexavalent	mg/kg	1.02	3.30	5.10*	50-150	106.*	20	L474578-02	WG494417

Batch number /Run number / Sample number cross reference

WG494211: R1338388: L474582-07 08
WG494373: R1338829: L474582-04 05 06 07 08
WG494363: R1339409: L474582-01 02 03 04 06 07 08
WG494250: R1339648: L474582-04 05 06
WG494206: R1339868: L474582-07 08
WG494417: R1340248: L474582-07 08
WG494637: R1341252: L474582-07 08
WG494729: R1341448: L474582-07 08
WG494369: R1341464: L474582-07 08
WG494473: R1341788: L474582-07 08
WG494411: R1342309: L474582-07 08

* * Calculations are performed prior to rounding of reported values .

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Report Summary

Thursday September 16, 2010

Report Number: L478532b

Samples Received: 09/14/10

Client Project:

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

September 16, 2010

Date Received : September 14, 2010
Description :

Sample ID : E34-N PIT BOTTOM

Collected By : C. Jensen
Collection Date : 09/13/10 11:15

ESC Sample # : L478532-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/14/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	103.		% Rec.	602/8015	09/14/10	5
TPH (GC/FID) High Fraction	1400	80.	mg/kg	3546/DRO	09/15/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	09/15/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/16/10 09:19 Printed: 09/16/10 09:19



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REPORT OF ANALYSIS

Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

September 16, 2010

Date Received : September 14, 2010
Description :

Sample ID : E34-S PIT BOTTOM

Collected By : C. Jensen
Collection Date : 09/13/10 11:15

ESC Sample # : L478532-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/14/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	102.		% Rec.	602/8015	09/14/10	5
TPH (GC/FID) High Fraction	780	80.	mg/kg	3546/DRO	09/15/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	09/15/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L478532-03	WG498283	SAMP	o-Terphenyl	R1377348	J7
L478532-04	WG498283	SAMP	o-Terphenyl	R1377348	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/16/10 at 09:19:39

TSR Signing Reports: 358
R3 - Rush: Two Day

Sample: L478532-01 Account: ENCANACO Received: 09/14/10 09:00 Due Date: 09/16/10 00:00 RPT Date: 09/16/10 09:19
Sample: L478532-02 Account: ENCANACO Received: 09/14/10 09:00 Due Date: 09/16/10 00:00 RPT Date: 09/16/10 09:19
Sample: L478532-03 Account: ENCANACO Received: 09/14/10 09:00 Due Date: 09/16/10 00:00 RPT Date: 09/16/10 09:19
Sample: L478532-04 Account: ENCANACO Received: 09/14/10 09:00 Due Date: 09/16/10 00:00 RPT Date: 09/16/10 09:19
Sample: L478532-05 Account: ENCANACO Received: 09/14/10 09:00 Due Date: 09/16/10 00:00 RPT Date: 09/16/10 09:19



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EnCana Oil & Gas Inc. - CO
Chris Hines or Brad Kieding
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report
Level II

L478532

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September 16, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG498225	09/14/10 16:28
a,a,a-Trifluorotoluene(FID)		% Rec.	104.2	59-128	WG498225	09/14/10 16:28
TPH (GC/FID) High Fraction	< 4	ppm			WG498283	09/15/10 11:18
o-Terphenyl		% Rec.	58.76	50-150	WG498283	09/15/10 11:18
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG498364	09/15/10 12:48
a,a,a-Trifluorotoluene(FID)		% Rec.	101.4	59-128	WG498364	09/15/10 12:48

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.67	103.	67-135	WG498225
a,a,a-Trifluorotoluene(FID)				104.5	59-128	WG498225
TPH (GC/FID) High Fraction	ppm	60	48.2	80.3	50-150	WG498283
o-Terphenyl				69.39	50-150	WG498283
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.19	94.3	67-135	WG498364
a,a,a-Trifluorotoluene(FID)				108.8	59-128	WG498364

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.06	5.67	110.	67-135	6.66	20	WG498225
a,a,a-Trifluorotoluene(FID)				105.4	59-128			WG498225
TPH (GC/FID) High Fraction	ppm	47.0	48.2	78.0	50-150	2.60	25	WG498283
o-Terphenyl				69.67	50-150			WG498283
TPH (GC/FID) Low Fraction	mg/kg	5.58	5.19	101.	67-135	7.23	20	WG498364
a,a,a-Trifluorotoluene(FID)				110.7	59-128			WG498364

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	26.1	0	5.5	94.8	55-109	L478525-01	WG498225
a,a,a-Trifluorotoluene(FID)					101.7	59-128		WG498225
TPH (GC/FID) High Fraction	ppm	45.6	0	60	76.0	50-150	L478212-01	WG498283
o-Terphenyl					66.60	50-150		WG498283
TPH (GC/FID) Low Fraction	mg/kg	18.9	0	5.5	68.7	55-109	L478532-01	WG498364
a,a,a-Trifluorotoluene(FID)					103.7	59-128		WG498364

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	27.7	26.1	101.	55-109	5.95	20	L478525-01	WG498225
a,a,a-Trifluorotoluene(FID)				103.8	59-128				WG498225

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	45.5	45.6	75.9	50-150	0.188	25	L478212-01	WG498283
o-Terphenyl				67.69	50-150				WG498283
TPH (GC/FID) Low Fraction	mg/kg	18.5	18.9	67.4	55-109	1.89	20	L478532-01	WG498364
a,a,a-Trifluorotoluene(FID)				103.4	59-128				WG498364

Batch number /Run number / Sample number cross reference

WG498225: R1375668: L478532-02 03 04 05
WG498283: R1377348: L478532-01 02 03 04 05
WG498364: R1377408: L478532-01

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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September 16, 2010

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Level II

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Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



10/01/10

Technical Report for

ENCANA

E34 Spoils Pile

Accutest Job Number: T60783

Sampling Date: 09/28/10

Report to:

**EnCana
2717 Co. Rd. 215
Parachute, CO 81635
christopher.hines@encana.com**

ATTN: Chris Hines

Total number of pages in report: 26



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads 'Paul K Canevaro'.

**Paul Canevaro
Laboratory Director**

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-09C-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004)
OK (9103)

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Test results relate only to samples analyzed.

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Sample Summary

ENCANA

Job No: T60783

E34 Spoils Pile

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
T60783-1	09/28/10	10:50	09/29/10	SO	Soil	E34-SPOILS-092810

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA

Job No T60783

Site: E34 Spoils Pile

Report Date 10/1/2010 3:25:50 PM

1 Sample(s) were collected on 09/28/2010 and were received at Accutest on 09/29/2010 properly preserved, at 4.4 Deg. C and intact. These Samples received an Accutest job number of T60783. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method SW846 8015

Matrix SO	Batch ID: GHH87
------------------	------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T60778-1MS, T60778-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for TPH-GRO (C6-C10) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for TPH-GRO (C6-C10) are outside control limits. Probable cause due to matrix interference.

Extractables by GC By Method SW846 8015 M

Matrix SO	Batch ID: OP16217
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- T60783-1 for o-Terphenyl: Outside control limits due to dilution.

Metals By Method SW846 6010B

Matrix SO	Batch ID: MP12990
------------------	--------------------------

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T60278-1MS, T60278-1MSD, T60278-1DUP, T60278-1SDL were used as the QC samples for metals.
- RPD(s) for Duplicate for Arsenic are outside control limits for sample MP12990-D1. High RPD due to possible sample nonhomogeneity.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP12990-SD1. Probable cause due to sample homogeneity.

Wet Chemistry By Method SM 2540 G

Matrix SO	Batch ID: GN25733
------------------	--------------------------

- Sample(s) T60548-7DUP were used as the QC samples for Solids, Percent.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: E34-SPOILS-092810
Lab Sample ID: T60783-1
Matrix: SO - Soil
Method: SW846 8015
Project: E34 Spoils Pile

Date Sampled: 09/28/10
Date Received: 09/29/10
Percent Solids: 80.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0001714.D	1	10/01/10	LB	n/a	n/a	GHH87
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.64 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	14.9	6.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	110%		46-127%
98-08-8	aaa-Trifluorotoluene	97%		44-120%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: E34-SPOILS-092810**Lab Sample ID:** T60783-1**Date Sampled:** 09/28/10**Matrix:** SO - Soil**Date Received:** 09/29/10**Method:** SW846 8015 M SW846 3550B**Percent Solids:** 80.3**Project:** E34 Spoils Pile

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7186.D	10	09/29/10	EM	09/29/10	OP16217	GJF66
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C10-C28)	2480	41	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	0% ^a		33-115%	

(a) Outside control limits due to dilution.

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	E34-SPOILS-092810		
Lab Sample ID:	T60783-1	Date Sampled:	09/28/10
Matrix:	SO - Soil	Date Received:	09/29/10
		Percent Solids:	80.3
Project:	E34 Spoils Pile		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.1	0.70	mg/kg	1	09/30/10	09/30/10 TW	SW846 6010B ¹	SW846 3050B ²

(1) Instrument QC Batch: MA5135
(2) Prep QC Batch: MP12990

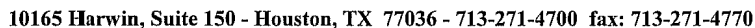
RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # T60783

T60783: Chain of Custody
Page 1 of 3

SAMPLE INSPECTION FORM

Accutest Job Number: T60783 Client: Sacoma Oil & Gas (USA) INC. Date/Time Received: 9-29-10 9:15
 # of Coolers Received: 1 Thermometer #: I 2 GUNNY Temperature Adjustment Factor: 0.0
 Cooler Temperatures (initial/adjusted): #1: 4.4 °C #2: _____ #3: _____ #4: _____ #5: _____
 #6: _____ #7: _____ #8: _____ #9: _____ #10: _____ #11: _____ #12: _____
 Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other

COOLER INFORMATION

- ☐ Custody seal missing or not intact
- ☐ Temperature criteria not met
- ☐ Wet ice received in cooler

CHAIN OF CUSTODY

- ☐ Chain of Custody not received
- ☐ Sample D/T unclear or missing
- ☐ Analyses unclear or missing
- ☐ COC not properly executed

SAMPLE INFORMATION

- ☐ Sample containers received broken
- ☐ VOC vials have headspace
- ☐ Sample labels missing or illegible
- ☐ ID on COC does not match label(s)
- ☐ D/T on COC does not match label(s)
- ☐ Sample/Bottles rcvd but no analysis on COC
- ☐ Sample listed on COC, but not received
- ☐ Bottles missing for requested analysis
- ☐ Insufficient volume for analysis
- ☐ Sample received improperly preserved

TRIP BLANK INFORMATION

- ☐ Trip Blank on COC but not received
- ☐ Trip Blank received but not on COC
- ☐ Trip Blank not intact
- ☐ Received Water Trip Blank
- ☐ Received Soil TB

Number of Encores? _____
 Number of 5035 kits? _____
 Number of lab-filtered metals? _____

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: [Signature] 9-29-10
 INFORMATION AND SAMPLE LABELING VERIFIED BY: [Signature] 9/29/10

CORRECTIVE ACTIONS

Client Representative Notified: _____ Date: _____
 By Accutest Representative: _____ Via: Phone Email
 Client Instructions: _____

\\nwalker\for\samplemanagement SM023 Revised 8/11/10

T60783: Chain of Custody

Page 2 of 3

SAMPLE RECEIPT LOG

JOB #: 760783 DATE/TIME RECEIVED: 9.29-10 915

CLIENT: Esso Oil & Gas (USA) Inc. INITIALS: EC

[illegible]

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

Rev 8/13/01 ewp

T60783: Chain of Custody

Page 3 of 3

GC Volatiles

5

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T60783
Account: ENCACOP ENCANA
Project: E34 Spoils Pile

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH87-MB	HH0001709.D		10/01/10	LB	n/a	n/a	GHH87

The QC reported here applies to the following samples:

Method: SW846 8015

T60783-1

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	90% 46-127%
98-08-8	aaa-Trifluorotoluene	99% 44-120%

Blank Spike Summary

Job Number: T60783
Account: ENCACOP ENCANA
Project: E34 Spoils Pile

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH87-BS	HH0001707.D		10/01/10	LB	n/a	n/a	GHH87

The QC reported here applies to the following samples: Method: SW846 8015

T60783-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.394	99	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	92%	46-127%
98-08-8	aaa-Trifluorotoluene	104%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T60783
Account: ENCACOP ENCANA
Project: E34 Spoils Pile

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T60778-1MS	HH0001719.D		10/01/10	LB	n/a	n/a	GHH87
T60778-1MSD	HH0001720.D		10/01/10	LB	n/a	n/a	GHH87
T60778-1	HH0001710.D		10/01/10	LB	n/a	n/a	GHH87

The QC reported here applies to the following samples:

Method: SW846 8015

T60783-1

CAS No.	Compound	T60778-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	18.7		25.6	50.4	124*	50.7	125*	1	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T60778-1	Limits
460-00-4	4-Bromofluorobenzene	122%	117%	111%	46-127%
98-08-8	aaa-Trifluorotoluene	106%	105%	99%	44-120%

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: T60783

Account: ENCACOP ENCANA

Project: E34 Spoils Pile

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16217-MB	JJ7165.D	1	09/29/10	EM	09/29/10	OP16217	GJB66

The QC reported here applies to the following samples:

Method: SW846 8015 M

T60783-1

CAS No.	Compound	Result	RL	Units	Q
	TPH (C10-C28)	ND	3.3	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	94% 33-115%

Blank Spike/Blank Spike Duplicate Summary

Page 1 of 1

Job Number: T60783

Account: ENCACOP ENCANA

Project: E34 Spoils Pile

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16217-BS	JJ7166.D	1	09/29/10	EM	09/29/10	OP16217	GJF66
OP16217-BSD	JJ7167.D	1	09/29/10	EM	09/29/10	OP16217	GJB66

The QC reported here applies to the following samples:

Method: SW846 8015 M

T60783-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	BSD mg/kg	BSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	33.1	27.0	82	27.2	82	1	45-107/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	67%	101%	33-115%

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T60783
Account: ENCACOP - ENCANA
Project: E34 Spoils Pile

QC Batch ID: MP12990
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 09/30/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.41	.73		
Antimony	0.50	.05	.085		
Arsenic	0.50	.085	.085	-0.018	<0.50
Barium	10	.049	.069		
Beryllium	0.25	.0028	.0055		
Boron	5.0	.07	.17		
Cadmium	0.25	.0055	.014		
Calcium	250	.37	1.3		
Chromium	0.50	.012	.023		
Cobalt	2.5	.0075	.03		
Copper	1.3	.056	.056		
Iron	5.0	.057	1.1		
Lead	0.50	.05	.05		
Lithium	15	.1			
Magnesium	250	.38	1.3		
Manganese	0.75	.0027	.037		
Molybdenum	0.50	.02	.025		
Nickel	2.0	.035	.057		
Potassium	250	2	10		
Selenium	0.50	.077	.14		
Silver	0.50	.058	.058		
Sodium	250	.46	1.6		
Strontium	1.0	.0031	.059		
Thallium	0.50	.034	.04		
Tin	1.0	.035	.035		
Titanium	1.0	.015	.029		
Vanadium	2.5	.015	.034		
Zinc	1.0	.026	.084		

Associated samples MP12990: T60783-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T60783
Account: ENCACOP - ENCANA
Project: E34 Spoils Pile

QC Batch ID: MP12990
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 09/30/10

09/30/10

Metal	T60278-1 Original	DUP	RPD	QC Limits	T60278-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	7.9	14.4	58.3*(a)	0-20	7.9	40.3	27.3	118.6	80-120
Barium	anr								
Beryllium									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron									
Lead	anr								
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel	anr								
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	anr								

Associated samples MP12990: T60783-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T60783
Account: ENCACOP - ENCANA
Project: E34 Spoils Pile

QC Batch ID: MP12990
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 09/30/10

Metal	T60278-1 Original	MSD	SpikeLot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	7.9	33.3	27.2	93.4	19.0	20
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	anr					

Associated samples MP12990: T60783-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T60783
Account: ENCACOP - ENCANA
Project: E34 Spoils Pile

QC Batch ID: MP12990
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 09/30/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	138	158	87.3	82-118
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP12990: T60783-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T60783
Account: ENCACOP - ENCANA
Project: E34 Spoils Pile

QC Batch ID: MP12990
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/30/10

Metal	T60278-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	118	142	20.3*(a)	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP12990: T60783-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.



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Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

Report Summary

Monday November 01, 2010

Report Number: L486212

Samples Received: 10/28/10

Client Project: E34

Description: E34

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

November 01, 2010

Date Received : October 28, 2010
Description : E34

Sample ID : E34-SPOIL-102710

Collected By : Jake Harris
Collection Date : 10/27/10 11:13

ESC Sample # : L486212-01

Site ID :

Project # : E34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	10/30/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	89.7		% Rec.	602/8015	10/30/10	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	11/01/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	11/01/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 11/01/10 17:30 Printed: 11/01/10 17:30



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REPORT OF ANALYSIS

Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

November 01, 2010

Date Received : October 28, 2010
Description : E34

Sample ID : E34-SP-102710

Collected By : Jake Harris
Collection Date : 10/27/10 12:00

ESC Sample # : L486212-02

Site ID :

Project # : E34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	10/30/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.1		% Rec.	602/8015	10/30/10	5
TPH (GC/FID) High Fraction	160	4.0	mg/kg	3546/DRO	10/30/10	1
Surrogate recovery(%) o-Terphenyl	52.4		% Rec.	3546/DRO	10/30/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L486212-01	WG505874	SAMP	TPH (GC/FID) Low Fraction	R1449629	J6
	WG505490	SAMP	o-Terphenyl	R1451511	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
11/01/10 at 17:30:41

TSR Signing Reports: 358
R3 - Rush: Two Day

Log all samples beginning with different sample numbers to separate reports. Ex.- M34 N PIT and M34 S PIT go on one L#, but M34 S PIT and E34 S PIT go on separate L #s. Log project # as project name.

Sample: L486212-01 Account: ENCANACO Received: 10/28/10 09:00 Due Date: 11/01/10 00:00 RPT Date: 11/01/10 17:30

Sample: L486212-02 Account: ENCANACO Received: 10/28/10 09:00 Due Date: 11/01/10 00:00 RPT Date: 11/01/10 17:30



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Quality Assurance Report
Level II

L486212

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG505874	10/30/10 08:38
a,a,a-Trifluorotoluene(FID)		% Rec.	91.69	59-128	WG505874	10/30/10 08:38
TPH (GC/FID) High Fraction	< 4	ppm			WG505490	10/30/10 13:56
o-Terphenyl		% Rec.	67.28	50-150	WG505490	10/30/10 13:56

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.38	97.8	67-135	WG505874
a,a,a-Trifluorotoluene(FID)				103.9	59-128	WG505874
TPH (GC/FID) High Fraction	ppm	60	46.0	76.6	50-150	WG505490
o-Terphenyl				65.38	50-150	WG505490

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.38	5.38	98.0	67-135	0.0200	20	WG505874
a,a,a-Trifluorotoluene(FID)				104.2	59-128			WG505874
TPH (GC/FID) High Fraction	ppm	48.4	46.0	81.0	50-150	5.20	25	WG505490
o-Terphenyl				65.68	50-150			WG505490

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	12.9	0	5.5	46.9*	55-109	L486212-01	WG505874
a,a,a-Trifluorotoluene(FID)					93.70	59-128		WG505874

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	11.1	12.9	40.3*	55-109	15.1	20	L486212-01	WG505874
a,a,a-Trifluorotoluene(FID)				93.64	59-128				WG505874

Batch number /Run number / Sample number cross reference

WG505874: R1449629: L486212-01 02
WG505490: R1451511: L486212-01 02

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report
Level II

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November 01, 2010

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.