



H34 496 (Location: 335941)
Pit (Facility: 414552)
Encana Oil & Gas (USA) Inc. (Operator: 100185)

REPORT OF WORK COMPLETED

- Form 27 (Doc: 2522025) (Rem: 5352)
- Form 19 (Spill Doc: Unissued – submitted 09/28/2010)

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. Field observations noted staining and hydrocarbon odor in the north cell of the pit, and sample results confirmed those observations with concentrations/levels in the north pit cell above the allowable limits in COGCC Table 910-1 for TPH, SAR, and arsenic. The south pit cell sample was in compliance with Table 910-1. A Form 19 was submitted to document discovery of impacted soils beneath the liner.

Following identification of below-liner impacts, two feet (2') from the bottom and side walls of the north pit cell was excavated. Excavated material was blended and stockpiled on location for characterization. The excavated pit bottom and spoil pile were characterized with composite samples and analyzed for the previously identified TPH impacts. After the stockpile and pit bottom sample results identified continued TPH impacts, additional excavation was undertaken. This process was repeated four (4) times during 2010, before the location became unworkable due to winter conditions.

In June 2011, the north pit excavation was characterized using discrete grab samples to provide more detailed information on the location of soil impacts within the excavation. Following receipt of lab results, a final round of excavation and stockpiling was undertaken in an attempt to remove impacted soil. Excavation efforts were ceased when competent bedrock was encountered, and when lateral clearance was achieved or stopped due to the presence of bedrock. A final round of grab samples was collected within from the excavation and soil stockpile.

The stockpiled material from the pit excavation was characterized with a composite sample and laid out to support bioremediation of hydrocarbon impacts. The initial characterization sample was above the allowable concentration, so the material was turned, and a follow up sample was collected.

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

NOTIFICATION OF COMPLETION

The final round of samples collected in the pit bottom was above the allowable limit in Table 910-1, but the presence of competent bedrock prevented further excavation of impacted material. Encana requests that the COGCC consider the following physical and temporal conditions associated with this pit closure project as an alternative to the allowable limit for TPH identified in Table 910-1:

- Final samples were collected from unrecoverable material above the bedrock. These samples are not representative of the bedrock or the geology beneath the bedrock, and only demonstrate that removed material had hydrocarbon impacts.
- Encana has maintained an extensive water quality monitoring program in the North Parachute Properties for nearly a decade, which includes quarterly sampling at area springs and streams.
 - During discussions about this project in 2010 a water quality monitoring plan was prepared and submitted by Encana and approved by the COGCC. Encana has nearly 4 years of sampling data since the closure of this pit without any water quality problems identified. See attached water quality monitoring plan from 2010 with map of sampling locations.

Initial arsenic concentrations in the pit bottoms are 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.

After bedrock refusal, and agreement on a water quality monitoring plan, the north pit spoil stockpile was placed in the pit excavation.

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. Water Quality Monitoring Program (approved in 2010)
4. Laboratory Reports

encana

North Parachute Mountain

Garfield County, Colorado

0 3,200 6,400 Feet

1 inch = 3,000 feet



T004S-R097W

T005S-R097W

T004S-R096W

T005S-R096W

T004S-R095W

T005S-R095W

H34 Well Pad and Pit
Location ID: 335941
Facility IDs: 414552
Rem #: 5352

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)

Location	Sample Date:	Sample Matrix	Matrix Notes	Allowable Concentration -->		Organic Compounds in Soil (mg/kg (ppm))																	Inorganics in Soil			Metals in Soil (mg/kg (ppm))															
				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			
H34	07/26/10	Pit	N pit bottom	3067	67	3000	0.16	0.31	0.1	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.46	BDL	BDL	BDL	2.4	31	8	5.2	1500	0.64	37	BDL	18	16	BDL	9.8	8.6	BDL	51		
H34	07/26/10	Pit	S pit bottom	300	BDL	300	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.048	BDL	BDL	BDL	1.3	20	8.1	BDL	310	0.48	40	BDL	16	15	BDL	22	8.6	BDL	44		
H34	08/31/10	Pit	N pit bottom	4703.6	3.6	4700																																			
H34	08/31/10	Pit	N pit spoil	2000.7	0.7	2000																																			
H34	09/13/10	Pit	N pit bottom	3000	BDL	3000																																			
H34	09/28/10	Pit	pit spoil	1386.24	6.24	1380																																			
H34	10/27/10	Pit	N pit bottom	1604.1	4.1	1600																																			
H34	10/27/10	Pit	pit spoil	440.69	0.69	440																																			
H34	11/08/10	Pit	N pit bottom	1306.1	6.1	1300																																			
H34	11/08/10	Pit	N pit bottom	1180	ND	1180																																			
H34	11/08/10	Pit	N pit spoil	410	BDL	410																																			
H34	11/08/10	Pit	N pit spoil	851	ND	851																																			
H34	06/10/11	Pit	NE (H34-PIT-2-061011)	1900	BDL	1900																																			
H34	06/10/11	Pit	S middle low point (H34-PIT)	3200.56	0.56	3200																																			
H34	06/10/11	Pit	SE middle low point (H34-PIT)	840.52	0.52	840																																			
H34	06/14/11	Pit	grab #1	980	BDL	980																																			
H34	06/14/11	Pit	grab #2	3200.8	0.8	3200																																			
H34	06/14/11	Pit	grab #3	4819	19	4800																																			
H34	06/14/11	Pit	grab #4	3005.7	5.7	3000																																			
H34	06/14/11	Pit	grab #5	330	BDL	330																																			
H34	07/06/11	Pit	pitX - east wall	0.9	0.9	BDL																																			
H34	07/06/11	Pit	pitX - pit bottom center	5301.3	1.3	5300																																			
H34	07/06/11	Pit	pitX - pit bottom low point	3900	BDL	3900																																			
H34	07/06/11	Pit	pitX - pit bottom north	7715	15	7700																																			
H34	07/06/11	Pit	pitX spoil	540	BDL	540																																			
H34	08/08/11	Pit	PitX spoil	230	BDL	230																																			



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Est. 1970

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

Report Summary

Tuesday September 07, 2010

Report Number: L476576

Samples Received: 09/01/10

Client Project: H34 PIT CLOSURE

Description: H34 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

September 07, 2010

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

Date Received : September 01, 2010
Description : H34 Pit Closure
Sample ID : H34-N PIT BOTTOM-083110
Collected By : Blair Rollins
Collection Date : 08/31/10 12:15

ESC Sample # : L476576-01
Site ID :
Project # : H34 PIT CLOSURE

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

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: 09/07/10 17:03 Printed: 09/07/10 17:18



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REPORT OF ANALYSIS

September 07, 2010

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

Date Received : September 01, 2010
Description : H34 Pit Closure
Sample ID : H34-N SPOIL-083110
Collected By : Blair Rollins
Collection Date : 08/31/10 12:30

ESC Sample # : L476576-02
Site ID :
Project # : H34 PIT CLOSURE

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

September 07, 2010

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

ESC Sample # : L476576-03

Date Received : September 01, 2010
 Description : H34 Pit Closure
 Sample ID : H34-CUTTINGS-083110

Site ID :

Collected By : Blair Rollins
 Collection Date : 08/31/10 12:45

Project # : H34 PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	09/03/10	1
Chromium,Trivalent	16.	2.0	mg/kg	Calc.	09/02/10	1
ORP	71.		mV	2580	09/04/10	1
pH	9.0		su	9045D	09/04/10	1
Sodium Adsorption Ratio	16.			Calc.	09/03/10	5
Specific Conductance	4100		umhos/cm	9050AMod	09/02/10	1
Mercury	0.023	0.020	mg/kg	7471	09/02/10	1
Arsenic	5.2	1.0	mg/kg	6010B	09/02/10	1
Barium	7500	1.2	mg/kg	6010B	09/02/10	5
Cadmium	1.2	0.25	mg/kg	6010B	09/02/10	1
Chromium	16.	0.50	mg/kg	6010B	09/02/10	1
Copper	18.	1.0	mg/kg	6010B	09/02/10	1
Lead	14.	0.25	mg/kg	6010B	09/02/10	1
Nickel	3.4	1.0	mg/kg	6010B	09/02/10	1
Selenium	BDL	1.0	mg/kg	6010B	09/02/10	1
Silver	BDL	0.50	mg/kg	6010B	09/02/10	1
Zinc	50.	1.5	mg/kg	6010B	09/02/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	09/02/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	09/02/10	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	09/02/10	5
Total Xylene	0.054	0.0075	mg/kg	8021/8015	09/02/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.1		% Rec.	8021/8015	09/02/10	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	09/02/10	5
TPH (GC/FID) High Fraction	55.	4.0	mg/kg	3546/DRO	09/07/10	1
Surrogate recovery(%)						
o-Terphenyl	58.4		% Rec.	3546/DRO	09/07/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Acenaphthene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Acenaphthylene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Benzo(a)anthracene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Benzo(a)pyrene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 L476576-03 (PH) - 9.0@20.2c



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REPORT OF ANALYSIS

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2717 County Road 215, Suite 100
Parachute, CO 81635

September 07, 2010

Date Received : September 01, 2010
Description : H34 Pit Closure
Sample ID : H34-CUTTINGS-083110
Collected By : Blair Rollins
Collection Date : 08/31/10 12:45

ESC Sample # : L476576-03

Site ID :

Project # : H34 PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Benzo(g,h,i)perylene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Benzo(k)fluoranthene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Chrysene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Dibenz(a,h)anthracene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Fluoranthene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Fluorene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Indeno(1,2,3-cd)pyrene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Naphthalene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Phenanthrene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Pyrene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
1-Methylnaphthalene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
2-Methylnaphthalene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
2-Chloronaphthalene	BDL	2.4	mg/kg	8270C-SIM	09/03/10	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	09/03/10	20
2-Fluorobiphenyl	0.00		% Rec.	8270C-SIM	09/03/10	20
p-Terphenyl-d14	0.00		% Rec.	8270C-SIM	09/03/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/07/10 17:03 Printed: 09/07/10 17:18
L476576-03 (PH) - 9.0@20.2c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L476576-01	WG496592	SAMP	o-Terphenyl	R1362768	J7
L476576-02	WG496592	SAMP	o-Terphenyl	R1362768	J7
L476576-03	WG496510	SAMP	Barium	R1361930	V
	WG496510	SAMP	Nickel	R1361930	P1
	WG496562	SAMP	Anthracene	R1363309	O
	WG496562	SAMP	Acenaphthene	R1363309	O
	WG496562	SAMP	Acenaphthylene	R1363309	O
	WG496562	SAMP	Benzo(a)anthracene	R1363309	O
	WG496562	SAMP	Benzo(a)pyrene	R1363309	O
	WG496562	SAMP	Benzo(b)fluoranthene	R1363309	O
	WG496562	SAMP	Benzo(g,h,i)perylene	R1363309	O
	WG496562	SAMP	Benzo(k)fluoranthene	R1363309	O
	WG496562	SAMP	Chrysene	R1363309	O
	WG496562	SAMP	Dibenz(a,h)anthracene	R1363309	O
	WG496562	SAMP	Fluoranthene	R1363309	O
	WG496562	SAMP	Fluorene	R1363309	O
	WG496562	SAMP	Indeno(1,2,3-cd)pyrene	R1363309	O
	WG496562	SAMP	Naphthalene	R1363309	O
	WG496562	SAMP	Phenanthrene	R1363309	O
	WG496562	SAMP	Pyrene	R1363309	O
	WG496562	SAMP	1-Methylnaphthalene	R1363309	O
	WG496562	SAMP	2-Methylnaphthalene	R1363309	O
	WG496562	SAMP	2-Chloronaphthalene	R1363309	O
	WG496562	SAMP	Nitrobenzene-d5	R1363309	J7
	WG496562	SAMP	2-Fluorobiphenyl	R1363309	J7
	WG496562	SAMP	p-Terphenyl-d14	R1363309	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

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
09/07/10 at 17:18:48

TSR Signing Reports: 358
R4 - Rush: Three Day

Sample: L476576-01 Account: ENCANACO Received: 09/01/10 09:00 Due Date: 09/07/10 00:00 RPT Date: 09/07/10 17:03

Sample: L476576-02 Account: ENCANACO Received: 09/01/10 09:00 Due Date: 09/07/10 00:00 RPT Date: 09/07/10 17:03

Sample: L476576-03 Account: ENCANACO Received: 09/01/10 09:00 Due Date: 09/07/10 00:00 RPT Date: 09/07/10 17:03



YOUR LAB OF CHOICE

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

Parachute, CO 81635

Quality Assurance Report
Level II

L476576

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Tax I.D. 62-0814289

Est. 1970

September 07, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG496395	09/01/10 11:07
a,a,a-Trifluorotoluene(FID)		% Rec.	96.88	59-128	WG496395	09/01/10 11:07
Benzene	< .0005	mg/kg			WG496403	09/01/10 16:38
Ethylbenzene	< .0005	mg/kg			WG496403	09/01/10 16:38
Toluene	< .005	mg/kg			WG496403	09/01/10 16:38
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG496403	09/01/10 16:38
Total Xylene	< .0015	mg/kg			WG496403	09/01/10 16:38
a,a,a-Trifluorotoluene(FID)		% Rec.	97.20	59-128	WG496403	09/01/10 16:38
a,a,a-Trifluorotoluene(PID)		% Rec.	101.8	54-144	WG496403	09/01/10 16:38
Mercury	< .02	mg/kg			WG496358	09/02/10 10:01
Specific Conductance	1.20	umhos/cm			WG496556	09/02/10 09:05
Arsenic	< 1	mg/kg			WG496510	09/03/10 08:31
Barium	< .25	mg/kg			WG496510	09/03/10 08:31
Cadmium	< .25	mg/kg			WG496510	09/03/10 08:31
Chromium	< .5	mg/kg			WG496510	09/03/10 08:31
Copper	< 1	mg/kg			WG496510	09/03/10 08:31
Lead	< .25	mg/kg			WG496510	09/03/10 08:31
Nickel	< 1	mg/kg			WG496510	09/03/10 08:31
Selenium	< 1	mg/kg			WG496510	09/03/10 08:31
Silver	< .5	mg/kg			WG496510	09/03/10 08:31
Zinc	< 1.5	mg/kg			WG496510	09/03/10 08:31
Chromium,Hexavalent	< 2	mg/kg			WG496496	09/03/10 12:54
TPH (GC/FID) High Fraction	< 4	ppm			WG496592	09/03/10 11:01
o-Terphenyl		% Rec.	105.8	50-150	WG496592	09/03/10 11:01
1-Methylnaphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
2-Chloronaphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
2-Methylnaphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
Acenaphthene	< .006	mg/kg			WG496562	09/03/10 06:45
Acenaphthylene	< .006	mg/kg			WG496562	09/03/10 06:45
Anthracene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(a)anthracene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(a)pyrene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(b)fluoranthene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(g,h,i)perylene	< .006	mg/kg			WG496562	09/03/10 06:45
Benzo(k)fluoranthene	< .006	mg/kg			WG496562	09/03/10 06:45
Chrysene	< .006	mg/kg			WG496562	09/03/10 06:45
Dibenz(a,h)anthracene	< .006	mg/kg			WG496562	09/03/10 06:45
Fluoranthene	< .006	mg/kg			WG496562	09/03/10 06:45
Fluorene	< .006	mg/kg			WG496562	09/03/10 06:45
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG496562	09/03/10 06:45
Naphthalene	< .006	mg/kg			WG496562	09/03/10 06:45
Phenanthrene	< .006	mg/kg			WG496562	09/03/10 06:45
Pyrene	< .006	mg/kg			WG496562	09/03/10 06:45
2-Fluorobiphenyl		% Rec.	76.65	21-120	WG496562	09/03/10 06:45
Nitrobenzene-d5		% Rec.	68.81	33-114	WG496562	09/03/10 06:45

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
p-Terphenyl-d14		% Rec.	94.48	18-142		09/03/10 06:45
pH	6.00	su			WG496907	09/04/10 14:07

Analyte	Units	Duplicate			Limit	Ref Samp	Batch
		Result	Duplicate	RPD			
Mercury	mg/kg	0.130	0.121	4.05	20	L475888-11	WG496358
Specific Conductance	umhos/cm	2700	2600	5.06	20	L476142-01	WG496556
Specific Conductance	umhos/cm	95.0	110.	14.5	20	L476696-01	WG496556
Arsenic	mg/kg	5.00	5.20	3.32	20	L476576-03	WG496510
Cadmium	mg/kg	1.20	1.20	4.26	20	L476576-03	WG496510
Chromium	mg/kg	16.0	16.0	2.53	20	L476576-03	WG496510
Copper	mg/kg	17.0	18.0	3.97	20	L476576-03	WG496510
Lead	mg/kg	12.0	14.0	12.9	20	L476576-03	WG496510
Nickel	mg/kg	0	3.40	NA	20	L476576-03	WG496510
Selenium	mg/kg	0	0	0	20	L476576-03	WG496510
Silver	mg/kg	0	0	0	20	L476576-03	WG496510
Zinc	mg/kg	48.0	50.0	5.13	20	L476576-03	WG496510
Chromium,Hexavalent	mg/kg	0	0	0	20	L476582-01	WG496496
Chromium,Hexavalent	mg/kg	0	0	0	20	L476195-04	WG496496
Barium	mg/kg	6800	7500	9.21	20	L476576-03	WG496510
ORP	mV	0	0	0	20	L476695-01	WG496849
pH	su	8.70	8.80	1.14*	1	L477063-08	WG496907

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.45	99.1	67-135	WG496395
a,a,a-Trifluorotoluene(FID)				102.5	59-128	WG496395
Benzene	mg/kg	.05	0.0515	103.	76-113	WG496403
Ethylbenzene	mg/kg	.05	0.0519	104.	78-115	WG496403
Toluene	mg/kg	.05	0.0498	99.6	76-114	WG496403
Total Xylene	mg/kg	.15	0.150	100.	81-118	WG496403
a,a,a-Trifluorotoluene(PID)				102.5	54-144	WG496403
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.64	102.	67-135	WG496403
a,a,a-Trifluorotoluene(FID)				104.4	59-128	WG496403
Mercury	mg/kg	8.77	10.6	121.	71.6-127.7	WG496358
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG496556
Arsenic	mg/kg	192	170.	88.5	78.6-120.8	WG496510

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Barium	mg/kg	420	404.	96.2	78.8-121.4	WG496510
Cadmium	mg/kg	70.1	64.2	91.6	78.5-121.5	WG496510
Chromium	mg/kg	168	167.	99.4	80.4-120.2	WG496510
Copper	mg/kg	122	122.	100.	81.6-119.7	WG496510
Lead	mg/kg	113	102.	90.3	77.3-122.1	WG496510
Nickel	mg/kg	74.1	89.8	121.	78.8-121.2	WG496510
Selenium	mg/kg	176	156.	88.6	75.6-125.0	WG496510
Silver	mg/kg	115	110.	95.7	66-133.9	WG496510
Zinc	mg/kg	437	416.	95.2	78.5-121.7	WG496510
Chromium, Hexavalent	mg/kg	100	60.4	60.4	50-143	WG496496
TPH (GC/FID) High Fraction	ppm	60	56.2	93.6	50-150	WG496592
o-Terphenyl				109.4	50-150	WG496592
1-Methylnaphthalene	mg/kg	.033	0.0279	84.6	41-110	WG496562
2-Chloronaphthalene	mg/kg	.033	0.0290	87.8	43-109	WG496562
2-Methylnaphthalene	mg/kg	.033	0.0278	84.2	38-104	WG496562
Acenaphthene	mg/kg	.033	0.0272	82.5	48-103	WG496562
Acenaphthylene	mg/kg	.033	0.0260	78.9	43-106	WG496562
Anthracene	mg/kg	.033	0.0293	88.7	51-110	WG496562
Benzo(a)anthracene	mg/kg	.033	0.0272	82.4	38-126	WG496562
Benzo(a)pyrene	mg/kg	.033	0.0280	84.8	47-118	WG496562
Benzo(b)fluoranthene	mg/kg	.033	0.0302	91.4	47-118	WG496562
Benzo(g,h,i)perylene	mg/kg	.033	0.0256	77.6	40-125	WG496562
Benzo(k)fluoranthene	mg/kg	.033	0.0286	86.8	45-121	WG496562
Chrysene	mg/kg	.033	0.0283	85.7	35-135	WG496562
Dibenz(a,h)anthracene	mg/kg	.033	0.0263	79.6	41-124	WG496562
Fluoranthene	mg/kg	.033	0.0283	85.8	50-114	WG496562
Fluorene	mg/kg	.033	0.0270	81.7	49-109	WG496562
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0261	79.0	40-126	WG496562
Naphthalene	mg/kg	.033	0.0240	72.8	36-100	WG496562
Phenanthrene	mg/kg	.033	0.0275	83.5	46-108	WG496562
Pyrene	mg/kg	.033	0.0297	89.9	30-136	WG496562
2-Fluorobiphenyl				82.83	21-120	WG496562
Nitrobenzene-d5				75.32	33-114	WG496562
p-Terphenyl-d14				100.9	18-142	WG496562
ORP	mV	229	220.	96.1	95.6-104.37	WG496849
pH	su	9.36	9.30	99.4	98.9-102.0	WG496907

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.57	5.45	101.	67-135	2.11	20	WG496395
a,a,a-Trifluorotoluene(FID)				102.2	59-128			WG496395
Benzene	mg/kg	0.0511	0.0515	102.	76-113	0.720	20	WG496403
Ethylbenzene	mg/kg	0.0502	0.0519	100.	78-115	3.42	20	WG496403
Toluene	mg/kg	0.0494	0.0498	99.0	76-114	0.870	20	WG496403
Total Xylene	mg/kg	0.144	0.150	96.0	81-118	4.09	20	WG496403
a,a,a-Trifluorotoluene(PID)				103.5	54-144			WG496403

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.82	5.64	106.	67-135	3.14	20	WG496403
a,a,a-Trifluorotoluene(FID)				103.8	59-128			WG496403
Specific Conductance	umhos/	420.	420.	103.	85-115	0	20	WG496556
Chromium,Hexavalent	mg/kg	58.2	60.4	58.0	50-143	3.71	20	WG496496
TPH (GC/FID) High Fraction	ppm	50.7	56.2	84.0	50-150	10.2	25	WG496592
o-Terphenyl				97.62	50-150			WG496592
1-Methylnaphthalene	mg/kg	0.0250	0.0279	76.0	41-110	11.1	24	WG496562
2-Chloronaphthalene	mg/kg	0.0281	0.0290	85.0	43-109	3.18	21	WG496562
2-Methylnaphthalene	mg/kg	0.0250	0.0278	76.0	38-104	10.6	24	WG496562
Acenaphthene	mg/kg	0.0275	0.0272	83.0	48-103	1.03	20	WG496562
Acenaphthylene	mg/kg	0.0252	0.0260	76.0	43-106	3.10	20	WG496562
Anthracene	mg/kg	0.0270	0.0293	82.0	51-110	8.13	22	WG496562
Benzo(a)anthracene	mg/kg	0.0272	0.0272	82.0	38-126	0.0197	20	WG496562
Benzo(a)pyrene	mg/kg	0.0270	0.0280	82.0	47-118	3.59	20	WG496562
Benzo(b)fluoranthene	mg/kg	0.0292	0.0302	88.0	47-118	3.37	29	WG496562
Benzo(g,h,i)perylene	mg/kg	0.0255	0.0256	77.0	40-125	0.278	20	WG496562
Benzo(k)fluoranthene	mg/kg	0.0280	0.0286	85.0	45-121	2.28	31	WG496562
Chrysene	mg/kg	0.0282	0.0283	85.0	35-135	0.464	20	WG496562
Dibenz(a,h)anthracene	mg/kg	0.0264	0.0263	80.0	41-124	0.675	20	WG496562
Fluoranthene	mg/kg	0.0300	0.0283	91.0	50-114	5.69	20	WG496562
Fluorene	mg/kg	0.0275	0.0270	83.0	49-109	2.14	19	WG496562
Indeno(1,2,3-cd)pyrene	mg/kg	0.0254	0.0261	77.0	40-126	2.48	20	WG496562
Naphthalene	mg/kg	0.0229	0.0240	70.0	36-100	4.64	24	WG496562
Phenanthrene	mg/kg	0.0247	0.0275	75.0	46-108	10.9	21	WG496562
Pyrene	mg/kg	0.0277	0.0297	84.0	30-136	6.70	20	WG496562
2-Fluorobiphenyl				84.37	21-120			WG496562
Nitrobenzene-d5				72.25	33-114			WG496562
p-Terphenyl-d14				96.71	18-142			WG496562
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG496849
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG496907

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	17.4	0	5.5	63.3	55-109	L476361-03	WG496395
a,a,a-Trifluorotoluene(FID)					97.19	59-128		WG496395
Benzene	mg/kg	0.0491	0	.05	98.1	32-137	L476108-33	WG496403
Ethylbenzene	mg/kg	0.0481	0	.05	96.2	10-150	L476108-33	WG496403
Toluene	mg/kg	0.0476	0	.05	95.3	20-142	L476108-33	WG496403
Total Xylene	mg/kg	0.140	0	.15	93.1	16-141	L476108-33	WG496403
a,a,a-Trifluorotoluene(PID)					103.7	54-144		WG496403
TPH (GC/FID) Low Fraction	mg/kg	4.92	0	5.5	89.5	55-109	L476108-33	WG496403
a,a,a-Trifluorotoluene(FID)					102.0	59-128		WG496403

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Mercury	mg/kg	0.402	0.121	.25	112.	70-130	L475888-11	WG496358
Arsenic	mg/kg	51.1	5.20	50	91.8	75-125	L476576-03	WG496510
Cadmium	mg/kg	44.0	1.20	50	85.6	75-125	L476576-03	WG496510
Chromium	mg/kg	61.9	16.0	50	91.8	75-125	L476576-03	WG496510
Copper	mg/kg	68.6	18.0	50	101.	75-125	L476576-03	WG496510
Lead	mg/kg	57.6	14.0	50	87.2	75-125	L476576-03	WG496510
Nickel	mg/kg	48.3	3.40	50	89.8	75-125	L476576-03	WG496510
Selenium	mg/kg	44.0	0	50	88.0	75-125	L476576-03	WG496510
Silver	mg/kg	47.6	0	50	95.2	75-125	L476576-03	WG496510
Zinc	mg/kg	97.0	50.0	50	94.0	75-125	L476576-03	WG496510
Chromium,Hexavalent	mg/kg	1.02	0	20	5.10*	50-150	L476195-05	WG496496
Barium	mg/kg	7020	7500	10	0*	75-125	L476576-03	WG496510
TPH (GC/FID) High Fraction o-Terphenyl	ppm	334.	320.	60	23.9* 68.60	50-150 50-150	L476678-01	WG496592 WG496592

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	23.4	17.4	85.1 101.2	55-109 59-128	29.4*	20	L476361-03	WG496395 WG496395
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	4.83	4.92	87.9 101.7	55-109 59-128	1.80	20	L476108-33	WG496403 WG496403
Benzene	mg/kg	0.0422	0.0491	84.4	32-137	15.0	39	L476108-33	WG496403
Ethylbenzene	mg/kg	0.0396	0.0481	79.2	10-150	19.3	44	L476108-33	WG496403
Toluene	mg/kg	0.0405	0.0476	81.0	20-142	16.2	42	L476108-33	WG496403
Total Xylene a,a,a-Trifluorotoluene(PID)	mg/kg	0.115	0.140	76.5 102.8	16-141 54-144	19.6	46	L476108-33	WG496403 WG496403
Mercury	mg/kg	0.416	0.402	118.	70-130	3.42	20	L475888-11	WG496358
Arsenic	mg/kg	51.2	51.1	92.0	75-125	0.196	20	L476576-03	WG496510
Cadmium	mg/kg	44.4	44.0	86.4	75-125	0.905	20	L476576-03	WG496510
Chromium	mg/kg	62.9	61.9	93.8	75-125	1.60	20	L476576-03	WG496510
Copper	mg/kg	68.8	68.6	102.	75-125	0.291	20	L476576-03	WG496510
Lead	mg/kg	57.7	57.6	87.4	75-125	0.173	20	L476576-03	WG496510
Nickel	mg/kg	48.3	48.3	89.8	75-125	0	20	L476576-03	WG496510
Selenium	mg/kg	44.8	44.0	89.6	75-125	1.80	20	L476576-03	WG496510
Silver	mg/kg	47.9	47.6	95.8	75-125	0.628	20	L476576-03	WG496510
Zinc	mg/kg	99.8	97.0	99.6	75-125	2.85	20	L476576-03	WG496510
Chromium,Hexavalent	mg/kg	1.63	1.02	8.15*	50-150	46.0*	20	L476195-05	WG496496
Barium	mg/kg	6390	7020	0*	75-125	9.40	20	L476576-03	WG496510

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	303.	334.	0*	50-150	9.86	25	L476678-01	WG496592
o-Terphenyl				58.98	50-150				WG496592

Batch number /Run number / Sample number cross reference

WG496395: R1357808: L476576-01 02
 WG496403: R1359089: L476576-03
 WG496358: R1360268: L476576-03
 WG496556: R1360528: L476576-03
 WG496510: R1361930: L476576-03
 WG496496: R1362589: L476576-03
 WG496592: R1362768: L476576-01 02 03
 WG496511: R1362788: L476576-03
 WG496562: R1363309: L476576-03
 WG496849: R1365175: L476576-03
 WG496907: R1365208: L476576-03

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

Report Summary

Monday August 02, 2010

Report Number: L470863

Samples Received: 07/28/10

Client Project:

Description: H34 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

August 02, 2010

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

ESC Sample # : L470863-01

Date Received : July 28, 2010
 Description : H34 Pit Closure

Site ID :

Sample ID : H34-N. PIT-072610

Project # :

Collected By : Blair Rollins
 Collection Date : 07/26/10 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	10.	mg/kg	3060A/7196A	07/30/10	5
Chromium,Trivalent	37.	10.	mg/kg	Calc.	07/29/10	1
ORP	-16.		mV	2580	07/30/10	1
pH	8.0		su	9045D	07/29/10	1
Sodium Adsorption Ratio	31.			Calc.	07/28/10	1
Specific Conductance	2400		umhos/cm	9050AMod	07/30/10	1
Mercury	BDL	0.020	mg/kg	7471	07/30/10	1
Arsenic	5.2	1.0	mg/kg	6010B	07/29/10	1
Barium	1500	0.25	mg/kg	6010B	07/29/10	1
Cadmium	0.64	0.25	mg/kg	6010B	07/29/10	1
Chromium	37.	0.50	mg/kg	6010B	07/29/10	1
Copper	18.	1.0	mg/kg	6010B	07/29/10	1
Lead	16.	0.25	mg/kg	6010B	07/29/10	1
Nickel	9.8	1.0	mg/kg	6010B	07/29/10	1
Selenium	8.6	5.0	mg/kg	6010B	07/30/10	5
Silver	BDL	0.50	mg/kg	6010B	07/29/10	1
Zinc	51.	1.5	mg/kg	6010B	07/29/10	1
Benzene	0.16	0.025	mg/kg	8021/8015	07/30/10	50
Toluene	0.31	0.25	mg/kg	8021/8015	07/30/10	50
Ethylbenzene	0.10	0.025	mg/kg	8021/8015	07/30/10	50
Total Xylene	0.62	0.075	mg/kg	8021/8015	07/30/10	50
TPH (GC/FID) Low Fraction	67.	20.	mg/kg	GRO	07/29/10	200
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	109.		% Rec.	8021/8015	07/29/10	200
a,a,a-Trifluorotoluene(PID)	104.		% Rec.	8021/8015	07/30/10	50
TPH (GC/FID) High Fraction	3000	80.	mg/kg	3546/DRO	07/29/10	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/29/10	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.33	mg/kg	8270C	07/31/10	10
Acenaphthene	BDL	0.33	mg/kg	8270C	07/31/10	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	07/31/10	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	07/31/10	10
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	07/31/10	10

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 L470863-01 (PAH BY GCMS) - Dilution due to matrix
 L470863-01 (PH) - 8.0@22.2c



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REPORT OF ANALYSIS

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Parachute, CO 81635

August 02, 2010

Date Received : July 28, 2010
Description : H34 Pit Closure
Sample ID : H34-N. PIT-072610
Collected By : Blair Rollins
Collection Date : 07/26/10 15:30

ESC Sample # : L470863-01

Site ID :

Project # :

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include various PAHs and surrogate recovery results.

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: 08/02/10 11:51 Printed: 08/02/10 11:51
L470863-01 (PAH BY GCMS) - Dilution due to matrix
L470863-01 (PH) - 8.0@22.2c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L470863-01	WG490768	SAMP	Nitrobenzene-d5	R1305288	J1
	WG490809	SAMP	Chromium, Hexavalent	R1305968	O
	WG490759	SAMP	o-Terphenyl	R1304189	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
0	(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
08/02/10 at 11:51:55

TSR Signing Reports: 358
R4 - Rush: Three Day

Log all samples to separate L#s. Log all PAHs as SV8270PAHSIM. Log all BTEX samples by 8021.

Sample: L470863-01 Account: ENCANACO Received: 07/28/10 09:00 Due Date: 08/02/10 00:00 RPT Date: 08/02/10 11:51



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(FID)		% Rec.	103.4	59-128	WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(PID)		% Rec.	107.6	54-144	WG490674	07/28/10 15:57
TPH (GC/FID) High Fraction	< 4	ppm			WG490759	07/29/10 09:31
o-Terphenyl		% Rec.	87.45	50-150	WG490759	07/29/10 09:31
Arsenic	< 1	mg/kg			WG490725	07/29/10 10:33
Barium	< .25	mg/kg			WG490725	07/29/10 10:33
Cadmium	< .25	mg/kg			WG490725	07/29/10 10:33
Chromium	< .5	mg/kg			WG490725	07/29/10 10:33
Lead	< .25	mg/kg			WG490725	07/29/10 10:33
Nickel	< 1	mg/kg			WG490725	07/29/10 10:33
Selenium	< 1	mg/kg			WG490725	07/29/10 10:33
Zinc	< 1.5	mg/kg			WG490725	07/29/10 10:33
Copper	< 1	mg/kg			WG490725	07/29/10 15:55
pH	4.20	su			WG490828	07/29/10 17:20
Acenaphthene	< .033	mg/kg			WG490768	07/29/10 17:49
Acenaphthylene	< .033	mg/kg			WG490768	07/29/10 17:49
Anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(b)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(g,h,i)perylene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(k)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Chrysene	< .033	mg/kg			WG490768	07/29/10 17:49
Dibenz(a,h)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluorene	< .033	mg/kg			WG490768	07/29/10 17:49
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Naphthalene	< .033	mg/kg			WG490768	07/29/10 17:49
Phenanthrene	< .033	mg/kg			WG490768	07/29/10 17:49
Pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
2-Fluorobiphenyl		% Rec.	79.30	37-123	WG490768	07/29/10 17:49
Nitrobenzene-d5		% Rec.	79.08	19-129	WG490768	07/29/10 17:49
p-Terphenyl-d14		% Rec.	94.43	34-149	WG490768	07/29/10 17:49
Silver	< .5	mg/kg			WG490725	07/30/10 10:12
Specific Conductance	1.90	umhos/cm			WG490835	07/30/10 14:00
Chromium,Hexavalent	< 2	mg/kg			WG490809	07/30/10 16:46
Silver	< .5	mg/kg			WG490725	07/29/10 21:32
Mercury	< .02	mg/kg			WG490799	07/30/10 09:37

* 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	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG491125	07/30/10 15:33
Ethylbenzene	< .0005	mg/kg			WG491125	07/30/10 15:33
Toluene	< .005	mg/kg			WG491125	07/30/10 15:33
Total Xylene	< .0015	mg/kg			WG491125	07/30/10 15:33
a,a,a-Trifluorotoluene(FID)		% Rec.	99.36	59-128	WG491125	07/30/10 15:33
a,a,a-Trifluorotoluene(PID)		% Rec.	103.7	54-144	WG491125	07/30/10 15:33

Analyte	Units	Duplicate			Limit	Ref Samp	Batch
		Result	Duplicate	RPD			
Arsenic	mg/kg	7.20	6.90	4.67	20	L470846-01	WG490725
Barium	mg/kg	210.	200.	2.96	20	L470846-01	WG490725
Cadmium	mg/kg	0.340	0.320	5.47	20	L470846-01	WG490725
Chromium	mg/kg	34.0	33.0	4.44	20	L470846-01	WG490725
Copper	mg/kg	11.0	10.0	5.83	20	L470846-01	WG490725
Lead	mg/kg	13.0	12.0	6.45	20	L470846-01	WG490725
Nickel	mg/kg	0	0	0	20	L470846-01	WG490725
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
Silver	mg/kg	0	0	0	20	L470846-01	WG490725
Zinc	mg/kg	47.0	44.0	6.38	20	L470846-01	WG490725
pH	su	7.70	7.90	2.56*	1	L470791-01	WG490828
pH	su	7.00	7.10	1.42*	1	L470964-01	WG490828
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
ORP	mV	0	0	0	20	L470864-01	WG490832
ORP	mV	7.00	8.00	13.3	20	L470868-01	WG490832
Specific Conductance	umhos/cm	37.0	36.0	3.55	20	L470864-01	WG490835
Specific Conductance	umhos/cm	6600	6600	0.454	20	L470868-01	WG490835
Chromium,Hexavalent	mg/kg	57.0	57.0	0	20	L470330-14	WG490809
Chromium,Hexavalent	mg/kg	0	0	0	20	L470864-01	WG490809
Mercury	mg/kg	0	0	0	20	L470690-01	WG490799

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.42	117.	67-135	WG490674
a,a,a-Trifluorotoluene(FID)				109.1	59-128	WG490674
TPH (GC/FID) High Fraction	ppm	60	46.2	77.0	50-150	WG490759
o-Terphenyl				89.54	50-150	WG490759
Arsenic	mg/kg	192	173.	90.1	78.6-120.8	WG490725
Barium	mg/kg	420	385.	91.7	78.8-121.4	WG490725
Cadmium	mg/kg	70.1	64.0	91.3	78.5-121.5	WG490725
Chromium	mg/kg	168	156.	92.9	80.4-120.2	WG490725
Copper	mg/kg	122	121.	99.2	81.6-119.7	WG490725

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Lead	mg/kg	113	106.	93.8	77.3-122.1	WG490725
Nickel	mg/kg	74.1	64.9	87.6	78.8-121.2	WG490725
Selenium	mg/kg	176	155.	88.1	75.6-125.0	WG490725
Silver	mg/kg	115	105.	91.3	66-133.9	WG490725
Zinc	mg/kg	437	409.	93.6	78.5-121.7	WG490725
pH	su	9.36	9.30	99.4	98.9-102.0	WG490828
Acenaphthene	mg/kg	.167	0.141	84.6	44-117	WG490768
Acenaphthylene	mg/kg	.167	0.138	82.4	43-118	WG490768
Anthracene	mg/kg	.167	0.140	83.9	42-127	WG490768
Benzo(a)anthracene	mg/kg	.167	0.146	87.6	45-127	WG490768
Benzo(a)pyrene	mg/kg	.167	0.140	83.7	46-123	WG490768
Benzo(b)fluoranthene	mg/kg	.167	0.146	87.4	43-126	WG490768
Benzo(g,h,i)perylene	mg/kg	.167	0.159	95.0	43-128	WG490768
Benzo(k)fluoranthene	mg/kg	.167	0.139	83.1	40-126	WG490768
Chrysene	mg/kg	.167	0.146	87.4	44-129	WG490768
Dibenz(a,h)anthracene	mg/kg	.167	0.159	95.3	43-127	WG490768
Fluoranthene	mg/kg	.167	0.146	87.6	44-125	WG490768
Fluorene	mg/kg	.167	0.138	82.4	45-121	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.160	95.9	43-127	WG490768
Naphthalene	mg/kg	.167	0.133	79.5	32-113	WG490768
Phenanthrene	mg/kg	.167	0.144	86.2	43-124	WG490768
Pyrene	mg/kg	.167	0.147	88.2	47-128	WG490768
2-Fluorobiphenyl				87.72	37-123	WG490768
Nitrobenzene-d5				81.69	19-129	WG490768
p-Terphenyl-d14				102.5	34-149	WG490768
ORP	mV	229	220.	96.1	95.6-104.37	WG490832
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG490835
Chromium,Hexavalent	mg/kg	100	93.3	93.3	50-143	WG490809
Mercury	mg/kg	8.77	10.3	117.	71.6-127.7	WG490799
Benzene	mg/kg	.05	0.0532	106.	76-113	WG491125
Ethylbenzene	mg/kg	.05	0.0546	109.	78-115	WG491125
Toluene	mg/kg	.05	0.0541	108.	76-114	WG491125
Total Xylene	mg/kg	.15	0.167	111.	81-118	WG491125
a,a,a-Trifluorotoluene(FID)				99.48	59-128	WG491125
a,a,a-Trifluorotoluene(PID)				102.8	54-144	WG491125

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
TPH (GC/FID) Low Fraction	mg/kg	6.05	6.42	110.	67-135	5.83	20	WG490674
a,a,a-Trifluorotoluene(FID)				106.8	59-128			WG490674
TPH (GC/FID) High Fraction	ppm	46.3	46.2	77.0	50-150	0.188	25	WG490759
o-Terphenyl				87.23	50-150			WG490759

* Performance of this Analyte is outside of established criteria.
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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
pH	su	9.30	9.30	99.0		98.9-102.0	0	20	WG490828
Acenaphthene	mg/kg	0.138	0.141	82.0		44-117	2.41	21	WG490768
Acenaphthylene	mg/kg	0.143	0.138	85.0		43-118	3.46	20	WG490768
Anthracene	mg/kg	0.147	0.140	88.0		42-127	4.67	21	WG490768
Benzo(a)anthracene	mg/kg	0.153	0.146	91.0		45-127	4.29	21	WG490768
Benzo(a)pyrene	mg/kg	0.149	0.140	89.0		46-123	6.34	20	WG490768
Benzo(b)fluoranthene	mg/kg	0.149	0.146	89.0		43-126	1.91	27	WG490768
Benzo(g,h,i)perylene	mg/kg	0.165	0.159	99.0		43-128	3.95	20	WG490768
Benzo(k)fluoranthene	mg/kg	0.152	0.139	91.0		40-126	8.83	32	WG490768
Chrysene	mg/kg	0.152	0.146	91.0		44-129	3.89	22	WG490768
Dibenz(a,h)anthracene	mg/kg	0.167	0.159	100.		43-127	5.05	20	WG490768
Fluoranthene	mg/kg	0.152	0.146	91.0		44-125	4.03	22	WG490768
Fluorene	mg/kg	0.144	0.138	86.0		45-121	4.45	20	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.169	0.160	101.		43-127	5.17	21	WG490768
Naphthalene	mg/kg	0.136	0.133	82.0		32-113	2.67	26	WG490768
Phenanthrene	mg/kg	0.144	0.144	86.0		43-124	0.117	21	WG490768
Pyrene	mg/kg	0.160	0.147	96.0		47-128	8.57	20	WG490768
2-Fluorobiphenyl				82.77		37-123			WG490768
Nitrobenzene-d5				80.64		19-129			WG490768
p-Terphenyl-d14				101.8		34-149			WG490768
ORP	mV	220.	220.	96.0		95.6-104.37	0	20	WG490832
Specific Conductance	umhos/	420.	420.	103.		85-115	0	20	WG490835
Chromium,Hexavalent	mg/kg	96.6	93.3	97.0		50-143	3.48	20	WG490809
Benzene	mg/kg	0.0518	0.0532	104.		76-113	2.75	20	WG491125
Ethylbenzene	mg/kg	0.0528	0.0546	106.		78-115	3.35	20	WG491125
Toluene	mg/kg	0.0525	0.0541	105.		76-114	3.12	20	WG491125
Total Xylene	mg/kg	0.161	0.167	107.		81-118	3.52	20	WG491125
a,a,a-Trifluorotoluene(FID)				98.96		59-128			WG491125
a,a,a-Trifluorotoluene(PID)				102.1		54-144			WG491125

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	23.0	0	5.5	83.7	55-109	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)					111.9	59-128		WG490674
Arsenic	mg/kg	52.1	6.90	50	90.4	75-125	L470846-01	WG490725
Barium	mg/kg	251.	200.	50	102.	75-125	L470846-01	WG490725
Cadmium	mg/kg	43.8	0.320	50	87.0	75-125	L470846-01	WG490725
Chromium	mg/kg	78.0	33.0	50	90.0	75-125	L470846-01	WG490725
Copper	mg/kg	56.2	10.0	50	92.4	75-125	L470846-01	WG490725
Lead	mg/kg	58.2	12.0	50	92.4	75-125	L470846-01	WG490725
Nickel	mg/kg	47.2	0	50	94.4	75-125	L470846-01	WG490725
Silver	mg/kg	42.5	0	50	85.0	75-125	L470846-01	WG490725
Zinc	mg/kg	89.0	44.0	50	90.0	75-125	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	49.0	0	60	81.6	50-150	L470918-01	WG490759

* 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 02, 2010

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
o-Terphenyl					91.41	50-150		
Acenaphthene	mg/kg	0.143	0	.167	85.7	38-121	L470884-07	WG490768
Acenaphthylene	mg/kg	0.141	0	.167	84.6	39-120	L470884-07	WG490768
Anthracene	mg/kg	0.142	0	.167	84.9	35-133	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.142	0	.167	85.3	35-136	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.120	0	.167	71.7	37-131	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.133	0	.167	79.5	29-145	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.123	0	.167	73.7	10-139	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.113	0	.167	67.6	31-140	L470884-07	WG490768
Chrysene	mg/kg	0.135	0	.167	81.1	34-137	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.126	0	.167	75.7	21-132	L470884-07	WG490768
Fluoranthene	mg/kg	0.153	0	.167	91.7	34-132	L470884-07	WG490768
Fluorene	mg/kg	0.143	0	.167	85.7	38-126	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.127	0	.167	76.2	17-134	L470884-07	WG490768
Naphthalene	mg/kg	0.143	0	.167	85.6	24-122	L470884-07	WG490768
Phenanthrene	mg/kg	0.150	0	.167	89.8	38-128	L470884-07	WG490768
Pyrene	mg/kg	0.146	0	.167	87.5	35-141	L470884-07	WG490768
2-Fluorobiphenyl					87.38	37-123		WG490768
Nitrobenzene-d5					85.39	19-129		WG490768
p-Terphenyl-d14					91.52	34-149		WG490768
Selenium	mg/kg	46.1	0	10	92.2	75-125	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.0	0	20	55.0	50-150	L470865-01	WG490809
Mercury	mg/kg	0.288	0	.25	115.	70-130	L470690-01	WG490799
Benzene	mg/kg	0.244	0	.05	97.5	32-137	L470771-03	WG491125
Ethylbenzene	mg/kg	0.240	0.0110	.05	91.5	10-150	L470771-03	WG491125
Toluene	mg/kg	0.247	0	.05	98.9	20-142	L470771-03	WG491125
Total Xylene	mg/kg	0.734	0.00890	.15	96.6	16-141	L470771-03	WG491125
a,a,a-Trifluorotoluene(FID)					97.70	59-128		WG491125
a,a,a-Trifluorotoluene(PID)					102.0	54-144		WG491125

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	17.4	23.0	63.2	55-109	28.0*	20	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)				104.2	59-128				WG490674
Arsenic	mg/kg	51.1	52.1	88.4	75-125	1.94	20	L470846-01	WG490725
Barium	mg/kg	256.	251.	112.	75-125	1.97	20	L470846-01	WG490725
Cadmium	mg/kg	43.0	43.8	85.4	75-125	1.84	20	L470846-01	WG490725
Chromium	mg/kg	75.6	78.0	85.2	75-125	3.13	20	L470846-01	WG490725
Copper	mg/kg	55.6	56.2	91.2	75-125	1.07	20	L470846-01	WG490725
Lead	mg/kg	56.8	58.2	89.6	75-125	2.43	20	L470846-01	WG490725
Nickel	mg/kg	47.4	47.2	94.8	75-125	0.423	20	L470846-01	WG490725
Silver	mg/kg	42.1	42.5	84.2	75-125	0.946	20	L470846-01	WG490725
Zinc	mg/kg	87.6	89.0	87.2	75-125	1.59	20	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	45.8	49.0	76.3	50-150	6.71	25	L470918-01	WG490759
o-Terphenyl				86.72	50-150				WG490759

* 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					
Acenaphthene	mg/kg	0.121	0.143	72.7	38-121	16.4	23	L470884-07	WG490768
Acenaphthylene	mg/kg	0.126	0.141	75.7	39-120	11.0	22	L470884-07	WG490768
Anthracene	mg/kg	0.122	0.142	73.0	35-133	15.0	23	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.116	0.142	69.2	35-136	20.8	23	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.101	0.120	60.7	37-131	16.6	22	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.110	0.133	66.0	29-145	18.5	33	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.103	0.123	61.9	10-139	17.4	26	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.101	0.113	60.6	31-140	10.9	34	L470884-07	WG490768
Chrysene	mg/kg	0.111	0.135	66.5	34-137	19.8	23	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.110	0.126	66.1	21-132	13.5	25	L470884-07	WG490768
Fluoranthene	mg/kg	0.125	0.153	75.0	34-132	20.0	24	L470884-07	WG490768
Fluorene	mg/kg	0.122	0.143	72.8	38-126	16.2	23	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.107	0.127	64.2	17-134	17.1	25	L470884-07	WG490768
Naphthalene	mg/kg	0.126	0.143	75.3	24-122	12.8	29	L470884-07	WG490768
Phenanthrene	mg/kg	0.126	0.150	75.5	38-128	17.4	25	L470884-07	WG490768
Pyrene	mg/kg	0.125	0.146	74.6	35-141	15.9	25	L470884-07	WG490768
2-Fluorobiphenyl				76.24	37-123				WG490768
Nitrobenzene-d5				75.33	19-129				WG490768
p-Terphenyl-d14				77.44	34-149				WG490768
Selenium	mg/kg	44.8	46.1	89.6	75-125	2.86	20	L470846-01	WG490725
Chromium, Hexavalent	mg/kg	11.5	11.0	57.5	50-150	4.44	20	L470865-01	WG490809
Mercury	mg/kg	0.280	0.288	112.	70-130	2.82	20	L470690-01	WG490799
Benzene	mg/kg	0.249	0.244	99.6	32-137	2.05	39	L470771-03	WG491125
Ethylbenzene	mg/kg	0.241	0.240	92.0	10-150	0.470	44	L470771-03	WG491125
Toluene	mg/kg	0.247	0.247	98.8	20-142	0.120	42	L470771-03	WG491125
Total Xylene	mg/kg	0.730	0.734	96.2	16-141	0.440	46	L470771-03	WG491125
a,a,a-Trifluorotoluene(FID)				97.44	59-128				WG491125
a,a,a-Trifluorotoluene(PID)				101.5	54-144				WG491125

Batch number /Run number / Sample number cross reference

WG490674: R1303508: L470863-01
 WG490759: R1304189: L470863-01
 WG490725: R1304568: L470863-01
 WG490828: R1305069: L470863-01
 WG490768: R1305288: L470863-01
 WG490832: R1305689: L470863-01
 WG490835: R1305690: L470863-01
 WG490809: R1305968: L470863-01
 WG490799: R1306709: L470863-01
 WG491125: R1306749: L470863-01
 WG490804: R1307290: L470863-01

* * 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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August 02, 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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Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
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Report Summary

Monday August 02, 2010

Report Number: L470862

Samples Received: 07/28/10

Client Project:

Description: H34 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

August 02, 2010

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

ESC Sample # : L470862-01

Date Received : July 28, 2010
 Description : H34 Pit Closure

Site ID :

Sample ID : H34-S. PIT-072610

Project # :

Collected By : Blair Rollins
 Collection Date : 07/26/10 15:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	20.	mg/kg	3060A/7196A	07/30/10	10
Chromium,Trivalent	40.	20.	mg/kg	Calc.	07/30/10	1
ORP	-22.		mV	2580	07/30/10	1
pH	8.1		su	9045D	07/29/10	1
Sodium Adsorption Ratio	20.			Calc.	07/28/10	1
Specific Conductance	1300		umhos/cm	9050AMod	07/30/10	1
Mercury	BDL	0.020	mg/kg	7471	07/29/10	1
Arsenic	BDL	1.0	mg/kg	6010B	07/30/10	1
Barium	310	0.25	mg/kg	6010B	07/30/10	1
Cadmium	0.48	0.25	mg/kg	6010B	07/30/10	1
Chromium	40.	0.50	mg/kg	6010B	07/30/10	1
Copper	16.	1.0	mg/kg	6010B	07/30/10	1
Lead	15.	0.25	mg/kg	6010B	07/30/10	1
Nickel	22.	1.0	mg/kg	6010B	07/30/10	1
Selenium	8.6	1.0	mg/kg	6010B	07/30/10	1
Silver	BDL	0.50	mg/kg	6010B	07/30/10	1
Zinc	44.	1.5	mg/kg	6010B	07/30/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	07/29/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/29/10	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/29/10	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/29/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/29/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	8021/8015	07/29/10	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	07/29/10	5
TPH (GC/FID) High Fraction	300	4.0	mg/kg	3546/DRO	07/29/10	1
Surrogate recovery(%)						
o-Terphenyl	104.		% Rec.	3546/DRO	07/29/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.033	mg/kg	8270C	07/29/10	1
Acenaphthene	BDL	0.033	mg/kg	8270C	07/29/10	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	07/29/10	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	07/29/10	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	07/29/10	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 L470862-01 (PH) - 8.1@21.6c
 L470862-01 (CR6) - diluted due to dark sample



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REPORT OF ANALYSIS

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

August 02, 2010

Date Received : July 28, 2010
Description : H34 Pit Closure
Sample ID : H34-S. PIT-072610
Collected By : Blair Rollins
Collection Date : 07/26/10 15:20

ESC Sample # : L470862-01

Site ID :

Project # :

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include various polycyclic aromatic hydrocarbons and surrogate recovery results.

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: 08/02/10 11:50 Printed: 08/02/10 11:50
L470862-01 (PH) - 8.1@21.6c
L470862-01 (CR6) - diluted due to dark sample

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L470862-01	WG490809	SAMP	Chromium, Hexavalent	R1305968	0

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
0	(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
08/02/10 at 11:50:55

TSR Signing Reports: 358
R4 - Rush: Three Day

Log all samples to separate L#s. Log all PAHs as SV8270PAHSIM. Log all BTEX samples by 8021.

Sample: L470862-01 Account: ENCANACO Received: 07/28/10 09:00 Due Date: 08/02/10 00:00 RPT Date: 08/02/10 11:50



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Ethylbenzene	< .0005	mg/kg			WG490674	07/28/10 15:57
Toluene	< .005	mg/kg			WG490674	07/28/10 15:57
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG490674	07/28/10 15:57
Total Xylene	< .0015	mg/kg			WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(FID)		% Rec.	103.4	59-128	WG490674	07/28/10 15:57
a,a,a-Trifluorotoluene(PID)		% Rec.	107.6	54-144	WG490674	07/28/10 15:57
TPH (GC/FID) High Fraction	< 4	ppm			WG490759	07/29/10 09:31
o-Terphenyl		% Rec.	87.45	50-150	WG490759	07/29/10 09:31
Mercury	< .02	mg/kg			WG490709	07/29/10 09:36
Arsenic	< 1	mg/kg			WG490725	07/29/10 10:33
Barium	< .25	mg/kg			WG490725	07/29/10 10:33
Cadmium	< .25	mg/kg			WG490725	07/29/10 10:33
Chromium	< .5	mg/kg			WG490725	07/29/10 10:33
Lead	< .25	mg/kg			WG490725	07/29/10 10:33
Nickel	< 1	mg/kg			WG490725	07/29/10 10:33
Selenium	< 1	mg/kg			WG490725	07/29/10 10:33
Zinc	< 1.5	mg/kg			WG490725	07/29/10 10:33
Copper	< 1	mg/kg			WG490725	07/29/10 15:55
pH	4.20	su			WG490828	07/29/10 17:20
Acenaphthene	< .033	mg/kg			WG490768	07/29/10 17:49
Acenaphthylene	< .033	mg/kg			WG490768	07/29/10 17:49
Anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(a)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(b)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(g,h,i)perylene	< .033	mg/kg			WG490768	07/29/10 17:49
Benzo(k)fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Chrysene	< .033	mg/kg			WG490768	07/29/10 17:49
Dibenz(a,h)anthracene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluoranthene	< .033	mg/kg			WG490768	07/29/10 17:49
Fluorene	< .033	mg/kg			WG490768	07/29/10 17:49
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
Naphthalene	< .033	mg/kg			WG490768	07/29/10 17:49
Phenanthrene	< .033	mg/kg			WG490768	07/29/10 17:49
Pyrene	< .033	mg/kg			WG490768	07/29/10 17:49
2-Fluorobiphenyl		% Rec.	79.30	37-123	WG490768	07/29/10 17:49
Nitrobenzene-d5		% Rec.	79.08	19-129	WG490768	07/29/10 17:49
p-Terphenyl-d14		% Rec.	94.43	34-149	WG490768	07/29/10 17:49
Silver	< .5	mg/kg			WG490725	07/30/10 10:12
Specific Conductance	1.90	umhos/cm			WG490835	07/30/10 14:00
Chromium,Hexavalent	< 2	mg/kg			WG490809	07/30/10 16:46

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Silver	< .5	mg/kg			WG490725	07/29/10 21:32

Analyte	Units	Duplicate			Limit	Ref Samp	Batch
		Result	Duplicate	RPD			
Mercury	mg/kg	0	0	0	20	L470507-01	WG490709
Arsenic	mg/kg	7.20	6.90	4.67	20	L470846-01	WG490725
Barium	mg/kg	210.	200.	2.96	20	L470846-01	WG490725
Cadmium	mg/kg	0.340	0.320	5.47	20	L470846-01	WG490725
Chromium	mg/kg	34.0	33.0	4.44	20	L470846-01	WG490725
Copper	mg/kg	11.0	10.0	5.83	20	L470846-01	WG490725
Lead	mg/kg	13.0	12.0	6.45	20	L470846-01	WG490725
Nickel	mg/kg	0	0	0	20	L470846-01	WG490725
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
Silver	mg/kg	0	0	0	20	L470846-01	WG490725
Zinc	mg/kg	47.0	44.0	6.38	20	L470846-01	WG490725
pH	su	7.70	7.90	2.56*	1	L470791-01	WG490828
pH	su	7.00	7.10	1.42*	1	L470964-01	WG490828
Selenium	mg/kg	0	0	0	20	L470846-01	WG490725
ORP	mV	0	0	0	20	L470864-01	WG490832
ORP	mV	7.00	8.00	13.3	20	L470868-01	WG490832
Specific Conductance	umhos/cm	37.0	36.0	3.55	20	L470864-01	WG490835
Specific Conductance	umhos/cm	6600	6600	0.454	20	L470868-01	WG490835
Chromium,Hexavalent	mg/kg	57.0	57.0	0	20	L470330-14	WG490809
Chromium,Hexavalent	mg/kg	0	0	0	20	L470864-01	WG490809

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0560	112.	76-113	WG490674
Ethylbenzene	mg/kg	.05	0.0571	114.	78-115	WG490674
Toluene	mg/kg	.05	0.0561	112.	76-114	WG490674
Total Xylene	mg/kg	.15	0.165	110.	81-118	WG490674
a,a,a-Trifluorotoluene(PID)				106.3	54-144	WG490674
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.42	117.	67-135	WG490674
a,a,a-Trifluorotoluene(FID)				109.1	59-128	WG490674
TPH (GC/FID) High Fraction	ppm	60	46.2	77.0	50-150	WG490759
o-Terphenyl				89.54	50-150	WG490759
Mercury	mg/kg	8.77	9.77	111.	71.6-127.7	WG490709
Arsenic	mg/kg	192	173.	90.1	78.6-120.8	WG490725

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Barium	mg/kg	420	385.	91.7	78.8-121.4	WG490725
Cadmium	mg/kg	70.1	64.0	91.3	78.5-121.5	WG490725
Chromium	mg/kg	168	156.	92.9	80.4-120.2	WG490725
Copper	mg/kg	122	121.	99.2	81.6-119.7	WG490725
Lead	mg/kg	113	106.	93.8	77.3-122.1	WG490725
Nickel	mg/kg	74.1	64.9	87.6	78.8-121.2	WG490725
Selenium	mg/kg	176	155.	88.1	75.6-125.0	WG490725
Silver	mg/kg	115	105.	91.3	66-133.9	WG490725
Zinc	mg/kg	437	409.	93.6	78.5-121.7	WG490725
pH	su	9.36	9.30	99.4	98.9-102.0	WG490828
Acenaphthene	mg/kg	.167	0.141	84.6	44-117	WG490768
Acenaphthylene	mg/kg	.167	0.138	82.4	43-118	WG490768
Anthracene	mg/kg	.167	0.140	83.9	42-127	WG490768
Benzo(a)anthracene	mg/kg	.167	0.146	87.6	45-127	WG490768
Benzo(a)pyrene	mg/kg	.167	0.140	83.7	46-123	WG490768
Benzo(b)fluoranthene	mg/kg	.167	0.146	87.4	43-126	WG490768
Benzo(g,h,i)perylene	mg/kg	.167	0.159	95.0	43-128	WG490768
Benzo(k)fluoranthene	mg/kg	.167	0.139	83.1	40-126	WG490768
Chrysene	mg/kg	.167	0.146	87.4	44-129	WG490768
Dibenz(a,h)anthracene	mg/kg	.167	0.159	95.3	43-127	WG490768
Fluoranthene	mg/kg	.167	0.146	87.6	44-125	WG490768
Fluorene	mg/kg	.167	0.138	82.4	45-121	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.160	95.9	43-127	WG490768
Naphthalene	mg/kg	.167	0.133	79.5	32-113	WG490768
Phenanthrene	mg/kg	.167	0.144	86.2	43-124	WG490768
Pyrene	mg/kg	.167	0.147	88.2	47-128	WG490768
2-Fluorobiphenyl				87.72	37-123	WG490768
Nitrobenzene-d5				81.69	19-129	WG490768
p-Terphenyl-d14				102.5	34-149	WG490768
ORP	mV	229	220.	96.1	95.6-104.37	WG490832
Specific Conductance	umhos/cm	406	420.	103.	85-115	WG490835
Chromium,Hexavalent	mg/kg	100	93.3	93.3	50-143	WG490809

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0547	0.0560	109.	76-113	2.36	20	WG490674
Ethylbenzene	mg/kg	0.0570	0.0571	114.	78-115	0.110	20	WG490674
Toluene	mg/kg	0.0552	0.0561	110.	76-114	1.47	20	WG490674
Total Xylene	mg/kg	0.165	0.165	110.	81-118	0.170	20	WG490674
a,a,a-Trifluorotoluene(PID)				106.2	54-144			WG490674
TPH (GC/FID) Low Fraction	mg/kg	6.05	6.42	110.	67-135	5.83	20	WG490674
a,a,a-Trifluorotoluene(FID)				106.8	59-128			WG490674
TPH (GC/FID) High Fraction	ppm	46.3	46.2	77.0	50-150	0.188	25	WG490759
o-Terphenyl				87.23	50-150			WG490759

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		Result	Ref	%Rec				
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG490828
Acenaphthene	mg/kg	0.138	0.141	82.0	44-117	2.41	21	WG490768
Acenaphthylene	mg/kg	0.143	0.138	85.0	43-118	3.46	20	WG490768
Anthracene	mg/kg	0.147	0.140	88.0	42-127	4.67	21	WG490768
Benzo(a)anthracene	mg/kg	0.153	0.146	91.0	45-127	4.29	21	WG490768
Benzo(a)pyrene	mg/kg	0.149	0.140	89.0	46-123	6.34	20	WG490768
Benzo(b)fluoranthene	mg/kg	0.149	0.146	89.0	43-126	1.91	27	WG490768
Benzo(g,h,i)perylene	mg/kg	0.165	0.159	99.0	43-128	3.95	20	WG490768
Benzo(k)fluoranthene	mg/kg	0.152	0.139	91.0	40-126	8.83	32	WG490768
Chrysene	mg/kg	0.152	0.146	91.0	44-129	3.89	22	WG490768
Dibenz(a,h)anthracene	mg/kg	0.167	0.159	100.	43-127	5.05	20	WG490768
Fluoranthene	mg/kg	0.152	0.146	91.0	44-125	4.03	22	WG490768
Fluorene	mg/kg	0.144	0.138	86.0	45-121	4.45	20	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.169	0.160	101.	43-127	5.17	21	WG490768
Naphthalene	mg/kg	0.136	0.133	82.0	32-113	2.67	26	WG490768
Phenanthrene	mg/kg	0.144	0.144	86.0	43-124	0.117	21	WG490768
Pyrene	mg/kg	0.160	0.147	96.0	47-128	8.57	20	WG490768
2-Fluorobiphenyl				82.77	37-123			WG490768
Nitrobenzene-d5				80.64	19-129			WG490768
p-Terphenyl-d14				101.8	34-149			WG490768
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG490832
Specific Conductance	umhos/	420.	420.	103.	85-115	0	20	WG490835
Chromium,Hexavalent	mg/kg	96.6	93.3	97.0	50-143	3.48	20	WG490809

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.239	0	.05	95.7	32-137	L470846-01	WG490674
Ethylbenzene	mg/kg	0.216	0	.05	86.2	10-150	L470846-01	WG490674
Toluene	mg/kg	0.225	0	.05	90.1	20-142	L470846-01	WG490674
Total Xylene	mg/kg	0.627	0	.15	83.6	16-141	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)					104.1	54-144		WG490674
TPH (GC/FID) Low Fraction	mg/kg	23.0	0	5.5	83.7	55-109	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)					111.9	59-128		WG490674
Mercury	mg/kg	0.222	0	.25	88.8	70-130	L470507-01	WG490709
Arsenic	mg/kg	52.1	6.90	50	90.4	75-125	L470846-01	WG490725
Barium	mg/kg	251.	200.	50	102.	75-125	L470846-01	WG490725
Cadmium	mg/kg	43.8	0.320	50	87.0	75-125	L470846-01	WG490725
Chromium	mg/kg	78.0	33.0	50	90.0	75-125	L470846-01	WG490725
Copper	mg/kg	56.2	10.0	50	92.4	75-125	L470846-01	WG490725
Lead	mg/kg	58.2	12.0	50	92.4	75-125	L470846-01	WG490725
Nickel	mg/kg	47.2	0	50	94.4	75-125	L470846-01	WG490725
Silver	mg/kg	42.5	0	50	85.0	75-125	L470846-01	WG490725
Zinc	mg/kg	89.0	44.0	50	90.0	75-125	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	49.0	0	60	81.6	50-150	L470918-01	WG490759

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Analyte	Units	MS Res	Matrix Spike			% Rec	Limit	Ref Samp	Batch
			Ref Res	TV					
o-Terphenyl						91.41	50-150		
Acenaphthene	mg/kg	0.143	0	.167		85.7	38-121	L470884-07	WG490768
Acenaphthylene	mg/kg	0.141	0	.167		84.6	39-120	L470884-07	WG490768
Anthracene	mg/kg	0.142	0	.167		84.9	35-133	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.142	0	.167		85.3	35-136	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.120	0	.167		71.7	37-131	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.133	0	.167		79.5	29-145	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.123	0	.167		73.7	10-139	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.113	0	.167		67.6	31-140	L470884-07	WG490768
Chrysene	mg/kg	0.135	0	.167		81.1	34-137	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.126	0	.167		75.7	21-132	L470884-07	WG490768
Fluoranthene	mg/kg	0.153	0	.167		91.7	34-132	L470884-07	WG490768
Fluorene	mg/kg	0.143	0	.167		85.7	38-126	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.127	0	.167		76.2	17-134	L470884-07	WG490768
Naphthalene	mg/kg	0.143	0	.167		85.6	24-122	L470884-07	WG490768
Phenanthrene	mg/kg	0.150	0	.167		89.8	38-128	L470884-07	WG490768
Pyrene	mg/kg	0.146	0	.167		87.5	35-141	L470884-07	WG490768
2-Fluorobiphenyl						87.38	37-123		WG490768
Nitrobenzene-d5						85.39	19-129		WG490768
p-Terphenyl-d14						91.52	34-149		WG490768
Selenium	mg/kg	46.1	0	10		92.2	75-125	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.0	0	20		55.0	50-150	L470865-01	WG490809

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.255	0.239	102.	32-137	6.22	39	L470846-01	WG490674
Ethylbenzene	mg/kg	0.227	0.216	90.8	10-150	5.15	44	L470846-01	WG490674
Toluene	mg/kg	0.240	0.225	95.8	20-142	6.14	42	L470846-01	WG490674
Total Xylene	mg/kg	0.651	0.627	86.8	16-141	3.74	46	L470846-01	WG490674
a,a,a-Trifluorotoluene(PID)				105.2	54-144				WG490674
TPH (GC/FID) Low Fraction	mg/kg	17.4	23.0	63.2	55-109	28.0*	20	L470846-01	WG490674
a,a,a-Trifluorotoluene(FID)				104.2	59-128				WG490674
Mercury	mg/kg	0.240	0.222	96.0	70-130	7.79	20	L470507-01	WG490709
Arsenic	mg/kg	51.1	52.1	88.4	75-125	1.94	20	L470846-01	WG490725
Barium	mg/kg	256.	251.	112.	75-125	1.97	20	L470846-01	WG490725
Cadmium	mg/kg	43.0	43.8	85.4	75-125	1.84	20	L470846-01	WG490725
Chromium	mg/kg	75.6	78.0	85.2	75-125	3.13	20	L470846-01	WG490725
Copper	mg/kg	55.6	56.2	91.2	75-125	1.07	20	L470846-01	WG490725
Lead	mg/kg	56.8	58.2	89.6	75-125	2.43	20	L470846-01	WG490725
Nickel	mg/kg	47.4	47.2	94.8	75-125	0.423	20	L470846-01	WG490725
Silver	mg/kg	42.1	42.5	84.2	75-125	0.946	20	L470846-01	WG490725
Zinc	mg/kg	87.6	89.0	87.2	75-125	1.59	20	L470846-01	WG490725
TPH (GC/FID) High Fraction	ppm	45.8	49.0	76.3	50-150	6.71	25	L470918-01	WG490759
o-Terphenyl				86.72	50-150				WG490759
Acenaphthene	mg/kg	0.121	0.143	72.7	38-121	16.4	23	L470884-07	WG490768
Acenaphthylene	mg/kg	0.126	0.141	75.7	39-120	11.0	22	L470884-07	WG490768

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Anthracene	mg/kg	0.122	0.142	73.0	35-133	15.0	23	L470884-07	WG490768
Benzo(a)anthracene	mg/kg	0.116	0.142	69.2	35-136	20.8	23	L470884-07	WG490768
Benzo(a)pyrene	mg/kg	0.101	0.120	60.7	37-131	16.6	22	L470884-07	WG490768
Benzo(b)fluoranthene	mg/kg	0.110	0.133	66.0	29-145	18.5	33	L470884-07	WG490768
Benzo(g,h,i)perylene	mg/kg	0.103	0.123	61.9	10-139	17.4	26	L470884-07	WG490768
Benzo(k)fluoranthene	mg/kg	0.101	0.113	60.6	31-140	10.9	34	L470884-07	WG490768
Chrysene	mg/kg	0.111	0.135	66.5	34-137	19.8	23	L470884-07	WG490768
Dibenz(a,h)anthracene	mg/kg	0.110	0.126	66.1	21-132	13.5	25	L470884-07	WG490768
Fluoranthene	mg/kg	0.125	0.153	75.0	34-132	20.0	24	L470884-07	WG490768
Fluorene	mg/kg	0.122	0.143	72.8	38-126	16.2	23	L470884-07	WG490768
Indeno(1,2,3-cd)pyrene	mg/kg	0.107	0.127	64.2	17-134	17.1	25	L470884-07	WG490768
Naphthalene	mg/kg	0.126	0.143	75.3	24-122	12.8	29	L470884-07	WG490768
Phenanthrene	mg/kg	0.126	0.150	75.5	38-128	17.4	25	L470884-07	WG490768
Pyrene	mg/kg	0.125	0.146	74.6	35-141	15.9	25	L470884-07	WG490768
2-Fluorobiphenyl				76.24	37-123				WG490768
Nitrobenzene-d5				75.33	19-129				WG490768
p-Terphenyl-d14				77.44	34-149				WG490768
Selenium	mg/kg	44.8	46.1	89.6	75-125	2.86	20	L470846-01	WG490725
Chromium,Hexavalent	mg/kg	11.5	11.0	57.5	50-150	4.44	20	L470865-01	WG490809

Batch number /Run number / Sample number cross reference

WG490674: R1303508: L470862-01
 WG490759: R1304189: L470862-01
 WG490709: R1304390: L470862-01
 WG490725: R1304568: L470862-01
 WG490828: R1305069: L470862-01
 WG490768: R1305288: L470862-01
 WG490832: R1305689: L470862-01
 WG490835: R1305690: L470862-01
 WG490809: R1305968: L470862-01
 WG490804: R1307290: L470862-01

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

Parachute, CO 81635

Quality Assurance Report
Level II

L470862

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Tax I.D. 62-0814289

Est. 1970

August 02, 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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Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

Report Summary

Thursday September 16, 2010

Report Number: L478532c

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:


Jared 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

September 16, 2010

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

Date Received : September 14, 2010
Description :
Sample ID : H34-N PIT BOTTOM
Collected By : C. Jensen
Collection Date : 09/13/10 13:10

ESC Sample # : L478532-05
Site ID :
Project # :

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
Reported: 09/16/10 09:19 Printed: 09/16/10 09:19

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L478532-05	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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Quality Assurance Report
Level II

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September 16, 2010

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

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

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

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

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

Technical Report for

ENCANA

H34 Spoils Pile

Accutest Job Number: T60782

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: 18



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.

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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1

2

3

4

5

6



Sample Summary

ENCANA

Job No: T60782

H34 Spoils Pile

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
T60782-1	09/28/10	11:20	09/29/10	SO	Soil	H34-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 T60782

Site: H34 Spoils Pile

Report Date 10/1/2010 3:05:23 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 T60782. 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.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T60778-1MS, T60778-1MSD were used as the QC samples indicated.
- 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.
- T60782-1 for o-Terphenyl: Outside control limits due to dilution.

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

3.1
3

Client Sample ID: H34-SPOILS-092810	
Lab Sample ID: T60782-1	Date Sampled: 09/28/10
Matrix: SO - Soil	Date Received: 09/29/10
Method: SW846 8015	Percent Solids: 84.0
Project: H34 Spoils Pile	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0001713.D	1	10/01/10	LB	n/a	n/a	GHH87
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.66 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	6.24	6.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
460-00-4	4-Bromofluorobenzene	95%		46-127%	
98-08-8	aaa-Trifluorotoluene	96%		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

3.1
3

Client Sample ID: H34-SPOILS-092810	
Lab Sample ID: T60782-1	Date Sampled: 09/28/10
Matrix: SO - Soil	Date Received: 09/29/10
Method: SW846 8015 M SW846 3550B	Percent Solids: 84.0
Project: H34 Spoils Pile	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7204.D	10	09/30/10	EM	09/29/10	OP16217	GJF66
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C10-C28)	1380	40	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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SAMPLE INSPECTION FORM

Accutest Job Number: T60782 Client: Encona Oil & Gas (USA) INC. Date/Time Received: 9-29-10 9:15

of Coolers Received: 1 Thermometer #: IR GUN 04 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: *Evan...* 9-29-10

INFORMATION AND SAMPLE LABELING VERIFIED BY: *JRA 9/29/10*

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ **CORRECTIVE ACTIONS** ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: Phone Email

Client Instructions: _____

I:\mwalker\lork\samplemanagement SM023 Revised 8/11/10

4.1
4

SAMPLE RECEIPT LOG

JOB #: T60782 DATE/TIME RECEIVED: 9.29.10 915
 CLIENT: Encore Oil & Gas (USA) INC. INITIALS: EC

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV				PH	
								1	2	3	4	<2	>12
1	1	H34-SP015-092810	9.29.10 1120	S	16oz	1	NR	1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12
								1	2	3	4	<2	>12
								5	6	7	8	<2	>12

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

4.1
4

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: T60782
Account: ENCACOP ENCANA
Project: H34 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

T60782-1

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: T60782
Account: ENCACOP ENCANA
Project: H34 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

T60782-1

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: T60782
Account: ENCACOP ENCANA
Project: H34 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

T60782-1

CAS No.	Compound	T60778-1 mg/kg	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%

5.3.1
5

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

Job Number: T60782
Account: ENCACOP ENCANA
Project: H34 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

T60782-1

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%

6.1.1

6

Blank Spike/Blank Spike Duplicate Summary

Job Number: T60782
Account: ENCACOP ENCANA
Project: H34 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

T60782-1

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%

6.2.1
6



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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

Tuesday November 02, 2010

Report Number: L486219

Samples Received: 10/28/10

Client Project: H34

Description: H34

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:


Jared 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

November 02, 2010

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

Date Received : October 28, 2010
Description : H34
Sample ID : H34-PBN-102710
Collected By : Jake Harris
Collection Date : 10/27/10 14:20

ESC Sample # : L486219-01
Site ID :
Project # : H34

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

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: 11/02/10 15:45 Printed: 11/02/10 15:59



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REPORT OF ANALYSIS

November 02, 2010

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

Date Received : October 28, 2010
Description : H34
Sample ID : H34-SP-102710
Collected By : Jake Harris
Collection Date : 10/27/10 14:00

ESC Sample # : L486219-02
Site ID :
Project # : H34

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.69	0.50	mg/kg	8015D/GRO	10/30/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	90.7		% Rec.	602/8015	10/30/10	5
TPH (GC/FID) High Fraction	440	80.	mg/kg	3546/DRO	11/02/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	11/02/10	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: 11/02/10 15:45 Printed: 11/02/10 15:59

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L486219-01	WG505878	SAMP	o-Terphenyl	R1451512	J7
L486219-02	WG506303	SAMP	o-Terphenyl	R1453090	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.



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Parachute, CO 81635

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	< .1	mg/kg			WG505874	10/30/10 08:38
		% Rec.	91.69	59-128	WG505874	10/30/10 08:38
TPH (GC/FID) High Fraction o-Terphenyl	< 4	ppm			WG505878	10/30/10 14:34
		% Rec.	73.10	50-150	WG505878	10/30/10 14:34
TPH (GC/FID) High Fraction o-Terphenyl	< 4	ppm			WG506303	11/02/10 12:57
		% Rec.	67.08	50-150	WG506303	11/02/10 12:57

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	5.5	5.38	97.8	67-135	WG505874
				103.9	59-128	WG505874
TPH (GC/FID) High Fraction o-Terphenyl	ppm	60	56.9	94.8	50-150	WG505878
				79.27	50-150	WG505878
TPH (GC/FID) High Fraction o-Terphenyl	ppm	60	49.6	82.7	50-150	WG506303
				74.57	50-150	WG506303

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	5.38	5.38	98.0	67-135	0.0200	20	WG505874
				104.2	59-128			WG505874
TPH (GC/FID) High Fraction o-Terphenyl	ppm	58.5	56.9	98.0	50-150	2.87	20	WG505878
				80.30	50-150			WG505878
TPH (GC/FID) High Fraction o-Terphenyl	ppm	50.6	49.6	84.0	50-150	1.95	25	WG506303
				75.19	50-150			WG506303

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	12.9	0	5.5	46.9*	55-109	L486212-01	WG505874
					93.70	59-128		WG505874
TPH (GC/FID) High Fraction o-Terphenyl	ppm	50.5	2.97	60	79.3	50-150	L486005-01	WG505878
					74.93	50-150		WG505878

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	11.1	12.9	40.3*	55-109	15.1	20	L486212-01	WG505874
				93.64	59-128				WG505874
TPH (GC/FID) High Fraction o-Terphenyl	ppm	49.8	50.5	78.1	50-150	1.47	20	L486005-01	WG505878
				76.26	50-150				WG505878

* 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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November 02, 2010

Batch number /Run number / Sample number cross reference

WG505874: R1449629: L486219-01 02
WG505878: R1451512: L486219-01
WG506303: R1453090: L486219-02

* * 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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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.

Technical Report for

ENCANA

H34 Pit Closure

Accutest Job Number: T63254

Sampling Date: 11/08/10

Report to:

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

ATTN: Chris Hines

Total number of pages in report: **21**



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.

Paul Canevaro
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-10-3) 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: T63254

H34 Pit Closure

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
T63254-1	11/08/10	11:00 CH	11/09/10	SO	Soil	H34-PBN-110810
T63254-2	11/08/10	11:30 CH	11/09/10	SO	Soil	H34-PBN.SP-110810

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA

Job No T63254

Site: H34 Pit Closure

Report Date 11/12/2010 12:14:13 P

2 Samples were collected on 11/08/2010 and were received at Accutest on 11/09/2010 properly preserved, at 3.1 Deg. C and intact. These Samples received an Accutest job number of T63254. 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: GBB183
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T63250-1MS, T63250-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846 8015 M

Matrix SO	Batch ID: OP16626
------------------	--------------------------

- 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.
- Sample(s) T63164-18MS, T63164-18MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for TPH (C10-C28) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for TPH (C10-C28) are outside control limits. Probable cause due to matrix interference.
- Sample(s) T63254-1, T63254-2 have surrogates outside control limits. Outside control limits due to dilution.

Wet Chemistry By Method SM 2540 G

Matrix SO	Batch ID: GN26612
------------------	--------------------------

- Sample(s) T63115-100DUP 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

3.1
3

Client Sample ID: H34-PBN-110810	Date Sampled: 11/08/10
Lab Sample ID: T63254-1	Date Received: 11/09/10
Matrix: SO - Soil	Percent Solids: 84.0
Method: SW846 8015	
Project: H34 Pit Closure	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB0003365.D	1	11/09/10	AT	n/a	n/a	GBB183
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.36 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	6.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
460-00-4	4-Bromofluorobenzene	112%		46-127%	
98-08-8	aaa-Trifluorotoluene	106%		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

3.1
3

Client Sample ID: H34-PBN-110810	Date Sampled: 11/08/10
Lab Sample ID: T63254-1	Date Received: 11/09/10
Matrix: SO - Soil	Percent Solids: 84.0
Method: SW846 8015 M SW846 3550B	
Project: H34 Pit Closure	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IF202501.D	10	11/10/10	EM	11/09/10	OP16626	GIB1124
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C10-C28)	1180	39	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

32
3

Client Sample ID: H34-PBN.SP-110810	
Lab Sample ID: T63254-2	Date Sampled: 11/08/10
Matrix: SO - Soil	Date Received: 11/09/10
Method: SW846 8015	Percent Solids: 84.7
Project: H34 Pit Closure	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB0003367.D	1	11/09/10	AT	n/a	n/a	GBB183
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.84 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	6.0	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
460-00-4	4-Bromofluorobenzene	99%		46-127%	
98-08-8	aaa-Trifluorotoluene	107%		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

32
3

Client Sample ID: H34-PBN.SP-110810	
Lab Sample ID: T63254-2	Date Sampled: 11/08/10
Matrix: SO - Soil	Date Received: 11/09/10
Method: SW846 8015 M SW846 3550B	Percent Solids: 84.7
Project: H34 Pit Closure	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IF202502.D	10	11/10/10	EM	11/09/10	OP16626	GIF1124
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C10-C28)	851	39	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	232% ^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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SAMPLE INSPECTION FORM

Accutest Job Number: T63254 Client: EnCana Oil+Gas (USA) Inc Date/Time Received: 11/9/10 0855

of Coolers Received: 1 Thermometer #: IR Gun 04 Temperature Adjustment Factor: 0

Cooler Temperatures (initial/adjusted): #1: 3.1°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

- 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

- CHAIN OF CUSTODY**
- Chain of Custody not received
 - Sample D/T unclear or missing
 - Analyses unclear or missing
 - COC not properly executed

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

Summary of Discrepancies:
Sample jars received with no labels, ID on jar lid only.

TECHNICIAN SIGNATURE/DATE: Daniel Huchelstein 11/9/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: SR 11/9/10

CORRECTIVE ACTIONS

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: Phone Email

Client Instructions: _____

\\walker\forms\sample\managemen\... SUM33... 01/11/10

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: T63254
Account: ENCACOP ENCANA
Project: H34 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBB183-MB	BB0003348.DI		11/09/10	AT	n/a	n/a	GBB183

The QC reported here applies to the following samples:

Method: SW846 8015

T63254-1, T63254-2

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	98%	46-127%
98-08-8	aaa-Trifluorotoluene	108%	44-120%

Blank Spike Summary

Job Number: T63254
Account: ENCACOP ENCANA
Project: H34 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBB183-BS	BB0003345.DI		11/09/10	AT	n/a	n/a	GBB183

The QC reported here applies to the following samples:

Method: SW846 8015

T63254-1, T63254-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.420	105	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	99%	46-127%
98-08-8	aaa-Trifluorotoluene	112%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T63254
Account: ENCACOP ENCANA
Project: H34 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T63250-1MS	BB0003362.D100		11/09/10	AT	n/a	n/a	GBB183
T63250-1MSD	BB0003363.D100		11/09/10	AT	n/a	n/a	GBB183
T63250-1	BB0003358.D100		11/09/10	AT	n/a	n/a	GBB183

The QC reported here applies to the following samples:

Method: SW846 8015

T63254-1, T63254-2

CAS No.	Compound	T63250-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	32800	43900	76900	100	77900	103	1	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T63250-1	Limits
460-00-4	4-Bromofluorobenzene	107%	109%	99%	46-127%
98-08-8	aaa-Trifluorotoluene	113%	115%	109%	44-120%

5.3.1
5

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

Job Number: T63254
Account: ENCACOP ENCANA
Project: H34 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16626-MB	CC220400.D 1		11/10/10	EM	11/09/10	OP16626	GCC1134

The QC reported here applies to the following samples:

Method: SW846 8015 M

T63254-1, T63254-2

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	64% 33-115%

Blank Spike Summary

Job Number: T63254
Account: ENCACOP ENCANA
Project: H34 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16626-BS	CC220401.D 1		11/10/10	EM	11/09/10	OP16626	GCC1134

The QC reported here applies to the following samples:

Method: SW846 8015 M

T63254-1, T63254-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.3	20.4	61	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	61%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T63254
Account: ENCACOP ENCANA
Project: H34 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16626-MS	CC220402.D	1	11/10/10	EM	11/09/10	OP16626	GCC1134
OP16626-MSD	CC220408.D	1	11/10/10	EM	11/09/10	OP16626	GCC1134
T63164-18	IF202498.D	1	11/10/10	EM	11/09/10	OP16626	GIF1124

The QC reported here applies to the following samples:

Method: SW846 8015 M

T63254-1, T63254-2

CAS No.	Compound	T63164-18 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	9.62	39.6	25.7	41*	26.7	44*	4	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T63164-18	Limits
84-15-1	o-Terphenyl	62%	65%	93%	33-115%

6.3.1
6



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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

Wednesday November 10, 2010

Report Number: L487850

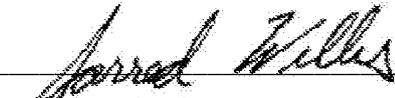
Samples Received: 11/09/10

Client Project: H34 PIT CLOSURE

Description: H34 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:


Jared 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

November 10, 2010

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

Date Received : November 09, 2010
Description : H34 Pit Closure
Sample ID : H34-PBN-110810
Collected By : C. Hines
Collection Date : 11/08/10 11:00

ESC Sample # : L487850-01
Site ID : H34
Project # : H34 PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	6.1	0.50	mg/kg	8015D/GRO	11/09/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	80.4		% Rec.	602/8015	11/09/10	5
TPH (GC/FID) High Fraction	1300	80.	mg/kg	3546/DRO	11/10/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	11/10/10	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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REPORT OF ANALYSIS

November 10, 2010

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

Date Received : November 09, 2010
Description : H34 Pit Closure
Sample ID : H34-PBN.SP-110810
Collected By : C. Hines
Collection Date : 11/08/10 11:30

ESC Sample # : L487850-02
Site ID : H34
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	11/09/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	81.5		% Rec.	602/8015	11/09/10	5
TPH (GC/FID) High Fraction	410	80.	mg/kg	3546/DRO	11/10/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	11/10/10	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: 11/10/10 17:34 Printed: 11/10/10 17:56

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L487850-01	WG507464	SAMP	o-Terphenyl	R1467350	J7
L487850-02	WG507464	SAMP	o-Terphenyl	R1467350	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
11/10/10 at 17:56:22

TSR Signing Reports: 358
R2 - Rush: Next 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: L487850-01 Account: ENCANACO Received: 11/09/10 09:00 Due Date: 11/10/10 00:00 RPT Date: 11/10/10 17:34

Sample: L487850-02 Account: ENCANACO Received: 11/09/10 09:00 Due Date: 11/10/10 00:00 RPT Date: 11/10/10 17:34



YOUR LAB OF CHOICE

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

Parachute, CO 81635

Quality Assurance Report
Level II

L487850

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November 10, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG507518	11/09/10 16:41
a,a,a-Trifluorotoluene(FID)		% Rec.	82.53	59-128	WG507518	11/09/10 16:41
TPH (GC/FID) High Fraction	< 4	ppm			WG507464	11/10/10 08:31
o-Terphenyl		% Rec.	77.41	50-150	WG507464	11/10/10 08:31

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.94	126.	67-135	WG507518
a,a,a-Trifluorotoluene(FID)				84.22	59-128	WG507518
TPH (GC/FID) High Fraction	ppm	60	48.6	81.1	50-150	WG507464
o-Terphenyl				77.90	50-150	WG507464

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.77	6.94	123.	67-135	2.37	20	WG507518
a,a,a-Trifluorotoluene(FID)				83.96	59-128			WG507518
TPH (GC/FID) High Fraction	ppm	55.3	48.6	92.0	50-150	12.8	20	WG507464
o-Terphenyl				87.35	50-150			WG507464

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	22.8	6.10	5.5	60.8	55-109	L487850-01	WG507518
a,a,a-Trifluorotoluene(FID)					79.73	59-128		WG507518
TPH (GC/FID) High Fraction	ppm	49.8	1.97	60	79.8	50-150	L487372-07	WG507464
o-Terphenyl					77.11	50-150		WG507464

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	26.3	22.8	73.3	55-109	14.0	20	L487850-01	WG507518
a,a,a-Trifluorotoluene(FID)				79.90	59-128				WG507518
TPH (GC/FID) High Fraction	ppm	38.6	49.8	61.0	50-150	25.5*	20	L487372-07	WG507464
o-Terphenyl				51.54	50-150				WG507464

Batch number /Run number / Sample number cross reference

WG507518: R1465769: L487850-01 02
WG507464: R1467350: L487850-01 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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EnCana Oil & Gas Inc. - CO
Chris Hines or Brad Kieding
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Parachute, CO 81635

Quality Assurance Report
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November 10, 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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Chris Hines
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

Report Summary

Thursday June 16, 2011

Report Number: L520663

Samples Received: 06/14/11

Client Project:

Description: H34 Pit

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: _____

Darren Reeder , 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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REPORT OF ANALYSIS

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

June 16, 2011

Date Received : June 14, 2011
Description : H34 Pit
Sample ID : H34-PIT-2-061011 8 IN
Collected By : SRM
Collection Date : 06/10/11 13:45

ESC Sample # : L520663-01
Site ID : H34
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/14/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	104.		% Rec.	602/8015	06/14/11	5
TPH (GC/FID) High Fraction	1900	80.	mg/kg	3546/DRO	06/16/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/16/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

June 16, 2011

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

Date Received : June 14, 2011
Description : H34 Pit
Sample ID : H34-PIT-7-061011 8 IN
Collected By : SRM
Collection Date : 06/10/11 14:00

ESC Sample # : L520663-02
Site ID : H34
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.56	0.50	mg/kg	8015D/GRO	06/14/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	105.		% Rec.	602/8015	06/14/11	5
TPH (GC/FID) High Fraction	3200	80.	mg/kg	3546/DRO	06/16/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/16/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

June 16, 2011

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

ESC Sample # : L520663-03

Date Received : June 14, 2011
Description : H34 Pit

Site ID : H34

Sample ID : H34-PIT-8-061011 8 IN

Project # :

Collected By : SRM
Collection Date : 06/10/11 14:30

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

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: 06/16/11 15:51 Printed: 06/16/11 15:52

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L520663-01	WG540408	SAMP	o-Terphenyl	R1724076	J7
L520663-02	WG540408	SAMP	o-Terphenyl	R1724076	J7
L520663-03	WG540408	SAMP	o-Terphenyl	R1724076	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
06/16/11 at 15:52:14

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. TPH=GRO and DRO ALWAYS

Sample: L520663-01 Account: ENCANACO Received: 06/14/11 09:00 Due Date: 06/16/11 00:00 RPT Date: 06/16/11 15:51

Sample: L520663-02 Account: ENCANACO Received: 06/14/11 09:00 Due Date: 06/16/11 00:00 RPT Date: 06/16/11 15:51

Sample: L520663-03 Account: ENCANACO Received: 06/14/11 09:00 Due Date: 06/16/11 00:00 RPT Date: 06/16/11 15:51



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

L520663

12065 Lebanon Rd.
 Mt. Juliet, TN 37122
 (615) 758-5858
 1-800-767-5859
 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 16, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG540367	06/14/11 15:50
a,a,a-Trifluorotoluene(FID)		% Rec.	104.5	59-128	WG540367	06/14/11 15:50
TPH (GC/FID) High Fraction	< 4	ppm			WG540408	06/15/11 10:00
o-Terphenyl		% Rec.	75.50	50-150	WG540408	06/15/11 10:00

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.90	107.	67-135	WG540367
a,a,a-Trifluorotoluene(FID)				100.7	59-128	WG540367
TPH (GC/FID) High Fraction	ppm	60	48.7	81.2	50-150	WG540408
o-Terphenyl				70.33	50-150	WG540408

Analyte	Units	Result	Laboratory Control Sample Duplicate		Limit	RPD	Limit	Batch
			Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.76	5.90	105.	67-135	2.34	20	WG540367
a,a,a-Trifluorotoluene(FID)				99.70	59-128			WG540367
TPH (GC/FID) High Fraction	ppm	46.2	48.7	77.0	50-150	5.44	25	WG540408
o-Terphenyl				66.93	50-150			WG540408

Analyte	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	22.3	0	5.5	81.0	55-109	L520392-04	WG540367
a,a,a-Trifluorotoluene(FID)					108.4	59-128		WG540367
TPH (GC/FID) High Fraction	ppm	45.4	0	60	75.6	50-150	L520643-06	WG540408
o-Terphenyl					58.03	50-150		WG540408

Analyte	Units	MSD	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec						
TPH (GC/FID) Low Fraction	mg/kg	19.0	22.3	69.2	55-109	15.7	20	L520392-04	WG540367	
a,a,a-Trifluorotoluene(FID)				108.5	59-128				WG540367	
TPH (GC/FID) High Fraction	ppm	49.6	45.4	82.7	50-150	8.91	25	L520643-06	WG540408	
o-Terphenyl				67.09	50-150				WG540408	

Batch number /Run number / Sample number cross reference

WG540367: R1723309: L520663-01 02 03
 WG540408: R1724076: L520663-01 02 03

* * 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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June 16, 2011

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

Report Summary

Tuesday June 21, 2011

Report Number: L521207

Samples Received: 06/16/11

Client Project:

Description: H34

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:


Jared 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

June 21, 2011

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

Date Received : June 16, 2011
Description : H34
Sample ID : H34-PIT1-061411 6-8IN
Collected By : Brennen Graff
Collection Date : 06/14/11 09:56

ESC Sample # : L521207-01
Site ID :
Project # :

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

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: 06/21/11 15:22 Printed: 06/21/11 15:22



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REPORT OF ANALYSIS

June 21, 2011

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

Date Received : June 16, 2011
Description : H34
Sample ID : H34-PIT2-061411 8-10IN
Collected By : Brennen Graff
Collection Date : 06/14/11 10:09

ESC Sample # : L521207-02
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.80	0.50	mg/kg	8015D/GRO	06/19/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.6		% Rec.	602/8015	06/19/11	5
TPH (GC/FID) High Fraction	3200	1600	mg/kg	3546/DRO	06/21/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/21/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

June 21, 2011

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

ESC Sample # : L521207-03

Date Received : June 16, 2011
Description : H34

Site ID :

Sample ID : H34-PIT3-061411 8-10IN

Project # :

Collected By : Brennen Graff
Collection Date : 06/14/11 10:19

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

June 21, 2011

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

ESC Sample # : L521207-04

Date Received : June 16, 2011
Description : H34

Site ID :

Sample ID : H34-PIT4-061411 10-12IN

Project # :

Collected By : Brennen Graff
Collection Date : 06/14/11 10:27

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/21/11 15:22 Printed: 06/21/11 15:22



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REPORT OF ANALYSIS

June 21, 2011

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2717 County Road 215, Suite 100
Parachute, CO 81635

ESC Sample # : L521207-05

Date Received : June 16, 2011
Description : H34

Site ID :

Sample ID : H34-PIT5-061411 6-8IN

Project # :

Collected By : Brennen Graff
Collection Date : 06/14/11 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/17/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.5		% Rec.	602/8015	06/17/11	5
TPH (GC/FID) High Fraction	330	80.	mg/kg	3546/DRO	06/21/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	06/21/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

June 21, 2011

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

ESC Sample # : L521207-06

Date Received : June 16, 2011
Description : H34

Site ID :

Sample ID : H34-SPOILE-061411 18-20IN

Project # :

Collected By : Brennen Graff
Collection Date : 06/14/11 11:05

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

June 21, 2011

Chris Hines
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Date Received : June 16, 2011
Description : H34
Sample ID : H34-SPOILW-061411 14-16IN
Collected By : Brennen Graff
Collection Date : 06/14/11 12:07

ESC Sample # : L521207-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/17/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	98.2		% Rec.	602/8015	06/17/11	5
TPH (GC/FID) High Fraction	260	40.	mg/kg	3546/DRO	06/21/11	10
Surrogate recovery(%) o-Terphenyl	67.6		% Rec.	3546/DRO	06/21/11	10

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Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

June 21, 2011

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2717 County Road 215, Suite 100
Parachute, CO 81635

ESC Sample # : L521207-08

Date Received : June 16, 2011
Description : H34

Site ID :

Sample ID : H34-SPOILS-061411 14-16IN

Project # :

Collected By : Brennen Graff
Collection Date : 06/14/11 12:46

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/16/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.1		% Rec.	602/8015	06/16/11	5
TPH (GC/FID) High Fraction	240	40.	mg/kg	3546/DRO	06/21/11	10
Surrogate recovery(%) o-Terphenyl	64.9		% Rec.	3546/DRO	06/21/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/21/11 15:22 Printed: 06/21/11 15:22

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L521207-01	WG541509	SAMP	o-Terphenyl	R1731271	J7
L521207-02	WG541509	SAMP	o-Terphenyl	R1731271	J7
L521207-03	WG541509	SAMP	o-Terphenyl	R1731271	J7
L521207-04	WG541509	SAMP	o-Terphenyl	R1731271	J7
L521207-05	WG541509	SAMP	o-Terphenyl	R1731271	J7
L521207-08	WG540861	SAMP	TPH (GC/FID) Low Fraction	R1726649	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

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- 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.
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- 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
06/21/11 at 15:22:30

TSR Signing Reports: 358
RX - Priority Rush

Sample: L521207-01 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22
Sample: L521207-02 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22
Sample: L521207-03 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22
Sample: L521207-04 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22
Sample: L521207-05 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22
Sample: L521207-06 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22
Sample: L521207-07 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22
Sample: L521207-08 Account: ENCANACO Received: 06/16/11 09:00 Due Date: 06/21/11 00:00 RPT Date: 06/21/11 15:22



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Quality Assurance Report
 Level II

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Tax I.D. 62-0814289

Est. 1970

June 21, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	< .1	mg/kg	98.20	59-128	WG540861	06/16/11 14:31
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	< .1	mg/kg	97.15	59-128	WG541376	06/19/11 18:50
TPH (GC/FID) High Fraction o-Terphenyl	< 4	ppm	64.29	50-150	WG541509	06/21/11 05:04

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	5.5	5.64	103. 105.0	67-135 59-128	WG540861 WG540861
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	5.5	5.93	108. 106.6	67-135 59-128	WG541376 WG541376
TPH (GC/FID) High Fraction o-Terphenyl	ppm	60	39.0	65.1 56.61	50-150 50-150	WG541509 WG541509

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	5.93	5.64	108. 106.0	67-135 59-128	4.92	20	WG540861 WG540861
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	5.82	5.93	106. 105.6	67-135 59-128	1.77	20	WG541376 WG541376
TPH (GC/FID) High Fraction o-Terphenyl	ppm	44.5	39.0	74.0 66.46	50-150 50-150	13.1	25	WG541509 WG541509

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	21.6	0	5.5	78.4 102.8	55-109 59-128	L521207-08	WG540861 WG540861
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	20.0	0	5.5	72.7 101.2	55-109 59-128	L521867-01	WG541376 WG541376

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	17.0	21.6	61.7 101.3	55-109 59-128	23.9*	20	L521207-08	WG540861 WG540861
TPH (GC/FID) Low Fraction a,a,a-Trifluorotoluene(FID)	mg/kg	22.1	20.0	80.3 101.7	55-109 59-128	9.96	20	L521867-01	WG541376 WG541376

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

Quality Assurance Report
Level II

L521207

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 21, 2011

Batch number /Run number / Sample number cross reference

WG540861: R1726649: L521207-01 03 04 05 06 07 08
WG541376: R1729069: L521207-02
WG541509: R1731271: L521207-01 02 03 04 05 06 07 08

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
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June 21, 2011

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

Report Summary

Tuesday July 12, 2011

Report Number: L525235

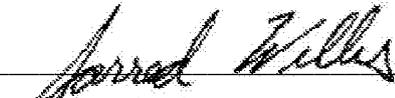
Samples Received: 07/11/11

Client Project:

Description: H34 Pitx

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:


Jared 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

July 12, 2011

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

ESC Sample # : L525235-01

Date Received : July 11, 2011
Description : H34 Pitx

Site ID : H34

Sample ID : H34-PITX LOWPOINT-0706111

Project # :

Collected By : Bob Stockton
Collection Date : 07/06/11 14:57

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	07/12/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	96.3		% Rec.	602/8015	07/12/11	5
TPH (GC/FID) High Fraction	3900	80.	mg/kg	3546/DRO	07/12/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	07/12/11	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: 07/12/11 16:10 Printed: 07/12/11 16:11



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REPORT OF ANALYSIS

July 12, 2011

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

ESC Sample # : L525235-02

Date Received : July 11, 2011
Description : H34 Pitx

Site ID : H34

Sample ID : H34-PITX-CENTER B-0706111

Project # :

Collected By : Bob Stockton
Collection Date : 07/06/11 15:07

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	1.3	0.50	mg/kg	8015D/GRO	07/12/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	602/8015	07/12/11	5
TPH (GC/FID) High Fraction	5300	80.	mg/kg	3546/DRO	07/12/11	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	07/12/11	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

July 12, 2011

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

Date Received : July 11, 2011
Description : H34 Pitx
Sample ID : H34-PITX-E WALL-0706111
Collected By : Bob Stockton
Collection Date : 07/06/11 15:13

ESC Sample # : L525235-03
Site ID : H34
Project # :

Table with 7 columns: Parameter, Result, Det. Limit, Units, Method, Date, Dil. Rows include TPH (GC/FID) Low Fraction, Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID), TPH (GC/FID) High Fraction, and Surrogate recovery(%) o-Terphenyl.

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

July 12, 2011

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

ESC Sample # : L525235-04

Date Received : July 11, 2011
Description : H34 Pitx

Site ID : H34

Sample ID : H34-PITX-NORTH B-0706111

Project # :

Collected By : Bob Stockton
Collection Date : 07/06/11 15:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	15.	0.50	mg/kg	8015D/GRO	07/12/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	93.6		% Rec.	602/8015	07/12/11	5
TPH (GC/FID) High Fraction	7700	200	mg/kg	3546/DRO	07/12/11	50
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	07/12/11	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 07/12/11 16:10 Printed: 07/12/11 16:11

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L525235-01	WG545021	SAMP	o-Terphenyl	R1757810	J7
L525235-02	WG545021	SAMP	o-Terphenyl	R1757810	J7
L525235-04	WG545021	SAMP	o-Terphenyl	R1757810	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
07/12/11 at 16:11:09

TSR Signing Reports: 358
R3 - Rush: Two Day

Sample: L525235-01 Account: ENCANACO Received: 07/11/11 09:00 Due Date: 07/13/11 00:00 RPT Date: 07/12/11 16:10

Sample: L525235-02 Account: ENCANACO Received: 07/11/11 09:00 Due Date: 07/13/11 00:00 RPT Date: 07/12/11 16:10

Sample: L525235-03 Account: ENCANACO Received: 07/11/11 09:00 Due Date: 07/13/11 00:00 RPT Date: 07/12/11 16:10

Sample: L525235-04 Account: ENCANACO Received: 07/11/11 09:00 Due Date: 07/13/11 00:00 RPT Date: 07/12/11 16:10



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Quality Assurance Report
 Level II

L525235

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 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

July 12, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG545053	07/11/11 18:37
a,a,a-Trifluorotoluene(FID)		% Rec.	97.12	59-128	WG545053	07/11/11 18:37
TPH (GC/FID) High Fraction	< 4	ppm			WG545021	07/12/11 09:59
o-Terphenyl		% Rec.	72.06	50-150	WG545021	07/12/11 09:59

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.97	108.	67-135	WG545053
a,a,a-Trifluorotoluene(FID)				105.6	59-128	WG545053
TPH (GC/FID) High Fraction	ppm	60	49.3	82.2	50-150	WG545021
o-Terphenyl				70.23	50-150	WG545021

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.94	5.97	108.	67-135	0.440	20	WG545053
a,a,a-Trifluorotoluene(FID)				105.1	59-128			WG545053
TPH (GC/FID) High Fraction	ppm	47.9	49.3	80.0	50-150	3.06	25	WG545021
o-Terphenyl				67.87	50-150			WG545021

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	5.67	0	5.5	103.	55-109	L525125-03	WG545053
a,a,a-Trifluorotoluene(FID)					102.9	59-128		WG545053
TPH (GC/FID) High Fraction	ppm	45.5	0	60	75.8	50-150	L523684-07	WG545021
o-Terphenyl					62.25	50-150		WG545021

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	4.25	5.67	77.2	55-109	28.6*	20	L525125-03	WG545053
a,a,a-Trifluorotoluene(FID)				101.0	59-128				WG545053
TPH (GC/FID) High Fraction	ppm	48.2	45.5	80.3	50-150	5.82	25	L523684-07	WG545021
o-Terphenyl				62.57	50-150				WG545021

Batch number /Run number / Sample number cross reference

WG545053: R1756831: L525235-01 02 03 04
 WG545021: R1757810: L525235-01 02 03 04

* * 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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July 12, 2011

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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.

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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.



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

Report Summary

Wednesday July 13, 2011

Report Number: L525238

Samples Received: 07/11/11

Client Project:

Description: H34 Pitx-Spoils

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:

Jared 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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REPORT OF ANALYSIS

July 13, 2011

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

ESC Sample # : L525238-01

Date Received : July 11, 2011
Description : H34 Pitx-Spoils

Site ID : H34

Sample ID : H34-PITX SPOILS-070611

Project # :

Collected By : Bob Stockton
Collection Date : 07/06/11 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	07/12/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.4		% Rec.	602/8015	07/12/11	5
TPH (GC/FID) High Fraction	540	20.	mg/kg	3546/DRO	07/12/11	5
Surrogate recovery(%) o-Terphenyl	82.2		% Rec.	3546/DRO	07/12/11	5

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: 07/13/11 09:30 Printed: 07/13/11 09:30

Summary of Remarks For Samples Printed
07/13/11 at 09:30:36

TSR Signing Reports: 358
R3 - Rush: Two Day

Sample: L525238-01 Account: ENCANACO Received: 07/11/11 09:00 Due Date: 07/13/11 00:00 RPT Date: 07/13/11 09:30



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EnCana Oil & Gas Inc. - CO
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Quality Assurance Report
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Tax I.D. 62-0814289

Est. 1970

July 13, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG545053	07/11/11 18:37
a,a,a-Trifluorotoluene(FID)		% Rec.	97.12	59-128	WG545053	07/11/11 18:37
TPH (GC/FID) High Fraction	< 4	ppm			WG545021	07/12/11 09:59
o-Terphenyl		% Rec.	72.06	50-150	WG545021	07/12/11 09:59

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.97	108.	67-135	WG545053
a,a,a-Trifluorotoluene(FID)				105.6	59-128	WG545053
TPH (GC/FID) High Fraction	ppm	60	49.3	82.2	50-150	WG545021
o-Terphenyl				70.23	50-150	WG545021

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.94	5.97	108.	67-135	0.440	20	WG545053
a,a,a-Trifluorotoluene(FID)				105.1	59-128			WG545053
TPH (GC/FID) High Fraction	ppm	47.9	49.3	80.0	50-150	3.06	25	WG545021
o-Terphenyl				67.87	50-150			WG545021

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	5.67	0	5.5	103.	55-109	L525125-03	WG545053
a,a,a-Trifluorotoluene(FID)					102.9	59-128		WG545053
TPH (GC/FID) High Fraction	ppm	45.5	0	60	75.8	50-150	L523684-07	WG545021
o-Terphenyl					62.25	50-150		WG545021

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	4.25	5.67	77.2	55-109	28.6*	20	L525125-03	WG545053
a,a,a-Trifluorotoluene(FID)				101.0	59-128				WG545053
TPH (GC/FID) High Fraction	ppm	48.2	45.5	80.3	50-150	5.82	25	L523684-07	WG545021
o-Terphenyl				62.57	50-150				WG545021

Batch number /Run number / Sample number cross reference

WG545053: R1756831: L525238-01
 WG545021: R1757810: L525238-01

* * Calculations are performed prior to rounding of reported values.
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 For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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July 13, 2011

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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.



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

Report Summary

Friday August 12, 2011

Report Number: L530197

Samples Received: 08/10/11

Client Project:

Description: H34 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:

Jared 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

August 12, 2011

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

Date Received : August 10, 2011
Description : H34 Pit Closure
Sample ID : H34-PITX-SPOIL-080811 4-6IN
Collected By : Brennen Graff
Collection Date : 08/08/11 12:09

ESC Sample # : L530197-01
Site ID : H34
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/10/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.1		% Rec.	602/8015	08/10/11	5
TPH (GC/FID) High Fraction	230	4.0	mg/kg	3546/DRO	08/11/11	1
Surrogate recovery(%) o-Terphenyl	49.7		% Rec.	3546/DRO	08/11/11	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: 08/12/11 09:47 Printed: 08/12/11 09:47

Summary of Remarks For Samples Printed
08/12/11 at 09:47:57

TSR Signing Reports: 358
R3 - Rush: Two Day

Sample: L530197-01 Account: ENCANACO Received: 08/10/11 09:00 Due Date: 08/12/11 00:00 RPT Date: 08/12/11 09:47



YOUR LAB OF CHOICE

EnCana Oil & Gas Inc. - CO
Chris Hines / Jake Harris
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report
Level II

L530197

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August 12, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG549816	08/10/11 15:34
a,a,a-Trifluorotoluene(FID)		% Rec.	98.13	59-128	WG549816	08/10/11 15:34
TPH (GC/FID) High Fraction	< 4	ppm			WG549763	08/11/11 15:43
o-Terphenyl		% Rec.	65.13	50-150	WG549763	08/11/11 15:43

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.45	99.1	67-135	WG549816
a,a,a-Trifluorotoluene(FID)				105.0	59-128	WG549816
TPH (GC/FID) High Fraction	ppm	60	47.6	79.3	50-150	WG549763
o-Terphenyl				72.80	50-150	WG549763

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.99	5.45	109.	67-135	9.39	20	WG549816
a,a,a-Trifluorotoluene(FID)				105.6	59-128			WG549816
TPH (GC/FID) High Fraction	ppm	49.4	47.6	82.0	50-150	3.87	25	WG549763
o-Terphenyl				74.82	50-150			WG549763

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	24.6	0	5.5	89.5	55-109	L530126-01	WG549816
a,a,a-Trifluorotoluene(FID)					101.6	59-128		WG549816
TPH (GC/FID) High Fraction	ppm	40.5	0	60	67.4	50-150	L529828-01	WG549763
o-Terphenyl					61.16	50-150		WG549763

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	22.4	24.6	81.6	55-109	9.21	20	L530126-01	WG549816
a,a,a-Trifluorotoluene(FID)				100.1	59-128				WG549816
TPH (GC/FID) High Fraction	ppm	45.0	40.5	74.9	50-150	10.5	25	L529828-01	WG549763
o-Terphenyl				68.29	50-150				WG549763

Batch number /Run number / Sample number cross reference

WG549816: R1810457: L530197-01
WG549763: R1811890: L530197-01

* * 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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