

Colorado Oil and Gas Conservation Commission
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Denver, CO 80203

Margaret Ash
Field Inspections Manager
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303-894-2100 x5110

**NOTIFICATION OF COMPLETION & NOAV CLOSURE REQUEST:
(I30A – Lined Earthen Pit Closure)**

Document History

COGCC Document	Document Tracking Number
Notice of Alleged Violation (NOAV)	200253729
Spill/Release Report (Form 19)	2521479
Site Investigation and Remediation Workplan (Form 27)	2521480 (Project Number – 5255)

Ms. Margaret Ash:

This letter is intended to act as the Notification of Completion (NOC), in compliance with COGCC Rule 909.e.(2)B., to demonstrate compliance with the approved Form 27 Site Investigation and Remediation Workplan (Project Number 5255) prepared to document the closure of 2 lined earthen pits on the Encana Oil & Gas (USA) Inc. (Encana) I30A well pad. Attached to this letter is a supplemental narrative to the previously approved Form 27, which details the results of field samples and the remediation and removal activities that were conducted in support of this project. Also included is a summary table of the sample results, followed by complete laboratory reports documenting compliance with COGCC Table 910-1 allowable concentrations.

In addition, this letter is intended to act as a formal request for closure of the NOAV (#200253729) issued for the lined earthen pits on this location. Informal phone conversations and email correspondence have addressed many of the corrective actions assigned with the NOAV. Attached is a copy of the Corrective Action Sheet issued with the NOAV, which formally addresses Encana's response to each corrective action assigned, with tracking numbers for previously submitted documents, and followed by any new documents prepared to meet remaining items that have yet to be formally addressed.

The west pit on the I30A well pad was backfilled and closed on September 14, 2010. The east pit remediation and closure was completed on September 24, 2010.

If you have any questions regarding this letter, its attachments, or the procedures discussed here, please don't hesitate to contact myself or Kathy Friesen (970-285-2665 or kathy.friesen@encana.com)

Regards,

Christopher C. Hines
Natural Resources Specialist
Contract Environmental Field Coordinator
970.285.2653
christopher.hines@encana.com

Attachments:

- NOAV Corrective Action Sheet Response Document
- Chemical Inventory
- I30A Supplement Form to the North Parachute Ranch Stormwater Management Plan
- Form 27 Narrative Supplement – Site Investigation and Remediation Workplan
- Laboratory Analysis Summary Table
- Laboratory Reports

NOTICE OF ALLEGED VIOLATION #200253729

I30A Well Pad – COGCC Location #335807

Corrective Action Sheet – Response Document

This document was prepared to formally respond to the Corrective Action Sheet provided to Encana Oil & Gas (USA) Inc. (Encana) with the Notice of Alleged Violation (NOAV #200253729) from the Colorado Oil and Gas Conservation Commission (COGCC). The NOAV was issued to Encana following an inspection by COGCC personnel of Encana's I30A Well Pad (COGCC Location #335807).

The document restates the issued corrective actions in the original order (number/letter) presented in bold type. Encana's response is presented following the corrective action in regular type.

1. Cease use of pits.

On April 20, 2010 the west pit was used to unload a well. A fire ignited during this activity, possibly due to a discharge of static electricity. After the fire was extinguished, Encana drained both pits, closed them to future use, and initiated scoping efforts to close both pits.

2. Repair netting and or install fencing immediately to ensure wildlife cannot access pits.

A pit netting inspection conducted on April 13, 2010 documented that the netting was in good condition, with no repairs needed. After the fire on April 20, 2010 a netting crew installed caution fence around the pit and new netting was installed over the damaged netting.

3. Submit accident report (Form 22) to Margaret Ash in Denver office June 16, 2010.

An Accident Report (Form 22) was prepared following receipt of the NOAV. The Form 22 was submitted to COGCC personnel on June 15, 2010 during an onsite of the I30A, and is provided as part of this document submission.

4. Submit spill/release report (Form 19) by June 16, 2010.

A Spill/Release Report (Form 19) was prepared following receipt of the NOAV. The Form 19 was submitted to COGCC personnel on June 15, 2010 during an onsite of the I30A, and is provided as part of this document submission. The COGCC Document Tracking Number for the submitted Form 19 is 2521479.

5. Close Pits:

a. Submit Form 27 Site Investigation/Remediation Workplan for pit closure to Margaret Ash by June 16, 2010.

A Site Investigation and Remediation Workplan (Form 27) was prepared following receipt of the NOAV. The Form 27 was submitted to COGCC personnel on June 15, 2010 during an onsite of the I30A. The COGCC Document Tracking Number for the submitted Form 27 is 2521480. The Project Tracking Number is 5255. The original Form 27 and a supplementary narrative to that document along with laboratory results are provided as part of this submission to provide Notification of Completion of remediation activities associated with Remediation Project 5255.



Encana Oil & Gas (USA) Inc.

NOAV #200253729S
Corrective Action Sheet Response Document

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NOTICE OF ALLEGED VIOLATION #200253729

I30A Well Pad – COGCC Location #335807

Corrective Action Sheet – Response Document

b. Close pits by July 22, 2010.

Due to unforeseen impacts in the east pit bottom, remediation and closure of the pits was not completed until September 14, 2010 for the west pit and September 24, 2010 for the east pit. An update on remediation progress was provided by Kathy Friesen (Encana Environmental Field Lead) via email on September 1, 2010.

c. Liner removal and soil sampling shall be witnessed by COGCC.

In preparation for closure of the pits, on May 26, 2010 Encana personnel began washing the pit liner and removing sludge and debris. The liner was removed on June 2, 2010, prior to receipt of the NOAV.

On June 15, 2010 COGCC personnel supervised collection of samples from the west pit. The east pit required additional work prior to sample collection, including removal of loosened material in the pit bottom to reestablish an undisturbed pit bottom. COGCC personnel supervised collection of samples from the east pit on July 6, 2010.

d. Provide work schedule with Form 27 and provide 72 hour notice via email and telephone to Margaret Ash (303) 894 2100 ext 5110, Margaret.ash@state.co.us.

A Site Investigation and Remediation Workplan (Form 27) was prepared following receipt of the NOAV. The Form 27 was submitted to COGCC personnel on June 15, 2010 during the onsite of the I30A. However, due to the fact that Encana had already initiated pit closure activities prior to receipt of the NOAV, we were unable to provide 72 hours notice to Margaret Ash prior to starting remediation activities.

The COGCC Document Tracking Number for the submitted Form 27 is 2521480. The Remediation Project Tracking Number is 5255.

6. Submit chemical inventory, as described in Rule 205, with Form 27 Workplan.

A chemical inventory for the I30A well pad is provided as part of this document submission.

7. Submit Form 36 Site Inspection checklist with Form 27.

The Form 36 prepared for the I30A well pad was submitted to COGCC personnel on June 15, 2010 during the onsite of the I30A.



Encana Oil & Gas (USA) Inc.

NOAV #200253729S
Corrective Action Sheet Response Document

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NOTICE OF ALLEGED VIOLATION #200253729

I30A Well Pad – COGCC Location #335807

Corrective Action Sheet – Response Document

8. Provide description CDPS stormwater permit and SWMP with Form 27 submittal.

The CDPS Stormwater Permit was submitted to COGCC personnel on June 15, 2010 during the onsite of the I30A. The location specific supplement to the North Parachute Ranch (NPR) Stormwater Management Plan (SWMP) is provided as part of this document submission. A copy of the NPR SWMP is available at Encana's Parachute Field Office.

Additional Response to NOAV regarding cut slope erosion and stormwater BMPs:

The steep terrain that is found in the Piceance Basin creates challenges for both the construction and environmental departments. The cut slope on the I30A pad was designed based on the disturbed footprint granted to the project. With the knowledge that the drilling and completions phases would be temporary the decision was made to employ BMPs that would prevent sediment or other pollution sources from leaving the location. The Haul Road to the north of the location is the Run-on Protection (ROP) BMP. This ROP limits the amount of stormwater running onto the location, thus lowering the erosion potential of the cut slope. The I30A design also employed the BMP known as Land Grading which, in the case of the I30A, collects all water or pollution on location. The I30A has a depression in the north-west corner that does not allow any discharge, lowering and possibly eliminating the threat to water quality.

The I30A is on the reclaim schedule for this fall (2010). The I30A footprint will be reduced to the acreage necessary for operations and more permanent BMPs will be employed on the site. The BMP selection will address the entire disturbance including the cut and fill slopes.



Encana Oil & Gas (USA) Inc.

NOAV #200253729S
Corrective Action Sheet Response Document

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I30A Well Pad – Chemical Inventory

Drilling / Completions / Workover Activity on I30A pad AFTER April 1, 2009:

05A-32 I30A - Workover, Hole in Tubing - Pull to Replace

10/26/09 - 5 gallons Biocide used, 5 gallons stored on location

10/27/09 - 5 gallons Biocide used, 0 gallons stored on location

05D-32 I30A - Workover, Hole in Tubing - Pull to Replace

10/28/09 - 5 gallons Biocide used, 10 gallons stored on location

10/29/09 - 5 gallons Biocide used, 5 gallons stored on location

10/30/09 - 5 gallons Biocide used, 0 gallons stored on location



Encana Oil & Gas (USA) Inc.

**I30A Well Pad
Chemical Inventory**

Page 1 of 1



**EnCana Stormwater Management Plan
Supplement Form**

Facility: EnCana Oil & Gas (USA) Inc.

Facility Address: 2717 County Road 217, Suite 100, Parachute, CO. 81635

SWMP Name: North Parachute Ranch SWMP Permit # North Parachute Ranch COR-037689

SWMP Representative: Chris Gray Phone # 970-285-2600

Site/Job Name: I30A Well Pad County: Garfield State: CO Land Status: FEE

Prepared by: Chris Gray

Qtr/Qtr	SEC	T	R	Meridian	Lat	Long
N1/2 SW1/4	30	5S	95W	6	39.582127	-108.091237

Construction Start Date	State Receiving Waters	Distance to Nearest Perennial Stream	Total Acreage	Acres Subject to Disturbance
7/27/09	East Fork Parachute Creek	~189ft	~5.59	~5.59

SITE DESCRIPTION:

Nature of activity at site: well pad.

Description of proposed construction sequence: See Volume 1 SWMP 2.1.1

Soil types: Soil data was obtained from NRCS Rifle Area, Colorado soil survey. The I30A pad is constructed in 100.0% (R47). Nihill channery loam, 6 to 25 percent slopes. Surface runoff is slow and erosion potential is severe. See Volume 1- Appendix-C and Volume 2 - Site soil maps (NRCS Soil Survey)

Description of pre-existing vegetation at the site:

The I30A is located in a transition zone of shrublands and pinyon juniper woodlands.

The plant communities of these two eco types are listed below:

Shrubland communities include semidesert shrublands found in dry lowlands, sagebrush shrublands that occupy a wide range of elevation from the Colorado Plateau to high mountain valleys, and montane shrublands other than sagebrush, characteristic of foothills and mountain regions. Semidesert Shrublands. Common shrubs include Great Basin big sagebrush (*Seriphidium tridentatum*), greasewood (*Sarcobatus vermiculatus*), rabbitbrush (*Chrysothamnus*), four-winged saltbush (*Atriplex canescens*), and shadscale (*Atriplex confertifolia*). Common grasses and forbs include galletagrass (*Hilaria jamesii*), blue grama, alkali sacaton (*Sporobolus airoides*), nodding eriogonum (*Eriogonum cernuum*), copper mallow (*Sphaeralcea coccinea*), and prince's plume (*Stanleya pinnata*). Pinyon-Juniper Woodlands. Pinyon-juniper woodlands consist of scattered Utah juniper interspersed with big sagebrush. Pinyon pine is a minor component. Several

other shrub species also occur in this community, including snowberry, bitterbrush (*Purshia tridentata*), snakeweed (*Gutierrezia sarothrae*), and serviceberry. In general, the sparse herbaceous layer consists of graminoids such as cheatgrass (*Anisantha tectorum*), Kentucky bluegrass (*Poa pratensis*), western wheatgrass, Indian ricegrass (*Oryzopsis hymenoides*), and squirreltail (*Elymus elymoides*). Forbs include Tracy's thistle (*Cirsium tracyi*), mariposa lily (*Calochortus nuttallii*), western wallflower (*Erysimum capitatum*), tapertip onion (*Allium acuminatum*), yarrow (*Achillea lanulosa*), stemless four-nerve daisy (*Tetranneuris acaulis*), and sharpleaf twinpod (*Physaria acutifolia*). All of these are native species, except for cheatgrass (an invasive, non-native annual species) and Kentucky bluegrass (a widely naturalized non-native perennial species).

Estimate of the percent of pre-existing vegetative ground cover: 75%

Describe all possible pollutants to stormwater runoff (list any that apply):

SWMP V 1 2.5 Potential sources of pollution are associated with all phases of the project from the start of construction through final reclamation. Final stabilization occurs when construction activities have been completed and all disturbed areas have been either built on, paved, or a uniform vegetative cover has been established with a density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed. The most common source of pollution during construction is sediment resulting from the erosion of recently cleared and/or graded areas, such as cut/fill slopes and soil stockpiles. However, there may be many potential pollution sources at any given site.

The following types of conditions that might affect the potential for a pollutant source to contribute pollutants to stormwater (CDPHE, 2007B) shall be evaluated: The frequency of the activity (i.e., does it occur every day or just once a month? can it be scheduled to occur only during dry weather?); Characteristics of the area where the activity takes place (i.e., surface type (pavement, gravel, vegetation, etc.), physical characteristics [site gradients, slope lengths, etc.]); Ability of primary and secondary containment (fuel tanks, drum storage, etc.) at product storage and loading/unloading facilities to prevent and contain spills and leaks; Proximity of product storage and loading/unloading facilities to waterways or drainage facilities; Concentration and toxicity of materials which may be found in the site's stormwater runoff; and Contamination of storage facilities/containment with stored materials (i.e., used oil drums or tanks coated with spilled oil).

The following items are potential sources of pollutants in the North Parachute Ranch Unit.

Each of the potential sources of pollutants will be controlled using one or more of the following types of BMPs: Erosion Controls, Drainage Controls, Sediment Controls, or Non-Stormwater Controls. Descriptions and details for each of these types of BMPs are provided in the BMP Manual (discussed in Section 3.3). Actual BMPs used at each site are shown on the Site Plans (discussed in Section 5.4).

Interim/Final Reclamation:

1. All Disturbed and Stored Soils: Erosion Controls, Drainage Controls, Sediment Controls.
2. Vehicle Tracking of Sediments: Sediment Controls, Non-Stormwater Controls.
3. Vehicle and Equipment Maintenance and Fueling: Non-Stormwater Controls.
4. Significant Dust or Particulate Generating Processes: Non-Stormwater Controls.
5. Non-Industrial Waste Sources such as Worker Trash and Portable Toilets: Non-Stormwater

Determine the potential of the above applicable pollution sources to impact stormwater discharge: All necessary controls will be implemented to prevent the above sources of pollution from impacting waters of the state.

Description of any anticipated allowable sources of non-stormwater discharge: NA

Stormwater Management Controls:

Describe and locate all structural practices implemented at the site:

- Berm (Is on the South fill slope & Southwest fill slope)
- Run On Protection (The Haul Road to the north of the location provides run-protection from the landscape water)
- Hydraulic Mulching (Is on the South fill slope)
- Filter Berm (Is on the North cut slope)
- Revegetation (Is on the Northeast cut slope)
- Roller berm (Is on the South fill slope of pad access)
- Land Grading (The location is graded so that any sediment laden stormwater collects in the northwest corner)

Describe and locate all non-structural practices implemented at the site: Revegetation

Seed Date: Fall 2008

Seed Mix used: NPR Lower Elevation Mix

Common Name	Scientific Name	Pounds Pure Live Seed (PLS) per acre
Grasses		
Bluebunch Wheatgrass	Psuedoroegneria spicata	4.0
Western wheatgrass	Pascopyrum smithii	5.0
Idaho Fescue	Festuca idahoensis	2.0
Canada bluegrass	Poa Compressa	.5
Mountain brome	Bromus marginatus	4.0
Blue Wildrye	Elymus glaucus	2.0
Needle and thread	Hesperostipa comata	3.0
		19.5 LBS/PLS/ACRE
Legumes		
Ladino clover	Trifolium repens latum	.50
Alfalfa Ladak		1.0
White sweetclover	Melilotus	.50
		2.0 LBS/PLS/ACRE

Rates recommended are for drill seeding. Double rates for broadcast seeding or Hydroseeding.

Describe phased BMP implementation:

See Volume 1- Section 3.4.

Describe the materials handling and spill prevention and response procedures:

Volume 1 Appendix E- VEM1- Refer to spec plan.

Describe and locate any concrete or asphalt batch plants implemented at the site:

There will not be any asphalt or concrete batch plant located at this site.

Describe and locate vehicle-tracking controls implemented at the site:

There is gravel on the road to minimize tracking issues on our road before we approach the county road.

Describe and locate waste management and disposal practices implemented at the site:

There is no porta john located at this facility.

Describe and locate groundwater and stormwater dewatering practices implemented at the site:

Dewatering will not take place at this site. If snowmelt needs to be removed the dewatering SOP will be followed.

Final Stabilization and Long-Term Stormwater Management:

Describe practices implemented to achieve final stabilization and planned practices to control pollutants in stormwater discharges that will occur after construction operations have been completed at the site:

The cut and fill slopes will be recontoured. Areas used for access, parking, and material staging will have gravel surfacing. Seed, soil preparation, and amendments will be applied to all disturbed soils except for areas needed for facility, road, parking, and material staging. Salvaged topsoil will be spread out and vegetative seed mix with amendments will be applied. Soil stabilization practices such as crimped straw, hydro mulch and erosion control products will be applied. Sediment control BMP's and potential erosion conditions will continue to be inspected and maintained and the areas that do not have re-growth will be reseeded as necessary until final stabilization has been achieved.

When operation of well pad or road is no longer necessary the area will be final reclaimed (plugged and abandoned). Decommissioned and all newly disturbed areas will be reclaimed. Any remaining topsoil will be spread and vegetative seed mix with amendments will be applied. The pad grade will be recontoured close to its original conditions and vegetative seed mix with amendments will be applied to all disturbed soils. Soil stabilization practices such as crimped straw, hydro mulch and erosion control products maybe used. This may occur after termination of this permit and under the coverage of a new construction permit.

Inspections and Maintenance

Describe the inspection and maintenance procedures implemented and developed for the site:

Inspections were completed within a 14-day inspection cycle during construction and during drilling/completions operations. Interim Reclamation for the location and road is complete. Seed was applied to disturbed ground and the site is stabilized. Inspections are now conducted on a 30-day inspection cycle until final stabilization is established. After all disturbed soils have been stabilized and/or controlled with native BMP's such as rocks and native slash, we will take them off a 30-day inspection and inspect them as need. See Volume 1 SWMP- 5.0.

I30A – FORM 27 – PIT CLOSURE NARRATIVE

Supplement to Document #2521480

10/25/2010

This supplement to the Form 27 Site Investigation and Remediation Workplan (COGCC Document #2521480) was prepared as part of the Notification of Completion for COGCC Remediation Project Number 5255. The information presented here is an addendum to the original Form 27 submission, and was not prepared to act as a replacement to that document. It provides clarification on how impacted materials were removed and/or remediated, and presents analytical data demonstrating compliance with the approved Remediation Plan and with COGCC Table 910-1.

Description of Impact:

The site investigation determined that impacts to material below the liner in the west pit, were below allowable levels in COGCC Table 910-1, or had mitigating circumstances for leaving material in place without additional remediation. See the section on remediation below for additional discussion on the west pit.

Elevated levels of COGCC Table 910-1 constituents of concern were identified below the liner in the east pit. The footprint for the east pit was approximately 3,000 square feet, and approximately 12 vertical feet of impacted material was excavated from that footprint during remediation efforts.

Potential receptors (water wells within ¼ mi, surface waters, etc.):

See COGCC Document #2521480.

Describe initial action taken (if previously provided, refer to that form or document):

See COGCC Document #2521480.

Describe how source is to be removed:

Impacted material in the east pit was removed using heavy equipment and was stockpiled next to the pit. Based on laboratory results, discussed below in the remediation section, no material was removed from the west pit.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

On June 15, 2010 COGCC personnel supervised the collection of samples from the west pit. The east pit required additional work prior to sample collection, including removal of loosened material in the pit bottom to reestablish an undisturbed pit bottom. On June 16, 2010 approximately 1 foot of material was scraped off the sides of the east pit and 1 to 2 feet of loose material was removed from the bottom of the east pit. The COGCC was notified that a new undisturbed pit bottom had been established, and on July 6, 2010 COGCC personnel supervised collection of samples from the east pit bottom and east pit spoil pile.

Laboratory results for the west pit showed concentrations of TPH, SAR, pH, and arsenic to be above the allowable concentrations identified in COGCC Table 910-1. The result for TPH was 1.6 ppm above the allowable concentration (501.6 ppm vs. 500 ppm) identified in Table 910-1. Encana requested a rerun by the laboratory, within the allowed hold time for the analytical method, which gave a follow up result of 360 ppm. The average TPH result for this sample is 430.8 ppm, which is below the allowable concentration. The arsenic result for the west pit is within the range of background for arsenic in the area. Based on footnote 1 to COGCC Table 910-1, that consideration will be given to background concentrations, no remediation for arsenic was conducted. Materials in the west pit were buried below the agronomic zone, at a minimum depth of 3 feet, therefore no remediation for elevated levels of SAR or pH was conducted.



Encana Oil & Gas (USA) Inc.

COGCC – Form 27

Site Investigation and Remediation Workplan Narrative

Page 1 of 3

I30A – FORM 27 – PIT CLOSURE NARRATIVE

Supplement to Document #2521480

10/25/2010

Laboratory results for samples collected from the east pit and spoil pile on July 6, 2010 showed elevated levels of TPH, SAR, and arsenic. The arsenic result was within the range of background values for the area. Additional excavation of approximately 2 feet from the east pit was conducted in late July / early August to address elevated TPH concentrations, and additional samples were collected on August 12, 2010. When results from the August 12 samples indicated that TPH levels were still above Table 910-1 allowable concentrations, approximately 3 feet of additional material was excavated from the east pit, and additional samples were collected on August 26, 2010. The August 26 samples showed continued elevated TPH concentrations in the pit bottom and spoil pile. On September 3, 2010 under Environmental Department supervision 5 test pits were dug across the bottom of the east pit. A photoionization detector was used to evaluate concentrations of volatiles at different depths in each test pit. With that information approximately 5 feet of additional material was excavated from the east pit, and additional samples were collected. The September 3 samples confirmed that TPH concentrations in the pit bottom were below allowable concentrations. The spoil pile was blended with onsite cuttings and clean native fill, and samples were collected on September 7, 2010 which indicated that additional blending with clean native fill would be required. A September 14, 2010 sampling event confirmed that spoil concentrations of TPH were below the allowable concentration identified in COGCC Table 910-1.

The cuttings used to blend with the spoil from the east pit were sampled on June 29, 2010. This material was recovered from the cut slope all around the pad. Laboratory results showed that the cuttings had elevated pH and arsenic levels, but these levels were within the range of background or were below the levels identified in the pit spoil they were blended with. The laboratory report for the cuttings is attached to this supplement.

On September 14, 2010 the west pit was backfilled with clean native fill. On September 24, 2010 following receipt of satisfactory laboratory results, the east pit was backfilled with the remediated spoil and capped with approximately 8 feet of clean native fill.

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

There is no indication of impacts to groundwater.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

See COGCC Document #2521480.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? If yes, describe:

See COGCC Document #2521480.

In addition to the originally proposed 4 samples, 12 samples were collected in support of the remediation effort on the east pit. A summary of the laboratory results and full laboratory reports are attached to this supplement.

No further site investigation is required.



I30A – FORM 27 – PIT CLOSURE NARRATIVE

Supplement to Document #2521480

10/25/2010

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

The impacted material in the west pit bottom, discussed in the remediation section, was left in place, and is covered by approximately 12 feet of clean native fill. All remediated spoil, including cuttings used during the remediation blend, was placed in the east pit and capped by approximately 8 feet of clean native fill.



Sample Tracking
Project Tracking

							Analytes (BDL = Below Detection Limit; ND = Non Detect)																																	
Allowable Concentration -->							Organic Compounds in Soil (mg/kg [ppm])																	Inorganics in Soil			Metals in Soil (mg/kg [ppm])													
Location	Field - Route	Lab	Sampler	Sample Date	Sample Matrix	Matrix Notes	TPH (total volatile and extractable petroleum hydrocarbons)	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-CD)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	
I30A	NPR - EF	Accute	AS	03/24/10	Background		62.463	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	0.004	0.579	3.48	8.54	16.9	1390	0.37	20.2	1.5	26	15.5	0.038	20.4	1.1	0.05	78.1	
I30A	NPR - EF	ESC	CH	06/15/10	Background	Cut slope middle	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.92	4.9	8.2	9.9	240	0.85	21	BDL	18	14	BDL	16	7.7	BDL	64
I30A	NPR - EF	ESC	CH	06/15/10	Background	W cut slope																						21												
I30A	NPR - EF	ESC	CH	06/15/10	Background	Cut slope east																						11												
I30A	NPR - EF	Accute	BR	06/29/10	Cuttings		196	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.27	4.25	9.2	14	2780	BDL	12.2	BDL	21.5	12.5	BDL	15	BDL	BDL	55.5	
I30A	NPR - EF	ESC	CH	06/15/10	Pit	W pit bottom - COGCC supervised collection	501.6	0.049	0.19	0.018	0.29	0.075	BDL	0.008	0.027	BDL	0.0082	0.029	BDL	0.022	0.093	BDL	0.33	0.045	2.7	33	11	11	7400	0.57	18	BDL	21	14	0.038	16	BDL	BDL	62	
I30A	NPR - EF	ESC	CH	06/15/10	Pit	W pit bottom - COGCC supervised collection (TPH rerun)	360																																	
I30A	NPR - EF	ESC	CH	07/06/10	Pit	E pit bottom - COGCC supervised	4334	0.032	BDL	0.066	0.12	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3.5	36	8.3	19	2300	0.58	24		32	18	0.032	14	7.2	BDL	52	
I30A	NPR - EF	ESC	CH	07/06/10	Pit	E pit spoil - COGCC supervised	3611	0.039	BDL	0.029	0.14	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.9	17	8	12	2300	0.6	18		35	18	0.032	11	5.5	BDL	60	
I30A	NPR - EF	ESC	BR	08/12/10	Pit	E pit bottom	1200																																	
I30A	NPR - EF	ESC	BR	08/12/10	Pit	E pit spoils	2804.9																																	
I30A	NPR - EF	ESC	BR	08/26/10	Pit	E pit bottom	1500																																	
I30A	NPR - EF	ESC	BR	08/26/10	Pit	E pit spoils	10021																																	
I30A	NPR - EF	ESC	CJ	09/03/10	Pit	E pit bottom	66																																	
I30A	NPR - EF	ESC	CJ	09/07/10	Pit	E pit spoils	620.83																																	
I30A	NPR - EF	ESC	CJ	09/14/10	Pit	Pit spoils	390																																	



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

Report Summary

Wednesday June 30, 2010

Report Number: L466441

Samples Received: 06/16/10

Client Project:

Description: I30A 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:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

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

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

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REPORT OF ANALYSIS

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

June 30, 2010

Date Received : June 16, 2010
Description : I30A Pit Closure
Sample ID : I30A-PIT W-061510
Collected By : Chris Hines
Collection Date : 06/15/10 13:20

ESC Sample # : L466441-01

Site ID : RANGELY

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/29/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	106.		% Rec.	602/8015	06/29/10	5
TPH (GC/FID) High Fraction	360	20.	mg/kg	3546/DRO	06/29/10	5
Surrogate recovery(%) o-Terphenyl	97.0		% Rec.	3546/DRO	06/29/10	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: 06/30/10 12:15 Printed: 06/30/10 12:15

Summary of Remarks For Samples Printed
06/30/10 at 12:15:33

TSR Signing Reports: 358

Sample: L466441-01 Account: ENCANACO Received: 06/16/10 09:00 Due Date: 07/02/10 00:00 RPT Date: 06/30/10 12:15
Sample expires 6/29. Relogged from L464620



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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

L466441

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June 30, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG485900	06/29/10 03:41
o-Terphenyl		% Rec.	77.47	50-150	WG485900	06/29/10 03:41
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG485869	06/29/10 08:12
a,a,a-Trifluorotoluene(FID)		% Rec.	105.8	59-128	WG485869	06/29/10 08:12

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	39.3	65.5	50-150	WG485900
o-Terphenyl				71.36	50-150	WG485900
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.56	83.0	67-135	WG485869
a,a,a-Trifluorotoluene(FID)				77.61	59-128	WG485869

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	36.6	39.3	61.0	50-150	7.09	25	WG485900
o-Terphenyl				70.87	50-150			WG485900
TPH (GC/FID) Low Fraction	mg/kg	4.51	4.56	82.0	67-135	1.21	20	WG485869
a,a,a-Trifluorotoluene(FID)				77.57	59-128			WG485869

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) High Fraction	ppm	44.1	0	60	73.4	50-150	L466255-01	WG485900
o-Terphenyl					77.42	50-150		WG485900
TPH (GC/FID) Low Fraction	mg/kg	20.8	0.800	5.5	72.6	55-109	L466089-01	WG485869
a,a,a-Trifluorotoluene(FID)					86.48	59-128		WG485869

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	42.1	44.1	70.2	50-150	4.50	25	L466255-01	WG485900
o-Terphenyl				76.66	50-150				WG485900
TPH (GC/FID) Low Fraction	mg/kg	20.0	20.8	69.8	55-109	3.74	20	L466089-01	WG485869
a,a,a-Trifluorotoluene(FID)				89.56	59-128				WG485869

Batch number /Run number / Sample number cross reference

WG485900: R1271910: L466441-01
WG485869: R1272428: L466441-01

* * 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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June 30, 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

Friday September 17, 2010

Report Number: L478734

Samples Received: 09/15/10

Client Project: G29

Description: G29

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

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
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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

September 17, 2010

Date Received : September 15, 2010
Description : G29

Sample ID : I30A-SPOIL PILE

Collected By : C. Jensen
Collection Date : 09/14/10 11:30

ESC Sample # : L478734-01

Site ID :

Project # : G29

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.9		%	2540G	09/17/10	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/15/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	103.		% Rec.	602/8015	09/15/10	5
TPH (GC/FID) High Fraction	390	4.0	mg/kg	3546/DRO	09/16/10	1
Surrogate recovery(%) o-Terphenyl	93.6		% Rec.	3546/DRO	09/16/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/17/10 15:48 Printed: 09/17/10 16:04

Summary of Remarks For Samples Printed
09/17/10 at 16:04:32

TSR Signing Reports: 358
R3 - Rush: Two Day

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

Sample: L478734-01 Account: ENCANACO Received: 09/15/10 09:00 Due Date: 09/17/10 00:00 RPT Date: 09/17/10 15:48



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Chris Hines
2717 County Road 215, Suite 100
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Quality Assurance Report
Level II

L478734

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September 17, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG498364	09/15/10 12:48
a,a,a-Trifluorotoluene(FID)		% Rec.	101.4	59-128	WG498364	09/15/10 12:48
TPH (GC/FID) High Fraction	< 4	ppm			WG498459	09/16/10 11:51
o-Terphenyl		% Rec.	87.29	50-150	WG498459	09/16/10 11:51
Total Solids	< .1	%			WG498656	09/17/10 11:13

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Total Solids	%	78.0	79.1	1.18	5	L478783-01	WG498656

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.19	94.3	67-135	WG498364
a,a,a-Trifluorotoluene(FID)				108.8	59-128	WG498364
TPH (GC/FID) High Fraction	ppm	60	47.6	79.4	50-150	WG498459
o-Terphenyl				85.86	50-150	WG498459
Total Solids	%	50	50.0	100.	85-115	WG498656

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.58	5.19	101.	67-135	7.23	20	WG498364
a,a,a-Trifluorotoluene(FID)				110.7	59-128			WG498364
TPH (GC/FID) High Fraction	ppm	52.2	47.6	87.0	50-150	9.18	25	WG498459
o-Terphenyl				95.55	50-150			WG498459

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	18.9	0	5.5	68.7	55-109	L478532-01	WG498364
a,a,a-Trifluorotoluene(FID)					103.7	59-128		WG498364
TPH (GC/FID) High Fraction	ppm	49.1	0	60	81.8	50-150	L478279-05	WG498459
o-Terphenyl					79.13	50-150		WG498459

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
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
TPH (GC/FID) High Fraction	ppm	50.6	49.1	84.3	50-150	2.95	25	L478279-05	WG498459
o-Terphenyl				83.55	50-150				WG498459

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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September 17, 2010

Batch number /Run number / Sample number cross reference

WG498364: R1377408: L478734-01
WG498459: R1378968: L478734-01
WG498656: R1380195: L478734-01

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
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September 17, 2010

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

Report Summary

Monday August 16, 2010

Report Number: L473688

Samples Received: 08/13/10

Client Project: I30A PIT CLOSURE

Description: I30A Pit Closure

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

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

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

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REPORT OF ANALYSIS

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

August 16, 2010

Date Received : August 13, 2010
Description : I30A Pit Closure
Sample ID : I30A-E PIT 081210
Collected By : Blair Rollins
Collection Date : 08/12/10 14:45

ESC Sample # : L473688-01

Site ID :

Project # : I30A PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/13/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	99.2		% Rec.	602/8015	08/13/10	5
TPH (GC/FID) High Fraction	1200	80.	mg/kg	3546/DRO	08/16/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/16/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/16/10 17:03 Printed: 08/16/10 17:18



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REPORT OF ANALYSIS

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

August 16, 2010

Date Received : August 13, 2010
Description : I30A Pit Closure
Sample ID : I30A-SPOILS 081210
Collected By : Blair Rollins
Collection Date : 08/12/10 15:10

ESC Sample # : L473688-02

Site ID :

Project # : I30A PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	4.9	0.50	mg/kg	8015D/GRO	08/13/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	98.5		% Rec.	602/8015	08/13/10	5
TPH (GC/FID) High Fraction	2800	80.	mg/kg	3546/DRO	08/16/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/16/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/16/10 17:03 Printed: 08/16/10 17:18

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L473688-01	WG493474	SAMP	o-Terphenyl	R1331629	J7
L473688-02	WG493474	SAMP	o-Terphenyl	R1331629	J7

Attachment B
Explanation of QC Qualifier Codes

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

Qualifier Report Information

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

Definitions

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

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

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

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

Summary of Remarks For Samples Printed
08/16/10 at 17:18:41

TSR Signing Reports: 358
R2 - Rush: Next Day

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

Sample: L473688-01 Account: ENCANACO Received: 08/13/10 09:00 Due Date: 08/16/10 00:00 RPT Date: 08/16/10 17:03

Sample: L473688-02 Account: ENCANACO Received: 08/13/10 09:00 Due Date: 08/16/10 00:00 RPT Date: 08/16/10 17:03



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Quality Assurance Report
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Est. 1970

August 16, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG493474	08/14/10 09:15
o-Terphenyl		% Rec.	63.14	50-150	WG493474	08/14/10 09:15
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG493423	08/13/10 16:54
a,a,a-Trifluorotoluene(FID)		% Rec.	100.6	59-128	WG493423	08/13/10 16:54

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	43.5	72.6	50-150	WG493474
o-Terphenyl				70.56	50-150	WG493474
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.12	111.	67-135	WG493423
a,a,a-Trifluorotoluene(FID)				93.42	59-128	WG493423

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	46.7	43.5	78.0	50-150	6.95	25	WG493474
o-Terphenyl				73.54	50-150			WG493474
TPH (GC/FID) Low Fraction	mg/kg	6.07	6.12	110.	67-135	0.770	20	WG493423
a,a,a-Trifluorotoluene(FID)				92.90	59-128			WG493423

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) High Fraction	ppm	35.9	0	60	59.8	50-150	L473639-02	WG493474
o-Terphenyl					61.30	50-150		WG493474
TPH (GC/FID) Low Fraction	mg/kg	28.9	0	5.5	105.	55-109	L473681-05	WG493423
a,a,a-Trifluorotoluene(FID)					93.41	59-128		WG493423

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	42.4	35.9	70.6	50-150	16.6	25	L473639-02	WG493474
o-Terphenyl				69.20	50-150				WG493474
TPH (GC/FID) Low Fraction	mg/kg	29.6	28.9	108.	55-109	2.49	20	L473681-05	WG493423
a,a,a-Trifluorotoluene(FID)				94.32	59-128				WG493423

Batch number /Run number / Sample number cross reference

WG493423: R1330449: L473688-01 02
WG493474: R1331629: L473688-01 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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Tax I.D. 62-0814289

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August 16, 2010

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

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

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

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



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

Report Summary

Thursday July 15, 2010

Report Number: L467717

Samples Received: 07/07/10

Client Project:

Description: I30A Pit Closure

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

Entire Report Reviewed By:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

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

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

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

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REPORT OF ANALYSIS

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

July 15, 2010

Date Received : July 07, 2010
Description : I30A Pit Closure
Sample ID : I30A-PIT E SPOIL - 070610
Collected By : Chris Hines
Collection Date : 07/06/10 11:00

ESC Sample # : L467717-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.0		su	9045D	07/09/10	1
Sodium Adsorption Ratio	17.			Calc.	07/13/10	1
Specific Conductance	2900		umhos/cm	9050AMod	07/13/10	1
Mercury	0.032	0.020	mg/kg	7471	07/08/10	1
Arsenic	12.	5.0	mg/kg	6010B	07/14/10	5
Barium	2300	0.25	mg/kg	6010B	07/14/10	1
Cadmium	0.60	0.25	mg/kg	6010B	07/14/10	1
Chromium	18.	0.50	mg/kg	6010B	07/14/10	1
Copper	35.	1.0	mg/kg	6010B	07/14/10	1
Lead	18.	0.25	mg/kg	6010B	07/14/10	1
Nickel	11.	1.0	mg/kg	6010B	07/14/10	1
Selenium	5.5	1.0	mg/kg	6010B	07/14/10	1
Silver	BDL	0.50	mg/kg	6010B	07/14/10	1
Zinc	60.	1.5	mg/kg	6010B	07/14/10	1
Benzene	0.039	0.025	mg/kg	8021/8015	07/12/10	50
Toluene	BDL	0.25	mg/kg	8021/8015	07/12/10	50
Ethylbenzene	0.029	0.025	mg/kg	8021/8015	07/12/10	50
Total Xylene	0.14	0.075	mg/kg	8021/8015	07/12/10	50
TPH (GC/FID) Low Fraction	11.	5.0	mg/kg	GRO	07/12/10	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.9		% Rec.	8021/8015	07/12/10	50
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	07/12/10	50
TPH (GC/FID) High Fraction	3600	80.	mg/kg	3546/DRO	07/09/10	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/09/10	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	1.6	mg/kg	8270C	07/13/10	50
Acenaphthene	BDL	1.6	mg/kg	8270C	07/13/10	50
Acenaphthylene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(a)anthracene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(a)pyrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(b)fluoranthene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(g,h,i)perylene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(k)fluoranthene	BDL	1.6	mg/kg	8270C	07/13/10	50
Chrysene	BDL	1.6	mg/kg	8270C	07/13/10	50
Dibenz(a,h)anthracene	BDL	1.6	mg/kg	8270C	07/13/10	50
Fluoranthene	BDL	1.6	mg/kg	8270C	07/13/10	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L467717-01 (PH) - 8.0@22.0c



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REPORT OF ANALYSIS

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

July 15, 2010

Date Received : July 07, 2010
Description : I30A Pit Closure
Sample ID : I30A-PIT E SPOIL - 070610
Collected By : Chris Hines
Collection Date : 07/06/10 11:00

ESC Sample # : L467717-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Fluorene	BDL	1.6	mg/kg	8270C	07/13/10	50
Indeno(1,2,3-cd)pyrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Naphthalene	BDL	1.6	mg/kg	8270C	07/13/10	50
Phenanthrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Pyrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	07/13/10	50
2-Fluorobiphenyl	0.00		% Rec.	8270C	07/13/10	50
p-Terphenyl-d14	0.00		% Rec.	8270C	07/13/10	50

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: 07/14/10 16:04 Revised: 07/15/10 10:09
L467717-01 (PH) - 8.0@22.0c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L467717-01	WG487453	SAMP	Anthracene	R1280791	O
	WG487453	SAMP	Acenaphthene	R1280791	O
	WG487453	SAMP	Acenaphthylene	R1280791	O
	WG487453	SAMP	Benzo(a)anthracene	R1280791	O
	WG487453	SAMP	Benzo(a)pyrene	R1280791	O
	WG487453	SAMP	Benzo(b)fluoranthene	R1280791	O
	WG487453	SAMP	Benzo(g,h,i)perylene	R1280791	O
	WG487453	SAMP	Benzo(k)fluoranthene	R1280791	O
	WG487453	SAMP	Chrysene	R1280791	O
	WG487453	SAMP	Dibenz(a,h)anthracene	R1280791	O
	WG487453	SAMP	Fluoranthene	R1280791	O
	WG487453	SAMP	Fluorene	R1280791	O
	WG487453	SAMP	Indeno(1,2,3-cd)pyrene	R1280791	O
	WG487453	SAMP	Naphthalene	R1280791	O
	WG487453	SAMP	Phenanthrene	R1280791	O
	WG487453	SAMP	Pyrene	R1280791	O
	WG487453	SAMP	Nitrobenzene-d5	R1280791	J7
	WG487453	SAMP	2-Fluorobiphenyl	R1280791	J7
	WG487453	SAMP	p-Terphenyl-d14	R1280791	J7
	WG487341	SAMP	o-Terphenyl	R1280389	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
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.



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July 15, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Mercury	< .02	mg/kg			WG487422	07/08/10 10:21
TPH (GC/FID) High Fraction	< 4	ppm			WG487341	07/08/10 16:15
o-Terphenyl		% Rec.	89.82	50-150	WG487341	07/08/10 16:15
Acenaphthene	< .033	mg/kg			WG487453	07/09/10 11:56
Acenaphthylene	< .033	mg/kg			WG487453	07/09/10 11:56
Anthracene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(a)anthracene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(a)pyrene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(b)fluoranthene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(g,h,i)perylene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(k)fluoranthene	< .033	mg/kg			WG487453	07/09/10 11:56
Chrysene	< .033	mg/kg			WG487453	07/09/10 11:56
Dibenz(a,h)anthracene	< .033	mg/kg			WG487453	07/09/10 11:56
Fluoranthene	< .033	mg/kg			WG487453	07/09/10 11:56
Fluorene	< .033	mg/kg			WG487453	07/09/10 11:56
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG487453	07/09/10 11:56
Naphthalene	< .033	mg/kg			WG487453	07/09/10 11:56
Phenanthrene	< .033	mg/kg			WG487453	07/09/10 11:56
Pyrene	< .033	mg/kg			WG487453	07/09/10 11:56
2-Fluorobiphenyl		% Rec.	63.19	37-123	WG487453	07/09/10 11:56
Nitrobenzene-d5		% Rec.	60.94	19-129	WG487453	07/09/10 11:56
p-Terphenyl-d14		% Rec.	82.82	34-149	WG487453	07/09/10 11:56
pH	5.10	su			WG487613	07/09/10 15:45
Benzene	< .0005	mg/kg			WG487980	07/12/10 15:32
Ethylbenzene	< .0005	mg/kg			WG487980	07/12/10 15:32
Toluene	< .005	mg/kg			WG487980	07/12/10 15:32
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG487980	07/12/10 15:32
Total Xylene	< .0015	mg/kg			WG487980	07/12/10 15:32
a,a,a-Trifluorotoluene(FID)		% Rec.	99.07	59-128	WG487980	07/12/10 15:32
a,a,a-Trifluorotoluene(PID)		% Rec.	102.3	54-144	WG487980	07/12/10 15:32
Specific Conductance	1.10	umhos/cm			WG487763	07/13/10 08:40
Arsenic	< 1	mg/kg			WG487996	07/14/10 00:00
Barium	< .25	mg/kg			WG487996	07/14/10 00:00
Cadmium	< .25	mg/kg			WG487996	07/14/10 00:00
Chromium	< .5	mg/kg			WG487996	07/14/10 00:00
Copper	< 1	mg/kg			WG487996	07/14/10 00:00
Lead	< .25	mg/kg			WG487996	07/14/10 00:00
Nickel	< 1	mg/kg			WG487996	07/14/10 00:00
Selenium	< 1	mg/kg			WG487996	07/14/10 00:00
Silver	< .5	mg/kg			WG487996	07/14/10 00:00
Zinc	< 1.5	mg/kg			WG487996	07/14/10 00:00

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Mercury	mg/kg	0.0210	0		NA	20	L467744-04	WG487422

* 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 15, 2010

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
pH	su	5.30	5.20		1.90*	1	L467647-01	WG487613
pH	su	5.30	5.50		3.70*	1	L468000-01	WG487613
Specific Conductance	umhos/cm	220.	220.		0.456	20	L467873-02	WG487763
Specific Conductance	umhos/cm	3300	3300		0	20	L468098-01	WG487763
Barium	mg/kg	78.0	80.0		2.53	20	L467791-01	WG487996
Cadmium	mg/kg	3.60	3.60		1.12	20	L467791-01	WG487996
Chromium	mg/kg	70.0	79.0		12.1	20	L467791-01	WG487996
Copper	mg/kg	950.	846.		11.9	20	L467791-01	WG487996
Lead	mg/kg	75.0	64.0		15.6	20	L467791-01	WG487996
Nickel	mg/kg	44.0	62.1		33.0*	20	L467791-01	WG487996
Selenium	mg/kg	85.0	80.0		6.53	20	L467791-01	WG487996
Silver	mg/kg	1.80	1.80		2.25	20	L467791-01	WG487996
Zinc	mg/kg	580.	599.		2.88	20	L467791-01	WG487996
Arsenic	mg/kg	0	0		0	20	L467791-01	WG487996

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Mercury	mg/kg	8.77	8.70	99.2	71.6-127.7	WG487422
TPH (GC/FID) High Fraction	ppm	60	44.5	74.2	50-150	WG487341
o-Terphenyl				81.26	50-150	WG487341
Acenaphthene	mg/kg	.167	0.121	72.3	44-117	WG487453
Acenaphthylene	mg/kg	.167	0.127	76.3	43-118	WG487453
Anthracene	mg/kg	.167	0.124	74.3	42-127	WG487453
Benzo(a)anthracene	mg/kg	.167	0.129	77.2	45-127	WG487453
Benzo(a)pyrene	mg/kg	.167	0.127	76.3	46-123	WG487453
Benzo(b)fluoranthene	mg/kg	.167	0.133	79.8	43-126	WG487453
Benzo(g,h,i)perylene	mg/kg	.167	0.141	84.3	43-128	WG487453
Benzo(k)fluoranthene	mg/kg	.167	0.113	67.9	40-126	WG487453
Chrysene	mg/kg	.167	0.127	75.9	44-129	WG487453
Dibenz(a,h)anthracene	mg/kg	.167	0.135	80.6	43-127	WG487453
Fluoranthene	mg/kg	.167	0.131	78.2	44-125	WG487453
Fluorene	mg/kg	.167	0.130	78.1	45-121	WG487453
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.139	83.3	43-127	WG487453
Naphthalene	mg/kg	.167	0.117	70.0	32-113	WG487453
Phenanthrene	mg/kg	.167	0.123	73.4	43-124	WG487453
Pyrene	mg/kg	.167	0.137	82.1	47-128	WG487453
2-Fluorobiphenyl				67.61	37-123	WG487453
Nitrobenzene-d5				61.32	19-129	WG487453
p-Terphenyl-d14				87.76	34-149	WG487453
pH	su	9.36	9.40	100.	98.9-102.0	WG487613
Benzene	mg/kg	.05	0.0499	99.7	76-113	WG487980
Ethylbenzene	mg/kg	.05	0.0511	102.	78-115	WG487980
Toluene	mg/kg	.05	0.0503	101.	76-114	WG487980
Total Xylene	mg/kg	.15	0.154	103.	81-118	WG487980
a,a,a-Trifluorotoluene(FID)				97.58	59-128	WG487980

* 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 15, 2010

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
a,a,a-Trifluorotoluene(PID)				100.4	54-144	
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.24	95.4	67-135	WG487980
a,a,a-Trifluorotoluene(FID)				92.86	59-128	WG487980
a,a,a-Trifluorotoluene(PID)				106.1	54-144	WG487980
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG487763
Arsenic	mg/kg	192	176.	91.7	78.6-120.8	WG487996
Barium	mg/kg	420	415.	98.8	78.8-121.4	WG487996
Cadmium	mg/kg	70.1	66.6	95.0	78.5-121.5	WG487996
Chromium	mg/kg	168	171.	102.	80.4-120.2	WG487996
Copper	mg/kg	122	124.	102.	81.6-119.7	WG487996
Lead	mg/kg	113	109.	96.5	77.3-122.1	WG487996
Nickel	mg/kg	74.1	70.9	95.7	78.8-121.2	WG487996
Selenium	mg/kg	176	180.	102.	75.6-125.0	WG487996
Silver	mg/kg	115	113.	98.3	66-133.9	WG487996
Zinc	mg/kg	437	434.	99.3	78.5-121.7	WG487996

Analyte	Units	Laboratory Control Result	Sample Duplicate Ref	%Rec	Limit	RPD	Limit	Batch
TPH (GC/FID) High Fraction	ppm	44.5	44.5	74.0	50-150	0.0881	25	WG487341
o-Terphenyl				80.47	50-150			WG487341
Acenaphthene	mg/kg	0.116	0.121	70.0	44-117	3.65	21	WG487453
Acenaphthylene	mg/kg	0.127	0.127	76.0	43-118	0.364	20	WG487453
Anthracene	mg/kg	0.126	0.124	75.0	42-127	1.24	21	WG487453
Benzo(a)anthracene	mg/kg	0.127	0.129	76.0	45-127	1.54	21	WG487453
Benzo(a)pyrene	mg/kg	0.124	0.127	74.0	46-123	2.83	20	WG487453
Benzo(b)fluoranthene	mg/kg	0.132	0.133	79.0	43-126	1.20	27	WG487453
Benzo(g,h,i)perylene	mg/kg	0.140	0.141	84.0	43-128	0.511	20	WG487453
Benzo(k)fluoranthene	mg/kg	0.110	0.113	66.0	40-126	3.05	32	WG487453
Chrysene	mg/kg	0.125	0.127	75.0	44-129	1.34	22	WG487453
Dibenz(a,h)anthracene	mg/kg	0.135	0.135	81.0	43-127	0.195	20	WG487453
Fluoranthene	mg/kg	0.130	0.131	78.0	44-125	0.0402	22	WG487453
Fluorene	mg/kg	0.125	0.130	75.0	45-121	4.31	20	WG487453
Indeno(1,2,3-cd)pyrene	mg/kg	0.140	0.139	84.0	43-127	0.625	21	WG487453
Naphthalene	mg/kg	0.114	0.117	68.0	32-113	2.34	26	WG487453
Phenanthrene	mg/kg	0.119	0.123	71.0	43-124	3.07	21	WG487453
Pyrene	mg/kg	0.132	0.137	79.0	47-128	3.78	20	WG487453
2-Fluorobiphenyl				67.62	37-123			WG487453
Nitrobenzene-d5				63.24	19-129			WG487453
p-Terphenyl-d14				87.70	34-149			WG487453
pH	su	9.40	9.40	100.	98.9-102.0	0	20	WG487613
Benzene	mg/kg	0.0518	0.0499	104.	76-113	3.77	20	WG487980
Ethylbenzene	mg/kg	0.0521	0.0511	104.	78-115	1.95	20	WG487980
Toluene	mg/kg	0.0515	0.0503	103.	76-114	2.36	20	WG487980
Total Xylene	mg/kg	0.157	0.154	105.	81-118	2.20	20	WG487980
a,a,a-Trifluorotoluene(FID)				98.83	59-128			WG487980
a,a,a-Trifluorotoluene(PID)				101.4	54-144			WG487980
TPH (GC/FID) Low Fraction	mg/kg	5.28	5.24	96.0	67-135	0.600	20	WG487980
a,a,a-Trifluorotoluene(FID)				92.78	59-128			WG487980

* 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 15, 2010

Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
a,a,a-Trifluorotoluene(PID)				106.3	54-144			
Specific Conductance	umhos/	410.	410.	101.	85-115	0	20	WG487763
Analyte	Units	Matrix Spike			Limit	Ref Samp	Batch	
		MS Res	Ref Res	TV				% Rec
Mercury	mg/kg	0.225	0	.25	90.0	70-130	L467744-04	WG487422
TPH (GC/FID) High Fraction	ppm	42.3	0	60	70.6	50-150	L467373-01	WG487341
o-Terphenyl					68.14	50-150		WG487341
Acenaphthene	mg/kg	0.146	0	.167	87.4	38-121	L467468-04	WG487453
Acenaphthylene	mg/kg	0.149	0	.167	89.1	39-120	L467468-04	WG487453
Anthracene	mg/kg	0.160	0.0360	.167	74.5	35-133	L467468-04	WG487453
Benzo(a)anthracene	mg/kg	0.163	0	.167	97.4	35-136	L467468-04	WG487453
Benzo(a)pyrene	mg/kg	0.139	0	.167	83.1	37-131	L467468-04	WG487453
Benzo(b)fluoranthene	mg/kg	0.133	0	.167	79.9	29-145	L467468-04	WG487453
Benzo(g,h,i)perylene	mg/kg	0.162	0	.167	97.0	10-139	L467468-04	WG487453
Benzo(k)fluoranthene	mg/kg	0.164	0	.167	97.9	31-140	L467468-04	WG487453
Chrysene	mg/kg	0.148	0	.167	88.8	34-137	L467468-04	WG487453
Dibenz(a,h)anthracene	mg/kg	0.151	0	.167	90.1	21-132	L467468-04	WG487453
Fluoranthene	mg/kg	0.151	0	.167	90.5	34-132	L467468-04	WG487453
Fluorene	mg/kg	0.148	0	.167	88.5	38-126	L467468-04	WG487453
Indeno(1,2,3-cd)pyrene	mg/kg	0.150	0	.167	89.8	17-134	L467468-04	WG487453
Naphthalene	mg/kg	0.147	0	.167	88.2	24-122	L467468-04	WG487453
Phenanthrene	mg/kg	0.156	0	.167	93.2	38-128	L467468-04	WG487453
Pyrene	mg/kg	0.172	0	.167	103.	35-141	L467468-04	WG487453
2-Fluorobiphenyl					80.46	37-123		WG487453
Nitrobenzene-d5					116.0	19-129		WG487453
p-Terphenyl-d14					102.3	34-149		WG487453
Benzene	mg/kg	0.225	0	.05	90.2	32-137	L468057-01	WG487980
Ethylbenzene	mg/kg	0.215	0	.05	85.9	10-150	L468057-01	WG487980
Toluene	mg/kg	0.223	0.00160	.05	88.7	20-142	L468057-01	WG487980
Total Xylene	mg/kg	0.654	0.00690	.15	86.3	16-141	L468057-01	WG487980
a,a,a-Trifluorotoluene(FID)					97.32	59-128		WG487980
a,a,a-Trifluorotoluene(PID)					100.6	54-144		WG487980
TPH (GC/FID) Low Fraction	mg/kg	20.2	0	5.5	73.6	55-109	L468057-01	WG487980
a,a,a-Trifluorotoluene(FID)					94.69	59-128		WG487980
a,a,a-Trifluorotoluene(PID)					103.5	54-144		WG487980
Barium	mg/kg	128.	80.0	50	96.0	75-125	L467791-01	WG487996
Cadmium	mg/kg	48.2	3.60	50	89.2	75-125	L467791-01	WG487996
Chromium	mg/kg	111.	79.0	50	64.0*	75-125	L467791-01	WG487996
Copper	mg/kg	1860	846.	50	2030*	75-125	L467791-01	WG487996
Lead	mg/kg	143.	64.0	50	158.*	75-125	L467791-01	WG487996
Nickel	mg/kg	95.8	62.1	50	67.4*	75-125	L467791-01	WG487996
Selenium	mg/kg	129.	80.0	50	98.0	75-125	L467791-01	WG487996
Silver	mg/kg	55.5	1.80	50	107.	75-125	L467791-01	WG487996
Zinc	mg/kg	677.	599.	50	156.*	75-125	L467791-01	WG487996
Arsenic	mg/kg	-2.67	0	1	0*	75-125	L467791-01	WG487996

* Performance of this Analyte is outside of established criteria.
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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.227	0.225	90.8	70-130	0.885	20	L467744-04	WG487422
TPH (GC/FID) High Fraction	ppm	41.1	42.3	68.6	50-150	2.88	25	L467373-01	WG487341
o-Terphenyl				66.80	50-150				WG487341
Acenaphthene	mg/kg	0.172	0.146	103.	38-121	16.3	23	L467468-04	WG487453
Acenaphthylene	mg/kg	0.177	0.149	106.	39-120	17.0	22	L467468-04	WG487453
Anthracene	mg/kg	0.174	0.160	82.8	35-133	8.28	23	L467468-04	WG487453
Benzo(a)anthracene	mg/kg	0.173	0.163	104.	35-136	6.19	23	L467468-04	WG487453
Benzo(a)pyrene	mg/kg	0.162	0.139	96.8	37-131	15.3	22	L467468-04	WG487453
Benzo(b)fluoranthene	mg/kg	0.161	0.133	96.3	29-145	18.6	33	L467468-04	WG487453
Benzo(g,h,i)perylene	mg/kg	0.173	0.162	103.	10-139	6.47	26	L467468-04	WG487453
Benzo(k)fluoranthene	mg/kg	0.159	0.164	95.4	31-140	2.63	34	L467468-04	WG487453
Chrysene	mg/kg	0.168	0.148	101.	34-137	12.5	23	L467468-04	WG487453
Dibenz(a,h)anthracene	mg/kg	0.160	0.151	96.0	21-132	6.31	25	L467468-04	WG487453
Fluoranthene	mg/kg	0.156	0.151	93.3	34-132	3.00	24	L467468-04	WG487453
Fluorene	mg/kg	0.174	0.148	104.	38-126	16.5	23	L467468-04	WG487453
Indeno(1,2,3-cd)pyrene	mg/kg	0.164	0.150	98.3	17-134	9.07	25	L467468-04	WG487453
Naphthalene	mg/kg	0.161	0.147	96.2	24-122	8.74	29	L467468-04	WG487453
Phenanthrene	mg/kg	0.165	0.156	98.7	38-128	5.76	25	L467468-04	WG487453
Pyrene	mg/kg	0.181	0.172	108.	35-141	5.17	25	L467468-04	WG487453
2-Fluorobiphenyl				97.65	37-123				WG487453
Nitrobenzene-d5				128.8	19-129				WG487453
p-Terphenyl-d14				104.8	34-149				WG487453
Benzene	mg/kg	0.230	0.225	92.0	32-137	2.00	39	L468057-01	WG487980
Ethylbenzene	mg/kg	0.225	0.215	90.1	10-150	4.80	44	L468057-01	WG487980
Toluene	mg/kg	0.227	0.223	90.3	20-142	1.78	42	L468057-01	WG487980
Total Xylene	mg/kg	0.683	0.654	90.1	16-141	4.24	46	L468057-01	WG487980
a,a,a-Trifluorotoluene(FID)				97.44	59-128				WG487980
a,a,a-Trifluorotoluene(PID)				100.1	54-144				WG487980
TPH (GC/FID) Low Fraction	mg/kg	26.8	20.2	97.5	55-109	27.9*	20	L468057-01	WG487980
a,a,a-Trifluorotoluene(FID)				95.70	59-128				WG487980
a,a,a-Trifluorotoluene(PID)				104.9	54-144				WG487980
Barium	mg/kg	128.	128.	96.0	75-125	0	20	L467791-01	WG487996
Cadmium	mg/kg	50.4	48.2	93.6	75-125	4.46	20	L467791-01	WG487996
Chromium	mg/kg	149.	111.	140.*	75-125	29.2*	20	L467791-01	WG487996
Copper	mg/kg	1460	1860	1230*	75-125	24.1*	20	L467791-01	WG487996
Lead	mg/kg	147.	143.	166.*	75-125	2.76	20	L467791-01	WG487996
Nickel	mg/kg	104.	95.8	83.8	75-125	8.21	20	L467791-01	WG487996
Selenium	mg/kg	136.	129.	112.	75-125	5.28	20	L467791-01	WG487996
Silver	mg/kg	57.0	55.5	110.	75-125	2.67	20	L467791-01	WG487996
Zinc	mg/kg	582.	677.	0*	75-125	15.1	20	L467791-01	WG487996
Arsenic	mg/kg	3.95	-2.67	7.90*	75-125	1030*	20	L467791-01	WG487996

Batch number /Run number / Sample number cross reference

WG487422: R1279609: L467717-01
WG487341: R1280389: L467717-01
WG487453: R1280791: L467717-01
WG487613: R1282273: L467717-01
WG487980: R1283290: L467717-01
WG487763: R1284188: L467717-01
WG487937: R1284288: L467717-01

* 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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WG487996: R1284874: L467717-01

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
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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 or Brad Kieding
EnCana Oil & Gas Inc. - CO
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Parachute, CO 81635

Report Summary

Friday September 10, 2010

Report Number: L477479

Samples Received: 09/08/10

Client Project: I30A - E. PIT SPOILS

Description: I30A - E. Pit 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:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

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

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

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

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REPORT OF ANALYSIS

Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
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September 10, 2010

Date Received : September 08, 2010
Description : I30A - E. Pit Spoils
Sample ID : I30A - E. PIT SPOILS
Collected By : C. Jensen
Collection Date : 09/07/10 10:30

ESC Sample # : L477479-01

Site ID :

Project # : I30A - E. PIT SPOILS

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.83	0.50	mg/kg	8015D/GRO	09/08/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	99.3		% Rec.	602/8015	09/08/10	5
TPH (GC/FID) High Fraction	620	80.	mg/kg	3546/DRO	09/09/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	09/09/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/10/10 11:34 Printed: 09/10/10 13:01

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L477479-01	WG497078	SAMP	o-Terphenyl	R1368648	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
09/10/10 at 13:01:37

TSR Signing Reports: 358
R3 - Rush: Two Day

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

Sample: L477479-01 Account: ENCANACO Received: 09/08/10 09:00 Due Date: 09/10/10 00:00 RPT Date: 09/10/10 11:34



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG497346	09/08/10 13:49
a,a,a-Trifluorotoluene(FID)		% Rec.	100.8	59-128	WG497346	09/08/10 13:49
TPH (GC/FID) High Fraction	< 4	ppm			WG497078	09/09/10 10:19
o-Terphenyl		% Rec.	50.93	50-150	WG497078	09/09/10 10:19

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.24	95.3	67-135	WG497346
a,a,a-Trifluorotoluene(FID)				105.3	59-128	WG497346
TPH (GC/FID) High Fraction	ppm	60	44.3	73.8	50-150	WG497078
o-Terphenyl				63.39	50-150	WG497078

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	5.32	5.24	97.0	67-135	1.57	20	WG497346
a,a,a-Trifluorotoluene(FID)				105.8	59-128			WG497346
TPH (GC/FID) High Fraction	ppm	44.9	44.3	75.0	50-150	1.33	25	WG497078
o-Terphenyl				62.68	50-150			WG497078

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	276.	0	5.5	100.	55-109	L477341-03	WG497346
a,a,a-Trifluorotoluene(FID)					107.1	59-128		WG497346
TPH (GC/FID) High Fraction	ppm	52.0	19.0	60	55.0	50-150	L477334-02	WG497078
o-Terphenyl					80.59	50-150		WG497078

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	257.	276.	93.5	55-109	7.18	20	L477341-03	WG497346
a,a,a-Trifluorotoluene(FID)				104.9	59-128				WG497346
TPH (GC/FID) High Fraction	ppm	63.2	52.0	73.6	50-150	19.4	25	L477334-02	WG497078
o-Terphenyl				67.69	50-150				WG497078

Batch number /Run number / Sample number cross reference

WG497346: R1368068: L477479-01
WG497078: R1368648: L477479-01

* * 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 or Brad Kieding
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report
Level II

L477479

12065 Lebanon Rd.
Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

Est. 1970

September 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.

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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 August 31, 2010

Report Number: L476147

Samples Received: 08/28/10

Client Project: I30A PIT CLOSURE

Description: I30A Pit Closure

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

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

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

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

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REPORT OF ANALYSIS

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

August 31, 2010

Date Received : August 28, 2010
Description : I30A Pit Closure
Sample ID : I30A-E PIT-082610
Collected By : Blair Rollins
Collection Date : 08/26/10 13:20

ESC Sample # : L476147-01

Site ID :

Project # : I30A PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/29/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	97.7		% Rec.	602/8015	08/29/10	5
TPH (GC/FID) High Fraction	1500	80.	mg/kg	3546/DRO	08/29/10	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/29/10	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/30/10 19:42 Revised: 08/31/10 11:14



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REPORT OF ANALYSIS

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

August 31, 2010

Date Received : August 28, 2010
Description : I30A Pit Closure
Sample ID : I30A-SPOILS-082610
Collected By : Blair Rollins
Collection Date : 08/26/10 13:40

ESC Sample # : L476147-02

Site ID :

Project # : I30A PIT CLOSURE

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	21.	5.0	mg/kg	8015D/GRO	08/29/10	50
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	98.2		% Rec.	602/8015	08/29/10	50
TPH (GC/FID) High Fraction	10000	400	mg/kg	3546/DRO	08/29/10	100
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/29/10	100

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/30/10 19:42 Revised: 08/31/10 11:14

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L476147-01	WG495874	SAMP	o-Terphenyl	R1352748	J7
L476147-02	WG495874	SAMP	o-Terphenyl	R1352748	J7

Attachment B
Explanation of QC Qualifier Codes

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

Qualifier Report Information

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

Definitions

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

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

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

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

Summary of Remarks For Samples Printed
08/31/10 at 11:14:39

TSR Signing Reports: 358
R2 - Rush: Next Day

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

Sample: L476147-01 Account: ENCANACO Received: 08/28/10 09:00 Due Date: 08/31/10 00:00 RPT Date: 08/30/10 19:42

Sample: L476147-02 Account: ENCANACO Received: 08/28/10 09:00 Due Date: 08/31/10 00:00 RPT Date: 08/30/10 19:42



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Chris Hines or Brad Kieding
2717 County Road 215, Suite 100

Parachute, CO 81635

Quality Assurance Report
Level II

L476147

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Est. 1970

August 31, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG495922	08/28/10 23:40
a,a,a-Trifluorotoluene(FID)		% Rec.	99.23	59-128	WG495922	08/28/10 23:40
TPH (GC/FID) High Fraction	< 4	ppm			WG495874	08/29/10 09:39
o-Terphenyl		% Rec.	66.99	50-150	WG495874	08/29/10 09:39

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.21	113.	67-135	WG495922
a,a,a-Trifluorotoluene(FID)				95.17	59-128	WG495922
TPH (GC/FID) High Fraction	ppm	60	40.0	66.7	50-150	WG495874
o-Terphenyl				70.00	50-150	WG495874

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.06	6.21	110.	67-135	2.35	20	WG495922
a,a,a-Trifluorotoluene(FID)				93.51	59-128			WG495922
TPH (GC/FID) High Fraction	ppm	45.3	40.0	75.0	50-150	12.3	25	WG495874
o-Terphenyl				79.74	50-150			WG495874

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	19.6	1.70	5.5	65.2	55-109	L476148-01	WG495922
a,a,a-Trifluorotoluene(FID)					93.71	59-128		WG495922
TPH (GC/FID) High Fraction	ppm	103.	44.0	60	98.7	50-150	L475510-01	WG495874
o-Terphenyl					77.79	50-150		WG495874

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	22.3	19.6	75.0	55-109	12.8	20	L476148-01	WG495922
a,a,a-Trifluorotoluene(FID)				93.37	59-128				WG495922
TPH (GC/FID) High Fraction	ppm	78.3	103.	57.2	50-150	27.5*	25	L475510-01	WG495874
o-Terphenyl				77.69	50-150				WG495874

Batch number /Run number / Sample number cross reference

WG495922: R1351388: L476147-01 02
WG495874: R1352748: L476147-01 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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Chris Hines or Brad Kieding
EnCana Oil & Gas Inc. - CO
2717 County Road 215, Suite 100
Parachute, CO 81635

Report Summary

Wednesday September 08, 2010

Report Number: L477281

Samples Received: 09/04/10

Client Project: I30A EAST PIT

Description: I30A East 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:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

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

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REPORT OF ANALYSIS

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

September 08, 2010

Date Received : September 04, 2010
Description : I30A East Pit
Sample ID : I30A-EAST PIT-9-3-10
Collected By : C. Jensen
Collection Date : 09/03/10 10:30

ESC Sample # : L477281-01

Site ID :

Project # : I30A EAST PIT

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	09/05/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	110.		% Rec.	602/8015	09/05/10	5
TPH (GC/FID) High Fraction	66.	4.0	mg/kg	3546/DRO	09/07/10	1
Surrogate recovery(%) o-Terphenyl	59.8		% Rec.	3546/DRO	09/07/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 09/07/10 17:41 Revised: 09/08/10 10:53

Summary of Remarks For Samples Printed
09/08/10 at 10:53:36

TSR Signing Reports: 358
R2 - Rush: Next Day

Sample: L477281-01 Account: ENCANACO Received: 09/04/10 09:00 Due Date: 09/08/10 00:00 RPT Date: 09/07/10 17:41



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Chris Hines or Brad Kieding
2717 County Road 215, Suite 100

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Quality Assurance Report
Level II

L477281

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Est. 1970

September 08, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG496965	09/05/10 04:20
a,a,a-Trifluorotoluene(FID)		% Rec.	109.2	59-128	WG496965	09/05/10 04:20
TPH (GC/FID) High Fraction	< 4	ppm			WG497007	09/06/10 23:48
o-Terphenyl		% Rec.	77.53	50-150	WG497007	09/06/10 23:48

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.70	104.	67-135	WG496965
a,a,a-Trifluorotoluene(FID)				111.6	59-128	WG496965
TPH (GC/FID) High Fraction	ppm	60	42.0	70.0	50-150	WG497007
o-Terphenyl				73.06	50-150	WG497007

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.16	5.70	112.	67-135	7.67	20	WG496965
a,a,a-Trifluorotoluene(FID)				115.4	59-128			WG496965
TPH (GC/FID) High Fraction	ppm	42.8	42.0	71.0	50-150	1.96	20	WG497007
o-Terphenyl				75.66	50-150			WG497007

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) Low Fraction	mg/kg	27.4	0	5.5	99.5	55-109	L477178-06	WG496965
a,a,a-Trifluorotoluene(FID)					113.8	59-128		WG496965
TPH (GC/FID) High Fraction	ppm	44.2	0.578	60	72.6	50-150	L476628-08	WG497007
o-Terphenyl					83.03	50-150		WG497007

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	24.8	27.4	90.0	55-109	10.0	20	L477178-06	WG496965
a,a,a-Trifluorotoluene(FID)				116.2	59-128				WG496965
TPH (GC/FID) High Fraction	ppm	43.5	44.2	71.5	50-150	1.56	20	L476628-08	WG497007
o-Terphenyl				74.22	50-150				WG497007

Batch number /Run number / Sample number cross reference

WG496965: R1364328: L477281-01
WG497007: R1366310: L477281-01

* * 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.'



YOUR LAB OF CHOICE

EnCana Oil & Gas Inc. - CO
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Est. 1970

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

Report Summary

Thursday July 15, 2010

Report Number: L467715

Samples Received: 07/07/10

Client Project:

Description: I30A Pit Closure

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

Entire Report Reviewed By:


Jarred Willis , ESC Representative

Laboratory Certification Numbers

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

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REPORT OF ANALYSIS

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

July 15, 2010

Date Received : July 07, 2010
Description : I30A Pit Closure
Sample ID : I30A-PIT E-070610
Collected By : Chris Hines
Collection Date : 07/06/10 10:30

ESC Sample # : L467715-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.3		su	9045D	07/09/10	1
Sodium Adsorption Ratio	36.			Calc.	07/13/10	1
Specific Conductance	3500		umhos/cm	9050AMod	07/13/10	1
Mercury	0.032	0.020	mg/kg	7471	07/08/10	1
Arsenic	19.	5.0	mg/kg	6010B	07/14/10	5
Barium	2300	0.25	mg/kg	6010B	07/14/10	1
Cadmium	0.58	0.25	mg/kg	6010B	07/14/10	1
Chromium	24.	0.50	mg/kg	6010B	07/14/10	1
Copper	32.	1.0	mg/kg	6010B	07/14/10	1
Lead	18.	0.25	mg/kg	6010B	07/14/10	1
Nickel	14.	1.0	mg/kg	6010B	07/14/10	1
Selenium	7.2	1.0	mg/kg	6010B	07/14/10	1
Silver	BDL	0.50	mg/kg	6010B	07/14/10	1
Zinc	52.	1.5	mg/kg	6010B	07/14/10	1
Benzene	0.032	0.025	mg/kg	8021/8015	07/12/10	50
Toluene	BDL	0.25	mg/kg	8021/8015	07/12/10	50
Ethylbenzene	0.066	0.025	mg/kg	8021/8015	07/12/10	50
Total Xylene	0.12	0.075	mg/kg	8021/8015	07/12/10	50
TPH (GC/FID) Low Fraction	34.	5.0	mg/kg	GRO	07/12/10	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.7		% Rec.	8021/8015	07/12/10	50
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	07/12/10	50
TPH (GC/FID) High Fraction	4300	80.	mg/kg	3546/DRO	07/09/10	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	07/09/10	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	1.6	mg/kg	8270C	07/13/10	50
Acenaphthene	BDL	1.6	mg/kg	8270C	07/13/10	50
Acenaphthylene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(a)anthracene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(a)pyrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(b)fluoranthene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(g,h,i)perylene	BDL	1.6	mg/kg	8270C	07/13/10	50
Benzo(k)fluoranthene	BDL	1.6	mg/kg	8270C	07/13/10	50
Chrysene	BDL	1.6	mg/kg	8270C	07/13/10	50
Dibenz(a,h)anthracene	BDL	1.6	mg/kg	8270C	07/13/10	50
Fluoranthene	BDL	1.6	mg/kg	8270C	07/13/10	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L467715-01 (PH) - 8.3@22.2c



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REPORT OF ANALYSIS

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

July 15, 2010

Date Received : July 07, 2010
Description : I30A Pit Closure
Sample ID : I30A-PIT E-070610
Collected By : Chris Hines
Collection Date : 07/06/10 10:30

ESC Sample # : L467715-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Fluorene	BDL	1.6	mg/kg	8270C	07/13/10	50
Indeno(1,2,3-cd)pyrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Naphthalene	BDL	1.6	mg/kg	8270C	07/13/10	50
Phenanthrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Pyrene	BDL	1.6	mg/kg	8270C	07/13/10	50
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C	07/13/10	50
2-Fluorobiphenyl	0.00		% Rec.	8270C	07/13/10	50
p-Terphenyl-d14	0.00		% Rec.	8270C	07/13/10	50

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: 07/14/10 16:04 Revised: 07/15/10 10:09

L467715-01 (PH) - 8.3@22.2c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L467715-01	WG487453	SAMP	Anthracene	R1280791	O
	WG487453	SAMP	Acenaphthene	R1280791	O
	WG487453	SAMP	Acenaphthylene	R1280791	O
	WG487453	SAMP	Benzo(a)anthracene	R1280791	O
	WG487453	SAMP	Benzo(a)pyrene	R1280791	O
	WG487453	SAMP	Benzo(b)fluoranthene	R1280791	O
	WG487453	SAMP	Benzo(g,h,i)perylene	R1280791	O
	WG487453	SAMP	Benzo(k)fluoranthene	R1280791	O
	WG487453	SAMP	Chrysene	R1280791	O
	WG487453	SAMP	Dibenz(a,h)anthracene	R1280791	O
	WG487453	SAMP	Fluoranthene	R1280791	O
	WG487453	SAMP	Fluorene	R1280791	O
	WG487453	SAMP	Indeno(1,2,3-cd)pyrene	R1280791	O
	WG487453	SAMP	Naphthalene	R1280791	O
	WG487453	SAMP	Phenanthrene	R1280791	O
	WG487453	SAMP	Pyrene	R1280791	O
	WG487453	SAMP	Nitrobenzene-d5	R1280791	J7
	WG487453	SAMP	2-Fluorobiphenyl	R1280791	J7
	WG487453	SAMP	p-Terphenyl-d14	R1280791	J7
	WG487341	SAMP	o-Terphenyl	R1280389	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
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.



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Mercury	< .02	mg/kg			WG487422	07/08/10 10:21
TPH (GC/FID) High Fraction	< 4	ppm			WG487341	07/08/10 16:15
o-Terphenyl		% Rec.	89.82	50-150	WG487341	07/08/10 16:15
Acenaphthene	< .033	mg/kg			WG487453	07/09/10 11:56
Acenaphthylene	< .033	mg/kg			WG487453	07/09/10 11:56
Anthracene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(a)anthracene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(a)pyrene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(b)fluoranthene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(g,h,i)perylene	< .033	mg/kg			WG487453	07/09/10 11:56
Benzo(k)fluoranthene	< .033	mg/kg			WG487453	07/09/10 11:56
Chrysene	< .033	mg/kg			WG487453	07/09/10 11:56
Dibenz(a,h)anthracene	< .033	mg/kg			WG487453	07/09/10 11:56
Fluoranthene	< .033	mg/kg			WG487453	07/09/10 11:56
Fluorene	< .033	mg/kg			WG487453	07/09/10 11:56
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG487453	07/09/10 11:56
Naphthalene	< .033	mg/kg			WG487453	07/09/10 11:56
Phenanthrene	< .033	mg/kg			WG487453	07/09/10 11:56
Pyrene	< .033	mg/kg			WG487453	07/09/10 11:56
2-Fluorobiphenyl		% Rec.	63.19	37-123	WG487453	07/09/10 11:56
Nitrobenzene-d5		% Rec.	60.94	19-129	WG487453	07/09/10 11:56
p-Terphenyl-d14		% Rec.	82.82	34-149	WG487453	07/09/10 11:56
pH	5.10	su			WG487613	07/09/10 15:45
Benzene	< .0005	mg/kg			WG487980	07/12/10 15:32
Ethylbenzene	< .0005	mg/kg			WG487980	07/12/10 15:32
Toluene	< .005	mg/kg			WG487980	07/12/10 15:32
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG487980	07/12/10 15:32
Total Xylene	< .0015	mg/kg			WG487980	07/12/10 15:32
a,a,a-Trifluorotoluene(FID)		% Rec.	99.07	59-128	WG487980	07/12/10 15:32
a,a,a-Trifluorotoluene(PID)		% Rec.	102.3	54-144	WG487980	07/12/10 15:32
Specific Conductance	1.10	umhos/cm			WG487763	07/13/10 08:40
Arsenic	< 1	mg/kg			WG487996	07/14/10 00:00
Barium	< .25	mg/kg			WG487996	07/14/10 00:00
Cadmium	< .25	mg/kg			WG487996	07/14/10 00:00
Chromium	< .5	mg/kg			WG487996	07/14/10 00:00
Copper	< 1	mg/kg			WG487996	07/14/10 00:00
Lead	< .25	mg/kg			WG487996	07/14/10 00:00
Nickel	< 1	mg/kg			WG487996	07/14/10 00:00
Selenium	< 1	mg/kg			WG487996	07/14/10 00:00
Silver	< .5	mg/kg			WG487996	07/14/10 00:00
Zinc	< 1.5	mg/kg			WG487996	07/14/10 00:00

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Mercury	mg/kg	0.0210	0		NA	20	L467744-04	WG487422

* 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	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
pH	su	5.30	5.20		1.90*	1	L467647-01	WG487613
pH	su	5.30	5.50		3.70*	1	L468000-01	WG487613
Specific Conductance	umhos/cm	220.	220.		0.456	20	L467873-02	WG487763
Specific Conductance	umhos/cm	3300	3300		0	20	L468098-01	WG487763
Barium	mg/kg	78.0	80.0		2.53	20	L467791-01	WG487996
Cadmium	mg/kg	3.60	3.60		1.12	20	L467791-01	WG487996
Chromium	mg/kg	70.0	79.0		12.1	20	L467791-01	WG487996
Copper	mg/kg	950.	846.		11.9	20	L467791-01	WG487996
Lead	mg/kg	75.0	64.0		15.6	20	L467791-01	WG487996
Nickel	mg/kg	44.0	62.1		33.0*	20	L467791-01	WG487996
Selenium	mg/kg	85.0	80.0		6.53	20	L467791-01	WG487996
Silver	mg/kg	1.80	1.80		2.25	20	L467791-01	WG487996
Zinc	mg/kg	580.	599.		2.88	20	L467791-01	WG487996
Arsenic	mg/kg	0	0		0	20	L467791-01	WG487996

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Mercury	mg/kg	8.77	8.70	99.2	71.6-127.7	WG487422
TPH (GC/FID) High Fraction	ppm	60	44.5	74.2	50-150	WG487341
o-Terphenyl				81.26	50-150	WG487341
Acenaphthene	mg/kg	.167	0.121	72.3	44-117	WG487453
Acenaphthylene	mg/kg	.167	0.127	76.3	43-118	WG487453
Anthracene	mg/kg	.167	0.124	74.3	42-127	WG487453
Benzo(a)anthracene	mg/kg	.167	0.129	77.2	45-127	WG487453
Benzo(a)pyrene	mg/kg	.167	0.127	76.3	46-123	WG487453
Benzo(b)fluoranthene	mg/kg	.167	0.133	79.8	43-126	WG487453
Benzo(g,h,i)perylene	mg/kg	.167	0.141	84.3	43-128	WG487453
Benzo(k)fluoranthene	mg/kg	.167	0.113	67.9	40-126	WG487453
Chrysene	mg/kg	.167	0.127	75.9	44-129	WG487453
Dibenz(a,h)anthracene	mg/kg	.167	0.135	80.6	43-127	WG487453
Fluoranthene	mg/kg	.167	0.131	78.2	44-125	WG487453
Fluorene	mg/kg	.167	0.130	78.1	45-121	WG487453
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.139	83.3	43-127	WG487453
Naphthalene	mg/kg	.167	0.117	70.0	32-113	WG487453
Phenanthrene	mg/kg	.167	0.123	73.4	43-124	WG487453
Pyrene	mg/kg	.167	0.137	82.1	47-128	WG487453
2-Fluorobiphenyl				67.61	37-123	WG487453
Nitrobenzene-d5				61.32	19-129	WG487453
p-Terphenyl-d14				87.76	34-149	WG487453
pH	su	9.36	9.40	100.	98.9-102.0	WG487613
Benzene	mg/kg	.05	0.0499	99.7	76-113	WG487980
Ethylbenzene	mg/kg	.05	0.0511	102.	78-115	WG487980
Toluene	mg/kg	.05	0.0503	101.	76-114	WG487980
Total Xylene	mg/kg	.15	0.154	103.	81-118	WG487980
a,a,a-Trifluorotoluene(FID)				97.58	59-128	WG487980

* Performance of this Analyte is outside of established criteria.

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Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
a,a,a-Trifluorotoluene(PID)				100.4	54-144	
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.24	95.4	67-135	WG487980
a,a,a-Trifluorotoluene(FID)				92.86	59-128	WG487980
a,a,a-Trifluorotoluene(PID)				106.1	54-144	WG487980
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG487763
Arsenic	mg/kg	192	176.	91.7	78.6-120.8	WG487996
Barium	mg/kg	420	415.	98.8	78.8-121.4	WG487996
Cadmium	mg/kg	70.1	66.6	95.0	78.5-121.5	WG487996
Chromium	mg/kg	168	171.	102.	80.4-120.2	WG487996
Copper	mg/kg	122	124.	102.	81.6-119.7	WG487996
Lead	mg/kg	113	109.	96.5	77.3-122.1	WG487996
Nickel	mg/kg	74.1	70.9	95.7	78.8-121.2	WG487996
Selenium	mg/kg	176	180.	102.	75.6-125.0	WG487996
Silver	mg/kg	115	113.	98.3	66-133.9	WG487996
Zinc	mg/kg	437	434.	99.3	78.5-121.7	WG487996

Analyte	Units	Laboratory Control Result	Sample Duplicate Ref	%Rec	Limit	RPD	Limit	Batch
TPH (GC/FID) High Fraction	ppm	44.5	44.5	74.0	50-150	0.0881	25	WG487341
o-Terphenyl				80.47	50-150			WG487341
Acenaphthene	mg/kg	0.116	0.121	70.0	44-117	3.65	21	WG487453
Acenaphthylene	mg/kg	0.127	0.127	76.0	43-118	0.364	20	WG487453
Anthracene	mg/kg	0.126	0.124	75.0	42-127	1.24	21	WG487453
Benzo(a)anthracene	mg/kg	0.127	0.129	76.0	45-127	1.54	21	WG487453
Benzo(a)pyrene	mg/kg	0.124	0.127	74.0	46-123	2.83	20	WG487453
Benzo(b)fluoranthene	mg/kg	0.132	0.133	79.0	43-126	1.20	27	WG487453
Benzo(g,h,i)perylene	mg/kg	0.140	0.141	84.0	43-128	0.511	20	WG487453
Benzo(k)fluoranthene	mg/kg	0.110	0.113	66.0	40-126	3.05	32	WG487453
Chrysene	mg/kg	0.125	0.127	75.0	44-129	1.34	22	WG487453
Dibenz(a,h)anthracene	mg/kg	0.135	0.135	81.0	43-127	0.195	20	WG487453
Fluoranthene	mg/kg	0.130	0.131	78.0	44-125	0.0402	22	WG487453
Fluorene	mg/kg	0.125	0.130	75.0	45-121	4.31	20	WG487453
Indeno(1,2,3-cd)pyrene	mg/kg	0.140	0.139	84.0	43-127	0.625	21	WG487453
Naphthalene	mg/kg	0.114	0.117	68.0	32-113	2.34	26	WG487453
Phenanthrene	mg/kg	0.119	0.123	71.0	43-124	3.07	21	WG487453
Pyrene	mg/kg	0.132	0.137	79.0	47-128	3.78	20	WG487453
2-Fluorobiphenyl				67.62	37-123			WG487453
Nitrobenzene-d5				63.24	19-129			WG487453
p-Terphenyl-d14				87.70	34-149			WG487453
pH	su	9.40	9.40	100.	98.9-102.0	0	20	WG487613
Benzene	mg/kg	0.0518	0.0499	104.	76-113	3.77	20	WG487980
Ethylbenzene	mg/kg	0.0521	0.0511	104.	78-115	1.95	20	WG487980
Toluene	mg/kg	0.0515	0.0503	103.	76-114	2.36	20	WG487980
Total Xylene	mg/kg	0.157	0.154	105.	81-118	2.20	20	WG487980
a,a,a-Trifluorotoluene(FID)				98.83	59-128			WG487980
a,a,a-Trifluorotoluene(PID)				101.4	54-144			WG487980
TPH (GC/FID) Low Fraction	mg/kg	5.28	5.24	96.0	67-135	0.600	20	WG487980
a,a,a-Trifluorotoluene(FID)				92.78	59-128			WG487980

* 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					
a,a,a-Trifluorotoluene(PID)				106.3	54-144				
Specific Conductance	umhos/	410.	410.	101.	85-115	0	20	WG487763	
Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch	
		MS Res	Ref Res	TV	% Rec				
Mercury	mg/kg	0.225	0	.25	90.0	70-130	L467744-04	WG487422	
TPH (GC/FID) High Fraction	ppm	42.3	0	60	70.6	50-150	L467373-01	WG487341	
o-Terphenyl					68.14	50-150		WG487341	
Acenaphthene	mg/kg	0.146	0	.167	87.4	38-121	L467468-04	WG487453	
Acenaphthylene	mg/kg	0.149	0	.167	89.1	39-120	L467468-04	WG487453	
Anthracene	mg/kg	0.160	0.0360	.167	74.5	35-133	L467468-04	WG487453	
Benzo(a)anthracene	mg/kg	0.163	0	.167	97.4	35-136	L467468-04	WG487453	
Benzo(a)pyrene	mg/kg	0.139	0	.167	83.1	37-131	L467468-04	WG487453	
Benzo(b)fluoranthene	mg/kg	0.133	0	.167	79.9	29-145	L467468-04	WG487453	
Benzo(g,h,i)perylene	mg/kg	0.162	0	.167	97.0	10-139	L467468-04	WG487453	
Benzo(k)fluoranthene	mg/kg	0.164	0	.167	97.9	31-140	L467468-04	WG487453	
Chrysene	mg/kg	0.148	0	.167	88.8	34-137	L467468-04	WG487453	
Dibenz(a,h)anthracene	mg/kg	0.151	0	.167	90.1	21-132	L467468-04	WG487453	
Fluoranthene	mg/kg	0.151	0	.167	90.5	34-132	L467468-04	WG487453	
Fluorene	mg/kg	0.148	0	.167	88.5	38-126	L467468-04	WG487453	
Indeno(1,2,3-cd)pyrene	mg/kg	0.150	0	.167	89.8	17-134	L467468-04	WG487453	
Naphthalene	mg/kg	0.147	0	.167	88.2	24-122	L467468-04	WG487453	
Phenanthrene	mg/kg	0.156	0	.167	93.2	38-128	L467468-04	WG487453	
Pyrene	mg/kg	0.172	0	.167	103.	35-141	L467468-04	WG487453	
2-Fluorobiphenyl					80.46	37-123		WG487453	
Nitrobenzene-d5					116.0	19-129		WG487453	
p-Terphenyl-d14					102.3	34-149		WG487453	
Benzene	mg/kg	0.225	0	.05	90.2	32-137	L468057-01	WG487980	
Ethylbenzene	mg/kg	0.215	0	.05	85.9	10-150	L468057-01	WG487980	
Toluene	mg/kg	0.223	0.00160	.05	88.7	20-142	L468057-01	WG487980	
Total Xylene	mg/kg	0.654	0.00690	.15	86.3	16-141	L468057-01	WG487980	
a,a,a-Trifluorotoluene(FID)					97.32	59-128		WG487980	
a,a,a-Trifluorotoluene(PID)					100.6	54-144		WG487980	
TPH (GC/FID) Low Fraction	mg/kg	20.2	0	5.5	73.6	55-109	L468057-01	WG487980	
a,a,a-Trifluorotoluene(FID)					94.69	59-128		WG487980	
a,a,a-Trifluorotoluene(PID)					103.5	54-144		WG487980	
Barium	mg/kg	128.	80.0	50	96.0	75-125	L467791-01	WG487996	
Cadmium	mg/kg	48.2	3.60	50	89.2	75-125	L467791-01	WG487996	
Chromium	mg/kg	111.	79.0	50	64.0*	75-125	L467791-01	WG487996	
Copper	mg/kg	1860	846.	50	2030*	75-125	L467791-01	WG487996	
Lead	mg/kg	143.	64.0	50	158.*	75-125	L467791-01	WG487996	
Nickel	mg/kg	95.8	62.1	50	67.4*	75-125	L467791-01	WG487996	
Selenium	mg/kg	129.	80.0	50	98.0	75-125	L467791-01	WG487996	
Silver	mg/kg	55.5	1.80	50	107.	75-125	L467791-01	WG487996	
Zinc	mg/kg	677.	599.	50	156.*	75-125	L467791-01	WG487996	
Arsenic	mg/kg	-2.67	0	1	0*	75-125	L467791-01	WG487996	

* 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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Tax I.D. 62-0814289

Est. 1970

July 15, 2010

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.227	0.225	90.8	70-130	0.885	20	L467744-04	WG487422
TPH (GC/FID) High Fraction	ppm	41.1	42.3	68.6	50-150	2.88	25	L467373-01	WG487341
o-Terphenyl				66.80	50-150				WG487341
Acenaphthene	mg/kg	0.172	0.146	103.	38-121	16.3	23	L467468-04	WG487453
Acenaphthylene	mg/kg	0.177	0.149	106.	39-120	17.0	22	L467468-04	WG487453
Anthracene	mg/kg	0.174	0.160	82.8	35-133	8.28	23	L467468-04	WG487453
Benzo(a)anthracene	mg/kg	0.173	0.163	104.	35-136	6.19	23	L467468-04	WG487453
Benzo(a)pyrene	mg/kg	0.162	0.139	96.8	37-131	15.3	22	L467468-04	WG487453
Benzo(b)fluoranthene	mg/kg	0.161	0.133	96.3	29-145	18.6	33	L467468-04	WG487453
Benzo(g,h,i)perylene	mg/kg	0.173	0.162	103.	10-139	6.47	26	L467468-04	WG487453
Benzo(k)fluoranthene	mg/kg	0.159	0.164	95.4	31-140	2.63	34	L467468-04	WG487453
Chrysene	mg/kg	0.168	0.148	101.	34-137	12.5	23	L467468-04	WG487453
Dibenz(a,h)anthracene	mg/kg	0.160	0.151	96.0	21-132	6.31	25	L467468-04	WG487453
Fluoranthene	mg/kg	0.156	0.151	93.3	34-132	3.00	24	L467468-04	WG487453
Fluorene	mg/kg	0.174	0.148	104.	38-126	16.5	23	L467468-04	WG487453
Indeno(1,2,3-cd)pyrene	mg/kg	0.164	0.150	98.3	17-134	9.07	25	L467468-04	WG487453
Naphthalene	mg/kg	0.161	0.147	96.2	24-122	8.74	29	L467468-04	WG487453
Phenanthrene	mg/kg	0.165	0.156	98.7	38-128	5.76	25	L467468-04	WG487453
Pyrene	mg/kg	0.181	0.172	108.	35-141	5.17	25	L467468-04	WG487453
2-Fluorobiphenyl				97.65	37-123				WG487453
Nitrobenzene-d5				128.8	19-129				WG487453
p-Terphenyl-d14				104.8	34-149				WG487453
Benzene	mg/kg	0.230	0.225	92.0	32-137	2.00	39	L468057-01	WG487980
Ethylbenzene	mg/kg	0.225	0.215	90.1	10-150	4.80	44	L468057-01	WG487980
Toluene	mg/kg	0.227	0.223	90.3	20-142	1.78	42	L468057-01	WG487980
Total Xylene	mg/kg	0.683	0.654	90.1	16-141	4.24	46	L468057-01	WG487980
a,a,a-Trifluorotoluene(FID)				97.44	59-128				WG487980
a,a,a-Trifluorotoluene(PID)				100.1	54-144				WG487980
TPH (GC/FID) Low Fraction	mg/kg	26.8	20.2	97.5	55-109	27.9*	20	L468057-01	WG487980
a,a,a-Trifluorotoluene(FID)				95.70	59-128				WG487980
a,a,a-Trifluorotoluene(PID)				104.9	54-144				WG487980
Barium	mg/kg	128.	128.	96.0	75-125	0	20	L467791-01	WG487996
Cadmium	mg/kg	50.4	48.2	93.6	75-125	4.46	20	L467791-01	WG487996
Chromium	mg/kg	149.	111.	140.*	75-125	29.2*	20	L467791-01	WG487996
Copper	mg/kg	1460	1860	1230*	75-125	24.1*	20	L467791-01	WG487996
Lead	mg/kg	147.	143.	166.*	75-125	2.76	20	L467791-01	WG487996
Nickel	mg/kg	104.	95.8	83.8	75-125	8.21	20	L467791-01	WG487996
Selenium	mg/kg	136.	129.	112.	75-125	5.28	20	L467791-01	WG487996
Silver	mg/kg	57.0	55.5	110.	75-125	2.67	20	L467791-01	WG487996
Zinc	mg/kg	582.	677.	0*	75-125	15.1	20	L467791-01	WG487996
Arsenic	mg/kg	3.95	-2.67	7.90*	75-125	1030*	20	L467791-01	WG487996

Batch number /Run number / Sample number cross reference

WG487422: R1279609: L467715-01
WG487341: R1280389: L467715-01
WG487453: R1280791: L467715-01
WG487613: R1282273: L467715-01
WG487980: R1283290: L467715-01
WG487763: R1284188: L467715-01
WG487937: R1284288: L467715-01

* 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

July 15, 2010

WG487996: R1284874: L467715-01

* * 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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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.



07/12/10

Technical Report for

EnCana

I30A Cuttings

Accutest Job Number: D14850

Sampling Date: 06/29/10

Report to:

**EnCana
2717 CR 215 Suite 100
Parachute, CO 81635
christopher.hines@encana.com**

ATTN: Chris Hines

Total number of pages in report: 72



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.

**Jesse L. Smith
Laboratory Director**

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

EnCana

Job No: D14850

I30A Cuttings

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D14850-1	06/29/10	11:15 BR	07/01/10	SO	Soil	I30A-CUTTINGS-062910
D14850-1A	06/29/10	11:15 BR	07/01/10	SO	Soil	I30A-CUTTINGS-062910

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: EnCana

Job No D14850

Site: I30A Cuttings

Report Dat 7/10/2010 10:09:50 AM

On 07/01/2010, 1 sample(s), 0 Trip Blank(s) and 0 Field Blank(s) was received at Accutest Mountain States (AMS) at a temperature of 4.3 °C. The sample was intact and properly preserved, unless noted below. An AMS Job Number of D14850 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO

Batch ID: V3V283

- All samples were analyzed within the recommended method holding time.
- Sample(s) D14850-1MS, D14850-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP2111

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D14817-3MS, D14817-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGA445

- All samples were analyzed within the recommended method holding time.
- Sample(s) D14907-2MS, D14907-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP2112

- 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) D14764-1MS, D14764-1MSD were used as the QC samples indicated.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP2240

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D14745-1AMS, D14745-1AMSD were used as the QC samples for metals.

Matrix SO

Batch ID: MP2238

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D14850-1MS, D14850-1MSD, D14850-1SDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Serial Dilution for Cadmium, Selenium, Barium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP2238-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method SW846 6020

Matrix SO

Batch ID: MP2239

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D14850-1MS, D14850-1MSD, D14850-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP2239-SD1. Probable cause due to sample homogeneity.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP2250

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D14851-1MS, D14851-1MSD were used as the QC samples for metals.

Wet Chemistry By Method ASTM E1498-76M

Matrix SO

Batch ID: M:GN32327

- The data for ASTM E1498-76M meets quality control requirements.
- The following sample was run outside of holding time for method ASTM E1498-76M: D14850-1.
- D14850-1 for Redox Potential Vs H2: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method LADNR29B

Matrix SO

Batch ID: R3070

- The data for LADNR29B meets quality control requirements.
- D14850-1A for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN5174

- The data for SM19 2540B M meets quality control requirements.

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO

Batch ID: R3109

- The data for SW846 3060/7196A M meets quality control requirements.
- D14850-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO

Batch ID: M:GP11780

- The data for SW846 3060A/7196A meets quality control requirements.
- D14850-1 for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method SW846 9045C

Matrix SO

Batch ID: GN5177

- The following sample was run outside of holding time for method SW846 9045C: D14850-1

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Accutest Mountain States**Job No** D14850**Site:** ENCACOP: I30A Cuttings**Report Date** 7/7/2010 4:40:18 PM

1 Sample(s) were collected on 06/29/2010 and were received at Accutest on 07/01/2010 properly preserved, at 3.7 Deg. C and intact. These Samples received an Accutest job number of D14850. 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.

Wet Chemistry By Method ASTM E1498-76M

Matrix SO**Batch ID:** GN32327

- Sample(s) D14852-2DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO**Batch ID:** GP11780

- All samples were distilled 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) D14817-3DUP, D14817-3MS were used as the QC samples for Chromium, Hexavalent.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D14850).



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: I30A-CUTTINGS-062910**Lab Sample ID:** D14850-1**Date Sampled:** 06/29/10**Matrix:** SO - Soil**Date Received:** 07/01/10**Method:** SW846 8260B**Percent Solids:** 86.2**Project:** I30A Cuttings

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V05572.D	1	07/03/10	DC	n/a	n/a	V3V283
Run #2							

Initial Weight

Run #1 1.00 g

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.8	1.7	ug/kg	
108-88-3	Toluene	ND	12	5.8	ug/kg	
100-41-4	Ethylbenzene	ND	12	2.3	ug/kg	
	m,p-Xylene	ND	23	4.1	ug/kg	
95-47-6	o-Xylene	ND	12	4.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	92%		70-130%
460-00-4	4-Bromofluorobenzene	80%		70-130%
17060-07-0	1,2-Dichloroethane-D4	89%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	I30A-CUTTINGS-062910			Date Sampled:	06/29/10
Lab Sample ID:	D14850-1			Date Received:	07/01/10
Matrix:	SO - Soil			Percent Solids:	86.2
Method:	SW846 8270C BY SIM SW846 3540C				
Project:	I30A Cuttings				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G01291.D	5	07/06/10	TMB	07/02/10	OP2111	E3G33
Run #2							

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	39	36	ug/kg	
208-96-8	Acenaphthylene	ND	190	40	ug/kg	
120-12-7	Anthracene	ND	39	25	ug/kg	
56-55-3	Benzo(a)anthracene	ND	39	38	ug/kg	
50-32-8	Benzo(a)pyrene	ND	39	24	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	39	28	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	39	24	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	39	24	ug/kg	
218-01-9	Chrysene	ND	39	19	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	39	29	ug/kg	
206-44-0	Fluoranthene	ND	39	24	ug/kg	
86-73-7	Fluorene	ND	39	38	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	39	25	ug/kg	
90-12-0	1-Methylnaphthalene	ND	39	34	ug/kg	
91-57-6	2-Methylnaphthalene	92.7	190	59	ug/kg	J
91-20-3	Naphthalene	ND	190	43	ug/kg	
85-01-8	Phenanthrene	ND	39	31	ug/kg	
129-00-0	Pyrene	ND	39	26	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	65%		10-193%
321-60-8	2-Fluorobiphenyl	65%		20-138%
1718-51-0	Terphenyl-d14	73%		17-174%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	I30A-CUTTINGS-062910				
Lab Sample ID:	D14850-1			Date Sampled:	06/29/10
Matrix:	SO - Soil			Date Received:	07/01/10
Method:	SW846 8015B			Percent Solids:	86.2
Project:	I30A Cuttings				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA7527.D	1	07/07/10	DG	n/a	n/a	GGA445
Run #2							

	Initial Weight
Run #1	1.0 g
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	1.2	1.2	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	63%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

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

Report of Analysis

Client Sample ID:	I30A-CUTTINGS-062910				
Lab Sample ID:	D14850-1		Date Sampled:	06/29/10	
Matrix:	SO - Soil		Date Received:	07/01/10	
Method:	SW846-8015B SW846 3550B		Percent Solids:	86.2	
Project:	I30A Cuttings				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD2464.D	1	07/04/10	CP	07/02/10	OP2112	GFD131
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	196	15	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	84%		63-130%	

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

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

Report of Analysis

Client Sample ID: I30A-CUTTINGS-062910**Lab Sample ID:** D14850-1**Matrix:** SO - Soil**Project:** I30A Cuttings**Date Sampled:** 06/29/10**Date Received:** 07/01/10**Percent Solids:** 86.2**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	14.0	0.38	mg/kg	5	07/02/10	07/02/10 SH	SW846 6020 ¹	SW846 3050B ⁵
Barium	2780	0.94	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Cadmium	< 0.94	0.94	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Chromium	12.2	0.94	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Copper	21.5	0.47	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Lead	12.5	4.7	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Mercury	< 0.11	0.11	mg/kg	1	07/06/10	07/06/10 RN	SW846 7471A ³	SW846 7471A ⁶
Nickel	15.0	2.8	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Selenium	< 4.7	4.7	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Silver	< 2.8	2.8	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴
Zinc	55.5	2.8	mg/kg	1	07/02/10	07/02/10 SH	SW846 6010B ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA795

(2) Instrument QC Batch: MA798

(3) Instrument QC Batch: MA799

(4) Prep QC Batch: MP2238

(5) Prep QC Batch: MP2239

(6) Prep QC Batch: MP2250

RL = Reporting Limit

Report of Analysis

Client Sample ID: I30A-CUTTINGS-062910**Lab Sample ID:** D14850-1**Matrix:** SO - Soil**Project:** I30A Cuttings**Date Sampled:** 06/29/10**Date Received:** 07/01/10**Percent Solids:** 86.2

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 2.3	2.3	mg/kg	1	07/07/10 12:07	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	12.2	3.2	mg/kg	1	07/07/10 12:07	AMA	SW846 3060/7196A M
Redox Potential Vs H2 ^a	361		mv	1	07/06/10	AMA	ASTM E1498-76M
Solids, Percent	86.2		%	1	07/02/10	JD	SM19 2540B M
Specific Conductivity	1270	1.0	umhos/cm	1	07/06/10	JD	DEPT.OF AG, BOOK N9
pH	9.20		su	1	07/02/10 10:15	CJ	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	I30A-CUTTINGS-062910	Date Sampled:	06/29/10
Lab Sample ID:	D14850-1A	Date Received:	07/01/10
Matrix:	SO - Soil	Percent Solids:	86.2
Project:	I30A Cuttings		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	60.9	2.0	mg/l	1	07/02/10	07/03/10 SH	SW846 6010B ¹	EPA 200.7 ²
Magnesium	32.3	1.0	mg/l	1	07/02/10	07/03/10 SH	SW846 6010B ¹	EPA 200.7 ²
Sodium	165	2.0	mg/l	1	07/02/10	07/03/10 SH	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA798
(2) Prep QC Batch: MP2240

RL = Reporting Limit

Report of Analysis

Client Sample ID:	I30A-CUTTINGS-062910	Date Sampled:	06/29/10
Lab Sample ID:	D14850-1A	Date Received:	07/01/10
Matrix:	SO - Soil	Percent Solids:	86.2
Project:	I30A Cuttings		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	4.25		ratio	1	07/03/10 00:30	SH	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

D 14850

[illegible]

D14850: Chain of Custody

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Constituents of Concern: Allowable Concentrations and Analytical Methods (COGCC Table 910-1)

CONTAMINANT OF CONCERN	CONCENTRATIONS	ANALYTICAL METHOD (SW648)
Organic Compounds in Soil		
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg	8015
Benzene	0.17 mg/kg ²	8260B
Toluene	85 mg/kg ²	8260B
Ethylbenzene	100 mg/kg ²	8260B
Xylenes (total)	175 mg/kg ²	8260B
Acenaphthene	1,000 mg/kg ²	8270C
Anthracene	1,000 mg/kg ²	8270C
Benzo(A)anthracene	0.22 mg/kg ²	8270C
Benzo(B)fluoranthene	0.22 mg/kg ²	8270C
Benzo(K)fluoranthene	2.2 mg/kg ²	8270C
Benzo(A)pyrene	0.022 mg/kg ²	8270C
Chrysene	22 mg/kg ²	8270C
Dibenz(A,H)anthracene	0.022 mg/kg ²	8270C
Fluoranthene	1,000 mg/kg ²	8270C
Fluorene	1,000 mg/kg ²	8270C
Indeno(1,2,3-CD)pyrene	0.22 mg/kg ²	8270C
Naphthalene	23 mg/kg ²	8270C
Pyrene	1,000 mg/kg ²	8270C
Inorganics in Soils		
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background ¹	9050
Sodium Adsorption Ratio (SAR)	<12 ²	LAQR29B
pH	6-9	9045C
Metals in Soils		
Arsenic	0.39 mg/kg ³	6010E
Barium	15,000 mg/kg ³	6010B
Cadmium	70 mg/kg ^{3A}	6010B
Chromium (III)	120,000 mg/kg ³	6010B
Chromium (VI)	23 mg/kg ^{3,2}	6010B
Copper	3,100 mg/kg ³	6010E
Lead (inorganic)	400 mg/kg ³	6010E
Mercury	23 mg/kg ³	6010B
Nickel (soluble salts)	1,600 mg/kg ³	6010B
Selenium	390 mg/kg ^{3B}	6010B
Silver	390 mg/kg ³	6010BB
Zinc	23,000 mg/kg ³	6010B
Liquid Hydrocarbons in Soils and Ground Water		
Liquid hydrocarbons including condensate and oil	Below detection level	Visual

COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

¹ Consideration shall be given to background levels in native soils and ground water.

² Concentrations taken from CDPHE-HMMWD Table 1 Colorado Soil Evaluation Values (December 2007).

³ Concentrations taken from CDPHE-WQCC Regulation 41 - The Basic Standards for Ground Water.

^{3A} For this range of standards, the sample of at least 500 grams. If soils are saturated, USDA Agricultural Handbook 60 with soluble cations determined by health-based standards. The second number in this range is a maximum contaminant level (MCL), established under the Federal Safe Drinking Water Act which has been 900-22 As of April 1, 2009 900-23 As of April 1, 2009.

^{3B} The WQCC intends that control requirements for this chemical in public water supplies, taking treatability and laboratory detection limits into account. The minimum range except as follows: 1) where ground water quality exceeds the first number in the range due to a release of contaminants that occurred prior to the implementation of the Act; 2) where ground water quality exceeds the second number in the range due to a release of contaminants that occurred prior to the implementation of the Act; 3) where ground water quality exceeds the third number in the range due to a release of contaminants that occurred prior to the implementation of the Act. The WQCC has adopted alternative, site-specific standards for the chemical, the site-specific standards shall apply instead of these statewide standards.

⁴ Analysis by USDA Agricultural Handbook 60 method (20B) with soluble cations determined by method (2). Method (20B) = estimation of exchangeable sodium percentage and exchangeable potassium percentage from soluble cations. Method (2) = saturated paste method (note: each method (3A) saturation of the sample of at least 500 grams). If soils are saturated, USDA Agricultural Handbook 60 with soluble cations determined by method (3A) saturation.

⁵ The table value for these inorganic constituents is taken from the CDPHE-HMMWD Table 1 Colorado Soil Evaluation Values (December 2007). However, because these values are high, it is possible that site-specific geochemical conditions may exist that cause inorganic constituents to migrate into ground water at levels exceeding ground water standards even though the concentrations are below the table values. Therefore, when these constituents are present as contaminants, a secondary evaluation of their leachability must be performed to ensure ground water protection.



GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V283-MB1	3V05570.D	1	07/03/10	DC	n/a	n/a	V3V283

The QC reported here applies to the following samples:

Method: SW846 8260B

D14850-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	1.5	ug/kg	
100-41-4	Ethylbenzene	ND	10	2.0	ug/kg	
108-88-3	Toluene	ND	10	5.0	ug/kg	
	m,p-Xylene	ND	20	3.5	ug/kg	
95-47-6	o-Xylene	ND	10	3.5	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	88% 70-130%
460-00-4	4-Bromofluorobenzene	81% 70-130%
17060-07-0	1,2-Dichloroethane-D4	84% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V283-BS1	3V05571.D	1	07/03/10	DC	n/a	n/a	V3V283

The QC reported here applies to the following samples:

Method: SW846 8260B

D14850-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.2	96	68-130
100-41-4	Ethylbenzene	50	53.8	108	70-130
108-88-3	Toluene	50	53.5	107	70-130
	m,p-Xylene	50	45.9	92	53-130
95-47-6	o-Xylene	50	47.8	96	61-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	89%	70-130%
460-00-4	4-Bromofluorobenzene	88%	70-130%
17060-07-0	1,2-Dichloroethane-D4	85%	70-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D14850-1MS	3V05573.D	1	07/03/10	DC	n/a	n/a	V3V283
D14850-1MSD	3V05574.D	1	07/03/10	DC	n/a	n/a	V3V283
D14850-1	3V05572.D	1	07/03/10	DC	n/a	n/a	V3V283

The QC reported here applies to the following samples:

Method: SW846 8260B

D14850-1

CAS No.	Compound	D14850-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		290	273	94	282	97	3	55-140/30
100-41-4	Ethylbenzene	ND		290	294	101	303	104	3	56-139/30
108-88-3	Toluene	ND		290	302	104	318	110	5	57-144/30
	m,p-Xylene	ND		290	254	88	255	88	0	47-130/30
95-47-6	o-Xylene	ND		290	263	91	266	92	1	51-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D14850-1	Limits
2037-26-5	Toluene-D8	90%	91%	92%	70-130%
460-00-4	4-Bromofluorobenzene	84%	85%	80%	70-130%
17060-07-0	1,2-Dichloroethane-D4	88%	84%	89%	70-130%



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2111-MB	3G01289.D	1	07/06/10	TMB	07/02/10	OP2111	E3G33

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D14850-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	6.2	ug/kg	
208-96-8	Acenaphthylene	ND	33	6.9	ug/kg	
120-12-7	Anthracene	ND	6.7	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	6.5	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	4.2	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	4.8	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	4.2	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.2	ug/kg	
218-01-9	Chrysene	ND	6.7	3.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	4.9	ug/kg	
206-44-0	Fluoranthene	ND	6.7	4.1	ug/kg	
86-73-7	Fluorene	ND	6.7	6.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	4.4	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	5.9	ug/kg	
91-57-6	2-Methylnaphthalene	ND	33	10	ug/kg	
91-20-3	Naphthalene	ND	33	7.4	ug/kg	
85-01-8	Phenanthrene	ND	6.7	5.3	ug/kg	
129-00-0	Pyrene	ND	6.7	4.5	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	62% 10-193%
321-60-8	2-Fluorobiphenyl	61% 20-138%
1718-51-0	Terphenyl-d14	80% 17-174%

Blank Spike Summary

Page 1 of 1

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2111-BS	3G01290.D	1	07/06/10	TMB	07/02/10	OP2111	E3G33

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D14850-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	53.5	64	40-136
208-96-8	Acenaphthylene	83.3	52.1	63	42-139
120-12-7	Anthracene	83.3	55.3	66	40-141
56-55-3	Benzo(a)anthracene	83.3	56.8	68	38-143
50-32-8	Benzo(a)pyrene	83.3	59.4	71	39-145
205-99-2	Benzo(b)fluoranthene	83.3	60.0	72	38-151
191-24-2	Benzo(g,h,i)perylene	83.3	60.6	73	35-136
207-08-9	Benzo(k)fluoranthene	83.3	58.3	70	38-147
218-01-9	Chrysene	83.3	60.0	72	39-137
53-70-3	Dibenzo(a,h)anthracene	83.3	59.4	71	35-139
206-44-0	Fluoranthene	83.3	56.7	68	34-132
86-73-7	Fluorene	83.3	54.2	65	41-136
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	53.7	64	31-144
90-12-0	1-Methylnaphthalene	83.3	52.2	63	36-130
91-57-6	2-Methylnaphthalene	83.3	56.3	68	40-131
91-20-3	Naphthalene	83.3	54.3	65	36-130
85-01-8	Phenanthrene	83.3	56.1	67	40-135
129-00-0	Pyrene	83.3	59.6	72	29-157

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	65%	10-193%
321-60-8	2-Fluorobiphenyl	62%	20-138%
1718-51-0	Terphenyl-d14	71%	17-174%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2111-MS	3G01293.D	1	07/07/10	TMB	07/02/10	OP2111	E3G33
OP2111-MSD	3G01294.D	1	07/07/10	TMB	07/02/10	OP2111	E3G33
D14817-3	3G01292.D	1	07/06/10	TMB	07/02/10	OP2111	E3G33

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D14850-1

CAS No.	Compound	D14817-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		95.2	61.7	65	55.7	59	10	20-151/30
208-96-8	Acenaphthylene	ND		95.2	62.0	65	56.7	60	9	23-156/30
120-12-7	Anthracene	ND		95.2	62.3	65	55.6	59	11	25-149/30
56-55-3	Benzo(a)anthracene	ND		95.2	73.7	77	66.3	70	11	22-157/30
50-32-8	Benzo(a)pyrene	ND		95.2	70.8	74	63.0	66	12	23-153/30
205-99-2	Benzo(b)fluoranthene	ND		95.2	71.2	75	62.8	66	13	22-161/30
191-24-2	Benzo(g,h,i)perylene	ND		95.2	70.1	74	66.9	71	5	20-158/30
207-08-9	Benzo(k)fluoranthene	ND		95.2	63.6	67	56.0	59	13	17-161/30
218-01-9	Chrysene	ND		95.2	65.2	68	57.3	60	13	16-159/30
53-70-3	Dibenzo(a,h)anthracene	ND		95.2	76.8	81	69.6	73	10	21-154/30
206-44-0	Fluoranthene	ND		95.2	70.3	74	60.5	64	15	16-140/30
86-73-7	Fluorene	ND		95.2	66.0	69	60.8	64	8	15-153/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		95.2	74.5	78	68.0	72	9	21-159/30
90-12-0	1-Methylnaphthalene	ND		95.2	58.8	62	55.7	59	5	10-148/30
91-57-6	2-Methylnaphthalene	ND		95.2	64.0	67	58.0	61	10	10-181/30
91-20-3	Naphthalene	ND		95.2	61.0	64	54.8	58	11	10-176/30
85-01-8	Phenanthrene	ND		95.2	62.0	65	55.5	58	11	22-152/30
129-00-0	Pyrene	ND		95.2	74.4	78	69.1	73	7	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	D14817-3	Limits
4165-60-0	Nitrobenzene-d5	63%	56%	63%	10-193%
321-60-8	2-Fluorobiphenyl	61%	57%	62%	20-138%
1718-51-0	Terphenyl-d14	72%	66%	64%	17-174%



GC 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: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA445-MB	GA7497.D	1	07/07/10	DG	n/a	n/a	GGA445

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

D14850-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	1.0	1.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	100% 60-140%

7.1.1
7

Blank Spike Summary

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA445-BS	GA7498.D	1	07/07/10	DG	n/a	n/a	GGA445

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

D14850-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	11	10.1	92	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	117%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D14907-2MS	GA7504.D	1	07/07/10	DG	n/a	n/a	GGA445
D14907-2MSD	GA7501.D	1	07/07/10	DG	n/a	n/a	GGA445
D14907-2	GA7499.D	1	07/07/10	DG	n/a	n/a	GGA445

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

D14850-1

CAS No.	Compound	D14907-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		11.4	9.86	86	8.34	73	17	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D14907-2	Limits
120-82-1	1,2,4-Trichlorobenzene	127%	95%	102%	60-140%

7.3.1
7



GC Semi-volatiles

QC Data Summaries

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Includes the following where applicable:

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

Method Blank Summary

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2112-MB	FD2427.D	1	07/03/10	CP	07/02/10	OP2112	GFD131

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

D14850-1

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	ND	13	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	80% 63-130%

8.1.1
8

Blank Spike Summary

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2112-BS	FD2428.D	1	07/03/10	CP	07/02/10	OP2112	GFD131

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

D14850-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	581	87	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	81%	63-130%

8.2.1
8

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D14850
Account: ENCACOP EnCana
Project: I30A Cuttings

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2112-MS	FD2430.D	1	07/03/10	CP	07/02/10	OP2112	GFD131
OP2112-MSD	FD2431.D	1	07/03/10	CP	07/02/10	OP2112	GFD131
D14764-1	FD2429.D	1	07/03/10	CP	07/02/10	OP2112	GFD131

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

D14850-1

CAS No.	Compound	D14764-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	1040		754	1670	84	1630	78	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D14764-1	Limits
84-15-1	o-Terphenyl	76%	81%	81%	63-130%

8.3.1
8



Metals Analysis

QC Data Summaries

Includes the following where applicable:

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/02/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.7	2		
Antimony	3.0	.17	.5		
Arsenic	2.5	.28	.72		
Barium	1.0	.014	.05	0.17	<1.0
Beryllium	1.0	.14	.21		
Boron	5.0	.35	.91		
Cadmium	1.0	.022	.12	-0.11	<1.0
Calcium	40	1.7	2.7		
Chromium	1.0	.027	.18	0.17	<1.0
Cobalt	0.50	.048	.058		
Copper	0.50	.16	.38	0.34	<0.50
Iron	7.0	.77	.91		
Lead	5.0	.13	.24	0.16	<5.0
Lithium	0.20	.076	.09		
Magnesium	20	.58	.93		
Manganese	0.50	.021	.028		
Molybdenum	1.0	.041	.16		
Nickel	3.0	.038	.075	0.050	<3.0
Phosphorus	10	1.5	3.5		
Potassium	200	38	130		
Selenium	5.0	.28	.54	-0.10	<5.0
Silicon	5.0	1.2	.68		
Silver	3.0	.098	.068	0.0	<3.0
Sodium	40	23	6.3		
Strontium	5.0	.0091	.02		
Thallium	1.0	.31	.21		
Tin	5.0	1.4	.56		
Titanium	1.0	.0098	.041		
Uranium	5.0	.22	.53		
Vanadium	1.0	.027	.034		
Zinc	3.0	.076	.49	0.40	<3.0

Associated samples MP2238: D14850-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/02/10

Metal	D14850-1 Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	2780	3530	189	397.6(a)	75-125
Beryllium					
Boron	anr				
Cadmium	0.22	40.9	47.2	86.3	75-125
Calcium					
Chromium	12.2	53.5	47.2	87.6	75-125
Cobalt					
Copper	21.5	68.2	47.2	99.0	75-125
Iron					
Lead	12.5	91.6	94.3	83.9	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	15.0	54.1	47.2	82.9	75-125
Phosphorus					
Potassium					
Selenium	2.6	83.5	94.3	85.8	75-125
Silicon					
Silver	0.0	17.4	18.9	92.2	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	55.5	93.1	47.2	79.7	75-125

Associated samples MP2238: D14850-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/02/10

Metal	D14850-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	2780	3480	186	377.1(a)	1.4	20
Beryllium						
Boron	anr					
Cadmium	0.22	41.8	46.4	89.6	2.2	20
Calcium						
Chromium	12.2	56.8	46.4	96.1	6.0	20
Cobalt						
Copper	21.5	73.8	46.4	112.7	7.9	20
Iron						
Lead	12.5	94.6	92.8	88.5	3.2	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	15.0	56.3	46.4	89.0	4.0	20
Phosphorus						
Potassium						
Selenium	2.6	85.7	92.8	89.5	2.6	20
Silicon						
Silver	0.0	18.0	18.6	97.0	3.4	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	55.5	99.5	46.4	94.8	6.6	20

Associated samples MP2238: D14850-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

- (N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 07/02/10

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	198	200	99.0	80-120
Beryllium				
Boron	anr			
Cadmium	46.1	50	92.2	80-120
Calcium				
Chromium	50.0	50	100.0	80-120
Cobalt				
Copper	49.2	50	98.4	80-120
Iron				
Lead	95.7	100	95.7	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	48.0	50	96.0	80-120
Phosphorus				
Potassium				
Selenium	92.0	100	92.0	80-120
Silicon				
Silver	19.4	20	97.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	47.7	50	95.4	80-120

Associated samples MP2238: D14850-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/02/10

Metal	D14850-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	29400	34800	18.1*(a)	0-10
Beryllium				
Boron	anr			
Cadmium	2.30	0.00	100.0(b)	0-10
Calcium				
Chromium	130	159	22.2*(a)	0-10
Cobalt				
Copper	228	248	8.6	0-10
Iron				
Lead	133	167	25.5*(a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	159	201	26.3*(a)	0-10
Phosphorus				
Potassium				
Selenium	27.9	38.0	36.2 (b)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	588	765	30.1*(a)	0-10

Associated samples MP2238: D14850-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2238
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

(a) Serial dilution indicates possible matrix interference.

(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

9.1.4

9

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2239
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/02/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	.89		
Antimony	0.20	.001	.045		
Arsenic	0.40	.049	.26	-0.16	<0.40
Barium	1.0	.0035	.17		
Beryllium	0.10	.0075	.014		
Boron	20	.97	2		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	6.1		
Chromium	1.0	.021	.23		
Cobalt	0.10	.0033	.088		
Copper	1.0	.011	.14		
Iron	20	.81	6.1		
Lead	0.25	.0012	.18		
Magnesium	50	.067	1.3		
Manganese	0.50	.007	.089		
Molybdenum	0.50	.0044	.2		
Nickel	1.0	.0029	.074		
Phosphorus	30	1.8	5.6		
Potassium	100	2	9.1		
Selenium	0.20	.075	.14		
Silver	0.050	.0008	.029		
Sodium	250	.8	1.8		
Strontium	10	.004	.047		
Thallium	0.10	.015	.071		
Tin	5.0	.006	.17		
Titanium	1.0	.035	.071		
Uranium	0.25	.00038	.12		
Vanadium	2.0	.052	.99		
Zinc	5.0	.039	.53		

Associated samples MP2239: D14850-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2239
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/02/10

Metal	D14850-1 Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	14.0	93.5	94.3	84.3	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP2239: D14850-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2239
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 07/02/10

Metal	D14850-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	14.0	96.5	92.8	88.9	3.2	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP2239: D14850-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2239
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 07/02/10

Metal		D14850-1		QC	
		Original	SDL 5:25	%DIF	Limits
Aluminum					
Antimony					
Arsenic					
	149	164	10.4*(a)	0-10	
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP2239: D14850-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/02/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	35	250		
Antimony	150	8.5	65		
Arsenic	130	14	33		
Barium	50	.7	12		
Beryllium	50	7	22		
Boron	250	18	93		
Cadmium	50	1.1	6		
Calcium	2000	85	46	432	<2000
Chromium	50	1.4	8		
Cobalt	25	2.4	1.5		
Copper	25	8	14		
Iron	350	39	50		
Lead	250	6.5	16		
Lithium	10	3.8	8		
Magnesium	1000	29	62	206	<1000
Manganese	25	1.1	3.5		
Molybdenum	50	2.1	6		
Nickel	150	1.9	3		
Phosphorus	500	75	270		
Potassium	5000	1900	2700		
Selenium	250	14	36		
Silicon	250	60	100		
Silver	150	4.9	1.5		
Sodium	2000	1200	110	-470	<2000
Strontium	25	.46	17		
Thallium	50	16	11		
Tin	250	70	22		
Titanium	50	.49	3.5		
Uranium	250	11	20		
Vanadium	50	1.4	1.5		
Zinc	150	3.8	8.5		

Associated samples MP2240: D14850-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/02/10

Metal	D14745-1A Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	21100	152000	125000	104.7	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	6970	132000	125000	100.0	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	20900	148000	125000	101.7	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP2240: D14850-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/02/10

Metal	D14745-1A Original MSD	Spikelot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	21100	151000	125000	103.9
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	6970	131000	125000	99.2
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	20900	148000	125000	101.7
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP2240: D14850-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/02/10

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	134000	125000	107.2	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	118000	125000	94.4	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	120000	125000	96.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP2240: D14850-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

9.3.3
6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2240
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2250
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/06/10

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.0012	0.0036	<0.10

Associated samples MP2250: D14850-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2250
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/06/10

Metal	D14851-1		Spikelot		QC	
	Original	MS	HGWSR1	% Rec	Limits	
Mercury	0.019	0.41	0.424	92.2	85-115	

Associated samples MP2250: D14850-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2250
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/06/10

Metal	D14851-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.019	0.41	0.432	90.5	0.0	20

Associated samples MP2250: D14850-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

QC Batch ID: MP2250
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 07/06/10

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.38	0.4	95.0	80-120

Associated samples MP2250: D14850-1

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



General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D14850
Account: ENCACOP - EnCana
Project: I30A Cuttings

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP2292/GN5202			umhos/cm	9970	9970	93.3	90-110%
pH	GN5177			su	8.00	8.02	100.3	99.3-100.7%

Associated Samples:
Batch GN5177: D14850-1
Batch GP2292: D14850-1
(*) Outside of QC limits



Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

Accutest Job #: D14850

Accutest Quote #:

AMS P.O. #:

Project No.:

Client Information				Subcontract Laboratory Information				Analytical Information				Comments							
Name Accutest Mountain States (AMS)				Name Accutest - New England				XCRA		EH									
Address 4036 Youngfield St.				Address 495 Technology Center West, BLDG O															
City Wheat Ridge,		State CO		Zip 80033		City Marlborough								State MA		Zip 01752			
Send Report to: Any questions contact: Tiffany Pham Amanda Kissell				Contact: Sample Management															
Phone/Fax #: (303) 425-6021; (303) 425-6854				Phone: (508) 481-6200															
Field ID / Point of Collection		Collection		Matrix	# of bottles	Preservation						Comments							
		Date	Time			HCL	NaOH	HNO3	H2SO4	None									
D14850 -1		6/29/10	11:15 AM	Soil	1														
Turnaround Information				Data Deliverable Information				Comments / Remarks											
<input checked="" type="checkbox"/> 1 - 2 Business Day Rush <input type="checkbox"/> Other _____ (Days)				Approved By: _____ _____ _____ 10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.				<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> Commercial "BN" <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> Full Tier 1				<input type="checkbox"/> PDF <input type="checkbox"/> Compact Disk Deliverable <input type="checkbox"/> Electronic Delivery: _____ <input type="checkbox"/> State Forms <input type="checkbox"/> Other (Specify) _____				Please use Colorado regulations and RLs.			
Sample Custody must be documented below each time samples change possession, including courier delivery.								For Subcontract Laboratory Use Only											
Relinquished by:		Date & Time:		Received By:		Date & Time:		Seal #:		Headspace:		Yas <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>							
1		7/1/10		1 FedEx															
Relinquished by:		Date & Time:		Received By:		Date & Time:		Preserved where applicable:											
2 FedEx		7/3/10 10:31		2 [Signature]				<input type="checkbox"/>		TS#									
Relinquished by:		Date & Time:		Received By:		Date & Time:		Temperature °C		On Ice <input checked="" type="checkbox"/>									
3				3 [Signature]				3.7											

D14850: Chain of Custody

Page 1 of 2

Accutest Labs of New England, Inc.



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D14850

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 7/3/2010 10:30:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project:

Airbill #'s:

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun | |
| 3. Cooler media: | Ice (bag) | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume rec'd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

Accutest Laboratories
V:508.481.6200

495 Technology Center West, Bldg One
F: 508.481.7753

Marlborough, MA
www.accutest.com

D14850: Chain of Custody
Page 2 of 2



General Chemistry

QC Data Summaries

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D14850
Account: ALMS - Accutest Mountain States
Project: ENCACOP: I30A Cuttings

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP11780/GN32325	2.0	0.0	mg/kg	40	36.9	92.3	80-120%
Chromium, Hexavalent	GP11780/GN32325			mg/kg	844	818	96.9	80-120%

Associated Samples:
Batch GP11780: D14850-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D14850
Account: ALMS - Accutest Mountain States
Project: ENCACOP: I30A Cuttings

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP11780/GN32325	D14817-3	mg/kg	0.0	0.0	0.0	0-20%
Redox Potential Vs H2	GN32327	D14852-2	mv	391	387	1.0	0-20%

Associated Samples:
Batch GN32327: D14850-1
Batch GP11780: D14850-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D14850
Account: ALMS - Accutest Mountain States
Project: ENCACOP: I30A Cuttings

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP11780/GN32325	D14817-3	mg/kg	0.0	45.5	39.1	86.0	75-125%
Chromium, Hexavalent	GP11780/GN32325	D14817-3	mg/kg	0.0	988	1020	103.3	75-125%

Associated Samples:
Batch GP11780: D14850-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits



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

Report Summary

Friday June 25, 2010

Report Number: L464621

Samples Received: 06/16/10

Client Project:

Description: I30A Background

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:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

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

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

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

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REPORT OF ANALYSIS

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

June 25, 2010

Date Received : June 16, 2010
Description : I30A Background
Sample ID : I30A-BACK MID-061510
Collected By : Chris Hines
Collection Date : 06/15/10 14:20

ESC Sample # : L464621-01

Site ID : RANGELY

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/19/10	1
Chromium, Trivalent	21.	0.50	mg/kg	Calc.	06/18/10	1
ORP	-86.		mV	2580	06/24/10	1
pH	8.2		su	9045D	06/18/10	1
Sodium Adsorption Ratio	4.9			Calc.	06/20/10	1
Specific Conductance	920		umhos/cm	9050AMod	06/19/10	1
Mercury	BDL	0.020	mg/kg	7471	06/18/10	1
Arsenic	9.9	1.0	mg/kg	6010B	06/18/10	1
Barium	240	0.25	mg/kg	6010B	06/18/10	1
Cadmium	0.85	0.25	mg/kg	6010B	06/18/10	1
Chromium	21.	0.50	mg/kg	6010B	06/18/10	1
Copper	18.	1.0	mg/kg	6010B	06/18/10	1
Lead	14.	0.25	mg/kg	6010B	06/18/10	1
Nickel	16.	1.0	mg/kg	6010B	06/18/10	1
Selenium	7.7	1.0	mg/kg	6010B	06/18/10	1
Silver	BDL	0.50	mg/kg	6010B	06/18/10	1
Zinc	64.	1.5	mg/kg	6010B	06/18/10	1
Benzene	BDL	0.0025	mg/kg	8021/8015	06/23/10	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/23/10	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/23/10	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/23/10	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/24/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	98.3		% Rec.	8021/8015	06/24/10	5
a,a,a-Trifluorotoluene(PID)	99.0		% Rec.	8021/8015	06/23/10	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	06/21/10	1
Surrogate recovery(%)						
o-Terphenyl	63.5		% Rec.	3546/DRO	06/21/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L464621-01 (PH) - 8.2@22.5c



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REPORT OF ANALYSIS

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

June 25, 2010

Date Received : June 16, 2010
Description : I30A Background
Sample ID : I30A-BACK MID-061510
Collected By : Chris Hines
Collection Date : 06/15/10 14:20

ESC Sample # : L464621-01

Site ID : RANGELY

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/19/10	1
Surrogate Recovery						
Nitrobenzene-d5	66.9		% Rec.	8270C-SIM	06/19/10	1
2-Fluorobiphenyl	67.7		% Rec.	8270C-SIM	06/19/10	1
p-Terphenyl-d14	75.7		% Rec.	8270C-SIM	06/19/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/25/10 09:35 Printed: 06/25/10 09:35
L464621-01 (PH) - 8.2@22.5c



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REPORT OF ANALYSIS

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

June 25, 2010

Date Received : June 16, 2010
Description : I30A Background
Sample ID : I30A-BACK W-061510
Collected By : Chris Hines
Collection Date : 06/15/10 14:30

ESC Sample # : L464621-02

Site ID : RANGELY

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	21.	5.0	mg/kg	6010B	06/22/10	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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REPORT OF ANALYSIS

Chris Hines
EnCana Oil & Gas Inc. - CO
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Parachute, CO 81635

June 25, 2010

Date Received : June 16, 2010
Description : I30A Background
Sample ID : I30A-BACK E-061510
Collected By : Chris Hines
Collection Date : 06/15/10 14:40

ESC Sample # : L464621-03

Site ID : RANGELY

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	11.	1.0	mg/kg	6010B	06/22/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/25/10 09:35 Printed: 06/25/10 09:35

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L464621-01	WG484016	SAMP	Barium	R1256208	V
	WG484016	SAMP	Selenium	R1256208	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
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
06/25/10 at 09:35:49

TSR Signing Reports: 358

Sample: L464621-01 Account: ENCANACO Received: 06/16/10 09:00 Due Date: 06/23/10 00:00 RPT Date: 06/25/10 09:35

Sample: L464621-02 Account: ENCANACO Received: 06/16/10 09:00 Due Date: 06/23/10 00:00 RPT Date: 06/25/10 09:35

Sample: L464621-03 Account: ENCANACO Received: 06/16/10 09:00 Due Date: 06/23/10 00:00 RPT Date: 06/25/10 09:35



YOUR LAB OF CHOICE

EnCana Oil & Gas Inc. - CO
Chris Hines
2717 County Road 215, Suite 100
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Quality Assurance Report
Level II

L464621

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June 25, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
pH	4.70	su			WG484040	06/18/10 08:17
Mercury	< .02	mg/kg			WG484155	06/18/10 08:02
Arsenic	< 1	mg/kg			WG484016	06/18/10 05:02
Barium	< .25	mg/kg			WG484016	06/18/10 05:02
Cadmium	< .25	mg/kg			WG484016	06/18/10 05:02
Chromium	< .5	mg/kg			WG484016	06/18/10 05:02
Copper	< 1	mg/kg			WG484016	06/18/10 05:02
Lead	< .25	mg/kg			WG484016	06/18/10 05:02
Nickel	< 1	mg/kg			WG484016	06/18/10 05:02
Selenium	< 1	mg/kg			WG484016	06/18/10 05:02
Silver	< .5	mg/kg			WG484016	06/18/10 05:02
Zinc	< 1.5	mg/kg			WG484016	06/18/10 05:02
Chromium,Hexavalent	< 2	mg/kg			WG484311	06/19/10 12:16
1-Methylnaphthalene	< .006	mg/kg			WG484008	06/19/10 09:54
2-Chloronaphthalene	< .006	mg/kg			WG484008	06/19/10 09:54
2-Methylnaphthalene	< .006	mg/kg			WG484008	06/19/10 09:54
Acenaphthene	< .006	mg/kg			WG484008	06/19/10 09:54
Acenaphthylene	< .006	mg/kg			WG484008	06/19/10 09:54
Anthracene	< .006	mg/kg			WG484008	06/19/10 09:54
Benzo(a)anthracene	< .006	mg/kg			WG484008	06/19/10 09:54
Benzo(a)pyrene	< .006	mg/kg			WG484008	06/19/10 09:54
Benzo(b)fluoranthene	< .006	mg/kg			WG484008	06/19/10 09:54
Benzo(g,h,i)perylene	< .006	mg/kg			WG484008	06/19/10 09:54
Benzo(k)fluoranthene	< .006	mg/kg			WG484008	06/19/10 09:54
Chrysene	< .006	mg/kg			WG484008	06/19/10 09:54
Dibenz(a,h)anthracene	< .006	mg/kg			WG484008	06/19/10 09:54
Fluoranthene	< .006	mg/kg			WG484008	06/19/10 09:54
Fluorene	< .006	mg/kg			WG484008	06/19/10 09:54
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG484008	06/19/10 09:54
Naphthalene	< .006	mg/kg			WG484008	06/19/10 09:54
Phenanthrene	< .006	mg/kg			WG484008	06/19/10 09:54
Pyrene	< .006	mg/kg			WG484008	06/19/10 09:54
2-Fluorobiphenyl		% Rec.	77.80	21-120	WG484008	06/19/10 09:54
Nitrobenzene-d5		% Rec.	68.33	33-114	WG484008	06/19/10 09:54
p-Terphenyl-d14		% Rec.	83.15	18-142	WG484008	06/19/10 09:54
TPH (GC/FID) High Fraction	< 4	ppm			WG484208	06/21/10 09:44
o-Terphenyl		% Rec.	91.10	50-150	WG484208	06/21/10 09:44
Arsenic	< 1	mg/kg			WG484229	06/22/10 16:16
Benzene	< .0005	mg/kg			WG484841	06/23/10 12:36
Ethylbenzene	< .0005	mg/kg			WG484841	06/23/10 12:36
Toluene	< .005	mg/kg			WG484841	06/23/10 12:36
Total Xylene	< .0015	mg/kg			WG484841	06/23/10 12:36
a,a,a-Trifluorotoluene(FID)		% Rec.	106.3	59-128	WG484841	06/23/10 12:36
a,a,a-Trifluorotoluene(PID)		% Rec.	102.3	54-144	WG484841	06/23/10 12:36

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Est. 1970

June 25, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG485397	06/24/10 21:43
a,a,a-Trifluorotoluene(FID)		% Rec.	98.84	59-128	WG485397	06/24/10 21:43
a,a,a-Trifluorotoluene(PID)		% Rec.	91.48	54-144	WG485397	06/24/10 21:43

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
pH	su	8.70	8.70	0	1	L464262-01	WG484040
Mercury	mg/kg	0	0	0	20	L464621-01	WG484155
Arsenic	mg/kg	12.0	9.90	18.3	20	L464621-01	WG484016
Barium	mg/kg	240.	240.	0.837	20	L464621-01	WG484016
Cadmium	mg/kg	0.830	0.850	2.26	20	L464621-01	WG484016
Chromium	mg/kg	21.0	21.0	1.92	20	L464621-01	WG484016
Copper	mg/kg	17.0	18.0	3.39	20	L464621-01	WG484016
Lead	mg/kg	14.0	14.0	2.82	20	L464621-01	WG484016
Nickel	mg/kg	15.0	16.0	7.12	20	L464621-01	WG484016
Selenium	mg/kg	5.80	7.70	28.8*	20	L464621-01	WG484016
Silver	mg/kg	0	0	0	20	L464621-01	WG484016
Zinc	mg/kg	63.0	64.0	1.10	20	L464621-01	WG484016
Chromium,Hexavalent	mg/kg	0	0	0	20	L464960-01	WG484311
Chromium,Hexavalent	mg/kg	0	0	0	20	L464620-01	WG484311
Specific Conductance	umhos/cm	2700	2700	0.557	20	L464620-01	WG484414
Arsenic	mg/kg	0	0	0	20	L464861-20	WG484229
ORP	mV	0	0	0	20	L464620-01	WG484992
ORP	mV	280.	280.	0.717	20	L464960-02	WG484992

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
pH	su	9.36	9.30	99.4	98.9-102.0	WG484040
Mercury	mg/kg	8.77	9.25	105.	71.6-127.7	WG484155
Arsenic	mg/kg	192	171.	89.1	78.6-120.8	WG484016
Barium	mg/kg	420	409.	97.4	78.8-121.4	WG484016
Cadmium	mg/kg	70.1	63.0	89.9	78.5-121.5	WG484016
Chromium	mg/kg	168	168.	100.	80.4-120.2	WG484016
Copper	mg/kg	122	123.	101.	81.6-119.7	WG484016
Lead	mg/kg	113	110.	97.3	77.3-122.1	WG484016
Nickel	mg/kg	74.1	73.4	99.1	78.8-121.2	WG484016
Selenium	mg/kg	176	173.	98.3	75.6-125.0	WG484016
Silver	mg/kg	115	110.	95.7	66-133.9	WG484016
Zinc	mg/kg	437	407.	93.1	78.5-121.7	WG484016

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Analyte	Units	Laboratory Control	Sample	% Rec	Limit	Batch
		Known Val	Result			
Chromium,Hexavalent	mg/kg	100	96.5	96.5	50-143	WG484311
1-Methylnaphthalene	mg/kg	.033	0.0261	79.1	41-110	WG484008
2-Chloronaphthalene	mg/kg	.033	0.0302	91.4	43-109	WG484008
2-Methylnaphthalene	mg/kg	.033	0.0258	78.3	38-104	WG484008
Acenaphthene	mg/kg	.033	0.0248	75.1	48-103	WG484008
Acenaphthylene	mg/kg	.033	0.0267	80.8	43-106	WG484008
Anthracene	mg/kg	.033	0.0251	76.0	51-110	WG484008
Benzo(a)anthracene	mg/kg	.033	0.0267	81.0	38-126	WG484008
Benzo(a)pyrene	mg/kg	.033	0.0266	80.6	47-118	WG484008
Benzo(b)fluoranthene	mg/kg	.033	0.0268	81.1	47-118	WG484008
Benzo(g,h,i)perylene	mg/kg	.033	0.0289	87.5	40-125	WG484008
Benzo(k)fluoranthene	mg/kg	.033	0.0305	92.3	45-121	WG484008
Chrysene	mg/kg	.033	0.0253	76.5	35-135	WG484008
Dibenz(a,h)anthracene	mg/kg	.033	0.0295	89.3	41-124	WG484008
Fluoranthene	mg/kg	.033	0.0263	79.8	50-114	WG484008
Fluorene	mg/kg	.033	0.0250	75.9	49-109	WG484008
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0284	86.1	40-126	WG484008
Naphthalene	mg/kg	.033	0.0259	78.6	36-100	WG484008
Phenanthrene	mg/kg	.033	0.0248	75.3	46-108	WG484008
Pyrene	mg/kg	.033	0.0244	74.1	30-136	WG484008
2-Fluorobiphenyl				86.21	21-120	WG484008
Nitrobenzene-d5				78.68	33-114	WG484008
p-Terphenyl-d14				86.85	18-142	WG484008
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG484414
TPH (GC/FID) High Fraction	ppm	60	40.0	66.7	50-150	WG484208
o-Terphenyl				83.33	50-150	WG484208
Arsenic	mg/kg	192	159.	82.8	78.6-120.8	WG484229
Benzene	mg/kg	.05	0.0512	102.	76-113	WG484841
Ethylbenzene	mg/kg	.05	0.0538	108.	78-115	WG484841
Toluene	mg/kg	.05	0.0517	103.	76-114	WG484841
Total Xylene	mg/kg	.15	0.161	108.	81-118	WG484841
a,a,a-Trifluorotoluene(PID)				100.9	54-144	WG484841
ORP	mV	229	237.	103.	95.6-104.37	WG484992
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.40	116.	67-135	WG485397
a,a,a-Trifluorotoluene(FID)				96.95	59-128	WG485397

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	WG484040
Chromium,Hexavalent	mg/kg	90.9	96.5 91.0	50-143	5.98	20	WG484311
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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
1-Methylnaphthalene	mg/kg	0.0260	0.0261	79.0		41-110	0.181	24	WG484008
2-Chloronaphthalene	mg/kg	0.0303	0.0302	92.0		43-109	0.347	21	WG484008
2-Methylnaphthalene	mg/kg	0.0267	0.0258	81.0		38-104	3.41	24	WG484008
Acenaphthene	mg/kg	0.0265	0.0248	80.0		48-103	6.72	20	WG484008
Acenaphthylene	mg/kg	0.0265	0.0267	80.0		43-106	0.523	20	WG484008
Anthracene	mg/kg	0.0267	0.0251	81.0		51-110	6.42	22	WG484008
Benzo(a)anthracene	mg/kg	0.0276	0.0267	84.0		38-126	3.16	20	WG484008
Benzo(a)pyrene	mg/kg	0.0276	0.0266	83.0		47-118	3.53	20	WG484008
Benzo(b)fluoranthene	mg/kg	0.0271	0.0268	82.0		47-118	1.22	29	WG484008
Benzo(g,h,i)perylene	mg/kg	0.0297	0.0289	90.0		40-125	2.91	20	WG484008
Benzo(k)fluoranthene	mg/kg	0.0311	0.0305	94.0		45-121	2.10	31	WG484008
Chrysene	mg/kg	0.0264	0.0253	80.0		35-135	4.50	20	WG484008
Dibenz(a,h)anthracene	mg/kg	0.0303	0.0295	92.0		41-124	2.87	20	WG484008
Fluoranthene	mg/kg	0.0278	0.0263	84.0		50-114	5.46	20	WG484008
Fluorene	mg/kg	0.0259	0.0250	78.0		49-109	3.21	19	WG484008
Indeno(1,2,3-cd)pyrene	mg/kg	0.0301	0.0284	91.0		40-126	5.73	20	WG484008
Naphthalene	mg/kg	0.0261	0.0259	79.0		36-100	0.468	24	WG484008
Phenanthrene	mg/kg	0.0256	0.0248	78.0		46-108	2.95	21	WG484008
Pyrene	mg/kg	0.0256	0.0244	77.0		30-136	4.51	20	WG484008
2-Fluorobiphenyl				88.42		21-120			WG484008
Nitrobenzene-d5				81.62		33-114			WG484008
p-Terphenyl-d14				88.53		18-142			WG484008
Specific Conductance	umhos/	410.	410.	101.		85-115	0	20	WG484414
TPH (GC/FID) High Fraction	ppm	43.5	40.0	72.0		50-150	8.31	20	WG484208
o-Terphenyl				87.13		50-150			WG484208
Benzene	mg/kg	0.0496	0.0512	99.0		76-113	3.29	20	WG484841
Ethylbenzene	mg/kg	0.0527	0.0538	105.		78-115	2.22	20	WG484841
Toluene	mg/kg	0.0513	0.0517	102.		76-114	0.930	20	WG484841
Total Xylene	mg/kg	0.157	0.161	105.		81-118	2.73	20	WG484841
a,a,a-Trifluorotoluene(PID)				102.7		54-144			WG484841
ORP	mV	236.	237.	103.		95.6-104.37	0.423	20	WG484992
TPH (GC/FID) Low Fraction	mg/kg	6.37	6.40	116.		67-135	0.550	20	WG485397
a,a,a-Trifluorotoluene(FID)				96.38		59-128			WG485397

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Mercury	mg/kg	0.262	0	.25	105.	70-130	L464621-01	WG484155
Arsenic	mg/kg	53.4	9.90	50	87.0	75-125	L464621-01	WG484016
Barium	mg/kg	290.	240.	50	100.	75-125	L464621-01	WG484016
Cadmium	mg/kg	40.6	0.850	50	79.5	75-125	L464621-01	WG484016
Chromium	mg/kg	65.5	21.0	50	89.0	75-125	L464621-01	WG484016
Copper	mg/kg	64.8	18.0	50	93.6	75-125	L464621-01	WG484016
Lead	mg/kg	55.8	14.0	50	83.6	75-125	L464621-01	WG484016
Nickel	mg/kg	58.1	16.0	50	84.2	75-125	L464621-01	WG484016
Selenium	mg/kg	47.2	7.70	50	79.0	75-125	L464621-01	WG484016

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Silver	mg/kg	44.9	0	50	89.8	75-125	L464621-01	WG484016
Zinc	mg/kg	106.	64.0	50	84.0	75-125	L464621-01	WG484016
Chromium, Hexavalent	mg/kg	14.5	0	20	72.5	50-150	L464621-01	WG484311
1-Methylnaphthalene	mg/kg	0.0271	0	.033	82.2	19-131	L464119-03	WG484008
2-Chloronaphthalene	mg/kg	0.0268	0	.033	81.3	38-117	L464119-03	WG484008
2-Methylnaphthalene	mg/kg	0.0307	0	.033	93.2	18-125	L464119-03	WG484008
Acenaphthene	mg/kg	0.0264	0	.033	79.9	31-120	L464119-03	WG484008
Acenaphthylene	mg/kg	0.0304	0	.033	92.2	34-116	L464119-03	WG484008
Anthracene	mg/kg	0.0299	0	.033	90.5	32-131	L464119-03	WG484008
Benzo(a)anthracene	mg/kg	0.0288	0	.033	87.2	32-131	L464119-03	WG484008
Benzo(a)pyrene	mg/kg	0.0294	0	.033	89.1	28-130	L464119-03	WG484008
Benzo(b)fluoranthene	mg/kg	0.0331	0	.033	100.	37-130	L464119-03	WG484008
Benzo(g,h,i)perylene	mg/kg	0.0205	0	.033	62.0	10-134	L464119-03	WG484008
Benzo(k)fluoranthene	mg/kg	0.0271	0	.033	82.1	31-129	L464119-03	WG484008
Chrysene	mg/kg	0.0258	0	.033	78.2	25-137	L464119-03	WG484008
Dibenz(a,h)anthracene	mg/kg	0.0236	0	.033	71.6	20-134	L464119-03	WG484008
Fluoranthene	mg/kg	0.0318	0	.033	96.5	27-138	L464119-03	WG484008
Fluorene	mg/kg	0.0298	0	.033	90.4	26-136	L464119-03	WG484008
Indeno(1,2,3-cd)pyrene	mg/kg	0.0228	0	.033	69.2	16-135	L464119-03	WG484008
Naphthalene	mg/kg	0.0262	0	.033	79.3	22-121	L464119-03	WG484008
Phenanthrene	mg/kg	0.0310	0	.033	94.0	27-133	L464119-03	WG484008
Pyrene	mg/kg	0.0292	0	.033	88.4	22-133	L464119-03	WG484008
2-Fluorobiphenyl					92.06	21-120		WG484008
Nitrobenzene-d5					98.52	33-114		WG484008
p-Terphenyl-d14					95.28	18-142		WG484008
TPH (GC/FID) High Fraction	ppm	50.6	20.0	60	50.9	50-150	L464003-05	WG484208
o-Terphenyl					123.2	50-150		WG484208
Arsenic	mg/kg	42.1	0	50	84.2	75-125	L464861-20	WG484229
Benzene	mg/kg	0.216	0.0490	.05	67.0	32-137	L464620-01	WG484841
Ethylbenzene	mg/kg	0.197	0.0180	.05	71.8	10-150	L464620-01	WG484841
Toluene	mg/kg	0.234	0.190	.05	17.7*	20-142	L464620-01	WG484841
Total Xylene	mg/kg	0.639	0.290	.15	46.5	16-141	L464620-01	WG484841
a,a,a-Trifluorotoluene(PID)					98.88	54-144		WG484841
TPH (GC/FID) Low Fraction	mg/kg	25.4	0	5.5	92.4	55-109	L464621-01	WG485397
a,a,a-Trifluorotoluene(FID)					95.82	59-128		WG485397

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.223	0.262	89.2	70-130	16.1	20	L464621-01	WG484155
Arsenic	mg/kg	52.2	53.4	84.6	75-125	2.27	20	L464621-01	WG484016
Barium	mg/kg	283.	290.	86.0	75-125	2.44	20	L464621-01	WG484016
Cadmium	mg/kg	40.5	40.6	79.3	75-125	0.247	20	L464621-01	WG484016
Chromium	mg/kg	65.5	65.5	89.0	75-125	0	20	L464621-01	WG484016
Copper	mg/kg	65.7	64.8	95.4	75-125	1.38	20	L464621-01	WG484016

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Lead	mg/kg	56.3	55.8	84.6	75-125	0.892	20	L464621-01	WG484016
Nickel	mg/kg	59.4	58.1	86.8	75-125	2.21	20	L464621-01	WG484016
Selenium	mg/kg	47.2	47.2	79.0	75-125	0	20	L464621-01	WG484016
Silver	mg/kg	44.8	44.9	89.6	75-125	0.223	20	L464621-01	WG484016
Zinc	mg/kg	108.	106.	88.0	75-125	1.87	20	L464621-01	WG484016
Chromium, Hexavalent	mg/kg	14.9	14.5	74.5	50-150	2.72	20	L464621-01	WG484311
1-Methylnaphthalene	mg/kg	0.0295	0.0271	89.3	19-131	8.22	30	L464119-03	WG484008
2-Chloronaphthalene	mg/kg	0.0298	0.0268	90.3	38-117	10.5	26	L464119-03	WG484008
2-Methylnaphthalene	mg/kg	0.0329	0.0307	99.7	18-125	6.74	29	L464119-03	WG484008
Acenaphthene	mg/kg	0.0307	0.0264	93.0	31-120	15.1	30	L464119-03	WG484008
Acenaphthylene	mg/kg	0.0350	0.0304	106.	34-116	14.0	29	L464119-03	WG484008
Anthracene	mg/kg	0.0325	0.0299	98.4	32-131	8.38	26	L464119-03	WG484008
Benzo(a)anthracene	mg/kg	0.0339	0.0288	103.	32-131	16.4	31	L464119-03	WG484008
Benzo(a)pyrene	mg/kg	0.0339	0.0294	103.	28-130	14.2	28	L464119-03	WG484008
Benzo(b)fluoranthene	mg/kg	0.0383	0.0331	116.	37-130	14.4	41	L464119-03	WG484008
Benzo(g,h,i)perylene	mg/kg	0.0249	0.0205	75.6	10-134	19.8	26	L464119-03	WG484008
Benzo(k)fluoranthene	mg/kg	0.0306	0.0271	92.7	31-129	12.2	42	L464119-03	WG484008
Chrysene	mg/kg	0.0288	0.0258	87.3	25-137	10.9	22	L464119-03	WG484008
Dibenz(a,h)anthracene	mg/kg	0.0279	0.0236	84.6	20-134	16.6	25	L464119-03	WG484008
Fluoranthene	mg/kg	0.0330	0.0318	100.	27-138	3.70	35	L464119-03	WG484008
Fluorene	mg/kg	0.0330	0.0298	100.	26-136	10.1	30	L464119-03	WG484008
Indeno(1,2,3-cd)pyrene	mg/kg	0.0275	0.0228	83.3	16-135	18.5	26	L464119-03	WG484008
Naphthalene	mg/kg	0.0288	0.0262	87.3	22-121	9.60	30	L464119-03	WG484008
Phenanthrene	mg/kg	0.0314	0.0310	95.2	27-133	1.24	36	L464119-03	WG484008
Pyrene	mg/kg	0.0280	0.0292	85.0	22-133	3.99	33	L464119-03	WG484008
2-Fluorobiphenyl				104.3	21-120				WG484008
Nitrobenzene-d5				103.2	33-114				WG484008
p-Terphenyl-d14				107.4	18-142				WG484008
TPH (GC/FID) High Fraction	ppm	50.9	50.6	51.6	50-150	0.755	20	L464003-05	WG484208
o-Terphenyl				68.65	50-150				WG484208
Arsenic	mg/kg	38.7	42.1	77.4	75-125	8.42	20	L464861-20	WG484229
Benzene	mg/kg	0.223	0.216	69.6	32-137	2.91	39	L464620-01	WG484841
Ethylbenzene	mg/kg	0.200	0.197	72.7	10-150	1.16	44	L464620-01	WG484841
Toluene	mg/kg	0.239	0.234	19.5*	20-142	1.92	42	L464620-01	WG484841
Total Xylene	mg/kg	0.636	0.639	46.1	16-141	0.520	46	L464620-01	WG484841
a,a,a-Trifluorotoluene(PID)				101.2	54-144				WG484841
TPH (GC/FID) Low Fraction	mg/kg	29.5	25.4	107.	55-109	15.0	20	L464621-01	WG485397
a,a,a-Trifluorotoluene(FID)				91.26	59-128				WG485397

Batch number /Run number / Sample number cross reference

WG484040: R1256051: L464621-01
WG484155: R1256109: L464621-01
WG484016: R1256208: L464621-01
WG484311: R1257508: L464621-01
WG484008: R1258448: L464621-01

* Performance of this Analyte is outside of established criteria.

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



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

L464621

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 25, 2010

WG484414: R1258851: L464621-01
WG484208: R1259969: L464621-01
WG484367: R1261648: L464621-01
WG484229: R1263613: L464621-02 03
WG484841: R1264368: L464621-01
WG484992: R1265628: L464621-01
WG485397: R1268048: L464621-01

* * 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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June 25, 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.



04/09/10

Technical Report for

ENCANA

I30A Background Samples

Accutest Job Number: T49816

Sampling Date: 03/24/10

Report to:

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

ATTN: Chris Hines

Total number of pages in report: **52**



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) UT(7132714700)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

ENCANA

Job No: T49816

I30A Background Samples

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
T49816-1	03/24/10	09:50		03/25/10	SO	Soil	I30A-BACKGROUND-032410
T49816-1A	03/24/10	09:50		03/25/10	SO	Soil	I30A-BACKGROUND-032410

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: ENCANA

Job No T49816

Site: I30A Background Samples

Report Date 4/8/2010 9:25:00 AM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 03/24/2010 and were received at Accutest on 03/25/2010 properly preserved, at 4 Deg. C and intact. These Samples received an Accutest job number of T49816. 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 GCMS By Method SW846 8260B

Matrix SO	Batch ID: VY2467
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49820-1MS, T49820-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP14399
------------------	--------------------------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) T49818-1MS, T49818-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Benzo(g,h,i)perylene, Pyrene are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Acenaphthene, Benzo(g,h,i)perylene, Pyrene are outside control limits. Probable cause due to matrix interference.
- T49816-1: Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.
- T49816-1: Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.

Volatiles by GC By Method SW846 8015

Matrix SO	Batch ID: GEE2708
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) T49818-1MS, T49818-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8015 M

Matrix SO	Batch ID: OP14403
------------------	--------------------------

- 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) T49816-1MS, T49816-1MSD 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.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP11442

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49667-1BDUP, T49667-1BSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Magnesium are outside control limits for sample MP11442-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix SO

Batch ID: MP11448

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49551-1DUP, T49551-1MS, T49551-1MSD, T49551-1SDL, T49551-1DUP were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Arsenic, Selenium, Zinc are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Arsenic, Selenium are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- RPD(s) for Duplicate for Cadmium are outside control limits for sample MP11448-D1. RPD acceptable due to low duplicate and sample concentrations.
- RPD(s) for Serial Dilution for Cadmium, Selenium, Barium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP11448-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP11453

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T50046-1DUP, T50046-1MS, T50046-1MSD were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Mercury are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Mercury are outside control limits. Probable cause due to matrix interference.

Wet Chemistry By Method EPA 120.1

Matrix AQ

Batch ID: GN21871

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T49551-1DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method LADNR29B

Matrix SO

Batch ID: MP11442

- T49816-1A for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

Wet Chemistry By Method SM 2540 G

Matrix SO

Batch ID: GN21781

- Sample(s) T49875-1DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060/7196A**Matrix** SO**Batch ID:** GN21869

- All method blanks for this batch meet method specific criteria.
- Sample(s) T49816-1DUP, T49816-1MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 6010/7196A M**Matrix** SO**Batch ID:** R22205

- T49816-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045C**Matrix** SO**Batch ID:** GN21685

- Sample(s) T49816-1DUP were used as the QC samples for pH.

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



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	I30A-BACKGROUND-032410			Date Sampled:	03/24/10
Lab Sample ID:	T49816-1			Date Received:	03/25/10
Matrix:	SO - Soil			Percent Solids:	86.1
Method:	SW846 8260B				
Project:	I30A Background Samples				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0038998.D	1	03/31/10	JL	n/a	n/a	VY2467
Run #2							

	Initial Weight	Final Volume
Run #1	5.23 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0056	0.00078	mg/kg	
108-88-3	Toluene	ND	0.0056	0.0011	mg/kg	
100-41-4	Ethylbenzene	ND	0.0056	0.0010	mg/kg	
1330-20-7	Xylene (total)	ND	0.017	0.0023	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		70-121%
2037-26-5	Toluene-D8	115%		76-132%
460-00-4	4-Bromofluorobenzene	122%		73-165%
17060-07-0	1,2-Dichloroethane-D4	76%		57-122%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

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

Report of Analysis

Client Sample ID:	I30A-BACKGROUND-032410			Date Sampled:	03/24/10
Lab Sample ID:	T49816-1			Date Received:	03/25/10
Matrix:	SO - Soil			Percent Solids:	86.1
Method:	SW846 8270C BY SIM SW846 3550B				
Project:	I30A Background Samples				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	H37728.D	1	03/30/10	SC	03/26/10	OP14399	EH2018
Run #2 ^a	H37753.D	10	03/31/10	SC	03/26/10	OP14399	EH2019

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

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0077	0.0013	mg/kg	
208-96-8	Acenaphthylene	ND	0.0077	0.0027	mg/kg	
120-12-7	Anthracene	ND	0.0077	0.0015	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0077	0.0012	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0077	0.0041	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0077	0.0041	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0077	0.0077	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0077	0.0050	mg/kg	
218-01-9	Chrysene	ND	0.0077	0.0019	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0077	0.0075	mg/kg	
206-44-0	Fluoranthene	ND	0.0077	0.0017	mg/kg	
86-73-7	Fluorene	ND	0.0077	0.0027	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0077	0.0058	mg/kg	
90-12-0	1-Methylnaphthalene	0.0033	0.0077	0.0014	mg/kg	J
91-57-6	2-Methylnaphthalene	0.0026	0.0077	0.0013	mg/kg	J
91-20-3	Naphthalene	0.0030	0.0077	0.0012	mg/kg	J
85-01-8	Phenanthrene	0.0019	0.0077	0.0011	mg/kg	J
129-00-0	Pyrene	0.0037	0.0077	0.0026	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	32%	19%	10-127%
321-60-8	2-Fluorobiphenyl	51%	51%	11-133%
1718-51-0	Terphenyl-d14	77%	52%	15-187%

(a) Internal standards are not within the advisory limits due to a matrix interference. Confirmed by reanalysis.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	I30A-BACKGROUND-032410			Date Sampled:	03/24/10		
Lab Sample ID:	T49816-1			Date Received:	03/25/10		
Matrix:	SO - Soil			Percent Solids:	86.1		
Method:	SW846 8015						
Project:	I30A Background Samples						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE053298.D	1	03/31/10	FI	n/a	n/a	GEE2708
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.40 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.663	6.2	0.37	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	106%		46-127%
98-08-8	aaa-Trifluorotoluene	106%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

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

Report of Analysis

Client Sample ID:	I30A-BACKGROUND-032410					Date Sampled:	03/24/10
Lab Sample ID:	T49816-1					Date Received:	03/25/10
Matrix:	SO - Soil					Percent Solids:	86.1
Method:	SW846 8015 M SW846 3550B						
Project:	I30A Background Samples						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	CC218699.D	1	03/30/10	EM	03/27/10	OP14403	GCC1082
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	61.8	9.6	3.2	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	94%		33-115%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

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

Report of Analysis

Client Sample ID: I30A-BACKGROUND-032410

Lab Sample ID: T49816-1

Date Sampled: 03/24/10

Matrix: SO - Soil

Date Received: 03/25/10

Percent Solids: 86.1

Project: I30A Background Samples

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method	
Arsenic	16.9	0.61	0.12	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Barium	1390	12	0.037	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Cadmium	0.37	0.31	0.061	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Chromium	21.7	0.61	0.043	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Copper	26.0	1.5	0.080	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Lead	15.5	0.61	0.25	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Mercury	0.038	0.018	0.00071	mg/kg	1	04/01/10	04/01/10	TW	SW846 7471A ¹	SW846 7471A ⁴
Nickel	20.4	2.5	0.080	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Selenium	1.1	0.61	0.15	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Silver	0.049 U	0.61	0.049	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³
Zinc	78.1	1.2	0.25	mg/kg	1	03/31/10	04/01/10	NS	SW846 6010B ²	SW846 3050B ³

(1) Instrument QC Batch: MA4639

(2) Instrument QC Batch: MA4640

(3) Prep QC Batch: MP11448

(4) Prep QC Batch: MP11453

RL = Reporting Limit

MDL = Method Detection Limit

U = Indicates a result < MDL

B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	I30A-BACKGROUND-032410	Date Sampled:	03/24/10
Lab Sample ID:	T49816-1	Date Received:	03/25/10
Matrix:	SO - Soil	Percent Solids:	86.1
Project:	I30A Background Samples		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	1.5 B	2.0	1.0	mg/kg	1	04/07/10 12:00	KD	SW846 3060/7196A
Chromium, Trivalent ^a	20.2	2.6	1.0	mg/kg	1	04/07/10 12:00	KD	SW846 6010/7196A M
Solids, Percent	86.1			%	1	03/31/10	MR	SM 2540 G
Specific Conductivity	579	1.0		umhos/cm	1	04/06/10 13:00	KD	EPA 120.1
pH	8.54			su	1	03/26/10 14:00	CN	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	I30A-BACKGROUND-032410					Date Sampled:	03/24/10			
Lab Sample ID:	T49816-1A					Date Received:	03/25/10			
Matrix:	SO - Soil					Percent Solids:	86.1			
Project:	I30A Background Samples									

SAR Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Calcium	224	25	0.18	mg/l	5	03/31/10	04/03/10	NS	SW846 6010B ¹	LADNR 29B ²
Magnesium	84.9	25	0.039	mg/l	5	03/31/10	04/03/10	NS	SW846 6010B ¹	LADNR 29B ²
Sodium	241	25	0.67	mg/l	5	03/31/10	04/03/10	NS	SW846 6010B ¹	LADNR 29B ²

(1) Instrument QC Batch: MA4643
(2) Prep QC Batch: MP11442

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: I30A-BACKGROUND-032410

Lab Sample ID: T49816-1A

Matrix: SO - Soil

Project: I30A Background Samples

Date Sampled: 03/24/10

Date Received: 03/25/10

Percent Solids: 86.1

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	3.48		ratio	1	04/03/10 14:54	NS	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SAMPLE INSPECTION FORM

Accutest Job Number: T49816 Client: ENCANA Date/Time Received: 3/25/10 0930
 # of Coolers Received: 1 Thermometer #: 1R-1 Temperature Adjustment Factor: +0.4°C
 Cooler Temps: #1: 4.0°C #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____
 Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other
 Airbill Numbers: _____

COOLER INFORMATION

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

CHAIN OF CUSTODY

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

SAMPLE INFORMATION

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

TRIP BLANK INFORMATION

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

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

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: [Signature] 3/25/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: EC 3-25-10

♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ CORRECTIVE ACTIONS ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: _____ Phone _____ Email _____

Client Instructions: _____

T49816: Chain of Custody

Page 2 of 3

SAMPLE RECEIPT LOG

JOB #: T49816 DATE/TIME RECEIVED: 3/25/10 0930

CLIENT: ENCANA INITIALS: IS

[illegible]

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

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

Rev 8/13/01 ewp

T49816: Chain of Custody

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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2467-MB	Y0038996.D	1	03/31/10	JL	n/a	n/a	VY2467

The QC reported here applies to the following samples:

Method: SW846 8260B

T49816-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	0.90	ug/kg	
108-88-3	Toluene	ND	5.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	101% 70-121%
2037-26-5	Toluene-D8	105% 76-132%
460-00-4	4-Bromofluorobenzene	91% 73-165%
17060-07-0	1,2-Dichloroethane-D4	79% 57-122%

Blank Spike Summary

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2467-BS	Y0038994.D	1	03/31/10	JL	n/a	n/a	VY2467

The QC reported here applies to the following samples: Method: SW846 8260B

T49816-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	52.3	105	70-114
100-41-4	Ethylbenzene	50	50.2	100	60-119
108-88-3	Toluene	50	50.8	102	68-115
1330-20-7	Xylene (total)	150	151	101	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-121%
2037-26-5	Toluene-D8	108%	76-132%
460-00-4	4-Bromofluorobenzene	98%	73-165%
17060-07-0	1,2-Dichloroethane-D4	77%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T49820-1MS	Y0039005.D	1	03/31/10	JL	n/a	n/a	VY2467
T49820-1MSD	Y0039006.D	1	03/31/10	JL	n/a	n/a	VY2467
T49820-1	Y0039003.D	1	03/31/10	JL	n/a	n/a	VY2467

The QC reported here applies to the following samples:

Method: SW846 8260B

T49816-1

CAS No.	Compound	T49820-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	390		3430	3550	92	3570	93	1	70-114/38
100-41-4	Ethylbenzene	84.1	J	3430	3090	88	3110	88	1	60-119/40
108-88-3	Toluene	651		3430	3730	90	3880	94	4	68-115/38
1330-20-7	Xylene (total)	526	J	10300	9760	90	9840	90	1	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T49820-1	Limits
1868-53-7	Dibromofluoromethane	97%	96%	99%	70-121%
2037-26-5	Toluene-D8	105%	106%	107%	76-132%
460-00-4	4-Bromofluorobenzene	99%	104%	97%	73-165%
17060-07-0	1,2-Dichloroethane-D4	71%	71%	75%	57-122%



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14399-MB	H37786.D	1	04/02/10	SC	03/26/10	OP14399	EH2022

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T49816-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	48% 10-127%
321-60-8	2-Fluorobiphenyl	124% 11-133%
1718-51-0	Terphenyl-d14	53% 15-187%

Blank Spike Summary

Page 1 of 1

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14399-BS	H37787.D	1	04/02/10	SC	03/26/10	OP14399	EH2022

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T49816-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	149	89	18-118
208-96-8	Acenaphthylene	167	162	97	35-125
120-12-7	Anthracene	167	132	79	24-116
56-55-3	Benzo(a)anthracene	167	142	85	32-132
50-32-8	Benzo(a)pyrene	167	142	85	36-130
205-99-2	Benzo(b)fluoranthene	167	174	104	35-134
191-24-2	Benzo(g,h,i)perylene	167	147	88	18-149
207-08-9	Benzo(k)fluoranthene	167	170	102	30-131
218-01-9	Chrysene	167	146	88	37-124
53-70-3	Dibenzo(a,h)anthracene	167	133	80	23-150
206-44-0	Fluoranthene	167	173	104	28-118
86-73-7	Fluorene	167	133	80	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	129	77	18-150
90-12-0	1-Methylnaphthalene	167	106	64	10-128
91-57-6	2-Methylnaphthalene	167	121	73	28-113
91-20-3	Naphthalene	167	75.5	45	31-106
85-01-8	Phenanthrene	167	115	69	37-112
129-00-0	Pyrene	167	125	75	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	47%	10-127%
321-60-8	2-Fluorobiphenyl	69%	11-133%
1718-51-0	Terphenyl-d14	46%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14399-MS	H37795.D	1	04/02/10	SC	03/26/10	OP14399	EH2022
OP14399-MSD	H37796.D	1	04/02/10	SC	03/26/10	OP14399	EH2022
T49818-1 ^a	H37794.D	1	04/02/10	SC	03/26/10	OP14399	EH2022

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

T49816-1

CAS No.	Compound	T49818-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		190	191	101	306	162*	46	10-153/80
208-96-8	Acenaphthylene	ND		190	163	86	151	80	8	10-144/71
120-12-7	Anthracene	ND		190	100	53	94.2	50	6	10-176/57
56-55-3	Benzo(a)anthracene	ND		190	146	77	148	78	1	10-174/73
50-32-8	Benzo(a)pyrene	ND		190	150	79	147	78	2	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		190	184	97	177	93	4	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		190	305	161*	332	175*	8	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		190	153	81	153	81	0	10-170/94
218-01-9	Chrysene	ND		190	143	75	136	72	5	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		190	234	123	252	133	7	10-192/74
206-44-0	Fluoranthene	2.6	J	190	140	72	145	75	4	10-141/73
86-73-7	Fluorene	ND		190	171	90	154	81	10	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		190	222	117	236	125	6	10-150/73
90-12-0	1-Methylnaphthalene	2.1	J	190	150	78	122	63	21	10-154/82
91-57-6	2-Methylnaphthalene	6.1	J	190	175	89	152	77	14	10-171/75
91-20-3	Naphthalene	6.8	J	190	147	74	100	49	38	10-138/82
85-01-8	Phenanthrene	ND		190	131	69	140	74	7	10-191/77
129-00-0	Pyrene	ND		190	372	196*	393	207*	5	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T49818-1	Limits
4165-60-0	Nitrobenzene-d5	49%	42%	29%	10-127%
321-60-8	2-Fluorobiphenyl	30%	51%	29%	11-133%
1718-51-0	Terphenyl-d14	102%	112%	71%	15-187%

(a) Internal standards are not within the advisory limits due to a matrix interference. Confirmed by associated ms/msd.



GC 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: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2708-MB	EE053284.D	1	03/31/10	FI	n/a	n/a	GEE2708

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

T49816-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	100%
98-08-8	aaa-Trifluorotoluene	106%

Blank Spike Summary

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE2708-BS	EE053280.D	1	03/30/10	FI	n/a	n/a	GEE2708

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

T49816-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.363	91	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	100%	46-127%
98-08-8	aaa-Trifluorotoluene	103%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T49818-1MS	EE053305.D	1	03/31/10	FI	n/a	n/a	GEE2708
T49818-1MSD	EE053306.D	1	03/31/10	FI	n/a	n/a	GEE2708
T49818-1	EE053300.D	1	03/31/10	FI	n/a	n/a	GEE2708

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

T49816-1

CAS No.	Compound	T49818-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.849	J	24.8	22.5	87	21.9	85	3	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T49818-1	Limits
460-00-4	4-Bromofluorobenzene	109%	110%	104%	46-127%
98-08-8	aaa-Trifluorotoluene	111%	111%	106%	44-120%



GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14403-MB	CC218695.D	1	03/30/10	EM	03/27/10	OP14403	GCC1082

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

T49816-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	8.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	110% 33-115%

Blank Spike Summary

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14403-BS	CC218696.D	1	03/30/10	EM	03/27/10	OP14403	GCC1082

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

T49816-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.1	28.3	85	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	103%	33-115%

8.2.1
8

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T49816
Account: ENCACOP ENCANA
Project: I30A Background Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14403-MS	CC218697.D	1	03/30/10	EM	03/27/10	OP14403	GCC1082
OP14403-MSD	CC218698.D	1	03/30/10	EM	03/27/10	OP14403	GCC1082
T49816-1	CC218699.D	1	03/30/10	EM	03/27/10	OP14403	GCC1082

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

T49816-1

CAS No.	Compound	T49816-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	61.8		38.5	72.2	27*	70.7	23*	2	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T49816-1	Limits
84-15-1	o-Terphenyl	110%	86%	94%	33-115%

8.3.1
8



Metals Analysis

QC Data Summaries

Includes the following where applicable:

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11442
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 03/31/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	17		
Antimony	5.0	2.3	3		
Arsenic	5.0	1.8	2		
Barium	200	.14	2.7		
Beryllium	5.0	.11	.2		
Boron	100	1.1	2.1		
Cadmium	4.0	.25	.3		
Calcium	5000	5.4	35	85.3	<5000
Chromium	10	1.1	1.9		
Cobalt	50	.5	.8		
Copper	25	.58	5.9		
Iron	100	13	13		
Lead	3.0	1.6	1.7		
Magnesium	5000	6.7	7.8	34.1	<5000
Manganese	15	.2	7.6		
Molybdenum	10	.96	1.3		
Nickel	40	.95	3.2		
Potassium	5000	53	53		
Selenium	5.0	3.2	3.2		
Silver	10	.85	.8		
Sodium	5000	130	130	63.9	<5000
Strontium	20	.17	.4		
Thallium	10	3.2	2.6		
Tin	20	1.8	2.9		
Titanium	20	.3	.3		
Vanadium	50	.6	.6		
Zinc	20	.49	4.1		

Associated samples MP11442: T49816-1A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11442
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 03/31/10

Metal	T49667-1B Original DUP		RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	6770	6770	0.0	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium	318	338	6.1	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	279000	278000	0.4	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP11442: T49816-1A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11442
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 03/31/10

Metal	T49667-1B			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	6770	7110	5.0	0-10	
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium	318	415	30.7 (a)	0-10	
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium	279000	269000	3.5	0-10	
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP11442: T49816-1A

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11448
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/31/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1	-0.032	<0.50
Barium	10	.007	.03	0.0020	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	0.0020	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	0.017	<0.50
Cobalt	2.5	.025	.09		
Copper	1.3	.029	.065	0.014	<1.3
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	-0.037	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.011	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	0.0065	<0.50
Silver	0.50	.043	.04	0.0035	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	-0.031	<1.0

Associated samples MP11448: T49816-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11448
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

03/31/10

03/31/10

	T49551-1			QC	T49551-1		Spikelot		QC
Metal	Original	DUP	RPD	Limits	Original	MS	MPTW4	% Rec	Limits
Aluminum									
Antimony									
Arsenic	5.5	5.7	3.6	0-20	5.5	27.6	28.6	77.2N	80-120
Barium	313	261	18.1	0-20	313	311	28.6	-7.0 (b)	80-120
Beryllium									
Boron									
Cadmium	0.16	0.12	28.6 (a)	0-20	0.16	23.8	28.6	82.6	80-120
Calcium									
Chromium	13.9	14.9	6.9	0-20	13.9	39.8	28.6	90.5	80-120
Cobalt									
Copper	32.2	35.2	8.9	0-20	32.2	64.2	28.6	111.8	80-120
Iron									
Lead	17.1	16.1	6.0	0-20	17.1	40.1	28.6	80.4	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	13.3	14.9	11.3	0-20	13.3	38.5	28.6	88.1	80-120
Potassium	anr								
Selenium	0.78	0.67	15.2	0-20	0.78	22.8	28.6	77.0N	80-120
Silver	0.0	0.0	NC	0-20	0.0	25.8	28.6	90.2	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	77.5	84.7	8.9	0-20	77.5	99.6	28.6	77.2N	80-120

Associated samples MP11448: T49816-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11448
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/31/10

Metal	T49551-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	5.5	28.8	29.6	78.7N	4.3	20
Barium	313	289	29.6	-81.1(a)	7.3	20
Beryllium						
Boron						
Cadmium	0.16	24.9	29.6	83.6	4.5	20
Calcium						
Chromium	13.9	38.9	29.6	84.4	2.3	20
Cobalt						
Copper	32.2	62.1	29.6	101.0	3.3	20
Iron						
Lead	17.1	40.8	29.6	80.1	1.7	20
Magnesium						
Manganese						
Molybdenum						
Nickel	13.3	39.0	29.6	86.8	1.3	20
Potassium	anr					
Selenium	0.78	23.3	29.6	76.1N	2.2	20
Silver	0.0	26.8	29.6	90.5	3.8	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	77.5	108	29.6	103.0	8.1	20

Associated samples MP11448: T49816-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T49816
 Account: ENCACOP - ENCANA
 Project: I30A Background Samples

QC Batch ID: MP11448
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 03/31/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	139	158	88.0	82-118
Barium	324	348	93.1	81-119
Beryllium				
Boron				
Cadmium	167	187	89.3	82-118
Calcium				
Chromium	82.7	89.5	92.4	79-121
Cobalt				
Copper	123	129	95.3	84-117
Iron				
Lead	148	172	86.0	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	90.2	99	91.1	81-119
Potassium	anr			
Selenium	131	148	88.5	78-121
Silver	59.8	66	90.6	66-134
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	345	394	87.6	80-119

Associated samples MP11448: T49816-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

9.2.3

9

SERIAL DILUTION RESULTS SUMMARY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11448
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 03/31/10

Metal	T49551-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	83.4	90.5	8.6	0-10
Barium	4730	5470	15.6*(a)	0-10
Beryllium				
Boron				
Cadmium	2.44	0.00	100.0(b)	0-10
Calcium				
Chromium	210	253	20.7*(a)	0-10
Cobalt				
Copper	487	529	8.5	0-10
Iron				
Lead	258	310	20.1*(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	202	244	21.0*(a)	0-10
Potassium	anr			
Selenium	11.8	0.00	100.0(b)	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	1170	1440	23.3*(a)	0-10

Associated samples MP11448: T49816-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Serial dilution indicates possible matrix interference.

(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11453
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 04/01/10

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.017	.0041	.00066	0.0013	<0.017

Associated samples MP11453: T49816-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

QC Batch ID: MP11453
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 04/01/10 04/01/10

Metal	T50046-1		QC	T50046-1		Spikelot	% Rec	QC
	Original	DUP	RPD	Original	MS	HGTXWS1		Limits
Mercury	0.14	0.16	13.3	0-20	0.14 0.70	0.322	173.9N	75-125

Associated samples MP11453: T49816-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T49816
 Account: ENCACOP - ENCANA
 Project: I30A Background Samples

QC Batch ID: MP11453
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 04/01/10

Metal	T50046-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
-------	----------------------	-----	---------------------	-------	------------	-------------

Mercury	0.14	0.68	0.355	151.9N	2.9	
---------	------	------	-------	--------	-----	--

Associated samples MP11453: T49816-1

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

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

Methods: SW846 7471A
Units: mg/kg

Metal	LCS Result	Spikelot HGLCD054 % Rec	QC Limits
-------	---------------	----------------------------	--------------

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



General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN21869	2.0	0.0	mg/kg	40	41.2	102.0	80-120%
Specific Conductivity	GN21871	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN21869: T49816-1
Batch GN21871: T49816-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN21869	T49816-1	mg/kg	1.5 B	1.7	11.0	0-20%
Solids, Percent	GN21781	T49875-1	%	64	63.7	0.5	0-5%
Specific Conductivity	GN21871	T49551-1	umhos/cm	467	467	0.0	0-20%
pH	GN21685	T49816-1	su	8.54	8.59	0.6	0-20%

Associated Samples:

Batch GN21685: T49816-1

Batch GN21781: T49816-1

Batch GN21869: T49816-1

Batch GN21871: T49816-1

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T49816
Account: ENCACOP - ENCANA
Project: I30A Background Samples

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN21869	T49816-1	mg/kg	1.5 B	40	42.6	102.8	75-125%

Associated Samples:
Batch GN21869: T49816-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits



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

Report Summary

Friday June 25, 2010

Report Number: L464620

Samples Received: 06/16/10

Client Project:

Description: I30A 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:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

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REPORT OF ANALYSIS

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

June 25, 2010

Date Received : June 16, 2010
Description : I30A Pit Closure
Sample ID : I30A-PIT W-061510
Collected By : Chris Hines
Collection Date : 06/15/10 13:20

ESC Sample # : L464620-01

Site ID : RANGELY

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/19/10	1
Chromium, Trivalent	18.	0.50	mg/kg	Calc.	06/21/10	1
ORP	-140		mV	2580	06/24/10	1
pH	11.		su	9045D	06/19/10	1
Sodium Adsorption Ratio	33.			Calc.	06/20/10	5
Specific Conductance	2700		umhos/cm	9050AMod	06/19/10	1
Mercury	0.038	0.020	mg/kg	7471	06/20/10	1
Arsenic	11.	1.0	mg/kg	6010B	06/21/10	1
Barium	7400	0.25	mg/kg	6010B	06/21/10	1
Cadmium	0.57	0.25	mg/kg	6010B	06/21/10	1
Chromium	18.	0.50	mg/kg	6010B	06/21/10	1
Copper	21.	1.0	mg/kg	6010B	06/21/10	1
Lead	14.	0.25	mg/kg	6010B	06/21/10	1
Nickel	16.	1.0	mg/kg	6010B	06/21/10	1
Selenium	BDL	5.0	mg/kg	6010B	06/22/10	5
Silver	BDL	0.50	mg/kg	6010B	06/21/10	1
Zinc	62.	1.5	mg/kg	6010B	06/21/10	1
Benzene	0.049	0.0025	mg/kg	8021/8015	06/23/10	5
Toluene	0.19	0.025	mg/kg	8021/8015	06/23/10	5
Ethylbenzene	0.018	0.0025	mg/kg	8021/8015	06/23/10	5
Total Xylene	0.29	0.0075	mg/kg	8021/8015	06/23/10	5
TPH (GC/FID) Low Fraction	1.6	0.50	mg/kg	GRO	06/23/10	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	8021/8015	06/23/10	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	06/23/10	5
TPH (GC/FID) High Fraction	500	20.	mg/kg	3546/DRO	06/21/10	5
Surrogate recovery(%)						
o-Terphenyl	101.		% Rec.	3546/DRO	06/21/10	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/25/10	1
Acenaphthene	0.075	0.0060	mg/kg	8270C-SIM	06/25/10	1
Acenaphthylene	0.010	0.0060	mg/kg	8270C-SIM	06/25/10	1
Benzo(a)anthracene	0.0076	0.0060	mg/kg	8270C-SIM	06/25/10	1
Benzo(a)pyrene	0.0082	0.0060	mg/kg	8270C-SIM	06/25/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L464620-01 (PH) - 11.0@21.7c



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REPORT OF ANALYSIS

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

June 25, 2010

Date Received : June 16, 2010
Description : I30A Pit Closure

Sample ID : I30A-PIT W-061510

Collected By : Chris Hines
Collection Date : 06/15/10 13:20

ESC Sample # : L464620-01

Site ID : RANGELY

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.027	0.0060	mg/kg	8270C-SIM	06/25/10	1
Benzo(g,h,i)perylene	0.0097	0.0060	mg/kg	8270C-SIM	06/25/10	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/25/10	1
Chrysene	0.029	0.0060	mg/kg	8270C-SIM	06/25/10	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/25/10	1
Fluoranthene	0.022	0.0060	mg/kg	8270C-SIM	06/25/10	1
Fluorene	0.093	0.0060	mg/kg	8270C-SIM	06/25/10	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/25/10	1
Naphthalene	0.33	0.0060	mg/kg	8270C-SIM	06/25/10	1
Phenanthrene	0.20	0.0060	mg/kg	8270C-SIM	06/25/10	1
Pyrene	0.045	0.0060	mg/kg	8270C-SIM	06/25/10	1
1-Methylnaphthalene	0.28	0.0060	mg/kg	8270C-SIM	06/25/10	1
2-Methylnaphthalene	0.63	0.0060	mg/kg	8270C-SIM	06/25/10	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/25/10	1
Surrogate Recovery						
Nitrobenzene-d5	78.2		% Rec.	8270C-SIM	06/25/10	1
2-Fluorobiphenyl	77.9		% Rec.	8270C-SIM	06/25/10	1
p-Terphenyl-d14	90.9		% Rec.	8270C-SIM	06/25/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/25/10 15:15 Printed: 06/25/10 15:16
L464620-01 (PH) - 11.0@21.7c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L464620-01	WG484841	SAMP	Toluene	R1264368	J6
	WG484500	SAMP	Selenium	R1259268	O
	WG484683	SAMP	Anthracene	R1264889	J5
	WG484683	SAMP	Acenaphthene	R1264889	J6
	WG484683	SAMP	Naphthalene	R1264889	VE
	WG484683	SAMP	1-Methylnaphthalene	R1264889	V
	WG484683	SAMP	2-Methylnaphthalene	R1264889	VE
	WG484683	SAMP	2-Chloronaphthalene	R1264889	J5

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
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.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.

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
06/25/10 at 15:16:01

TSR Signing Reports: 358

Sample: L464620-01 Account: ENCANACO Received: 06/16/10 09:00 Due Date: 06/23/10 00:00 RPT Date: 06/25/10 15:15



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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

L464620

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 25, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Chromium,Hexavalent	< 2	mg/kg			WG484311	06/19/10 12:16
pH	4.80	su			WG484369	06/19/10 10:54
Arsenic	< 1	mg/kg			WG484500	06/21/10 00:44
Barium	< .25	mg/kg			WG484500	06/21/10 00:44
Cadmium	< .25	mg/kg			WG484500	06/21/10 00:44
Chromium	< .5	mg/kg			WG484500	06/21/10 00:44
Copper	< 1	mg/kg			WG484500	06/21/10 00:44
Nickel	< 1	mg/kg			WG484500	06/21/10 00:44
Selenium	< 1	mg/kg			WG484500	06/21/10 00:44
Silver	< .5	mg/kg			WG484500	06/21/10 00:44
Zinc	< 1.5	mg/kg			WG484500	06/21/10 00:44
Lead	< .25	mg/kg			WG484500	06/21/10 11:45
Mercury	< .02	mg/kg			WG484420	06/20/10 09:16
TPH (GC/FID) High Fraction	< 4	ppm			WG484505	06/20/10 04:22
o-Terphenyl		% Rec.	98.35	50-150	WG484505	06/20/10 04:22
Benzene	< .0005	mg/kg			WG484841	06/23/10 12:36
Ethylbenzene	< .0005	mg/kg			WG484841	06/23/10 12:36
Toluene	< .005	mg/kg			WG484841	06/23/10 12:36
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG484841	06/23/10 12:36
Total Xylene	< .0015	mg/kg			WG484841	06/23/10 12:36
a,a,a-Trifluorotoluene(FID)		% Rec.	106.3	59-128	WG484841	06/23/10 12:36
a,a,a-Trifluorotoluene(PID)		% Rec.	102.3	54-144	WG484841	06/23/10 12:36
1-Methylnaphthalene	< .006	mg/kg			WG484683	06/23/10 11:09
2-Chloronaphthalene	< .006	mg/kg			WG484683	06/23/10 11:09
2-Methylnaphthalene	< .006	mg/kg			WG484683	06/23/10 11:09
Acenaphthene	< .006	mg/kg			WG484683	06/23/10 11:09
Acenaphthylene	< .006	mg/kg			WG484683	06/23/10 11:09
Anthracene	< .006	mg/kg			WG484683	06/23/10 11:09
Benzo(a)anthracene	< .006	mg/kg			WG484683	06/23/10 11:09
Benzo(a)pyrene	< .006	mg/kg			WG484683	06/23/10 11:09
Benzo(b)fluoranthene	< .006	mg/kg			WG484683	06/23/10 11:09
Benzo(g,h,i)perylene	< .006	mg/kg			WG484683	06/23/10 11:09
Benzo(k)fluoranthene	< .006	mg/kg			WG484683	06/23/10 11:09
Chrysene	< .006	mg/kg			WG484683	06/23/10 11:09
Dibenz(a,h)anthracene	< .006	mg/kg			WG484683	06/23/10 11:09
Fluoranthene	< .006	mg/kg			WG484683	06/23/10 11:09
Fluorene	< .006	mg/kg			WG484683	06/23/10 11:09
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG484683	06/23/10 11:09
Naphthalene	< .006	mg/kg			WG484683	06/23/10 11:09
Phenanthrene	< .006	mg/kg			WG484683	06/23/10 11:09
Pyrene	< .006	mg/kg			WG484683	06/23/10 11:09
2-Fluorobiphenyl		% Rec.	57.30	21-120	WG484683	06/23/10 11:09
Nitrobenzene-d5		% Rec.	66.81	33-114	WG484683	06/23/10 11:09
p-Terphenyl-d14		% Rec.	101.7	18-142	WG484683	06/23/10 11:09

* Performance of this Analyte is outside of established criteria.
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June 25, 2010

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Chromium,Hexavalent	mg/kg	0	0	0	0	20	L464960-01	WG484311
Chromium,Hexavalent	mg/kg	0	0	0	0	20	L464620-01	WG484311
pH	su	11.0	11.0	0	0	1	L464620-01	WG484369
pH	su	7.20	7.20	0	0	1	L464961-03	WG484369
Specific Conductance	umhos/cm	2700	2700	0.557	0	20	L464620-01	WG484414
Arsenic	mg/kg	3.30	4.00	20.4*	0	20	L465142-01	WG484500
Barium	mg/kg	36.0	37.0	3.58	0	20	L465142-01	WG484500
Cadmium	mg/kg	0	0	0	0	20	L465142-01	WG484500
Chromium	mg/kg	1.60	1.50	5.83	0	20	L465142-01	WG484500
Copper	mg/kg	1.60	1.77	8.24	0	20	L465142-01	WG484500
Lead	mg/kg	3.50	4.60	27.7*	0	20	L465142-01	WG484500
Nickel	mg/kg	2.40	2.56	7.29	0	20	L465142-01	WG484500
Selenium	mg/kg	0	0	0	0	20	L465142-01	WG484500
Silver	mg/kg	0	0	0	0	20	L465142-01	WG484500
Zinc	mg/kg	11.0	10.7	0.939	0	20	L465142-01	WG484500
Mercury	mg/kg	0.0220	0.0270	19.1	0	20	L464688-01	WG484420
ORP	mV	0	0	0	0	20	L464620-01	WG484992
ORP	mV	280.	280.	0.717	0	20	L464960-02	WG484992

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Chromium,Hexavalent	mg/kg	100	96.5	96.5	50-143	WG484311
pH	su	9.36	9.30	99.4	98.9-102.0	WG484369
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG484414
Arsenic	mg/kg	192	185.	96.4	78.6-120.8	WG484500
Barium	mg/kg	420	435.	104.	78.8-121.4	WG484500
Cadmium	mg/kg	70.1	66.9	95.4	78.5-121.5	WG484500
Chromium	mg/kg	168	170.	101.	80.4-120.2	WG484500
Copper	mg/kg	122	126.	103.	81.6-119.7	WG484500
Lead	mg/kg	113	110.	97.3	77.3-122.1	WG484500
Nickel	mg/kg	74.1	84.2	114.	78.8-121.2	WG484500
Selenium	mg/kg	176	165.	93.8	75.6-125.0	WG484500
Silver	mg/kg	115	118.	103.	66-133.9	WG484500
Zinc	mg/kg	437	434.	99.3	78.5-121.7	WG484500
Mercury	mg/kg	8.77	10.1	115.	71.6-127.7	WG484420
TPH (GC/FID) High Fraction	ppm	60	51.2	85.4	50-150	WG484505
o-Terphenyl				92.29	50-150	WG484505

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June 25, 2010

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0512	102.	76-113	WG484841
Ethylbenzene	mg/kg	.05	0.0538	108.	78-115	WG484841
Toluene	mg/kg	.05	0.0517	103.	76-114	WG484841
Total Xylene	mg/kg	.15	0.161	108.	81-118	WG484841
a,a,a-Trifluorotoluene(PID)				100.9	54-144	WG484841
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.74	104.	67-135	WG484841
a,a,a-Trifluorotoluene(FID)				111.9	59-128	WG484841
1-Methylnaphthalene	mg/kg	.033	0.0222	67.2	41-110	WG484683
2-Chloronaphthalene	mg/kg	.033	0.0233	70.7	43-109	WG484683
2-Methylnaphthalene	mg/kg	.033	0.0246	74.5	38-104	WG484683
Acenaphthene	mg/kg	.033	0.0224	67.8	48-103	WG484683
Acenaphthylene	mg/kg	.033	0.0226	68.5	43-106	WG484683
Anthracene	mg/kg	.033	0.0227	68.7	51-110	WG484683
Benzo(a)anthracene	mg/kg	.033	0.0234	71.1	38-126	WG484683
Benzo(a)pyrene	mg/kg	.033	0.0232	70.3	47-118	WG484683
Benzo(b)fluoranthene	mg/kg	.033	0.0249	75.5	47-118	WG484683
Benzo(g,h,i)perylene	mg/kg	.033	0.0280	84.8	40-125	WG484683
Benzo(k)fluoranthene	mg/kg	.033	0.0232	70.4	45-121	WG484683
Chrysene	mg/kg	.033	0.0229	69.3	35-135	WG484683
Dibenz(a,h)anthracene	mg/kg	.033	0.0284	86.1	41-124	WG484683
Fluoranthene	mg/kg	.033	0.0230	69.8	50-114	WG484683
Fluorene	mg/kg	.033	0.0220	66.5	49-109	WG484683
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0277	83.8	40-126	WG484683
Naphthalene	mg/kg	.033	0.0197	59.8	36-100	WG484683
Phenanthrene	mg/kg	.033	0.0229	69.5	46-108	WG484683
Pyrene	mg/kg	.033	0.0239	72.5	30-136	WG484683
2-Fluorobiphenyl				77.53	21-120	WG484683
Nitrobenzene-d5				79.57	33-114	WG484683
p-Terphenyl-d14				96.72	18-142	WG484683
ORP	mV	229	237.	103.	95.6-104.37	WG484992

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chromium, Hexavalent	mg/kg	90.9	96.5	91.0	50-143	5.98	20	WG484311
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG484369
Specific Conductance	umhos/	410.	410.	101.	85-115	0	20	WG484414
TPH (GC/FID) High Fraction	ppm	52.7	51.2	88.0	50-150	2.85	25	WG484505
o-Terphenyl				96.01	50-150			WG484505
Benzene	mg/kg	0.0496	0.0512	99.0	76-113	3.29	20	WG484841
Ethylbenzene	mg/kg	0.0527	0.0538	105.	78-115	2.22	20	WG484841
Toluene	mg/kg	0.0513	0.0517	102.	76-114	0.930	20	WG484841
Total Xylene	mg/kg	0.157	0.161	105.	81-118	2.73	20	WG484841
a,a,a-Trifluorotoluene(PID)				102.7	54-144			WG484841
TPH (GC/FID) Low Fraction	mg/kg	6.05	5.74	110.	67-135	5.30	20	WG484841
a,a,a-Trifluorotoluene(FID)				114.4	59-128			WG484841

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
1-Methylnaphthalene	mg/kg	0.0208	0.0222	63.0		41-110	6.50	24	WG484683
2-Chloronaphthalene	mg/kg	0.0247	0.0233	75.0		43-109	5.64	21	WG484683
2-Methylnaphthalene	mg/kg	0.0254	0.0246	77.0		38-104	3.25	24	WG484683
Acenaphthene	mg/kg	0.0181	0.0224	55.0		48-103	21.3*	20	WG484683
Acenaphthylene	mg/kg	0.0207	0.0226	62.0		43-106	8.97	20	WG484683
Anthracene	mg/kg	0.0222	0.0227	67.0		51-110	2.25	22	WG484683
Benzo(a)anthracene	mg/kg	0.0227	0.0234	69.0		38-126	3.25	20	WG484683
Benzo(a)pyrene	mg/kg	0.0219	0.0232	66.0		47-118	5.60	20	WG484683
Benzo(b)fluoranthene	mg/kg	0.0220	0.0249	67.0		47-118	12.5	29	WG484683
Benzo(g,h,i)perylene	mg/kg	0.0289	0.0280	87.0		40-125	3.07	20	WG484683
Benzo(k)fluoranthene	mg/kg	0.0205	0.0232	62.0		45-121	12.3	31	WG484683
Chrysene	mg/kg	0.0208	0.0229	63.0		35-135	9.63	20	WG484683
Dibenz(a,h)anthracene	mg/kg	0.0288	0.0284	87.0		41-124	1.54	20	WG484683
Fluoranthene	mg/kg	0.0155	0.0230	47*		50-114	38.9*	20	WG484683
Fluorene	mg/kg	0.0252	0.0220	76.0		49-109	13.7	19	WG484683
Indeno(1,2,3-cd)pyrene	mg/kg	0.0286	0.0277	87.0		40-126	3.38	20	WG484683
Naphthalene	mg/kg	0.0181	0.0197	55.0		36-100	8.42	24	WG484683
Phenanthrene	mg/kg	0.0223	0.0229	68.0		46-108	2.78	21	WG484683
Pyrene	mg/kg	0.0310	0.0239	94.0		30-136	25.6*	20	WG484683
2-Fluorobiphenyl				52.31		21-120			WG484683
Nitrobenzene-d5				56.88		33-114			WG484683
p-Terphenyl-d14				125.8		18-142			WG484683
ORP	mV	236.	237.	103.		95.6-104.37	0.423	20	WG484992

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
Chromium, Hexavalent	mg/kg	14.5	0	20	72.5	50-150	L464621-01	WG484311
Arsenic	mg/kg	48.8	4.00	50	89.6	75-125	L465142-01	WG484500
Barium	mg/kg	82.5	37.0	50	91.0	75-125	L465142-01	WG484500
Cadmium	mg/kg	44.5	0	50	89.0	75-125	L465142-01	WG484500
Chromium	mg/kg	48.6	1.50	50	94.2	75-125	L465142-01	WG484500
Copper	mg/kg	49.6	1.77	50	95.7	75-125	L465142-01	WG484500
Lead	mg/kg	49.3	4.60	50	89.4	75-125	L465142-01	WG484500
Nickel	mg/kg	49.6	2.56	50	94.1	75-125	L465142-01	WG484500
Selenium	mg/kg	42.0	0	50	84.0	75-125	L465142-01	WG484500
Silver	mg/kg	47.2	0	50	94.4	75-125	L465142-01	WG484500
Zinc	mg/kg	56.1	10.7	50	90.8	75-125	L465142-01	WG484500
Mercury	mg/kg	0.289	0.0270	.25	105.	70-130	L464688-01	WG484420
TPH (GC/FID) High Fraction	ppm	46.1	0	60	76.8	50-150	L464827-01	WG484505
o-Terphenyl					79.49	50-150		WG484505
Benzene	mg/kg	0.216	0.0490	.05	67.0	32-137	L464620-01	WG484841
Ethylbenzene	mg/kg	0.197	0.0180	.05	71.8	10-150	L464620-01	WG484841
Toluene	mg/kg	0.234	0.190	.05	17.7*	20-142	L464620-01	WG484841
Total Xylene	mg/kg	0.639	0.290	.15	46.5	16-141	L464620-01	WG484841
a,a,a-Trifluorotoluene(PID)					98.88	54-144		WG484841
TPH (GC/FID) Low Fraction	mg/kg	17.0	1.60	5.5	55.9	55-109	L464620-01	WG484841
a,a,a-Trifluorotoluene(FID)					106.0	59-128		WG484841

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
1-Methylnaphthalene	mg/kg	0.307	0.280	.033	80.7	19-131	L464620-01	WG484683
2-Chloronaphthalene	mg/kg	0.0387	0	.033	117.*	38-117	L464620-01	WG484683
2-Methylnaphthalene	mg/kg	0.699	0.630	.033	210.*	18-125	L464620-01	WG484683
Acenaphthene	mg/kg	0.0673	0.0750	.033	0*	31-120	L464620-01	WG484683
Acenaphthylene	mg/kg	0.0399	0.0100	.033	90.5	34-116	L464620-01	WG484683
Anthracene	mg/kg	0.0592	0	.033	179.*	32-131	L464620-01	WG484683
Benzo(a)anthracene	mg/kg	0.0293	0.00760	.033	65.8	32-131	L464620-01	WG484683
Benzo(a)pyrene	mg/kg	0.0279	0.00820	.033	59.6	28-130	L464620-01	WG484683
Benzo(b)fluoranthene	mg/kg	0.0437	0.0270	.033	50.6	37-130	L464620-01	WG484683
Benzo(g,h,i)perylene	mg/kg	0.0207	0.00970	.033	33.4	10-134	L464620-01	WG484683
Benzo(k)fluoranthene	mg/kg	0.0301	0	.033	91.3	31-129	L464620-01	WG484683
Chrysene	mg/kg	0.0497	0.0290	.033	62.6	25-137	L464620-01	WG484683
Dibenz(a,h)anthracene	mg/kg	0.0179	0	.033	54.3	20-134	L464620-01	WG484683
Fluoranthene	mg/kg	0.0532	0.0220	.033	94.6	27-138	L464620-01	WG484683
Fluorene	mg/kg	0.118	0.0930	.033	75.6	26-136	L464620-01	WG484683
Indeno(1,2,3-cd)pyrene	mg/kg	0.0178	0	.033	53.9	16-135	L464620-01	WG484683
Naphthalene	mg/kg	0.375	0.330	.033	138.*	22-121	L464620-01	WG484683
Phenanthrene	mg/kg	0.240	0.200	.033	122.	27-133	L464620-01	WG484683
Pyrene	mg/kg	0.0624	0.0450	.033	52.6	22-133	L464620-01	WG484683
2-Fluorobiphenyl					90.20	21-120		WG484683
Nitrobenzene-d5					50.71	33-114		WG484683
p-Terphenyl-d14					88.44	18-142		WG484683

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium,Hexavalent	mg/kg	14.9	14.5	74.5	50-150	2.72	20	L464621-01	WG484311
Arsenic	mg/kg	51.1	48.8	94.2	75-125	4.60	20	L465142-01	WG484500
Barium	mg/kg	89.3	82.5	105.	75-125	7.92	20	L465142-01	WG484500
Cadmium	mg/kg	47.8	44.5	95.6	75-125	7.15	20	L465142-01	WG484500
Chromium	mg/kg	50.7	48.6	98.4	75-125	4.23	20	L465142-01	WG484500
Copper	mg/kg	52.9	49.6	102.	75-125	6.44	20	L465142-01	WG484500
Lead	mg/kg	52.4	49.3	95.6	75-125	6.10	20	L465142-01	WG484500
Nickel	mg/kg	52.4	49.6	99.7	75-125	5.49	20	L465142-01	WG484500
Selenium	mg/kg	43.4	42.0	86.8	75-125	3.28	20	L465142-01	WG484500
Silver	mg/kg	50.6	47.2	101.	75-125	6.95	20	L465142-01	WG484500
Zinc	mg/kg	59.4	56.1	97.4	75-125	5.71	20	L465142-01	WG484500
Mercury	mg/kg	0.295	0.289	107.	70-130	2.05	20	L464688-01	WG484420
TPH (GC/FID) High Fraction	ppm	39.0	46.1	65.1	50-150	16.5	25	L464827-01	WG484505
o-Terphenyl				71.57	50-150				WG484505
Benzene	mg/kg	0.223	0.216	69.6	32-137	2.91	39	L464620-01	WG484841
Ethylbenzene	mg/kg	0.200	0.197	72.7	10-150	1.16	44	L464620-01	WG484841
Toluene	mg/kg	0.239	0.234	19.5*	20-142	1.92	42	L464620-01	WG484841
Total Xylene	mg/kg	0.636	0.639	46.1	16-141	0.520	46	L464620-01	WG484841
a,a,a-Trifluorotoluene(PID)				101.2	54-144				WG484841
TPH (GC/FID) Low Fraction	mg/kg	20.4	17.0	68.2	55-109	18.2	20	L464620-01	WG484841
a,a,a-Trifluorotoluene(FID)				108.5	59-128				WG484841
1-Methylnaphthalene	mg/kg	0.369	0.307	270.*	19-131	18.5	30	L464620-01	WG484683
2-Chloronaphthalene	mg/kg	0.0401	0.0387	121.*	38-117	3.39	26	L464620-01	WG484683

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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

L464620

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 25, 2010

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
2-Methylnaphthalene	mg/kg	0.740	0.699	332.*	18-125	5.61	29	L464620-01	WG484683
Acenaphthene	mg/kg	0.0755	0.0673	1.48*	31-120	11.4	30	L464620-01	WG484683
Acenaphthylene	mg/kg	0.0393	0.0399	88.7	34-116	1.49	29	L464620-01	WG484683
Anthracene	mg/kg	0.0603	0.0592	183.*	32-131	1.92	26	L464620-01	WG484683
Benzo(a)anthracene	mg/kg	0.0319	0.0293	73.5	32-131	8.34	31	L464620-01	WG484683
Benzo(a)pyrene	mg/kg	0.0284	0.0279	61.3	28-130	2.04	28	L464620-01	WG484683
Benzo(b)fluoranthene	mg/kg	0.0491	0.0437	67.1	37-130	11.7	41	L464620-01	WG484683
Benzo(g,h,i)perylene	mg/kg	0.0192	0.0207	28.8	10-134	7.63	26	L464620-01	WG484683
Benzo(k)fluoranthene	mg/kg	0.0285	0.0301	86.4	31-129	5.51	42	L464620-01	WG484683
Chrysene	mg/kg	0.0460	0.0497	51.4	25-137	7.69	22	L464620-01	WG484683
Dibenz(a,h)anthracene	mg/kg	0.0168	0.0179	51.0	20-134	6.36	25	L464620-01	WG484683
Fluoranthene	mg/kg	0.0507	0.0532	87.0	27-138	4.79	35	L464620-01	WG484683
Fluorene	mg/kg	0.121	0.118	83.4	26-136	2.17	30	L464620-01	WG484683
Indeno(1,2,3-cd)pyrene	mg/kg	0.0163	0.0178	49.3	16-135	8.96	26	L464620-01	WG484683
Naphthalene	mg/kg	0.364	0.375	102.	22-121	3.23	30	L464620-01	WG484683
Phenanthrene	mg/kg	0.236	0.240	108.	27-133	1.96	36	L464620-01	WG484683
Pyrene	mg/kg	0.0605	0.0624	46.9	22-133	3.07	33	L464620-01	WG484683
2-Fluorobiphenyl				77.65	21-120				WG484683
Nitrobenzene-d5				48.46	33-114				WG484683
p-Terphenyl-d14				89.81	18-142				WG484683

Batch number /Run number / Sample number cross reference

WG484311: R1257508: L464620-01
WG484369: R1258749: L464620-01
WG484414: R1258851: L464620-01
WG484500: R1259268: L464620-01
WG484420: R1259528: L464620-01
WG484505: R1259970: L464620-01
WG484367: R1261648: L464620-01
WG484841: R1264368: L464620-01
WG484683: R1264889: L464620-01
WG484992: R1265628: L464620-01

* * 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.