

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: _____	API Number: _____
2. Name of Operator: _____	OGCC Facility ID # _____
3. Well/Facility Name: _____	Well/Facility Number: _____
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): _____	

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. DESCRIBE PROPOSED OR COMPLETED OPERATIONS

Introduction

Encana Oil & Gas (USA) Inc. (Encana) is submitting this Form 4 Sundry Notice to request final closure status for an earthen pit associated with Douglas Pass Unit 7715 (COGCC facility # 322505, COGCC remediation #5320). The pit was investigated, characterized and sampled by a third party consultant as authorized by Encana personnel. All samples were collected in accordance with Encana's Environmental Compliance Group's Sampling Procedures. The analytical results for the respective soil samples were within the COGCC Table 910-1 standards and are provided in Table 1 and Attachment A of this submittal. The text below provides the details of the site investigation. For a visual description of the site please refer to Figures 1 and 2 – Site Maps.

Site Investigation

June 5, 2012 – The respective pit had been backfilled prior to site investigation. There were several positions within the well pad that were potential pit locations. These locations were investigated using a trackhoe. The pumper confirmed the position of the pit and the pit investigation focused on the respective location. The pit was characterized by a third party contractor utilizing a photoionization (PID) meter. Field screen readings were collected throughout the excavation process. There were no indicators of hydrocarbon impacts to the soil. A grab sample was collected from the pit bottom for analysis with regards to the COGCC Table 910-1 standards. Five (5) background samples were collected from the surrounding area associated with the excavation site from a depth of approximately six (6) inches. These samples were sent the lab for analysis with respect to arsenic. The analytical report indicated that the grab sample collected from the pit bottom was within the COGCC Table 910-1 standards.

Conclusion

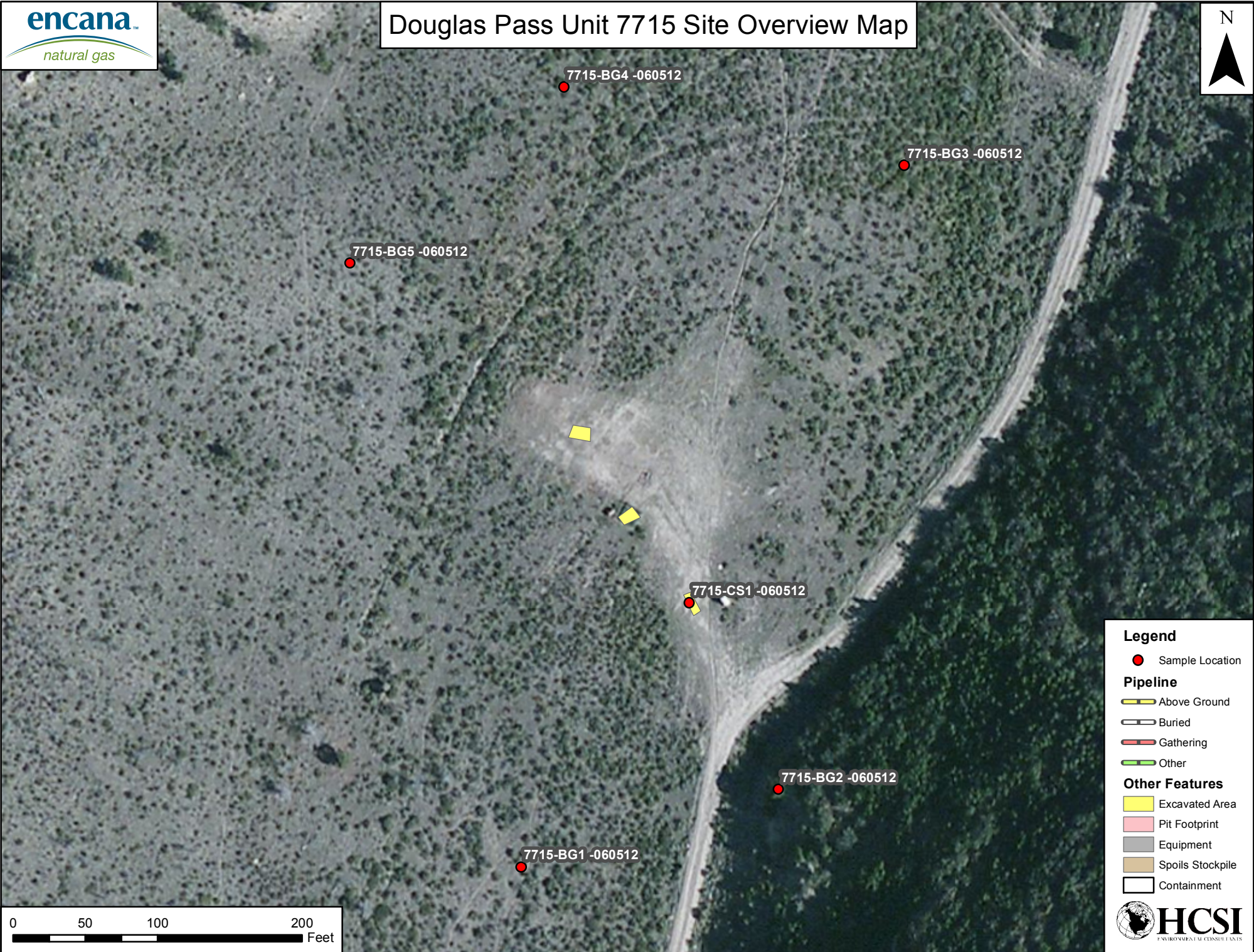
Based on the site investigation and analytical results, the pit associated with the Douglas Pass Unit 7715 is in compliance with the standards specified within COGCC Table 910-1. Encana respectfully requests that final closure be granted for the respective pit, COGCC remediation #5320.

Analytical Review

Sample results indicate that the soil within the earthen pit footprint on Encana's Douglas Pass Unit 7715 well pad have exceedances of COGCC Table 910-1 allowable concentrations for arsenic (7.5 ppm). Though the arsenic concentration in the soil is above the allowable concentration identified in Table 910-1, the concentration is within the range of arsenic background values (3.0-7.8 ppm) in this area. Based on these results and footnote 1 to COGCC Table 910-1, Encana requests that the COGCC consider the higher range of background arsenic

value(s) as the allowable concentration for this constituent. Please see Attachment A for the respective laboratory analytical results.

Douglas Pass Unit 7715 Site Overview Map



Legend

● Sample Location

Pipeline

— Above Ground

— Buried

- - - Gathering

- - - Other

Other Features

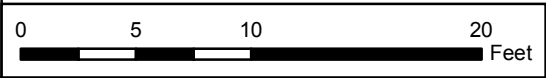
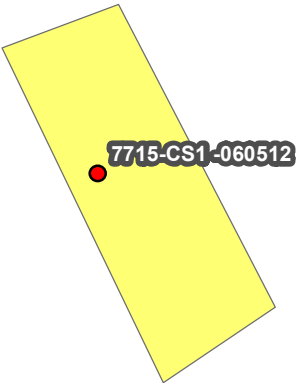
■ Excavated Area

■ Pit Footprint

■ Equipment

■ Spoils Stockpile

□ Containment



Legend


● Sample Location

Pipeline

- ▬ Above Ground
- ▬ Buried
- ▬ Gathering
- ▬ Other

Other Features

- ▭ Excavated Area
- ▭ Pit Footprint
- ▭ Equipment
- ▭ Spoils Stockpile
- ▭ Containment

 **HCSI**
ENVIRONMENTAL CONSULTANTS

						Analytes (BDL = Below Detection Limit; NA = Not Applicable; NS = Not Sampled)																								
						Organics in Soil (mg/Kg)																								
						Allowable Concentration -->		500	NA	NA	0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000	see below	<12	(6-9)
COC ID	Date:	Lab	Sampler:	Sample Matrix	Matrix Notes	TPH	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c)pyrene	Naphthalene	Pyrene	EC (4 mmhos/cm or 2x background)	SAR (calculation)	pH		
7715-CS1-06052012 8FT	6/5/2012	ESC	KHR	Soil	Pit Bottom	4.6	BDL	4.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.61	1.9	8.5	
7715-BG1-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.78	NS	
7715-BG2-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.68	NS	
7715-BG3-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.51	NS	
7715-BG4-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.68	NS	
7715-BG5-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.55	NS	

Metals in Soil (mg/kg [ppm])																		
0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000							
Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (III)	Chromium (VI)	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc							
7715-CS1-06052012 8FT	6/5/2012	ESC	KHR	Soil	Pit Bottom	7.5	170	BDL	19	BDL	20	12	BDL	12	BDL	57		
7715-BG1-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 1	7.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
7715-BG2-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 2	3	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
7715-BG3-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 3	4.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
7715-BG4-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 4	4.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
7715-BG5-06052012 6IN	6/5/2012	ESC	KHR	Soil	Background 5	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		



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Tax I.D. 62-0814289

Est. 1970

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

Report Summary

Wednesday June 13, 2012

Report Number: L578857

Samples Received: 06/06/12

Client Project:

Description: Earthen Pit Closure Project

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 - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 06, 2012
Description : Earthen Pit Closure Project
Sample ID : 7715-CS1-06052012 8FT
Collected By : KHR
Collection Date : 06/05/12 09:15

ESC Sample # : L578857-01

Site ID : DPU 7715

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	4.0	mg/kg	3060A/7196A	06/08/12	2
Chromium, Trivalent	19.	4.0	mg/kg	Calc.	06/11/12	1
ORP	240		mV	2580	06/10/12	1.1
pH	8.5		su	9045D	06/09/12	1
Sodium Adsorption Ratio	1.9			Calc.	06/09/12	1
Specific Conductance	610		umhos/cm	9050AMod	06/08/12	1
Mercury	BDL	0.020	mg/kg	7471	06/08/12	1
Arsenic	7.5	1.0	mg/kg	6010B	06/11/12	1
Barium	170	0.25	mg/kg	6010B	06/11/12	1
Cadmium	BDL	0.25	mg/kg	6010B	06/11/12	1
Chromium	19.	0.50	mg/kg	6010B	06/11/12	1
Copper	20.	1.0	mg/kg	6010B	06/11/12	1
Lead	12.	0.25	mg/kg	6010B	06/11/12	1
Nickel	12.	1.0	mg/kg	6010B	06/11/12	1
Selenium	BDL	1.0	mg/kg	6010B	06/11/12	1
Silver	BDL	0.50	mg/kg	6010B	06/11/12	1
Zinc	57.	1.5	mg/kg	6010B	06/11/12	1
Benzene	BDL	0.0025	mg/kg	8021/8015	06/08/12	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/08/12	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/08/12	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/08/12	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/08/12	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.2		% Rec.	8021/8015	06/08/12	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	06/08/12	5
TPH (GC/FID) High Fraction	4.6	4.0	mg/kg	3546/DRO	06/12/12	1
Surrogate recovery(%)						
o-Terphenyl	55.9		% Rec.	3546/DRO	06/12/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L578857-01 (PH) - 22.3c

L578857-01 (CR6) - diluted due to sample color interference



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REPORT OF ANALYSIS

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EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 06, 2012
Description : Earthen Pit Closure Project
Sample ID : 7715-CS1-06052012 8FT
Collected By : KHR
Collection Date : 06/05/12 09:15

ESC Sample # : L578857-01

Site ID : DPU 7715

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/11/12	1
Surrogate Recovery						
Nitrobenzene-d5	70.4		% Rec.	8270C-SIM	06/11/12	1
2-Fluorobiphenyl	70.4		% Rec.	8270C-SIM	06/11/12	1
p-Terphenyl-d14	82.8		% Rec.	8270C-SIM	06/11/12	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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L578857-01 (PH) - 22.3c

L578857-01 (CR6) - diluted due to sample color interference



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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 06, 2012
Description : Earthen Pit Closure Project
Sample ID : 7715-BG1-06052012 6IN
Collected By : KHR
Collection Date : 06/05/12 09:20

ESC Sample # : L578857-02

Site ID : DPU 7715

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	0.78			Calc.	06/09/12	1
Arsenic	7.8	1.0	mg/kg	6010B	06/11/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 06, 2012
Description : Earthen Pit Closure Project
Sample ID : 7715-BG2-06052012 6IN
Collected By : KHR
Collection Date : 06/05/12 09:30

ESC Sample # : L578857-03

Site ID : DPU 7715

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	0.68			Calc.	06/09/12	1
Arsenic	3.0	1.0	mg/kg	6010B	06/11/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 06, 2012
Description : Earthen Pit Closure Project
Sample ID : 7715-BG3-06052012 6IN
Collected By : KHR
Collection Date : 06/05/12 09:50

ESC Sample # : L578857-04

Site ID : DPU 7715

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	0.51			Calc.	06/09/12	1
Arsenic	4.1	1.0	mg/kg	6010B	06/11/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 06, 2012
Description : Earthen Pit Closure Project
Sample ID : 7715-BG4-06052012 6IN
Collected By : KHR
Collection Date : 06/05/12 10:00

ESC Sample # : L578857-05

Site ID : DPU 7715

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	0.68			Calc.	06/09/12	1
Arsenic	4.9	1.0	mg/kg	6010B	06/11/12	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: 06/13/12 15:12 Printed: 06/13/12 15:12



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REPORT OF ANALYSIS

Blake Ford and Kate Ramsay
EnCana Oil & Gas - Rangely, CO
1125 Escalante Drive
Rangely, CO 81648-3600

June 13, 2012

Date Received : June 06, 2012
Description : Earthen Pit Closure Project
Sample ID : 7715-BG5-06052012 6IN
Collected By : KHR
Collection Date : 06/05/12 10:10

ESC Sample # : L578857-06

Site ID : DPU 7715

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Sodium Adsorption Ratio	0.55			Calc.	06/09/12	1
Arsenic	5.0	1.0	mg/kg	6010B	06/10/12	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: 06/13/12 15:12 Printed: 06/13/12 15:12

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L578857-01	WG596975	SAMP	pH	R2204496	T8
	WG596075	SAMP	Chromium, Hexavalent	R2201954	O
L578857-05	WG596843	SAMP	Arsenic	R2206174	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
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.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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
06/13/12 at 15:12:29

TSR Signing Reports: 358
R5 - Desired TAT

Log all projects under the project codes with the project managers last name unless multiple project managers are listed.

Sample: L578857-01 Account: ENCANRCO Received: 06/06/12 09:00 Due Date: 06/13/12 00:00 RPT Date: 06/13/12 15:12
Sample: L578857-02 Account: ENCANRCO Received: 06/06/12 09:00 Due Date: 06/13/12 00:00 RPT Date: 06/13/12 15:12
Sample: L578857-03 Account: ENCANRCO Received: 06/06/12 09:00 Due Date: 06/13/12 00:00 RPT Date: 06/13/12 15:12
Sample: L578857-04 Account: ENCANRCO Received: 06/06/12 09:00 Due Date: 06/13/12 00:00 RPT Date: 06/13/12 15:12
Sample: L578857-05 Account: ENCANRCO Received: 06/06/12 09:00 Due Date: 06/13/12 00:00 RPT Date: 06/13/12 15:12
Sample: L578857-06 Account: ENCANRCO Received: 06/06/12 09:00 Due Date: 06/13/12 00:00 RPT Date: 06/13/12 15:12



YOUR LAB OF CHOICE

EnCana Oil & Gas - Rangely, CO
Blake Ford and Kate Ramsay
1125 Escalante Drive

Rangely, CO 81648-3600

Quality Assurance Report
Level II

L578857

12065 Lebanon Rd.
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Est. 1970

June 13, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Chromium, Hexavalent	< 2	mg/kg			WG596075	06/08/12 08:53
Benzene	< .0005	mg/kg			WG596587	06/07/12 16:35
Ethylbenzene	< .0005	mg/kg			WG596587	06/07/12 16:35
Toluene	< .005	mg/kg			WG596587	06/07/12 16:35
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG596587	06/07/12 16:35
Total Xylene	< .0015	mg/kg			WG596587	06/07/12 16:35
a,a,a-Trifluorotoluene(FID)		% Rec.	98.18	59-128	WG596587	06/07/12 16:35
a,a,a-Trifluorotoluene(PID)		% Rec.	106.2	54-144	WG596587	06/07/12 16:35
Mercury	< .02	mg/kg			WG596730	06/08/12 10:39
Specific Conductance	1.16	umhos/cm			WG596769	06/08/12 13:04
pH	4.99	su			WG596975	06/09/12 14:00
Arsenic	< 1	mg/kg			WG596905	06/10/12 12:15
Arsenic	< 1	mg/kg			WG596843	06/11/12 17:48
Barium	< .25	mg/kg			WG596843	06/11/12 17:48
Cadmium	< .25	mg/kg			WG596843	06/11/12 17:48
Chromium	< .5	mg/kg			WG596843	06/11/12 17:48
Copper	< 1	mg/kg			WG596843	06/11/12 17:48
Lead	< .25	mg/kg			WG596843	06/11/12 17:48
Nickel	< 1	mg/kg			WG596843	06/11/12 17:48
Selenium	< 1	mg/kg			WG596843	06/11/12 17:48
Silver	< .5	mg/kg			WG596843	06/11/12 17:48
Zinc	< 1.5	mg/kg			WG596843	06/11/12 17:48
1-Methylnaphthalene	< .006	mg/kg			WG597038	06/11/12 02:01
2-Chloronaphthalene	< .006	mg/kg			WG597038	06/11/12 02:01
2-Methylnaphthalene	< .006	mg/kg			WG597038	06/11/12 02:01
Acenaphthene	< .006	mg/kg			WG597038	06/11/12 02:01
Acenaphthylene	< .006	mg/kg			WG597038	06/11/12 02:01
Anthracene	< .006	mg/kg			WG597038	06/11/12 02:01
Benzo(a)anthracene	< .006	mg/kg			WG597038	06/11/12 02:01
Benzo(a)pyrene	< .006	mg/kg			WG597038	06/11/12 02:01
Benzo(b)fluoranthene	< .006	mg/kg			WG597038	06/11/12 02:01
Benzo(g,h,i)perylene	< .006	mg/kg			WG597038	06/11/12 02:01
Benzo(k)fluoranthene	< .006	mg/kg			WG597038	06/11/12 02:01
Chrysene	< .006	mg/kg			WG597038	06/11/12 02:01
Dibenz(a,h)anthracene	< .006	mg/kg			WG597038	06/11/12 02:01
Fluoranthene	< .006	mg/kg			WG597038	06/11/12 02:01
Fluorene	< .006	mg/kg			WG597038	06/11/12 02:01
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG597038	06/11/12 02:01
Naphthalene	< .006	mg/kg			WG597038	06/11/12 02:01
Phenanthrene	< .006	mg/kg			WG597038	06/11/12 02:01
Pyrene	< .006	mg/kg			WG597038	06/11/12 02:01
2-Fluorobiphenyl		% Rec.	72.97	34-129	WG597038	06/11/12 02:01
Nitrobenzene-d5		% Rec.	74.63	14-141	WG597038	06/11/12 02:01
p-Terphenyl-d14		% Rec.	99.73	25-139	WG597038	06/11/12 02:01

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG597332	06/12/12 15:07
o-Terphenyl		% Rec.	71.77	50-150	WG597332	06/12/12 15:07

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Chromium,Hexavalent	mg/kg	0	0	0	20	L578857-01	WG596075
Chromium,Hexavalent	mg/kg	0	0	0	20	L577984-01	WG596075
Mercury	mg/kg	0	0	0	20	L578993-05	WG596730
Specific Conductance	umhos/cm	650.	610.	6.81	20	L578857-01	WG596769
ORP	mV	220.	210.	2.35	20	L577173-18	WG597071
ORP	mV	210.	220.	5.61	20	L579061-01	WG597071
pH	su	10.0	10.0	3.73*	1	L578792-01	WG596975
pH	su	12.0	12.0	3.52*	1	L579305-01	WG596975
Arsenic	mg/kg	9.50	9.50	0.316	20	L579180-03	WG596905
Arsenic	mg/kg	6.10	4.90	22.3*	20	L578857-05	WG596843
Barium	mg/kg	340.	225.	41.3*	20	L578857-05	WG596843
Cadmium	mg/kg	0	0	0	20	L578857-05	WG596843
Chromium	mg/kg	16.0	13.6	13.1	20	L578857-05	WG596843
Copper	mg/kg	19.0	14.7	24.0*	20	L578857-05	WG596843
Lead	mg/kg	13.0	10.4	19.1	20	L578857-05	WG596843
Nickel	mg/kg	12.0	10.2	17.9	20	L578857-05	WG596843
Silver	mg/kg	0	0	0	20	L578857-05	WG596843
Zinc	mg/kg	52.0	43.1	18.3	20	L578857-05	WG596843
Selenium	mg/kg	0	0	0	20	L578857-05	WG596843

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Chromium,Hexavalent	mg/kg	150	135.	90.0	50-150	WG596075
Benzene	mg/kg	.05	0.0460	92.0	76-113	WG596587
Ethylbenzene	mg/kg	.05	0.0462	92.5	78-115	WG596587
Toluene	mg/kg	.05	0.0454	90.9	76-114	WG596587
Total Xylene	mg/kg	.15	0.134	89.7	81-118	WG596587
a,a,a-Trifluorotoluene(PID)				104.6	54-144	WG596587
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.90	107.	67-135	WG596587
a,a,a-Trifluorotoluene(FID)				106.8	59-128	WG596587
Mercury	mg/kg	3.77	4.58	121.	71.6-128	WG596730
Specific Conductance	umhos/cm	495	491.	99.2	85-115	WG596769

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Analyte	Units	Laboratory Control	Sample	% Rec	Limit	Batch
		Known Val	Result			
ORP	mV	228	232.	102.	95.6-104.	WG597071
pH	su	5.7	5.74	101.	98-101	WG596975
Arsenic	mg/kg	92.6	93.2	101.	82.9-117	WG596905
Arsenic	mg/kg	92.6	94.0	102.	82.9-117	WG596843
Barium	mg/kg	169	173.	102.	82.8-117	WG596843
Cadmium	mg/kg	61.8	61.4	99.4	83.3-117	WG596843
Chromium	mg/kg	71.3	72.7	102.	81.8-118	WG596843
Copper	mg/kg	81.2	81.8	101.	83.9-116	WG596843
Lead	mg/kg	92.4	96.8	105.	83.3-117	WG596843
Nickel	mg/kg	59.1	54.8	92.7	83.8-116	WG596843
Selenium	mg/kg	89.5	93.3	104.	79-121	WG596843
Silver	mg/kg	34.4	34.5	100.	66.3-134	WG596843
Zinc	mg/kg	141	141.	100.	80.9-119	WG596843
1-Methylnaphthalene	mg/kg	.033	0.0246	74.5	48-113	WG597038
2-Chloronaphthalene	mg/kg	.033	0.0238	72.2	51-114	WG597038
2-Methylnaphthalene	mg/kg	.033	0.0248	75.2	44-109	WG597038
Acenaphthene	mg/kg	.033	0.0245	74.1	52-108	WG597038
Acenaphthylene	mg/kg	.033	0.0253	76.7	51-110	WG597038
Anthracene	mg/kg	.033	0.0301	91.3	58-120	WG597038
Benzo(a)anthracene	mg/kg	.033	0.0273	82.7	54-110	WG597038
Benzo(a)pyrene	mg/kg	.033	0.0289	87.5	56-118	WG597038
Benzo(b)fluoranthene	mg/kg	.033	0.0284	86.0	55-114	WG597038
Benzo(g,h,i)perylene	mg/kg	.033	0.0283	85.7	48-130	WG597038
Benzo(k)fluoranthene	mg/kg	.033	0.0295	89.3	55-122	WG597038
Chrysene	mg/kg	.033	0.0292	88.6	57-118	WG597038
Dibenz(a,h)anthracene	mg/kg	.033	0.0285	86.2	53-122	WG597038
Fluoranthene	mg/kg	.033	0.0306	92.6	58-118	WG597038
Fluorene	mg/kg	.033	0.0260	78.6	54-109	WG597038
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0285	86.5	51-125	WG597038
Naphthalene	mg/kg	.033	0.0237	71.7	45-105	WG597038
Phenanthrene	mg/kg	.033	0.0291	88.1	53-114	WG597038
Pyrene	mg/kg	.033	0.0289	87.5	53-121	WG597038
2-Fluorobiphenyl				69.77	34-129	WG597038
Nitrobenzene-d5				74.42	14-141	WG597038
p-Terphenyl-d14				102.3	25-139	WG597038
TPH (GC/FID) High Fraction	ppm	60	49.3	82.2	50-150	WG597332
o-Terphenyl				73.46	50-150	WG597332

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chromium, Hexavalent	mg/kg	118.	135.	79.0	50-150	13.4	20	WG596075
Benzene	mg/kg	0.0470	0.0460	94.0	76-113	2.11	20	WG596587
Ethylbenzene	mg/kg	0.0468	0.0462	94.0	78-115	1.16	20	WG596587
Toluene	mg/kg	0.0458	0.0454	92.0	76-114	0.810	20	WG596587
Total Xylene	mg/kg	0.136	0.134	90.0	81-118	0.960	20	WG596587

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
a,a,a-Trifluorotoluene(PID)				104.8		54-144			
TPH (GC/FID) Low Fraction	mg/kg	5.91	5.90	107.		67-135	0.180	20	WG596587
a,a,a-Trifluorotoluene(FID)				106.6		59-128			WG596587
Specific Conductance	umhos/	491.	491.	99.0		85-115	0	20	WG596769
ORP	mV	231.	232.	101.		95.6-104.	0.432	20	WG597071
pH	su	5.75	5.74	101.		98-101	0.174	20	WG596975
1-Methylnaphthalene	mg/kg	0.0262	0.0246	80.0		48-113	6.45	24	WG597038
2-Chloronaphthalene	mg/kg	0.0247	0.0238	75.0		51-114	3.74	24	WG597038
2-Methylnaphthalene	mg/kg	0.0263	0.0248	80.0		44-109	5.77	24	WG597038
Acenaphthene	mg/kg	0.0264	0.0245	80.0		52-108	7.58	22	WG597038
Acenaphthylene	mg/kg	0.0260	0.0253	79.0		51-110	2.84	21	WG597038
Anthracene	mg/kg	0.0293	0.0301	89.0		58-120	2.84	20	WG597038
Benzo(a)anthracene	mg/kg	0.0278	0.0273	84.0		54-110	1.92	22	WG597038
Benzo(a)pyrene	mg/kg	0.0296	0.0289	90.0		56-118	2.56	21	WG597038
Benzo(b)fluoranthene	mg/kg	0.0293	0.0284	89.0		55-114	3.35	20	WG597038
Benzo(g,h,i)perylene	mg/kg	0.0291	0.0283	88.0		48-130	2.76	20	WG597038
Benzo(k)fluoranthene	mg/kg	0.0302	0.0295	91.0		55-122	2.42	25	WG597038
Chrysene	mg/kg	0.0302	0.0292	92.0		57-118	3.42	20	WG597038
Dibenz(a,h)anthracene	mg/kg	0.0291	0.0285	88.0		53-122	2.09	20	WG597038
Fluoranthene	mg/kg	0.0299	0.0306	90.0		58-118	2.31	20	WG597038
Fluorene	mg/kg	0.0272	0.0260	82.0		54-109	4.82	20	WG597038
Indeno(1,2,3-cd)pyrene	mg/kg	0.0292	0.0285	88.0		51-125	2.16	21	WG597038
Naphthalene	mg/kg	0.0247	0.0237	75.0		45-105	4.18	24	WG597038
Phenanthrene	mg/kg	0.0289	0.0291	87.0		53-114	0.726	20	WG597038
Pyrene	mg/kg	0.0296	0.0289	90.0		53-121	2.39	20	WG597038
2-Fluorobiphenyl				75.51		34-129			WG597038
Nitrobenzene-d5				77.83		14-141			WG597038
p-Terphenyl-d14				105.3		25-139			WG597038
TPH (GC/FID) High Fraction	ppm	54.4	49.3	91.0		50-150	9.79	25	WG597332
o-Terphenyl				82.49		50-150			WG597332

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Chromium,Hexavalent	mg/kg	8.96	0	20	44.8*	50-150	L577984-05	WG596075
Benzene	mg/kg	0.218	0	.05	87.1	32-137	L578965-01	WG596587
Ethylbenzene	mg/kg	0.218	0	.05	87.0	10-150	L578965-01	WG596587
Toluene	mg/kg	0.218	0	.05	87.1	20-142	L578965-01	WG596587
Total Xylene	mg/kg	0.641	0	.15	85.4	16-141	L578965-01	WG596587
a,a,a-Trifluorotoluene(PID)					104.8	54-144		WG596587
TPH (GC/FID) Low Fraction	mg/kg	25.5	0	5.5	92.7	55-109	L578965-01	WG596587
a,a,a-Trifluorotoluene(FID)					105.6	59-128		WG596587
Mercury	mg/kg	0.238	0	.25	95.2	70-130	L578993-05	WG596730

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Arsenic	mg/kg	52.5	9.50	50	86.0	75-125	L579180-03	WG596905
Arsenic	mg/kg	51.4	2.80	50	97.2	75-125	L578909-01	WG596905
Arsenic	mg/kg	50.4	4.90	50	91.0	75-125	L578857-05	WG596843
Barium	mg/kg	326.	225.	50	202.*	75-125	L578857-05	WG596843
Cadmium	mg/kg	44.0	0	50	88.0	75-125	L578857-05	WG596843
Chromium	mg/kg	57.5	13.6	50	87.8	75-125	L578857-05	WG596843
Copper	mg/kg	60.9	14.7	50	92.4	75-125	L578857-05	WG596843
Lead	mg/kg	56.8	10.4	50	92.8	75-125	L578857-05	WG596843
Nickel	mg/kg	51.5	10.2	50	82.6	75-125	L578857-05	WG596843
Silver	mg/kg	47.3	0	50	94.6	75-125	L578857-05	WG596843
Zinc	mg/kg	86.5	43.1	50	86.8	75-125	L578857-05	WG596843
Selenium	mg/kg	45.4	0	25	90.8	75-125	L578857-05	WG596843

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium,Hexavalent	mg/kg	9.68	8.96	48.4*	50-150	7.73	20	L577984-05	WG596075
Benzene	mg/kg	0.223	0.218	89.3	32-137	2.49	39	L578965-01	WG596587
Ethylbenzene	mg/kg	0.210	0.218	83.9	10-150	3.73	44	L578965-01	WG596587
Toluene	mg/kg	0.212	0.218	84.9	20-142	2.61	42	L578965-01	WG596587
Total Xylene	mg/kg	0.610	0.641	81.3	16-141	4.93	46	L578965-01	WG596587
a,a,a-Trifluorotoluene(PID)				104.6	54-144				WG596587
TPH (GC/FID) Low Fraction	mg/kg	23.5	25.5	85.6	55-109	8.00	20	L578965-01	WG596587
a,a,a-Trifluorotoluene(FID)				104.0	59-128				WG596587
a,a,a-Trifluorotoluene(PID)				110.9	54-144				WG596587
Mercury	mg/kg	0.248	0.238	99.2	70-130	4.12	20	L578993-05	WG596730
Arsenic	mg/kg	54.4	52.5	89.8	75-125	3.55	20	L579180-03	WG596905
Arsenic	mg/kg	48.3	51.4	91.0	75-125	6.22	20	L578909-01	WG596905
Arsenic	mg/kg	49.4	50.4	89.0	75-125	2.00	20	L578857-05	WG596843
Barium	mg/kg	298.	326.	146.*	75-125	8.97	20	L578857-05	WG596843
Cadmium	mg/kg	42.3	44.0	84.6	75-125	3.94	20	L578857-05	WG596843
Chromium	mg/kg	56.9	57.5	86.6	75-125	1.05	20	L578857-05	WG596843
Copper	mg/kg	59.1	60.9	88.8	75-125	3.00	20	L578857-05	WG596843
Lead	mg/kg	55.9	56.8	91.0	75-125	1.60	20	L578857-05	WG596843
Nickel	mg/kg	50.4	51.5	80.4	75-125	2.16	20	L578857-05	WG596843
Silver	mg/kg	46.0	47.3	92.0	75-125	2.79	20	L578857-05	WG596843
Zinc	mg/kg	84.4	86.5	82.6	75-125	2.46	20	L578857-05	WG596843
Selenium	mg/kg	40.7	45.4	81.4	75-125	10.9	20	L578857-05	WG596843

Batch number /Run number / Sample number cross reference

WG596075: R2201954: L578857-01
WG596587: R2202353: L578857-01
WG596730: R2202606: L578857-01
WG596769: R2202673: L578857-01
WG597071: R2204333: L578857-01
WG596975: R2204496: L578857-01
WG596905: R2206135: L578857-06

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WG596843: R2206174: L578857-01 02 03 04 05
WG597038: R2206362: L578857-01
WG597332: R2207493: L578857-01
WG596954: R2207995: L578857-01 02 03 04 05 06

* * 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.