



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

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

Report Summary

Friday May 20, 2011

Report Number: L516540

Samples Received: 05/18/11

Client Project:

Description: A15 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:

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

May 20, 2011

Date Received : May 18, 2011
Description : A15 Pit
Sample ID : A15-BG-S-051711
Collected By : Bob Stockton
Collection Date : 05/17/11 11:51

ESC Sample # : L516540-01

Site ID : A15

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	18.	5.0	mg/kg	6010B	05/18/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/20/11 16:20 Printed: 05/20/11 16:21



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2717 County Road 215, Suite 100
Parachute, CO 81635

May 20, 2011

Date Received : May 18, 2011
Description : A15 Pit

Sample ID : A15-BG-E-051711

Collected By : Bob Stockton
Collection Date : 05/17/11 12:02

ESC Sample # : L516540-02

Site ID : A15

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	15.	5.0	mg/kg	6010B	05/18/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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2717 County Road 215, Suite 100
Parachute, CO 81635

May 20, 2011

Date Received : May 18, 2011
Description : A15 Pit

Sample ID : A15-BG-NE-051711

Collected By : Bob Stockton
Collection Date : 05/17/11 12:10

ESC Sample # : L516540-03

Site ID : A15

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	11.	1.0	mg/kg	6010B	05/18/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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2717 County Road 215, Suite 100
Parachute, CO 81635

May 20, 2011

Date Received : May 18, 2011
Description : A15 Pit
Sample ID : A15-BG-N-051711
Collected By : Bob Stockton
Collection Date : 05/17/11 12:21

ESC Sample # : L516540-04

Site ID : A15

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	19.	5.0	mg/kg	6010B	05/18/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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2717 County Road 215, Suite 100
Parachute, CO 81635

May 20, 2011

Date Received : May 18, 2011
Description : A15 Pit
Sample ID : A15-BG-NW-051711
Collected By : Bob Stockton
Collection Date : 05/17/11 11:33

ESC Sample # : L516540-05

Site ID : A15

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	16.	5.0	mg/kg	6010B	05/18/11	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

May 20, 2011

Date Received : May 18, 2011
Description : A15 Pit
Sample ID : A15-SPOIL-051711
Collected By : Bob Stockton
Collection Date : 05/17/11 13:04

ESC Sample # : L516540-06

Site ID : A15

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/20/11	1
Chromium, Trivalent	19.	2.0	mg/kg	Calc.	05/19/11	1
ORP	120		mV	2580	05/19/11	1
pH	8.0		su	9045D	05/20/11	1
Sodium Adsorption Ratio	5.1			Calc.	05/19/11	1
Specific Conductance	1200		umhos/cm	9050AMod	05/20/11	1
Mercury	0.074	0.020	mg/kg	7471	05/19/11	1
Arsenic	15.	1.0	mg/kg	6010B	05/19/11	1
Barium	5900	1.2	mg/kg	6010B	05/19/11	5
Cadmium	0.28	0.25	mg/kg	6010B	05/19/11	1
Chromium	19.	0.50	mg/kg	6010B	05/19/11	1
Copper	19.	1.0	mg/kg	6010B	05/19/11	1
Lead	14.	0.25	mg/kg	6010B	05/19/11	1
Nickel	12.	5.0	mg/kg	6010B	05/19/11	5
Selenium	BDL	1.0	mg/kg	6010B	05/19/11	1
Silver	BDL	0.50	mg/kg	6010B	05/19/11	1
Zinc	68.	7.5	mg/kg	6010B	05/19/11	5
Benzene	BDL	0.0025	mg/kg	8021/8015	05/18/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/18/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/18/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/18/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/18/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	05/18/11	5
a,a,a-Trifluorotoluene(PID)	105.		% Rec.	8021/8015	05/18/11	5
TPH (GC/FID) High Fraction	57.	4.0	mg/kg	3546/DRO	05/19/11	1
Surrogate recovery(%)						
o-Terphenyl	80.1		% Rec.	3546/DRO	05/19/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L516540-06 (PH) - 8.0@21.5c



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May 20, 2011

Date Received : May 18, 2011
Description : A15 Pit

Sample ID : A15-SPOIL-051711

Collected By : Bob Stockton
Collection Date : 05/17/11 13:04

ESC Sample # : L516540-06

Site ID : A15

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Fluorene	0.0065	0.0060	mg/kg	8270C-SIM	05/19/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Naphthalene	3.7	0.30	mg/kg	8270C-SIM	05/19/11	50
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/19/11	1
1-Methylnaphthalene	0.67	0.30	mg/kg	8270C-SIM	05/19/11	50
2-Methylnaphthalene	1.3	0.30	mg/kg	8270C-SIM	05/19/11	50
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/19/11	50
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	05/19/11	50
2-Fluorobiphenyl	70.1		% Rec.	8270C-SIM	05/19/11	1
p-Terphenyl-d14	81.0		% Rec.	8270C-SIM	05/19/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 05/20/11 16:20 Printed: 05/20/11 16:21
L516540-06 (PH) - 8.0@21.5c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L516540-06	WG536335	SAMP	Barium	R1694295	V
	WG536335	SAMP	Cadmium	R1694295	J3J6
	WG536335	SAMP	Chromium	R1694295	J6
	WG536335	SAMP	Copper	R1694295	J3
	WG536335	SAMP	Lead	R1694295	J3
	WG536064	SAMP	Nitrobenzene-d5	R1694509	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
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
05/20/11 at 16:21:06

TSR Signing Reports: 358
R3 - Rush: Two Day

Sample: L516540-01 Account: ENCANACO Received: 05/18/11 09:00 Due Date: 05/20/11 00:00 RPT Date: 05/20/11 16:20
Sample: L516540-02 Account: ENCANACO Received: 05/18/11 09:00 Due Date: 05/20/11 00:00 RPT Date: 05/20/11 16:20
Sample: L516540-03 Account: ENCANACO Received: 05/18/11 09:00 Due Date: 05/20/11 00:00 RPT Date: 05/20/11 16:20
Sample: L516540-04 Account: ENCANACO Received: 05/18/11 09:00 Due Date: 05/20/11 00:00 RPT Date: 05/20/11 16:20
Sample: L516540-05 Account: ENCANACO Received: 05/18/11 09:00 Due Date: 05/20/11 00:00 RPT Date: 05/20/11 16:20
Sample: L516540-06 Account: ENCANACO Received: 05/18/11 09:00 Due Date: 05/20/11 00:00 RPT Date: 05/20/11 16:20



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Quality Assurance Report
Level II

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May 20, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG535938	05/19/11 01:05
o-Terphenyl		% Rec.	78.05	50-150	WG535938	05/19/11 01:05
Benzene	< .0005	mg/kg			WG536255	05/18/11 13:49
Ethylbenzene	< .0005	mg/kg			WG536255	05/18/11 13:49
Toluene	< .005	mg/kg			WG536255	05/18/11 13:49
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG536255	05/18/11 13:49
Total Xylene	< .0015	mg/kg			WG536255	05/18/11 13:49
a,a,a-Trifluorotoluene(FID)		% Rec.	101.4	59-128	WG536255	05/18/11 13:49
a,a,a-Trifluorotoluene(PID)		% Rec.	105.9	54-144	WG536255	05/18/11 13:49
Arsenic	< 1	mg/kg			WG536186	05/18/11 20:37
Mercury	< .02	mg/kg			WG536285	05/19/11 10:05
Arsenic	< 1	mg/kg			WG536335	05/19/11 12:12
Barium	< .25	mg/kg			WG536335	05/19/11 12:12
Cadmium	< .25	mg/kg			WG536335	05/19/11 12:12
Chromium	< .5	mg/kg			WG536335	05/19/11 12:12
Copper	< 1	mg/kg			WG536335	05/19/11 12:12
Lead	< .25	mg/kg			WG536335	05/19/11 12:12
Nickel	< 1	mg/kg			WG536335	05/19/11 12:12
Selenium	< 1	mg/kg			WG536335	05/19/11 12:12
Silver	< .5	mg/kg			WG536335	05/19/11 12:12
Zinc	< 1.5	mg/kg			WG536335	05/19/11 12:12
1-Methylnaphthalene	< .006	mg/kg			WG536064	05/19/11 14:59
2-Chloronaphthalene	< .006	mg/kg			WG536064	05/19/11 14:59
2-Methylnaphthalene	< .006	mg/kg			WG536064	05/19/11 14:59
Acenaphthene	< .006	mg/kg			WG536064	05/19/11 14:59
Acenaphthylene	< .006	mg/kg			WG536064	05/19/11 14:59
Anthracene	< .006	mg/kg			WG536064	05/19/11 14:59
Benzo(a)anthracene	< .006	mg/kg			WG536064	05/19/11 14:59
Benzo(a)pyrene	< .006	mg/kg			WG536064	05/19/11 14:59
Benzo(b)fluoranthene	< .006	mg/kg			WG536064	05/19/11 14:59
Benzo(g,h,i)perylene	< .006	mg/kg			WG536064	05/19/11 14:59
Benzo(k)fluoranthene	< .006	mg/kg			WG536064	05/19/11 14:59
Chrysene	< .006	mg/kg			WG536064	05/19/11 14:59
Dibenz(a,h)anthracene	< .006	mg/kg			WG536064	05/19/11 14:59
Fluoranthene	< .006	mg/kg			WG536064	05/19/11 14:59
Fluorene	< .006	mg/kg			WG536064	05/19/11 14:59
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG536064	05/19/11 14:59
Naphthalene	< .006	mg/kg			WG536064	05/19/11 14:59
Phenanthrene	< .006	mg/kg			WG536064	05/19/11 14:59
Pyrene	< .006	mg/kg			WG536064	05/19/11 14:59
2-Fluorobiphenyl		% Rec.	70.05	21-120	WG536064	05/19/11 14:59
Nitrobenzene-d5		% Rec.	70.29	33-114	WG536064	05/19/11 14:59
p-Terphenyl-d14		% Rec.	86.63	18-142	WG536064	05/19/11 14:59
Specific Conductance	1.40	umhos/cm			WG536551	05/20/11 13:42
Chromium,Hexavalent	< 2	mg/kg			WG536313	05/20/11 13:15

* 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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May 20, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
pH	4.50	su			WG536562	05/20/11 14:20

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Arsenic	mg/kg	7.50	7.24	3.93	20	L516518-01	WG536186
Mercury	mg/kg	0.00850	0.00750	12.5	20	L516495-13	WG536285
ORP	mV	62.0	65.0	4.72	20	L515976-09	WG536408
ORP	mV	120.	110.	7.86	20	L515976-23	WG536408
Arsenic	mg/kg	14.0	15.0	5.48	20	L516540-06	WG536335
Cadmium	mg/kg	0.380	0.280	29.0*	20	L516540-06	WG536335
Chromium	mg/kg	22.0	19.0	12.3	20	L516540-06	WG536335
Copper	mg/kg	24.0	19.0	22.8*	20	L516540-06	WG536335
Lead	mg/kg	20.0	14.0	33.8*	20	L516540-06	WG536335
Selenium	mg/kg	0	0	0	20	L516540-06	WG536335
Silver	mg/kg	0	0	0	20	L516540-06	WG536335
Barium	mg/kg	5400	5900	9.78	20	L516540-06	WG536335
Nickel	mg/kg	14.0	12.0	18.2	20	L516540-06	WG536335
Zinc	mg/kg	72.0	68.0	5.44	20	L516540-06	WG536335
Specific Conductance	umhos/cm	260.	240.	7.11	20	L516495-39	WG536551
Specific Conductance	umhos/cm	3000	2800	5.89	20	L516547-04	WG536551
Chromium,Hexavalent	mg/kg	0	0	0	20	L516414-01	WG536313
pH	su	7.70	7.80	1.29*	1	L516495-59	WG536562
pH	su	7.60	7.70	1.31*	1	L516547-04	WG536562

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	47.6	79.3	50-150	WG535938
o-Terphenyl				76.87	50-150	WG535938
Benzene	mg/kg	.05	0.0493	98.6	76-113	WG536255
Ethylbenzene	mg/kg	.05	0.0513	103.	78-115	WG536255
Toluene	mg/kg	.05	0.0501	100.	76-114	WG536255
Total Xylene	mg/kg	.15	0.153	102.	81-118	WG536255
a,a,a-Trifluorotoluene(PID)				106.5	54-144	WG536255
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.33	115.	67-135	WG536255
a,a,a-Trifluorotoluene(FID)				109.5	59-128	WG536255
Arsenic	mg/kg	192	165.	85.9	78.6-120.8	WG536186
Mercury	mg/kg	8.77	7.84	89.4	71.6-127.7	WG536285

* 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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May 20, 2011

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
ORP	mV	229	220.	96.1	95.6-104.37	WG536408
Arsenic	mg/kg	192	166.	86.5	78.6-120.8	WG536335
Barium	mg/kg	420	366.	87.1	78.8-121.4	WG536335
Cadmium	mg/kg	70.1	61.0	87.0	78.5-121.5	WG536335
Chromium	mg/kg	168	151.	89.9	80.4-120.2	WG536335
Copper	mg/kg	122	112.	91.8	81.6-119.7	WG536335
Lead	mg/kg	113	99.6	88.1	77.3-122.1	WG536335
Nickel	mg/kg	74.1	66.4	89.6	78.8-121.2	WG536335
Selenium	mg/kg	176	156.	88.6	75.6-125.0	WG536335
Silver	mg/kg	115	104.	90.4	66-133.9	WG536335
Zinc	mg/kg	437	384.	87.9	78.5-121.7	WG536335
1-Methylnaphthalene	mg/kg	.033	0.0293	88.9	41-110	WG536064
2-Chloronaphthalene	mg/kg	.033	0.0277	83.9	43-109	WG536064
2-Methylnaphthalene	mg/kg	.033	0.0262	79.3	38-104	WG536064
Acenaphthene	mg/kg	.033	0.0278	84.3	48-103	WG536064
Acenaphthylene	mg/kg	.033	0.0282	85.3	43-106	WG536064
Anthracene	mg/kg	.033	0.0271	82.1	51-110	WG536064
Benzo(a)anthracene	mg/kg	.033	0.0309	93.8	38-126	WG536064
Benzo(a)pyrene	mg/kg	.033	0.0269	81.4	47-118	WG536064
Benzo(b)fluoranthene	mg/kg	.033	0.0258	78.1	47-118	WG536064
Benzo(g,h,i)perylene	mg/kg	.033	0.0291	88.2	40-125	WG536064
Benzo(k)fluoranthene	mg/kg	.033	0.0327	99.1	45-121	WG536064
Chrysene	mg/kg	.033	0.0295	89.5	35-135	WG536064
Dibenz(a,h)anthracene	mg/kg	.033	0.0285	86.3	41-124	WG536064
Fluoranthene	mg/kg	.033	0.0250	75.7	50-114	WG536064
Fluorene	mg/kg	.033	0.0277	83.8	49-109	WG536064
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0288	87.1	40-126	WG536064
Naphthalene	mg/kg	.033	0.0251	76.0	36-100	WG536064
Phenanthrene	mg/kg	.033	0.0288	87.2	46-108	WG536064
Pyrene	mg/kg	.033	0.0325	98.5	30-136	WG536064
2-Fluorobiphenyl				74.90	33-114	WG536064
Nitrobenzene-d5				79.99	21-120	WG536064
p-Terphenyl-d14				89.55	18-142	WG536064
Specific Conductance	umhos/cm	556	550.	98.9	85-115	WG536551
Chromium, Hexavalent	mg/kg	132	97.0	73.5	50-150	WG536313
pH	su	6.3	6.30	100.	97.98-102.02	WG536562

Analyte	Units	Laboratory Control Result	Sample Duplicate Ref	%Rec	Limit	RPD	Limit	Batch
TPH (GC/FID) High Fraction	ppm	46.0	47.6	77.0	50-150	3.35	25	WG535938
o-Terphenyl				73.45	50-150			WG535938
Benzene	mg/kg	0.0487	0.0493	97.0	76-113	1.15	20	WG536255
Ethylbenzene	mg/kg	0.0507	0.0513	101.	78-115	1.13	20	WG536255
Toluene	mg/kg	0.0493	0.0501	98.0	76-114	1.80	20	WG536255
Total Xylene	mg/kg	0.152	0.153	101.	81-118	0.990	20	WG536255
a,a,a-Trifluorotoluene(PID)				105.0	54-144			WG536255

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Quality Assurance Report
Level II

L516540

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Tax I.D. 62-0814289

Est. 1970

May 20, 2011

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	6.16	6.33	112.		67-135	2.78	20	WG536255
a,a,a-Trifluorotoluene(FID)				108.6		59-128			WG536255
ORP	mV	220.	220.	96.0		95.6-104.37	0	20	WG536408
1-Methylnaphthalene	mg/kg	0.0315	0.0293	95.0		41-110	7.06	24	WG536064
2-Chloronaphthalene	mg/kg	0.0309	0.0277	94.0		43-109	11.0	21	WG536064
2-Methylnaphthalene	mg/kg	0.0319	0.0262	97.0		38-104	19.8	24	WG536064
Acenaphthene	mg/kg	0.0284	0.0278	86.0		48-103	2.14	20	WG536064
Acenaphthylene	mg/kg	0.0282	0.0282	85.0		43-106	0.0676	20	WG536064
Anthracene	mg/kg	0.0307	0.0271	93.0		51-110	12.5	22	WG536064
Benzo(a)anthracene	mg/kg	0.0297	0.0309	90.0		38-126	4.21	20	WG536064
Benzo(a)pyrene	mg/kg	0.0280	0.0269	85.0		47-118	3.99	20	WG536064
Benzo(b)fluoranthene	mg/kg	0.0341	0.0258	103.		47-118	27.7	29	WG536064
Benzo(g,h,i)perylene	mg/kg	0.0313	0.0291	95.0		40-125	7.21	20	WG536064
Benzo(k)fluoranthene	mg/kg	0.0375	0.0327	114.		45-121	13.7	31	WG536064
Chrysene	mg/kg	0.0328	0.0295	99.0		35-135	10.5	20	WG536064
Dibenz(a,h)anthracene	mg/kg	0.0309	0.0285	94.0		41-124	8.11	20	WG536064
Fluoranthene	mg/kg	0.0281	0.0250	85.0		50-114	11.7	20	WG536064
Fluorene	mg/kg	0.0292	0.0277	89.0		49-109	5.57	19	WG536064
Indeno(1,2,3-cd)pyrene	mg/kg	0.0309	0.0288	94.0		40-126	7.13	20	WG536064
Naphthalene	mg/kg	0.0257	0.0251	78.0		36-100	2.30	24	WG536064
Phenanthrene	mg/kg	0.0288	0.0288	87.0		46-108	0.179	21	WG536064
Pyrene	mg/kg	0.0301	0.0325	91.0		30-136	7.57	20	WG536064
2-Fluorobiphenyl				79.03		33-114			WG536064
Nitrobenzene-d5				77.47		21-120			WG536064
p-Terphenyl-d14				82.71		18-142			WG536064
Specific Conductance	umhos/	550.	550.	99.0		85-115	0	20	WG536551
Chromium,Hexavalent	mg/kg	110.	97.0	83.0		50-150	12.6	20	WG536313
pH	su	6.30	6.30	100.		97.98-102.02	0	20	WG536562

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
TPH (GC/FID) High Fraction	ppm	40.1	0	60	66.8	50-150	L515977-42	WG535938
o-Terphenyl					65.54	50-150		WG535938
Benzene	mg/kg	0.193	0.0140	.05	71.4	32-137	L516414-01	WG536255
Ethylbenzene	mg/kg	0.182	0	.05	72.8	10-150	L516414-01	WG536255
Toluene	mg/kg	0.192	0	.05	76.6	20-142	L516414-01	WG536255
Total Xylene	mg/kg	0.557	0	.15	74.2	16-141	L516414-01	WG536255
a,a,a-Trifluorotoluene(PID)	mg/kg				103.9	54-144		WG536255
TPH (GC/FID) Low Fraction	mg/kg	16.2	0	5.5	58.8	55-109	L516414-01	WG536255
a,a,a-Trifluorotoluene(FID)					104.0	59-128		WG536255
Arsenic	mg/kg	51.4	7.24	50	88.3	75-125	L516518-01	WG536186
Mercury	mg/kg	0.256	0.00750	.25	99.4	70-130	L516495-13	WG536285

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Arsenic	mg/kg	59.2	15.0	50	88.4	75-125	L516540-06	WG536335
Cadmium	mg/kg	36.9	0.280	50	73.2*	75-125	L516540-06	WG536335
Chromium	mg/kg	56.7	19.0	50	75.4	75-125	L516540-06	WG536335
Copper	mg/kg	64.3	19.0	50	90.6	75-125	L516540-06	WG536335
Lead	mg/kg	57.7	14.0	50	87.4	75-125	L516540-06	WG536335
Selenium	mg/kg	39.4	0	50	78.8	75-125	L516540-06	WG536335
Silver	mg/kg	42.6	0	50	85.2	75-125	L516540-06	WG536335
Barium	mg/kg	5110	5900	10	0*	75-125	L516540-06	WG536335
Nickel	mg/kg	59.3	12.0	10	94.6	75-125	L516540-06	WG536335
Zinc	mg/kg	117.	68.0	10	98.0	75-125	L516540-06	WG536335
1-Methylnaphthalene	mg/kg	0.0521	0.0530	.033	0*	19-131	L516190-07	WG536064
2-Chloronaphthalene	mg/kg	0.0268	0	.033	81.2	38-117	L516190-07	WG536064
2-Methylnaphthalene	mg/kg	0.0370	0.0220	.033	45.5	18-125	L516190-07	WG536064
Acenaphthene	mg/kg	0.0497	0.0320	.033	53.6	31-120	L516190-07	WG536064
Acenaphthylene	mg/kg	0.0295	0	.033	89.4	34-116	L516190-07	WG536064
Anthracene	mg/kg	0.0355	0	.033	108.	32-131	L516190-07	WG536064
Benzo(a)anthracene	mg/kg	0.0267	0	.033	81.0	32-131	L516190-07	WG536064
Benzo(a)pyrene	mg/kg	0.0293	0	.033	88.9	28-130	L516190-07	WG536064
Benzo(b)fluoranthene	mg/kg	0.0292	0	.033	88.4	37-130	L516190-07	WG536064
Benzo(g,h,i)perylene	mg/kg	0.0246	0	.033	74.6	10-134	L516190-07	WG536064
Benzo(k)fluoranthene	mg/kg	0.0313	0	.033	94.7	31-129	L516190-07	WG536064
Chrysene	mg/kg	0.0293	0	.033	88.8	25-137	L516190-07	WG536064
Dibenz(a,h)anthracene	mg/kg	0.0246	0	.033	74.6	20-134	L516190-07	WG536064
Fluoranthene	mg/kg	0.0288	0	.033	87.4	27-138	L516190-07	WG536064
Fluorene	mg/kg	0.0482	0.0320	.033	49.2	26-136	L516190-07	WG536064
Indeno(1,2,3-cd)pyrene	mg/kg	0.0245	0	.033	74.3	16-135	L516190-07	WG536064
Naphthalene	mg/kg	0.0312	0	.033	94.6	22-121	L516190-07	WG536064
Phenanthrene	mg/kg	0.0966	0.0890	.033	23.1*	27-133	L516190-07	WG536064
Pyrene	mg/kg	0.0297	0	.033	90.1	22-133	L516190-07	WG536064
2-Fluorobiphenyl					74.29	33-114		WG536064
Nitrobenzene-d5					95.08	21-120		WG536064
p-Terphenyl-d14					76.08	18-142		WG536064
Chromium,Hexavalent	mg/kg	14.0	0	20	70.0	50-150	L516414-02	WG536313

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	39.1	40.1	65.1	50-150	2.55	25	L515977-42	WG535938
o-Terphenyl				62.15	50-150				WG535938
Benzene	mg/kg	0.173	0.193	63.5	32-137	10.9	39	L516414-01	WG536255
Ethylbenzene	mg/kg	0.156	0.182	62.3	10-150	15.6	44	L516414-01	WG536255
Toluene	mg/kg	0.162	0.192	64.9	20-142	16.5	42	L516414-01	WG536255
Total Xylene	mg/kg	0.481	0.557	64.2	16-141	14.5	46	L516414-01	WG536255
a,a,a-Trifluorotoluene(PID)				104.1	54-144				WG536255
TPH (GC/FID) Low Fraction	mg/kg	14.7	16.2	53.4*	55-109	9.56	20	L516414-01	WG536255
a,a,a-Trifluorotoluene(FID)				104.2	59-128				WG536255

Arsenic	mg/kg	51.5	51.4	88.5	75-125	0.194	20	L516518-01	WG536186
Mercury	mg/kg	0.278	0.256	108.	70-130	8.24	20	L516495-13	WG536285

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L516540

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	55.1	59.2	80.2	75-125	7.17	20	L516540-06	WG536335
Cadmium	mg/kg	37.7	36.9	74.8*	75-125	2.14	20	L516540-06	WG536335
Chromium	mg/kg	56.0	56.7	74.0*	75-125	1.24	20	L516540-06	WG536335
Copper	mg/kg	62.8	64.3	87.6	75-125	2.36	20	L516540-06	WG536335
Lead	mg/kg	55.4	57.7	82.8	75-125	4.07	20	L516540-06	WG536335
Selenium	mg/kg	40.4	39.4	80.8	75-125	2.51	20	L516540-06	WG536335
Silver	mg/kg	43.3	42.6	86.6	75-125	1.63	20	L516540-06	WG536335
Barium	mg/kg	4940	5110	0*	75-125	3.38	20	L516540-06	WG536335
Nickel	mg/kg	56.6	59.3	89.2	75-125	4.66	20	L516540-06	WG536335
Zinc	mg/kg	115.	117.	94.0	75-125	1.72	20	L516540-06	WG536335
1-Methylnaphthalene	mg/kg	0.0742	0.0521	64.3	19-131	35.0*	30	L516190-07	WG536064
2-Chloronaphthalene	mg/kg	0.0307	0.0268	92.9	38-117	13.4	26	L516190-07	WG536064
2-Methylnaphthalene	mg/kg	0.0422	0.0370	61.2	18-125	13.1	29	L516190-07	WG536064
Acenaphthene	mg/kg	0.0657	0.0497	102.	31-120	27.7	30	L516190-07	WG536064
Acenaphthylene	mg/kg	0.0323	0.0295	97.8	34-116	8.96	29	L516190-07	WG536064
Anthracene	mg/kg	0.0359	0.0355	109.	32-131	0.996	26	L516190-07	WG536064
Benzo(a)anthracene	mg/kg	0.0289	0.0267	87.5	32-131	7.71	31	L516190-07	WG536064
Benzo(a)pyrene	mg/kg	0.0302	0.0293	91.5	28-130	2.84	28	L516190-07	WG536064
Benzo(b)fluoranthene	mg/kg	0.0277	0.0292	84.0	37-130	5.19	41	L516190-07	WG536064
Benzo(g,h,i)perylene	mg/kg	0.0239	0.0246	72.4	10-134	3.01	26	L516190-07	WG536064
Benzo(k)fluoranthene	mg/kg	0.0310	0.0313	93.9	31-129	0.862	42	L516190-07	WG536064
Chrysene	mg/kg	0.0301	0.0293	91.2	25-137	2.61	22	L516190-07	WG536064
Dibenz(a,h)anthracene	mg/kg	0.0241	0.0246	72.9	20-134	2.31	25	L516190-07	WG536064
Fluoranthene	mg/kg	0.0278	0.0288	84.1	27-138	3.87	35	L516190-07	WG536064
Fluorene	mg/kg	0.0545	0.0482	68.3	26-136	12.3	30	L516190-07	WG536064
Indeno(1,2,3-cd)pyrene	mg/kg	0.0238	0.0245	72.1	16-135	2.96	26	L516190-07	WG536064
Naphthalene	mg/kg	0.0435	0.0312	132.*	22-121	33.0*	30	L516190-07	WG536064
Phenanthrene	mg/kg	0.142	0.0966	161.*	27-133	38.2*	36	L516190-07	WG536064
Pyrene	mg/kg	0.0321	0.0297	97.2	22-133	7.50	33	L516190-07	WG536064
2-Fluorobiphenyl				91.70	33-114				WG536064
Nitrobenzene-d5				154.4*	21-120				WG536064
p-Terphenyl-d14				75.04	18-142				WG536064
Chromium,Hexavalent	mg/kg	15.0	14.0	75.0	50-150	6.90	20	L516414-02	WG536313

Batch number /Run number / Sample number cross reference

WG535938: R1692609: L516540-06
WG536255: R1692629: L516540-06
WG536186: R1692811: L516540-01 02 03 04 05
WG536285: R1693454: L516540-06
WG536408: R1693790: L516540-06
WG536335: R1694295: L516540-06
WG536378: R1694376: L516540-06
WG536064: R1694509: L516540-06
WG536551: R1694830: L516540-06
WG536313: R1694831: L516540-06
WG536562: R1694969: L516540-06

* * 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.