

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

Allowable Concentration -->				Organic Compounds in Soil (mg/kg [ppm])																	Inorganics in Soil			Metals in Soil (mg/kg [ppm])															
Location	Sample Date:	Sample Matrix	Matrix Notes	500	TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
				TPH				Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene	Napthalene	Pyrene	EC (<4 mmhos/cm or 2x background)	SAR (calculation)	pH	Arsenic	Barium - EPA Total Barium	Cadmium	Chromium (II)	Chromium (VI)	Copper	Lead (inorganic)	Mercury	Nicke(soluble salts)	Selenium	Silver	Zinc
B16	06/01/11	Cuttings		190	BDL	190	BDL	BDL	BDL	BDL	BDL	BDL	0.064	0.086	BDL	BDL	0.067	BDL	0.13	BDL	BDL	0.28	0.088	3.7	23	12	6.1	5400	0.78	16	BDL	16	14	0.024	13	6.2	BDL	50	

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

Allowable Concentration -->				Organic Compounds in Soil (mg/kg [ppm])																		Inorganics in Soil			Metals in Soil (mg/kg [ppm])														
Location	Sample Date:	Sample Matrix	Matrix Notes	500	TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
G21	06/23/11	Cuttings		140	BDL	140	0.0047	BDL	BDL	BDL	0.011	0.11	BDL	0.0087	BDL	BDL	0.023	BDL	0.01	0.032	BDL	0.25	0.014	3.3	14	8.1	2.6	2300	0.9	9.2	BDL	11	8.6	0.028	5.7	2.8	BDL	31	



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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 June 10, 2011

Report Number: L518752

Samples Received: 06/02/11

Client Project:

Description: B16

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

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

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

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

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REPORT OF ANALYSIS

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

June 10, 2011

Date Received : June 02, 2011
Description : B16

Sample ID : B16-CVA-060111

Collected By :
Collection Date : 06/01/11 13:20

ESC Sample # : L518752-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/08/11	1
Chromium, Trivalent	16.	2.0	mg/kg	Calc.	06/03/11	1
ORP	52.		mV	2580	06/03/11	1
pH	12.		su	9045D	06/03/11	1
Sodium Adsorption Ratio	23.			Calc.	06/08/11	1
Specific Conductance	3700		umhos/cm	9050AMod	06/08/11	1
Mercury	0.024	0.020	mg/kg	7471	06/04/11	1
Arsenic	6.1	5.0	mg/kg	6010B	06/03/11	5
Barium	5400	1.2	mg/kg	6010B	06/03/11	5
Cadmium	0.78	0.25	mg/kg	6010B	06/03/11	1
Chromium	16.	0.50	mg/kg	6010B	06/03/11	1
Copper	16.	1.0	mg/kg	6010B	06/03/11	1
Lead	14.	0.25	mg/kg	6010B	06/03/11	1
Nickel	13.	5.0	mg/kg	6010B	06/03/11	5
Selenium	6.2	1.0	mg/kg	6010B	06/03/11	1
Silver	BDL	0.50	mg/kg	6010B	06/03/11	1
Zinc	50.	1.5	mg/kg	6010B	06/03/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	06/06/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/06/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/06/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/06/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/02/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	104.		% Rec.	8021/8015	06/02/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	06/06/11	5
TPH (GC/FID) High Fraction	190	4.0	mg/kg	3546/DRO	06/09/11	1
Surrogate recovery(%)						
o-Terphenyl	53.6		% Rec.	3546/DRO	06/09/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Benzo(a)anthracene	0.064	0.060	mg/kg	8270C-SIM	06/09/11	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L518752-01 (PH) - 12@20.8c



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June 10, 2011

Date Received : June 02, 2011
Description : B16

Sample ID : B16-CVA-060111

Collected By :
Collection Date : 06/01/11 13:20

ESC Sample # : L518752-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.086	0.060	mg/kg	8270C-SIM	06/09/11	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Chrysene	0.067	0.060	mg/kg	8270C-SIM	06/09/11	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Fluoranthene	0.13	0.060	mg/kg	8270C-SIM	06/09/11	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Naphthalene	0.28	0.060	mg/kg	8270C-SIM	06/09/11	10
Phenanthrene	0.20	0.060	mg/kg	8270C-SIM	06/09/11	10
Pyrene	0.088	0.060	mg/kg	8270C-SIM	06/09/11	10
1-Methylnaphthalene	0.25	0.060	mg/kg	8270C-SIM	06/09/11	10
2-Methylnaphthalene	0.52	0.060	mg/kg	8270C-SIM	06/09/11	10
2-Chloronaphthalene	BDL	0.060	mg/kg	8270C-SIM	06/09/11	10
Surrogate Recovery						
Nitrobenzene-d5	92.3		% Rec.	8270C-SIM	06/09/11	10
2-Fluorobiphenyl	101.		% Rec.	8270C-SIM	06/09/11	10
p-Terphenyl-d14	97.5		% Rec.	8270C-SIM	06/09/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L518752-01 (PH) - 12@20.8c



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

June 10, 2011

Date Received : June 02, 2011
Description : B16

Sample ID : B16-BGSE-060111

Collected By :
Collection Date : 06/01/11 13:50

ESC Sample # : L518752-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	2.8	1.0	mg/kg	6010B	06/03/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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June 10, 2011

Date Received : June 02, 2011
Description : B16

Sample ID : B16-BGE-060111

Collected By :
Collection Date : 06/01/11 14:00

ESC Sample # : L518752-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	1.9	1.0	mg/kg	6010B	06/03/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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June 10, 2011

Date Received : June 02, 2011
Description : B16

Sample ID : B16-BGNE-060111

Collected By :
Collection Date : 06/01/11 14:05

ESC Sample # : L518752-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.0	1.0	mg/kg	6010B	06/03/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 06/10/11 16:27 Printed: 06/10/11 16:28



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June 10, 2011

Date Received : June 02, 2011
Description : B16

Sample ID : B16-BGNW-060111

Collected By :
Collection Date : 06/01/11 14:10

ESC Sample # : L518752-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.5	1.0	mg/kg	6010B	06/03/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 06/10/11 16:27 Printed: 06/10/11 16:28

Summary of Remarks For Samples Printed
06/10/11 at 16:28:06

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L518752-01 Account: ENCANACO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/10/11 16:27
Sample: L518752-02 Account: ENCANACO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/10/11 16:27
Sample: L518752-03 Account: ENCANACO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/10/11 16:27
Sample: L518752-04 Account: ENCANACO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/10/11 16:27
Sample: L518752-05 Account: ENCANACO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/10/11 16:27



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June 10, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
pH	4.70	su			WG538584	06/03/11 12:25
Arsenic	< 1	mg/kg			WG538575	06/03/11 10:13
Barium	< .25	mg/kg			WG538575	06/03/11 10:13
Cadmium	< .25	mg/kg			WG538575	06/03/11 10:13
Chromium	< .5	mg/kg			WG538575	06/03/11 10:13
Copper	< 1	mg/kg			WG538575	06/03/11 10:13
Lead	< .25	mg/kg			WG538575	06/03/11 10:13
Nickel	< 1	mg/kg			WG538575	06/03/11 10:13
Selenium	< 1	mg/kg			WG538575	06/03/11 10:13
Silver	< .5	mg/kg			WG538575	06/03/11 10:13
Zinc	< 1.5	mg/kg			WG538575	06/03/11 10:13
Mercury	< .02	mg/kg			WG538643	06/04/11 06:51
Arsenic	< 1	mg/kg			WG538629	06/03/11 21:11
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG538574	06/02/11 16:50
a,a,a-Trifluorotoluene(FID)		% Rec.	106.3	59-128	WG538574	06/02/11 16:50
a,a,a-Trifluorotoluene(PID)		% Rec.	110.0	54-144	WG538574	06/02/11 16:50
Chromium,Hexavalent	< 2	mg/kg			WG538896	06/08/11 08:56
1-Methylnaphthalene	< .006	mg/kg			WG538687	06/08/11 10:15
2-Chloronaphthalene	< .006	mg/kg			WG538687	06/08/11 10:15
2-Methylnaphthalene	< .006	mg/kg			WG538687	06/08/11 10:15
Acenaphthene	< .006	mg/kg			WG538687	06/08/11 10:15
Acenaphthylene	< .006	mg/kg			WG538687	06/08/11 10:15
Anthracene	< .006	mg/kg			WG538687	06/08/11 10:15
Benzo(a)anthracene	< .006	mg/kg			WG538687	06/08/11 10:15
Benzo(a)pyrene	< .006	mg/kg			WG538687	06/08/11 10:15
Benzo(b)fluoranthene	< .006	mg/kg			WG538687	06/08/11 10:15
Benzo(g,h,i)perylene	< .006	mg/kg			WG538687	06/08/11 10:15
Benzo(k)fluoranthene	< .006	mg/kg			WG538687	06/08/11 10:15
Chrysene	< .006	mg/kg			WG538687	06/08/11 10:15
Dibenz(a,h)anthracene	< .006	mg/kg			WG538687	06/08/11 10:15
Fluoranthene	< .006	mg/kg			WG538687	06/08/11 10:15
Fluorene	< .006	mg/kg			WG538687	06/08/11 10:15
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG538687	06/08/11 10:15
Naphthalene	< .006	mg/kg			WG538687	06/08/11 10:15
Phenanthrene	< .006	mg/kg			WG538687	06/08/11 10:15
Pyrene	< .006	mg/kg			WG538687	06/08/11 10:15
2-Fluorobiphenyl		% Rec.	74.57	21-120	WG538687	06/08/11 10:15
Nitrobenzene-d5		% Rec.	62.49	33-114	WG538687	06/08/11 10:15
p-Terphenyl-d14		% Rec.	76.69	18-142	WG538687	06/08/11 10:15
Specific Conductance	0.800	umhos/cm			WG539344	06/08/11 18:13
TPH (GC/FID) High Fraction	< 4	ppm			WG538685	06/08/11 22:09
o-Terphenyl		% Rec.	70.85	50-150	WG538685	06/08/11 22:09
* 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	7.20	7.20		0	1	L518641-03	WG538584
pH	su	8.70	8.70		0	1	L518791-05	WG538584
Arsenic	mg/kg	2.80	2.70		4.35	20	L518815-02	WG538575
Barium	mg/kg	15.0	13.0		11.6	20	L518815-02	WG538575
Cadmium	mg/kg	0	0.160		NA	20	L518815-02	WG538575
Chromium	mg/kg	11.0	10.0		11.3	20	L518815-02	WG538575
Copper	mg/kg	2.80	2.56		8.60	20	L518815-02	WG538575
Lead	mg/kg	6.00	5.60		6.23	20	L518815-02	WG538575
Nickel	mg/kg	3.50	3.12		12.0	20	L518815-02	WG538575
Selenium	mg/kg	11.0	10.0		9.52	20	L518815-02	WG538575
Silver	mg/kg	0	0		0	20	L518815-02	WG538575
Zinc	mg/kg	4.60	4.22		7.96	20	L518815-02	WG538575
ORP	mV	120.	110.		7.02	20	L518641-04	WG538621
ORP	mV	91.0	89.0		2.22	20	L518791-04	WG538621
Mercury	mg/kg	0	0		0	20	L518706-03	WG538643
Arsenic	mg/kg	5.20	5.70		9.17	20	L518854-07	WG538629
Chromium,Hexavalent	mg/kg	0	0		0	20	L518645-06	WG538896
Chromium,Hexavalent	mg/kg	0	0		0	20	L519132-02	WG538896
Specific Conductance	umhos/cm	1500	1400		5.15	20	L518791-03	WG539344
Specific Conductance	umhos/cm	140.	140.		0.499	20	L519132-02	WG539344

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
pH	su	6.3	6.30	100.	97.98-102.02	WG538584
Arsenic	mg/kg	192	175.	91.1	78.6-120.8	WG538575
Barium	mg/kg	420	402.	95.7	78.8-121.4	WG538575
Cadmium	mg/kg	70.1	64.4	91.9	78.5-121.5	WG538575
Chromium	mg/kg	168	165.	98.2	80.4-120.2	WG538575
Copper	mg/kg	122	125.	102.	81.6-119.7	WG538575
Lead	mg/kg	113	113.	100.	77.3-122.1	WG538575
Nickel	mg/kg	74.1	75.8	102.	78.8-121.2	WG538575
Selenium	mg/kg	176	184.	105.	75.6-125.0	WG538575
Silver	mg/kg	115	115.	100.	66-133.9	WG538575
Zinc	mg/kg	437	410.	93.8	78.5-121.7	WG538575
ORP	mV	229	220.	96.1	95.6-104.37	WG538621
Mercury	mg/kg	8.77	7.98	91.0	71.6-127.7	WG538643
Arsenic	mg/kg	192	175.	91.1	78.6-120.8	WG538629

* 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 10, 2011

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.92	108.	67-135	WG538574
a,a,a-Trifluorotoluene(FID)				102.2	59-128	WG538574
Chromium,Hexavalent	mg/kg	132	110.	83.3	50-150	WG538896
1-Methylnaphthalene	mg/kg	.033	0.0235	71.1	41-110	WG538687
2-Chloronaphthalene	mg/kg	.033	0.0240	72.6	43-109	WG538687
2-Methylnaphthalene	mg/kg	.033	0.0235	71.1	38-104	WG538687
Acenaphthene	mg/kg	.033	0.0259	78.5	48-103	WG538687
Acenaphthylene	mg/kg	.033	0.0257	77.9	43-106	WG538687
Anthracene	mg/kg	.033	0.0267	80.8	51-110	WG538687
Benzo(a)anthracene	mg/kg	.033	0.0300	90.8	38-126	WG538687
Benzo(a)pyrene	mg/kg	.033	0.0304	92.0	47-118	WG538687
Benzo(b)fluoranthene	mg/kg	.033	0.0303	91.8	47-118	WG538687
Benzo(g,h,i)perylene	mg/kg	.033	0.0335	102.	40-125	WG538687
Benzo(k)fluoranthene	mg/kg	.033	0.0296	89.7	45-121	WG538687
Chrysene	mg/kg	.033	0.0267	80.8	35-135	WG538687
Dibenz(a,h)anthracene	mg/kg	.033	0.0310	94.1	41-124	WG538687
Fluoranthene	mg/kg	.033	0.0275	83.3	50-114	WG538687
Fluorene	mg/kg	.033	0.0267	80.8	49-109	WG538687
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0308	93.3	40-126	WG538687
Naphthalene	mg/kg	.033	0.0250	75.8	36-100	WG538687
Phenanthrene	mg/kg	.033	0.0290	87.8	46-108	WG538687
Pyrene	mg/kg	.033	0.0291	88.2	30-136	WG538687
2-Fluorobiphenyl				71.15	33-114	WG538687
Nitrobenzene-d5				67.81	21-120	WG538687
p-Terphenyl-d14				85.12	18-142	WG538687
Specific Conductance	umhos/cm	556	560.	101.	85-115	WG539344
TPH (GC/FID) High Fraction	ppm	60	46.1	76.9	50-150	WG538685
o-Terphenyl				69.65	50-150	WG538685

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	6.30	6.30	100.	97.98-102.02	0	20	WG538584
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG538621
TPH (GC/FID) Low Fraction	mg/kg	6.10	5.92	111.	67-135	2.85	20	WG538574
a,a,a-Trifluorotoluene(FID)				101.9	59-128			WG538574
Chromium,Hexavalent	mg/kg	100.	110.	76.0	50-150	9.52	20	WG538896
1-Methylnaphthalene	mg/kg	0.0256	0.0235	78.0	41-110	8.77	24	WG538687
2-Chloronaphthalene	mg/kg	0.0277	0.0240	84.0	43-109	14.3	21	WG538687
2-Methylnaphthalene	mg/kg	0.0267	0.0235	81.0	38-104	12.9	24	WG538687
Acenaphthene	mg/kg	0.0292	0.0259	88.0	48-103	12.0	20	WG538687
Acenaphthylene	mg/kg	0.0289	0.0257	88.0	43-106	11.7	20	WG538687
Anthracene	mg/kg	0.0305	0.0267	92.0	51-110	13.4	22	WG538687

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Tax I.D. 62-0814289

Est. 1970

June 10, 2011

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzo(a)anthracene	mg/kg	0.0308	0.0300	93.0	38-126	2.62	20	WG538687
Benzo(a)pyrene	mg/kg	0.0286	0.0304	87.0	47-118	5.93	20	WG538687
Benzo(b)fluoranthene	mg/kg	0.0310	0.0303	94.0	47-118	2.43	29	WG538687
Benzo(g,h,i)perylene	mg/kg	0.0324	0.0335	98.0	40-125	3.37	20	WG538687
Benzo(k)fluoranthene	mg/kg	0.0321	0.0296	97.0	45-121	8.11	31	WG538687
Chrysene	mg/kg	0.0294	0.0267	89.0	35-135	9.66	20	WG538687
Dibenz(a,h)anthracene	mg/kg	0.0306	0.0310	93.0	41-124	1.38	20	WG538687
Fluoranthene	mg/kg	0.0300	0.0275	91.0	50-114	8.75	20	WG538687
Fluorene	mg/kg	0.0307	0.0267	93.0	49-109	13.9	19	WG538687
Indeno(1,2,3-cd)pyrene	mg/kg	0.0306	0.0308	92.0	40-126	0.771	20	WG538687
Naphthalene	mg/kg	0.0280	0.0250	85.0	36-100	11.1	24	WG538687
Phenanthrene	mg/kg	0.0309	0.0290	94.0	46-108	6.36	21	WG538687
Pyrene	mg/kg	0.0302	0.0291	91.0	30-136	3.50	20	WG538687
2-Fluorobiphenyl				80.73	33-114			WG538687
Nitrobenzene-d5				72.58	21-120			WG538687
p-Terphenyl-d14				91.95	18-142			WG538687
Specific Conductance	umhos/	560.	560.	101.	85-115	0	20	WG539344
TPH (GC/FID) High Fraction	ppm	44.0	46.1	73.0	50-150	4.78	25	WG538685
o-Terphenyl				63.80	50-150			WG538685

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Arsenic	mg/kg	48.4	2.70	50	91.4	75-125	L518815-02	WG538575
Barium	mg/kg	63.4	13.0	50	101.	75-125	L518815-02	WG538575
Cadmium	mg/kg	47.4	0.160	50	94.5	75-125	L518815-02	WG538575
Chromium	mg/kg	62.6	10.0	50	105.	75-125	L518815-02	WG538575
Copper	mg/kg	55.2	2.56	50	105.	75-125	L518815-02	WG538575
Lead	mg/kg	56.8	5.60	50	102.	75-125	L518815-02	WG538575
Nickel	mg/kg	53.6	3.12	50	101.	75-125	L518815-02	WG538575
Selenium	mg/kg	56.3	10.0	50	92.6	75-125	L518815-02	WG538575
Silver	mg/kg	49.4	0	50	98.8	75-125	L518815-02	WG538575
Zinc	mg/kg	52.4	4.22	50	96.4	75-125	L518815-02	WG538575
Mercury	mg/kg	0.249	0	.25	99.6	70-130	L518706-03	WG538643
Arsenic	mg/kg	51.6	5.70	50	91.8	75-125	L518854-07	WG538629
TPH (GC/FID) Low Fraction	mg/kg	22.0	0	5.5	79.8	55-109	L518752-01	WG538574
a,a,a-Trifluorotoluene(FID)					101.2	59-128		WG538574
Chromium,Hexavalent	mg/kg	13.0	0	20	65.0	50-150	L519132-01	WG538896
TPH (GC/FID) High Fraction	ppm	37.5	0	60	62.5	50-150	L518754-09	WG538685
o-Terphenyl					61.14	50-150		WG538685
1-Methylnaphthalene	mg/kg	0.135	0.0920	.033	132.*	19-131	L518304-01	WG538687
2-Chloronaphthalene	mg/kg	0.0324	0	.033	98.3	38-117	L518304-01	WG538687
2-Methylnaphthalene	mg/kg	0.261	0.170	.033	275.*	18-125	L518304-01	WG538687

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Acenaphthene	mg/kg	0.0401	0.00650	.033	102.	31-120	L518304-01	WG538687
Acenaphthylene	mg/kg	0.0311	0	.033	94.4	34-116	L518304-01	WG538687
Anthracene	mg/kg	0.0372	0	.033	113.	32-131	L518304-01	WG538687
Benzo(a)anthracene	mg/kg	0.0261	0	.033	79.0	32-131	L518304-01	WG538687
Benzo(a)pyrene	mg/kg	0.0264	0	.033	80.0	28-130	L518304-01	WG538687
Benzo(b)fluoranthene	mg/kg	0.0285	0	.033	86.4	37-130	L518304-01	WG538687
Benzo(g,h,i)perylene	mg/kg	0.0253	0	.033	76.6	10-134	L518304-01	WG538687
Benzo(k)fluoranthene	mg/kg	0.0221	0	.033	67.1	31-129	L518304-01	WG538687
Chrysene	mg/kg	0.0235	0	.033	71.4	25-137	L518304-01	WG538687
Dibenz(a,h)anthracene	mg/kg	0.0253	0	.033	76.5	20-134	L518304-01	WG538687
Fluoranthene	mg/kg	0.0318	0	.033	96.4	27-138	L518304-01	WG538687
Fluorene	mg/kg	0.0551	0.0150	.033	121.	26-136	L518304-01	WG538687
Indeno(1,2,3-cd)pyrene	mg/kg	0.0252	0	.033	76.5	16-135	L518304-01	WG538687
Naphthalene	mg/kg	0.0545	0.0400	.033	43.8	22-121	L518304-01	WG538687
Phenanthrene	mg/kg	0.0905	0.0330	.033	174.*	27-133	L518304-01	WG538687
Pyrene	mg/kg	0.0291	0.00120	.033	84.6	22-133	L518304-01	WG538687
2-Fluorobiphenyl					78.34	33-114		WG538687
Nitrobenzene-d5					78.02	21-120		WG538687
p-Terphenyl-d14					56.89	18-142		WG538687

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	47.1	48.4	88.8	75-125	2.72	20	L518815-02	WG538575
Barium	mg/kg	63.8	63.4	102.	75-125	0.629	20	L518815-02	WG538575
Cadmium	mg/kg	46.9	47.4	93.5	75-125	1.06	20	L518815-02	WG538575
Chromium	mg/kg	61.5	62.6	103.	75-125	1.77	20	L518815-02	WG538575
Copper	mg/kg	55.2	55.2	105.	75-125	0	20	L518815-02	WG538575
Lead	mg/kg	55.2	56.8	99.2	75-125	2.86	20	L518815-02	WG538575
Nickel	mg/kg	51.8	53.6	97.4	75-125	3.42	20	L518815-02	WG538575
Selenium	mg/kg	54.9	56.3	89.8	75-125	2.52	20	L518815-02	WG538575
Silver	mg/kg	49.4	49.4	98.8	75-125	0	20	L518815-02	WG538575
Zinc	mg/kg	52.1	52.4	95.8	75-125	0.574	20	L518815-02	WG538575
Mercury	mg/kg	0.260	0.249	104.	70-130	4.32	20	L518706-03	WG538643
Arsenic	mg/kg	47.7	51.6	84.0	75-125	7.85	20	L518854-07	WG538629
TPH (GC/FID) Low Fraction	mg/kg	19.5	22.0	71.0	55-109	11.8	20	L518752-01	WG538574
a,a,a-Trifluorotoluene(FID)				105.2	59-128				WG538574
Chromium,Hexavalent	mg/kg	12.0	13.0	60.0	50-150	8.00	20	L519132-01	WG538896
TPH (GC/FID) High Fraction	ppm	37.7	37.5	62.8	50-150	0.574	25	L518754-09	WG538685
o-Terphenyl				58.98	50-150				WG538685
1-Methylnaphthalene	mg/kg	0.105	0.135	38.7	19-131	25.5	30	L518304-01	WG538687
2-Chloronaphthalene	mg/kg	0.0332	0.0324	101.	38-117	2.32	26	L518304-01	WG538687
2-Methylnaphthalene	mg/kg	0.191	0.261	64.8	18-125	30.7*	29	L518304-01	WG538687
Acenaphthene	mg/kg	0.0298	0.0401	70.7	31-120	29.3	30	L518304-01	WG538687
Acenaphthylene	mg/kg	0.0307	0.0311	93.1	34-116	1.32	29	L518304-01	WG538687
Anthracene	mg/kg	0.0348	0.0372	105.	32-131	6.86	26	L518304-01	WG538687
Benzo(a)anthracene	mg/kg	0.0290	0.0261	87.9	32-131	10.6	31	L518304-01	WG538687

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Benzo(a)pyrene	mg/kg	0.0286	0.0264	86.7	28-130	8.05	28	L518304-01		WG538687
Benzo(b)fluoranthene	mg/kg	0.0283	0.0285	85.9	37-130	0.665	41	L518304-01		WG538687
Benzo(g,h,i)perylene	mg/kg	0.0275	0.0253	83.3	10-134	8.37	26	L518304-01		WG538687
Benzo(k)fluoranthene	mg/kg	0.0253	0.0221	76.8	31-129	13.5	42	L518304-01		WG538687
Chrysene	mg/kg	0.0258	0.0235	78.0	25-137	8.96	22	L518304-01		WG538687
Dibenz(a,h)anthracene	mg/kg	0.0295	0.0253	89.3	20-134	15.4	25	L518304-01		WG538687
Fluoranthene	mg/kg	0.0266	0.0318	80.5	27-138	17.9	35	L518304-01		WG538687
Fluorene	mg/kg	0.0404	0.0551	76.9	26-136	30.8*	30	L518304-01		WG538687
Indeno(1,2,3-cd)pyrene	mg/kg	0.0299	0.0252	90.6	16-135	16.9	26	L518304-01		WG538687
Naphthalene	mg/kg	0.0531	0.0545	39.7	22-121	2.49	30	L518304-01		WG538687
Phenanthrene	mg/kg	0.0611	0.0905	85.2	27-133	38.8*	36	L518304-01		WG538687
Pyrene	mg/kg	0.0303	0.0291	88.2	22-133	4.09	33	L518304-01		WG538687
2-Fluorobiphenyl				73.64	33-114					WG538687
Nitrobenzene-d5				108.4	21-120					WG538687
p-Terphenyl-d14				69.79	18-142					WG538687

Batch number /Run number / Sample number cross reference

WG538584: R1710009: L518752-01
WG538575: R1710153: L518752-01
WG538621: R1710349: L518752-01
WG538643: R1711372: L518752-01
WG538629: R1711750 R1711751: L518752-02 03 04 05
WG538574: R1711849 R1712791: L518752-01 01
WG538896: R1715591: L518752-01
WG538687: R1715729: L518752-01
WG539030: R1716309: L518752-01
WG539344: R1716669: L518752-01
WG538685: R1716949: L518752-01

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

Report Summary

Wednesday June 29, 2011

Report Number: L523054

Samples Received: 06/25/11

Client Project:

Description: G21

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

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

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

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

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REPORT OF ANALYSIS

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

June 29, 2011

Date Received : June 25, 2011
Description : G21
Sample ID : G21-CUT-062311 14-16 IN
Collected By : Brennen Graff
Collection Date : 06/23/11 12:23

ESC Sample # : L523054-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/28/11	1
Chromium, Trivalent	9.2	2.0	mg/kg	Calc.	06/26/11	1
ORP	140		mV	2580	06/27/11	1
pH	8.1		su	9045D	06/28/11	1
Sodium Adsorption Ratio	14.			Calc.	06/28/11	1
Specific Conductance	3300		umhos/cm	9050AMod	06/27/11	1
Mercury	0.028	0.020	mg/kg	7471	06/26/11	1
Arsenic	2.6	1.0	mg/kg	6010B	06/26/11	1
Barium	2300	0.25	mg/kg	6010B	06/26/11	1
Cadmium	0.90	0.25	mg/kg	6010B	06/26/11	1
Chromium	9.2	0.50	mg/kg	6010B	06/26/11	1
Copper	11.	1.0	mg/kg	6010B	06/26/11	1
Lead	8.6	0.25	mg/kg	6010B	06/26/11	1
Nickel	5.7	1.0	mg/kg	6010B	06/26/11	1
Selenium	2.8	1.0	mg/kg	6010B	06/26/11	1
Silver	BDL	0.50	mg/kg	6010B	06/26/11	1
Zinc	31.	1.5	mg/kg	6010B	06/26/11	1
Benzene	0.0047	0.0025	mg/kg	8021/8015	06/25/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/25/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/25/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/25/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/25/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8021/8015	06/25/11	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	06/25/11	5
TPH (GC/FID) High Fraction	140	4.0	mg/kg	3546/DRO	06/28/11	1
Surrogate recovery(%)						
o-Terphenyl	67.1		% Rec.	3546/DRO	06/28/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.11	0.0060	mg/kg	8270C-SIM	06/28/11	1
Acenaphthene	0.011	0.0060	mg/kg	8270C-SIM	06/28/11	1
Acenaphthylene	0.0088	0.0060	mg/kg	8270C-SIM	06/28/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/28/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/28/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L523054-01 (PH) - 8.1@19.4c



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Est. 1970

REPORT OF ANALYSIS

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

June 29, 2011

Date Received : June 25, 2011
Description : G21
Sample ID : G21-CUT-062311 14-16 IN
Collected By : Brennen Graff
Collection Date : 06/23/11 12:23

ESC Sample # : L523054-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	0.0087	0.0060	mg/kg	8270C-SIM	06/28/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	06/28/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/28/11	1
Chrysene	0.023	0.0060	mg/kg	8270C-SIM	06/28/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/28/11	1
Fluoranthene	0.010	0.0060	mg/kg	8270C-SIM	06/28/11	1
Fluorene	0.032	0.0060	mg/kg	8270C-SIM	06/28/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/28/11	1
Naphthalene	0.25	0.0060	mg/kg	8270C-SIM	06/28/11	1
Phenanthrene	0.12	0.0060	mg/kg	8270C-SIM	06/28/11	1
Pyrene	0.014	0.0060	mg/kg	8270C-SIM	06/28/11	1
1-Methylnaphthalene	0.25	0.0060	mg/kg	8270C-SIM	06/28/11	1
2-Methylnaphthalene	0.43	0.0060	mg/kg	8270C-SIM	06/28/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/28/11	1
Surrogate Recovery						
Nitrobenzene-d5	88.3		% Rec.	8270C-SIM	06/28/11	1
2-Fluorobiphenyl	49.3		% Rec.	8270C-SIM	06/28/11	1
p-Terphenyl-d14	58.5		% Rec.	8270C-SIM	06/28/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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L523054-01 (PH) - 8.1@19.4c



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REPORT OF ANALYSIS

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

June 29, 2011

Date Received : June 25, 2011
Description : G21
Sample ID : G21-BGSE-062311 8-10 IN
Collected By : Brennen Graff
Collection Date : 06/23/11 11:14

ESC Sample # : L523054-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	16.	1.0	mg/kg	6010B	06/27/11	1

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

June 29, 2011

Date Received : June 25, 2011
Description : G21
Sample ID : G21-BGNE-062311 8-10 IN
Collected By : Brennen Graff
Collection Date : 06/23/11 11:25

ESC Sample # : L523054-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	9.8	1.0	mg/kg	6010B	06/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

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

June 29, 2011

Date Received : June 25, 2011
Description : G21
Sample ID : G21-BGW-062311 8-10 IN
Collected By : Brennen Graff
Collection Date : 06/23/11 11:37

ESC Sample # : L523054-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	14.	1.0	mg/kg	6010B	06/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/29/11 08:58 Printed: 06/29/11 08:59



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REPORT OF ANALYSIS

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

June 29, 2011

Date Received : June 25, 2011
Description : G21
Sample ID : G21-BGS-062311 8-10 IN
Collected By : Brennen Graff
Collection Date : 06/23/11 11:51

ESC Sample # : L523054-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	11.	1.0	mg/kg	6010B	06/27/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L523054-01	WG542699	SAMP	Arsenic	R1742929	P1
	WG542699	SAMP	Barium	R1742929	V
	WG542699	SAMP	Chromium	R1742929	J3
	WG542699	SAMP	Copper	R1742929	J3
	WG542699	SAMP	Lead	R1742929	J3
	WG542699	SAMP	Nickel	R1742929	J3
	WG542699	SAMP	Selenium	R1742929	P1
	WG542654	SAMP	2-Methylnaphthalene	R1742729	E

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J3	The associated batch QC was outside the established quality control range for precision.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
06/29/11 at 08:59:12

TSR Signing Reports: 358
R3 - Rush: Two Day

Sample: L523054-01 Account: ENCANACO Received: 06/25/11 09:00 Due Date: 06/28/11 00:00 RPT Date: 06/29/11 08:58
Sample: L523054-02 Account: ENCANACO Received: 06/25/11 09:00 Due Date: 06/28/11 00:00 RPT Date: 06/29/11 08:58
Sample: L523054-03 Account: ENCANACO Received: 06/25/11 09:00 Due Date: 06/28/11 00:00 RPT Date: 06/29/11 08:58
Sample: L523054-04 Account: ENCANACO Received: 06/25/11 09:00 Due Date: 06/28/11 00:00 RPT Date: 06/29/11 08:58
Sample: L523054-05 Account: ENCANACO Received: 06/25/11 09:00 Due Date: 06/28/11 00:00 RPT Date: 06/29/11 08:58



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Level II

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June 29, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG542709	06/25/11 22:19
Ethylbenzene	< .0005	mg/kg			WG542709	06/25/11 22:19
Toluene	< .005	mg/kg			WG542709	06/25/11 22:19
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG542709	06/25/11 22:19
Total Xylene	< .0015	mg/kg			WG542709	06/25/11 22:19
a,a,a-Trifluorotoluene(FID)		% Rec.	103.2	59-128	WG542709	06/25/11 22:19
a,a,a-Trifluorotoluene(PID)		% Rec.	107.6	54-144	WG542709	06/25/11 22:19
Mercury	< .02	mg/kg			WG542665	06/26/11 10:12
Arsenic	< 1	mg/kg			WG542808	06/27/11 18:44
TPH (GC/FID) High Fraction	< 4	ppm			WG542641	06/28/11 04:25
o-Terphenyl		% Rec.	77.34	50-150	WG542641	06/28/11 04:25
1-Methylnaphthalene	< .006	mg/kg			WG542654	06/28/11 10:05
2-Chloronaphthalene	< .006	mg/kg			WG542654	06/28/11 10:05
2-Methylnaphthalene	< .006	mg/kg			WG542654	06/28/11 10:05
Acenaphthene	< .006	mg/kg			WG542654	06/28/11 10:05
Acenaphthylene	< .006	mg/kg			WG542654	06/28/11 10:05
Anthracene	< .006	mg/kg			WG542654	06/28/11 10:05
Benzo(a)anthracene	< .006	mg/kg			WG542654	06/28/11 10:05
Benzo(a)pyrene	< .006	mg/kg			WG542654	06/28/11 10:05
Benzo(b)fluoranthene	< .006	mg/kg			WG542654	06/28/11 10:05
Benzo(g,h,i)perylene	< .006	mg/kg			WG542654	06/28/11 10:05
Benzo(k)fluoranthene	< .006	mg/kg			WG542654	06/28/11 10:05
Chrysene	< .006	mg/kg			WG542654	06/28/11 10:05
Dibenz(a,h)anthracene	< .006	mg/kg			WG542654	06/28/11 10:05
Fluoranthene	< .006	mg/kg			WG542654	06/28/11 10:05
Fluorene	< .006	mg/kg			WG542654	06/28/11 10:05
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG542654	06/28/11 10:05
Naphthalene	< .006	mg/kg			WG542654	06/28/11 10:05
Phenanthrene	< .006	mg/kg			WG542654	06/28/11 10:05
Pyrene	< .006	mg/kg			WG542654	06/28/11 10:05
2-Fluorobiphenyl		% Rec.	90.43	21-120	WG542654	06/28/11 10:05
Nitrobenzene-d5		% Rec.	73.35	33-114	WG542654	06/28/11 10:05
p-Terphenyl-d14		% Rec.	88.84	18-142	WG542654	06/28/11 10:05
Specific Conductance	0.990	umhos/cm			WG542673	06/27/11 16:32
Arsenic	< 1	mg/kg			WG542699	06/26/11 23:16
Barium	< .25	mg/kg			WG542699	06/26/11 23:16
Cadmium	< .25	mg/kg			WG542699	06/26/11 23:16
Chromium	< .5	mg/kg			WG542699	06/26/11 23:16
Copper	< 1	mg/kg			WG542699	06/26/11 23:16
Nickel	< 1	mg/kg			WG542699	06/26/11 23:16
Selenium	< 1	mg/kg			WG542699	06/26/11 23:16
Silver	< .5	mg/kg			WG542699	06/26/11 23:16
Zinc	< 1.5	mg/kg			WG542699	06/26/11 23:16
Lead	< .25	mg/kg			WG542699	06/27/11 23:46
Chromium,Hexavalent	< 2	mg/kg			WG542576	06/28/11 15:01

* 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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Chris Hines
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Est. 1970

June 29, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
pH	5.20	su			WG542691	06/28/11 15:55

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Mercury	mg/kg	0	0	0	20	L522913-11	WG542665
ORP	mV	170.	170.	1.17	20	L522662-04	WG542685
ORP	mV	160.	160.	2.53	20	L522791-02	WG542685
Arsenic	mg/kg	6.00	5.80	4.05	20	L523056-01	WG542808
Specific Conductance	umhos/cm	1100	920.	17.8	20	L522685-01	WG542673
Specific Conductance	umhos/cm	1300	1600	20.7*	20	L522687-57	WG542673
Arsenic	mg/kg	3.40	2.60	27.5*	20	L523054-01	WG542699
Barium	mg/kg	2500	2300	7.53	20	L523054-01	WG542699
Cadmium	mg/kg	1.10	0.900	18.2	20	L523054-01	WG542699
Chromium	mg/kg	12.0	9.20	24.8*	20	L523054-01	WG542699
Copper	mg/kg	18.0	11.0	47.8*	20	L523054-01	WG542699
Lead	mg/kg	13.0	8.60	39.3*	20	L523054-01	WG542699
Nickel	mg/kg	9.10	5.70	45.6*	20	L523054-01	WG542699
Selenium	mg/kg	4.00	2.80	36.0*	20	L523054-01	WG542699
Silver	mg/kg	0	0	0	20	L523054-01	WG542699
Zinc	mg/kg	38.0	31.0	19.5	20	L523054-01	WG542699
Chromium,Hexavalent	mg/kg	0	0	0	20	L522662-04	WG542576
Chromium,Hexavalent	mg/kg	0	0	0	20	L523059-01	WG542576
pH	su	6.20	6.20	0	1	L522301-01	WG542691
pH	su	8.10	8.10	0	1	L523054-01	WG542691

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0519	104.	76-113	WG542709
Ethylbenzene	mg/kg	.05	0.0516	103.	78-115	WG542709
Toluene	mg/kg	.05	0.0510	102.	76-114	WG542709
Total Xylene	mg/kg	.15	0.158	105.	81-118	WG542709
a,a,a-Trifluorotoluene(PID)				103.4	54-144	WG542709
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.08	92.4	67-135	WG542709
a,a,a-Trifluorotoluene(FID)				103.4	59-128	WG542709
Mercury	mg/kg	8.77	9.88	113.	71.6-127.7	WG542665
ORP	mV	229	220.	96.1	95.6-104.37	WG542685
Arsenic	mg/kg	192	173.	90.1	78.6-120.8	WG542808

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June 29, 2011

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
TPH (GC/FID) High Fraction	ppm	60		53.1	88.4	50-150	WG542641
o-Terphenyl					76.34	50-150	WG542641
1-Methylnaphthalene	mg/kg	.033		0.0282	85.3	41-110	WG542654
2-Chloronaphthalene	mg/kg	.033		0.0281	85.3	43-109	WG542654
2-Methylnaphthalene	mg/kg	.033		0.0252	76.5	38-104	WG542654
Acenaphthene	mg/kg	.033		0.0273	82.7	48-103	WG542654
Acenaphthylene	mg/kg	.033		0.0269	81.4	43-106	WG542654
Anthracene	mg/kg	.033		0.0298	90.4	51-110	WG542654
Benzo(a)anthracene	mg/kg	.033		0.0239	72.4	38-126	WG542654
Benzo(a)pyrene	mg/kg	.033		0.0321	97.4	47-118	WG542654
Benzo(b)fluoranthene	mg/kg	.033		0.0309	93.7	47-118	WG542654
Benzo(g,h,i)perylene	mg/kg	.033		0.0285	86.5	40-125	WG542654
Benzo(k)fluoranthene	mg/kg	.033		0.0295	89.5	45-121	WG542654
Chrysene	mg/kg	.033		0.0321	97.1	35-135	WG542654
Dibenz(a,h)anthracene	mg/kg	.033		0.0276	83.8	41-124	WG542654
Fluoranthene	mg/kg	.033		0.0303	91.7	50-114	WG542654
Fluorene	mg/kg	.033		0.0283	85.8	49-109	WG542654
Indeno(1,2,3-cd)pyrene	mg/kg	.033		0.0287	87.1	40-126	WG542654
Naphthalene	mg/kg	.033		0.0243	73.5	36-100	WG542654
Phenanthrene	mg/kg	.033		0.0258	78.2	46-108	WG542654
Pyrene	mg/kg	.033		0.0305	92.5	30-136	WG542654
2-Fluorobiphenyl					79.19	33-114	WG542654
Nitrobenzene-d5					66.51	21-120	WG542654
p-Terphenyl-d14					80.88	18-142	WG542654
Specific Conductance	umhos/cm	445		440.	98.9	85-115	WG542673
Arsenic	mg/kg	192		164.	85.4	78.6-120.8	WG542699
Barium	mg/kg	420		348.	82.9	78.8-121.4	WG542699
Cadmium	mg/kg	70.1		58.8	83.9	78.5-121.5	WG542699
Chromium	mg/kg	168		143.	85.1	80.4-120.2	WG542699
Copper	mg/kg	122		107.	87.7	81.6-119.7	WG542699
Lead	mg/kg	113		98.8	87.4	77.3-122.1	WG542699
Nickel	mg/kg	74.1		66.1	89.2	78.8-121.2	WG542699
Selenium	mg/kg	176		163.	92.6	75.6-125.0	WG542699
Silver	mg/kg	115		99.0	86.1	66-133.9	WG542699
Zinc	mg/kg	437		374.	85.6	78.5-121.7	WG542699
Chromium,Hexavalent	mg/kg	132		104.	78.8	50-150	WG542576
pH	su	6.3		6.30	100.	97.98-102.02	WG542691

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0544	0.0519	109.	76-113	4.67	20	WG542709
Ethylbenzene	mg/kg	0.0540	0.0516	108.	78-115	4.61	20	WG542709
Toluene	mg/kg	0.0532	0.0510	106.	76-114	4.15	20	WG542709
Total Xylene	mg/kg	0.165	0.158	110.	81-118	4.28	20	WG542709
a,a,a-Trifluorotoluene(PID)				105.4	54-144			WG542709
TPH (GC/FID) Low Fraction	mg/kg	5.17	5.08	94.0	67-135	1.84	20	WG542709
a,a,a-Trifluorotoluene(FID)				104.4	59-128			WG542709

* Performance of this Analyte is outside of established criteria.

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June 29, 2011

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG542685
TPH (GC/FID) High Fraction	ppm	52.2	53.1	87.0	50-150	1.69	25	WG542641
o-Terphenyl				75.43	50-150			WG542641
1-Methylnaphthalene	mg/kg	0.0284	0.0282	86.0	41-110	1.01	24	WG542654
2-Chloronaphthalene	mg/kg	0.0283	0.0281	86.0	43-109	0.502	21	WG542654
2-Methylnaphthalene	mg/kg	0.0252	0.0252	76.0	38-104	0.191	24	WG542654
Acenaphthene	mg/kg	0.0282	0.0273	85.0	48-103	3.09	20	WG542654
Acenaphthylene	mg/kg	0.0275	0.0269	83.0	43-106	2.32	20	WG542654
Anthracene	mg/kg	0.0308	0.0298	93.0	51-110	3.23	22	WG542654
Benzo(a)anthracene	mg/kg	0.0241	0.0239	73.0	38-126	0.762	20	WG542654
Benzo(a)pyrene	mg/kg	0.0284	0.0321	86.0	47-118	12.5	20	WG542654
Benzo(b)fluoranthene	mg/kg	0.0320	0.0309	97.0	47-118	3.27	29	WG542654
Benzo(g,h,i)perylene	mg/kg	0.0298	0.0285	90.0	40-125	4.39	20	WG542654
Benzo(k)fluoranthene	mg/kg	0.0326	0.0295	99.0	45-121	9.97	31	WG542654
Chrysene	mg/kg	0.0342	0.0321	104.	35-135	6.60	20	WG542654
Dibenz(a,h)anthracene	mg/kg	0.0292	0.0276	88.0	41-124	5.62	20	WG542654
Fluoranthene	mg/kg	0.0302	0.0303	91.0	50-114	0.373	20	WG542654
Fluorene	mg/kg	0.0280	0.0283	85.0	49-109	1.28	19	WG542654
Indeno(1,2,3-cd)pyrene	mg/kg	0.0295	0.0287	89.0	40-126	2.50	20	WG542654
Naphthalene	mg/kg	0.0248	0.0243	75.0	36-100	2.31	24	WG542654
Phenanthrene	mg/kg	0.0254	0.0258	77.0	46-108	1.41	21	WG542654
Pyrene	mg/kg	0.0305	0.0305	92.0	30-136	0.180	20	WG542654
2-Fluorobiphenyl				84.60	33-114			WG542654
Nitrobenzene-d5				70.20	21-120			WG542654
p-Terphenyl-d14				85.02	18-142			WG542654
Specific Conductance	umhos/	440.	440.	99.0	85-115	0	20	WG542673
Chromium,Hexavalent	mg/kg	108.	104.	82.0	50-150	3.77	20	WG542576
pH	su	6.30	6.30	100.	97.98-102.02	0	20	WG542691

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.228	0.00260	.05	90.2	32-137	L523059-01	WG542709
Ethylbenzene	mg/kg	0.211	0	.05	84.6	10-150	L523059-01	WG542709
Toluene	mg/kg	0.221	0	.05	88.6	20-142	L523059-01	WG542709
Total Xylene	mg/kg	0.654	0	.15	87.2	16-141	L523059-01	WG542709
a,a,a-Trifluorotoluene(PID)					102.6	54-144		WG542709
TPH (GC/FID) Low Fraction	mg/kg	20.4	0	5.5	74.1	55-109	L523059-01	WG542709
a,a,a-Trifluorotoluene(FID)					98.04	59-128		WG542709
Mercury	mg/kg	0.276	0	.25	110.	70-130	L522913-11	WG542665
Arsenic	mg/kg	50.6	5.80	50	89.6	75-125	L523056-01	WG542808
Arsenic	mg/kg	53.2	2.60	50	101.	75-125	L523054-01	WG542699

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Quality Assurance Report
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L523054

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Tax I.D. 62-0814289

Est. 1970

June 29, 2011

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Barium	mg/kg	2550	2300	50	500.*	75-125	L523054-01	WG542699
Cadmium	mg/kg	46.2	0.900	50	90.6	75-125	L523054-01	WG542699
Chromium	mg/kg	57.6	9.20	50	96.8	75-125	L523054-01	WG542699
Copper	mg/kg	62.5	11.0	50	103.	75-125	L523054-01	WG542699
Lead	mg/kg	62.0	8.60	50	107.	75-125	L523054-01	WG542699
Nickel	mg/kg	53.9	5.70	50	96.4	75-125	L523054-01	WG542699
Selenium	mg/kg	52.4	2.80	50	99.2	75-125	L523054-01	WG542699
Silver	mg/kg	47.2	0	50	94.4	75-125	L523054-01	WG542699
Zinc	mg/kg	85.6	31.0	50	109.	75-125	L523054-01	WG542699
1-Methylnaphthalene	mg/kg	0.0260	0	.033	78.9	19-131	L522275-03	WG542654
2-Chloronaphthalene	mg/kg	0.0259	0	.033	78.6	38-117	L522275-03	WG542654
2-Methylnaphthalene	mg/kg	0.0245	0	.033	74.4	18-125	L522275-03	WG542654
Acenaphthene	mg/kg	0.0280	0	.033	85.0	31-120	L522275-03	WG542654
Acenaphthylene	mg/kg	0.0271	0	.033	82.2	34-116	L522275-03	WG542654
Anthracene	mg/kg	0.0277	0	.033	83.9	32-131	L522275-03	WG542654
Benzo(a)anthracene	mg/kg	0.0243	0	.033	73.6	32-131	L522275-03	WG542654
Benzo(a)pyrene	mg/kg	0.0351	0	.033	106.	28-130	L522275-03	WG542654
Benzo(b)fluoranthene	mg/kg	0.0348	0	.033	105.	37-130	L522275-03	WG542654
Benzo(g,h,i)perylene	mg/kg	0.0117	0	.033	35.5	10-134	L522275-03	WG542654
Benzo(k)fluoranthene	mg/kg	0.0496	0	.033	150.*	31-129	L522275-03	WG542654
Chrysene	mg/kg	0.0326	0	.033	98.7	25-137	L522275-03	WG542654
Dibenz(a,h)anthracene	mg/kg	0.0149	0	.033	45.3	20-134	L522275-03	WG542654
Fluoranthene	mg/kg	0.0307	0	.033	93.1	27-138	L522275-03	WG542654
Fluorene	mg/kg	0.0295	0	.033	89.4	26-136	L522275-03	WG542654
Indeno(1,2,3-cd)pyrene	mg/kg	0.0138	0	.033	41.8	16-135	L522275-03	WG542654
Naphthalene	mg/kg	0.0235	0	.033	71.2	22-121	L522275-03	WG542654
Phenanthrene	mg/kg	0.0273	0	.033	82.8	27-133	L522275-03	WG542654
Pyrene	mg/kg	0.0429	0	.033	130.	22-133	L522275-03	WG542654
2-Fluorobiphenyl					77.68	33-114		WG542654
Nitrobenzene-d5					63.62	21-120		WG542654
p-Terphenyl-d14					115.4	18-142		WG542654
Chromium,Hexavalent	mg/kg	7.08	0	20	35.4*	50-150	L522655-01	WG542576

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.245	0.228	96.9	32-137	7.04	39	L523059-01	WG542709
Ethylbenzene	mg/kg	0.218	0.211	87.4	10-150	3.23	44	L523059-01	WG542709
Toluene	mg/kg	0.231	0.221	92.2	20-142	4.02	42	L523059-01	WG542709
Total Xylene	mg/kg	0.669	0.654	89.2	16-141	2.25	46	L523059-01	WG542709
a,a,a-Trifluorotoluene(PID)				103.4	54-144				WG542709
TPH (GC/FID) Low Fraction	mg/kg	17.3	20.4	62.9	55-109	16.4	20	L523059-01	WG542709
a,a,a-Trifluorotoluene(FID)				98.27	59-128				WG542709
Mercury	mg/kg	0.259	0.276	104.	70-130	6.36	20	L522913-11	WG542665
Arsenic	mg/kg	51.0	50.6	90.4	75-125	0.787	20	L523056-01	WG542808
Arsenic	mg/kg	51.9	53.2	98.6	75-125	2.47	20	L523054-01	WG542699
Barium	mg/kg	2760	2550	920.*	75-125	7.91	20	L523054-01	WG542699
Cadmium	mg/kg	46.1	46.2	90.4	75-125	0.217	20	L523054-01	WG542699
Chromium	mg/kg	55.7	57.6	93.0	75-125	3.35	20	L523054-01	WG542699

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L523054

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Copper	mg/kg	61.9	62.5	102.	75-125	0.965	20	L523054-01	WG542699
Lead	mg/kg	58.2	62.0	99.2	75-125	6.32	20	L523054-01	WG542699
Nickel	mg/kg	52.0	53.9	92.6	75-125	3.59	20	L523054-01	WG542699
Selenium	mg/kg	51.7	52.4	97.8	75-125	1.34	20	L523054-01	WG542699
Silver	mg/kg	46.6	47.2	93.2	75-125	1.28	20	L523054-01	WG542699
Zinc	mg/kg	85.0	85.6	108.	75-125	0.703	20	L523054-01	WG542699
1-Methylnaphthalene	mg/kg	0.0271	0.0260	82.2	19-131	4.07	30	L522275-03	WG542654
2-Chloronaphthalene	mg/kg	0.0272	0.0259	82.5	38-117	4.78	26	L522275-03	WG542654
2-Methylnaphthalene	mg/kg	0.0251	0.0245	75.9	18-125	2.13	29	L522275-03	WG542654
Acenaphthene	mg/kg	0.0289	0.0280	87.5	31-120	2.93	30	L522275-03	WG542654
Acenaphthylene	mg/kg	0.0283	0.0271	85.6	34-116	4.06	29	L522275-03	WG542654
Anthracene	mg/kg	0.0294	0.0277	89.1	32-131	6.03	26	L522275-03	WG542654
Benzo(a)anthracene	mg/kg	0.0260	0.0243	78.9	32-131	6.94	31	L522275-03	WG542654
Benzo(a)pyrene	mg/kg	0.0366	0.0351	111.	28-130	4.38	28	L522275-03	WG542654
Benzo(b)fluoranthene	mg/kg	0.0355	0.0348	107.	37-130	1.91	41	L522275-03	WG542654
Benzo(g,h,i)perylene	mg/kg	0.0154	0.0117	46.5	10-134	26.9*	26	L522275-03	WG542654
Benzo(k)fluoranthene	mg/kg	0.0573	0.0496	174.*	31-129	14.4	42	L522275-03	WG542654
Chrysene	mg/kg	0.0323	0.0326	97.9	25-137	0.811	22	L522275-03	WG542654
Dibenz(a,h)anthracene	mg/kg	0.0185	0.0149	56.1	20-134	21.3	25	L522275-03	WG542654
Fluoranthene	mg/kg	0.0317	0.0307	96.1	27-138	3.16	35	L522275-03	WG542654
Fluorene	mg/kg	0.0303	0.0295	91.7	26-136	2.56	30	L522275-03	WG542654
Indeno(1,2,3-cd)pyrene	mg/kg	0.0173	0.0138	52.4	16-135	22.6	26	L522275-03	WG542654
Naphthalene	mg/kg	0.0246	0.0235	74.5	22-121	4.62	30	L522275-03	WG542654
Phenanthrene	mg/kg	0.0287	0.0273	86.9	27-133	4.87	36	L522275-03	WG542654
Pyrene	mg/kg	0.0543	0.0429	165.*	22-133	23.6	33	L522275-03	WG542654
2-Fluorobiphenyl				81.57	33-114				WG542654
Nitrobenzene-d5				70.34	21-120				WG542654
p-Terphenyl-d14				150.2*	18-142				WG542654
Chromium,Hexavalent	mg/kg	0.0400	7.08	0.200*	50-150	198.*	20	L522655-01	WG542576

Batch number /Run number / Sample number cross reference

WG542709: R1739949: L523054-01
WG542665: R1740409: L523054-01
WG542685: R1741532: L523054-01
WG542808: R1742354: L523054-02 03 04 05
WG542641: R1742611: L523054-01
WG542654: R1742729: L523054-01
WG542673: R1742778: L523054-01
WG542699: R1742929: L523054-01
WG542576: R1743452: L523054-01
WG542691: R1743570: L523054-01
WG542807: R1743609: L523054-01

* * 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.