

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			0.17	85	100	175	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000		(<12)	(6-9)	0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
				TPH (total volatile and extractable petroleum hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Benzo(A)pyrene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-C,D)pyrene	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
PL28SW	08/23/11	Cuttings		210.67	0.67	210	0.01	0.038	0.0037	0.032	0.008	0.026	BDL	BDL	BDL	BDL	0.0063	BDL	BDL	0.026	BDL	0.1	0.0065	2	30	8.7	1.9	5500	0.53	7.2	BDL	20	6.7	0.025	6	BDL	BDL	33



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

Report Summary

Monday August 29, 2011

Report Number: L532660

Samples Received: 08/24/11

Client Project:

Description: PL28SW Cuttings

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

August 29, 2011

Date Received : August 24, 2011
Description : PL28SW Cuttings
Sample ID : PL28SW-CUT-082311 12-14 IN
Collected By : Brennen Graff
Collection Date : 08/23/11 08:36

ESC Sample # : L532660-01

Site ID : PL28SW

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	10.	mg/kg	3060A/7196A	08/26/11	5
Chromium, Trivalent	7.2	10.	mg/kg	Calc.	08/25/11	1
ORP	90.		mV	2580	08/26/11	1
pH	8.7		su	9045D	08/25/11	1
Sodium Adsorption Ratio	30.			Calc.	08/26/11	1
Specific Conductance	2000		umhos/cm	9050AMod	08/25/11	1
Mercury	0.025	0.020	mg/kg	7471	08/27/11	1
Arsenic	1.9	1.0	mg/kg	6010B	08/25/11	1
Barium	5500	0.50	mg/kg	6010B	08/25/11	2
Cadmium	0.53	0.25	mg/kg	6010B	08/25/11	1
Chromium	7.2	0.50	mg/kg	6010B	08/25/11	1
Copper	20.	1.0	mg/kg	6010B	08/25/11	1
Lead	6.7	0.25	mg/kg	6010B	08/25/11	1
Nickel	6.0	1.0	mg/kg	6010B	08/25/11	1
Selenium	BDL	1.0	mg/kg	6010B	08/25/11	1
Silver	BDL	0.50	mg/kg	6010B	08/25/11	1
Zinc	33.	1.5	mg/kg	6010B	08/25/11	1
Benzene	0.010	0.0025	mg/kg	8021/8015	08/25/11	5
Toluene	0.038	0.025	mg/kg	8021/8015	08/25/11	5
Ethylbenzene	0.0037	0.0025	mg/kg	8021/8015	08/25/11	5
Total Xylene	0.032	0.0075	mg/kg	8021/8015	08/25/11	5
TPH (GC/FID) Low Fraction	0.67	0.50	mg/kg	GRO	08/25/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	8021/8015	08/25/11	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	08/25/11	5
TPH (GC/FID) High Fraction	210	4.0	mg/kg	3546/DRO	08/27/11	1
Surrogate recovery(%)						
o-Terphenyl	73.0		% Rec.	3546/DRO	08/27/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.026	0.0060	mg/kg	8270C-SIM	08/26/11	1
Acenaphthene	0.0084	0.0060	mg/kg	8270C-SIM	08/26/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L532660-01 (CR6) - diluted due to cloudy once acid and color reagent added

L532660-01 (PH) - 8.7@22.3c



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August 29, 2011

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Description : PL28SW Cuttings
Sample ID : PL28SW-CUT-082311 12-14 IN
Collected By : Brennen Graff
Collection Date : 08/23/11 08:36

ESC Sample # : L532660-01

Site ID : PL28SW

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Chrysene	0.0063	0.0060	mg/kg	8270C-SIM	08/26/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Fluorene	0.026	0.0060	mg/kg	8270C-SIM	08/26/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Naphthalene	0.10	0.0060	mg/kg	8270C-SIM	08/26/11	1
Phenanthrene	0.059	0.0060	mg/kg	8270C-SIM	08/26/11	1
Pyrene	0.0065	0.0060	mg/kg	8270C-SIM	08/26/11	1
1-Methylnaphthalene	0.099	0.0060	mg/kg	8270C-SIM	08/26/11	1
2-Methylnaphthalene	0.17	0.0060	mg/kg	8270C-SIM	08/26/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	08/26/11	1
Surrogate Recovery						
Nitrobenzene-d5	139.		% Rec.	8270C-SIM	08/26/11	1
2-Fluorobiphenyl	57.9		% Rec.	8270C-SIM	08/26/11	1
p-Terphenyl-d14	55.1		% Rec.	8270C-SIM	08/26/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/29/11 15:52 Printed: 08/29/11 15:52

L532660-01 (CR6) - diluted due to cloudy once acid and color reagent added

L532660-01 (PH) - 8.7@22.3c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L532660-01	WG552031	SAMP	Anthracene	R1831152	J3
	WG552031	SAMP	Acenaphthylene	R1831152	J3
	WG552031	SAMP	Fluorene	R1831152	J3
	WG552031	SAMP	Indeno(1,2,3-cd)pyrene	R1831152	J3
	WG552031	SAMP	Phenanthrene	R1831152	J3
	WG552031	SAMP	2-Methylnaphthalene	R1831152	J3
	WG552031	SAMP	2-Chloronaphthalene	R1831152	J3
	WG552040	SAMP	Chromium, Trivalent	R1830193	J
	WG551502	SAMP	Chromium, Hexavalent	R1831414	O

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
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.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
08/29/11 at 15:52:49

TSR Signing Reports: 358
R5 - Desired TAT

If COC says TPH, then please log for GRO and DRO.

Sample: L532660-01 Account: ENCANACO Received: 08/24/11 09:00 Due Date: 08/31/11 00:00 RPT Date: 08/29/11 15:52



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Quality Assurance Report
Level II

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August 29, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
pH	5.60	su			WG552068	08/25/11 11:00
Specific Conductance	1.40	umhos/cm			WG552083	08/25/11 15:59
Arsenic	< 1	mg/kg			WG552040	08/25/11 22:26
Barium	< .25	mg/kg			WG552040	08/25/11 22:26
Cadmium	< .25	mg/kg			WG552040	08/25/11 22:26
Chromium	< .5	mg/kg			WG552040	08/25/11 22:26
Copper	< 1	mg/kg			WG552040	08/25/11 22:26
Lead	< .25	mg/kg			WG552040	08/25/11 22:26
Nickel	< 1	mg/kg			WG552040	08/25/11 22:26
Selenium	< 1	mg/kg			WG552040	08/25/11 22:26
Silver	< .5	mg/kg			WG552040	08/25/11 22:26
Zinc	< 1.5	mg/kg			WG552040	08/25/11 22:26
1-Methylnaphthalene	< .006	mg/kg			WG552031	08/26/11 10:42
2-Chloronaphthalene	< .006	mg/kg			WG552031	08/26/11 10:42
2-Methylnaphthalene	< .006	mg/kg			WG552031	08/26/11 10:42
Acenaphthene	< .006	mg/kg			WG552031	08/26/11 10:42
Acenaphthylene	< .006	mg/kg			WG552031	08/26/11 10:42
Anthracene	< .006	mg/kg			WG552031	08/26/11 10:42
Benzo(a)anthracene	< .006	mg/kg			WG552031	08/26/11 10:42
Benzo(a)pyrene	< .006	mg/kg			WG552031	08/26/11 10:42
Benzo(b)fluoranthene	< .006	mg/kg			WG552031	08/26/11 10:42
Benzo(g,h,i)perylene	< .006	mg/kg			WG552031	08/26/11 10:42
Benzo(k)fluoranthene	< .006	mg/kg			WG552031	08/26/11 10:42
Chrysene	< .006	mg/kg			WG552031	08/26/11 10:42
Dibenz(a,h)anthracene	< .006	mg/kg			WG552031	08/26/11 10:42
Fluoranthene	< .006	mg/kg			WG552031	08/26/11 10:42
Fluorene	< .006	mg/kg			WG552031	08/26/11 10:42
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG552031	08/26/11 10:42
Naphthalene	< .006	mg/kg			WG552031	08/26/11 10:42
Phenanthrene	< .006	mg/kg			WG552031	08/26/11 10:42
Pyrene	< .006	mg/kg			WG552031	08/26/11 10:42
2-Fluorobiphenyl		% Rec.	85.07	34-129	WG552031	08/26/11 10:42
Nitrobenzene-d5		% Rec.	75.78	14-141	WG552031	08/26/11 10:42
p-Terphenyl-d14		% Rec.	87.04	25-139	WG552031	08/26/11 10:42
Chromium,Hexavalent	< 2	mg/kg			WG551502	08/26/11 13:46
Mercury	< .02	mg/kg			WG552277	08/27/11 09:43
TPH (GC/FID) High Fraction	< 4	ppm			WG552120	08/26/11 23:44
o-Terphenyl		% Rec.	69.06	50-150	WG552120	08/26/11 23:44
Benzene	< .0005	mg/kg			WG552102	08/25/11 14:15
Ethylbenzene	< .0005	mg/kg			WG552102	08/25/11 14:15
Toluene	< .005	mg/kg			WG552102	08/25/11 14:15
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG552102	08/25/11 14:15
Total Xylene	< .0015	mg/kg			WG552102	08/25/11 14:15
a,a,a-Trifluorotoluene(FID)		% Rec.	96.69	59-128	WG552102	08/25/11 14:15
a,a,a-Trifluorotoluene(PID)		% Rec.	101.9	54-144	WG552102	08/25/11 14:15

* 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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August 29, 2011

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
			Duplicate				
pH	su	2.90	2.90	0	1	L532291-01	WG552068
pH	su	8.00	7.50	6.45*	1	L532701-01	WG552068
Specific Conductance	umhos/cm	260.	270.	5.60	20	L532060-01	WG552083
Specific Conductance	umhos/cm	2300	2000	14.3	20	L532660-01	WG552083
Arsenic	mg/kg	3.90	3.90	0.772	20	L532639-02	WG552040
Barium	mg/kg	72.0	81.0	11.2	20	L532639-02	WG552040
Cadmium	mg/kg	0.500	0.500	0.401	20	L532639-02	WG552040
Chromium	mg/kg	16.0	16.0	2.47	20	L532639-02	WG552040
Copper	mg/kg	170.	140.	18.8	20	L532639-02	WG552040
Lead	mg/kg	28.0	27.0	2.92	20	L532639-02	WG552040
Nickel	mg/kg	15.0	16.0	7.79	20	L532639-02	WG552040
Selenium	mg/kg	0	0	0	20	L532639-02	WG552040
Silver	mg/kg	0	0	0	20	L532639-02	WG552040
Zinc	mg/kg	61.0	64.0	4.15	20	L532639-02	WG552040
Arsenic	mg/kg	4.10	3.90	4.76	20	L532639-02	WG552040
Barium	mg/kg	74.0	81.0	8.36	20	L532639-02	WG552040
Cadmium	mg/kg	0.500	0.500	0.803	20	L532639-02	WG552040
Chromium	mg/kg	17.0	16.0	4.88	20	L532639-02	WG552040
Copper	mg/kg	170.	140.	20.5*	20	L532639-02	WG552040
Lead	mg/kg	29.0	27.0	5.76	20	L532639-02	WG552040
Nickel	mg/kg	15.0	16.0	5.13	20	L532639-02	WG552040
Selenium	mg/kg	0	0	0	20	L532639-02	WG552040
Silver	mg/kg	0	0	0	20	L532639-02	WG552040
Zinc	mg/kg	63.0	64.0	1.57	20	L532639-02	WG552040
Chromium,Hexavalent	mg/kg	0	0	0	20	L532256-04	WG551502
Chromium,Hexavalent	mg/kg	0	0	0	20	L532701-01	WG551502
ORP	mV	18.0	23.0	24.4*	20	L532897-01	WG552450
Mercury	mg/kg	0.0440	0	NA	20	L532760-02	WG552277

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
pH	su	9.04	8.90	98.5	98-101	WG552068
Specific Conductance	umhos/cm	427	430.	101.	85-115	WG552083
Arsenic	mg/kg	92.6	85.6	92.4	82.9-117	WG552040
Barium	mg/kg	169	161.	95.3	82.8-117	WG552040
Cadmium	mg/kg	61.8	57.0	92.2	83.3-117	WG552040
Chromium	mg/kg	71.3	68.9	96.6	81.8-118	WG552040
Copper	mg/kg	81.2	83.3	103.	83.9-116	WG552040
Lead	mg/kg	92.4	89.1	96.4	83.3-117	WG552040
Nickel	mg/kg	59.1	57.2	96.8	83.8-116	WG552040
Selenium	mg/kg	89.5	83.6	93.4	79-121	WG552040
Silver	mg/kg	34.4	33.1	96.2	66.3-134	WG552040
Zinc	mg/kg	141	129.	91.5	80.9-119	WG552040

* 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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L532660

August 29, 2011

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1-Methylnaphthalene	mg/kg	.033	0.0224	68.0	48-113	WG552031
2-Chloronaphthalene	mg/kg	.033	0.0210	63.5	51-114	WG552031
2-Methylnaphthalene	mg/kg	.033	0.0202	61.1	44-109	WG552031
Acenaphthene	mg/kg	.033	0.0228	69.2	52-108	WG552031
Acenaphthylene	mg/kg	.033	0.0213	64.4	51-110	WG552031
Anthracene	mg/kg	.033	0.0238	72.1	58-120	WG552031
Benzo(a)anthracene	mg/kg	.033	0.0213	64.6	54-110	WG552031
Benzo(a)pyrene	mg/kg	.033	0.0246	74.6	56-118	WG552031
Benzo(b)fluoranthene	mg/kg	.033	0.0233	70.6	55-114	WG552031
Benzo(g,h,i)perylene	mg/kg	.033	0.0250	75.7	48-130	WG552031
Benzo(k)fluoranthene	mg/kg	.033	0.0264	80.1	55-122	WG552031
Chrysene	mg/kg	.033	0.0242	73.3	57-118	WG552031
Dibenz(a,h)anthracene	mg/kg	.033	0.0255	77.3	53-122	WG552031
Fluoranthene	mg/kg	.033	0.0257	78.0	58-118	WG552031
Fluorene	mg/kg	.033	0.0225	68.3	54-109	WG552031
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0249	75.4	51-125	WG552031
Naphthalene	mg/kg	.033	0.0193	58.6	45-105	WG552031
Phenanthrene	mg/kg	.033	0.0214	64.7	53-114	WG552031
Pyrene	mg/kg	.033	0.0222	67.3	53-121	WG552031
2-Fluorobiphenyl				70.05	34-129	WG552031
Nitrobenzene-d5				55.92	14-141	WG552031
p-Terphenyl-d14				71.58	25-139	WG552031
Chromium, Hexavalent	mg/kg	132	104.	78.8	50-150	WG551502
ORP	mV	229	220.	96.1	95.6-104.37	WG552450
Mercury	mg/kg	3.77	3.84	102.	71.6-128	WG552277
TPH (GC/FID) High Fraction	ppm	60	51.5	85.8	50-150	WG552120
o-Terphenyl				77.73	50-150	WG552120
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.78	123.	67-135	WG552102
a,a,a-Trifluorotoluene(FID)				97.47	59-128	WG552102
Benzene	mg/kg	.05	0.0487	97.5	76-113	WG552102
Ethylbenzene	mg/kg	.05	0.0517	103.	78-115	WG552102
Toluene	mg/kg	.05	0.0534	107.	76-114	WG552102
Total Xylene	mg/kg	.15	0.156	104.	81-118	WG552102
a,a,a-Trifluorotoluene(PID)				100.3	54-144	WG552102

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
pH	su	8.90	8.90	98.0	98-101	0	20	WG552068
Specific Conductance	umhos/	430.	430.	101.	85-115	0	20	WG552083
1-Methylnaphthalene	mg/kg	0.0277	0.0224	84.0	48-113	21.1	24	WG552031
2-Chloronaphthalene	mg/kg	0.0278	0.0210	84.0	51-114	27.9*	24	WG552031
2-Methylnaphthalene	mg/kg	0.0258	0.0202	78.0	44-109	24.7*	24	WG552031
Acenaphthene	mg/kg	0.0263	0.0228	80.0	52-108	14.0	22	WG552031

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Analyte	Units	Laboratory Control			Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref		%Rec					
Acenaphthylene	mg/kg	0.0269	0.0213		81.0	51-110	23.3*	21		WG552031
Anthracene	mg/kg	0.0301	0.0238		91.0	58-120	23.3*	20		WG552031
Benzo(a)anthracene	mg/kg	0.0256	0.0213		78.0	54-110	18.3	22		WG552031
Benzo(a)pyrene	mg/kg	0.0297	0.0246		90.0	56-118	18.6	21		WG552031
Benzo(b)fluoranthene	mg/kg	0.0282	0.0233		85.0	55-114	19.0	20		WG552031
Benzo(g,h,i)perylene	mg/kg	0.0299	0.0250		91.0	48-130	18.0	20		WG552031
Benzo(k)fluoranthene	mg/kg	0.0314	0.0264		95.0	55-122	17.1	25		WG552031
Chrysene	mg/kg	0.0291	0.0242		88.0	57-118	18.5	20		WG552031
Dibenz(a,h)anthracene	mg/kg	0.0308	0.0255		93.0	53-122	18.8	20		WG552031
Fluoranthene	mg/kg	0.0313	0.0257		95.0	58-118	19.5	20		WG552031
Fluorene	mg/kg	0.0283	0.0225		86.0	54-109	22.6*	20		WG552031
Indeno(1,2,3-cd)pyrene	mg/kg	0.0309	0.0249		94.0	51-125	21.6*	21		WG552031
Naphthalene	mg/kg	0.0239	0.0193		72.0	45-105	21.2	24		WG552031
Phenanthrene	mg/kg	0.0285	0.0214		86.0	53-114	28.8*	20		WG552031
Pyrene	mg/kg	0.0268	0.0222		81.0	53-121	18.8	20		WG552031
2-Fluorobiphenyl					83.96	34-129				WG552031
Nitrobenzene-d5					70.88	14-141				WG552031
p-Terphenyl-d14					82.92	25-139				WG552031
Chromium, Hexavalent	mg/kg	110.	104.		83.0	50-150	5.61	20		WG551502
ORP	mV	220.	220.		96.0	95.6-104.37	0	20		WG552450
TPH (GC/FID) High Fraction	ppm	49.1	51.5		82.0	50-150	4.64	20		WG552120
o-Terphenyl					75.75	50-150				WG552120
TPH (GC/FID) Low Fraction	mg/kg	6.76	6.78		123.	67-135	0.420	20		WG552102
a,a,a-Trifluorotoluene(FID)					97.16	59-128				WG552102
Benzene	mg/kg	0.0469	0.0487		94.0	76-113	3.87	20		WG552102
Ethylbenzene	mg/kg	0.0481	0.0517		96.0	78-115	7.27	20		WG552102
Toluene	mg/kg	0.0495	0.0534		99.0	76-114	7.44	20		WG552102
Total Xylene	mg/kg	0.142	0.156		94.0	81-118	9.46	20		WG552102
a,a,a-Trifluorotoluene(PID)					98.95	54-144				WG552102

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Arsenic	mg/kg	46.2	3.90	50	84.6	75-125	L532639-02	WG552040
Barium	mg/kg	123.	81.0	50	84.0	75-125	L532639-02	WG552040
Cadmium	mg/kg	42.8	0.500	50	84.6	75-125	L532639-02	WG552040
Chromium	mg/kg	62.7	16.0	50	93.4	75-125	L532639-02	WG552040
Copper	mg/kg	175.	140.	50	70.0*	75-125	L532639-02	WG552040
Lead	mg/kg	87.2	27.0	50	120.	75-125	L532639-02	WG552040
Nickel	mg/kg	58.0	16.0	50	84.0	75-125	L532639-02	WG552040
Selenium	mg/kg	40.5	0	50	81.0	75-125	L532639-02	WG552040
Silver	mg/kg	46.3	0	50	92.6	75-125	L532639-02	WG552040
Zinc	mg/kg	116.	64.0	50	104.	75-125	L532639-02	WG552040
Chromium, Hexavalent	mg/kg	13.6	0	20	68.0	50-150	L532060-01	WG551502
1-Methylnaphthalene	mg/kg	0.0272	0	.033	82.6	25-155	L532613-01	WG552031
2-Chloronaphthalene	mg/kg	0.0269	0	.033	81.5	31-153	L532613-01	WG552031
2-Methylnaphthalene	mg/kg	0.0290	0	.033	87.8	22-172	L532613-01	WG552031

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Acenaphthene	mg/kg	0.0255	0	.033	77.4	43-133	L532613-01	WG552031
Acenaphthylene	mg/kg	0.0263	0	.033	79.6	42-146	L532613-01	WG552031
Anthracene	mg/kg	0.0247	0	.033	74.9	38-153	L532613-01	WG552031
Benzo(a)anthracene	mg/kg	0.0211	0	.033	64.0	31-142	L532613-01	WG552031
Benzo(a)pyrene	mg/kg	0.0230	0	.033	69.5	26-152	L532613-01	WG552031
Benzo(b)fluoranthene	mg/kg	0.0229	0	.033	69.4	10-188	L532613-01	WG552031
Benzo(g,h,i)perylene	mg/kg	0.0216	0	.033	65.4	10-176	L532613-01	WG552031
Benzo(k)fluoranthene	mg/kg	0.0242	0	.033	73.3	22-163	L532613-01	WG552031
Chrysene	mg/kg	0.0235	0	.033	71.2	26-146	L532613-01	WG552031
Dibenz(a,h)anthracene	mg/kg	0.0217	0	.033	65.7	10-160	L532613-01	WG552031
Fluoranthene	mg/kg	0.0270	0	.033	81.9	23-160	L532613-01	WG552031
Fluorene	mg/kg	0.0278	0	.033	84.1	44-143	L532613-01	WG552031
Indeno(1,2,3-cd)pyrene	mg/kg	0.0214	0	.033	64.8	10-157	L532613-01	WG552031
Naphthalene	mg/kg	0.0279	0	.033	84.4	22-156	L532613-01	WG552031
Phenanthrene	mg/kg	0.0263	0	.033	79.8	23-164	L532613-01	WG552031
Pyrene	mg/kg	0.0254	0	.033	77.0	12-170	L532613-01	WG552031
2-Fluorobiphenyl					79.51	34-129		WG552031
Nitrobenzene-d5					86.07	14-141		WG552031
p-Terphenyl-d14					69.36	25-139		WG552031
Mercury	mg/kg	0.281	0	.25	112.	70-130	L532760-02	WG552277
TPH (GC/FID) High Fraction	ppm	47.3	0.759	60	77.6	50-150	L532429-03	WG552120
o-Terphenyl					72.13	50-150		WG552120
Benzene	mg/kg	0.242	0.0100	.05	93.0	32-137	L532660-01	WG552102
Ethylbenzene	mg/kg	0.237	0.00370	.05	93.4	10-150	L532660-01	WG552102
Toluene	mg/kg	0.274	0.0380	.05	94.6	20-142	L532660-01	WG552102
Total Xylene	mg/kg	0.726	0.0320	.15	92.5	16-141	L532660-01	WG552102
a,a,a-Trifluorotoluene(PID)					99.65	54-144		WG552102
TPH (GC/FID) Low Fraction	mg/kg	25.6	0.670	5.5	90.7	55-109	L532660-01	WG552102
a,a,a-Trifluorotoluene(FID)					95.63	59-128		WG552102

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	50.4	46.2	93.0	75-125	8.70	20	L532639-02	WG552040
Barium	mg/kg	124.	123.	86.0	75-125	0.810	20	L532639-02	WG552040
Cadmium	mg/kg	45.6	42.8	90.2	75-125	6.33	20	L532639-02	WG552040
Chromium	mg/kg	67.4	62.7	103.	75-125	7.23	20	L532639-02	WG552040
Copper	mg/kg	204.	175.	128.*	75-125	15.3	20	L532639-02	WG552040
Lead	mg/kg	81.7	87.2	109.	75-125	6.51	20	L532639-02	WG552040
Nickel	mg/kg	62.4	58.0	92.8	75-125	7.31	20	L532639-02	WG552040
Selenium	mg/kg	44.1	40.5	88.2	75-125	8.51	20	L532639-02	WG552040
Silver	mg/kg	49.6	46.3	99.2	75-125	6.88	20	L532639-02	WG552040
Zinc	mg/kg	109.	116.	90.0	75-125	6.22	20	L532639-02	WG552040
Chromium, Hexavalent	mg/kg	13.8	13.6	69.0	50-150	1.46	20	L532060-01	WG551502
1-Methylnaphthalene	mg/kg	0.0283	0.0272	85.8	25-155	3.86	27	L532613-01	WG552031
2-Chloronaphthalene	mg/kg	0.0254	0.0269	77.1	31-153	5.59	22	L532613-01	WG552031
2-Methylnaphthalene	mg/kg	0.0312	0.0290	94.5	22-172	7.39	29	L532613-01	WG552031
Acenaphthene	mg/kg	0.0253	0.0255	76.6	43-133	1.07	26	L532613-01	WG552031
Acenaphthylene	mg/kg	0.0242	0.0263	73.5	42-146	8.06	22	L532613-01	WG552031

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Anthracene	mg/kg	0.0287	0.0247	86.9	38-153	14.8	27	L532613-01	WG552031
Benzo(a)anthracene	mg/kg	0.0203	0.0211	61.5	31-142	4.00	31	L532613-01	WG552031
Benzo(a)pyrene	mg/kg	0.0215	0.0230	65.3	26-152	6.30	32	L532613-01	WG552031
Benzo(b)fluoranthene	mg/kg	0.0213	0.0229	64.6	10-188	7.18	33	L532613-01	WG552031
Benzo(g,h,i)perylene	mg/kg	0.0207	0.0216	62.6	10-176	4.34	30	L532613-01	WG552031
Benzo(k)fluoranthene	mg/kg	0.0225	0.0242	68.3	22-163	7.08	29	L532613-01	WG552031
Chrysene	mg/kg	0.0229	0.0235	69.5	26-146	2.41	30	L532613-01	WG552031
Dibenz(a,h)anthracene	mg/kg	0.0199	0.0217	60.2	10-160	8.74	39	L532613-01	WG552031
Fluoranthene	mg/kg	0.0272	0.0270	82.4	23-160	0.622	22	L532613-01	WG552031
Fluorene	mg/kg	0.0269	0.0278	81.4	44-143	3.22	23	L532613-01	WG552031
Indeno(1,2,3-cd)pyrene	mg/kg	0.0205	0.0214	62.1	10-157	4.29	40	L532613-01	WG552031
Naphthalene	mg/kg	0.0267	0.0279	81.0	22-156	4.12	27	L532613-01	WG552031
Phenanthrene	mg/kg	0.0288	0.0263	87.3	23-164	9.03	25	L532613-01	WG552031
Pyrene	mg/kg	0.0266	0.0254	80.5	12-170	4.37	24	L532613-01	WG552031
2-Fluorobiphenyl				70.39	34-129				WG552031
Nitrobenzene-d5				49.44	14-141				WG552031
p-Terphenyl-d14				60.05	25-139				WG552031
Mercury	mg/kg	0.214	0.281	85.6	70-130	27.1*	20	L532760-02	WG552277
TPH (GC/FID) High Fraction	ppm	46.4	47.3	76.0	50-150	2.11	20	L532429-03	WG552120
o-Terphenyl				68.38	50-150				WG552120
Benzene	mg/kg	0.254	0.242	97.5	32-137	4.53	39	L532660-01	WG552102
Ethylbenzene	mg/kg	0.231	0.237	91.1	10-150	2.55	44	L532660-01	WG552102
Toluene	mg/kg	0.272	0.274	93.5	20-142	1.03	42	L532660-01	WG552102
Total Xylene	mg/kg	0.698	0.726	88.8	16-141	3.93	46	L532660-01	WG552102
a,a,a-Trifluorotoluene(PID)				99.54	54-144				WG552102
TPH (GC/FID) Low Fraction	mg/kg	24.5	25.6	86.6	55-109	4.56	20	L532660-01	WG552102
a,a,a-Trifluorotoluene(FID)				95.57	59-128				WG552102

Batch number /Run number / Sample number cross reference

WG552068: R1828571: L532660-01
WG552083: R1829151: L532660-01
WG552040: R1830193: L532660-01
WG552031: R1831152: L532660-01
WG551502: R1831414: L532660-01
WG552450: R1831932: L532660-01
WG552277: R1833333: L532660-01
WG552294: R1834354: L532660-01
WG552120: R1834652: L532660-01
WG552102: R1834952: L532660-01

* * 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.