



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

Est. 1970

Brett Middleton
Encana
2717 Co. Rd. 215
Parachute, CO 81635

Report Summary

Monday January 09, 2012

Report Number: L553938

Samples Received: 12/31/11

Client Project:

Description: J16W

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, PA - 68-02979

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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

Brett Middleton
Encana
2717 Co. Rd. 215
Parachute, CO 81635

January 09, 2012

Date Received : December 31, 2011
Description : J16W
Sample ID : J16W-S-DM-123011
Collected By : SRM/RGW
Collection Date : 12/30/11 11:35

ESC Sample # : L553938-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	01/05/12	1
Chromium, Trivalent	7.9	2.0	mg/kg	Calc.	01/04/12	1
ORP	-26.		mV	2580	01/04/12	1
pH	9.5		su	9045D	01/03/12	1
Sodium Adsorption Ratio	9.9			Calc.	01/05/12	1
Specific Conductance	340		umhos/cm	9050AMod	01/05/12	1
Mercury	BDL	0.020	mg/kg	7471	01/05/12	1
Arsenic	BDL	1.0	mg/kg	6010B	01/04/12	1
Barium	280	0.25	mg/kg	6010B	01/04/12	1
Cadmium	BDL	0.25	mg/kg	6010B	01/04/12	1
Chromium	7.9	0.50	mg/kg	6010B	01/04/12	1
Copper	5.8	1.0	mg/kg	6010B	01/04/12	1
Lead	5.5	0.25	mg/kg	6010B	01/04/12	1
Nickel	7.7	1.0	mg/kg	6010B	01/04/12	1
Selenium	BDL	1.0	mg/kg	6010B	01/04/12	1
Silver	BDL	0.50	mg/kg	6010B	01/04/12	1
Zinc	32.	1.5	mg/kg	6010B	01/04/12	1
Benzene	BDL	0.0025	mg/kg	8021/8015	12/31/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	12/31/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	12/31/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	12/31/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	12/31/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.1		% Rec.	8021/8015	12/31/11	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021/8015	12/31/11	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	01/03/12	1
Surrogate recovery(%)						
o-Terphenyl	88.6		% Rec.	3546/DRO	01/03/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L553938-01 (PH) - 9.46@19.2c



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Collected By : SRM/RGW
Collection Date : 12/30/11 11:35

ESC Sample # : L553938-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	01/04/12	1
Surrogate Recovery						
Nitrobenzene-d5	74.0		% Rec.	8270C-SIM	01/04/12	1
2-Fluorobiphenyl	74.1		% Rec.	8270C-SIM	01/04/12	1
p-Terphenyl-d14	71.4		% Rec.	8270C-SIM	01/04/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 01/09/12 09:41 Printed: 01/09/12 10:52
L553938-01 (PH) - 9.46@19.2c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L553938-01	WG572400	SAMP	pH	R1987392	T8
	WG572588	SAMP	ORP	R1988712	T8

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

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

Definitions

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



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG572414	12/31/11 21:23
Ethylbenzene	< .0005	mg/kg			WG572414	12/31/11 21:23
Toluene	< .005	mg/kg			WG572414	12/31/11 21:23
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG572414	12/31/11 21:23
Total Xylene	< .0015	mg/kg			WG572414	12/31/11 21:23
a,a,a-Trifluorotoluene(FID)		% Rec.	98.06	59-128	WG572414	12/31/11 21:23
a,a,a-Trifluorotoluene(PID)		% Rec.	104.1	54-144	WG572414	12/31/11 21:23
pH	4.30	su			WG572400	01/03/12 14:03
TPH (GC/FID) High Fraction	< 4	ppm			WG572249	01/03/12 22:08
o-Terphenyl		% Rec.	83.36	50-150	WG572249	01/03/12 22:08
1-Methylnaphthalene	< .006	mg/kg			WG572466	01/04/12 10:47
2-Chloronaphthalene	< .006	mg/kg			WG572466	01/04/12 10:47
2-Methylnaphthalene	< .006	mg/kg			WG572466	01/04/12 10:47
Acenaphthene	< .006	mg/kg			WG572466	01/04/12 10:47
Acenaphthylene	< .006	mg/kg			WG572466	01/04/12 10:47
Anthracene	< .006	mg/kg			WG572466	01/04/12 10:47
Benzo(a)anthracene	< .006	mg/kg			WG572466	01/04/12 10:47
Benzo(a)pyrene	< .006	mg/kg			WG572466	01/04/12 10:47
Benzo(b)fluoranthene	< .006	mg/kg			WG572466	01/04/12 10:47
Benzo(g,h,i)perylene	< .006	mg/kg			WG572466	01/04/12 10:47
Benzo(k)fluoranthene	< .006	mg/kg			WG572466	01/04/12 10:47
Chrysene	< .006	mg/kg			WG572466	01/04/12 10:47
Dibenz(a,h)anthracene	< .006	mg/kg			WG572466	01/04/12 10:47
Fluoranthene	< .006	mg/kg			WG572466	01/04/12 10:47
Fluorene	< .006	mg/kg			WG572466	01/04/12 10:47
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG572466	01/04/12 10:47
Naphthalene	< .006	mg/kg			WG572466	01/04/12 10:47
Phenanthrene	< .006	mg/kg			WG572466	01/04/12 10:47
Pyrene	< .006	mg/kg			WG572466	01/04/12 10:47
2-Fluorobiphenyl		% Rec.	80.81	34-129	WG572466	01/04/12 10:47
Nitrobenzene-d5		% Rec.	79.72	14-141	WG572466	01/04/12 10:47
p-Terphenyl-d14		% Rec.	93.85	25-139	WG572466	01/04/12 10:47
Arsenic	< 1	mg/kg			WG572494	01/04/12 16:36
Barium	< .25	mg/kg			WG572494	01/04/12 16:36
Cadmium	< .25	mg/kg			WG572494	01/04/12 16:36
Chromium	< .5	mg/kg			WG572494	01/04/12 16:36
Copper	< 1	mg/kg			WG572494	01/04/12 16:36
Lead	< .25	mg/kg			WG572494	01/04/12 16:36
Nickel	< 1	mg/kg			WG572494	01/04/12 16:36
Selenium	< 1	mg/kg			WG572494	01/04/12 16:36
Silver	< .5	mg/kg			WG572494	01/04/12 16:36
Zinc	< 1.5	mg/kg			WG572494	01/04/12 16:36
Chromium,Hexavalent	< 2	mg/kg			WG572401	01/05/12 11:38
Specific Conductance	1.00	umhos/cm			WG572768	01/05/12 11:46
Mercury	< .02	mg/kg			WG572641	01/05/12 11:04

* 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	Duplicate				
pH	su	6.60	6.60		0.456	1	L553842-13	WG572400
ORP	mV	21.0	24.0		13.3	20	L553659-01	WG572588
ORP	mV	0	0		0	20	L553938-01	WG572588
Arsenic	mg/kg	9.40	8.00		16.4	20	L553842-29	WG572494
Barium	mg/kg	88.0	90.0		2.02	20	L553842-29	WG572494
Cadmium	mg/kg	0	0		0	20	L553842-29	WG572494
Chromium	mg/kg	17.0	17.0		1.75	20	L553842-29	WG572494
Copper	mg/kg	31.0	29.8		4.27	20	L553842-29	WG572494
Lead	mg/kg	16.0	16.0		2.47	20	L553842-29	WG572494
Nickel	mg/kg	32.0	32.9		4.35	20	L553842-29	WG572494
Selenium	mg/kg	3.40	3.58		3.99	20	L553842-29	WG572494
Silver	mg/kg	0	0		0	20	L553842-29	WG572494
Zinc	mg/kg	53.0	52.4		1.52	20	L553842-29	WG572494
Chromium, Hexavalent	mg/kg	0	0		0	20	L553943-01	WG572401
Chromium, Hexavalent	mg/kg	0	0		0	20	L553659-01	WG572401
Specific Conductance	umhos/cm	2200	2200		1.60	20	L553659-01	WG572768
Specific Conductance	umhos/cm	1700	1700		0.762	20	L554226-01	WG572768
Mercury	mg/kg	0.00460	0.0130		95.5*	20	L553933-05	WG572641

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0521	104.	76-113	WG572414
Ethylbenzene	mg/kg	.05	0.0558	112.	78-115	WG572414
Toluene	mg/kg	.05	0.0537	107.	76-114	WG572414
Total Xylene	mg/kg	.15	0.166	111.	81-118	WG572414
a,a,a-Trifluorotoluene(PID)				104.2	54-144	WG572414
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.73	122.	67-135	WG572414
a,a,a-Trifluorotoluene(FID)				104.2	59-128	WG572414
pH	su	7.98	8.04	101.	98-101	WG572400
TPH (GC/FID) High Fraction	ppm	60	45.4	75.7	50-150	WG572249
o-Terphenyl				92.09	50-150	WG572249
1-Methylnaphthalene	mg/kg	.033	0.0268	81.3	48-113	WG572466
2-Chloronaphthalene	mg/kg	.033	0.0281	85.1	51-114	WG572466
2-Methylnaphthalene	mg/kg	.033	0.0261	79.0	44-109	WG572466
Acenaphthene	mg/kg	.033	0.0262	79.3	52-108	WG572466
Acenaphthylene	mg/kg	.033	0.0264	80.0	51-110	WG572466
Anthracene	mg/kg	.033	0.0270	81.9	58-120	WG572466
Benzo(a)anthracene	mg/kg	.033	0.0268	81.1	54-110	WG572466
Benzo(a)pyrene	mg/kg	.033	0.0272	82.5	56-118	WG572466
Benzo(b)fluoranthene	mg/kg	.033	0.0281	85.1	55-114	WG572466
Benzo(g,h,i)perylene	mg/kg	.033	0.0316	95.9	48-130	WG572466
Benzo(k)fluoranthene	mg/kg	.033	0.0277	84.0	55-122	WG572466

* 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	Laboratory Control		Sample	% Rec	Limit	Batch
		Known Val	Result	Result			
Chrysene	mg/kg	.033	0.0255		77.3	57-118	WG572466
Dibenz(a,h)anthracene	mg/kg	.033	0.0337		102.	53-122	WG572466
Fluoranthene	mg/kg	.033	0.0300		90.8	58-118	WG572466
Fluorene	mg/kg	.033	0.0274		83.0	54-109	WG572466
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0323		97.9	51-125	WG572466
Naphthalene	mg/kg	.033	0.0252		76.4	45-105	WG572466
Phenanthrene	mg/kg	.033	0.0266		80.5	53-114	WG572466
Pyrene	mg/kg	.033	0.0270		81.9	53-121	WG572466
2-Fluorobiphenyl					81.16	34-129	WG572466
Nitrobenzene-d5					78.98	14-141	WG572466
p-Terphenyl-d14					85.74	25-139	WG572466
ORP	mV	229	226.		98.7	95.6-104.37	WG572588
Arsenic	mg/kg	92.6	89.6		96.8	82.9-117	WG572494
Barium	mg/kg	169	167.		98.8	82.8-117	WG572494
Cadmium	mg/kg	61.8	60.3		97.6	83.3-117	WG572494
Chromium	mg/kg	71.3	69.2		97.1	81.8-118	WG572494
Copper	mg/kg	81.2	79.7		98.2	83.9-116	WG572494
Lead	mg/kg	92.4	93.2		101.	83.3-117	WG572494
Nickel	mg/kg	59.1	58.5		99.0	83.8-116	WG572494
Selenium	mg/kg	89.5	89.1		99.6	79-121	WG572494
Silver	mg/kg	34.4	32.2		93.6	66.3-134	WG572494
Zinc	mg/kg	141	136.		96.5	80.9-119	WG572494
Chromium, Hexavalent	mg/kg	203	151.		74.4	50-150	WG572401
Specific Conductance	umhos/cm	427	420.		98.4	85-115	WG572768
Mercury	mg/kg	3.77	4.48		119.	71.6-128	WG572641

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) Low Fraction	mg/kg	6.70	6.73	122.	67-135	0.320	20	WG572414
a,a,a-Trifluorotoluene(FID)				104.2	59-128			WG572414
Benzene	mg/kg	0.0486	0.0521	97.0	76-113	6.90	20	WG572414
Ethylbenzene	mg/kg	0.0525	0.0558	105.	78-115	6.14	20	WG572414
Toluene	mg/kg	0.0514	0.0537	103.	76-114	4.31	20	WG572414
Total Xylene	mg/kg	0.156	0.166	104.	81-118	6.01	20	WG572414
a,a,a-Trifluorotoluene(PID)				104.3	54-144			WG572414
pH	su	8.03	8.04	101.	98-101	0.124	20	WG572400
TPH (GC/FID) High Fraction	ppm	47.8	45.4	80.0	50-150	5.24	25	WG572249
o-Terphenyl				95.82	50-150			WG572249
1-Methylnaphthalene	mg/kg	0.0244	0.0268	74.0	48-113	9.36	24	WG572466
2-Chloronaphthalene	mg/kg	0.0269	0.0281	81.0	51-114	4.51	24	WG572466
2-Methylnaphthalene	mg/kg	0.0252	0.0261	76.0	44-109	3.54	24	WG572466
Acenaphthene	mg/kg	0.0266	0.0262	81.0	52-108	1.69	22	WG572466

* Performance of this Analyte is outside of established criteria.

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		Result	Ref	%Rec					
Acenaphthylene	mg/kg	0.0252	0.0264	76.0		51-110	4.49	21	WG572466
Anthracene	mg/kg	0.0265	0.0270	80.0		58-120	1.98	20	WG572466
Benzo(a)anthracene	mg/kg	0.0281	0.0268	85.0		54-110	4.86	22	WG572466
Benzo(a)pyrene	mg/kg	0.0283	0.0272	86.0		56-118	3.96	21	WG572466
Benzo(b)fluoranthene	mg/kg	0.0309	0.0281	94.0		55-114	9.44	20	WG572466
Benzo(g,h,i)perylene	mg/kg	0.0332	0.0316	100.		48-130	4.72	20	WG572466
Benzo(k)fluoranthene	mg/kg	0.0268	0.0277	81.0		55-122	3.30	25	WG572466
Chrysene	mg/kg	0.0264	0.0255	80.0		57-118	3.35	20	WG572466
Dibenz(a,h)anthracene	mg/kg	0.0358	0.0337	108.		53-122	6.21	20	WG572466
Fluoranthene	mg/kg	0.0283	0.0300	86.0		58-118	5.74	20	WG572466
Fluorene	mg/kg	0.0267	0.0274	81.0		54-109	2.44	20	WG572466
Indeno(1,2,3-cd)pyrene	mg/kg	0.0347	0.0323	105.		51-125	7.04	21	WG572466
Naphthalene	mg/kg	0.0237	0.0252	72.0		45-105	6.14	24	WG572466
Phenanthrene	mg/kg	0.0268	0.0266	81.0		53-114	1.09	20	WG572466
Pyrene	mg/kg	0.0270	0.0270	82.0		53-121	0.248	20	WG572466
2-Fluorobiphenyl				73.43		34-129			WG572466
Nitrobenzene-d5				77.13		14-141			WG572466
p-Terphenyl-d14				89.01		25-139			WG572466
ORP	mV	223.	226.	97.0		95.6-104.37	1.34	20	WG572588
Chromium, Hexavalent	mg/kg	149.	151.	73.0		50-150	1.33	20	WG572401
Specific Conductance	umhos/	410.	420.	96.0		85-115	2.41	20	WG572768

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
Benzene	mg/kg	0.245	0	.05	98.1	32-137	L553938-01	WG572414
Ethylbenzene	mg/kg	0.239	0	.05	95.6	10-150	L553938-01	WG572414
Toluene	mg/kg	0.242	0	.05	96.7	20-142	L553938-01	WG572414
Total Xylene	mg/kg	0.714	0	.15	95.2	16-141	L553938-01	WG572414
a,a,a-Trifluorotoluene(PID)					103.1	54-144		WG572414
TPH (GC/FID) Low Fraction	mg/kg	24.7	0	5.5	89.9	55-109	L553938-01	WG572414
a,a,a-Trifluorotoluene(FID)					101.7	59-128		WG572414
TPH (GC/FID) High Fraction	ppm	240.	310.	60	0*	50-150	L553929-01	WG572249
o-Terphenyl					42.20*	50-150		WG572249
1-Methylnaphthalene	mg/kg	0.0245	0	.033	74.3	25-155	L553199-01	WG572466
2-Chloronaphthalene	mg/kg	0.0321	0	.033	97.2	31-153	L553199-01	WG572466
2-Methylnaphthalene	mg/kg	0.0262	0	.033	79.5	22-172	L553199-01	WG572466
Acenaphthene	mg/kg	0.0257	0	.033	77.9	43-133	L553199-01	WG572466
Acenaphthylene	mg/kg	0.0261	0	.033	79.1	42-146	L553199-01	WG572466
Anthracene	mg/kg	0.0265	0	.033	80.2	38-153	L553199-01	WG572466
Benzo(a)anthracene	mg/kg	0.0272	0	.033	82.4	31-142	L553199-01	WG572466
Benzo(a)pyrene	mg/kg	0.0271	0	.033	82.1	26-152	L553199-01	WG572466
Benzo(b)fluoranthene	mg/kg	0.0295	0	.033	89.4	10-188	L553199-01	WG572466
Benzo(g,h,i)perylene	mg/kg	0.0372	0	.033	113.	10-176	L553199-01	WG572466
Benzo(k)fluoranthene	mg/kg	0.0263	0	.033	79.6	22-163	L553199-01	WG572466
Chrysene	mg/kg	0.0263	0	.033	79.6	26-146	L553199-01	WG572466
Dibenz(a,h)anthracene	mg/kg	0.0291	0	.033	88.3	10-160	L553199-01	WG572466
Fluoranthene	mg/kg	0.0291	0	.033	88.0	23-160	L553199-01	WG572466
Fluorene	mg/kg	0.0274	0	.033	83.0	44-143	L553199-01	WG572466

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Quality Assurance Report
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

January 09, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Indeno(1,2,3-cd)pyrene	mg/kg	0.0285	0	.033	86.4	10-157	L553199-01	WG572466
Naphthalene	mg/kg	0.0240	0	.033	72.8	22-156	L553199-01	WG572466
Phenanthrene	mg/kg	0.0259	0	.033	78.6	23-164	L553199-01	WG572466
Pyrene	mg/kg	0.0260	0	.033	78.7	12-170	L553199-01	WG572466
2-Fluorobiphenyl					77.50	34-129		WG572466
Nitrobenzene-d5					77.15	14-141		WG572466
p-Terphenyl-d14					79.75	25-139		WG572466
Arsenic	mg/kg	60.0	8.00	50	104.	75-125	L553842-29	WG572494
Barium	mg/kg	152.	90.0	50	124.	75-125	L553842-29	WG572494
Cadmium	mg/kg	50.1	0	50	100.	75-125	L553842-29	WG572494
Chromium	mg/kg	70.0	17.0	50	106.	75-125	L553842-29	WG572494
Copper	mg/kg	81.6	29.8	50	104.	75-125	L553842-29	WG572494
Lead	mg/kg	68.4	16.0	50	105.	75-125	L553842-29	WG572494
Nickel	mg/kg	80.1	32.9	50	94.4	75-125	L553842-29	WG572494
Selenium	mg/kg	51.4	3.58	50	95.6	75-125	L553842-29	WG572494
Silver	mg/kg	48.4	0	50	96.8	75-125	L553842-29	WG572494
Zinc	mg/kg	109.	52.4	50	113.	75-125	L553842-29	WG572494
Chromium, Hexavalent	mg/kg	16.6	0	20	83.0	50-150	L553938-01	WG572401
Mercury	mg/kg	0.265	0.0130	.25	101.	70-130	L553933-05	WG572641

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.244	0.245	97.7	32-137	0.400	39	L553938-01	WG572414
Ethylbenzene	mg/kg	0.240	0.239	95.8	10-150	0.290	44	L553938-01	WG572414
Toluene	mg/kg	0.241	0.242	96.5	20-142	0.150	42	L553938-01	WG572414
Total Xylene	mg/kg	0.712	0.714	94.9	16-141	0.280	46	L553938-01	WG572414
a,a,a-Trifluorotoluene(PID)				103.4	54-144				WG572414
TPH (GC/FID) Low Fraction	mg/kg	24.6	24.7	89.6	55-109	0.340	20	L553938-01	WG572414
a,a,a-Trifluorotoluene(FID)				102.2	59-128				WG572414
TPH (GC/FID) High Fraction	ppm	216.	240.	0*	50-150	10.8	25	L553929-01	WG572249
o-Terphenyl				31.79*	50-150				WG572249
1-Methylnaphthalene	mg/kg	0.0246	0.0245	74.7	25-155	0.528	27	L553199-01	WG572466
2-Chloronaphthalene	mg/kg	0.0304	0.0321	92.2	31-153	5.32	22	L553199-01	WG572466
2-Methylnaphthalene	mg/kg	0.0261	0.0262	79.1	22-172	0.521	29	L553199-01	WG572466
Acenaphthene	mg/kg	0.0257	0.0257	77.8	43-133	0.176	26	L553199-01	WG572466
Acenaphthylene	mg/kg	0.0253	0.0261	76.6	42-146	3.19	22	L553199-01	WG572466
Anthracene	mg/kg	0.0267	0.0265	80.8	38-153	0.683	27	L553199-01	WG572466
Benzo(a)anthracene	mg/kg	0.0268	0.0272	81.1	31-142	1.56	31	L553199-01	WG572466
Benzo(a)pyrene	mg/kg	0.0274	0.0271	82.9	26-152	1.00	32	L553199-01	WG572466
Benzo(b)fluoranthene	mg/kg	0.0265	0.0295	80.2	10-188	10.9	33	L553199-01	WG572466
Benzo(g,h,i)perylene	mg/kg	0.0279	0.0372	84.4	10-176	28.7	30	L553199-01	WG572466
Benzo(k)fluoranthene	mg/kg	0.0290	0.0263	87.8	22-163	9.79	29	L553199-01	WG572466
Chrysene	mg/kg	0.0254	0.0263	76.9	26-146	3.55	30	L553199-01	WG572466
Dibenz(a,h)anthracene	mg/kg	0.0323	0.0291	97.7	10-160	10.2	39	L553199-01	WG572466
Fluoranthene	mg/kg	0.0278	0.0291	84.2	23-160	4.41	22	L553199-01	WG572466
Fluorene	mg/kg	0.0276	0.0274	83.6	44-143	0.732	23	L553199-01	WG572466
Indeno(1,2,3-cd)pyrene	mg/kg	0.0299	0.0285	90.5	10-157	4.68	40	L553199-01	WG572466
Naphthalene	mg/kg	0.0218	0.0240	65.9	22-156	9.85	27	L553199-01	WG572466

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YOUR LAB OF CHOICE

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Phenanthrene	mg/kg	0.0261	0.0259	79.0	23-164	0.490	25	L553199-01		WG572466
Pyrene	mg/kg	0.0265	0.0260	80.3	12-170	1.99	24	L553199-01		WG572466
2-Fluorobiphenyl				76.28	34-129					WG572466
Nitrobenzene-d5				75.45	14-141					WG572466
p-Terphenyl-d14				85.88	25-139					WG572466
Arsenic	mg/kg	51.7	60.0	87.4	75-125	14.9	20	L553842-29		WG572494
Barium	mg/kg	145.	152.	110.	75-125	4.71	20	L553842-29		WG572494
Cadmium	mg/kg	45.7	50.1	91.4	75-125	9.19	20	L553842-29		WG572494
Chromium	mg/kg	64.7	70.0	95.4	75-125	7.87	20	L553842-29		WG572494
Copper	mg/kg	74.6	81.6	89.6	75-125	8.96	20	L553842-29		WG572494
Lead	mg/kg	60.7	68.4	89.4	75-125	11.9	20	L553842-29		WG572494
Nickel	mg/kg	73.0	80.1	80.2	75-125	9.27	20	L553842-29		WG572494
Selenium	mg/kg	44.6	51.4	82.0	75-125	14.2	20	L553842-29		WG572494
Silver	mg/kg	45.0	48.4	90.0	75-125	7.28	20	L553842-29		WG572494
Zinc	mg/kg	102.	109.	99.2	75-125	6.64	20	L553842-29		WG572494
Chromium,Hexavalent	mg/kg	16.4	16.6	82.0	50-150	1.21	20	L553938-01		WG572401
Mercury	mg/kg	0.267	0.265	102.	70-130	0.752	20	L553933-05		WG572641

Batch number /Run number / Sample number cross reference

WG572414: R1986373: L553938-01
WG572400: R1987392: L553938-01
WG572249: R1988312: L553938-01
WG572466: R1988652: L553938-01
WG572588: R1988712: L553938-01
WG572494: R1989154: L553938-01
WG572533: R1989212: L553938-01
WG572401: R1989652: L553938-01
WG572768: R1989832: L553938-01
WG572641: R1989972: L553938-01

* * 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.