

Dave Nicholson  
Berry Petroleum Company - Denver, CO  
1999 Broadway, Suite 3700  
Denver, CO 80202

## Report Summary

Monday June 13, 2011

Report Number: L518791

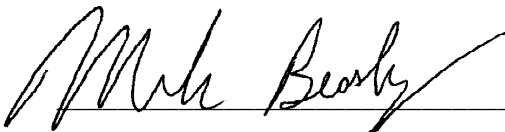
Samples Received: 06/02/11

Client Project:

Description: Berry Pit Permitting

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:



Mark W. Beasley , 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,  
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REPORT OF ANALYSIS

Dave Nicholson  
Berry Petroleum Company - Denver, C  
1999 Broadway, Suite 3700  
Denver, CO 80202

June 13, 2011

Date Received : June 02, 2011  
Description : Berry Pit Permitting

Sample ID : F-01 PIT

Collected By : DK Nicholson  
Collection Date : 05/28/11 09:25

ESC Sample # : L518791-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/09/11	1
ORP	72.		mV	2580	06/03/11	1
pH	8.3		su	9045D	06/03/11	1
Sodium Adsorption Ratio	1.7			Calc.	06/05/11	1
Specific Conductance	250		umhos/cm	9050AMod	06/08/11	1
Mercury	0.027	0.020	mg/kg	7471	06/04/11	1
Arsenic	6.5	1.0	mg/kg	6010B	06/03/11	1
Barium	340	0.25	mg/kg	6010B	06/03/11	1
Boron	BDL	10.	mg/kg	6010B	06/03/11	1
Cadmium	0.69	0.25	mg/kg	6010B	06/03/11	1
Chromium	30.	0.50	mg/kg	6010B	06/03/11	1
Copper	22.	1.0	mg/kg	6010B	06/03/11	1
Lead	15.	0.25	mg/kg	6010B	06/03/11	1
Nickel	18.	1.0	mg/kg	6010B	06/03/11	1
Selenium	21.	1.0	mg/kg	6010B	06/03/11	1
Silver	BDL	0.50	mg/kg	6010B	06/03/11	1
Zinc	48.	1.5	mg/kg	6010B	06/03/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	06/03/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	06/03/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	06/03/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	06/03/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	06/03/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	106.		% Rec.	8021/8015	06/03/11	5
a,a,a-Trifluorotoluene(PID)	109.		% Rec.	8021/8015	06/03/11	5
TPH (GC/FID) High Fraction	41.	4.0	mg/kg	3546/DRO	06/09/11	1
Surrogate recovery(%)						
o-Terphenyl	65.6		% Rec.	3546/DRO	06/09/11	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Benzo(a)anthracene	0.0071	0.0060	mg/kg	8270C-SIM	06/08/11	1
Benzo(a)pyrene	0.0062	0.0060	mg/kg	8270C-SIM	06/08/11	1
Benzo(b)fluoranthene	0.013	0.0060	mg/kg	8270C-SIM	06/08/11	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L518791-02 (PH) - 8.3@20.7c



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Tax I.D. 62-0814289

Est. 1970

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Description : Berry Pit Permitting

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Collected By : DK Nicholson  
Collection Date : 05/28/11 09:25

ESC Sample # : L518791-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(g,h,i)perylene	0.0071	0.0060	mg/kg	8270C-SIM	06/08/11	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Chrysene	0.0084	0.0060	mg/kg	8270C-SIM	06/08/11	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Fluoranthene	0.010	0.0060	mg/kg	8270C-SIM	06/08/11	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Naphthalene	0.017	0.0060	mg/kg	8270C-SIM	06/08/11	1
Phenanthrene	0.013	0.0060	mg/kg	8270C-SIM	06/08/11	1
Pyrene	0.012	0.0060	mg/kg	8270C-SIM	06/08/11	1
1-Methylnaphthalene	0.015	0.0060	mg/kg	8270C-SIM	06/08/11	1
2-Methylnaphthalene	0.035	0.0060	mg/kg	8270C-SIM	06/08/11	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	06/08/11	1
Surrogate Recovery						
Nitrobenzene-d5	80.4		% Rec.	8270C-SIM	06/08/11	1
2-Fluorobiphenyl	82.5		% Rec.	8270C-SIM	06/08/11	1
p-Terphenyl-d14	102.		% Rec.	8270C-SIM	06/08/11	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: 06/13/11 15:28 Printed: 06/13/11 15:29  
L518791-02 (PH) - 8.3@20.7c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L518791-01	WG538687	SAMP	Nitrobenzene-d5	R1715729	J1
	WG538685	SAMP	o-Terphenyl	R1716949	J7
L518791-03	WG538687	SAMP	Nitrobenzene-d5	R1715729	J7
	WG538685	SAMP	o-Terphenyl	R1716949	J7
L518791-06	WG538796	SAMP	pH	R1712289	J3
L518791-07	WG538687	SAMP	Nitrobenzene-d5	R1715729	J1
	WG538687	SAMP	2-Fluorobiphenyl	R1715729	J1

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed  
06/13/11 at 15:29:23

TSR Signing Reports: 134  
R5 - Desired TAT

Sample: L518791-01 Account: BERPETDCO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/13/11 15:28  
Sample: L518791-02 Account: BERPETDCO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/13/11 15:28  
Sample: L518791-03 Account: BERPETDCO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/13/11 15:28  
Sample: L518791-04 Account: BERPETDCO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/13/11 15:28  
Sample: L518791-05 Account: BERPETDCO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/13/11 15:28  
Sample: L518791-06 Account: BERPETDCO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/13/11 15:28  
Sample: L518791-07 Account: BERPETDCO Received: 06/02/11 09:00 Due Date: 06/09/11 00:00 RPT Date: 06/13/11 15:28



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June 13, 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
Boron	< 10	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
Benzene	< .0005	mg/kg			WG538574	06/02/11 16:50
Ethylbenzene	< .0005	mg/kg			WG538574	06/02/11 16:50
Toluene	< .005	mg/kg			WG538574	06/02/11 16:50
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG538574	06/02/11 16:50
Total Xylene	< .0015	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
pH	4.90	su			WG538796	06/04/11 13:05
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
* 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	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
o-Terphenyl		% Rec.	70.85	50-150		06/08/11 22:09
TPH (GC/FID) High Fraction	< 4	ppm			WG538986	06/09/11 03:34
o-Terphenyl		% Rec.	65.95	50-150	WG538986	06/09/11 03:34
Chromium, Hexavalent	< 2	mg/kg			WG538897	06/09/11 14:30

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
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
Boron	mg/kg	0	0.565	NA	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
pH	su	8.70	8.60	1.16*	1	L518791-06	WG538796
pH	su	8.10	8.20	1.23*	1	L518925-13	WG538796
Specific Conductance	umhos/cm	1500	1400	5.15	20	L518791-03	WG539344
Specific Conductance	umhos/cm	140.	140.	0.499	20	L519132-02	WG539344
Chromium, Hexavalent	mg/kg	0	0	0	20	L518791-06	WG538897
Chromium, Hexavalent	mg/kg	0	0	0	20	L519125-01	WG538897

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
Boron	mg/kg	140	140.	100.	74.3-125.7	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

\* 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 Known Val	Sample Result	% Rec	Limit	Batch
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
Benzene	mg/kg	.05	0.0542	108.	76-113	WG538574
Ethylbenzene	mg/kg	.05	0.0567	113.	78-115	WG538574
Toluene	mg/kg	.05	0.0545	109.	76-114	WG538574
Total Xylene	mg/kg	.15	0.169	113.	81-118	WG538574
a,a,a-Trifluorotoluene(PID)				107.2	54-144	WG538574
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
pH	su	6.3	6.30	100.	97.98-102.02	WG538796
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
TPH (GC/FID) High Fraction	ppm	60	44.3	73.9	50-150	WG538986
o-Terphenyl				68.10	50-150	WG538986
Chromium,Hexavalent	mg/kg	132	110.	83.3	50-150	WG538897

\* 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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Est. 1970

June 13, 2011

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
Benzene	mg/kg	0.0521	0.0542	104.	76-113	3.98	20	WG538574
Ethylbenzene	mg/kg	0.0533	0.0567	106.	78-115	6.30	20	WG538574
Toluene	mg/kg	0.0515	0.0545	103.	76-114	5.65	20	WG538574
Total Xylene	mg/kg	0.159	0.169	106.	81-118	6.47	20	WG538574
a,a,a-Trifluorotoluene(PID)				106.7	54-144			WG538574
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
pH	su	6.30	6.30	100.	97.98-102.02	0	20	WG538796
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
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
TPH (GC/FID) High Fraction	ppm	42.5	44.3	71.0	50-150	4.16	25	WG538986
o-Terphenyl				63.77	50-150			WG538986
Chromium,Hexavalent	mg/kg	100.	110.	76.0	50-150	9.52	20	WG538897

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

\* Performance of this Analyte is outside of established criteria.

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Barium	mg/kg	63.4	13.0	50	101.	75-125	L518815-02	WG538575
Boron	mg/kg	43.1	0.565	50	85.1	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
TPH (GC/FID) Low Fraction	mg/kg	22.0	0	5.5	79.8	55-109	L518752-01	WG538574
a,a,a-Trifluorotoluene(FID)	mg/kg	0.180	0	.05	101.2	59-128	L518752-01	WG538574
Benzene	mg/kg	0.180	0	.05	71.9	32-137	L518752-01	WG538574
Ethylbenzene	mg/kg	0.138	0	.05	55.3	10-150	L518752-01	WG538574
Toluene	mg/kg	0.159	0	.05	63.4	20-142	L518752-01	WG538574
Total Xylene	mg/kg	0.395	0	.15	52.6	16-141	L518752-01	WG538574
TPH (GC/FID) High Fraction	ppm	37.5	0	60	62.5	50-150	L518754-09	WG538685
o-Terphenyl					61.14	50-150		WG538685
TPH (GC/FID) High Fraction	ppm	80.4	36.0	60	74.0	50-150	L518805-01	WG538986
o-Terphenyl					60.93	50-150		WG538986
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
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
Chromium,Hexavalent	mg/kg	13.0	0	20	65.0	50-150	L518854-07	WG538897

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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
Boron	mg/kg	44.0	43.1	86.9	75-125	2.07	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
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
Benzene	mg/kg	0.180	0.180	71.9	32-137	0	39	L518752-01	WG538574
Ethylbenzene	mg/kg	0.140	0.138	55.9	10-150	1.08	44	L518752-01	WG538574
Toluene	mg/kg	0.158	0.159	63.0	20-142	0.650	42	L518752-01	WG538574
Total Xylene	mg/kg	0.398	0.395	53.1	16-141	0.840	46	L518752-01	WG538574
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
TPH (GC/FID) High Fraction	ppm	79.9	80.4	73.2	50-150	0.581	25	L518805-01	WG538986
o-Terphenyl				50.20	50-150				WG538986
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
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
Chromium,Hexavalent	mg/kg	8.60	13.0	43.0*	50-150	40.7*	20	L518854-07	WG538897

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Batch number /Run number / Sample number cross reference

WG538584: R1710009: L518791-01 02 03 04 05  
WG538575: R1710153: L518791-01 02 03 04 05 06 07  
WG538621: R1710349: L518791-01 02 03 04 05 06 07  
WG538643: R1711372: L518791-01 02 03 04 05 06 07  
WG538574: R1711849: L518791-01 02 03 04 05 06 07  
WG538796: R1712289: L518791-06 07  
WG538899: R1712470: L518791-01 02 03 04 05 06 07  
WG538687: R1715729: L518791-01 02 03 04 05 06 07  
WG539344: R1716669: L518791-01 02 03 04 05 06 07  
WG538685: R1716949: L518791-01 02 03  
WG538986: R1716950: L518791-04 05 06 07  
WG538897: R1717609: L518791-01 02 03 04 05 06 07

\* \* 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.