



12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970

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

Report Summary

Thursday March 08, 2012

Report Number: L563186

Samples Received: 03/02/12

Client Project:

Description: Pit Reclamation

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 - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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

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

March 08, 2012

Date Received : March 02, 2012
Description : Pit Reclamation

Sample ID : 0-36B PILE

Collected By :
Collection Date : 02/28/12 14:00

ESC Sample # : L563186-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	03/05/12	1
Chromium, Trivalent	18.	2.0	mg/kg	Calc.	03/04/12	1
ORP	-74.		mV	2580	03/06/12	1
pH	12.		su	9045D	03/05/12	1
Sodium Adsorption Ratio	20.			Calc.	03/06/12	1
Specific Conductance	4700		umhos/cm	9050AMod	03/04/12	1
Mercury	0.040	0.020	mg/kg	7471	03/07/12	1
Arsenic	11.	5.0	mg/kg	6010B	03/04/12	5
Barium	5800	1.2	mg/kg	6010B	03/04/12	5
Boron	26.	10.	mg/kg	6010B	03/04/12	1
Cadmium	0.97	0.25	mg/kg	6010B	03/04/12	1
Chromium	18.	0.50	mg/kg	6010B	03/04/12	1
Copper	18.	1.0	mg/kg	6010B	03/04/12	1
Lead	18.	1.2	mg/kg	6010B	03/04/12	5
Nickel	11.	5.0	mg/kg	6010B	03/04/12	5
Selenium	BDL	5.0	mg/kg	6010B	03/04/12	5
Silver	BDL	0.50	mg/kg	6010B	03/04/12	1
Zinc	68.	1.5	mg/kg	6010B	03/04/12	1
Benzene	0.034	0.025	mg/kg	8021/8015	03/04/12	50
Toluene	0.84	0.25	mg/kg	8021/8015	03/04/12	50
Ethylbenzene	0.81	0.025	mg/kg	8021/8015	03/04/12	50
Total Xylene	5.1	0.075	mg/kg	8021/8015	03/04/12	50
TPH (GC/FID) Low Fraction	170	5.0	mg/kg	GRO	03/04/12	50
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	101.		% Rec.	8021/8015	03/04/12	50
a,a,a-Trifluorotoluene(PID)	99.7		% Rec.	8021/8015	03/04/12	50
TPH (GC/FID) High Fraction	2900	80.	mg/kg	3546/DRO	03/06/12	20
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	03/06/12	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.069	0.0060	mg/kg	8270C-SIM	03/04/12	1
Acenaphthene	0.032	0.0060	mg/kg	8270C-SIM	03/04/12	1
Acenaphthylene	0.0064	0.0060	mg/kg	8270C-SIM	03/04/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	03/04/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L563186-01 (PH) - 12@19.5c



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March 08, 2012

Date Received : March 02, 2012
Description : Pit Reclamation

Sample ID : 0-36B PILE

Collected By :
Collection Date : 02/28/12 14:00

ESC Sample # : L563186-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	03/06/12	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	03/06/12	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	03/06/12	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	03/06/12	20
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	03/04/12	1
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	03/06/12	20
Fluoranthene	0.010	0.0060	mg/kg	8270C-SIM	03/04/12	1
Fluorene	0.15	0.0060	mg/kg	8270C-SIM	03/04/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	03/06/12	20
Naphthalene	1.2	0.12	mg/kg	8270C-SIM	03/06/12	20
Phenanthrene	0.28	0.0060	mg/kg	8270C-SIM	03/04/12	1
Pyrene	0.089	0.0060	mg/kg	8270C-SIM	03/04/12	1
1-Methylnaphthalene	2.8	0.12	mg/kg	8270C-SIM	03/06/12	20
2-Methylnaphthalene	4.3	0.12	mg/kg	8270C-SIM	03/06/12	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	03/06/12	20
Surrogate Recovery						
Nitrobenzene-d5	0.00		% Rec.	8270C-SIM	03/06/12	20
2-Fluorobiphenyl	31.5		% Rec.	8270C-SIM	03/04/12	1
p-Terphenyl-d14	26.7		% Rec.	8270C-SIM	03/04/12	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: 03/08/12 15:46 Printed: 03/08/12 16:06
L563186-01 (PH) - 12@19.5c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L563186-01	WG581201	SAMP	Selenium	R2058952	O
	WG581242	SAMP	Nitrobenzene-d5	R2060752	J7
	WG581242	SAMP	2-Fluorobiphenyl	R2060752	J2
	WG581290	SAMP	pH	R2059752	T8
	WG581233	SAMP	o-Terphenyl	R2061032	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
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.
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			WG581296	03/04/12 00:11
Ethylbenzene	< .0005	mg/kg			WG581296	03/04/12 00:11
Toluene	< .005	mg/kg			WG581296	03/04/12 00:11
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG581296	03/04/12 00:11
Total Xylene	< .0015	mg/kg			WG581296	03/04/12 00:11
a,a,a-Trifluorotoluene(FID)		% Rec.	97.63	59-128	WG581296	03/04/12 00:11
a,a,a-Trifluorotoluene(PID)		% Rec.	101.4	54-144	WG581296	03/04/12 00:11
Specific Conductance	0.980	umhos/cm			WG581266	03/04/12 15:09
Arsenic	< 1	mg/kg			WG581201	03/04/12 19:06
Barium	< .25	mg/kg			WG581201	03/04/12 19:06
Boron	< 10	mg/kg			WG581201	03/04/12 19:06
Cadmium	< .25	mg/kg			WG581201	03/04/12 19:06
Chromium	< .5	mg/kg			WG581201	03/04/12 19:06
Copper	< 1	mg/kg			WG581201	03/04/12 19:06
Lead	< .25	mg/kg			WG581201	03/04/12 19:06
Nickel	< 1	mg/kg			WG581201	03/04/12 19:06
Selenium	< 1	mg/kg			WG581201	03/04/12 19:06
Silver	< .5	mg/kg			WG581201	03/04/12 19:06
Zinc	< 1.5	mg/kg			WG581201	03/04/12 19:06
pH	6.40	su			WG581290	03/05/12 13:30
Chromium,Hexavalent	< 2	mg/kg			WG580605	03/05/12 16:09
1-Methylnaphthalene	< .006	mg/kg			WG581242	03/04/12 12:03
2-Chloronaphthalene	< .006	mg/kg			WG581242	03/04/12 12:03
2-Methylnaphthalene	< .006	mg/kg			WG581242	03/04/12 12:03
Acenaphthene	< .006	mg/kg			WG581242	03/04/12 12:03
Acenaphthylene	< .006	mg/kg			WG581242	03/04/12 12:03
Anthracene	< .006	mg/kg			WG581242	03/04/12 12:03
Benzo(a)anthracene	< .006	mg/kg			WG581242	03/04/12 12:03
Benzo(a)pyrene	< .006	mg/kg			WG581242	03/04/12 12:03
Benzo(b)fluoranthene	< .006	mg/kg			WG581242	03/04/12 12:03
Benzo(g,h,i)perylene	< .006	mg/kg			WG581242	03/04/12 12:03
Benzo(k)fluoranthene	< .006	mg/kg			WG581242	03/04/12 12:03
Chrysene	< .006	mg/kg			WG581242	03/04/12 12:03
Dibenz(a,h)anthracene	< .006	mg/kg			WG581242	03/04/12 12:03
Fluoranthene	< .006	mg/kg			WG581242	03/04/12 12:03
Fluorene	< .006	mg/kg			WG581242	03/04/12 12:03
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG581242	03/04/12 12:03
Naphthalene	< .006	mg/kg			WG581242	03/04/12 12:03
Phenanthrene	< .006	mg/kg			WG581242	03/04/12 12:03
Pyrene	< .006	mg/kg			WG581242	03/04/12 12:03
2-Fluorobiphenyl		% Rec.	59.86	34-129	WG581242	03/04/12 12:03
Nitrobenzene-d5		% Rec.	61.22	14-141	WG581242	03/04/12 12:03
p-Terphenyl-d14		% Rec.	81.09	25-139	WG581242	03/04/12 12:03
TPH (GC/FID) High Fraction	< 4	ppm			WG581233	03/05/12 11:16
o-Terphenyl		% Rec.	86.60	50-150	WG581233	03/05/12 11:16

* 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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March 08, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Mercury	< .02	mg/kg			WG581363	03/07/12 18:16

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Specific Conductance	umhos/cm	3900	4600	16.7	20	L562839-01	WG581266
Barium	mg/kg	110.	93.6	18.8	20	L563170-01	WG581201
Boron	mg/kg	16.0	14.7	7.21	20	L563170-01	WG581201
Cadmium	mg/kg	0.280	0.278	2.14	20	L563170-01	WG581201
Chromium	mg/kg	14.0	13.0	3.77	20	L563170-01	WG581201
Copper	mg/kg	8.30	8.26	0.483	20	L563170-01	WG581201
Silver	mg/kg	0	0	0	20	L563170-01	WG581201
Zinc	mg/kg	27.0	24.3	10.9	20	L563170-01	WG581201
Arsenic	mg/kg	10.0	10.8	7.69	20	L563170-01	WG581201
Lead	mg/kg	9.00	9.50	4.85	20	L563170-01	WG581201
Nickel	mg/kg	10.0	9.86	2.40	20	L563170-01	WG581201
Selenium	mg/kg	0	0	0	20	L563170-01	WG581201
pH	su	4.90	4.90	0.610	1	L563151-03	WG581290
pH	su	8.90	8.90	0.448	1	L563269-01	WG581290
Chromium, Hexavalent	mg/kg	0	1.30	NA	20	L562587-02	WG580605
Chromium, Hexavalent	mg/kg	1.20	0.840	38.5*	20	L562589-04	WG580605
ORP	mV	240.	240.	0.830	20	L563339-01	WG581452
Mercury	mg/kg	0.0300	0.0220	30.1*	20	L563237-16	WG581363

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0485	97.0	76-113	WG581296
Ethylbenzene	mg/kg	.05	0.0486	97.2	78-115	WG581296
Toluene	mg/kg	.05	0.0481	96.2	76-114	WG581296
Total Xylene	mg/kg	.15	0.147	98.3	81-118	WG581296
a,a,a-Trifluorotoluene(PID)				100.2	54-144	WG581296
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.01	109.	67-135	WG581296
a,a,a-Trifluorotoluene(FID)				104.2	59-128	WG581296
Specific Conductance	umhos/cm	350	343.	98.0	85-115	WG581266
Arsenic	mg/kg	92.6	82.1	88.7	82.9-117	WG581201
Barium	mg/kg	169	159.	94.1	82.8-117	WG581201
Boron	mg/kg	106	106.	100.	71.2-129	WG581201
Cadmium	mg/kg	61.8	55.3	89.5	83.3-117	WG581201
Chromium	mg/kg	71.3	68.5	96.1	81.8-118	WG581201
Copper	mg/kg	81.2	77.3	95.2	83.9-116	WG581201
Lead	mg/kg	92.4	84.4	91.3	83.3-117	WG581201
Nickel	mg/kg	59.1	53.7	90.9	83.8-116	WG581201
Selenium	mg/kg	89.5	86.9	97.1	79-121	WG581201
Silver	mg/kg	34.4	31.2	90.7	66.3-134	WG581201

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Zinc	mg/kg	141	128.	90.8	80.9-119	WG581201
pH	su	7.98	8.01	100.	98-101	WG581290
Chromium, Hexavalent	mg/kg	203	127.	62.6	50-150	WG580605
1-Methylnaphthalene	mg/kg	.033	0.0194	58.8	48-113	WG581242
2-Chloronaphthalene	mg/kg	.033	0.0201	61.0	51-114	WG581242
2-Methylnaphthalene	mg/kg	.033	0.0192	58.1	44-109	WG581242
Acenaphthene	mg/kg	.033	0.0201	60.8	52-108	WG581242
Acenaphthylene	mg/kg	.033	0.0207	62.6	51-110	WG581242
Anthracene	mg/kg	.033	0.0215	65.0	58-120	WG581242
Benzo(a)anthracene	mg/kg	.033	0.0228	69.1	54-110	WG581242
Benzo(a)pyrene	mg/kg	.033	0.0229	69.4	56-118	WG581242
Benzo(b)fluoranthene	mg/kg	.033	0.0221	67.0	55-114	WG581242
Benzo(g,h,i)perylene	mg/kg	.033	0.0248	75.2	48-130	WG581242
Benzo(k)fluoranthene	mg/kg	.033	0.0227	68.7	55-122	WG581242
Chrysene	mg/kg	.033	0.0213	64.6	57-118	WG581242
Dibenz(a,h)anthracene	mg/kg	.033	0.0253	76.6	53-122	WG581242
Fluoranthene	mg/kg	.033	0.0226	68.5	58-118	WG581242
Fluorene	mg/kg	.033	0.0216	65.4	54-109	WG581242
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0254	77.1	51-125	WG581242
Naphthalene	mg/kg	.033	0.0181	54.9	45-105	WG581242
Phenanthrene	mg/kg	.033	0.0204	61.8	53-114	WG581242
Pyrene	mg/kg	.033	0.0214	64.9	53-121	WG581242
2-Fluorobiphenyl				60.60	34-129	WG581242
Nitrobenzene-d5				59.28	14-141	WG581242
p-Terphenyl-d14				81.29	25-139	WG581242
TPH (GC/FID) High Fraction	ppm	60	46.0	76.6	50-150	WG581233
o-Terphenyl				92.45	50-150	WG581233
ORP	mV	229	228.	99.6	95.6-104.37	WG581452
Mercury	mg/kg	3.77	4.37	116.	71.6-128	WG581363

Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch
		Result	Ref					
Benzene	mg/kg	0.0477	0.0485	95.0	76-113	1.68	20	WG581296
Ethylbenzene	mg/kg	0.0473	0.0486	94.0	78-115	2.70	20	WG581296
Toluene	mg/kg	0.0466	0.0481	93.0	76-114	3.04	20	WG581296
Total Xylene	mg/kg	0.143	0.147	95.0	81-118	2.91	20	WG581296
a,a,a-Trifluorotoluene(PID)				99.63	54-144			WG581296
TPH (GC/FID) Low Fraction	mg/kg	6.22	6.01	113.	67-135	3.57	20	WG581296
a,a,a-Trifluorotoluene(FID)				105.9	59-128			WG581296
Specific Conductance	umhos/	341.	343.	97.0	85-115	0.585	20	WG581266
pH	su	7.98	8.01	100.	98-101	0.375	20	WG581290

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Chromium, Hexavalent	mg/kg	148.	127.	73.0		50-150	15.3	20	WG580605
1-Methylnaphthalene	mg/kg	0.0181	0.0194	55.0		48-113	6.66	24	WG581242
2-Chloronaphthalene	mg/kg	0.0186	0.0201	56.0		51-114	7.76	24	WG581242
2-Methylnaphthalene	mg/kg	0.0182	0.0192	55.0		44-109	4.99	24	WG581242
Acenaphthene	mg/kg	0.0189	0.0201	57.0		52-108	5.88	22	WG581242
Acenaphthylene	mg/kg	0.0198	0.0207	60.0		51-110	4.20	21	WG581242
Anthracene	mg/kg	0.0198	0.0215	60.0		58-120	8.05	20	WG581242
Benzo(a)anthracene	mg/kg	0.0213	0.0228	64.0		54-110	6.80	22	WG581242
Benzo(a)pyrene	mg/kg	0.0220	0.0229	67.0		56-118	3.97	21	WG581242
Benzo(b)fluoranthene	mg/kg	0.0213	0.0221	65.0		55-114	3.62	20	WG581242
Benzo(g,h,i)perylene	mg/kg	0.0243	0.0248	74.0		48-130	2.29	20	WG581242
Benzo(k)fluoranthene	mg/kg	0.0215	0.0227	65.0		55-122	5.36	25	WG581242
Chrysene	mg/kg	0.0201	0.0213	61.0		57-118	5.64	20	WG581242
Dibenz(a,h)anthracene	mg/kg	0.0246	0.0253	75.0		53-122	2.65	20	WG581242
Fluoranthene	mg/kg	0.0209	0.0226	63.0		58-118	7.67	20	WG581242
Fluorene	mg/kg	0.0201	0.0216	61.0		54-109	7.04	20	WG581242
Indeno(1,2,3-cd)pyrene	mg/kg	0.0248	0.0254	75.0		51-125	2.53	21	WG581242
Naphthalene	mg/kg	0.0170	0.0181	51.0		45-105	6.46	24	WG581242
Phenanthrene	mg/kg	0.0194	0.0204	59.0		53-114	4.91	20	WG581242
Pyrene	mg/kg	0.0202	0.0214	61.0		53-121	5.86	20	WG581242
2-Fluorobiphenyl				57.01		34-129			WG581242
Nitrobenzene-d5				56.63		14-141			WG581242
p-Terphenyl-d14				76.74		25-139			WG581242
TPH (GC/FID) High Fraction	ppm	45.1	46.0	75.0		50-150	1.84	23	WG581233
o-Terphenyl				92.61		50-150			WG581233
ORP	mV	228.	228.	100.		95.6-104.37	0	20	WG581452

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.245	0.0400	.05	82.1	32-137	L563269-07	WG581296
Ethylbenzene	mg/kg	0.249	0.0430	.05	82.2	10-150	L563269-07	WG581296
Toluene	mg/kg	0.275	0.170	.05	41.9	20-142	L563269-07	WG581296
Total Xylene	mg/kg	0.840	0.470	.15	49.3	16-141	L563269-07	WG581296
a,a,a-Trifluorotoluene(PID)					99.01	54-144		WG581296
TPH (GC/FID) Low Fraction	mg/kg	30.3	11.0	5.5	70.4	55-109	L563269-07	WG581296
a,a,a-Trifluorotoluene(FID)					101.9	59-128		WG581296
Barium	mg/kg	155.	93.6	50	123.	75-125	L563170-01	WG581201
Boron	mg/kg	62.4	14.7	50	95.4	75-125	L563170-01	WG581201
Cadmium	mg/kg	43.1	0.278	50	85.6	75-125	L563170-01	WG581201
Chromium	mg/kg	60.6	13.0	50	95.2	75-125	L563170-01	WG581201
Copper	mg/kg	57.4	8.26	50	98.3	75-125	L563170-01	WG581201
Silver	mg/kg	48.8	0	50	97.6	75-125	L563170-01	WG581201
Zinc	mg/kg	77.2	24.3	50	106.	75-125	L563170-01	WG581201
Arsenic	mg/kg	60.2	10.8	10	98.8	75-125	L563170-01	WG581201
Lead	mg/kg	59.4	9.50	10	99.8	75-125	L563170-01	WG581201
Nickel	mg/kg	55.2	9.86	10	90.7	75-125	L563170-01	WG581201
Selenium	mg/kg	20.4	0	2.5	40.8*	75-125	L563170-01	WG581201

* Performance of this Analyte is outside of established criteria.
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YOUR LAB OF CHOICE

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Est. 1970

March 08, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Chromium,Hexavalent	mg/kg	15.9	1.20	20	73.5	50-150	L562587-04	WG580605
TPH (GC/FID) High Fraction	ppm	74.6	44.0	60	51.0	50-150	L563163-01	WG581233
o-Terphenyl					67.64	50-150		WG581233
Mercury	mg/kg	0.258	0.0220	.25	94.4	70-130	L563237-16	WG581363

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.204	0.245	65.8	32-137	18.2	39	L563269-07	WG581296
Ethylbenzene	mg/kg	0.197	0.249	61.8	10-150	22.9	44	L563269-07	WG581296
Toluene	mg/kg	0.242	0.275	29.0	20-142	12.4	42	L563269-07	WG581296
Total Xylene	mg/kg	0.727	0.840	34.2	16-141	14.4	46	L563269-07	WG581296
a,a,a-Trifluorotoluene(PID)				98.75	54-144				WG581296
TPH (GC/FID) Low Fraction	mg/kg	30.2	30.3	69.9	55-109	0.400	20	L563269-07	WG581296
a,a,a-Trifluorotoluene(FID)				101.0	59-128				WG581296
Barium	mg/kg	152.	155.	117.	75-125	1.95	20	L563170-01	WG581201
Boron	mg/kg	55.7	62.4	82.0	75-125	11.3	20	L563170-01	WG581201
Cadmium	mg/kg	39.0	43.1	77.4	75-125	9.99	20	L563170-01	WG581201
Chromium	mg/kg	54.7	60.6	83.4	75-125	10.2	20	L563170-01	WG581201
Copper	mg/kg	52.3	57.4	88.1	75-125	9.30	20	L563170-01	WG581201
Silver	mg/kg	44.0	48.8	88.0	75-125	10.3	20	L563170-01	WG581201
Zinc	mg/kg	69.5	77.2	90.4	75-125	10.5	20	L563170-01	WG581201
Arsenic	mg/kg	63.3	60.2	105.	75-125	5.02	20	L563170-01	WG581201
Lead	mg/kg	64.0	59.4	109.	75-125	7.46	20	L563170-01	WG581201
Nickel	mg/kg	62.8	55.2	106.	75-125	12.9	20	L563170-01	WG581201
Selenium	mg/kg	32.5	20.4	65.0*	75-125	45.7*	20	L563170-01	WG581201
Chromium,Hexavalent	mg/kg	17.1	15.9	79.5	50-150	7.27	20	L562587-04	WG580605
TPH (GC/FID) High Fraction	ppm	89.6	74.6	76.0	50-150	18.3	40	L563163-01	WG581233
o-Terphenyl				65.24	50-150				WG581233
Mercury	mg/kg	0.270	0.258	99.2	70-130	4.55	20	L563237-16	WG581363

Batch number /Run number / Sample number cross reference

WG581296: R2058097: L563186-01
WG581266: R2058772: L563186-01
WG581201: R2058952: L563186-01
WG581290: R2059752: L563186-01
WG580605: R2060454: L563186-01
WG581242: R2060752: L563186-01
WG581233: R2061032: L563186-01
WG581452: R2061133: L563186-01
WG581385: R2061632: L563186-01
WG581363: R2063773: L563186-01

* * 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.