



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

Est. 1970

Scott Carmichael
Walter Env. & Eng. Group -CO
115 N 5th Street, Suite 340
Grand Junction, CO 81501

Report Summary

Monday November 25, 2013

Report Number: L669143

Samples Received: 11/15/13

Client Project: 242-05-001

Description: Lake 6-22

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, IA Lab #364, EPA - TN002

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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

Scott Carmichael
Walter Env. & Eng. Group -CO
115 N 5th Street, Suite 340
Grand Junction, CO 81501

November 25, 2013

Date Received : November 15, 2013
Description : Lake 6-22

Sample ID : PIT BOTTOM-SW

Collected By : Scott Carmichael
Collection Date : 11/14/13 12:10

ESC Sample # : L669143-01

Site ID :

Project # : 242-05-001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	11/21/13	1
Chromium, Trivalent	8.7	2.0	mg/kg	Calc.	11/25/13	1
ORP	110		mV	2580 B-2011	11/21/13	1
pH	9.1		su	9045D	11/21/13	1
Sodium Adsorption Ratio	8.3			Calc.	11/18/13	1
Specific Conductance	280		umhos/cm	9050AMod	11/19/13	1
Mercury	BDL	0.020	mg/kg	7471	11/19/13	1
Arsenic	3.8	1.0	mg/kg	6010B	11/23/13	1
Barium	69.	0.25	mg/kg	6010B	11/23/13	1
Cadmium	0.40	0.25	mg/kg	6010B	11/23/13	1
Chromium	8.7	0.50	mg/kg	6010B	11/23/13	1
Lead	6.8	0.25	mg/kg	6010B	11/23/13	1
Selenium	BDL	1.0	mg/kg	6010B	11/23/13	1
Silver	BDL	0.50	mg/kg	6010B	11/23/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	11/18/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/18/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/18/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/18/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/18/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.6		% Rec.	8021/8015	11/18/13	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	11/18/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	11/21/13	1
Surrogate recovery(%)						
o-Terphenyl	84.8		% Rec.	3546/DRO	11/21/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L669143-01 (PH) - 9.1@21.0c



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November 25, 2013

Date Received : November 15, 2013
Description : Lake 6-22

Sample ID : PIT BOTTOM-SW

Collected By : Scott Carmichael
Collection Date : 11/14/13 12:10

ESC Sample # : L669143-01

Site ID :

Project # : 242-05-001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
Surrogate Recovery						
Nitrobenzene-d5	121.		% Rec.	8270C-SIM	11/21/13	1
2-Fluorobiphenyl	85.3		% Rec.	8270C-SIM	11/21/13	1
p-Terphenyl-d14	104.		% Rec.	8270C-SIM	11/21/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 11/25/13 11:01 Printed: 11/25/13 11:02
L669143-01 (PH) - 9.1@21.0c



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November 25, 2013

Date Received : November 15, 2013
Description : Lake 6-22

Sample ID : PIT BOTTOM-C

Collected By : Scott Carmichael
Collection Date : 11/14/13 12:00

ESC Sample # : L669143-02

Site ID :

Project # : 242-05-001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	11/21/13	1
Chromium, Trivalent	6.3	2.0	mg/kg	Calc.	11/25/13	1
ORP	110		mV	2580 B-2011	11/21/13	1
pH	9.4		su	9045D	11/21/13	1
Sodium Adsorption Ratio	12.			Calc.	11/18/13	1
Specific Conductance	920		umhos/cm	9050AMod	11/19/13	1
Mercury	BDL	0.020	mg/kg	7471	11/21/13	1
Arsenic	3.2	1.0	mg/kg	6010B	11/23/13	1
Barium	26.	0.25	mg/kg	6010B	11/23/13	1
Cadmium	BDL	0.25	mg/kg	6010B	11/23/13	1
Chromium	6.3	0.50	mg/kg	6010B	11/23/13	1
Lead	5.6	0.25	mg/kg	6010B	11/23/13	1
Selenium	BDL	1.0	mg/kg	6010B	11/23/13	1
Silver	BDL	0.50	mg/kg	6010B	11/23/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	11/18/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/18/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/18/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/18/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/18/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	94.5		% Rec.	8021/8015	11/18/13	5
a,a,a-Trifluorotoluene(PID)	100.		% Rec.	8021/8015	11/18/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	11/21/13	1
Surrogate recovery(%)						
o-Terphenyl	90.7		% Rec.	3546/DRO	11/21/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L669143-02 (PH) - 9.4@21.1c



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November 25, 2013

Date Received : November 15, 2013
Description : Lake 6-22

Sample ID : PIT BOTTOM-C

Collected By : Scott Carmichael
Collection Date : 11/14/13 12:00

ESC Sample # : L669143-02

Site ID :

Project # : 242-05-001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
Surrogate Recovery						
Nitrobenzene-d5	101.		% Rec.	8270C-SIM	11/21/13	1
2-Fluorobiphenyl	71.5		% Rec.	8270C-SIM	11/21/13	1
p-Terphenyl-d14	85.9		% Rec.	8270C-SIM	11/21/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Reported: 11/25/13 11:01 Printed: 11/25/13 11:02
L669143-02 (PH) - 9.4@21.1c



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November 25, 2013

Date Received : November 15, 2013
Description : Lake 6-22

Sample ID : PIT BOTTOM-N

Collected By : Scott Carmichael
Collection Date : 11/14/13 12:15

ESC Sample # : L669143-03

Site ID :

Project # : 242-05-001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	11/21/13	1
Chromium, Trivalent	6.4	2.0	mg/kg	Calc.	11/25/13	1
ORP	170		mV	2580 B-2011	11/21/13	1
pH	8.9		su	9045D	11/21/13	1
Sodium Adsorption Ratio	10.			Calc.	11/18/13	1
Specific Conductance	1900		umhos/cm	9050AMod	11/19/13	1
Mercury	BDL	0.020	mg/kg	7471	11/21/13	1
Arsenic	4.6	1.0	mg/kg	6010B	11/23/13	1
Barium	42.	0.25	mg/kg	6010B	11/23/13	1
Cadmium	0.36	0.25	mg/kg	6010B	11/23/13	1
Chromium	6.4	0.50	mg/kg	6010B	11/23/13	1
Lead	5.3	0.25	mg/kg	6010B	11/23/13	1
Selenium	BDL	1.0	mg/kg	6010B	11/23/13	1
Silver	BDL	0.50	mg/kg	6010B	11/23/13	1
Benzene	BDL	0.0025	mg/kg	8021/8015	11/19/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	11/19/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	11/19/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	11/19/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	11/19/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	92.8		% Rec.	8021/8015	11/19/13	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	11/19/13	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	11/21/13	1
Surrogate recovery(%)						
o-Terphenyl	83.3		% Rec.	3546/DRO	11/21/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L669143-03 (PH) - 8.9@20.5c



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REPORT OF ANALYSIS

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115 N 5th Street, Suite 340
Grand Junction, CO 81501

November 25, 2013

Date Received : November 15, 2013
Description : Lake 6-22

Sample ID : PIT BOTTOM-N

Collected By : Scott Carmichael
Collection Date : 11/14/13 12:15

ESC Sample # : L669143-03

Site ID :

Project # : 242-05-001

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	11/21/13	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	11/21/13	1
Surrogate Recovery						
Nitrobenzene-d5	116.		% Rec.	8270C-SIM	11/21/13	1
2-Fluorobiphenyl	84.3		% Rec.	8270C-SIM	11/21/13	1
p-Terphenyl-d14	101.		% Rec.	8270C-SIM	11/21/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Reported: 11/25/13 11:01 Printed: 11/25/13 11:02
L669143-03 (PH) - 8.9@20.5c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L669143-03	WG692922	SAMP	Arsenic	R2859336	O1
	WG692922	SAMP	Barium	R2859336	J3
	WG692922	SAMP	Cadmium	R2859336	O1P1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
O1	(ESC) The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

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
11/25/13 at 11:02:16

TSR Signing Reports: 134
R5 - Desired TAT

Accounting - pending credit app

Sample: L669143-01 Account: WALTERGJCO Received: 11/15/13 09:00 Due Date: 11/22/13 00:00 RPT Date: 11/25/13 11:01

Sample: L669143-02 Account: WALTERGJCO Received: 11/15/13 09:00 Due Date: 11/22/13 00:00 RPT Date: 11/25/13 11:01

Sample: L669143-03 Account: WALTERGJCO Received: 11/15/13 09:00 Due Date: 11/22/13 00:00 RPT Date: 11/25/13 11:01



YOUR LAB OF CHOICE

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Scott Carmichael
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Quality Assurance Report
Level II

L669143

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November 25, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Specific Conductance	1.10	umhos/cm			WG692975	11/19/13 12:02
Benzene	< .0005	mg/kg			WG693016	11/19/13 12:53
Ethylbenzene	< .0005	mg/kg			WG693016	11/19/13 12:53
Toluene	< .005	mg/kg			WG693016	11/19/13 12:53
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG693016	11/19/13 12:53
Total Xylene	< .0015	mg/kg			WG693016	11/19/13 12:53
a,a,a-Trifluorotoluene(FID)		% Rec.	93.00	59-128	WG693016	11/19/13 12:53
a,a,a-Trifluorotoluene(PID)		% Rec.	101.0	54-144	WG693016	11/19/13 12:53
Mercury	< .02	mg/kg			WG692881	11/19/13 10:54
Benzene	< .0005	mg/kg			WG692807	11/18/13 15:27
Ethylbenzene	< .0005	mg/kg			WG692807	11/18/13 15:27
Toluene	< .005	mg/kg			WG692807	11/18/13 15:27
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG692807	11/18/13 15:27
Total Xylene	< .0015	mg/kg			WG692807	11/18/13 15:27
a,a,a-Trifluorotoluene(FID)		% Rec.	95.80	59-128	WG692807	11/18/13 15:27
a,a,a-Trifluorotoluene(PID)		% Rec.	101.0	54-144	WG692807	11/18/13 15:27
Chromium, Hexavalent	< 2	mg/kg			WG693036	11/21/13 13:19
1-Methylnaphthalene	< .02	mg/kg			WG693237	11/21/13 04:47
2-Chloronaphthalene	< .02	mg/kg			WG693237	11/21/13 04:47
2-Methylnaphthalene	< .02	mg/kg			WG693237	11/21/13 04:47
Acenaphthene	< .006	mg/kg			WG693237	11/21/13 04:47
Acenaphthylene	< .006	mg/kg			WG693237	11/21/13 04:47
Anthracene	< .006	mg/kg			WG693237	11/21/13 04:47
Benzo(a)anthracene	< .006	mg/kg			WG693237	11/21/13 04:47
Benzo(a)pyrene	< .006	mg/kg			WG693237	11/21/13 04:47
Benzo(b)fluoranthene	< .006	mg/kg			WG693237	11/21/13 04:47
Benzo(g,h,i)perylene	< .006	mg/kg			WG693237	11/21/13 04:47
Benzo(k)fluoranthene	< .006	mg/kg			WG693237	11/21/13 04:47
Chrysene	< .006	mg/kg			WG693237	11/21/13 04:47
Dibenz(a,h)anthracene	< .006	mg/kg			WG693237	11/21/13 04:47
Fluoranthene	< .006	mg/kg			WG693237	11/21/13 04:47
Fluorene	< .006	mg/kg			WG693237	11/21/13 04:47
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG693237	11/21/13 04:47
Naphthalene	< .02	mg/kg			WG693237	11/21/13 04:47
Phenanthrene	< .006	mg/kg			WG693237	11/21/13 04:47
Pyrene	< .006	mg/kg			WG693237	11/21/13 04:47
2-Fluorobiphenyl		% Rec.	89.40	51.1-131	WG693237	11/21/13 04:47
Nitrobenzene-d5		% Rec.	69.90	40.9-147	WG693237	11/21/13 04:47
p-Terphenyl-d14		% Rec.	90.10	45.3-138	WG693237	11/21/13 04:47
Mercury	< .02	mg/kg			WG693051	11/21/13 14:03
TPH (GC/FID) High Fraction	< 4	mg/kg			WG693233	11/21/13 19:05
o-Terphenyl		% Rec.	87.80	50-150	WG693233	11/21/13 19:05
Arsenic	< 1	mg/kg			WG692922	11/23/13 14:38

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Est. 1970

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Barium	< .25	mg/kg			WG692922	11/23/13 14:38
Cadmium	< .25	mg/kg			WG692922	11/23/13 14:38
Chromium	< .5	mg/kg			WG692922	11/23/13 14:38
Lead	< .25	mg/kg			WG692922	11/23/13 14:38
Selenium	< 1	mg/kg			WG692922	11/23/13 14:38
Silver	< .5	mg/kg			WG692922	11/23/13 14:38

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Specific Conductance	umhos/cm	680.	680.	0.295	20	L668749-01	WG692975
Specific Conductance	umhos/cm	2100	2100	2.17	20	L669238-01	WG692975
Mercury	mg/kg	0.0	0.0218	53.0*	20	L668994-11	WG692881
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L669143-02	WG693036
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L669238-02	WG693036
pH	su	8.40	8.40	0.119	1	L669242-02	WG693439
pH	su	7.60	7.60	0.656	1	L669242-03	WG693439
ORP	mV	86.0	87.0	1.16	20	L668755-04	WG693466
ORP	mV	80.0	79.0	1.26	20	L669245-07	WG693466
Mercury	mg/kg	0.0230	0.0226	0.0	20	L666464-02	WG693051
Arsenic	mg/kg	4.90	4.62	6.00	20	L669143-03	WG692922
Barium	mg/kg	58.0	42.5	31.0*	20	L669143-03	WG692922
Cadmium	mg/kg	0.0	0.364	64.0*	20	L669143-03	WG692922
Chromium	mg/kg	7.70	6.41	18.0	20	L669143-03	WG692922
Lead	mg/kg	5.80	5.26	9.00	20	L669143-03	WG692922
Selenium	mg/kg	0.0	0.111	909.*	20	L669143-03	WG692922
Silver	mg/kg	0.0	-0.151	28.0*	20	L669143-03	WG692922

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Specific Conductance	umhos/cm	510	510.	100.	85-115	WG692975
Benzene	mg/kg	.05	0.0451	90.2	70-130	WG693016
Ethylbenzene	mg/kg	.05	0.0463	92.6	70-130	WG693016
Toluene	mg/kg	.05	0.0453	90.7	70-130	WG693016
Total Xylene	mg/kg	.15	0.141	93.8	70-130	WG693016
a,a,a-Trifluorotoluene(PID)				100.0	54-144	WG693016
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.13	75.2	63.5-137	WG693016
a,a,a-Trifluorotoluene(FID)				98.10	59-128	WG693016
Mercury	mg/kg	12.4	12.0	96.7	71.6-128	WG692881
Benzene	mg/kg	.05	0.0505	101.	70-130	WG692807

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Ethylbenzene	mg/kg	.05	0.0514	103.	70-130	WG692807
Toluene	mg/kg	.05	0.0520	104.	70-130	WG692807
Total Xylene	mg/kg	.15	0.149	99.6	70-130	WG692807
a,a,a-Trifluorotoluene(PID)				101.0	54-144	WG692807
TPH (GC/FID) Low Fraction	mg/kg	5.5	4.05	73.6	63.5-137	WG692807
a,a,a-Trifluorotoluene(FID)				93.30	59-128	WG692807
Chromium, Hexavalent	mg/kg	146	139.	95.2	80-120	WG693036
1-Methylnaphthalene	mg/kg	.08	0.0748	93.5	62.5-121	WG693237
2-Chloronaphthalene	mg/kg	.08	0.0678	84.8	62.1-120	WG693237
2-Methylnaphthalene	mg/kg	.08	0.0753	94.2	62.5-121	WG693237
Acenaphthene	mg/kg	.08	0.0674	84.3	62.4-121	WG693237
Acenaphthylene	mg/kg	.08	0.0678	84.8	62.9-123	WG693237
Anthracene	mg/kg	.08	0.0726	90.8	64.9-129	WG693237
Benzo(a)anthracene	mg/kg	.08	0.0702	87.7	61.8-125	WG693237
Benzo(a)pyrene	mg/kg	.08	0.0632	79.0	63.4-119	WG693237
Benzo(b)fluoranthene	mg/kg	.08	0.0704	88.0	62.7-119	WG693237
Benzo(g,h,i)perylene	mg/kg	.08	0.0749	93.7	68.2-129	WG693237
Benzo(k)fluoranthene	mg/kg	.08	0.0680	85.0	64.5-128	WG693237
Chrysene	mg/kg	.08	0.0714	89.2	64.4-128	WG693237
Dibenz(a,h)anthracene	mg/kg	.08	0.0739	92.4	65.3-128	WG693237
Fluoranthene	mg/kg	.08	0.0689	86.1	61.8-129	WG693237
Fluorene	mg/kg	.08	0.0677	84.7	60.8-121	WG693237
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0746	93.3	67.6-129	WG693237
Naphthalene	mg/kg	.08	0.0669	83.7	59.5-116	WG693237
Phenanthrene	mg/kg	.08	0.0649	81.1	59.4-121	WG693237
Pyrene	mg/kg	.08	0.0670	83.7	61.2-130	WG693237
2-Fluorobiphenyl				83.90	51.1-131	WG693237
Nitrobenzene-d5				71.70	40.9-147	WG693237
p-Terphenyl-d14				83.80	45.3-138	WG693237
pH	su	6.96	6.90	99.1	98.3-101.7	WG693439
ORP	mV	100	100.	100.	90-110	WG693466
Mercury	mg/kg	12.4	11.3	91.0	71.6-128	WG693051
TPH (GC/FID) High Fraction	mg/kg	60	49.0	81.6	50-150	WG693233
o-Terphenyl				87.50	50-150	WG693233
Arsenic	mg/kg	237	215.	91.0	83.1-117	WG692922
Barium	mg/kg	252	237.	94.0	84.1-116	WG692922
Cadmium	mg/kg	191	168.	88.0	83.2-117	WG692922
Chromium	mg/kg	128	118.	92.0	81.3-118	WG692922
Lead	mg/kg	103	93.0	90.0	83.1-117	WG692922
Selenium	mg/kg	110	101.	92.0	78.7-122	WG692922
Silver	mg/kg	47.3	42.3	89.0	66.2-134	WG692922

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Specific Conductance	umhos/	510.	510.	100.	85-115	0.0	20	WG692975
Benzene	mg/kg	0.0456	0.0451	91.0	70-130	1.09	20	WG693016
Ethylbenzene	mg/kg	0.0467	0.0463	93.0	70-130	0.820	20	WG693016
Toluene	mg/kg	0.0453	0.0453	90.0	70-130	0.170	20	WG693016
Total Xylene	mg/kg	0.142	0.141	95.0	70-130	1.24	20	WG693016
a,a,a-Trifluorotoluene(PID)				100.0	54-144			WG693016
TPH (GC/FID) Low Fraction	mg/kg	4.13	4.13	75.0	63.5-137	0.210	20	WG693016
a,a,a-Trifluorotoluene(FID)				98.00	59-128			WG693016
Benzene	mg/kg	0.0493	0.0505	98.0	70-130	2.47	20	WG692807
Ethylbenzene	mg/kg	0.0506	0.0514	101.	70-130	1.66	20	WG692807
Toluene	mg/kg	0.0508	0.0520	102.	70-130	2.41	20	WG692807
Total Xylene	mg/kg	0.147	0.149	98.0	70-130	1.95	20	WG692807
a,a,a-Trifluorotoluene(PID)				101.0	54-144			WG692807
TPH (GC/FID) Low Fraction	mg/kg	3.95	4.05	72.0	63.5-137	2.54	20	WG692807
a,a,a-Trifluorotoluene(FID)				96.60	59-128			WG692807
Chromium,Hexavalent	mg/kg	139.	139.	95.0	80-120	0.0	20	WG693036
1-Methylnaphthalene	mg/kg	0.0775	0.0748	97.0	62.5-121	3.62	20	WG693237
2-Chloronaphthalene	mg/kg	0.0712	0.0678	89.0	62.1-120	4.80	20	WG693237
2-Methylnaphthalene	mg/kg	0.0784	0.0753	98.0	62.5-121	3.92	20	WG693237
Acenaphthene	mg/kg	0.0702	0.0674	88.0	62.4-121	3.99	20	WG693237
Acenaphthylene	mg/kg	0.0705	0.0678	88.0	62.9-123	3.87	20	WG693237
Anthracene	mg/kg	0.0754	0.0726	94.0	64.9-129	3.70	20	WG693237
Benzo(a)anthracene	mg/kg	0.0727	0.0702	91.0	61.8-125	3.49	20	WG693237
Benzo(a)pyrene	mg/kg	0.0668	0.0632	83.0	63.4-119	5.52	20	WG693237
Benzo(b)fluoranthene	mg/kg	0.0732	0.0704	92.0	62.7-119	3.86	20	WG693237
Benzo(g,h,i)perylene	mg/kg	0.0781	0.0749	98.0	68.2-129	4.13	20	WG693237
Benzo(k)fluoranthene	mg/kg	0.0715	0.0680	89.0	64.5-128	5.08	20	WG693237
Chrysene	mg/kg	0.0741	0.0714	93.0	64.4-128	3.83	20	WG693237
Dibenz(a,h)anthracene	mg/kg	0.0765	0.0739	96.0	65.3-128	3.50	20	WG693237
Fluoranthene	mg/kg	0.0720	0.0689	90.0	61.8-129	4.46	20	WG693237
Fluorene	mg/kg	0.0705	0.0677	88.0	60.8-121	4.06	20	WG693237
Indeno(1,2,3-cd)pyrene	mg/kg	0.0775	0.0746	97.0	67.6-129	3.73	20	WG693237
Naphthalene	mg/kg	0.0700	0.0669	88.0	59.5-116	4.53	20	WG693237
Phenanthrene	mg/kg	0.0683	0.0649	85.0	59.4-121	5.12	20	WG693237
Pyrene	mg/kg	0.0693	0.0670	87.0	61.2-130	3.45	20	WG693237
2-Fluorobiphenyl				84.40	51.1-131			WG693237
Nitrobenzene-d5				71.90	40.9-147			WG693237
p-Terphenyl-d14				83.50	45.3-138			WG693237
pH	su	6.90	6.90	99.0	98.3-101.7	0.0	20	WG693439
ORP	mV	100.	100.	100.	90-110	0.0	20	WG693466
TPH (GC/FID) High Fraction	mg/kg	50.8	49.0	85.0	50-150	3.75	20	WG693233
o-Terphenyl				89.40	50-150			WG693233

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.201	0.000358	.05	80.0	49.7-127	L669359-01	WG693016
Ethylbenzene	mg/kg	0.196	0.000416	.05	78.0	40.8-141	L669359-01	WG693016
Toluene	mg/kg	0.198	0.000762	.05	79.0	49.8-132	L669359-01	WG693016
Total Xylene	mg/kg	0.592	0.00124	.15	79.0	41.2-140	L669359-01	WG693016
a,a,a-Trifluorotoluene(PID)					99.70	54-144		WG693016
TPH (GC/FID) Low Fraction	mg/kg	17.2	0.0682	5.5	62.0	28.5-138	L669359-01	WG693016
a,a,a-Trifluorotoluene(FID)					96.50	59-128		WG693016
Mercury	mg/kg	0.256	0.0218	.25	94.0	80-120	L668994-11	WG692881
Benzene	mg/kg	0.243	0.0	.05	97.0	49.7-127	L669063-01	WG692807
Ethylbenzene	mg/kg	0.220	0.0	.05	88.0	40.8-141	L669063-01	WG692807
Toluene	mg/kg	0.238	0.0	.05	95.0	49.8-132	L669063-01	WG692807
Total Xylene	mg/kg	0.641	0.0	.15	86.0	41.2-140	L669063-01	WG692807
a,a,a-Trifluorotoluene(PID)					99.50	54-144		WG692807
TPH (GC/FID) Low Fraction	mg/kg	15.4	0.0647	5.5	56.0	28.5-138	L669063-01	WG692807
a,a,a-Trifluorotoluene(FID)					93.50	59-128		WG692807
Chromium, Hexavalent	mg/kg	19.7	0.0	20	98.0	75-125	L669143-03	WG693036
1-Methylnaphthalene	mg/kg	0.0712	0.	.08	89.0	58.9-123	L668845-08	WG693237
2-Chloronaphthalene	mg/kg	0.0667	0.	.08	83.4	61.6-120	L668845-08	WG693237
2-Methylnaphthalene	mg/kg	0.0724	0.000923	.08	89.4	50.7-129	L668845-08	WG693237
Acenaphthene	mg/kg	0.0661	0.	.08	82.6	51.6-124	L668845-08	WG693237
Acenaphthylene	mg/kg	0.0665	0.	.08	83.2	58.3-126	L668845-08	WG693237
Anthracene	mg/kg	0.0702	0.	.08	87.7	47.9-137	L668845-08	WG693237
Benzo(a)anthracene	mg/kg	0.0688	0.00143	.08	84.2	34.2-138	L668845-08	WG693237
Benzo(a)pyrene	mg/kg	0.0677	0.	.08	84.6	34.6-133	L668845-08	WG693237
Benzo(b)fluoranthene	mg/kg	0.0672	0.	.08	83.9	19.8-142	L668845-08	WG693237
Benzo(g,h,i)perylene	mg/kg	0.0724	0.	.08	90.5	20-149	L668845-08	WG693237
Benzo(k)fluoranthene	mg/kg	0.0649	0.	.08	81.2	32.1-137	L668845-08	WG693237
Chrysene	mg/kg	0.0690	0.00154	.08	84.4	36.6-137	L668845-08	WG693237
Dibenz(a,h)anthracene	mg/kg	0.0702	0.	.08	87.7	27.1-145	L668845-08	WG693237
Fluoranthene	mg/kg	0.0683	0.	.08	85.4	39.8-141	L668845-08	WG693237
Fluorene	mg/kg	0.0663	0.	.08	82.8	42.5-130	L668845-08	WG693237
Indeno(1,2,3-cd)pyrene	mg/kg	0.0711	0.	.08	88.9	19-151	L668845-08	WG693237
Naphthalene	mg/kg	0.0651	0.00115	.08	80.0	40.6-135	L668845-08	WG693237
Phenanthrene	mg/kg	0.0637	0.	.08	79.6	39.7-129	L668845-08	WG693237
Pyrene	mg/kg	0.0630	0.	.08	78.7	31.5-141	L668845-08	WG693237
2-Fluorobiphenyl					80.90	51.1-131		WG693237
Nitrobenzene-d5					66.70	40.9-147		WG693237
p-Terphenyl-d14					79.20	45.3-138		WG693237
Mercury	mg/kg	0.313	0.0226	.25	120.	80-120	L666464-02	WG693051
TPH (GC/FID) High Fraction	mg/kg	46.2	0.0833	60	77.0	50-150	L669143-01	WG693233
o-Terphenyl					83.10	50-150		WG693233
Arsenic	mg/kg	50.1	4.62	50	91.0	75-125	L669143-03	WG692922
Barium	mg/kg	92.9	42.5	50	100.	75-125	L669143-03	WG692922
Cadmium	mg/kg	44.4	0.364	50	88.0	75-125	L669143-03	WG692922
Chromium	mg/kg	52.8	6.41	50	93.0	75-125	L669143-03	WG692922
Lead	mg/kg	50.6	5.26	50	91.0	75-125	L669143-03	WG692922

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Selenium	mg/kg	45.0	0.111	50	90.0	75-125	L669143-03	WG692922
Silver	mg/kg	46.4	-0.151	50	93.0	75-125	L669143-03	WG692922

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.219	0.201	87.4	49.7-127	8.55	23.5	L669359-01	WG693016
Ethylbenzene	mg/kg	0.212	0.196	84.6	40.8-141	7.74	23.8	L669359-01	WG693016
Toluene	mg/kg	0.214	0.198	85.2	49.8-132	7.64	23.5	L669359-01	WG693016
Total Xylene	mg/kg	0.634	0.592	84.4	41.2-140	6.90	23.7	L669359-01	WG693016
a,a,a-Trifluorotoluene(PID)				99.90	54-144				WG693016
TPH (GC/FID) Low Fraction	mg/kg	18.5	17.2	67.0	28.5-138	7.40	23.6	L669359-01	WG693016
a,a,a-Trifluorotoluene(FID)				96.90	59-128				WG693016
Mercury	mg/kg	0.221	0.256	79.8*	80-120	14.5	20	L668994-11	WG692881
Benzene	mg/kg	0.241	0.243	96.2	49.7-127	0.920	23.5	L669063-01	WG692807
Ethylbenzene	mg/kg	0.221	0.220	88.6	40.8-141	0.590	23.8	L669063-01	WG692807
Toluene	mg/kg	0.236	0.238	94.6	49.8-132	0.620	23.5	L669063-01	WG692807
Total Xylene	mg/kg	0.644	0.641	85.8	41.2-140	0.390	23.7	L669063-01	WG692807
a,a,a-Trifluorotoluene(PID)				99.70	54-144				WG692807
TPH (GC/FID) Low Fraction	mg/kg	16.0	15.4	57.9	28.5-138	3.90	23.6	L669063-01	WG692807
a,a,a-Trifluorotoluene(FID)				93.80	59-128				WG692807
Chromium, Hexavalent	mg/kg	18.6	19.7	93.0	75-125	5.74	20	L669143-03	WG693036
1-Methylnaphthalene	mg/kg	0.0667	0.0712	83.4	58.9-123	6.46	20	L668845-08	WG693237
2-Chloronaphthalene	mg/kg	0.0616	0.0667	77.0	61.6-120	7.97	20	L668845-08	WG693237
2-Methylnaphthalene	mg/kg	0.0671	0.0724	82.7	50.7-129	7.69	20	L668845-08	WG693237
Acenaphthene	mg/kg	0.0611	0.0661	76.4	51.6-124	7.80	20	L668845-08	WG693237
Acenaphthylene	mg/kg	0.0615	0.0665	76.8	58.3-126	7.90	20	L668845-08	WG693237
Anthracene	mg/kg	0.0651	0.0702	81.4	47.9-137	7.48	20	L668845-08	WG693237
Benzo(a)anthracene	mg/kg	0.0625	0.0688	76.3	34.2-138	9.55	22.8	L668845-08	WG693237
Benzo(a)pyrene	mg/kg	0.0615	0.0677	76.9	34.6-133	9.56	26.3	L668845-08	WG693237
Benzo(b)fluoranthene	mg/kg	0.0600	0.0672	75.0	19.8-142	11.2	30.3	L668845-08	WG693237
Benzo(g,h,i)perylene	mg/kg	0.0658	0.0724	82.3	20-149	9.48	27.1	L668845-08	WG693237
Benzo(k)fluoranthene	mg/kg	0.0599	0.0649	74.9	32.1-137	8.01	24.6	L668845-08	WG693237
Chrysene	mg/kg	0.0631	0.0690	76.9	36.6-137	9.00	22.7	L668845-08	WG693237
Dibenz(a,h)anthracene	mg/kg	0.0637	0.0702	79.6	27.1-145	9.74	21.9	L668845-08	WG693237
Fluoranthene	mg/kg	0.0632	0.0683	78.9	39.8-141	7.83	22.2	L668845-08	WG693237
Fluorene	mg/kg	0.0613	0.0663	76.6	42.5-130	7.78	20	L668845-08	WG693237
Indeno(1,2,3-cd)pyrene	mg/kg	0.0645	0.0711	80.6	19-151	9.79	25	L668845-08	WG693237
Naphthalene	mg/kg	0.0606	0.0651	74.3	40.6-135	7.18	20	L668845-08	WG693237
Phenanthrene	mg/kg	0.0580	0.0637	72.5	39.7-129	9.32	20	L668845-08	WG693237
Pyrene	mg/kg	0.0577	0.0630	72.2	31.5-141	8.70	23.5	L668845-08	WG693237
2-Fluorobiphenyl				74.90	51.1-131				WG693237
Nitrobenzene-d5				60.80	40.9-147				WG693237
p-Terphenyl-d14				72.40	45.3-138				WG693237
Mercury	mg/kg	0.300	0.313	111.	80-120	4.00	20	L666464-02	WG693051
TPH (GC/FID) High Fraction	mg/kg	52.8	46.2	87.8	50-150	13.2	20	L669143-01	WG693233
o-Terphenyl				97.10	50-150				WG693233

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

Walter Env. & Eng. Group -CO
Scott Carmichael
115 N 5th Street, Suite 340

Grand Junction, CO 81501

Quality Assurance Report
Level II

L669143

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

November 25, 2013

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	47.6	50.1	86.0	75-125	5.00	20	L669143-03	WG692922
Barium	mg/kg	97.5	92.9	110.	75-125	5.00	20	L669143-03	WG692922
Cadmium	mg/kg	42.0	44.4	83.3	75-125	6.00	20	L669143-03	WG692922
Chromium	mg/kg	49.8	52.8	86.7	75-125	6.00	20	L669143-03	WG692922
Lead	mg/kg	48.2	50.6	85.8	75-125	5.00	20	L669143-03	WG692922
Selenium	mg/kg	42.6	45.0	84.9	75-125	6.00	20	L669143-03	WG692922
Silver	mg/kg	43.8	46.4	88.0	75-125	6.00	20	L669143-03	WG692922

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG692826: R2857159: L669143-01 02 03
WG692975: R2857360: L669143-01 02 03
WG693016: R2857446: L669143-03
WG692881: R2857507: L669143-01
WG692807: R2857509: L669143-01 02
WG693051: R2857903 R2858343: L669143-02 03
WG693036: R2858180: L669143-01 02 03
WG693237: R2858226 R2858668 R2858909: L669143-01 02 03
WG693439: R2858282: L669143-01 02 03
WG693466: R2858341: L669143-01 02 03
WG693233: R2858752 R2859157: L669143-01 02 03
WG692922: R2859336: L669143-01 02 03

* * 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.