



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

Est. 1970

Robert Stockton
Olsson Associates- Grand Junction, CO
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

Report Summary

Tuesday August 26, 2014

Report Number: L716793

Samples Received: 08/19/14

Client Project:

Description: POC ILES Dome Sampling

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:

Daphne Richards , 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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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling
Sample ID : POC CS1
Collected By : J. Surina
Collection Date : 08/18/14 11:00

ESC Sample # : L716793-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/21/14	1
Chromium,Trivalent	19.	2.0	mg/kg	Calc.	08/25/14	1
ORP	96.		mV	2580 B-2011	08/21/14	1
pH	8.0		su	9045D	08/23/14	1
Sodium Adsorption Ratio	1.4			Calc.	08/26/14	1
Specific Conductance	260		umhos/cm	9050AMod	08/23/14	1
Mercury	0.034	0.020	mg/kg	7471	08/25/14	1
Arsenic	8.1	2.0	mg/kg	6010B	08/25/14	1
Barium	250	0.50	mg/kg	6010B	08/25/14	1
Boron	35.	10.	mg/kg	6010B	08/25/14	1
Cadmium	BDL	0.50	mg/kg	6010B	08/25/14	1
Chromium	19.	1.0	mg/kg	6010B	08/25/14	1
Copper	16.	2.0	mg/kg	6010B	08/25/14	1
Lead	19.	0.50	mg/kg	6010B	08/25/14	1
Nickel	18.	2.0	mg/kg	6010B	08/25/14	1
Selenium	BDL	2.0	mg/kg	6010B	08/25/14	1
Silver	BDL	1.0	mg/kg	6010B	08/25/14	1
Zinc	400	5.0	mg/kg	6010B	08/25/14	1
Benzene	BDL	0.0025	mg/kg	8021	08/20/14	5
Toluene	BDL	0.025	mg/kg	8021	08/20/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/20/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/20/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/20/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.9		% Rec.	8015	08/20/14	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021	08/20/14	5
TPH (GC/FID) High Fraction	1500	80.	mg/kg	3546/DRO	08/20/14	20
Surrogate recovery(%)						
o-Terphenyl	71.0		% Rec.	3546/DRO	08/20/14	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.071	0.060	mg/kg	8270C-SIM	08/21/14	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L716793-01 (DRO) - Dilution due to matrix
L716793-01 (SV8270PAHSIM) - Dilution due to matrix
L716793-01 (PH) - 8.0@20.6c



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August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling

Sample ID : POC CS1

Collected By : J. Surina
Collection Date : 08/18/14 11:00

ESC Sample # : L716793-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Naphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
Phenanthrene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
1-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
2-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
2-Chloronaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
Surrogate Recovery						
p-Terphenyl-d14	98.8		% Rec.	8270C-SIM	08/21/14	10
Nitrobenzene-d5	172.		% Rec.	8270C-SIM	08/21/14	10
2-Fluorobiphenyl	96.7		% Rec.	8270C-SIM	08/21/14	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/26/14 13:07 Printed: 08/26/14 13:08

L716793-01 (DRO) - Dilution due to matrix

L716793-01 (SV8270PAHSIM) - Dilution due to matrix

L716793-01 (PH) - 8.0@20.6c



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REPORT OF ANALYSIS

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Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling
Sample ID : POC CS2
Collected By : J. Surina
Collection Date : 08/18/14 11:10

ESC Sample # : L716793-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/21/14	1
Chromium, Trivalent	17.	2.0	mg/kg	Calc.	08/25/14	1
ORP	91.		mV	2580 B-2011	08/21/14	1
pH	8.0		su	9045D	08/23/14	1
Sodium Adsorption Ratio	5.2			Calc.	08/26/14	1
Specific Conductance	690		umhos/cm	9050AMod	08/23/14	1
Mercury	0.035	0.020	mg/kg	7471	08/25/14	1
Arsenic	11.	2.0	mg/kg	6010B	08/25/14	1
Barium	260	0.50	mg/kg	6010B	08/25/14	1
Boron	33.	10.	mg/kg	6010B	08/25/14	1
Cadmium	BDL	0.50	mg/kg	6010B	08/25/14	1
Chromium	17.	1.0	mg/kg	6010B	08/25/14	1
Copper	16.	2.0	mg/kg	6010B	08/25/14	1
Lead	18.	0.50	mg/kg	6010B	08/25/14	1
Nickel	16.	2.0	mg/kg	6010B	08/25/14	1
Selenium	BDL	2.0	mg/kg	6010B	08/25/14	1
Silver	BDL	1.0	mg/kg	6010B	08/25/14	1
Zinc	510	5.0	mg/kg	6010B	08/25/14	1
Benzene	BDL	0.0025	mg/kg	8021	08/21/14	5
Toluene	BDL	0.025	mg/kg	8021	08/21/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/21/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/21/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/21/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.5		% Rec.	8015	08/21/14	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/21/14	5
TPH (GC/FID) High Fraction	3400	200	mg/kg	3546/DRO	08/20/14	50
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/20/14	50
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.19	0.060	mg/kg	8270C-SIM	08/21/14	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L716793-02 (SV8270PAHSIM) - Dilution due to matrix
L716793-02 (PH) - 8.0@20.7c
L716793-02 (DRO) - Dilution due to matrix



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Grand Junction, CO 81506

August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling

Sample ID : POC CS2

Collected By : J. Surina
Collection Date : 08/18/14 11:10

ESC Sample # : L716793-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Chrysene	0.078	0.060	mg/kg	8270C-SIM	08/21/14	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/21/14	10
Naphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
Phenanthrene	0.28	0.060	mg/kg	8270C-SIM	08/21/14	10
Pyrene	0.13	0.060	mg/kg	8270C-SIM	08/21/14	10
1-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
2-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
2-Chloronaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/21/14	10
Surrogate Recovery						
p-Terphenyl-d14	112.		% Rec.	8270C-SIM	08/21/14	10
Nitrobenzene-d5	103.		% Rec.	8270C-SIM	08/21/14	10
2-Fluorobiphenyl	93.5		% Rec.	8270C-SIM	08/21/14	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/26/14 13:07 Printed: 08/26/14 13:08
L716793-02 (SV8270PAHSIM) - Dilution due to matrix
L716793-02 (PH) - 8.0@20.7c
L716793-02 (DRO) - Dilution due to matrix



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REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling
Sample ID : POC CS3
Collected By : J. Surina
Collection Date : 08/18/14 11:20

ESC Sample # : L716793-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/21/14	1
Chromium, Trivalent	18.	2.0	mg/kg	Calc.	08/25/14	1
ORP	95.		mV	2580 B-2011	08/21/14	1
pH	7.8		su	9045D	08/23/14	1
Sodium Adsorption Ratio	0.69			Calc.	08/26/14	1
Specific Conductance	570		umhos/cm	9050AMod	08/23/14	1
Mercury	0.026	0.020	mg/kg	7471	08/25/14	1
Arsenic	7.8	2.0	mg/kg	6010B	08/25/14	1
Barium	310	0.50	mg/kg	6010B	08/25/14	1
Boron	33.	10.	mg/kg	6010B	08/25/14	1
Cadmium	BDL	0.50	mg/kg	6010B	08/25/14	1
Chromium	18.	1.0	mg/kg	6010B	08/25/14	1
Copper	57.	2.0	mg/kg	6010B	08/25/14	1
Lead	17.	0.50	mg/kg	6010B	08/25/14	1
Nickel	21.	2.0	mg/kg	6010B	08/25/14	1
Selenium	BDL	2.0	mg/kg	6010B	08/25/14	1
Silver	BDL	1.0	mg/kg	6010B	08/25/14	1
Zinc	1300	5.0	mg/kg	6010B	08/25/14	1
Benzene	BDL	0.0025	mg/kg	8021	08/21/14	5
Toluene	BDL	0.025	mg/kg	8021	08/21/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/21/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/21/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/21/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.6		% Rec.	8015	08/21/14	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/21/14	5
TPH (GC/FID) High Fraction	4000	400	mg/kg	3546/DRO	08/20/14	100
Surrogate recovery(%)						
o-Terphenyl	0.00		% Rec.	3546/DRO	08/20/14	100
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.15	0.12	mg/kg	8270C-SIM	08/21/14	20
Acenaphthene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L716793-03 (DRO) - Dilution due to matrix
L716793-03 (PH) - 7.8@20.5c



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August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling

Sample ID : POC CS3

Collected By : J. Surina
Collection Date : 08/18/14 11:20

ESC Sample # : L716793-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Fluorene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Naphthalene	BDL	0.40	mg/kg	8270C-SIM	08/21/14	20
Phenanthrene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	08/21/14	20
1-Methylnaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/21/14	20
2-Methylnaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/21/14	20
2-Chloronaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/21/14	20
Surrogate Recovery						
p-Terphenyl-d14	126.		% Rec.	8270C-SIM	08/21/14	20
Nitrobenzene-d5	89.4		% Rec.	8270C-SIM	08/21/14	20
2-Fluorobiphenyl	89.0		% Rec.	8270C-SIM	08/21/14	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L716793-03 (DRO) - Dilution due to matrix

L716793-03 (PH) - 7.8@20.5c



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August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling
Sample ID : POC CS4
Collected By : J. Surina
Collection Date : 08/18/14 11:30

ESC Sample # : L716793-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/21/14	1
Chromium, Trivalent	15.	2.0	mg/kg	Calc.	08/25/14	1
ORP	92.		mV	2580 B-2011	08/21/14	1
pH	8.3		su	9045D	08/23/14	1
Sodium Adsorption Ratio	3.1			Calc.	08/26/14	1
Specific Conductance	270		umhos/cm	9050AMod	08/23/14	1
Mercury	0.024	0.020	mg/kg	7471	08/25/14	1
Arsenic	7.4	2.0	mg/kg	6010B	08/25/14	1
Barium	320	0.50	mg/kg	6010B	08/25/14	1
Boron	42.	10.	mg/kg	6010B	08/25/14	1
Cadmium	0.65	0.50	mg/kg	6010B	08/25/14	1
Chromium	15.	1.0	mg/kg	6010B	08/25/14	1
Copper	17.	2.0	mg/kg	6010B	08/25/14	1
Lead	19.	0.50	mg/kg	6010B	08/25/14	1
Nickel	12.	2.0	mg/kg	6010B	08/25/14	1
Selenium	BDL	2.0	mg/kg	6010B	08/25/14	1
Silver	BDL	1.0	mg/kg	6010B	08/25/14	1
Zinc	430	5.0	mg/kg	6010B	08/25/14	1
Benzene	BDL	0.0025	mg/kg	8021	08/21/14	5
Toluene	BDL	0.025	mg/kg	8021	08/21/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/21/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	08/21/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	08/21/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.9		% Rec.	8015	08/21/14	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/21/14	5
TPH (GC/FID) High Fraction	570	40.	mg/kg	3546/DRO	08/21/14	10
Surrogate recovery(%)						
o-Terphenyl	53.0		% Rec.	3546/DRO	08/21/14	10
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Acenaphthene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Acenaphthylene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Benzo(a)anthracene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L716793-04 (DRO) - Cannot run at lower dilution, dilution due to extractions process

L716793-04 (PH) - 8.3@20.5c



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

REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling
Sample ID : POC CS4
Collected By : J. Surina
Collection Date : 08/18/14 11:30

ESC Sample # : L716793-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Benzo(b)fluoranthene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Benzo(g,h,i)perylene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Benzo(k)fluoranthene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Chrysene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Dibenz(a,h)anthracene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Fluoranthene	0.037	0.030	mg/kg	8270C-SIM	08/20/14	5
Fluorene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Indeno(1,2,3-cd)pyrene	BDL	0.030	mg/kg	8270C-SIM	08/20/14	5
Naphthalene	BDL	0.10	mg/kg	8270C-SIM	08/20/14	5
Phenanthrene	0.038	0.030	mg/kg	8270C-SIM	08/20/14	5
Pyrene	0.054	0.030	mg/kg	8270C-SIM	08/20/14	5
1-Methylnaphthalene	BDL	0.10	mg/kg	8270C-SIM	08/20/14	5
2-Methylnaphthalene	BDL	0.10	mg/kg	8270C-SIM	08/20/14	5
2-Chloronaphthalene	BDL	0.10	mg/kg	8270C-SIM	08/20/14	5
Surrogate Recovery						
p-Terphenyl-d14	59.1		% Rec.	8270C-SIM	08/20/14	5
Nitrobenzene-d5	72.8		% Rec.	8270C-SIM	08/20/14	5
2-Fluorobiphenyl	68.8		% Rec.	8270C-SIM	08/20/14	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/26/14 13:07 Printed: 08/26/14 13:08

L716793-04 (DRO) - Cannot run at lower dilution, dilution due to extractions process

L716793-04 (PH) - 8.3@20.5c



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Est. 1970

REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling
Sample ID : POC PL CS1
Collected By : J. Surina
Collection Date : 08/18/14 12:00

ESC Sample # : L716793-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/21/14	1
Chromium, Trivalent	24.	2.0	mg/kg	Calc.	08/25/14	1
ORP	85.		mV	2580 B-2011	08/21/14	1
pH	8.2		su	9045D	08/23/14	1
Sodium Adsorption Ratio	4.1			Calc.	08/26/14	1
Specific Conductance	350		umhos/cm	9050AMod	08/23/14	1
Mercury	BDL	0.020	mg/kg	7471	08/25/14	1
Arsenic	8.9	2.0	mg/kg	6010B	08/23/14	1
Barium	260	0.50	mg/kg	6010B	08/23/14	1
Boron	14.	10.	mg/kg	6010B	08/23/14	1
Cadmium	0.68	0.50	mg/kg	6010B	08/23/14	1
Chromium	24.	1.0	mg/kg	6010B	08/23/14	1
Copper	12.	2.0	mg/kg	6010B	08/23/14	1
Lead	15.	0.50	mg/kg	6010B	08/23/14	1
Nickel	20.	2.0	mg/kg	6010B	08/23/14	1
Selenium	BDL	10.	mg/kg	6010B	08/23/14	5
Silver	BDL	1.0	mg/kg	6010B	08/23/14	1
Zinc	82.	5.0	mg/kg	6010B	08/23/14	1
Benzene	BDL	0.0025	mg/kg	8021	08/22/14	5
Toluene	BDL	0.025	mg/kg	8021	08/22/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	08/22/14	5
Total Xylene	0.028	0.0075	mg/kg	8021	08/22/14	5
TPH (GC/FID) Low Fraction	4.2	0.50	mg/kg	8015	08/22/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.8		% Rec.	8015	08/22/14	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	08/22/14	5
TPH (GC/FID) High Fraction	700	40.	mg/kg	3546/DRO	08/21/14	10
Surrogate recovery(%)						
o-Terphenyl	54.8		% Rec.	3546/DRO	08/21/14	10
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.056	0.0060	mg/kg	8270C-SIM	08/20/14	1
Acenaphthene	0.020	0.0060	mg/kg	8270C-SIM	08/20/14	1
Acenaphthylene	0.016	0.0060	mg/kg	8270C-SIM	08/20/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/20/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L716793-05 (PH) - 8.2@20.5c

L716793-05 (DRO) - Cannot run at lower dilution, dilution due to extractions process



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Est. 1970

REPORT OF ANALYSIS

Robert Stockton
Olsson Associates- Grand Junction,
760 Horizon Drive, Ste 102
Grand Junction, CO 81506

August 26, 2014

Date Received : August 19, 2014
Description : POC ILES Dome Sampling

ESC Sample # : L716793-05

Sample ID : POC PL CS1

Site ID :

Collected By : J. Surina
Collection Date : 08/18/14 12:00

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/20/14	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/20/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	08/20/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/20/14	1
Chrysene	0.031	0.0060	mg/kg	8270C-SIM	08/20/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/20/14	1
Fluoranthene	0.012	0.0060	mg/kg	8270C-SIM	08/20/14	1
Fluorene	0.027	0.0060	mg/kg	8270C-SIM	08/20/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/20/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	08/20/14	1
Phenanthrene	0.16	0.0060	mg/kg	8270C-SIM	08/20/14	1
Pyrene	0.032	0.0060	mg/kg	8270C-SIM	08/20/14	1
1-Methylnaphthalene	0.052	0.020	mg/kg	8270C-SIM	08/20/14	1
2-Methylnaphthalene	0.065	0.020	mg/kg	8270C-SIM	08/20/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	08/20/14	1
Surrogate Recovery						
p-Terphenyl-d14	77.2		% Rec.	8270C-SIM	08/20/14	1
Nitrobenzene-d5	85.2		% Rec.	8270C-SIM	08/20/14	1
2-Fluorobiphenyl	54.2		% Rec.	8270C-SIM	08/20/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/26/14 13:07 Printed: 08/26/14 13:08

L716793-05 (PH) - 8.2@20.5c

L716793-05 (DRO) - Cannot run at lower dilution, dilution due to extractions process

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L716793-01	WG738300	SAMP	Anthracene	R2978937	J3
	WG738300	SAMP	Acenaphthene	R2978937	J3
	WG738300	SAMP	Acenaphthylene	R2978937	J3
	WG738300	SAMP	Benzo(a)anthracene	R2978937	J3
	WG738300	SAMP	Benzo(a)pyrene	R2978937	J3
	WG738300	SAMP	Benzo(b)fluoranthene	R2978937	J3
	WG738300	SAMP	Benzo(g,h,i)perylene	R2978937	J3
	WG738300	SAMP	Benzo(k)fluoranthene	R2978937	J3
	WG738300	SAMP	Chrysene	R2978937	J3
	WG738300	SAMP	Fluoranthene	R2978937	J3
	WG738300	SAMP	Fluorene	R2978937	J3
	WG738300	SAMP	Indeno(1,2,3-cd)pyrene	R2978937	J3
	WG738300	SAMP	Naphthalene	R2978937	J3
	WG738300	SAMP	Phenanthrene	R2978937	J3
	WG738300	SAMP	Pyrene	R2978937	J3
	WG738300	SAMP	1-Methylnaphthalene	R2978937	J3
	WG738300	SAMP	2-Methylnaphthalene	R2978937	J3
	WG738300	SAMP	2-Chloronaphthalene	R2978937	J3
	WG738300	SAMP	Nitrobenzene-d5	R2978937	J1
	WG738303	SAMP	o-Terphenyl	R2979031	J7
L716793-02	WG738300	SAMP	Anthracene	R2978937	J3
	WG738300	SAMP	Acenaphthene	R2978937	J3
	WG738300	SAMP	Acenaphthylene	R2978937	J3
	WG738300	SAMP	Benzo(a)anthracene	R2978937	J3
	WG738300	SAMP	Benzo(a)pyrene	R2978937	J3
	WG738300	SAMP	Benzo(b)fluoranthene	R2978937	J3
	WG738300	SAMP	Benzo(g,h,i)perylene	R2978937	J3
	WG738300	SAMP	Benzo(k)fluoranthene	R2978937	J3
	WG738300	SAMP	Chrysene	R2978937	J3
	WG738300	SAMP	Fluoranthene	R2978937	J3
	WG738300	SAMP	Fluorene	R2978937	J3
	WG738300	SAMP	Indeno(1,2,3-cd)pyrene	R2978937	J3
	WG738300	SAMP	Naphthalene	R2978937	J3
	WG738300	SAMP	Phenanthrene	R2978937	J3
	WG738300	SAMP	Pyrene	R2978937	J3
	WG738300	SAMP	1-Methylnaphthalene	R2978937	J3
	WG738300	SAMP	2-Methylnaphthalene	R2978937	J3
	WG738300	SAMP	2-Chloronaphthalene	R2978937	J3
	WG738303	SAMP	o-Terphenyl	R2979031	J7
L716793-03	WG738173	SAMP	p-Terphenyl-d14	R2978935	J7
	WG738173	SAMP	Nitrobenzene-d5	R2978935	J7
	WG738173	SAMP	2-Fluorobiphenyl	R2978935	J7
	WG738303	SAMP	o-Terphenyl	R2979031	J7
L716793-04	WG738380	SAMP	Benzo(a)pyrene	R2978736	J4J3
L716793-05	WG738380	SAMP	Benzo(a)pyrene	R2978736	J4
	WG738380	SAMP	2-Methylnaphthalene	R2978736	J3
	WG738857	SAMP	Lead	R2979914	O1

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.
J4	The associated batch QC was outside the established quality control range for accuracy.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
O1	(ESC) The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
08/26/14 at 13:08:15

TSR Signing Reports: 288
R5 - Desired TAT

Log all PAHs as PAHSIM.

Sample: L716793-01 Account: OLSSONCO Received: 08/19/14 09:00 Due Date: 08/26/14 00:00 RPT Date: 08/26/14 13:07

Sample: L716793-02 Account: OLSSONCO Received: 08/19/14 09:00 Due Date: 08/26/14 00:00 RPT Date: 08/26/14 13:07

Sample: L716793-03 Account: OLSSONCO Received: 08/19/14 09:00 Due Date: 08/26/14 00:00 RPT Date: 08/26/14 13:07

Sample: L716793-04 Account: OLSSONCO Received: 08/19/14 09:00 Due Date: 08/26/14 00:00 RPT Date: 08/26/14 13:07

Sample: L716793-05 Account: OLSSONCO Received: 08/19/14 09:00 Due Date: 08/26/14 00:00 RPT Date: 08/26/14 13:07



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Quality Assurance Report
Level II

L716793

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Tax I.D. 62-0814289

Est. 1970

August 26, 2014

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
1-Methylnaphthalene	< .02	mg/kg			WG738380	08/20/14 17:49
2-Chloronaphthalene	< .02	mg/kg			WG738380	08/20/14 17:49
2-Methylnaphthalene	< .02	mg/kg			WG738380	08/20/14 17:49
Acenaphthene	< .006	mg/kg			WG738380	08/20/14 17:49
Acenaphthylene	< .006	mg/kg			WG738380	08/20/14 17:49
Anthracene	< .006	mg/kg			WG738380	08/20/14 17:49
Benzo(a)anthracene	< .006	mg/kg			WG738380	08/20/14 17:49
Benzo(a)pyrene	< .006	mg/kg			WG738380	08/20/14 17:49
Benzo(b)fluoranthene	< .006	mg/kg			WG738380	08/20/14 17:49
Benzo(g,h,i)perylene	< .006	mg/kg			WG738380	08/20/14 17:49
Benzo(k)fluoranthene	< .006	mg/kg			WG738380	08/20/14 17:49
Chrysene	< .006	mg/kg			WG738380	08/20/14 17:49
Dibenz(a,h)anthracene	< .006	mg/kg			WG738380	08/20/14 17:49
Fluoranthene	< .006	mg/kg			WG738380	08/20/14 17:49
Fluorene	< .006	mg/kg			WG738380	08/20/14 17:49
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG738380	08/20/14 17:49
Naphthalene	< .02	mg/kg			WG738380	08/20/14 17:49
Phenanthrene	< .006	mg/kg			WG738380	08/20/14 17:49
Pyrene	< .006	mg/kg			WG738380	08/20/14 17:49
2-Fluorobiphenyl	% Rec.		83.60	38.2-135	WG738380	08/20/14 17:49
Nitrobenzene-d5	% Rec.		108.0	28.4-151	WG738380	08/20/14 17:49
p-Terphenyl-d14	% Rec.		82.40	34.2-141	WG738380	08/20/14 17:49
1-Methylnaphthalene	< .02	mg/kg			WG738173	08/20/14 06:58
2-Chloronaphthalene	< .02	mg/kg			WG738173	08/20/14 06:58
2-Methylnaphthalene	< .02	mg/kg			WG738173	08/20/14 06:58
Acenaphthene	< .006	mg/kg			WG738173	08/20/14 06:58
Acenaphthylene	< .006	mg/kg			WG738173	08/20/14 06:58
Anthracene	< .006	mg/kg			WG738173	08/20/14 06:58
Benzo(a)anthracene	< .006	mg/kg			WG738173	08/20/14 06:58
Benzo(a)pyrene	< .006	mg/kg			WG738173	08/20/14 06:58
Benzo(b)fluoranthene	< .006	mg/kg			WG738173	08/20/14 06:58
Benzo(g,h,i)perylene	< .006	mg/kg			WG738173	08/20/14 06:58
Benzo(k)fluoranthene	< .006	mg/kg			WG738173	08/20/14 06:58
Chrysene	< .006	mg/kg			WG738173	08/20/14 06:58
Dibenz(a,h)anthracene	< .006	mg/kg			WG738173	08/20/14 06:58
Fluoranthene	< .006	mg/kg			WG738173	08/20/14 06:58
Fluorene	< .006	mg/kg			WG738173	08/20/14 06:58
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG738173	08/20/14 06:58
Naphthalene	< .02	mg/kg			WG738173	08/20/14 06:58
Phenanthrene	< .006	mg/kg			WG738173	08/20/14 06:58
Pyrene	< .006	mg/kg			WG738173	08/20/14 06:58
2-Fluorobiphenyl	% Rec.		98.30	38.2-135	WG738173	08/20/14 06:58
Nitrobenzene-d5	% Rec.		96.10	28.4-151	WG738173	08/20/14 06:58
p-Terphenyl-d14	% Rec.		114.0	34.2-141	WG738173	08/20/14 06:58
1-Methylnaphthalene	< .02	mg/kg			WG738300	08/20/14 16:14
2-Chloronaphthalene	< .02	mg/kg			WG738300	08/20/14 16:14
2-Methylnaphthalene	< .02	mg/kg			WG738300	08/20/14 16:14
Acenaphthene	< .006	mg/kg			WG738300	08/20/14 16:14
Acenaphthylene	< .006	mg/kg			WG738300	08/20/14 16:14
Anthracene	< .006	mg/kg			WG738300	08/20/14 16:14
Benzo(a)anthracene	< .006	mg/kg			WG738300	08/20/14 16:14
Benzo(a)pyrene	< .006	mg/kg			WG738300	08/20/14 16:14
Benzo(b)fluoranthene	< .006	mg/kg			WG738300	08/20/14 16:14
Benzo(g,h,i)perylene	< .006	mg/kg			WG738300	08/20/14 16:14
Benzo(k)fluoranthene	< .006	mg/kg			WG738300	08/20/14 16:14

* 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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Tax I.D. 62-0814289

Est. 1970

August 26, 2014

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Chrysene	< .006	mg/kg			WG738300	08/20/14 16:14
Dibenz(a,h)anthracene	< .006	mg/kg			WG738300	08/20/14 16:14
Fluoranthene	< .006	mg/kg			WG738300	08/20/14 16:14
Fluorene	< .006	mg/kg			WG738300	08/20/14 16:14
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG738300	08/20/14 16:14
Naphthalene	< .02	mg/kg			WG738300	08/20/14 16:14
Phenanthrene	< .006	mg/kg			WG738300	08/20/14 16:14
Pyrene	< .006	mg/kg			WG738300	08/20/14 16:14
2-Fluorobiphenyl		% Rec.	83.60	38.2-135	WG738300	08/20/14 16:14
Nitrobenzene-d5		% Rec.	84.80	28.4-151	WG738300	08/20/14 16:14
p-Terphenyl-d14		% Rec.	90.00	34.2-141	WG738300	08/20/14 16:14
Chromium,Hexavalent	< 2	mg/kg			WG738277	08/21/14 08:23
TPH (GC/FID) High Fraction	< 4	mg/kg			WG738303	08/20/14 10:22
o-Terphenyl		% Rec.	81.50	50-150	WG738303	08/20/14 10:22
TPH (GC/FID) High Fraction	< 4	mg/kg			WG738366	08/20/14 22:52
o-Terphenyl		% Rec.	72.10	50-150	WG738366	08/20/14 22:52
Benzene	< .0005	mg/kg			WG738478	08/20/14 21:05
Ethylbenzene	< .0005	mg/kg			WG738478	08/20/14 21:05
Toluene	< .005	mg/kg			WG738478	08/20/14 21:05
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG738478	08/20/14 21:05
Total Xylene	< .0015	mg/kg			WG738478	08/20/14 21:05
a,a,a-Trifluorotoluene(FID)		% Rec.	98.50	59-128	WG738478	08/20/14 21:05
a,a,a-Trifluorotoluene(PID)		% Rec.	103.0	54-144	WG738478	08/20/14 21:05
Benzene	< .0005	mg/kg			WG738759	08/22/14 14:15
Ethylbenzene	< .0005	mg/kg			WG738759	08/22/14 14:15
Toluene	< .005	mg/kg			WG738759	08/22/14 14:15
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG738759	08/22/14 14:15
Total Xylene	< .0015	mg/kg			WG738759	08/22/14 14:15
a,a,a-Trifluorotoluene(FID)		% Rec.	99.20	59-128	WG738759	08/22/14 14:15
a,a,a-Trifluorotoluene(PID)		% Rec.	104.0	54-144	WG738759	08/22/14 14:15
Arsenic	< 2	mg/kg			WG738857	08/23/14 01:38
Barium	< .5	mg/kg			WG738857	08/23/14 01:38
Boron	< 10	mg/kg			WG738857	08/23/14 01:38
Cadmium	< .5	mg/kg			WG738857	08/23/14 01:38
Chromium	< 1	mg/kg			WG738857	08/23/14 01:38
Copper	< 2	mg/kg			WG738857	08/23/14 01:38
Lead	< .5	mg/kg			WG738857	08/23/14 01:38
Nickel	< 2	mg/kg			WG738857	08/23/14 01:38
Selenium	< 2	mg/kg			WG738857	08/23/14 01:38
Silver	< 1	mg/kg			WG738857	08/23/14 01:38
Zinc	< 5	mg/kg			WG738857	08/23/14 01:38
Arsenic	< 2	mg/kg			WG738825	08/25/14 03:19
Barium	< .5	mg/kg			WG738825	08/25/14 03:19
Boron	< 10	mg/kg			WG738825	08/25/14 03:19
Cadmium	< .5	mg/kg			WG738825	08/25/14 03:19

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Quality Assurance Report
Level II

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Tax I.D. 62-0814289

Est. 1970

August 26, 2014

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Chromium	< 1	mg/kg			WG738825	08/25/14 03:19
Copper	< 2	mg/kg			WG738825	08/25/14 03:19
Lead	< .5	mg/kg			WG738825	08/25/14 03:19
Nickel	< 2	mg/kg			WG738825	08/25/14 03:19
Selenium	< 2	mg/kg			WG738825	08/25/14 03:19
Silver	< 1	mg/kg			WG738825	08/25/14 03:19
Zinc	< 5	mg/kg			WG738825	08/25/14 03:19
Specific Conductance	0.910	umhos/cm			WG738944	08/23/14 11:57
Mercury	< .02	mg/kg			WG738797	08/25/14 08:28

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L716793-05	WG738277
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L716631-01	WG738277
ORP	mV	110.	110.	1.80	20	L716724-01	WG738403
ORP	mV	11.0	11.0	0.0	20	L717116-03	WG738403
Specific Conductance	umhos/cm	260.	260.	0.385	20	L716672-03	WG738944
Specific Conductance	umhos/cm	1200	1200	0.0	20	L717084-03	WG738944
pH	su	7.30	7.30	0.410	1	L716788-09	WG738967
pH	su	7.00	7.10	0.849	1	L717004-01	WG738967
Mercury	mg/kg	0.0	0.0114	5.00	20	L716791-05	WG738797

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1-Methylnaphthalene	mg/kg	.08	0.0706	88.2	48.9-127	WG738380
2-Chloronaphthalene	mg/kg	.08	0.0707	88.4	48.8-125	WG738380
2-Methylnaphthalene	mg/kg	.08	0.0705	88.1	45.7-131	WG738380
Acenaphthene	mg/kg	.08	0.0705	88.1	48.7-127	WG738380
Acenaphthylene	mg/kg	.08	0.0739	92.4	47.9-128	WG738380
Anthracene	mg/kg	.08	0.0745	93.1	51.3-136	WG738380
Benzo(a)anthracene	mg/kg	.08	0.0762	95.2	55-126	WG738380
Benzo(a)pyrene	mg/kg	.08	0.0638	79.8	51.9-127	WG738380
Benzo(b)fluoranthene	mg/kg	.08	0.0650	81.2	54-125	WG738380
Benzo(g,h,i)perylene	mg/kg	.08	0.0828	104.	53.8-136	WG738380
Benzo(k)fluoranthene	mg/kg	.08	0.0685	85.7	53.9-132	WG738380
Chrysene	mg/kg	.08	0.0730	91.3	55.7-133	WG738380
Dibenz(a,h)anthracene	mg/kg	.08	0.0894	112.	52.6-137	WG738380
Fluoranthene	mg/kg	.08	0.0632	79.0	54-132	WG738380
Fluorene	mg/kg	.08	0.0659	82.4	48.7-127	WG738380
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0845	106.	53.8-138	WG738380
Naphthalene	mg/kg	.08	0.0676	84.5	42-127	WG738380
Phenanthrene	mg/kg	.08	0.0666	83.3	49.6-126	WG738380
Pyrene	mg/kg	.08	0.0689	86.1	54-129	WG738380
2-Fluorobiphenyl				88.40	38.2-135	WG738380
Nitrobenzene-d5				120.0	28.4-151	WG738380

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
p-Terphenyl-d14				85.90	34.2-141	
1-Methylnaphthalene	mg/kg	.08	0.0752	93.9	48.9-127	WG738173
2-Chloronaphthalene	mg/kg	.08	0.0814	102.	48.8-125	WG738173
2-Methylnaphthalene	mg/kg	.08	0.0750	93.8	45.7-131	WG738173
Acenaphthene	mg/kg	.08	0.0773	96.7	48.7-127	WG738173
Acenaphthylene	mg/kg	.08	0.0777	97.2	47.9-128	WG738173
Anthracene	mg/kg	.08	0.0822	103.	51.3-136	WG738173
Benzo(a)anthracene	mg/kg	.08	0.0865	108.	55-126	WG738173
Benzo(a)pyrene	mg/kg	.08	0.0876	109.	51.9-127	WG738173
Benzo(b)fluoranthene	mg/kg	.08	0.0829	104.	54-125	WG738173
Benzo(g,h,i)perylene	mg/kg	.08	0.0920	115.	53.8-136	WG738173
Benzo(k)fluoranthene	mg/kg	.08	0.0888	111.	53.9-132	WG738173
Chrysene	mg/kg	.08	0.0877	110.	55.7-133	WG738173
Dibenz(a,h)anthracene	mg/kg	.08	0.0893	112.	52.6-137	WG738173
Fluoranthene	mg/kg	.08	0.0791	98.8	54-132	WG738173
Fluorene	mg/kg	.08	0.0773	96.6	48.7-127	WG738173
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0909	114.	53.8-138	WG738173
Naphthalene	mg/kg	.08	0.0765	95.6	42-127	WG738173
Phenanthrene	mg/kg	.08	0.0780	97.5	49.6-126	WG738173
Pyrene	mg/kg	.08	0.0901	113.	54-129	WG738173
2-Fluorobiphenyl				102.0	38.2-135	WG738173
Nitrobenzene-d5				100.0	28.4-151	WG738173
p-Terphenyl-d14				122.0	34.2-141	WG738173
1-Methylnaphthalene	mg/kg	.08	0.0602	75.3	48.9-127	WG738300
2-Chloronaphthalene	mg/kg	.08	0.0659	82.4	48.8-125	WG738300
2-Methylnaphthalene	mg/kg	.08	0.0599	74.9	45.7-131	WG738300
Acenaphthene	mg/kg	.08	0.0623	77.9	48.7-127	WG738300
Acenaphthylene	mg/kg	.08	0.0624	78.0	47.9-128	WG738300
Anthracene	mg/kg	.08	0.0648	81.0	51.3-136	WG738300
Benzo(a)anthracene	mg/kg	.08	0.0683	85.4	55-126	WG738300
Benzo(a)pyrene	mg/kg	.08	0.0636	79.5	51.9-127	WG738300
Benzo(b)fluoranthene	mg/kg	.08	0.0652	81.5	54-125	WG738300
Benzo(g,h,i)perylene	mg/kg	.08	0.0727	90.9	53.8-136	WG738300
Benzo(k)fluoranthene	mg/kg	.08	0.0731	91.3	53.9-132	WG738300
Chrysene	mg/kg	.08	0.0719	89.9	55.7-133	WG738300
Dibenz(a,h)anthracene	mg/kg	.08	0.0735	91.9	52.6-137	WG738300
Fluoranthene	mg/kg	.08	0.0639	79.9	54-132	WG738300
Fluorene	mg/kg	.08	0.0604	75.4	48.7-127	WG738300
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0740	92.5	53.8-138	WG738300
Naphthalene	mg/kg	.08	0.0616	77.0	42-127	WG738300
Phenanthrene	mg/kg	.08	0.0625	78.2	49.6-126	WG738300
Pyrene	mg/kg	.08	0.0691	86.4	54-129	WG738300
2-Fluorobiphenyl				81.80	38.2-135	WG738300
Nitrobenzene-d5				80.50	28.4-151	WG738300
p-Terphenyl-d14				90.50	34.2-141	WG738300
Chromium, Hexavalent	mg/kg	187	200.	107.	80-120	WG738277
TPH (GC/FID) High Fraction	mg/kg	60	50.6	84.3	50-150	WG738303
o-Terphenyl				78.80	50-150	WG738303
TPH (GC/FID) High Fraction	mg/kg	60	44.1	73.5	50-150	WG738366
o-Terphenyl				68.20	50-150	WG738366

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0518	104.	70-130	WG738478
Ethylbenzene	mg/kg	.05	0.0524	105.	70-130	WG738478
Toluene	mg/kg	.05	0.0523	105.	70-130	WG738478
Total Xylene	mg/kg	.15	0.159	106.	70-130	WG738478
a,a,a-Trifluorotoluene(FID)				99.10	59-128	WG738478
a,a,a-Trifluorotoluene(PID)				103.0	54-144	WG738478
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.33	97.0	63.5-137	WG738478
a,a,a-Trifluorotoluene(FID)				98.70	59-128	WG738478
a,a,a-Trifluorotoluene(PID)				112.0	54-144	WG738478
ORP	mV	100	110.	110.	90-110	WG738403
Benzene	mg/kg	.05	0.0500	100.	70-130	WG738759
Ethylbenzene	mg/kg	.05	0.0508	102.	70-130	WG738759
Toluene	mg/kg	.05	0.0509	102.	70-130	WG738759
Total Xylene	mg/kg	.15	0.154	103.	70-130	WG738759
a,a,a-Trifluorotoluene(FID)				99.30	59-128	WG738759
a,a,a-Trifluorotoluene(PID)				103.0	54-144	WG738759
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.80	106.	63.5-137	WG738759
a,a,a-Trifluorotoluene(FID)				99.40	59-128	WG738759
a,a,a-Trifluorotoluene(PID)				114.0	54-144	WG738759
Arsenic	mg/kg	237	256.	108.	83.1-117	WG738857
Barium	mg/kg	252	268.	107.	84.1-116	WG738857
Boron	mg/kg	118	122.	103.	74-126	WG738857
Cadmium	mg/kg	191	199.	104.	83.2-117	WG738857
Chromium	mg/kg	128	144.	112.	81.3-118	WG738857
Copper	mg/kg	123	122.	99.0	83.7-116	WG738857
Lead	mg/kg	103	106.	103.	83.1-117	WG738857
Nickel	mg/kg	118	122.	103.	82-118	WG738857
Selenium	mg/kg	110	117.	106.	78.7-122	WG738857
Silver	mg/kg	47.3	47.7	101.	66.2-134	WG738857
Zinc	mg/kg	183	182.	99.0	82-118	WG738857
Arsenic	mg/kg	237	233.	98.0	83.1-117	WG738825
Barium	mg/kg	252	250.	99.0	84.1-116	WG738825
Boron	mg/kg	118	126.	107.	74-126	WG738825
Cadmium	mg/kg	191	180.	94.0	83.2-117	WG738825
Chromium	mg/kg	128	124.	97.0	81.3-118	WG738825
Copper	mg/kg	123	121.	98.0	83.7-116	WG738825
Lead	mg/kg	103	98.7	96.0	83.1-117	WG738825
Nickel	mg/kg	118	112.	95.0	82-118	WG738825
Selenium	mg/kg	110	109.	99.0	78.7-122	WG738825
Silver	mg/kg	47.3	45.3	96.0	66.2-134	WG738825
Zinc	mg/kg	183	176.	96.0	82-118	WG738825
Specific Conductance	umhos/cm	1040	1000	96.2	85-115	WG738944
pH	su	6.33	6.30	99.5	98.3-101.7	WG738967
Mercury	mg/kg	12.4	10.5	85.0	71.6-128	WG738797

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
1-Methylnaphthalene	mg/kg	0.0643	0.0706	80.0	48.9-127	9.22	20	WG738380
2-Chloronaphthalene	mg/kg	0.0632	0.0707	79.0	48.8-125	11.2	20	WG738380
2-Methylnaphthalene	mg/kg	0.0641	0.0705	80.0	45.7-131	9.45	20	WG738380
Acenaphthene	mg/kg	0.0631	0.0705	79.0	48.7-127	11.0	20	WG738380
Acenaphthylene	mg/kg	0.0617	0.0739	77.0	47.9-128	18.0	20	WG738380
Anthracene	mg/kg	0.0633	0.0745	79.0	51.3-136	16.2	20	WG738380
Benzo(a)anthracene	mg/kg	0.0669	0.0762	84.0	55-126	13.0	20	WG738380
Benzo(a)pyrene	mg/kg	0.0348	0.0638	43*	51.9-127	58.9*	20	WG738380
Benzo(b)fluoranthene	mg/kg	0.0656	0.0650	82.0	54-125	0.960	20	WG738380
Benzo(g,h,i)perylene	mg/kg	0.0740	0.0828	92.0	53.8-136	11.3	20	WG738380
Benzo(k)fluoranthene	mg/kg	0.0619	0.0685	77.0	53.9-132	10.2	20	WG738380
Chrysene	mg/kg	0.0654	0.0730	82.0	55.7-133	11.0	20	WG738380
Dibenz(a,h)anthracene	mg/kg	0.0839	0.0894	105.	52.6-137	6.31	20	WG738380
Fluoranthene	mg/kg	0.0566	0.0632	71.0	54-132	11.1	20	WG738380
Fluorene	mg/kg	0.0591	0.0659	74.0	48.7-127	10.9	20	WG738380
Indeno(1,2,3-cd)pyrene	mg/kg	0.0791	0.0845	99.0	53.8-138	6.64	20	WG738380
Naphthalene	mg/kg	0.0613	0.0676	76.0	42-127	9.83	20	WG738380
Phenanthrene	mg/kg	0.0596	0.0666	74.0	49.6-126	11.2	20	WG738380
Pyrene	mg/kg	0.0597	0.0689	75.0	54-129	14.3	20	WG738380
2-Fluorobiphenyl				77.90	38.2-135			WG738380
Nitrobenzene-d5				96.50	28.4-151			WG738380
p-Terphenyl-d14				75.50	34.2-141			WG738380
1-Methylnaphthalene	mg/kg	0.0777	0.0752	97.0	48.9-127	3.36	20	WG738173
2-Chloronaphthalene	mg/kg	0.0840	0.0814	105.	48.8-125	3.17	20	WG738173
2-Methylnaphthalene	mg/kg	0.0770	0.0750	96.0	45.7-131	2.59	20	WG738173
Acenaphthene	mg/kg	0.0799	0.0773	100.	48.7-127	3.21	20	WG738173
Acenaphthylene	mg/kg	0.0793	0.0777	99.0	47.9-128	2.01	20	WG738173
Anthracene	mg/kg	0.0851	0.0822	106.	51.3-136	3.40	20	WG738173
Benzo(a)anthracene	mg/kg	0.0904	0.0865	113.	55-126	4.40	20	WG738173
Benzo(a)pyrene	mg/kg	0.0910	0.0876	114.	51.9-127	3.78	20	WG738173
Benzo(b)fluoranthene	mg/kg	0.0876	0.0829	110.	54-125	5.57	20	WG738173
Benzo(g,h,i)perylene	mg/kg	0.0941	0.0920	118.	53.8-136	2.27	20	WG738173
Benzo(k)fluoranthene	mg/kg	0.0922	0.0888	115.	53.9-132	3.77	20	WG738173
Chrysene	mg/kg	0.0908	0.0877	114.	55.7-133	3.56	20	WG738173
Dibenz(a,h)anthracene	mg/kg	0.0921	0.0893	115.	52.6-137	3.08	20	WG738173
Fluoranthene	mg/kg	0.0824	0.0791	103.	54-132	4.16	20	WG738173
Fluorene	mg/kg	0.0791	0.0773	99.0	48.7-127	2.41	20	WG738173
Indeno(1,2,3-cd)pyrene	mg/kg	0.0944	0.0909	118.	53.8-138	3.78	20	WG738173
Naphthalene	mg/kg	0.0798	0.0765	100.	42-127	4.26	20	WG738173
Phenanthrene	mg/kg	0.0807	0.0780	101.	49.6-126	3.45	20	WG738173
Pyrene	mg/kg	0.0929	0.0901	116.	54-129	3.01	20	WG738173
2-Fluorobiphenyl				104.0	38.2-135			WG738173
Nitrobenzene-d5				102.0	28.4-151			WG738173
p-Terphenyl-d14				125.0	34.2-141			WG738173
1-Methylnaphthalene	mg/kg	0.0746	0.0602	93.0	48.9-127	21.4*	20	WG738300
2-Chloronaphthalene	mg/kg	0.0837	0.0659	105.	48.8-125	23.9*	20	WG738300
2-Methylnaphthalene	mg/kg	0.0747	0.0599	93.0	45.7-131	21.9*	20	WG738300
Acenaphthene	mg/kg	0.0784	0.0623	98.0	48.7-127	22.8*	20	WG738300
Acenaphthylene	mg/kg	0.0791	0.0624	99.0	47.9-128	23.7*	20	WG738300
Anthracene	mg/kg	0.0818	0.0648	102.	51.3-136	23.2*	20	WG738300
Benzo(a)anthracene	mg/kg	0.0874	0.0683	109.	55-126	24.6*	20	WG738300
Benzo(a)pyrene	mg/kg	0.0819	0.0636	102.	51.9-127	25.2*	20	WG738300
Benzo(b)fluoranthene	mg/kg	0.0829	0.0652	104.	54-125	23.8*	20	WG738300
Benzo(g,h,i)perylene	mg/kg	0.0903	0.0727	113.	53.8-136	21.6*	20	WG738300
Benzo(k)fluoranthene	mg/kg	0.0894	0.0731	112.	53.9-132	20.1*	20	WG738300

* Performance of this Analyte is outside of established criteria.

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YOUR LAB OF CHOICE

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Robert Stockton
760 Horizon Drive, Ste 102

Grand Junction, CO 81506

Quality Assurance Report
Level II

L716793

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

August 26, 2014

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chrysene	mg/kg	0.0879	0.0719	110.	55.7-133	20.0*	20	WG738300
Dibenz(a,h)anthracene	mg/kg	0.0898	0.0735	112.	52.6-137	19.9	20	WG738300
Fluoranthene	mg/kg	0.0791	0.0639	99.0	54-132	21.3*	20	WG738300
Fluorene	mg/kg	0.0776	0.0604	97.0	48.7-127	25.0*	20	WG738300
Indeno(1,2,3-cd)pyrene	mg/kg	0.0912	0.0740	114.	53.8-138	20.9*	20	WG738300
Naphthalene	mg/kg	0.0777	0.0616	97.0	42-127	23.1*	20	WG738300
Phenanthrene	mg/kg	0.0791	0.0625	99.0	49.6-126	23.3*	20	WG738300
Pyrene	mg/kg	0.0856	0.0691	107.	54-129	21.2*	20	WG738300
2-Fluorobiphenyl				100.0	38.2-135			WG738300
Nitrobenzene-d5				97.60	28.4-151			WG738300
p-Terphenyl-d14				109.0	34.2-141			WG738300
Chromium,Hexavalent	mg/kg	192.	200.	103.	80-120	4.08	20	WG738277
TPH (GC/FID) High Fraction	mg/kg	55.5	50.6	92.0	50-150	9.26	20	WG738303
o-Terphenyl				86.00	50-150			WG738303
TPH (GC/FID) High Fraction	mg/kg	39.1	44.1	65.0	50-150	11.9	20	WG738366
o-Terphenyl				57.20	50-150			WG738366
Benzene	mg/kg	0.0512	0.0518	102.	70-130	1.13	20	WG738478
Ethylbenzene	mg/kg	0.0513	0.0524	102.	70-130	2.22	20	WG738478
Toluene	mg/kg	0.0511	0.0523	102.	70-130	2.36	20	WG738478
Total Xylene	mg/kg	0.155	0.159	103.	70-130	2.46	20	WG738478
a,a,a-Trifluorotoluene(FID)				98.80	59-128			WG738478
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG738478
TPH (GC/FID) Low Fraction	mg/kg	5.09	5.33	92.0	63.5-137	4.77	20	WG738478
a,a,a-Trifluorotoluene(FID)				98.00	59-128			WG738478
a,a,a-Trifluorotoluene(PID)				111.0	54-144			WG738478
ORP	mV	110.	110.	110.	90-110	0.0	20	WG738403
Benzene	mg/kg	0.0498	0.0500	100.	70-130	0.360	20	WG738759
Ethylbenzene	mg/kg	0.0505	0.0508	101.	70-130	0.680	20	WG738759
Toluene	mg/kg	0.0501	0.0509	100.	70-130	1.49	20	WG738759
Total Xylene	mg/kg	0.153	0.154	102.	70-130	0.920	20	WG738759
a,a,a-Trifluorotoluene(FID)				99.30	59-128			WG738759
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG738759
TPH (GC/FID) Low Fraction	mg/kg	5.75	5.80	104.	63.5-137	0.900	20	WG738759
a,a,a-Trifluorotoluene(FID)				99.30	59-128			WG738759
a,a,a-Trifluorotoluene(PID)				113.0	54-144			WG738759
Arsenic	mg/kg	244.	256.	103.	83.1-117	5.00	20	WG738857
Barium	mg/kg	257.	268.	102.	84.1-116	4.00	20	WG738857
Boron	mg/kg	122.	122.	104.	74-126	1.00	20	WG738857
Cadmium	mg/kg	192.	199.	100.	83.2-117	4.00	20	WG738857
Chromium	mg/kg	138.	144.	107.	81.3-118	5.00	20	WG738857
Copper	mg/kg	118.	122.	96.0	83.7-116	4.00	20	WG738857
Lead	mg/kg	103.	106.	100.	83.1-117	3.00	20	WG738857
Nickel	mg/kg	116.	122.	98.0	82-118	5.00	20	WG738857
Selenium	mg/kg	113.	117.	102.	78.7-122	3.00	20	WG738857
Silver	mg/kg	45.8	47.7	97.0	66.2-134	4.00	20	WG738857

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Zinc	mg/kg	177.	182.	97.0	82-118	2.00	20	WG738857
Arsenic	mg/kg	241.	233.	102.	83.1-117	4.00	20	WG738825
Barium	mg/kg	246.	250.	98.0	84.1-116	1.00	20	WG738825
Boron	mg/kg	127.	126.	108.	74-126	1.00	20	WG738825
Cadmium	mg/kg	182.	180.	95.0	83.2-117	1.00	20	WG738825
Chromium	mg/kg	125.	124.	97.0	81.3-118	1.00	20	WG738825
Copper	mg/kg	120.	121.	98.0	83.7-116	0.0	20	WG738825
Lead	mg/kg	102.	98.7	99.0	83.1-117	3.00	20	WG738825
Nickel	mg/kg	112.	112.	95.0	82-118	0.0	20	WG738825
Selenium	mg/kg	113.	109.	103.	78.7-122	4.00	20	WG738825
Silver	mg/kg	46.9	45.3	99.0	66.2-134	3.00	20	WG738825
Zinc	mg/kg	178.	176.	97.0	82-118	1.00	20	WG738825
Specific Conductance	umhos/	1000	1000	96.0	85-115	0.0	20	WG738944
pH	su	6.30	6.30	100.	98.3-101.7	0.0	20	WG738967

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
1-Methylnaphthalene	mg/kg	0.138	0.0526	.08	107.	41.8-133	L716793-05	WG738380
2-Chloronaphthalene	mg/kg	0.0456	0.	.08	57.0	42.4-129	L716793-05	WG738380
2-Methylnaphthalene	mg/kg	0.125	0.0648	.08	75.7	37.5-137	L716793-05	WG738380
Acenaphthene	mg/kg	0.0709	0.0205	.08	63.0	39.4-132	L716793-05	WG738380
Acenaphthylene	mg/kg	0.0579	0.0156	.08	52.9	41.3-132	L716793-05	WG738380
Anthracene	mg/kg	0.112	0.0557	.08	69.9	36.7-144	L716793-05	WG738380
Benzo(a)anthracene	mg/kg	0.0720	0.	.08	89.9	28-144	L716793-05	WG738380
Benzo(a)pyrene	mg/kg	0.0599	0.	.08	74.8	23.8-147	L716793-05	WG738380
Benzo(b)fluoranthene	mg/kg	0.0599	0.	.08	74.9	18.2-147	L716793-05	WG738380
Benzo(g,h,i)perylene	mg/kg	0.0530	0.	.08	66.3	9.2-155	L716793-05	WG738380
Benzo(k)fluoranthene	mg/kg	0.0547	0.	.08	68.4	26.5-143	L716793-05	WG738380
Chrysene	mg/kg	0.125	0.0307	.08	118.	27.4-150	L716793-05	WG738380
Dibenz(a,h)anthracene	mg/kg	0.0615	0.	.08	76.9	13.8-150	L716793-05	WG738380
Fluoranthene	mg/kg	0.0736	0.0119	.08	77.2	23.2-158	L716793-05	WG738380
Fluorene	mg/kg	0.0730	0.0271	.08	57.4	30.8-139	L716793-05	WG738380
Indeno(1,2,3-cd)pyrene	mg/kg	0.0547	0.	.08	68.4	10.7-155	L716793-05	WG738380
Naphthalene	mg/kg	0.0806	0.0161	.08	80.6	34.9-133	L716793-05	WG738380
Phenanthrene	mg/kg	0.187	0.157	.08	36.7	20.2-150	L716793-05	WG738380
Pyrene	mg/kg	0.0861	0.0323	.08	67.2	22.6-151	L716793-05	WG738380
2-Fluorobiphenyl					59.00	38.2-135		WG738380
Nitrobenzene-d5					91.60	28.4-151		WG738380
p-Terphenyl-d14					78.80	34.2-141		WG738380

1-Methylnaphthalene	mg/kg	0.0681	0.	.08	85.1	41.8-133	L716733-02	WG738300
2-Chloronaphthalene	mg/kg	0.0776	0.	.08	97.0	42.4-129	L716733-02	WG738300
2-Methylnaphthalene	mg/kg	0.0686	0.	.08	85.8	37.5-137	L716733-02	WG738300
Acenaphthene	mg/kg	0.0738	0.	.08	92.3	39.4-132	L716733-02	WG738300
Acenaphthylene	mg/kg	0.0741	0.	.08	92.6	41.3-132	L716733-02	WG738300
Anthracene	mg/kg	0.0758	0.	.08	94.8	36.7-144	L716733-02	WG738300
Benzo(a)anthracene	mg/kg	0.0795	0.	.08	99.4	28-144	L716733-02	WG738300
Benzo(a)pyrene	mg/kg	0.0791	0.	.08	98.9	23.8-147	L716733-02	WG738300
Benzo(b)fluoranthene	mg/kg	0.0822	0.	.08	103.	18.2-147	L716733-02	WG738300
Benzo(g,h,i)perylene	mg/kg	0.0857	0.	.08	107.	9.2-155	L716733-02	WG738300
Benzo(k)fluoranthene	mg/kg	0.0736	0.	.08	92.0	26.5-143	L716733-02	WG738300

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Est. 1970

August 26, 2014

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Chrysene	mg/kg	0.0849	0.	.08	106.	27.4-150	L716733-02	WG738300
Dibenz(a,h)anthracene	mg/kg	0.0831	0.	.08	104.	13.8-150	L716733-02	WG738300
Fluoranthene	mg/kg	0.0765	0.	.08	95.6	23.2-158	L716733-02	WG738300
Fluorene	mg/kg	0.0717	0.	.08	89.7	30.8-139	L716733-02	WG738300
Indeno(1,2,3-cd)pyrene	mg/kg	0.0827	0.	.08	103.	10.7-155	L716733-02	WG738300
Naphthalene	mg/kg	0.0726	0.	.08	90.8	34.9-133	L716733-02	WG738300
Phenanthrene	mg/kg	0.0729	0.	.08	91.1	20.2-150	L716733-02	WG738300
Pyrene	mg/kg	0.0798	0.	.08	99.7	22.6-151	L716733-02	WG738300
2-Fluorobiphenyl					90.80	38.2-135		WG738300
Nitrobenzene-d5					95.20	28.4-151		WG738300
p-Terphenyl-d14					98.50	34.2-141		WG738300
Chromium,Hexavalent	mg/kg	18.4	0.0	20	92.0	75-125	L716793-05	WG738277
TPH (GC/FID) High Fraction	mg/kg	43.6	5.36	60	64.0	50-150	L716326-05	WG738366
o-Terphenyl					49.00*	50-150		WG738366
Benzene	mg/kg	0.273	0.000358	.05	110.	49.7-127	L716793-01	WG738478
Ethylbenzene	mg/kg	0.259	0.000244	.05	100.	40.8-141	L716793-01	WG738478
Toluene	mg/kg	0.271	0.00133	.05	110.	49.8-132	L716793-01	WG738478
Total Xylene	mg/kg	0.778	0.00239	.15	100.	41.2-140	L716793-01	WG738478
a,a,a-Trifluorotoluene(FID)					98.00	59-128		WG738478
a,a,a-Trifluorotoluene(PID)					102.0	54-144		WG738478
TPH (GC/FID) Low Fraction	mg/kg	20.5	0.330	5.5	73.0	28.5-138	L716793-01	WG738478
a,a,a-Trifluorotoluene(FID)					98.20	59-128		WG738478
a,a,a-Trifluorotoluene(PID)					108.0	54-144		WG738478
Benzene	mg/kg	0.240	0.000365	.05	96.0	49.7-127	L717046-01	WG738759
Ethylbenzene	mg/kg	0.246	0.000539	.05	98.0	40.8-141	L717046-01	WG738759
Toluene	mg/kg	0.246	0.00136	.05	98.0	49.8-132	L717046-01	WG738759
Total Xylene	mg/kg	0.750	0.00259	.15	100.	41.2-140	L717046-01	WG738759
a,a,a-Trifluorotoluene(FID)					99.10	59-128		WG738759
a,a,a-Trifluorotoluene(PID)					103.0	54-144		WG738759
TPH (GC/FID) Low Fraction	mg/kg	27.7	0.118	5.5	100.	28.5-138	L717046-01	WG738759
a,a,a-Trifluorotoluene(FID)					100.0	59-128		WG738759
a,a,a-Trifluorotoluene(PID)					112.0	54-144		WG738759
Arsenic	mg/kg	107.	8.88	100	98.0	75-125	L716793-05	WG738857
Barium	mg/kg	334.	257.	100	77.0	75-125	L716793-05	WG738857
Boron	mg/kg	104.	14.1	100	90.0	75-125	L716793-05	WG738857
Cadmium	mg/kg	93.8	0.677	100	93.0	75-125	L716793-05	WG738857
Chromium	mg/kg	117.	24.5	100	93.0	75-125	L716793-05	WG738857
Copper	mg/kg	107.	11.6	100	95.0	75-125	L716793-05	WG738857
Lead	mg/kg	110.	15.3	100	95.0	75-125	L716793-05	WG738857
Nickel	mg/kg	108.	20.3	100	88.0	75-125	L716793-05	WG738857
Silver	mg/kg	95.3	0.0798	100	95.0	75-125	L716793-05	WG738857
Zinc	mg/kg	170.	82.1	100	88.0	75-125	L716793-05	WG738857
Selenium	mg/kg	89.7	-8.44	20	90.0	75-125	L716793-05	WG738857
Arsenic	mg/kg	135.	49.3	100	86.0	75-125	L716672-07	WG738825
Barium	mg/kg	294.	159.	100	140.*	75-125	L716672-07	WG738825
Cadmium	mg/kg	88.5	0.701	100	88.0	75-125	L716672-07	WG738825
Chromium	mg/kg	122.	30.8	100	91.0	75-125	L716672-07	WG738825

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Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Lead	mg/kg	104.	14.4	100	90.0	75-125	L716672-07	WG738825
Selenium	mg/kg	91.4	-1.07	100	91.0	75-125	L716672-07	WG738825
Silver	mg/kg	91.5	-0.389	100	92.0	75-125	L716672-07	WG738825
Arsenic	mg/kg	107.	6.81	100	100.	75-125	L716791-02	WG738825
Barium	mg/kg	126.	35.2	100	91.0	75-125	L716791-02	WG738825
Cadmium	mg/kg	94.7	0.193	100	95.0	75-125	L716791-02	WG738825
Chromium	mg/kg	117.	25.1	100	92.0	75-125	L716791-02	WG738825
Lead	mg/kg	104.	9.45	100	94.0	75-125	L716791-02	WG738825
Selenium	mg/kg	103.	-0.873	100	100.	75-125	L716791-02	WG738825
Silver	mg/kg	100.	-0.272	100	100.	75-125	L716791-02	WG738825
Arsenic	mg/kg	105.	5.07	100	100.	75-125	L716791-04	WG738825
Barium	mg/kg	205.	78.2	100	130.*	75-125	L716791-04	WG738825
Cadmium	mg/kg	102.	2.43	100	100.	75-125	L716791-04	WG738825
Chromium	mg/kg	136.	27.4	100	110.	75-125	L716791-04	WG738825
Lead	mg/kg	117.	12.2	100	100.	75-125	L716791-04	WG738825
Selenium	mg/kg	102.	-0.813	100	100.	75-125	L716791-04	WG738825
Silver	mg/kg	104.	2.10	100	100.	75-125	L716791-04	WG738825
Mercury	mg/kg	0.478	0.0114	.5	93.0	80-120	L716791-05	WG738797

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
1-Methylnaphthalene	mg/kg	0.154	0.138	126.	41.8-133	10.7	20.9	L716793-05	WG738380
2-Chloronaphthalene	mg/kg	0.0445	0.0456	55.6	42.4-129	2.36	20	L716793-05	WG738380
2-Methylnaphthalene	mg/kg	0.154	0.125	112.	37.5-137	20.8*	20.4	L716793-05	WG738380
Acenaphthene	mg/kg	0.0712	0.0709	63.4	39.4-132	0.520	20	L716793-05	WG738380
Acenaphthylene	mg/kg	0.0587	0.0579	53.8	41.3-132	1.31	20	L716793-05	WG738380
Anthracene	mg/kg	0.115	0.112	74.2	36.7-144	3.07	20.7	L716793-05	WG738380
Benzo(a)anthracene	mg/kg	0.0741	0.0720	92.6	28-144	2.89	24.7	L716793-05	WG738380
Benzo(a)pyrene	mg/kg	0.0592	0.0599	74.0	23.8-147	1.17	25.3	L716793-05	WG738380
Benzo(b)fluoranthene	mg/kg	0.0593	0.0599	74.1	18.2-147	1.03	29.5	L716793-05	WG738380
Benzo(g,h,i)perylene	mg/kg	0.0529	0.0530	66.1	9.2-155	0.250	29.2	L716793-05	WG738380
Benzo(k)fluoranthene	mg/kg	0.0556	0.0547	69.5	26.5-143	1.60	26.1	L716793-05	WG738380
Chrysene	mg/kg	0.128	0.125	122.	27.4-150	2.64	25.7	L716793-05	WG738380
Dibenz(a,h)anthracene	mg/kg	0.0612	0.0615	76.4	13.8-150	0.540	25.8	L716793-05	WG738380
Fluoranthene	mg/kg	0.0764	0.0736	80.7	23.2-158	3.74	26	L716793-05	WG738380
Fluorene	mg/kg	0.0743	0.0730	59.0	30.8-139	1.74	20	L716793-05	WG738380
Indeno(1,2,3-cd)pyrene	mg/kg	0.0545	0.0547	68.1	10.7-155	0.350	26.9	L716793-05	WG738380
Naphthalene	mg/kg	0.0738	0.0806	72.2	34.9-133	8.76	20.4	L716793-05	WG738380
Phenanthrene	mg/kg	0.201	0.187	54.1	20.2-150	7.19	24.6	L716793-05	WG738380
Pyrene	mg/kg	0.0894	0.0861	71.4	22.6-151	3.83	25.1	L716793-05	WG738380
2-Fluorobiphenyl				55.80	38.2-135				WG738380
Nitrobenzene-d5				92.30	28.4-151				WG738380
p-Terphenyl-d14				75.40	34.2-141				WG738380
1-Methylnaphthalene	mg/kg	0.0730	0.0681	91.3	41.8-133	6.97	20.9	L716733-02	WG738300
2-Chloronaphthalene	mg/kg	0.0808	0.0776	101.	42.4-129	3.94	20	L716733-02	WG738300
2-Methylnaphthalene	mg/kg	0.0729	0.0686	91.1	37.5-137	6.06	20.4	L716733-02	WG738300
Acenaphthene	mg/kg	0.0762	0.0738	95.3	39.4-132	3.16	20	L716733-02	WG738300
Acenaphthylene	mg/kg	0.0754	0.0741	94.3	41.3-132	1.84	20	L716733-02	WG738300
Anthracene	mg/kg	0.0796	0.0758	99.5	36.7-144	4.84	20.7	L716733-02	WG738300
Benzo(a)anthracene	mg/kg	0.101	0.0795	126.	28-144	23.8	24.7	L716733-02	WG738300
Benzo(a)pyrene	mg/kg	0.0880	0.0791	110.	23.8-147	10.6	25.3	L716733-02	WG738300
Benzo(b)fluoranthene	mg/kg	0.102	0.0822	127.	18.2-147	21.1	29.5	L716733-02	WG738300
Benzo(g,h,i)perylene	mg/kg	0.0935	0.0857	117.	9.2-155	8.79	29.2	L716733-02	WG738300
Benzo(k)fluoranthene	mg/kg	0.0919	0.0736	115.	26.5-143	22.0	26.1	L716733-02	WG738300

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Quality Assurance Report
Level II

L716793

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

August 26, 2014

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Chrysene	mg/kg	0.102	0.0849	128.	27.4-150	18.6	25.7	L716733-02	WG738300	
Dibenz(a,h)anthracene	mg/kg	0.0884	0.0831	110.	13.8-150	6.17	25.8	L716733-02	WG738300	
Fluoranthene	mg/kg	0.0912	0.0765	114.	23.2-158	17.6	26	L716733-02	WG738300	
Fluorene	mg/kg	0.0741	0.0717	92.6	30.8-139	3.28	20	L716733-02	WG738300	
Indeno(1,2,3-cd)pyrene	mg/kg	0.0881	0.0827	110.	10.7-155	6.35	26.9	L716733-02	WG738300	
Naphthalene	mg/kg	0.0748	0.0726	93.5	34.9-133	2.93	20.4	L716733-02	WG738300	
Phenanthrene	mg/kg	0.0763	0.0729	95.3	20.2-150	4.48	24.6	L716733-02	WG738300	
Pyrene	mg/kg	0.0898	0.0798	112.	22.6-151	11.8	25.1	L716733-02	WG738300	
2-Fluorobiphenyl				97.10	38.2-135				WG738300	
Nitrobenzene-d5				101.0	28.4-151				WG738300	
p-Terphenyl-d14				105.0	34.2-141				WG738300	
Chromium,Hexavalent	mg/kg	18.4	18.4	92.2	75-125	0.0	20	L716793-05	WG738277	
TPH (GC/FID) High Fraction	mg/kg	42.6	43.6	62.0	50-150	2.32	20	L716326-05	WG738366	
o-Terphenyl				47.70*	50-150				WG738366	
Benzene	mg/kg	0.251	0.273	100.	49.7-127	8.24	23.5	L716793-01	WG738478	
Ethylbenzene	mg/kg	0.223	0.259	89.3	40.8-141	14.6	23.8	L716793-01	WG738478	
Toluene	mg/kg	0.240	0.271	95.3	49.8-132	12.3	23.5	L716793-01	WG738478	
Total Xylene	mg/kg	0.664	0.778	88.2	41.2-140	15.8	23.7	L716793-01	WG738478	
a,a,a-Trifluorotoluene(FID)				98.10	59-128				WG738478	
a,a,a-Trifluorotoluene(PID)				102.0	54-144				WG738478	
TPH (GC/FID) Low Fraction	mg/kg	17.2	20.5	61.3	28.5-138	17.5	23.6	L716793-01	WG738478	
a,a,a-Trifluorotoluene(FID)				97.00	59-128				WG738478	
a,a,a-Trifluorotoluene(PID)				106.0	54-144				WG738478	
Benzene	mg/kg	0.237	0.240	94.7	49.7-127	1.01	23.5	L717046-01	WG738759	
Ethylbenzene	mg/kg	0.237	0.246	94.7	40.8-141	3.67	23.8	L717046-01	WG738759	
Toluene	mg/kg	0.238	0.246	94.6	49.8-132	3.45	23.5	L717046-01	WG738759	
Total Xylene	mg/kg	0.718	0.750	95.4	41.2-140	4.36	23.7	L717046-01	WG738759	
a,a,a-Trifluorotoluene(FID)				98.60	59-128				WG738759	
a,a,a-Trifluorotoluene(PID)				103.0	54-144				WG738759	
TPH (GC/FID) Low Fraction	mg/kg	26.4	27.7	95.6	28.5-138	4.65	23.6	L717046-01	WG738759	
a,a,a-Trifluorotoluene(FID)				100.0	59-128				WG738759	
a,a,a-Trifluorotoluene(PID)				111.0	54-144				WG738759	
Arsenic	mg/kg	109.	107.	99.8	75-125	2.00	20	L716793-05	WG738857	
Barium	mg/kg	341.	334.	83.4	75-125	2.00	20	L716793-05	WG738857	
Boron	mg/kg	109.	104.	94.8	75-125	5.00	20	L716793-05	WG738857	
Cadmium	mg/kg	95.2	93.8	94.5	75-125	1.00	20	L716793-05	WG738857	
Chromium	mg/kg	118.	117.	93.4	75-125	1.00	20	L716793-05	WG738857	
Copper	mg/kg	109.	107.	97.1	75-125	2.00	20	L716793-05	WG738857	
Lead	mg/kg	112.	110.	96.4	75-125	1.00	20	L716793-05	WG738857	
Nickel	mg/kg	110.	108.	89.5	75-125	2.00	20	L716793-05	WG738857	
Silver	mg/kg	97.2	95.3	97.1	75-125	2.00	20	L716793-05	WG738857	
Zinc	mg/kg	172.	170.	89.7	75-125	1.00	20	L716793-05	WG738857	
Selenium	mg/kg	98.1	89.7	106.	75-125	9.00	20	L716793-05	WG738857	
Arsenic	mg/kg	141.	135.	91.7	75-125	4.00	20	L716672-07	WG738825	
Barium	mg/kg	288.	294.	129.*	75-125	2.00	20	L716672-07	WG738825	
Cadmium	mg/kg	97.4	88.5	96.7	75-125	10.0	20	L716672-07	WG738825	
Chromium	mg/kg	132.	122.	101.	75-125	8.00	20	L716672-07	WG738825	

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Lead	mg/kg	114.	104.	99.2	75-125	9.00	20	L716672-07	WG738825
Selenium	mg/kg	102.	91.4	103.	75-125	11.0	20	L716672-07	WG738825
Silver	mg/kg	101.	91.5	101.	75-125	10.0	20	L716672-07	WG738825
Arsenic	mg/kg	107.	107.	100.	75-125	0.0	20	L716791-02	WG738825
Barium	mg/kg	126.	126.	90.5	75-125	0.0	20	L716791-02	WG738825
Cadmium	mg/kg	94.9	94.7	94.7	75-125	0.0	20	L716791-02	WG738825
Chromium	mg/kg	118.	117.	92.7	75-125	0.0	20	L716791-02	WG738825
Lead	mg/kg	104.	104.	94.4	75-125	0.0	20	L716791-02	WG738825
Selenium	mg/kg	103.	103.	103.	75-125	1.00	20	L716791-02	WG738825
Silver	mg/kg	99.6	100.	99.9	75-125	0.0	20	L716791-02	WG738825
Arsenic	mg/kg	106.	105.	101.	75-125	1.00	20	L716791-04	WG738825
Barium	mg/kg	179.	205.	101.	75-125	14.0	20	L716791-04	WG738825
Cadmium	mg/kg	95.1	102.	92.7	75-125	7.00	20	L716791-04	WG738825
Chromium	mg/kg	118.	136.	90.2	75-125	15.0	20	L716791-04	WG738825
Lead	mg/kg	105.	117.	92.5	75-125	11.0	20	L716791-04	WG738825
Selenium	mg/kg	99.4	102.	100.	75-125	3.00	20	L716791-04	WG738825
Silver	mg/kg	98.2	104.	96.1	75-125	5.00	20	L716791-04	WG738825
Mercury	mg/kg	0.466	0.478	90.9	80-120	3.00	20	L716791-05	WG738797

Post Spike

Serial Dilution

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Serial Dilution

Batch number /Run number / Sample number cross reference

WG738380: R2978736: L716793-04 05
WG738173: R2978935 R2980933: L716793-03
WG738300: R2978937 R2980934: L716793-01 02
WG738277: R2978986: L716793-01 02 03 04 05
WG738303: R2979031: L716793-01 02 03
WG738366: R2979032: L716793-04 05
WG738478: R2979101: L716793-01 02 03 04
WG738403: R2979127: L716793-01 02 03 04 05
WG738759: R2979772: L716793-05
WG738857: R2979914 R2980447: L716793-05
WG738825: R2980345: L716793-01 02 03 04
WG738944: R2980393: L716793-01 02 03 04 05
WG738967: R2980400: L716793-01 02 03 04 05
WG738797: R2980751: L716793-01 02 03 04 05
WG738827: R2981145: L716793-01 02 03 04 05

* * 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.