



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

Est. 1970

Jake Janicek
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

Report Summary

Friday October 24, 2014

Report Number: L728240


Samples Received: 10/17/14

Client Project: 058514002

Description: Big Ridge Federal 15-1-101 #1

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:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-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

Jake Janicek
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1

Sample ID : PB01 2FT

Collected By : Chris Wilson
Collection Date : 10/15/14 11:59

ESC Sample # : L728240-01

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	10/23/14	1
Chromium, Trivalent	14.	2.0	mg/kg	Calc.	10/24/14	1
ORP	58.		mV	2580 B-2011	10/21/14	1
pH	8.2		su	9045D	10/21/14	1
Sodium Adsorption Ratio	0.81			Calc.	10/20/14	1
Specific Conductance	560		umhos/cm	9050AMod	10/23/14	1
Mercury	0.030	0.020	mg/kg	7471	10/22/14	1
Arsenic	4.7	2.0	mg/kg	6010B	10/21/14	1
Barium	81.	0.50	mg/kg	6010B	10/21/14	1
Cadmium	BDL	0.50	mg/kg	6010B	10/21/14	1
Chromium	14.	1.0	mg/kg	6010B	10/21/14	1
Copper	16.	2.0	mg/kg	6010B	10/21/14	1
Lead	11.	0.50	mg/kg	6010B	10/21/14	1
Nickel	12.	2.0	mg/kg	6010B	10/21/14	1
Selenium	BDL	2.0	mg/kg	6010B	10/21/14	1
Silver	BDL	1.0	mg/kg	6010B	10/21/14	1
Zinc	44.	5.0	mg/kg	6010B	10/21/14	1
Benzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Toluene	BDL	0.025	mg/kg	8021	10/23/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	10/23/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	10/23/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8015	10/23/14	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021	10/23/14	5
TPH (GC/FID) High Fraction	27.	4.0	mg/kg	3546/DRO	10/21/14	1
Surrogate recovery(%)						
o-Terphenyl	93.6		% Rec.	3546/DRO	10/21/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L728240-01 (PH) - 8.2@21.2c



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Sample ID : PB01 2FT
Collected By : Chris Wilson
Collection Date : 10/15/14 11:59

ESC Sample # : L728240-01

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	10/22/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/22/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/22/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/22/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/22/14	1
Surrogate Recovery						
p-Terphenyl-d14	94.9		% Rec.	8270C-SIM	10/22/14	1
Nitrobenzene-d5	84.9		% Rec.	8270C-SIM	10/22/14	1
2-Fluorobiphenyl	89.6		% Rec.	8270C-SIM	10/22/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 10/24/14 09:56 Printed: 10/24/14 09:57
L728240-01 (PH) - 8.2@21.2c



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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1

Sample ID : PB02 2FT

Collected By : Chris Wilson
Collection Date : 10/15/14 12:08

ESC Sample # : L728240-02

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	10/23/14	1
Chromium, Trivalent	13.	2.0	mg/kg	Calc.	10/24/14	1
ORP	58.		mV	2580 B-2011	10/21/14	1
pH	8.3		su	9045D	10/21/14	1
Sodium Adsorption Ratio	0.46			Calc.	10/20/14	1
Specific Conductance	270		umhos/cm	9050AMod	10/23/14	1
Mercury	0.026	0.020	mg/kg	7471	10/22/14	1
Arsenic	5.1	2.0	mg/kg	6010B	10/21/14	1
Barium	120	0.50	mg/kg	6010B	10/21/14	1
Cadmium	BDL	0.50	mg/kg	6010B	10/21/14	1
Chromium	13.	1.0	mg/kg	6010B	10/21/14	1
Copper	13.	2.0	mg/kg	6010B	10/21/14	1
Lead	8.6	0.50	mg/kg	6010B	10/21/14	1
Nickel	20.	2.0	mg/kg	6010B	10/21/14	1
Selenium	BDL	2.0	mg/kg	6010B	10/21/14	1
Silver	BDL	1.0	mg/kg	6010B	10/21/14	1
Zinc	42.	5.0	mg/kg	6010B	10/21/14	1
Benzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Toluene	BDL	0.025	mg/kg	8021	10/23/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	10/23/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	10/23/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8015	10/23/14	5
a,a,a-Trifluorotoluene(PID)	103.		% Rec.	8021	10/23/14	5
TPH (GC/FID) High Fraction	31.	4.0	mg/kg	3546/DRO	10/21/14	1
Surrogate recovery(%)						
o-Terphenyl	100.		% Rec.	3546/DRO	10/21/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L728240-02 (PH) - 8.3@20.1c



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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : PB02 2FT
Collected By : Chris Wilson
Collection Date : 10/15/14 12:08

ESC Sample # : L728240-02

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Surrogate Recovery						
p-Terphenyl-d14	124.		% Rec.	8270C-SIM	10/23/14	1
Nitrobenzene-d5	69.9		% Rec.	8270C-SIM	10/23/14	1
2-Fluorobiphenyl	87.1		% Rec.	8270C-SIM	10/23/14	1

BDL - Below Detection Limit

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L728240-02 (PH) - 8.3@20.1c



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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1

Sample ID : PB03 2FT

Collected By : Chris Wilson
Collection Date : 10/15/14 12:18

ESC Sample # : L728240-03

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	10/23/14	1
Chromium,Trivalent	12.	2.0	mg/kg	Calc.	10/24/14	1
ORP	60.		mV	2580 B-2011	10/21/14	1
pH	8.2		su	9045D	10/21/14	1
Sodium Adsorption Ratio	2.2			Calc.	10/20/14	1
Specific Conductance	900		umhos/cm	9050AMod	10/23/14	1
Mercury	0.020	0.020	mg/kg	7471	10/22/14	1
Arsenic	5.0	2.0	mg/kg	6010B	10/21/14	1
Barium	100	0.50	mg/kg	6010B	10/21/14	1
Cadmium	BDL	0.50	mg/kg	6010B	10/21/14	1
Chromium	12.	1.0	mg/kg	6010B	10/21/14	1
Copper	12.	2.0	mg/kg	6010B	10/21/14	1
Lead	9.7	0.50	mg/kg	6010B	10/21/14	1
Nickel	12.	2.0	mg/kg	6010B	10/21/14	1
Selenium	BDL	2.0	mg/kg	6010B	10/21/14	1
Silver	BDL	1.0	mg/kg	6010B	10/21/14	1
Zinc	40.	5.0	mg/kg	6010B	10/21/14	1
Benzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Toluene	BDL	0.025	mg/kg	8021	10/23/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	10/23/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	10/23/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.9		% Rec.	8015	10/23/14	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	10/23/14	5
TPH (GC/FID) High Fraction	7.9	4.0	mg/kg	3546/DRO	10/21/14	1
Surrogate recovery(%)						
o-Terphenyl	67.1		% Rec.	3546/DRO	10/21/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L728240-03 (PH) - 8.2@20.9c



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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : PB03 2FT
Collected By : Chris Wilson
Collection Date : 10/15/14 12:18

ESC Sample # : L728240-03

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Surrogate Recovery						
p-Terphenyl-d14	37.7		% Rec.	8270C-SIM	10/23/14	1
Nitrobenzene-d5	53.8		% Rec.	8270C-SIM	10/23/14	1
2-Fluorobiphenyl	57.8		% Rec.	8270C-SIM	10/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1

Sample ID : PB04 2FT

Collected By : Chris Wilson
Collection Date : 10/15/14 12:28

ESC Sample # : L728240-04

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	10/23/14	1
Chromium,Trivalent	10.	2.0	mg/kg	Calc.	10/24/14	1
ORP	70.		mV	2580 B-2011	10/21/14	1
pH	8.1		su	9045D	10/21/14	1
Sodium Adsorption Ratio	2.3			Calc.	10/20/14	1
Specific Conductance	1100		umhos/cm	9050AMod	10/23/14	1
Mercury	0.021	0.020	mg/kg	7471	10/22/14	1
Arsenic	3.6	2.0	mg/kg	6010B	10/21/14	1
Barium	97.	0.50	mg/kg	6010B	10/21/14	1
Cadmium	BDL	0.50	mg/kg	6010B	10/21/14	1
Chromium	10.	1.0	mg/kg	6010B	10/21/14	1
Copper	10.	2.0	mg/kg	6010B	10/21/14	1
Lead	8.4	0.50	mg/kg	6010B	10/21/14	1
Nickel	14.	2.0	mg/kg	6010B	10/21/14	1
Selenium	BDL	2.0	mg/kg	6010B	10/21/14	1
Silver	BDL	1.0	mg/kg	6010B	10/21/14	1
Zinc	34.	5.0	mg/kg	6010B	10/21/14	1
Benzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Toluene	BDL	0.025	mg/kg	8021	10/23/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	10/23/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	10/23/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	100.		% Rec.	8015	10/23/14	5
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021	10/23/14	5
TPH (GC/FID) High Fraction	25.	4.0	mg/kg	3546/DRO	10/22/14	1
Surrogate recovery(%)						
o-Terphenyl	98.7		% Rec.	3546/DRO	10/22/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L728240-04 (PH) - 8.1@20.5c



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Rifle, CO 81650

October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : PB04 2FT
Collected By : Chris Wilson
Collection Date : 10/15/14 12:28

ESC Sample # : L728240-04

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Surrogate Recovery						
p-Terphenyl-d14	101.		% Rec.	8270C-SIM	10/23/14	1
Nitrobenzene-d5	71.0		% Rec.	8270C-SIM	10/23/14	1
2-Fluorobiphenyl	87.6		% Rec.	8270C-SIM	10/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 10/24/14 09:56 Printed: 10/24/14 09:57
L728240-04 (PH) - 8.1@20.5c



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Jake Janicek
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1

Sample ID : PB05 2FT

Collected By : Chris Wilson
Collection Date : 10/15/14 11:49

ESC Sample # : L728240-05

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	2.1	2.0	mg/kg	3060A/7196A	10/23/14	1
Chromium, Trivalent	10.	2.0	mg/kg	Calc.	10/24/14	1
ORP	55.		mV	2580 B-2011	10/21/14	1
pH	8.5		su	9045D	10/21/14	1
Sodium Adsorption Ratio	0.18			Calc.	10/20/14	1
Specific Conductance	130		umhos/cm	9050AMod	10/23/14	1
Mercury	0.035	0.020	mg/kg	7471	10/22/14	1
Arsenic	3.8	2.0	mg/kg	6010B	10/21/14	1
Barium	65.	0.50	mg/kg	6010B	10/21/14	1
Cadmium	BDL	0.50	mg/kg	6010B	10/21/14	1
Chromium	12.	1.0	mg/kg	6010B	10/21/14	1
Copper	14.	2.0	mg/kg	6010B	10/21/14	1
Lead	9.7	0.50	mg/kg	6010B	10/21/14	1
Nickel	8.2	2.0	mg/kg	6010B	10/21/14	1
Selenium	BDL	2.0	mg/kg	6010B	10/21/14	1
Silver	BDL	1.0	mg/kg	6010B	10/21/14	1
Zinc	34.	5.0	mg/kg	6010B	10/21/14	1
Benzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Toluene	BDL	0.025	mg/kg	8021	10/23/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	10/23/14	5
Total Xylene	BDL	0.0075	mg/kg	8021	10/23/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	10/23/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.8		% Rec.	8015	10/23/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021	10/23/14	5
TPH (GC/FID) High Fraction	19.	4.0	mg/kg	3546/DRO	10/22/14	1
Surrogate recovery(%)						
o-Terphenyl	75.3		% Rec.	3546/DRO	10/22/14	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L728240-05 (PH) - 8.5@20.5c



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LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : PB05 2FT
Collected By : Chris Wilson
Collection Date : 10/15/14 11:49

ESC Sample # : L728240-05

Site ID :

Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Naphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	10/23/14	1
1-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Methylnaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	10/23/14	1
Surrogate Recovery						
p-Terphenyl-d14	111.		% Rec.	8270C-SIM	10/23/14	1
Nitrobenzene-d5	69.8		% Rec.	8270C-SIM	10/23/14	1
2-Fluorobiphenyl	84.5		% Rec.	8270C-SIM	10/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : BG01 6IN
Collected By : Chris Wilson
Collection Date : 10/15/14 10:28

ESC Sample # : L728240-06
Site ID :
Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.6	2.0	mg/kg	6010B	10/21/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : BG02 6IN
Collected By : Chris Wilson
Collection Date : 10/15/14 10:34

ESC Sample # : L728240-07
Site ID :
Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	3.3	2.0	mg/kg	6010B	10/21/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

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October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : BG03 6IN
Collected By : Chris Wilson
Collection Date : 10/15/14 10:42

ESC Sample # : L728240-08
Site ID :
Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.4	2.0	mg/kg	6010B	10/21/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Reported: 10/24/14 09:56 Printed: 10/24/14 09:57



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REPORT OF ANALYSIS

Jake Janicek
LT Environmental- Rifle, CO
820 Megan Ave, Unit B
Rifle, CO 81650

October 24, 2014

Date Received : October 17, 2014
Description : Big Ridge Federal 15-1-101 #1
Sample ID : BG04 6IN
Collected By : Chris Wilson
Collection Date : 10/15/14 10:49

ESC Sample # : L728240-09
Site ID :
Project # : 058514002

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.3	2.0	mg/kg	6010B	10/21/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Summary of Remarks For Samples Printed
10/24/14 at 09:57:08

TSR Signing Reports: 358
R5 - Desired TAT

Sample: L728240-01 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-02 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-03 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-04 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-05 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-06 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-07 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-08 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56
Sample: L728240-09 Account: LTENVRCO Received: 10/17/14 09:00 Due Date: 10/24/14 00:00 RPT Date: 10/24/14 09:56



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October 24, 2014

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Arsenic	< 2	mg/kg			WG749404	10/21/14 17:56
Barium	< .5	mg/kg			WG749404	10/21/14 17:56
Cadmium	< .5	mg/kg			WG749404	10/21/14 17:56
Chromium	< 1	mg/kg			WG749404	10/21/14 17:56
Copper	< 2	mg/kg			WG749404	10/21/14 17:56
Lead	< .5	mg/kg			WG749404	10/21/14 17:56
Nickel	< 2	mg/kg			WG749404	10/21/14 17:56
Selenium	< 2	mg/kg			WG749404	10/21/14 17:56
Silver	< 1	mg/kg			WG749404	10/21/14 17:56
Zinc	< 5	mg/kg			WG749404	10/21/14 17:56
TPH (GC/FID) High Fraction	< 4	mg/kg			WG749548	10/21/14 16:11
o-Terphenyl		% Rec.	96.10	50-150	WG749548	10/21/14 16:11
Mercury	< .02	mg/kg			WG749842	10/22/14 07:35
1-Methylnaphthalene	< .02	mg/kg			WG749855	10/22/14 08:42
2-Chloronaphthalene	< .02	mg/kg			WG749855	10/22/14 08:42
2-Methylnaphthalene	< .02	mg/kg			WG749855	10/22/14 08:42
Acenaphthene	< .006	mg/kg			WG749855	10/22/14 08:42
Acenaphthylene	< .006	mg/kg			WG749855	10/22/14 08:42
Anthracene	< .006	mg/kg			WG749855	10/22/14 08:42
Benzo(a)anthracene	< .006	mg/kg			WG749855	10/22/14 08:42
Benzo(a)pyrene	< .006	mg/kg			WG749855	10/22/14 08:42
Benzo(b)fluoranthene	< .006	mg/kg			WG749855	10/22/14 08:42
Benzo(g,h,i)perylene	< .006	mg/kg			WG749855	10/22/14 08:42
Benzo(k)fluoranthene	< .006	mg/kg			WG749855	10/22/14 08:42
Chrysene	< .006	mg/kg			WG749855	10/22/14 08:42
Dibenz(a,h)anthracene	< .006	mg/kg			WG749855	10/22/14 08:42
Fluoranthene	< .006	mg/kg			WG749855	10/22/14 08:42
Fluorene	< .006	mg/kg			WG749855	10/22/14 08:42
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG749855	10/22/14 08:42
Naphthalene	< .02	mg/kg			WG749855	10/22/14 08:42
Phenanthrene	< .006	mg/kg			WG749855	10/22/14 08:42
Pyrene	< .006	mg/kg			WG749855	10/22/14 08:42
2-Fluorobiphenyl		% Rec.	86.00	38.2-135	WG749855	10/22/14 08:42
Nitrobenzene-d5		% Rec.	75.30	28.4-151	WG749855	10/22/14 08:42
p-Terphenyl-d14		% Rec.	83.70	34.2-141	WG749855	10/22/14 08:42
TPH (GC/FID) High Fraction	< 4	mg/kg			WG749862	10/22/14 09:02
o-Terphenyl		% Rec.	105.0	50-150	WG749862	10/22/14 09:02
Chromium, Hexavalent	< 2	mg/kg			WG750028	10/23/14 10:54
Benzene	< .0005	mg/kg			WG749532	10/23/14 00:59
Ethylbenzene	< .0005	mg/kg			WG749532	10/23/14 00:59
Toluene	< .005	mg/kg			WG749532	10/23/14 00:59
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG749532	10/23/14 00:59
Total Xylene	< .0015	mg/kg			WG749532	10/23/14 00:59
a,a,a-Trifluorotoluene(FID)		% Rec.	101.0	59-128	WG749532	10/23/14 00:59
a,a,a-Trifluorotoluene(PID)		% Rec.	103.0	54-144	WG749532	10/23/14 00:59

* Performance of this Analyte is outside of established criteria.

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



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
1-Methylnaphthalene	< .02	mg/kg			WG749949	10/23/14 08:55
2-Chloronaphthalene	< .02	mg/kg			WG749949	10/23/14 08:55
2-Methylnaphthalene	< .02	mg/kg			WG749949	10/23/14 08:55
Acenaphthene	< .006	mg/kg			WG749949	10/23/14 08:55
Acenaphthylene	< .006	mg/kg			WG749949	10/23/14 08:55
Anthracene	< .006	mg/kg			WG749949	10/23/14 08:55
Benzo(a)anthracene	< .006	mg/kg			WG749949	10/23/14 08:55
Benzo(a)pyrene	< .006	mg/kg			WG749949	10/23/14 08:55
Benzo(b)fluoranthene	< .006	mg/kg			WG749949	10/23/14 08:55
Benzo(g,h,i)perylene	< .006	mg/kg			WG749949	10/23/14 08:55
Benzo(k)fluoranthene	< .006	mg/kg			WG749949	10/23/14 08:55
Chrysene	< .006	mg/kg			WG749949	10/23/14 08:55
Dibenz(a,h)anthracene	< .006	mg/kg			WG749949	10/23/14 08:55
Fluoranthene	< .006	mg/kg			WG749949	10/23/14 08:55
Fluorene	< .006	mg/kg			WG749949	10/23/14 08:55
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG749949	10/23/14 08:55
Naphthalene	< .02	mg/kg			WG749949	10/23/14 08:55
Phenanthrene	< .006	mg/kg			WG749949	10/23/14 08:55
Pyrene	< .006	mg/kg			WG749949	10/23/14 08:55
2-Fluorobiphenyl	% Rec.		87.00	38.2-135	WG749949	10/23/14 08:55
Nitrobenzene-d5	% Rec.		72.30	28.4-151	WG749949	10/23/14 08:55
p-Terphenyl-d14	% Rec.		79.40	34.2-141	WG749949	10/23/14 08:55
Specific Conductance	1.60	umhos/cm			WG750122	10/23/14 18:56

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
pH	su	8.70	8.70	0.344	1	L727949-03	WG749041
ORP	mV	31.0	32.0	3.17	20	L727864-01	WG749630
ORP	mV	120.	120.	4.26	20	L728529-04	WG749630
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L728529-04	WG750028
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L728859-14	WG750028
Specific Conductance	umhos/cm	560.	560.	0.0	20	L728240-01	WG750122
Specific Conductance	umhos/cm	2300	2300	1.72	20	L728909-02	WG750122

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
pH	su	6.33	6.40	101.	98.3-101.7	WG749041
ORP	mV	100	99.0	99.0	90-110	WG749630
Arsenic	mg/kg	237	239.	101.	83.1-117	WG749404
Barium	mg/kg	252	268.	106.	84.1-116	WG749404
Cadmium	mg/kg	191	185.	97.0	83.2-117	WG749404
Chromium	mg/kg	128	132.	103.	81.3-118	WG749404
Copper	mg/kg	123	132.	107.	83.7-116	WG749404
Lead	mg/kg	103	100.	97.0	83.1-117	WG749404
Nickel	mg/kg	118	128.	108.	82-118	WG749404

* Performance of this Analyte is outside of established criteria.

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



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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Selenium	mg/kg	110	113.	103.	78.7-122	WG749404
Silver	mg/kg	47.3	48.0	102.	66.2-134	WG749404
Zinc	mg/kg	183	174.	95.0	82-118	WG749404
TPH (GC/FID) High Fraction	mg/kg	60	52.6	87.7	50-150	WG749548
o-Terphenyl				91.20	50-150	WG749548
Mercury	mg/kg	12.4	14.1	114.	71.6-128	WG749842
1-Methylnaphthalene	mg/kg	.08	0.0714	89.3	48.9-127	WG749855
2-Chloronaphthalene	mg/kg	.08	0.0730	91.2	48.8-125	WG749855
2-Methylnaphthalene	mg/kg	.08	0.0718	89.7	45.7-131	WG749855
Acenaphthene	mg/kg	.08	0.0727	90.9	48.7-127	WG749855
Acenaphthylene	mg/kg	.08	0.0739	92.4	47.9-128	WG749855
Anthracene	mg/kg	.08	0.0792	98.9	51.3-136	WG749855
Benzo(a)anthracene	mg/kg	.08	0.0698	87.2	55-126	WG749855
Benzo(a)pyrene	mg/kg	.08	0.0730	91.3	51.9-127	WG749855
Benzo(b)fluoranthene	mg/kg	.08	0.0622	77.7	54-125	WG749855
Benzo(g,h,i)perylene	mg/kg	.08	0.0690	86.3	53.8-136	WG749855
Benzo(k)fluoranthene	mg/kg	.08	0.0806	101.	53.9-132	WG749855
Chrysene	mg/kg	.08	0.0768	96.1	55.7-133	WG749855
Dibenz(a,h)anthracene	mg/kg	.08	0.0684	85.5	52.6-137	WG749855
Fluoranthene	mg/kg	.08	0.0690	86.3	54-132	WG749855
Fluorene	mg/kg	.08	0.0727	90.8	48.7-127	WG749855
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0699	87.4	53.8-138	WG749855
Naphthalene	mg/kg	.08	0.0708	88.5	42-127	WG749855
Phenanthrene	mg/kg	.08	0.0706	88.3	49.6-126	WG749855
Pyrene	mg/kg	.08	0.0656	82.0	54-129	WG749855
2-Fluorobiphenyl				82.40	38.2-135	WG749855
Nitrobenzene-d5				74.10	28.4-151	WG749855
p-Terphenyl-d14				79.80	34.2-141	WG749855
TPH (GC/FID) High Fraction	mg/kg	60	51.6	86.0	50-150	WG749862
o-Terphenyl				86.70	50-150	WG749862
Chromium, Hexavalent	mg/kg	187	161.	86.1	80-120	WG750028
TPH (GC/FID) Low Fraction	mg/kg	5.5	3.74	68.0	63.5-137	WG749532
a,a,a-Trifluorotoluene(FID)				99.90	59-128	WG749532
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG749532
Benzene	mg/kg	.05	0.0544	109.	70-130	WG749532
Ethylbenzene	mg/kg	.05	0.0557	111.	70-130	WG749532
Toluene	mg/kg	.05	0.0550	110.	70-130	WG749532
Total Xylene	mg/kg	.15	0.163	109.	70-130	WG749532
a,a,a-Trifluorotoluene(FID)				101.0	59-128	WG749532
a,a,a-Trifluorotoluene(PID)				104.0	54-144	WG749532
1-Methylnaphthalene	mg/kg	.08	0.0701	87.6	48.9-127	WG749949
2-Chloronaphthalene	mg/kg	.08	0.0682	85.3	48.8-125	WG749949
2-Methylnaphthalene	mg/kg	.08	0.0692	86.5	45.7-131	WG749949
Acenaphthene	mg/kg	.08	0.0664	83.0	48.7-127	WG749949
Acenaphthylene	mg/kg	.08	0.0634	79.2	47.9-128	WG749949

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Jake Janicek
820 Megan Ave, Unit B

Rifle, CO 81650

Quality Assurance Report
Level II

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

October 24, 2014

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Anthracene	mg/kg	.08	0.0731	91.4	51.3-136	WG749949
Benzo(a)anthracene	mg/kg	.08	0.0635	79.4	55-126	WG749949
Benzo(a)pyrene	mg/kg	.08	0.0720	90.0	51.9-127	WG749949
Benzo(b)fluoranthene	mg/kg	.08	0.0751	93.8	54-125	WG749949
Benzo(g,h,i)perylene	mg/kg	.08	0.0559	69.9	53.8-136	WG749949
Benzo(k)fluoranthene	mg/kg	.08	0.0756	94.5	53.9-132	WG749949
Chrysene	mg/kg	.08	0.0710	88.7	55.7-133	WG749949
Dibenz(a,h)anthracene	mg/kg	.08	0.0594	74.3	52.6-137	WG749949
Fluoranthene	mg/kg	.08	0.0648	81.0	54-132	WG749949
Fluorene	mg/kg	.08	0.0657	82.1	48.7-127	WG749949
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0613	76.6	53.8-138	WG749949
Naphthalene	mg/kg	.08	0.0645	80.6	42-127	WG749949
Phenanthrene	mg/kg	.08	0.0612	76.5	49.6-126	WG749949
Pyrene	mg/kg	.08	0.0652	81.4	54-129	WG749949
2-Fluorobiphenyl				91.60	38.2-135	WG749949
Nitrobenzene-d5				81.20	28.4-151	WG749949
p-Terphenyl-d14				92.80	34.2-141	WG749949
Specific Conductance	umhos/cm	1040	1000	96.2	85-115	WG750122

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	6.40	6.40	101.	98.3-101.7	0.0	20	WG749041
ORP	mV	98.0	99.0	98.0	90-110	1.02	20	WG749630
Arsenic	mg/kg	254.	239.	107.	83.1-117	6.00	20	WG749404
Barium	mg/kg	273.	268.	108.	84.1-116	2.00	20	WG749404
Cadmium	mg/kg	191.	185.	100.	83.2-117	3.00	20	WG749404
Chromium	mg/kg	138.	132.	108.	81.3-118	4.00	20	WG749404
Copper	mg/kg	134.	132.	109.	83.7-116	1.00	20	WG749404
Lead	mg/kg	106.	100.	103.	83.1-117	5.00	20	WG749404
Nickel	mg/kg	132.	128.	112.	82-118	4.00	20	WG749404
Selenium	mg/kg	119.	113.	108.	78.7-122	5.00	20	WG749404
Silver	mg/kg	48.0	48.0	101.	66.2-134	0.0	20	WG749404
Zinc	mg/kg	178.	174.	97.0	82-118	2.00	20	WG749404
TPH (GC/FID) High Fraction	mg/kg	55.3	52.6	92.0	50-150	5.02	20	WG749548
o-Terphenyl				95.60	50-150			WG749548
Mercury	mg/kg	13.9	14.1	112.	71.6-128	1.00	20	WG749842
1-Methylnaphthalene	mg/kg	0.0755	0.0714	94.0	48.9-127	5.56	20	WG749855
2-Chloronaphthalene	mg/kg	0.0777	0.0730	97.0	48.8-125	6.30	20	WG749855
2-Methylnaphthalene	mg/kg	0.0757	0.0718	95.0	45.7-131	5.41	20	WG749855
Acenaphthene	mg/kg	0.0775	0.0727	97.0	48.7-127	6.33	20	WG749855
Acenaphthylene	mg/kg	0.0785	0.0739	98.0	47.9-128	5.93	20	WG749855
Anthracene	mg/kg	0.0828	0.0792	104.	51.3-136	4.57	20	WG749855
Benzo(a)anthracene	mg/kg	0.0733	0.0698	92.0	55-126	4.91	20	WG749855
Benzo(a)pyrene	mg/kg	0.0771	0.0730	96.0	51.9-127	5.47	20	WG749855
Benzo(b)fluoranthene	mg/kg	0.0696	0.0622	87.0	54-125	11.4	20	WG749855
Benzo(g,h,i)perylene	mg/kg	0.0726	0.0690	91.0	53.8-136	5.01	20	WG749855

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Tax I.D. 62-0814289

Est. 1970

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzo(k)fluoranthene	mg/kg	0.0806	0.0806	101.	53.9-132	0.0700	20	WG749855
Chrysene	mg/kg	0.0819	0.0768	102.	55.7-133	6.35	20	WG749855
Dibenz(a,h)anthracene	mg/kg	0.0716	0.0684	90.0	52.6-137	4.57	20	WG749855
Fluoranthene	mg/kg	0.0730	0.0690	91.0	54-132	5.65	20	WG749855
Fluorene	mg/kg	0.0774	0.0727	97.0	48.7-127	6.35	20	WG749855
Indeno(1,2,3-cd)pyrene	mg/kg	0.0736	0.0699	92.0	53.8-138	5.16	20	WG749855
Naphthalene	mg/kg	0.0744	0.0708	93.0	42-127	4.93	20	WG749855
Phenanthrene	mg/kg	0.0759	0.0706	95.0	49.6-126	7.16	20	WG749855
Pyrene	mg/kg	0.0695	0.0656	87.0	54-129	5.80	20	WG749855
2-Fluorobiphenyl				89.60	38.2-135			WG749855
Nitrobenzene-d5				78.20	28.4-151			WG749855
p-Terphenyl-d14				86.70	34.2-141			WG749855
TPH (GC/FID) High Fraction	mg/kg	60.1	51.6	100.	50-150	15.2	20	WG749862
o-Terphenyl				99.00	50-150			WG749862
Chromium, Hexavalent	mg/kg	161.	161.	86.0	80-120	0.0	20	WG750028
TPH (GC/FID) Low Fraction	mg/kg	3.77	3.74	68.0	63.5-137	0.840	20	WG749532
a,a,a-Trifluorotoluene(FID)				98.60	59-128			WG749532
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG749532
Benzene	mg/kg	0.0492	0.0544	98.0	70-130	10.1	20	WG749532
Ethylbenzene	mg/kg	0.0507	0.0557	101.	70-130	9.48	20	WG749532
Toluene	mg/kg	0.0500	0.0550	100.	70-130	9.50	20	WG749532
Total Xylene	mg/kg	0.148	0.163	99.0	70-130	9.61	20	WG749532
a,a,a-Trifluorotoluene(FID)				101.0	59-128			WG749532
a,a,a-Trifluorotoluene(PID)				103.0	54-144			WG749532
1-Methylnaphthalene	mg/kg	0.0648	0.0701	81.0	48.9-127	7.82	20	WG749949
2-Chloronaphthalene	mg/kg	0.0657	0.0682	82.0	48.8-125	3.70	20	WG749949
2-Methylnaphthalene	mg/kg	0.0648	0.0692	81.0	45.7-131	6.50	20	WG749949
Acenaphthene	mg/kg	0.0663	0.0664	83.0	48.7-127	0.210	20	WG749949
Acenaphthylene	mg/kg	0.0644	0.0634	80.0	47.9-128	1.65	20	WG749949
Anthracene	mg/kg	0.0723	0.0731	90.0	51.3-136	1.17	20	WG749949
Benzo(a)anthracene	mg/kg	0.0624	0.0635	78.0	55-126	1.78	20	WG749949
Benzo(a)pyrene	mg/kg	0.0641	0.0720	80.0	51.9-127	11.7	20	WG749949
Benzo(b)fluoranthene	mg/kg	0.0676	0.0751	84.0	54-125	10.5	20	WG749949
Benzo(g,h,i)perylene	mg/kg	0.0634	0.0559	79.0	53.8-136	12.6	20	WG749949
Benzo(k)fluoranthene	mg/kg	0.0690	0.0756	86.0	53.9-132	9.10	20	WG749949
Chrysene	mg/kg	0.0718	0.0710	90.0	55.7-133	1.21	20	WG749949
Dibenz(a,h)anthracene	mg/kg	0.0628	0.0594	78.0	52.6-137	5.58	20	WG749949
Fluoranthene	mg/kg	0.0640	0.0648	80.0	54-132	1.29	20	WG749949
Fluorene	mg/kg	0.0643	0.0657	80.0	48.7-127	2.20	20	WG749949
Indeno(1,2,3-cd)pyrene	mg/kg	0.0657	0.0613	82.0	53.8-138	6.86	20	WG749949
Naphthalene	mg/kg	0.0630	0.0645	79.0	42-127	2.42	20	WG749949
Phenanthrene	mg/kg	0.0608	0.0612	76.0	49.6-126	0.720	20	WG749949
Pyrene	mg/kg	0.0626	0.0652	78.0	54-129	3.99	20	WG749949
2-Fluorobiphenyl				86.30	38.2-135			WG749949
Nitrobenzene-d5				73.80	28.4-151			WG749949
p-Terphenyl-d14				82.80	34.2-141			WG749949
Specific Conductance	umhos/	1000	1000	96.0	85-115	0.0	20	WG750122

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Rifle, CO 81650

Quality Assurance Report
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Tax I.D. 62-0814289

Est. 1970

October 24, 2014

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Arsenic	mg/kg	109.	7.48	100	100.	75-125	L728247-04	WG749404
TPH (GC/FID) High Fraction	mg/kg	51.0	3.96	60	78.0	50-150	L728162-01	WG749548
o-Terphenyl					126.0	50-150		WG749548
Mercury	mg/kg	0.463	0.0110	.5	90.0	80-120	L728627-01	WG749842
1-Methylnaphthalene	mg/kg	1.79	1.08	.08	880.*	41.8-133	L728524-01	WG749855
2-Chloronaphthalene	mg/kg	0.0752	0.00153	.08	92.0	42.4-129	L728524-01	WG749855
2-Methylnaphthalene	mg/kg	3.52	2.20	.08	1600*	37.5-137	L728524-01	WG749855
Acenaphthene	mg/kg	0.103	0.0200	.08	100.	39.4-132	L728524-01	WG749855
Acenaphthylene	mg/kg	0.0814	0.00454	.08	96.0	41.3-132	L728524-01	WG749855
Anthracene	mg/kg	0.0894	0.00749	.08	100.	36.7-144	L728524-01	WG749855
Benzo(a)anthracene	mg/kg	0.0752	0.00145	.08	92.0	28-144	L728524-01	WG749855
Benzo(a)pyrene	mg/kg	0.0761	0.0	.08	95.0	23.8-147	L728524-01	WG749855
Benzo(b)fluoranthene	mg/kg	0.0717	0.0	.08	90.0	18.2-147	L728524-01	WG749855
Benzo(g,h,i)perylene	mg/kg	0.0769	0.0	.08	96.0	9.2-155	L728524-01	WG749855
Benzo(k)fluoranthene	mg/kg	0.0708	0.0	.08	88.0	26.5-143	L728524-01	WG749855
Chrysene	mg/kg	0.0756	0.00112	.08	93.0	27.4-150	L728524-01	WG749855
Dibenz(a,h)anthracene	mg/kg	0.0761	0.0	.08	95.0	13.8-150	L728524-01	WG749855
Fluoranthene	mg/kg	0.0796	0.00250	.08	96.0	23.2-158	L728524-01	WG749855
Fluorene	mg/kg	0.115	0.0240	.08	110.	30.8-139	L728524-01	WG749855
Indeno(1,2,3-cd)pyrene	mg/kg	0.0784	0.0	.08	98.0	10.7-155	L728524-01	WG749855
Naphthalene	mg/kg	3.22	2.07	.08	1400*	34.9-133	L728524-01	WG749855
Phenanthrene	mg/kg	0.141	0.0383	.08	130.	20.2-150	L728524-01	WG749855
Pyrene	mg/kg	0.0882	0.00600	.08	100.	22.6-151	L728524-01	WG749855
2-Fluorobiphenyl					90.90	38.2-135		WG749855
Nitrobenzene-d5					113.0	28.4-151		WG749855
p-Terphenyl-d14					96.60	34.2-141		WG749855
TPH (GC/FID) High Fraction	mg/kg	50.8	0.633	60	84.0	50-150	L728519-06	WG749862
o-Terphenyl					91.20	50-150		WG749862
Chromium, Hexavalent	mg/kg	18.5	0.0	20	92.0	75-125	L728529-03	WG750028
Benzene	mg/kg	0.247	0.000176	.05	99.0	49.7-127	L728162-01	WG749532
Ethylbenzene	mg/kg	0.245	0.000175	.05	98.0	40.8-141	L728162-01	WG749532
Toluene	mg/kg	0.247	0.000513	.05	98.0	49.8-132	L728162-01	WG749532
Total Xylene	mg/kg	0.715	0.000993	.15	95.0	41.2-140	L728162-01	WG749532
a,a,a-Trifluorotoluene(FID)					99.70	59-128		WG749532
a,a,a-Trifluorotoluene(PID)					102.0	54-144		WG749532
TPH (GC/FID) Low Fraction	mg/kg	30.7	0.0	5.5	110.	28.5-138	L728162-01	WG749532
a,a,a-Trifluorotoluene(FID)					100.0	59-128		WG749532
a,a,a-Trifluorotoluene(PID)					101.0	54-144		WG749532
1-Methylnaphthalene	mg/kg	0.0794	0.0105	.08	86.0	41.8-133	L728430-01	WG749949
2-Chloronaphthalene	mg/kg	0.0682	0.0	.08	85.0	42.4-129	L728430-01	WG749949
2-Methylnaphthalene	mg/kg	0.0936	0.0215	.08	90.0	37.5-137	L728430-01	WG749949
Acenaphthene	mg/kg	0.0682	0.000896	.08	84.0	39.4-132	L728430-01	WG749949
Acenaphthylene	mg/kg	0.0667	0.0	.08	83.0	41.3-132	L728430-01	WG749949
Anthracene	mg/kg	0.0754	0.00121	.08	93.0	36.7-144	L728430-01	WG749949
Benzo(a)anthracene	mg/kg	0.0674	0.00152	.08	82.0	28-144	L728430-01	WG749949
Benzo(a)pyrene	mg/kg	0.0634	0.00370	.08	75.0	23.8-147	L728430-01	WG749949

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzo(b)fluoranthene	mg/kg	0.0761	0.00446	.08	90.0	18.2-147	L728430-01	WG749949
Benzo(g,h,i)perylene	mg/kg	0.116	0.00855	.08	130.	9.2-155	L728430-01	WG749949
Benzo(k)fluoranthene	mg/kg	0.0752	0.00126	.08	92.0	26.5-143	L728430-01	WG749949
Chrysene	mg/kg	0.0724	0.00244	.08	88.0	27.4-150	L728430-01	WG749949
Dibenz(a,h)anthracene	mg/kg	0.0736	0.00129	.08	90.0	13.8-150	L728430-01	WG749949
Fluoranthene	mg/kg	0.0634	0.00341	.08	75.0	23.2-158	L728430-01	WG749949
Fluorene	mg/kg	0.0626	0.00124	.08	77.0	30.8-139	L728430-01	WG749949
Indeno(1,2,3-cd)pyrene	mg/kg	0.0795	0.00487	.08	93.0	10.7-155	L728430-01	WG749949
Naphthalene	mg/kg	0.0857	0.0169	.08	86.0	34.9-133	L728430-01	WG749949
Phenanthrene	mg/kg	0.0705	0.00602	.08	80.0	20.2-150	L728430-01	WG749949
Pyrene	mg/kg	0.0832	0.00647	.08	96.0	22.6-151	L728430-01	WG749949
2-Fluorobiphenyl					90.20	38.2-135		WG749949
Nitrobenzene-d5					74.80	28.4-151		WG749949
p-Terphenyl-d14					102.0	34.2-141		WG749949

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Arsenic	mg/kg	102.	109.	94.4	75-125	7.00	20	L728247-04	WG749404
TPH (GC/FID) High Fraction	mg/kg	51.6	51.0	79.4	50-150	1.05	20	L728162-01	WG749548
o-Terphenyl				123.0	50-150				WG749548
Mercury	mg/kg	0.470	0.463	91.8	80-120	2.00	20	L728627-01	WG749842
1-Methylnaphthalene	mg/kg	2.48	1.79	1740*	41.8-133	32.3*	20.9	L728524-01	WG749855
2-Chloronaphthalene	mg/kg	0.0775	0.0752	95.0	42.4-129	3.12	20	L728524-01	WG749855
2-Methylnaphthalene	mg/kg	4.93	3.52	3420*	37.5-137	33.5*	20.4	L728524-01	WG749855
Acenaphthene	mg/kg	0.117	0.103	121.	39.4-132	12.4	20	L728524-01	WG749855
Acenaphthylene	mg/kg	0.0856	0.0814	101.	41.3-132	5.04	20	L728524-01	WG749855
Anthracene	mg/kg	0.0951	0.0894	110.	36.7-144	6.26	20.7	L728524-01	WG749855
Benzo(a)anthracene	mg/kg	0.0782	0.0752	96.0	28-144	3.94	24.7	L728524-01	WG749855
Benzo(a)pyrene	mg/kg	0.0772	0.0761	96.5	23.8-147	1.46	25.3	L728524-01	WG749855
Benzo(b)fluoranthene	mg/kg	0.0700	0.0717	87.5	18.2-147	2.36	29.5	L728524-01	WG749855
Benzo(g,h,i)perylene	mg/kg	0.0794	0.0769	99.3	9.2-155	3.20	29.2	L728524-01	WG749855
Benzo(k)fluoranthene	mg/kg	0.0769	0.0708	96.1	26.5-143	8.20	26.1	L728524-01	WG749855
Chrysene	mg/kg	0.0794	0.0756	97.8	27.4-150	4.93	25.7	L728524-01	WG749855
Dibenz(a,h)anthracene	mg/kg	0.0785	0.0761	98.1	13.8-150	3.11	25.8	L728524-01	WG749855
Fluoranthene	mg/kg	0.0797	0.0796	96.4	23.2-158	0.130	26	L728524-01	WG749855
Fluorene	mg/kg	0.132	0.115	135.	30.8-139	13.9	20	L728524-01	WG749855
Indeno(1,2,3-cd)pyrene	mg/kg	0.0808	0.0784	101.	10.7-155	2.90	26.9	L728524-01	WG749855
Naphthalene	mg/kg	4.43	3.22	2940*	34.9-133	31.6*	20.4	L728524-01	WG749855
Phenanthrene	mg/kg	0.170	0.141	165.*	20.2-150	19.1	24.6	L728524-01	WG749855
Pyrene	mg/kg	0.0957	0.0882	112.	22.6-151	8.18	25.1	L728524-01	WG749855
2-Fluorobiphenyl				92.80	38.2-135				WG749855
Nitrobenzene-d5				113.0	28.4-151				WG749855
p-Terphenyl-d14				99.20	34.2-141				WG749855
TPH (GC/FID) High Fraction	mg/kg	47.7	50.8	78.5	50-150	6.24	20	L728519-06	WG749862
o-Terphenyl				85.20	50-150				WG749862
Chromium,Hexavalent	mg/kg	18.4	18.5	92.0	75-125	0.542	20	L728529-03	WG750028

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Est. 1970

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Benzene	mg/kg	0.234	0.247	93.7	49.7-127	5.36	23.5	L728162-01		WG749532
Ethylbenzene	mg/kg	0.224	0.245	89.6	40.8-141	8.99	23.8	L728162-01		WG749532
Toluene	mg/kg	0.229	0.247	91.4	49.8-132	7.32	23.5	L728162-01		WG749532
Total Xylene	mg/kg	0.644	0.715	85.7	41.2-140	10.4	23.7	L728162-01		WG749532
a,a,a-Trifluorotoluene(FID)				100.0	59-128					WG749532
a,a,a-Trifluorotoluene(PID)				104.0	54-144					WG749532
TPH (GC/FID) Low Fraction	mg/kg	20.6	30.7	74.8	28.5-138	39.4*	23.6	L728162-01		WG749532
a,a,a-Trifluorotoluene(FID)				97.40	59-128					WG749532
a,a,a-Trifluorotoluene(PID)				102.0	54-144					WG749532
1-Methylnaphthalene	mg/kg	0.0740	0.0794	79.4	41.8-133	7.03	20.9	L728430-01		WG749949
2-Chloronaphthalene	mg/kg	0.0689	0.0682	86.1	42.4-129	1.04	20	L728430-01		WG749949
2-Methylnaphthalene	mg/kg	0.0850	0.0936	79.3	37.5-137	9.73	20.4	L728430-01		WG749949
Acenaphthene	mg/kg	0.0679	0.0682	83.7	39.4-132	0.420	20	L728430-01		WG749949
Acenaphthylene	mg/kg	0.0658	0.0667	82.3	41.3-132	1.29	20	L728430-01		WG749949
Anthracene	mg/kg	0.0726	0.0754	89.2	36.7-144	3.85	20.7	L728430-01		WG749949
Benzo(a)anthracene	mg/kg	0.0660	0.0674	80.6	28-144	2.21	24.7	L728430-01		WG749949
Benzo(a)pyrene	mg/kg	0.0669	0.0634	79.1	23.8-147	5.38	25.3	L728430-01		WG749949
Benzo(b)fluoranthene	mg/kg	0.0676	0.0761	78.9	18.2-147	12.0	29.5	L728430-01		WG749949
Benzo(g,h,i)perylene	mg/kg	0.126	0.116	147.	9.2-155	8.81	29.2	L728430-01		WG749949
Benzo(k)fluoranthene	mg/kg	0.0642	0.0752	78.7	26.5-143	15.8	26.1	L728430-01		WG749949
Chrysene	mg/kg	0.0761	0.0724	92.1	27.4-150	5.03	25.7	L728430-01		WG749949
Dibenz(a,h)anthracene	mg/kg	0.117	0.0736	145.	13.8-150	45.8*	25.8	L728430-01		WG749949
Fluoranthene	mg/kg	0.0623	0.0634	73.6	23.2-158	1.78	26	L728430-01		WG749949
Fluorene	mg/kg	0.0619	0.0626	75.8	30.8-139	1.09	20	L728430-01		WG749949
Indeno(1,2,3-cd)pyrene	mg/kg	0.125	0.0795	150.	10.7-155	44.2*	26.9	L728430-01		WG749949
Naphthalene	mg/kg	0.0804	0.0857	79.3	34.9-133	6.41	20.4	L728430-01		WG749949
Phenanthrene	mg/kg	0.0661	0.0705	75.1	20.2-150	6.43	24.6	L728430-01		WG749949
Pyrene	mg/kg	0.0748	0.0832	85.5	22.6-151	10.5	25.1	L728430-01		WG749949
2-Fluorobiphenyl				87.30	38.2-135					WG749949
Nitrobenzene-d5				70.30	28.4-151					WG749949
p-Terphenyl-d14				91.50	34.2-141					WG749949

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG749405: R2998821: L728240-01 02 03 04 05
WG749041: R2998997: L728240-01 02 03 04 05
WG749630: R2999041: L728240-01 02 03 04 05
WG749404: R2999159: L728240-01 02 03 04 05 06 07 08 09
WG749548: R2999171 R2999474: L728240-01 02 03
WG749842: R2999354: L728240-01 02 03 04 05
WG749855: R2999400 R2999630: L728240-01
WG749862: R2999475: L728240-04 05
WG750028: R2999707: L728240-01 02 03 04 05

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WG749532: R2999768: L728240-01 02 03 04 05
WG749949: R2999926: L728240-02 03 04 05
WG750122: R2999964: L728240-01 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.