



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-1871-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 7/20/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.042 mg/L	EPA 200.7	MJL	7/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	7/31/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/6/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Phenolics, Tot. Recoverable	0.079 mg/L	EPA 420.4	MLI	8/4/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012



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Boonville, IN 47601

Lab Number: 2012-1871-02

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1871-03
Date Received: 7/24/2012
Date Reported: 8/17/2012

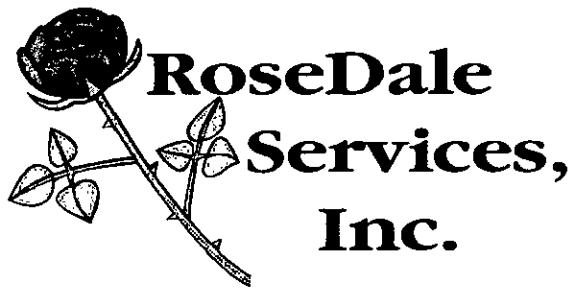
Sample Identification

Bulldog Mine
MW-3

Date Sampled: 7/20/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.08 feet	Field Measure	HMS	7/20/2012
pH	7.26 SU	SM 4500-H+ B	HMS	7/20/2012
Temperature	17.4 deg C	SM 2550 B	HMS	7/20/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/26/2012
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	7/26/2012
Chloride	15 mg/L	SM 4500-CL B	MJL	7/26/2012
Iron, Total	0.16 mg/L	EPA 200.7	MJL	7/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	7/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/26/2012
Hardness	190 mg/L as CaCO ₃	SM 2340 C	MJL	7/31/2012
Manganese, Total	0.012 mg/L	EPA 200.7	MJL	7/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	7/31/2012
Sulfate	40 mg/L	D51690,02	CCV	7/25/2012
Solids, Total Dissolved	340 mg/L	SM 2540 C	CCV	7/25/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	7/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Boron, Total	0.22 mg/L	EPA 200.7	MJL	7/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-1871-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 7/20/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.020 mg/L	EPA 200.7	MJL	7/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	7/31/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/6/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Phenolics, Tot. Recoverable	0.24 mg/L	EPA 420.4	MLI	8/4/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012



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Boonville, IN 47601

Lab Number: 2012-1871-03

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1871-04
Date Received: 7/24/2012
Date Reported: 8/17/2012

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 7/20/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.83 feet	Field Measure	HMS	7/20/2012
pH	7.22 SU	SM 4500-H+ B	HMS	7/20/2012
Temperature	17.8 deg C	SM 2550 B	HMS	7/20/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/26/2012
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	7/26/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	7/26/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	7/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	7/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/26/2012
Hardness	190 mg/L as CaCO ₃	SM 2340 C	MJL	7/31/2012
Manganese, Total	0.015 mg/L	EPA 200.7	MJL	7/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	7/31/2012
Sulfate	40 mg/L	D51690,02	CCV	7/25/2012
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	7/25/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	7/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Boron, Total	0.27 mg/L	EPA 200.7	MJL	7/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-1871-04

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Sample Identification

**Bulldog Mine
MW-4**

**Date Sampled: 7/20/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.031 mg/L	EPA 200.7	MJL	7/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	7/31/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/6/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Phenolics, Tot. Recoverable	<0.05 mg/L	EPA 420.4	MLI	8/4/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012



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Boonville, IN 47601

Lab Number: 2012-1871-04

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1871-05
Date Received: 7/24/2012
Date Reported: 8/17/2012

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 7/20/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.67 feet	Field Measure	HMS	7/20/2012
pH	7.39 SU	SM 4500-H+ B	HMS	7/20/2012
Temperature	17.8 deg C	SM 2550 B	HMS	7/20/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/26/2012
Alkalinity as CaCO ₃	250 mg/L	SM 2320 B	MJL	7/26/2012
Chloride	22 mg/L	SM 4500-CL B	MJL	7/26/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	7/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	7/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/26/2012
Hardness	160 mg/L as CaCO ₃	SM 2340 C	MJL	7/31/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	7/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	7/31/2012
Sulfate	37 mg/L	D51690,02	CCV	7/25/2012
Solids, Total Dissolved	690 mg/L	SM 2540 C	CCV	7/25/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	8/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Boron, Total	0.20 mg/L	EPA 200.7	MJL	8/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-1871-05

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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 7/20/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.036 mg/L	EPA 200.7	MJL	8/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	7/31/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/6/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Phenolics, Tot. Recoverable	0.057 mg/L	EPA 420.4	MLI	8/4/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012



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Boonville, IN 47601

Lab Number: 2012-1871-05

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1871-06
Date Received: 7/24/2012
Date Reported: 8/17/2012

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 7/20/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.46 feet	Field Measure	HMS	7/20/2012
pH	7.35 SU	SM 4500-H+ B	HMS	7/20/2012
Temperature	20.1 deg C	SM 2550 B	HMS	7/20/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/26/2012
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	7/26/2012
Chloride	18 mg/L	SM 4500-CL B	MJL	7/26/2012
Iron, Total	0.13 mg/L	EPA 200.7	MJL	7/26/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	7/26/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/26/2012
Hardness	170 mg/L as CaCO ₃	SM 2340 C	MJL	7/31/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	7/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	7/31/2012
Sulfate	50 mg/L	D51690,02	CCV	7/30/2012
Solids, Total Dissolved	690 mg/L	SM 2540 C	CCV	7/30/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	7/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Boron, Total	0.14 mg/L	EPA 200.7	MJL	7/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-1871-06

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Sample Identification

**Bulldog Mine
MW-6**

**Date Sampled: 7/20/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.035 mg/L	EPA 200.7	MJL	7/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	7/31/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/6/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Phenolics, Tot. Recoverable	<0.05 mg/L	EPA 420.4	MLI	8/4/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-1871-06

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Reviewed by Rodger Wilko

GROUNDWATER

IN ✓

COMPANY NAME: Sunrise Coal MINE ID: Bulldog mine DATE: 7/20/12

CALIBRATION: BUFFER 4.00 BUFFER 7.00 7.00 BUFFER 10.0 10.01

RAIN EVENT YES NO DATE OF LAST PRECIP / / AMOUNT

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	12:58	7.41	18.2	10.00'		
MW-2	12:15	7.59	19.0	7.94'	See Attachment	1871-01
MW-3	10:20	7.26	17.4	8:08'	" "	-02
MW-4	11:30	7.22	17.8	9.83'	" "	-03
MW-5	11:05	7.39	17.8	10.67'	" "	-04
MW-6	10:45	7.35	20.1	8.46'	" "	-05
	:					-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

- Bottle List
- 6-1 L H₂SO₄ Glass Amber
 - 6-1/2 L unpres
 - 12-1/4 L HNO₃
 - 6-1/2 L HNO₃ filtered
 - 6-1/4 L NaOH

Well# Elevation

MW-1	66.97'
MW-2	69.86'
MW-3	674.72'
MW-4	670.97'
MW-5	676.03'
MW-6	673.94'

NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED

1/2 L UNPRESERVED

1/4 L HNO₃ PRESERVED

RELINQUISHED BY: [Signature] DATE: 7/20/12 TIME:

RECEIVED BY: [Signature] DATE: 7/24/12 TIME: 9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1963-01
Date Received: 8/13/2012
Date Reported: 9/18/2012

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	14.60 feet	Field Measure	HMS	8/10/2012
Depth to Water	665.10 feet	Field Measure	HMS	8/10/2012
pH	7.27 SU	SM 4500-H+ B	HMS	8/10/2012
Temperature	17.7 deg C	SM 2550 B	HMS	8/10/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/15/2012
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	8/15/2012
Chloride	11 mg/L	SM 4500-CL B	MJL	8/15/2012
Iron, Total	0.18 mg/L	EPA 200.7	MJL	8/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	8/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/15/2012
Hardness	180 mg/L as CaCO ₃	SM 2340 C	MJL	8/31/2012
Manganese, Total	0.062 mg/L	EPA 200.7	MJL	8/31/2012
Manganese, Dissolved	0.049 mg/L	EPA 200.7	MJL	8/31/2012
Sulfate	<2 mg/L	D51690,02	CCV	8/14/2012
Solids, Total Dissolved	400 mg/L	SM 2540 C	CCV	8/16/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	8/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-1963-01

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Sample Identification

Bulldog Mine
MW-1

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.26 mg/L	EPA 200.7	MJL	8/31/2012
Barium, Total	0.037 mg/L	EPA 200.7	MJL	8/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/22/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Phenolics, Tot. Recoverable	<0.05 mg/L	EPA 420.4	MLI	8/25/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012



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Boonville, IN 47601

Lab Number: 2012-1963-01

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Reviewed by Rodger Wilson



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1963-02
Date Received: 8/13/2012
Date Reported: 9/18/2012

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	14.92 feet	Field Measure	HMS	8/10/2012
Depth to Water	662.88 feet	Field Measure	HMS	8/10/2012
pH	7.47 SU	SM 4500-H+ B	HMS	8/10/2012
Temperature	16.8 deg C	SM 2550 B	HMS	8/10/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/15/2012
Alkalinity as CaCO ₃	300 mg/L	SM 2320 B	MJL	8/15/2012
Chloride	13 mg/L	SM 4500-CL B	MJL	8/15/2012
Iron, Total	0.11 mg/L	EPA 200.7	MJL	8/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	8/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/15/2012
Hardness	180 mg/L as CaCO ₃	SM 2340 C	MJL	8/15/2012
Manganese, Total	0.081 mg/L	EPA 200.7	MJL	8/31/2012
Manganese, Dissolved	0.074 mg/L	EPA 200.7	MJL	8/31/2012
Sulfate	43 mg/L	D51690,02	CCV	8/14/2012
Solids, Total Dissolved	480 mg/L	SM 2540 C	CCV	8/16/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Aluminum, Total	0.051 mg/L	EPA 200.7	MJL	8/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012



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Boonville, IN 47601

Lab Number: 2012-1963-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.25 mg/L	EPA 200.7	MJL	8/31/2012
Barium, Total	0.036 mg/L	EPA 200.7	MJL	8/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	8/22/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	8/25/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012



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Lab Number: 2012-1963-02

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1963-03
Date Received: 8/13/2012
Date Reported: 9/18/2012

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.85 feet	Field Measure	HMS	8/10/2012
Depth to Water	672.95 feet	Field Measure	HMS	8/10/2012
pH	7.16 SU	SM 4500-H+ B	HMS	8/10/2012
Temperature	17.1 deg C	SM 2550 B	HMS	8/10/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/15/2012
Alkalinity as CaCO ₃	300 mg/L	SM 2320 B	MJL	8/15/2012
Chloride	18 mg/L	SM 4500-CL B	MJL	8/15/2012
Iron, Total	0.13 mg/L	EPA 200.7	MJL	8/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	8/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/15/2012
Hardness	200 mg/L as CaCO ₃	SM 2340 C	MJL	8/31/2012
Manganese, Total	0.010 mg/L	EPA 200.7	MJL	8/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	8/31/2012
Sulfate	49 mg/L	D51690,02	CCV	8/14/2012
Solids, Total Dissolved	330 mg/L	SM 2540 C	CCV	8/16/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	8/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012



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Lab Number: 2012-1963-03

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Sample Identification

**Bulldog Mine
MW-3**

**Date Sampled: 8/10/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.19 mg/L	EPA 200.7	MJL	8/31/2012
Barium, Total	0.025 mg/L	EPA 200.7	MJL	8/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/22/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Phenolics, Tot. Recoverable	0.10 mg/L	EPA 420.4	MLI	8/25/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012



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Lab Number: 2012-1963-03

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1963-04
Date Received: 8/13/2012
Date Reported: 9/18/2012

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	12.74 feet	Field Measure	HMS	8/10/2012
Depth to Water	668.06 feet	Field Measure	HMS	8/10/2012
pH	7.07 SU	SM 4500-H+ B	HMS	8/10/2012
Temperature	17.5 deg C	SM 2550 B	HMS	8/10/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/15/2012
Alkalinity as CaCO ₃	340 mg/L	SM 2320 B	MJL	8/15/2012
Chloride	14 mg/L	SM 4500-CL B	MJL	8/15/2012
Iron, Total	0.13 mg/L	EPA 200.7	MJL	8/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	8/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/15/2012
Hardness	200 mg/L as CaCO ₃	SM 2340 C	MJL	8/31/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	8/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	8/31/2012
Sulfate	34 mg/L	D51690,02	CCV	8/14/2012
Solids, Total Dissolved	500 mg/L	SM 2540 C	CCV	8/16/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	8/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012



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Boonville, IN 47601

Lab Number: 2012-1963-04

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Sample Identification

**Bulldog Mine
MW-4**

**Date Sampled: 8/10/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.26 mg/L	EPA 200.7	MJL	8/31/2012
Barium, Total	0.031 mg/L	EPA 200.7	MJL	8/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	8/22/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	8/25/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012



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Reviewed by Rodger Wilson



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1963-05
Date Received: 8/13/2012
Date Reported: 9/18/2012

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	14.08 feet	Field Measure	HMS	8/10/2012
Depth to Water	672.62 feet	Field Measure	HMS	8/10/2012
pH	7.35 SU	SM 4500-H+ B	HMS	8/10/2012
Temperature	18.4 deg C	SM 2550 B	HMS	8/10/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/23/2012
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	8/23/2012
Chloride	17 mg/L	SM 4500-CL B	MJL	8/23/2012
Iron, Total	0.11 mg/L	EPA 200.7	MJL	8/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	8/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/23/2012
Hardness	180 mg/L as CaCO ₃	SM 2340 C	MJL	8/31/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	8/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	8/31/2012
Sulfate	41 mg/L	D51690,02	CCV	8/20/2012
Solids, Total Dissolved	320 mg/L	SM 2540 C	CCV	8/16/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	8/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012



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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 8/10/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.19 mg/L	EPA 200.7	MJL	8/31/2012
Barium, Total	0.036 mg/L	EPA 200.7	MJL	8/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	8/22/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Phenolics, Tot. Recoverable	0.086 mg/L	EPA 420.4	MLI	8/25/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012



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1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-1963-06
Date Received: 8/13/2012
Date Reported: 9/18/2012

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 8/10/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.32 feet	Field Measure	HMS	8/10/2012
Depth to Water	673.08 feet	Field Measure	HMS	8/10/2012
pH	7.25 SU	SM 4500-H+ B	HMS	8/10/2012
Temperature	19.8 deg C	SM 2550 B	HMS	8/10/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/23/2012
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	8/23/2012
Chloride	14 mg/L	SM 4500-CL B	MJL	8/23/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	8/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	8/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/23/2012
Hardness	180 mg/L as CaCO ₃	SM 2340 C	MJL	8/31/2012
Manganese, Total	0.015 mg/L	EPA 200.7	MJL	8/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	8/31/2012
Sulfate	56 mg/L	D51690,02	CCV	8/20/2012
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	8/16/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	8/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012



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Lab Number: 2012-1963-06

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Sample Identification

**Bulldog Mine
MW-6**

**Date Sampled: 8/10/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.22 mg/L	EPA 200.7	MJL	8/31/2012
Barium, Total	0.032 mg/L	EPA 200.7	MJL	8/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	8/22/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Phenolics, Tot. Recoverable	0.15 mg/L	EPA 420.4	MLI	8/25/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	8/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	8/31/2012



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Lab Number: 2012-1963-06

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2053-01
Date Received: 9/10/2012
Date Reported: 10/18/2012

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.83 feet	Field Measure	HMS	9/7/2012
Depth to Water	663.87 feet	Field Measure	HMS	9/7/2012
pH	7.42 SU	SM 4500-H+ B	HMS	9/7/2012
Temperature	16.7 deg C	SM 2550 B	HMS	9/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	9/18/2012
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	9/18/2012
Chloride	13 mg/L	SM 4500-CL B	MJL	9/18/2012
Iron, Total	0.21 mg/L	EPA 200.7	MLI	9/21/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	9/21/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	9/18/2012
Hardness	200 mg/L as CaCO ₃	SM 2340 C	MLI	9/21/2012
Manganese, Total	0.054 mg/L	EPA 200.7	MLI	9/21/2012
Manganese, Dissolved	0.042 mg/L	EPA 200.7	MLI	9/21/2012
Sulfate	6 mg/L	D51690,02	CCV	9/17/2012
Solids, Total Dissolved	320 mg/L	SM 2540 C	CCV	9/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	9/21/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012



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Boonville, IN 47601

Lab Number: 2012-2053-01

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Sample Identification

Bulldog Mine
MW-1

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.31 mg/L	EPA 200.7	MLI	9/21/2012
Barium, Total	0.042 mg/L	EPA 200.7	MLI	9/21/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	9/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	9/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Phenolics, Tot. Recoverable	<0.05 mg/L	EPA 420.4	MLI	9/19/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012



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Boonville, IN 47601

Lab Number: 2012-2053-01

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2053-02
Date Received: 9/10/2012
Date Reported: 10/18/2012

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	16.46 feet	Field Measure	HMS	9/7/2012
Depth to Water	661.34 feet	Field Measure	HMS	9/7/2012
pH	7.54 SU	SM 4500-H+ B	HMS	9/7/2012
Temperature	16.9 deg C	SM 2550 B	HMS	9/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	9/18/2012
Alkalinity as CaCO ₃	310 mg/L	SM 2320 B	MJL	9/18/2012
Chloride	19 mg/L	SM 4500-CL B	MJL	9/18/2012
Iron, Total	0.15 mg/L	EPA 200.7	MLI	9/21/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	9/21/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	9/18/2012
Hardness	150 mg/L as CaCO ₃	SM 2340 C	MLI	9/21/2012
Manganese, Total	0.068 mg/L	EPA 200.7	MLI	9/21/2012
Manganese, Dissolved	0.054 mg/L	EPA 200.7	MLI	9/21/2012
Sulfate	37 mg/L	D51690,02	CCV	9/17/2012
Solids, Total Dissolved	450 mg/L	SM 2540 C	CCV	9/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	9/21/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-02

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Sample Identification

**Bulldog Mine
MW-2**

**Date Sampled: 9/7/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.19 mg/L	EPA 200.7	MLI	9/21/2012
Barium, Total	0.033 mg/L	EPA 200.7	MLI	9/21/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	9/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	9/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	9/19/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-02

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2053-03
Date Received: 9/10/2012
Date Reported: 10/18/2012

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.53 feet	Field Measure	HMS	9/7/2012
Depth to Water	673.27 feet	Field Measure	HMS	9/7/2012
pH	7.21 SU	SM 4500-H+ B	HMS	9/7/2012
Temperature	17.3 deg C	SM 2550 B	HMS	9/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	9/18/2012
Alkalinity as CaCO ₃	270 mg/L	SM 2320 B	MJL	9/18/2012
Chloride	22 mg/L	SM 4500-CL B	MJL	9/18/2012
Iron, Total	0.16 mg/L	EPA 200.7	MLI	9/21/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	9/21/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	9/18/2012
Hardness	190 mg/L as CaCO ₃	SM 2340 C	MLI	9/21/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MLI	9/21/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	9/21/2012
Sulfate	44 mg/L	D51690,02	CCV	9/17/2012
Solids, Total Dissolved	430 mg/L	SM 2540 C	CCV	9/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	9/21/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-03

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Sample Identification

**Bulldog Mine
MW-3**

Date Sampled: 9/7/2012

Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.24 mg/L	EPA 200.7	MLI	9/21/2012
Barium, Total	0.031 mg/L	EPA 200.7	MLI	9/21/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	9/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	9/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Phenolics, Tot. Recoverable	0.084 mg/L	EPA 420.4	MLI	9/19/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-03

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2053-04
Date Received: 9/10/2012
Date Reported: 10/18/2012

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	14.91 feet	Field Measure	HMS	9/7/2012
Depth to Water	665.89 feet	Field Measure	HMS	9/7/2012
pH	7.23 SU	SM 4500-H+ B	HMS	9/7/2012
Temperature	16.3 deg C	SM 2550 B	HMS	9/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	9/18/2012
Alkalinity as CaCO ₃	270 mg/L	SM 2320 B	MJL	9/18/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	9/18/2012
Iron, Total	0.19 mg/L	EPA 200.7	MLI	9/21/2012
Iron, Dissolved	0.11 mg/L	EPA 200.7	MLI	9/21/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	9/18/2012
Hardness	190 mg/L as CaCO ₃	SM 2340 C	MLI	9/21/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MLI	9/21/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	9/21/2012
Sulfate	60 mg/L	D51690,02	CCV	9/17/2012
Solids, Total Dissolved	370 mg/L	SM 2540 C	CCV	9/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	9/21/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-04

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Sample Identification

**Bulldog Mine
MW-4**

**Date Sampled: 9/7/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.28 mg/L	EPA 200.7	MLI	9/21/2012
Barium, Total	0.035 mg/L	EPA 200.7	MLI	9/21/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	9/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	9/14/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	9/14/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	9/14/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	9/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	9/19/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012



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Boonville, IN 47601

Lab Number: 2012-2053-04

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2053-05
Date Received: 9/10/2012
Date Reported: 10/18/2012

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	18.25 feet	Field Measure	HMS	9/7/2012
Depth to Water	668.45 feet	Field Measure	HMS	9/7/2012
pH	7.34 SU	SM 4500-H+ B	HMS	9/7/2012
Temperature	15.9 deg C	SM 2550 B	HMS	9/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	9/18/2012
Alkalinity as CaCO ₃	250 mg/L	SM 2320 B	MJL	9/18/2012
Chloride	20 mg/L	SM 4500-CL B	MJL	9/18/2012
Iron, Total	0.28 mg/L	EPA 200.7	MLI	9/21/2012
Iron, Dissolved	0.12 mg/L	EPA 200.7	MLI	9/21/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	9/18/2012
Hardness	200 mg/L as CaCO ₃	SM 2340 C	MLI	9/21/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MLI	9/21/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	9/21/2012
Sulfate	36 mg/L	D51690,02	CCV	9/17/2012
Solids, Total Dissolved	350 mg/L	SM 2540 C	CCV	9/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	9/21/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-05

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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 9/7/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.25 mg/L	EPA 200.7	MLI	9/21/2012
Barium, Total	0.041 mg/L	EPA 200.7	MLI	9/21/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	9/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	9/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Phenolics, Tot. Recoverable	0.077 mg/L	EPA 420.4	MLI	9/19/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-05

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2053-06
Date Received: 9/10/2012
Date Reported: 10/18/2012

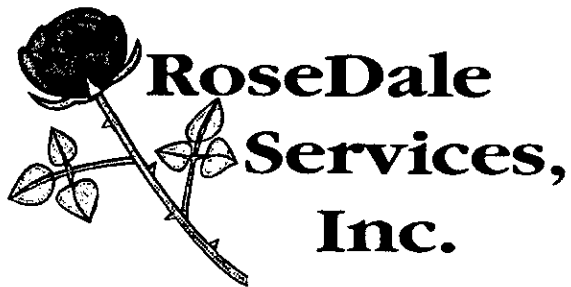
Sample Identification

Bulldog Mine
MW-6

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.51 feet	Field Measure	HMS	9/7/2012
Depth to Water	671.89 feet	Field Measure	HMS	9/7/2012
pH	7.39 SU	SM 4500-H+ B	HMS	9/7/2012
Temperature	18.8 deg C	SM 2550 B	HMS	9/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	9/18/2012
Alkalinity as CaCO ₃	230 mg/L	SM 2320 B	MJL	9/18/2012
Chloride	8 mg/L	SM 4500-CL B	MJL	9/18/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MLI	9/21/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	9/21/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	9/18/2012
Hardness	140 mg/L as CaCO ₃	SM 2340 C	MLI	9/21/2012
Manganese, Total	0.012 mg/L	EPA 200.7	MLI	9/21/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	9/21/2012
Sulfate	30 mg/L	D51690,02	CCV	9/17/2012
Solids, Total Dissolved	420 mg/L	SM 2540 C	CCV	9/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Aluminum, Total	0.052 mg/L	EPA 200.7	MLI	9/21/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-06

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Sample Identification

Bulldog Mine
MW-6

Date Sampled: 9/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.28 mg/L	EPA 200.7	MLI	9/21/2012
Barium, Total	0.045 mg/L	EPA 200.7	MLI	9/21/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	9/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	9/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Phenolics, Tot. Recoverable	0.099 mg/L	EPA 420.4	MLI	9/19/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	9/21/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	9/21/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2053-06

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Reviewed by Rodger Wilco

CHECKED SEP 13 2012

GROUNDWATER

COMPANY NAME: Sunrise Coal

MINE ID: Bulldog mine

DATE: 9/7/12

CALIBRATION: BUFFER 4.00 — BUFFER 7.00 7.00 BUFFER 10.0 10.03

RAIN EVENT YES — NO — DATE OF LAST PRECIP — / — / — AMOUNT —

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	10:50	7.42	16.7	15.83'	see attachment	2053-01
MW-2	10:17	7.54	16.9	16.46'	" "	-02
MW-3	09:00	7.21	17.3	10.53"	" "	-03
MW-4	09:55	7.23	16.3	14.91'	" "	-04
MW-5	9:33	7.34	15.9	18.25'	" "	-05
MW-6	09:15	7.39	18.8	10.51"	" "	-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

Bottle List

- 1 l H₂SO₄ Glass Amber
- 1/2 l unpres.
- 1/4 l HNO₃
- 1/4 l HNO₃ filtered
- 1/4 l NaOH

Well #

- MW-1 663.87'
- MW-2 661.34'
- MW-3 673.27'
- MW-4 665.89'
- MW-5 668.45'
- MW-6 671.89'

Elevation

NUMBER OF BOTTLES (PLASTIC)

- 1 L UNPRESERVED —
- 1/2 L UNPRESERVED —
- 1/4 L HNO₃ PRESERVED —

RELINQUISHED BY: [Signature]

DATE: 9/7/12

TIME: 16:00

RECEIVED BY: [Signature]

DATE: 9/10/12

TIME: 9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2225-01
Date Received: 10/15/2012
Date Reported: 11/16/2012

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	16.85 feet	Field Measure	HMS	10/12/2012
Depth to Water	662.85 feet	Field Measure	HMS	10/12/2012
pH	7.28 SU	SM 4500-H+ B	HMS	10/12/2012
Temperature	16.0 deg C	SM 2550 B	HMS	10/12/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	10/22/2012
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	10/22/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	10/22/2012
Iron, Total	0.37 mg/L	EPA 200.7	MJL	10/31/2012
Iron, Dissolved	0.14 mg/L	EPA 200.7	MJL	10/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/22/2012
Hardness	230 mg/L as CaCO ₃	SM 2340 C	MJL	10/31/2012
Manganese, Total	0.069 mg/L	EPA 200.7	MJL	10/31/2012
Manganese, Dissolved	0.052 mg/L	EPA 200.7	MJL	10/31/2012
Sulfate	7 mg/L	D51690,02	CCV	10/25/2012
Solids, Total Dissolved	380 mg/L	SM 2540 C	CCV	10/19/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Aluminum, Total	0.094 mg/L	EPA 200.7	MJL	10/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2225-01

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Sample Identification

Bulldog Mine
MW-1

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.37 mg/L	EPA 200.7	MJL	10/31/2012
Barium, Total	0.041 mg/L	EPA 200.7	MJL	10/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/30/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	10/30/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	10/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2225-01

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Reviewed by Rodger Wilson



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2225-02
Date Received: 10/15/2012
Date Reported: 11/16/2012

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	17.40 feet	Field Measure	HMS	10/12/2012
Depth to Water	660.40 feet	Field Measure	HMS	10/12/2012
pH	7.31 SU	SM 4500-H+ B	HMS	10/12/2012
Temperature	15.6 deg C	SM 2550 B	HMS	10/12/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	10/22/2012
Alkalinity as CaCO ₃	320 mg/L	SM 2320 B	MJL	10/22/2012
Chloride	17 mg/L	SM 4500-CL B	MJL	10/22/2012
Iron, Total	0.65 mg/L	EPA 200.7	MJL	10/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/22/2012
Hardness	190 mg/L as CaCO ₃	SM 2340 C	MJL	10/31/2012
Manganese, Total	0.088 mg/L	EPA 200.7	MJL	10/31/2012
Manganese, Dissolved	0.024 mg/L	EPA 200.7	MJL	10/31/2012
Sulfate	14 mg/L	D51690,02	CCV	10/25/2012
Solids, Total Dissolved	480 mg/L	SM 2540 C	CCV	10/19/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Aluminum, Total	0.089 mg/L	EPA 200.7	MJL	10/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012



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Boonville, IN 47601

Lab Number: 2012-2225-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.37 mg/L	EPA 200.7	MJL	10/31/2012
Barium, Total	0.041 mg/L	EPA 200.7	MJL	10/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/30/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	10/30/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Phenolics, Tot. Recoverable	0.081 mg/L	EPA 420.4	MLI	10/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012



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Lab Number: 2012-2225-02

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2225-03
Date Received: 10/15/2012
Date Reported: 11/16/2012

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	12.37 feet	Field Measure	HMS	10/12/2012
Depth to Water	671.43 feet	Field Measure	HMS	10/31/2012
pH	6.96 SU	SM 4500-H+ B	HMS	10/12/2012
Temperature	16.3 deg C	SM 2550 B	HMS	10/12/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	10/22/2012
Alkalinity as CaCO ₃	270 mg/L	SM 2320 B	MJL	10/22/2012
Chloride	18 mg/L	SM 4500-CL B	MJL	10/22/2012
Iron, Total	0.34 mg/L	EPA 200.7	MJL	10/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/22/2012
Hardness	220 mg/L as CaCO ₃	SM 2340 C	MJL	10/31/2012
Manganese, Total	0.18 mg/L	EPA 200.7	MJL	10/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	12/30/1899
Sulfate	14 mg/L	D51690,02	CCV	10/25/2012
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	10/19/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Aluminum, Total	0.082 mg/L	EPA 200.7	MJL	10/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012



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Boonville, IN 47601

Lab Number: 2012-2225-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.28 mg/L	EPA 200.7	MJL	10/31/2012
Barium, Total	0.049 mg/L	EPA 200.7	MJL	10/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/30/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	10/30/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	10/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012



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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2225-04
Date Received: 10/15/2012
Date Reported: 11/16/2012

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.97 feet	Field Measure	HMS	10/12/2012
Depth to Water	664.83 feet	Field Measure	HMS	10/12/2012
pH	7.05 SU	SM 4500-H+ B	HMS	10/12/2012
Temperature	16.1 deg C	SM 2550 B	HMS	10/12/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	10/22/2012
Alkalinity as CaCO ₃	310 mg/L	SM 2320 B	MJL	10/22/2012
Chloride	15 mg/L	SM 4500-CL B	MJL	10/22/2012
Iron, Total	0.26 mg/L	EPA 200.7	MJL	10/31/2012
Iron, Dissolved	0.032 mg/L	EPA 200.7	MJL	10/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/22/2012
Hardness	230 mg/L as CaCO ₃	SM 2340 C	MJL	10/31/2012
Manganese, Total	0.021 mg/L	EPA 200.7	MJL	10/31/2012
Manganese, Dissolved	0.019 mg/L	EPA 200.7	MJL	10/31/2012
Sulfate	48 mg/L	D51690,02	CCV	10/19/2012
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	10/19/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Aluminum, Total	0.072 mg/L	EPA 200.7	MJL	10/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012



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Boonville, IN 47601

Lab Number: 2012-2225-04

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Sample Identification

Bulldog Mine
MW-4

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.034 mg/L	EPA 200.7	MJL	10/31/2012
Barium, Total	0.043 mg/L	EPA 200.7	MJL	10/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/30/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	10/30/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	10/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012



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Boonville, IN 47601

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2225-05
Date Received: 10/15/2012
Date Reported: 11/16/2012

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	20.74 feet	Field Measure	HMS	10/12/2012
Depth to Water	668.96 feet	Field Measure	HMS	10/12/2012
pH	7.29 SU	SM 4500-H+ B	HMS	10/12/2012
Temperature	14.8 deg C	SM 2550 B	HMS	10/12/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	10/22/2012
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	10/22/2012
Chloride	22 mg/L	SM 4500-CL B	MJL	10/22/2012
Iron, Total	0.45 mg/L	EPA 200.7	MJL	10/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/22/2012
Hardness	260 mg/L as CaCO ₃	SM 2340 C	MJL	10/31/2012
Manganese, Total	0.13 mg/L	EPA 200.7	MJL	10/31/2012
Manganese, Dissolved	0.052 mg/L	EPA 200.7	MJL	10/31/2012
Sulfate	23 mg/L	D51690,02	CCV	10/25/2012
Solids, Total Dissolved	420 mg/L	SM 2540 C	CCV	10/19/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Aluminum, Total	0.062 mg/L	EPA 200.7	MJL	10/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	10/31/2012



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Lab Number: 2012-2225-05

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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 10/12/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.29 mg/L	EPA 200.7	MJL	10/31/2012
Barium, Total	0.053 mg/L	EPA 200.7	MJL	10/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/30/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	10/30/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Phenolics, Tot. Recoverable	0.10 mg/L	EPA 420.4	MLI	10/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012



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1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2225-06
Date Received: 10/15/2012
Date Reported: 11/16/2012

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 10/12/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	11.49 feet	Field Measure	HMS	10/12/2012
Depth to Water	670.91 feet	Field Measure	HMS	10/12/2012
pH	7.32 SU	SM 4500-H+ B	HMS	10/12/2012
Temperature	17.06 deg C	SM 2550 B	HMS	10/12/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	10/22/2012
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	10/22/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	10/22/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	10/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/22/2012
Hardness	200 mg/L as CaCO ₃	SM 2340 C	MJL	10/31/2012
Manganese, Total	0.023 mg/L	EPA 200.7	MJL	10/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	10/31/2012
Sulfate	40 mg/L	D51690,02	CCV	10/25/2012
Solids, Total Dissolved	450 mg/L	SM 2540 C	CCV	10/19/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Aluminum, Total	0.069 mg/L	EPA 200.7	MJL	10/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012



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Boonville, IN 47601

Lab Number: 2012-2225-06

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Sample Identification

**Bulldog Mine
MW-6**

**Date Sampled: 10/12/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.27 mg/L	EPA 200.7	MJL	10/31/2012
Barium, Total	0.052 mg/L	EPA 200.7	MJL	10/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/30/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	10/30/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	10/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/31/2012



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Boonville, IN 47601

Lab Number: 2012-2225-06

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2324-01
Date Received: 11/12/2012
Date Reported: 12/14/2012

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.33 feet	Field Measure	HMS	11/9/2012
Depth to Water	664.37 feet	Field Measure	HMS	11/9/2012
pH	7.37 SU	SM 4500-H+ B	HMS	11/9/2012
Temperature	16.5 deg C	SM 2550 B	HMS	11/9/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	11/14/2012
Alkalinity as CaCO ₃	230 mg/L	SM 2320 B	MJL	11/14/2012
Chloride	8 mg/L	SM 4500-CL B	MJL	11/14/2012
Iron, Total	0.40 mg/L	EPA 200.7	MJL	11/27/2012
Iron, Dissolved	0.19 mg/L	EPA 200.7	MJL	11/27/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/14/2012
Hardness	200 mg/L as CaCO ₃	SM 2340 C	MJL	11/27/2012
Manganese, Total	0.050 mg/L	EPA 200.7	MJL	11/27/2012
Manganese, Dissolved	0.037 mg/L	EPA 200.7	MJL	11/27/2012
Sulfate	10 mg/L	D51690,02	CCV	11/13/2012
Solids, Total Dissolved	290 mg/L	SM 2540 C	CCV	11/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Aluminum, Total	0.078 mg/L	EPA 200.7	MJL	11/27/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012



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Boonville, IN 47601

Lab Number: 2012-2324-01

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Sample Identification

Bulldog Mine

Date Sampled: 11/9/2012

MW-1

Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.25 mg/L	EPA 200.7	MJL	11/27/2012
Barium, Total	0.19 mg/L	EPA 200.7	MJL	11/27/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	11/26/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	11/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012



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Boonville, IN 47601

Lab Number: 2012-2324-01

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2324-02
Date Received: 11/12/2012
Date Reported: 12/14/2012

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.19 feet	Field Measure	HMS	11/9/2012
Depth to Water	662.61 feet	Field Measure	HMS	11/9/2012
pH	7.48 SU	SM 4500-H+ B	HMS	11/9/2012
Temperature	16.2 deg C	SM 2550 B	HMS	11/9/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	11/14/2012
Alkalinity as CaCO ₃	270 mg/L	SM 2320 B	MJL	11/14/2012
Chloride	13 mg/L	SM 4500-CL B	MJL	11/14/2012
Iron, Total	0.52 mg/L	EPA 200.7	MJL	11/27/2012
Iron, Dissolved	0.16 mg/L	EPA 200.7	MJL	11/27/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/14/2012
Hardness	160 mg/L as CaCO ₃	SM 2340 C	MJL	11/27/2012
Manganese, Total	0.063 mg/L	EPA 200.7	MJL	11/27/2012
Manganese, Dissolved	0.019 mg/L	EPA 200.7	MJL	11/27/2012
Sulfate	16 mg/L	D51690,02	CCV	11/13/2012
Solids, Total Dissolved	360 mg/L	SM 2540 C	CCV	11/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Aluminum, Total	0.072 mg/L	EPA 200.7	MJL	11/27/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-02

Page 2 of 3

Sample Identification

**Bulldog Mine
MW-2**

**Date Sampled: 11/9/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.31 mg/L	EPA 200.7	MJL	11/27/2012
Barium, Total	0.025 mg/L	EPA 200.7	MJL	11/27/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	11/26/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Phenolics, Tot. Recoverable	0.065 mg/L	EPA 420.4	MLI	11/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-02

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2324-03
Date Received: 11/12/2012
Date Reported: 12/14/2012

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.19 feet	Field Measure	HMS	11/9/2012
Depth to Water	674.61 feet	Field Measure	HMS	11/9/2012
pH	7.20 SU	SM 4500-H+ B	HMS	11/9/2012
Temperature	16.3 deg C	SM 2550 B	HMS	11/9/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	11/14/2012
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	11/14/2012
Chloride	16 mg/L	SM 4500-CL B	MJL	11/14/2012
Iron, Total	0.26 mg/L	EPA 200.7	MJL	11/27/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	11/27/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/14/2012
Hardness	220 mg/L as CaCO ₃	SM 2340 C	MJL	11/27/2012
Manganese, Total	0.13 mg/L	EPA 200.7	MJL	11/27/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	11/27/2012
Sulfate	18 mg/L	D51690,02	CCV	11/13/2012
Solids, Total Dissolved	400 mg/L	SM 2540 C	CCV	11/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Aluminum, Total	0.069 mg/L	EPA 200.7	MJL	11/27/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-03

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Sample Identification

**Bulldog Mine
MW-3**

**Date Sampled: 11/9/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.30 mg/L	EPA 200.7	MJL	11/27/2012
Barium, Total	0.066 mg/L	EPA 200.7	MJL	11/27/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	11/26/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	11/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012



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Boonville, IN 47601

Lab Number: 2012-2324-03

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2324-04
Date Received: 11/12/2012
Date Reported: 12/14/2012

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	13.12 feet	Field Measure	HMS	11/9/2012
Depth to Water	667.68 feet	Field Measure	HMS	11/9/2012
pH	7.17 SU	SM 4500-H+ B	HMS	11/9/2012
Temperature	16.1 deg C	SM 2550 B	HMS	11/9/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	11/14/2012
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	11/14/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	11/14/2012
Iron, Total	0.31 mg/L	EPA 200.7	MJL	11/27/2012
Iron, Dissolved	0.11 mg/L	EPA 200.7	MJL	11/27/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/14/2012
Hardness	210 mg/L as CaCO ₃	SM 2340 C	MJL	11/27/2012
Manganese, Total	0.016 mg/L	EPA 200.7	MJL	11/27/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	11/27/2012
Sulfate	41 mg/L	D51690,02	CCV	11/27/2012
Solids, Total Dissolved	400 mg/L	SM 2540 C	CCV	11/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Aluminum, Total	0.054 mg/L	EPA 200.7	MJL	11/27/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-04

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Sample Identification

Bulldog Mine
MW-4

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.039 mg/L	EPA 200.7	MJL	11/27/2012
Barium, Total	0.058 mg/L	EPA 200.7	MJL	11/27/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	11/26/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	11/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-04

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2324-05
Date Received: 11/12/2012
Date Reported: 12/14/2012

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	21.18 feet	Field Measure	HMS	11/9/2012
Depth to Water	665.52 feet	Field Measure	HMS	11/9/2012
pH	7.38 SU	SM 4500-H+ B	HMS	11/9/2012
Temperature	14.6 deg C	SM 2550 B	HMS	11/9/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	11/14/2012
Alkalinity as CaCO ₃	160 mg/L	SM 2320 B	MJL	11/14/2012
Chloride	15 mg/L	SM 4500-CL B	MJL	11/14/2012
Iron, Total	0.30 mg/L	EPA 200.7	MJL	11/27/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	11/27/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/14/2012
Hardness	190 mg/L as CaCO ₃	SM 2340 C	MJL	11/27/2012
Manganese, Total	0.086 mg/L	EPA 200.7	MJL	11/27/2012
Manganese, Dissolved	0.044 mg/L	EPA 200.7	MJL	11/27/2012
Sulfate	18 mg/L	D51690,02	CCV	11/13/2012
Solids, Total Dissolved	220 mg/L	SM 2540 C	CCV	11/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Aluminum, Total	0.054 mg/L	EPA 200.7	MJL	11/27/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-05

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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 11/9/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.22 mg/L	EPA 200.7	MJL	11/27/2012
Barium, Total	0.045 mg/L	EPA 200.7	MJL	11/27/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	11/26/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Phenolics, Tot. Recoverable	0.061 mg/L	EPA 420.4	MLI	11/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-05

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2324-06
Date Received: 11/12/2012
Date Reported: 12/14/2012

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	11.55 feet	Field Measure	HMS	11/9/2012
Depth to Water	670.85 feet	Field Measure	HMS	11/9/2012
pH	7.37 SU	SM 4500-H+ B	HMS	11/9/2012
Temperature	16.2 deg C	SM 2550 B	HMS	11/9/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	11/14/2012
Alkalinity as CaCO ₃	210 mg/L	SM 2320 B	MJL	11/14/2012
Chloride	8 mg/L	SM 4500-CL B	MJL	11/14/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	11/27/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	11/27/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/14/2012
Hardness	160 mg/L as CaCO ₃	SM 2340 C	MJL	11/27/2012
Manganese, Total	0.019 mg/L	EPA 200.7	MJL	11/27/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	11/27/2012
Sulfate	31 mg/L	D51690,02	CCV	11/13/2012
Solids, Total Dissolved	310 mg/L	SM 2540 C	CCV	11/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	11/27/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-06

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Sample Identification

Bulldog Mine
MW-6

Date Sampled: 11/9/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.31 mg/L	EPA 200.7	MJL	11/27/2012
Barium, Total	0.046 mg/L	EPA 200.7	MJL	11/27/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	11/26/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	11/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/27/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/27/2012



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2324-06

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Reviewed by Rodger Wilco

CHECKED NOV 15 2012

GROUNDWATER

COMPANY NAME: Sunrise Coal MINE ID: Bulldog mine DATE: 11/9/12

CALIBRATION: BUFFER 4.00 _____ BUFFER 7.00 7.01 BUFFER 10.0 10.05

RAIN EVENT YES _____ NO _____ DATE OF LAST PRECIP 1/1 AMOUNT _____

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	12:58	7.37	16.5	15.33'	See Attachment	2324-01
MW-2	12:26	7.48	16.2	15.19'		
MW-3	10:57	7.20	16.3	9.19'	" "	-02
MW-4	11:56	7.17	16.1	13.12'	" "	-03
MW-5	11:39	7.38	14.6	21.18'	" "	-04
MW-6	11:20	7.37	16.2	11.55'	" "	-05
	:				" "	-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

- Bottle List
- 6-1L H₂SO₄ Glass Amber
 - 6-1/2L unpres
 - 12-1/4L HNO₃
 - 6-1/4L HNO₃ filtered
 - 6-1/4L NaOH

Well#	Elevation
MW-1	664.37
MW-2	662.61
MW-3	674.61
MW-4	667.68
MW-5	665.52
MW-6	670.85

NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED _____

1/2 L UNPRESERVED _____

1/4 L HNO₃ PRESERVED _____

RELINQUISHED BY: Walter King

DATE: 11/9/12 TIME: 17:00

RECEIVED BY: Cindy Carpenter

DATE: 11/12/12 TIME: 9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2931-01
Date Received: 12/8/2012
Date Reported: 1/15/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	12.85 feet	Field Measure	HMS	12/7/2012
Depth to Water	666.85 feet	Field Measure	HMS	12/7/2012
pH	7.49 SU	SM 4500-H+ B	HMS	12/7/2012
Temperature	14.3 deg C	SM 2550 B	HMS	12/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	12/1/2012
Alkalinity as CaCO ₃	260 mg/L	SM 2320 B	MJL	12/1/2012
Chloride	6 mg/L	SM 4500-CL B	MJL	12/14/2012
Iron, Total	1.0 mg/L	EPA 200.7	MJL	1/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/14/2012
Hardness	240 mg/L as CaCO ₃	SM 2340 C	MJL	1/2/2013
Manganese, Total	0.010 mg/L	EPA 200.7	MJL	1/2/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	1/2/2013
Sulfate	<2 mg/L	D51690,02	CCV	12/13/2012
Solids, Total Dissolved	500 mg/L	SM 2540 C	CCV	12/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-01

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Sample Identification

Bulldog Mine
MW-1

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.088 mg/L	EPA 200.7	MJL	1/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Boron, Total	0.23 mg/L	EPA 200.7	MJL	1/2/2013
Barium, Total	0.027 mg/L	EPA 200.7	MJL	1/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	12/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	12/29/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-01

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Sample Identification

Bulldog Mine
MW-1

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013

Reviewed by *Rodger Wilco*



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2931-02
Date Received: 12/8/2012
Date Reported: 1/15/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	14.68 feet	Field Measure	HMS	12/7/2012
Depth to Water	663.12 feet	Field Measure	HMS	12/7/2012
pH	7.58 SU	SM 4500-H+ B	HMS	12/7/2012
Temperature	13.2 deg C	SM 2550 B	HMS	12/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	12/14/2012
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	12/14/2012
Chloride	14 mg/L	SM 4500-CL B	MJL	12/14/2012
Iron, Total	0.69 mg/L	EPA 200.7	MJL	1/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/14/2012
Hardness	300 mg/L as CaCO ₃	SM 2340 C	MJL	1/2/2013
Manganese, Total	0.081 mg/L	EPA 200.7	MJL	1/2/2013
Manganese, Dissolved	0.12 mg/L	EPA 200.7	MJL	1/2/2013
Sulfate	41 mg/L	D51690,02	CCV	12/13/2012
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	12/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-02

Page 2 of 3

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.10 mg/L	EPA 200.7	MJL	1/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Boron, Total	0.28 mg/L	EPA 200.7	MJL	1/2/2013
Barium, Total	0.071 mg/L	EPA 200.7	MJL	1/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	12/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Phenolics, Tot. Recoverable	<0.06 mg/L	EPA 420.4	MLI	12/29/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013

Reviewed by *Rodger Wilder*



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2931-03
Date Received: 12/8/2012
Date Reported: 1/15/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.47 feet	Field Measure	HMS	12/7/2012
Depth to Water	674.33 feet	Field Measure	HMS	12/7/2012
pH	7.45 SU	SM 4500-H+ B	HMS	12/7/2012
Temperature	14.1 deg C	SM 2550 B	HMS	12/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	12/14/2012
Alkalinity as CaCO ₃	270 mg/L	SM 2320 B	MJL	12/14/2012
Chloride	18 mg/L	SM 4500-CL B	MJL	12/14/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	1/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/14/2012
Hardness	370 mg/L as CaCO ₃	SM 2340 C	MJL	1/2/2013
Manganese, Total	0.014 mg/L	EPA 200.7	MJL	1/2/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	1/2/2013
Sulfate	23 mg/L	D51690,02	CCV	12/13/2012
Solids, Total Dissolved	620 mg/L	SM 2540 C	CCV	12/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.088 mg/L	EPA 200.7	MJL	1/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Boron, Total	0.16 mg/L	EPA 200.7	MJL	1/2/2013
Barium, Total	0.049 mg/L	EPA 200.7	MJL	1/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	12/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Phenolics, Tot. Recoverable	0.080 mg/L	EPA 420.4	MLI	12/19/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013

Reviewed by *Rodger Wilko*



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2931-04
Date Received: 12/8/2012
Date Reported: 1/15/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	12.87 feet	Field Measure	HMS	12/7/2012
Depth to Water	667.93 feet	Field Measure	HMS	12/7/2012
pH	7.24 SU	SM 4500-H+ B	HMS	12/7/2012
Temperature	13.9 deg C	SM 2550 B	HMS	12/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	12/14/2012
Alkalinity as CaCO ₃	320 mg/L	SM 2320 B	MJL	12/14/2012
Chloride	15 mg/L	SM 4500-CL B	MJL	12/14/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	1/2/2013
Iron, Dissolved	0.11 mg/L	EPA 200.7	MJL	1/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/14/2012
Hardness	330 mg/L as CaCO ₃	SM 2340 C	MJL	1/2/2013
Manganese, Total	0.032 mg/L	EPA 200.7	MJL	1/2/2013
Manganese, Dissolved	0.013 mg/L	EPA 200.7	MJL	1/2/2013
Sulfate	48 mg/L	D51690,02	CCV	12/13/2012
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	12/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-04

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Sample Identification

Bulldog Mine
MW-4

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.14 mg/L	EPA 200.7	MJL	1/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Boron, Total	0.33 mg/L	EPA 200.7	MJL	1/2/2013
Barium, Total	0.047 mg/L	EPA 200.7	MJL	1/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	12/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Phenolics, Tot. Recoverable	<0.060 mg/L	EPA 420.4	MLI	12/29/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-04

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Sample Identification

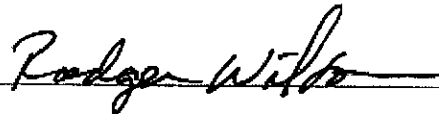
Bulldog Mine
MW-4

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013

Reviewed by





1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2931-05
Date Received: 12/8/2012
Date Reported: 1/15/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	18.80 feet	Field Measure	HMS	12/7/2012
Depth to Water	667.90 feet	Field Measure	HMS	12/7/2012
pH	7.43 SU	SM 4500-H+ B	HMS	12/7/2012
Temperature	12.0 deg C	SM 2550 B	HMS	12/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	12/14/2012
Alkalinity as CaCO ₃	260 mg/L	SM 2320 B	MJL	12/14/2012
Chloride	18 mg/L	SM 4500-CL B	MJL	12/14/2012
Iron, Total	1.2 mg/L	EPA 200.7	MJL	1/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/14/2012
Hardness	280 mg/L as CaCO ₃	SM 2340 C	MJL	1/2/2013
Manganese, Total	0.47 mg/L	EPA 200.7	MJL	1/2/2013
Manganese, Dissolved	0.34 mg/L	EPA 200.7	MJL	1/2/2013
Sulfate	20 mg/L	D51690,02	CCV	12/13/2012
Solids, Total Dissolved	420 mg/L	SM 2540 C	CCV	12/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-05

Page 2 of 3

Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 12/7/2012
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.13 mg/L	EPA 200.7	MJL	1/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	1/2/2013
Boron, Total	0.35 mg/L	EPA 200.7	MJL	1/2/2013
Barium, Total	0.087 mg/L	EPA 200.7	MJL	1/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	12/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Phenolics, Tot. Recoverable	<0.06 mg/L	EPA 420.4	MLI	12/29/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-05

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Sample Identification

Bulldog Mine
MW-5

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2012-2931-06
Date Received: 12/8/2012
Date Reported: 1/15/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	11.47 feet	Field Measure	HMS	12/7/2012
Depth to Water	670.93 feet	Field Measure	HMS	12/7/2012
pH	7.40 SU	SM 4500-H+ B	HMS	12/7/2012
Temperature	13.8 deg C	SM 2550 B	HMS	12/7/2012
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	12/14/2012
Alkalinity as CaCO ₃	350 mg/L	SM 2320 B	MJL	12/14/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	12/14/2012
Iron, Total	0.50 mg/L	EPA 200.7	MJL	1/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/14/2012
Hardness	290 mg/L as CaCO ₃	SM 2340 C	MJL	1/2/2013
Manganese, Total	0.24 mg/L	EPA 200.7	MJL	1/2/2013
Manganese, Dissolved	0.12 mg/L	EPA 200.7	MJL	1/2/2013
Sulfate	40 mg/L	D51690,02	CCV	12/13/2012
Solids, Total Dissolved	240 mg/L	SM 2540 C	CCV	12/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-06

Page 2 of 3

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	1/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Boron, Total	0.27 mg/L	EPA 200.7	MJL	1/2/2013
Barium, Total	0.051 mg/L	EPA 200.7	MJL	1/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/20/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	12/21/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Phenolics, Tot. Recoverable	<0.060 mg/L	EPA 420.4	MLI	12/29/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2012-2931-06

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Sample Identification

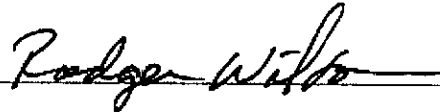
Bulldog Mine
MW-6

Date Sampled: 12/7/2012
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/2/2013

Reviewed by



CHECKED DEC 20 2012

GROUNDWATER



COMPANY NAME: Sunrise Coal MINE ID: Bulldog mine DATE: 12/7/12

CALIBRATION: BUFFER 4.00 BUFFER 7.00 7.00 BUFFER 10.0 10.03

RAIN EVENT YES NO DATE OF LAST PRECIP 1/1 AMOUNT _____

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	11:33	7.49	14.3	12.85'	see Attachment	2931-01
MW-2	10:53	7.58	13.2	14.68'	" "	-02
MW-3	11:18	7.45	14.1	9.47'	" "	-03
MW-4	10:23	7.24	13.9	12.87'	" "	-04
MW-5	10:00	7.43	12.0	18.80'	" "	-05
MW-6	09:43	7.40	13.8	11.47'	" "	-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

Bottle List

- 6-1L H₂SO₄ Glass Amber
- 6-1L unpres
- 12-1/4L HNO₃
- 6-1/4L HNO₃ filtered
- 6-1/4L NaOH

Well#	Elevation
MW-1	666.85'
MW-2	663.12'
MW-3	674.33'
MW-4	667.93'
MW-5	667.90'
MW-6	670.93'

NUMBER OF BOTTLES (PLASTIC)	
1 L UNPRESERVED	_____
1/2 L UNPRESERVED	_____
1/4 L HNO ₃ PRESERVED	_____

RELINQUISHED BY: [Signature] DATE: 12/7/12 TIME: _____

RECEIVED BY: _____ DATE: 1/1 TIME: _____

REPORTED
 JAN 15 2013
 E-MAILED JAN 15 2013



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1008-01
Date Received: 1/4/2013
Date Reported: 2/19/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 1/3/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.66 feet	Field Measure	HMS	1/3/2013
Depth to Water	669.04 feet	Field Measure	HMS	1/3/2013
pH	7.46 SU	SM 4500-H+ B	HMS	1/3/2013
Temperature	12.2 deg C	SM 2550 B	HMS	1/3/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	1/15/2013
Alkalinity as CaCO ₃	220 mg/L	SM 2320 B	MJL	1/15/2013
Chloride	6 mg/L	SM 4500-CL B	MJL	1/15/2013
Iron, Total	0.89 mg/L	EPA 200.7	MLI	1/31/2013
Iron, Dissolved	0.13 mg/L	EPA 200.7	MLI	1/31/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/15/2013
Hardness	250 mg/L as CaCO ₃	SM 2340 C	MLI	1/31/2013
Manganese, Total	0.016 mg/L	EPA 200.7	MLI	1/31/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	1/31/2013
Sulfate	<2 mg/L	D51690,02	CCV	1/14/2013
Solids, Total Dissolved	460 mg/L	SM 2540 C	CCV	1/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Aluminum, Total	0.076 mg/L	EPA 200.7	MJL	1/31/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1008-01

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Sample Identification

**Bulldog Mine
MW-1**

**Date Sampled: 1/3/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.29 mg/L	EPA 200.7	MJL	1/31/2013
Barium, Total	0.030 mg/L	EPA 200.7	MJL	1/31/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	1/11/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/9/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Phenolics, Tot. Recoverable	0.062 mg/L	EPA 420.4	MLI	1/31/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013



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Boonville, IN 47601

Lab Number: 2013-1008-01

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1008-02
Date Received: 1/4/2013
Date Reported: 2/19/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 1/3/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	13.36 feet	Field Measure	HMS	1/3/2013
Depth to Water	664.44 feet	Field Measure	HMS	1/3/2013
pH	7.77 SU	SM 4500-H+ B	HMS	1/3/2013
Temperature	9.0 deg C	SM 2550 B	HMS	1/3/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	1/15/2013
Alkalinity as CaCO ₃	260 mg/L	SM 2320 B	MJL	1/15/2013
Chloride	16 mg/L	SM 4500-CL B	MJL	1/15/2013
Iron, Total	0.73 mg/L	EPA 200.7	MLI	1/31/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	1/31/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/15/2013
Hardness	290 mg/L as CaCO ₃	SM 2340 C	MLI	1/31/2013
Manganese, Total	0.072 mg/L	EPA 200.7	MLI	1/31/2013
Manganese, Dissolved	0.066 mg/L	EPA 200.7	MLI	1/31/2013
Sulfate	63 mg/L	D51690,02	CCV	1/14/2013
Solids, Total Dissolved	580 mg/L	SM 2540 C	CCV	1/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Aluminum, Total	0.085 mg/L	EPA 200.7	MLI	1/31/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1008-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 1/3/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.25 mg/L	EPA 200.7	MLI	1/31/2013
Barium, Total	0.058 mg/L	EPA 200.7	MLI	1/31/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	1/11/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/9/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Phenolics, Tot. Recoverable	0.160 mg/L	EPA 420.4	MLI	1/31/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2013



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Lab Number: 2013-1008-02

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1008-03
Date Received: 1/4/2013
Date Reported: 2/19/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 1/3/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.50 feet	Field Measure	HMS	1/3/2013
Depth to Water	676.30 feet	Field Measure	HMS	1/3/2013
pH	7.54 SU	SM 4500-H+ B	HMS	1/3/2013
Temperature	11.0 deg C	SM 2550 B	HMS	1/3/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	1/15/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	1/15/2013
Chloride	17 mg/L	SM 4500-CL B	MJL	1/15/2013
Iron, Total	<0.1 mg/L	EPA 200.7	MLI	1/31/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	1/31/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/15/2013
Hardness	350 mg/L as CaCO ₃	SM 2340 C	MLI	1/31/2013
Manganese, Total	0.021 mg/L	EPA 200.7	MLI	1/31/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	1/31/2013
Sulfate	26 mg/L	D51690,02	CCV	1/14/2013
Solids, Total Dissolved	500 mg/L	SM 2540 C	CCV	1/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Aluminum, Total	0.074 mg/L	EPA 200.7	MLI	1/31/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1008-03

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Sample Identification

**Bulldog Mine
MW-3**

Date Sampled: 1/31/2013

Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.19 mg/L	EPA 200.7	MLI	1/31/2013
Barium, Total	0.043 mg/L	EPA 200.7	MLI	1/31/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	1/11/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/9/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	1/31/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013



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Boonville, IN 47601

Lab Number: 2013-1008-03

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Reviewed by Rodger Wilson



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1008-04
Date Received: 1/4/2013
Date Reported: 2/19/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 1/3/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.37 feet	Field Measure	HMS	1/3/2013
Depth to Water	670.43 feet	Field Measure	HMS	1/3/2013
pH	7.42 SU	SM 4500-H+ B	HMS	1/3/2013
Temperature	11.8 deg C	SM 2550 B	HMS	1/3/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	1/15/2013
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	1/15/2013
Chloride	13 mg/L	SM 4500-CL B	MJL	1/15/2013
Iron, Total	0.15 mg/L	EPA 200.7	MLI	1/31/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	1/31/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/15/2013
Hardness	310 mg/L as CaCO ₃	SM 2340 C	MLI	1/31/2013
Manganese, Total	0.027 mg/L	EPA 200.7	MLI	1/31/2013
Manganese, Dissolved	0.011 mg/L	EPA 200.7	MLI	1/31/2013
Sulfate	61 mg/L	D51690,02	CCV	1/14/2013
Solids, Total Dissolved	500 mg/L	SM 2540 C	CCV	1/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Aluminum, Total	0.096 mg/L	EPA 200.7	MLI	1/31/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1008-04

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Sample Identification

**Bulldog Mine
MW-4**

**Date Sampled: 1/3/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.28 mg/L	EPA 200.7	MLI	1/31/2013
Barium, Total	0.041 mg/L	EPA 200.7	MLI	1/31/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	1/11/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/9/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Phenolics, Tot. Recoverable	0.070 mg/L	EPA 420.4	MLI	1/31/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013



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Lab Number: 2013-1008-04

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1008-05
Date Received: 1/4/2013
Date Reported: 2/19/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 1/3/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	19.88 feet	Field Measure	HMS	1/3/2013
Depth to Water	666.82 feet	Field Measure	HMS	1/3/2013
pH	7.51 SU	SM 4500-H+ B	HMS	1/3/2013
Temperature	10.0 deg C	SM 2550 B	HMS	1/3/2013
Acidity as CaCO3	<10 mg/L	SM 2310 B	MJL	1/15/2013
Alkalinity as CaCO3	250 mg/L	SM 2320 B	MJL	1/15/2013
Chloride	19 mg/L	SM 4500-CL B	MJL	1/15/2013
Iron, Total	0.96 mg/L	EPA 200.7	MLI	1/31/2013
Iron, Dissolved	0.15 mg/L	EPA 200.7	MLI	1/31/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/15/2013
Hardness	270 mg/L as CaCO3	SM 2340 C	MLI	1/31/2013
Manganese, Total	0.33 mg/L	EPA 200.7	MLI	1/31/2013
Manganese, Dissolved	0.21 mg/L	EPA 200.7	MLI	1/31/2013
Sulfate	23 mg/L	D51690,02	CCV	1/14/2013
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	1/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Aluminum, Total	0.11 mg/L	EPA 200.7	MLI	1/31/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1008-05

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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 1/3/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.28 mg/L	EPA 200.7	MLI	1/31/2013
Barium, Total	0.074 mg/L	EPA 200.7	MLI	1/31/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	1/11/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/9/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	1/31/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013



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Boonville, IN 47601

Lab Number: 2013-1008-05

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1008-06
Date Received: 1/4/2013
Date Reported: 2/19/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 1/3/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.94 feet	Field Measure	HMS	1/3/2013
Depth to Water	671.46 feet	Field Measure	HMS	1/3/2013
pH	7.60 SU	SM 4500-H+ B	HMS	1/3/2013
Temperature	10.5 deg C	SM 2550 B	HMS	1/3/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	1/15/2013
Alkalinity as CaCO ₃	330 mg/L	SM 2320 B	MJL	1/15/2013
Chloride	10 mg/L	SM 4500-CL B	MJL	1/15/2013
Iron, Total	0.34 mg/L	EPA 200.7	MLI	1/31/2013
Iron, Dissolved	0.12 mg/L	EPA 200.7	MLI	1/31/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/15/2013
Hardness	300 mg/L as CaCO ₃	SM 2340 C	MLI	1/31/2013
Manganese, Total	0.19 mg/L	EPA 200.7	MLI	1/31/2013
Manganese, Dissolved	0.082 mg/L	EPA 200.7	MLI	1/31/2013
Sulfate	80 mg/L	D51690,02	CCV	1/14/2013
Solids, Total Dissolved	600 mg/L	SM 2540 C	CCV	1/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	1/31/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1008-06

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Sample Identification

**Bulldog Mine
MW-6**

**Date Sampled: 1/3/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.31 mg/L	EPA 200.7	MLI	1/31/2013
Barium, Total	0.047 mg/L	EPA 200.7	MLI	1/31/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	1/11/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/9/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Phenolics, Tot. Recoverable	0.064 mg/L	EPA 420.4	MLI	1/31/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	1/31/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	1/31/2013

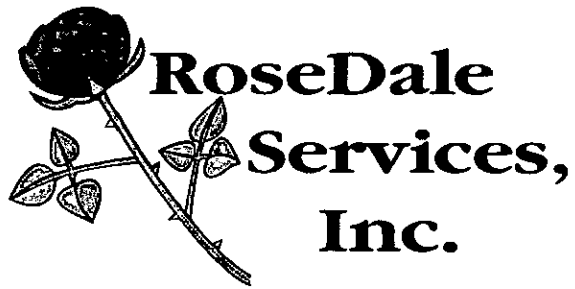


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Boonville, IN 47601

Lab Number: 2013-1008-06

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1175-01
Date Received: 2/11/2013
Date Reported: 3/19/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.38 feet	Field Measure	HMS	2/8/2013
Elevation	673.32 feet	Field Measure	HMS	2/8/2013
pH	7.37 SU	SM 4500-H+ B	HMS	2/8/2013
Temperature	9.5 deg C	SM 2550 B	HMS	2/8/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	2/22/2013
Alkalinity as CaCO ₃	210 mg/L	SM 2320 B	MJL	2/22/2013
Chloride	8 mg/L	SM 4500-CL B	MJL	2/22/2013
Iron, Total	0.96 mg/L	EPA 200.7	MLI	3/4/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	3/4/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/22/2013
Hardness	280 mg/L as CaCO ₃	SM 2340 C	MLI	3/4/2013
Manganese, Total	0.058 mg/L	EPA 200.7	MLI	3/4/2013
Manganese, Dissolved	0.052 mg/L	EPA 200.7	MLI	3/4/2013
Sulfate	5 mg/L	D51690,02	CCV	2/21/2013
Solids, Total Dissolved	470 mg/L	SM 2540 C	CCV	2/15/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	3/4/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-01

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Sample Identification

**Bulldog Mine
MW-1**

**Date Sampled: 2/8/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.27 mg/L	EPA 200.7	MLI	3/4/2013
Barium, Total	0.047 mg/L	EPA 200.7	MLI	3/4/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	2/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	2/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	2/26/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-01

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1175-02
Date Received: 2/11/2013
Date Reported: 3/19/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.66 feet	Field Measure	HMS	2/8/2013
Elevation	672.14 feet	Field Measure	HMS	2/8/2013
pH	7.46 SU	SM 4500-H+ B	HMS	2/8/2013
Temperature	9.4 deg C	SM 2550 B	HMS	2/8/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	2/22/2013
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	2/22/2013
Chloride	15 mg/L	SM 4500-CL B	MJL	2/22/2013
Iron, Total	0.67 mg/L	EPA 200.7	MLI	3/4/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	3/4/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/22/2013
Hardness	340 mg/L as CaCO ₃	SM 2340 C	MLI	3/4/2013
Manganese, Total	0.034 mg/L	EPA 200.7	MLI	3/4/2013
Manganese, Dissolved	0.021 mg/L	EPA 200.7	MLI	3/4/2013
Sulfate	70 mg/L	D51690,02	CCV	2/21/2013
Solids, Total Dissolved	640 mg/L	SM 2540 C	CCV	2/14/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Aluminum, Total	0.076 mg/L	EPA 200.7	MLI	3/4/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.26 mg/L	EPA 200.7	MLI	3/4/2013
Barium, Total	0.054 mg/L	EPA 200.7	MLI	3/4/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	2/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	2/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	3/4/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	3/4/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	3/4/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	2/26/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	3/4/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	3/4/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	3/4/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	3/4/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-02

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1175-03
Date Received: 2/11/2013
Date Reported: 3/19/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.97 feet	Field Measure	HMS	2/8/2013
Elevation	678.83 feet	Field Measure	HMS	2/8/2013
pH	7.43 SU	SM 4500-H+ B	HMS	2/8/2013
Temperature	10.0 deg C	SM 2550 B	HMS	2/8/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	2/22/2013
Alkalinity as CaCO ₃	260 mg/L	SM 2320 B	MJL	2/22/2013
Chloride	16 mg/L	SM 4500-CL B	MJL	2/22/2013
Iron, Total	<0.1 mg/L	EPA 200.7	MLI	3/4/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	3/4/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/22/2013
Hardness	330 mg/L as CaCO ₃	SM 2340 C	MLI	3/4/2013
Manganese, Total	0.019 mg/L	EPA 200.7	MLI	3/4/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	3/4/2013
Sulfate	37 mg/L	D51690,02	CCV	2/21/2013
Solids, Total Dissolved	480 mg/L	SM 2540 C	CCV	2/15/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Aluminum, Total	0.077 mg/L	EPA 200.7	MLI	3/4/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-03

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Sample Identification

**Bulldog Mine
MW-3**

**Date Sampled: 2/8/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.16 mg/L	EPA 200.7	MLI	3/4/2013
Barium, Total	0.054 mg/L	EPA 200.7	MLI	3/4/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	2/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	2/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Phenolics, Tot. Recoverable	0.094 mg/L	EPA 420.4	MLI	2/26/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013



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Boonville, IN 47601

Lab Number: 2013-1175-03

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1175-04
Date Received: 2/11/2013
Date Reported: 3/19/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.22 feet	Field Measure	HMS	2/8/2013
Elevation	672.58 feet	Field Measure	HMS	2/8/2013
pH	7.31 SU	SM 4500-H+ B	HMS	2/8/2013
Temperature	10.0 deg C	SM 2550 B	HMS	2/8/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	2/22/2013
Alkalinity as CaCO ₃	260 mg/L	SM 2320 B	MJL	2/22/2013
Chloride	14 mg/L	SM 4500-CL B	MJL	2/22/2013
Iron, Total	0.12 mg/L	EPA 200.7	MLI	3/4/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	3/4/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/22/2013
Hardness	330 mg/L as CaCO ₃	SM 2340 C	MLI	3/4/2013
Manganese, Total	0.018 mg/L	EPA 200.7	MLI	3/4/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	3/4/2013
Sulfate	68 mg/L	D51690,02	CCV	2/21/2013
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	2/15/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	3/4/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-04

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Sample Identification

Bulldog Mine
MW-4

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.34 mg/L	EPA 200.7	MLI	3/4/2013
Barium, Total	0.067 mg/L	EPA 200.7	MLI	3/4/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	2/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Mercury, Total	0.00023 mg/L	EPA 245.1	MLI	2/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Phenolics, Tot. Recoverable	0.072 mg/L	EPA 420.4	MLI	2/26/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013



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Boonville, IN 47601

Lab Number: 2013-1175-04

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1175-05
Date Received: 2/11/2013
Date Reported: 3/19/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	12.65 feet	Field Measure	HMS	2/8/2013
Elevation	674.05 feet	Field Measure	HMS	2/8/2013
pH	7.37 SU	SM 4500-H+ B	HMS	2/8/2013
Temperature	11.1 deg C	SM 2550 B	HMS	2/8/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	2/22/2013
Alkalinity as CaCO ₃	220 mg/L	SM 2320 B	MJL	2/22/2013
Chloride	16 mg/L	SM 4500-CL B	MJL	2/22/2013
Iron, Total	0.34 mg/L	EPA 200.7	MLI	3/4/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	3/4/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/22/2013
Hardness	280 mg/L as CaCO ₃	SM 2340 C	MLI	3/4/2013
Manganese, Total	0.012 mg/L	EPA 200.7	MLI	3/4/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	3/4/2013
Sulfate	15 mg/L	D51690,02	CCV	2/21/2013
Solids, Total Dissolved	540 mg/L	SM 2540 C	CCV	2/15/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	3/4/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-05

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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 2/8/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.16 mg/L	EPA 200.7	MLI	3/4/2013
Barium, Total	0.064 mg/L	EPA 200.7	MLI	3/4/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	2/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	2/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	2/26/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-05

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Reviewed by Rodger Wilho



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1175-06
Date Received: 2/11/2013
Date Reported: 3/19/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.20 feet	Field Measure	HMS	2/8/2013
Elevation	673.20 feet	Field Measure	HMS	2/8/2013
pH	7.48 SU	SM 4500-H+ B	HMS	2/8/2013
Temperature	10.5 deg C	SM 2550 B	HMS	2/8/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	2/22/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	2/22/2013
Chloride	8 mg/L	SM 4500-CL B	MJL	2/22/2013
Iron, Total	0.22 mg/L	EPA 200.7	MLI	3/4/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	3/4/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/22/2013
Hardness	300 mg/L as CaCO ₃	SM 2340 C	MLI	3/4/2013
Manganese, Total	0.044 mg/L	EPA 200.7	MLI	3/4/2013
Manganese, Dissolved	0.03 mg/L	EPA 200.7	MLI	3/4/2013
Sulfate	74 mg/L	D51690,02	CCV	2/21/2013
Solids, Total Dissolved	660 mg/L	SM 2540 C	CCV	2/15/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	3/4/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-06

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Sample Identification

Bulldog Mine
MW-6

Date Sampled: 2/8/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.20 mg/L	EPA 200.7	MLI	3/4/2013
Barium, Total	0.042 mg/L	EPA 200.7	MLI	3/4/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	2/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	2/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	2/26/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	3/4/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	3/4/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1175-06

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Reviewed by Rodger Wilko

GROUNDWATER

CHECKED FEB 15 2013

COMPANY NAME: Sunrise Coal

MINE ID: Bulldog mine

DATE: 2/8/13

CALIBRATION: BUFFER 4.00 BUFFER 7.00 7.0 BUFFER 10.0 10.0

RAIN EVENT YES NO DATE OF LAST PRECIP / / AMOUNT

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	11:03	7.37	9.5	6.38'	See Attachment	1175-01
MW-2	10:43	7.46	9.4	5.66'		-02
MW-3	09:22	7.43	10.0	4.97'		-03
MW-4	10:22	7.31	10.0	8.22'		-04
MW-5	10:00	7.37	11.1	12.65'		-05
MW-6	09:35	7.48	10.5	9.20'	↓	-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

- Bottle List
- 6 - 1 L H₂SO₄ Glass Amber
 - 6 - 1/2 L unpress.
 - 12 - 1/4 L HNO₃
 - 6 - 1/4 L HNO₃ filtered
 - 6 - 1/4 L NaOH

Well #	Elevation
MW-1	673.32'
MW-2	672.14'
MW-3	678.83'
MW-4	671.58'
MW-5	674.05'
MW-6	673.20'

NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED

1/2 L UNPRESERVED

1/4 L HNO₃ PRESERVED

RELINQUISHED BY: [Signature]

DATE: 2/8/13 TIME: 6:00

RECEIVED BY: [Signature]

DATE: 2/11/13 TIME: 9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1251-01
Date Received: 3/5/2013
Date Reported: 4/15/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.40 feet	Field Measure	HMS	3/1/2013
Elevation	675.30 feet	Field Measure	HMS	3/1/2013
pH	7.74 SU	SM 4500-H+ B	HMS	3/1/2013
Temperature	7.4 deg C	SM 2550 B	HMS	3/1/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	3/13/2013
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	3/13/2013
Chloride	10 mg/L	SM 4500-CL B	MJL	3/13/2013
Iron, Total	1.1 mg/L	EPA 200.7	MLI	4/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	4/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/13/2013
Hardness as CaCO ₃	290 mg/L	SM 2340 C	MLI	3/13/2013
Manganese, Total	0.042 mg/L	EPA 200.7	MLI	4/2/2013
Manganese, Dissolved	0.036 mg/L	EPA 200.7	MLI	4/2/2013
Sulfate	12 mg/L	D51690,02	CCV	3/12/2013
Solids, Total Dissolved	450 mg/L	SM 2540 C	CCV	3/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	4/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-01

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Sample Identification

Bulldog Mine
MW-1

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.31 mg/L	EPA 200.7	MLI	4/2/2013
Barium, Total	0.044 mg/L	EPA 200.7	MLI	4/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cyanide, Total	<0.0050 mg/L	SM 4500 CN E	MLI	3/25/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	3/20/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	3/25/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-01

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1251-02
Date Received: 3/5/2013
Date Reported: 4/15/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	2.93 feet	Field Measure	HMS	3/1/2013
Elevation	674.87 feet	Field Measure	HMS	3/1/2013
pH	7.80 SU	SM 4500-H+ B	HMS	3/1/2013
Temperature	5.7 deg C	SM 2550 B	HMS	3/1/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	3/13/2013
Alkalinity as CaCO ₃	310 mg/L	SM 2320 B	MJL	3/13/2013
Chloride	16 mg/L	SM 4500-CL B	MJL	3/13/2013
Iron, Total	0.53 mg/L	EPA 200.7	MLI	4/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	4/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/13/2013
Hardness as CaCO ₃	310 mg/L	SM 2340 C	MLI	4/2/2013
Manganese, Total	0.028 mg/L	EPA 200.7	MLI	4/2/2013
Manganese, Dissolved	0.016 mg/L	EPA 200.7	MLI	4/2/2013
Sulfate	69 mg/L	D51690,02	CCV	3/12/2013
Solids, Total Dissolved	540 mg/L	SM 2540 C	CCV	3/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Aluminum, Total	0.051 mg/L	EPA 200.7	MLI	4/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 3/1/2013

Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.28 mg/L	EPA 200.7	MLI	4/2/2013
Barium, Total	0.047 mg/L	EPA 200.7	MLI	4/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cyanide, Total	<0.0050 mg/L	SM 4500 CN E	MLI	3/25/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	3/20/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	4/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	4/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	4/2/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	3/25/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	4/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	4/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	4/2/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	4/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-02

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1251-03
Date Received: 3/5/2013
Date Reported: 4/15/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	3.11 feet	Field Measure	HMS	3/1/2013
Elevation	680.69 feet	Field Measure	HMS	3/1/2013
pH	7.66 SU	SM 4500-H+ B	HMS	3/1/2013
Temperature	6.5 deg C	SM 2550 B	HMS	3/1/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	3/13/2013
Alkalinity as CaCO ₃	250 mg/L	SM 2320 B	MJL	3/13/2013
Chloride	14 mg/L	SM 4500-CL B	MJL	3/13/2013
Iron, Total	<0.1 mg/L	EPA 200.7	MLI	4/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	4/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/13/2013
Hardness as CaCO ₃	310 mg/L	SM 2340 C	MLI	4/2/2013
Manganese, Total	0.023 mg/L	EPA 200.7	MLI	4/2/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	4/2/2013
Sulfate	43 mg/L	D51690,02	CCV	3/12/2013
Solids, Total Dissolved	420 mg/L	SM 2540 C	CCV	3/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Aluminum, Total	0.057 mg/L	EPA 200.7	MLI	4/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.21 mg/L	EPA 200.7	MLI	4/2/2013
Barium, Total	0.049 mg/L	EPA 200.7	MLI	4/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cyanide, Total	<0.0050 mg/L	SM 4500 CN E	MLI	3/25/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	3/20/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	3/25/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-03

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1251-04
Date Received: 3/5/2013
Date Reported: 4/15/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.78 feet	Field Measure	HMS	3/1/2013
Elevation	674.02 feet	Field Measure	HMS	3/1/2013
pH	7.68 SU	SM 4500-H+ B	HMS	3/1/2013
Temperature	9.5 deg C	SM 2550 B	HMS	3/1/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	3/13/2013
Alkalinity as CaCO ₃	310 mg/L	SM 2320 B	MJL	3/13/2013
Chloride	16 mg/L	SM 4500-CL B	MJL	3/13/2013
Iron, Total	0.17 mg/L	EPA 200.7	MLI	4/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	4/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/13/2013
Hardness as CaCO ₃	320 mg/L	SM 2340 C	MLI	4/2/2013
Manganese, Total	<0.01 mg/L	EPA 200.7	MLI	4/2/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	4/2/2013
Sulfate	61 mg/L	D51690,02	CCV	3/12/2013
Solids, Total Dissolved	420 mg/L	SM 2540 C	CCV	3/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	4/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-04

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Sample Identification

**Bulldog Mine
MW-4**

**Date Sampled: 3/1/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.39 mg/L	EPA 200.7	MLI	4/2/2013
Barium, Total	0.053 mg/L	EPA 200.7	MLI	4/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cyanide, Total	<0.0050 mg/L	SM 4500 CN E	MLI	3/25/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	3/20/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	3/25/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013



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Boonville, IN 47601

Lab Number: 2013-1251-04

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1251-05
Date Received: 3/5/2013
Date Reported: 4/15/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.98 feet	Field Measure	HMS	3/1/2013
Elevation	677.72 feet	Field Measure	HMS	3/1/2013
pH	7.75 SU	SM 4500-H+ B	HMS	3/1/2013
Temperature	8.1 deg C	SM 2550 B	HMS	3/1/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	3/13/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	3/13/2013
Chloride	14 mg/L	SM 4500-CL B	MJL	3/13/2013
Iron, Total	0.29 mg/L	EPA 200.7	MLI	4/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	4/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/13/2013
Hardness as CaCO ₃	260 mg/L	SM 2340 C	MLI	4/2/2013
Manganese, Total	0.015 mg/L	EPA 200.7	MLI	4/2/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	4/2/2013
Sulfate	15 mg/L	D51690,02	CCV	3/12/2013
Solids, Total Dissolved	400 mg/L	SM 2540 C	CCV	3/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	4/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-05

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Sample Identification

**Bulldog Mine
MW-5**

**Date Sampled: 3/1/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.22 mg/L	EPA 200.7	MLI	4/2/2013
Barium, Total	0.051 mg/L	EPA 200.7	MLI	4/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cyanide, Total	<0.0050 mg/L	SM 4500 CN E	MLI	3/25/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	3/20/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	3/25/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-05

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Reviewed by Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1251-06
Date Received: 3/5/2013
Date Reported: 4/15/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.44 feet	Field Measure	HMS	3/1/2013
Elevation	674.96 feet	Field Measure	HMS	3/1/2013
pH	7.66 SU	SM 4500-H+ B	HMS	3/1/2013
Temperature	8.7 deg C	SM 2550 B	HMS	3/1/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	3/13/2013
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	3/13/2013
Chloride	10 mg/L	SM 4500-CL B	MJL	3/13/2013
Iron, Total	0.11 mg/L	EPA 200.7	MLI	4/2/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	4/2/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/13/2013
Hardness as CaCO ₃	290 mg/L	SM 2340 C	MLI	4/2/2013
Manganese, Total	0.031 mg/L	EPA 200.7	MLI	4/2/2013
Manganese, Dissolved	0.024 mg/L	EPA 200.7	MLI	4/2/2013
Sulfate	65 mg/L	D51690,02	CCV	3/12/2013
Solids, Total Dissolved	590 mg/L	SM 2540 C	CCV	3/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	4/2/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-06

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Sample Identification

Bulldog Mine
MW-6

Date Sampled: 3/1/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.24 mg/L	EPA 200.7	MLI	4/2/2013
Barium, Total	0.037 mg/L	EPA 200.7	MLI	4/2/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Cyanide, Total	<0.0050 mg/L	SM 4500 CN E	MLI	3/25/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	3/20/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	3/25/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	4/2/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	4/2/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1251-06

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Reviewed by Rodger Wilko

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GROUNDWATER

COMPANY NAME: Sunrise Coal MINE ID: Bulldog mine DATE: 3/1/13

CALIBRATION: BUFFER 4.00 BUFFER 7.00 7.02 BUFFER 10.0 10.06

RAIN EVENT YES NO DATE OF LAST PRECIP / / AMOUNT

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	12:27	7.74	7.4	4.40'	see Attachment ↓	1251-01
MW-2	12:06	7.80	5.7	2.93'		-02
MW-3	10:44	7.66	6.5	3.11'		-03
MW-4	11:35	7.68	9.5	6.78'		-04
MW-5	11:11	7.75	8.1	8.98'		-05
MW-6	10:59	7.66	8.7	7.44'		-06
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		

Bottle List

6-1 L H₂SO₄ Glass Amber
6-1/2 L unpres.
12-1/4 L HNO₃
6-1/4 L HNO₃ filtered
6-1/4 L NaOH

Well #	Elevation
MW-1	675.30
MW-2	674.87
MW-3	680.69
MW-4	674.02
MW-5	677.72
MW-6	674.96

NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED
1/2 L UNPRESERVED
1/4 L HNO₃ PRESERVED

RELINQUISHED BY: William J. Smith DATE: 3/1/13 TIME: 17:00

RECEIVED BY: W. J. Smith DATE: 3/15/13 TIME: 9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1403-01
Date Received: 4/5/2013
Date Reported: 5/15/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.54 feet	Field Measure	HMS	4/4/2013
Elevation	674.16 feet	Field Measure	HMS	4/4/2013
pH	7.43 SU	SM 4500-H+ B	HMS	4/4/2013
Temperature	9.0 deg C	SM 2550 B	HMS	4/4/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	4/16/2013
Alkalinity as CaCO ₃	320 mg/L	SM 2320 B	MJL	4/16/2013
Chloride	8 mg/L	SM 4500-CL B	MJL	4/16/2013
Iron, Total	0.82 mg/L	EPA 200.7	MLI	5/3/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/3/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/16/2013
Hardness as CaCO ₃	220 mg/L	SM 2340 C	MLI	5/3/2013
Manganese, Total	0.053 mg/L	EPA 200.7	MLI	5/3/2013
Manganese, Dissolved	0.021 mg/L	EPA 200.7	MLI	5/3/2013
Sulfate	34 mg/L	D51690,02	CCV	4/11/2013
Solids, Total Dissolved	380 mg/L	SM 2540 C	CCV	4/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	5/3/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-01

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Sample Identification

**Bulldog Mine
MW-1**

**Date Sampled: 4/4/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.26 mg/L	EPA 200.7	MLI	5/3/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	5/3/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	4/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	4/12/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	4/19/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-01

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1403-02
Date Received: 4/5/2013
Date Reported: 5/15/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.58 feet	Field Measure	HMS	4/4/2013
Elevation	7.56 feet	Field Measure	HMS	4/4/2013
pH	9.7 SU	SM 4500-H+ B	HMS	4/4/2013
Temperature	673.22 deg C	SM 2550 B	HMS	4/4/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	4/16/2013
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	4/16/2013
Chloride	13 mg/L	SM 4500-CL B	MJL	4/16/2013
Iron, Total	0.60 mg/L	EPA 200.7	MLI	5/3/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/3/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/16/2013
Hardness as CaCO ₃	280 mg/L	SM 2340 C	MLI	5/3/2013
Manganese, Total	0.021 mg/L	EPA 200.7	MLI	5/3/2013
Manganese, Dissolved	0.013 mg/L	EPA 200.7	MLI	5/3/2013
Sulfate	20 mg/L	D51690,02	CCV	4/11/2013
Solids, Total Dissolved	580 mg/L	SM 2540 C	CCV	4/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Aluminum, Total	0.066 mg/L	EPA 200.7	MLI	5/3/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-02

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Sample Identification

Bulldog Mine
MW-2

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.23 mg/L	EPA 200.7	MLI	5/3/2013
Barium, Total	0.048 mg/L	EPA 200.7	MLI	5/3/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	4/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	4/12/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	5/3/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	5/3/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	5/3/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	4/19/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	5/3/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	5/3/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	5/3/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	5/3/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-02

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1403-03
Date Received: 4/5/2013
Date Reported: 5/15/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.57 feet	Field Measure	HMS	4/4/2013
Elevation	7.30 feet	Field Measure	HMS	4/4/2013
pH	9.0 SU	SM 4500-H+ B	HMS	4/4/2013
Temperature	679.23 deg C	SM 2550 B	HMS	4/4/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	4/16/2013
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	4/16/2013
Chloride	11 mg/L	SM 4500-CL B	MJL	4/16/2013
Iron, Total	<0.1 mg/L	EPA 200.7	MLI	5/3/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/3/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/16/2013
Hardness as CaCO ₃	270 mg/L	SM 2340 C	MLI	5/3/2013
Manganese, Total	0.019 mg/L	EPA 200.7	MLI	5/3/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	5/3/2013
Sulfate	51 mg/L	D51690,02	CCV	4/11/2013
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	4/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Aluminum, Total	0.052 mg/L	EPA 200.7	MLI	5/3/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.28 mg/L	EPA 200.7	MLI	5/3/2013
Barium, Total	0.041 mg/L	EPA 200.7	MLI	5/3/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	4/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	4/12/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Phenolics, Tot. Recoverable	0.13 mg/L	EPA 420.4	MLI	4/19/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-03

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1403-04
Date Received: 4/5/2013
Date Reported: 5/15/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.61 feet	Field Measure	HMS	4/4/2013
Elevation	7.35 feet	Field Measure	HMS	4/4/2013
pH	10.0 SU	SM 4500-H+ B	HMS	4/4/2013
Temperature	673.19 deg C	SM 2550 B	HMS	4/4/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	4/16/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	4/16/2013
Chloride	12 mg/L	SM 4500-CL B	MJL	4/16/2013
Iron, Total	0.20 mg/L	EPA 200.7	MLI	5/3/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/3/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/16/2013
Hardness as CaCO ₃	300 mg/L	SM 2340 C	MLI	5/3/2013
Manganese, Total	0.014 mg/L	EPA 200.7	MLI	5/3/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	5/3/2013
Sulfate	76 mg/L	D51690,02	CCV	4/11/2013
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	4/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	5/3/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-04

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Sample Identification

**Bulldog Mine
MW-4**

**Date Sampled: 4/4/2013
Sampled by: HMS**

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.41 mg/L	EPA 200.7	MLI	5/3/2013
Barium, Total	0.046 mg/L	EPA 200.7	MLI	5/3/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	4/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	4/12/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	4/19/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-04

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Reviewed by Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1403-06
Date Received: 4/5/2013
Date Reported: 5/15/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.40 feet	Field Measure	HMS	4/4/2013
Elevation	7.46 feet	Field Measure	HMS	4/4/2013
pH	9.6 SU	SM 4500-H+ B	HMS	4/4/2013
Temperature	675.00 deg C	SM 2550 B	HMS	4/4/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	4/16/2013
Alkalinity as CaCO ₃	300 mg/L	SM 2320 B	MJL	4/16/2013
Chloride	12 mg/L	SM 4500-CL B	MJL	4/16/2013
Iron, Total	0.19 mg/L	EPA 200.7	MLI	5/3/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/3/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/16/2013
Hardness as CaCO ₃	250 mg/L	SM 2340 C	MLI	5/3/2013
Manganese, Total	0.022 mg/L	EPA 200.7	MLI	5/3/2013
Manganese, Dissolved	0.016 mg/L	EPA 200.7	MLI	5/3/2013
Sulfate	20 mg/L	D51690,02	CCV	4/11/2013
Solids, Total Dissolved	530 mg/L	SM 2540 C	CCV	4/10/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	5/3/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-06

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Sample Identification

Bulldog Mine
MW-6

Date Sampled: 4/4/2013
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.32 mg/L	EPA 200.7	MLI	5/3/2013
Barium, Total	0.041 mg/L	EPA 200.7	MLI	5/3/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	4/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	4/12/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	4/19/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/3/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/3/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1403-06

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Reviewed by Rodger Wilco

GROUNDWATER

COMPANY NAME: Sunrise Coal

MINE ID: Bulldog mine

DATE: 4/4/13

CALIBRATION:

BUFFER 4.00

BUFFER 7.00

2.01

BUFFER 10.0

10.05

RAIN EVENT YES

NO

DATE OF LAST PRECIP

/ /

AMOUNT

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	10:56	7.43	9.0	5.54'		1403-01
MW-2	10:38	7.56	9.7	4.58'		-02
MW-3	09:46	7.30	9.0	4.57'		-03
MW-4	10:23	7.35	10.0	7.61'		-04
MW-5	10:08	7.48	9.4	7.32'		-05
MW-6	09:56	7.46	9.6	7.40'		-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

Bottle List

- 1 L H₂SO₄ Glass Amber
- 1/2 L unpres
- 1/4 L HNO₃
- 1/4 L HNO₃ filtered
- 1/4 L NaOH

Well# Elevation

MW-1	674.16
MW-2	673.23
MW-3	679.23
MW-4	673.19
MW-5	679.38
MW-6	675.00

NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED

1/2 L UNPRESERVED

1/4 L HNO₃ PRESERVED

RELINQUISHED BY:

William D. Smith

DATE:

4/4/13

TIME:

16:00

RECEIVED BY:

Cindy Voroster

DATE:

4/5/13

TIME:

9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1513-01
Date Received: 5/3/2013
Date Reported: 6/6/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 5/2/2013
Time Sampled: 9:42
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.90 feet	Field Measure	HMS	5/2/2013
Elevation	674.80 feet	Field Measure	HMS	5/2/2013
pH	7.38 SU	SM 4500-H+ B	HMS	5/2/2013
Temperature	11.6 deg C	SM 2550 B	HMS	5/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	5/9/2013
Alkalinity as CaCO ₃	320 mg/L	SM 2320 B	MJL	5/9/2013
Chloride	10 mg/L	SM 4500-CL B	MJL	5/9/2013
Iron, Total	0.63 mg/L	EPA 200.7	MLI	5/17/2013
Iron, Dissolved	0.25 mg/L	EPA 200.7	MLI	5/17/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/9/2013
Hardness as CaCO ₃	250 mg/L	SM 2340 C	MLI	5/17/2013
Manganese, Total	0.071 mg/L	EPA 200.7	MLI	5/17/2013
Manganese, Dissolved	0.012 mg/L	EPA 200.7	MLI	5/17/2013
Sulfate	22 mg/L	D51690,02	CCV	5/8/2013
Solids, Total Dissolved	370 mg/L	SM 2540 C	CCV	5/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	5/17/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Boron, Total	0.27 mg/L	EPA 200.7	MLI	5/17/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	5/17/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1513-01

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Sample Identification

Bulldog Mine
MW-1

Date Sampled: 5/2/2013
Time Sampled: 9:42
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	5/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	5/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Phenolics, Tot. Recoverable	0.10 mg/L	EPA 420.4	MLI	5/17/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013

Reviewed by

Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1513-02
Date Received: 5/3/2013
Date Reported: 6/6/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 5/2/2013
Time Sampled: 9:25
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	3.52 feet	Field Measure	HMS	5/2/2013
Elevation	674.28 feet	Field Measure	HMS	5/2/2013
pH	7.48 SU	SM 4500-H+ B	HMS	5/2/2013
Temperature	14.7 deg C	SM 2550 B	HMS	5/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	5/9/2013
Alkalinity as CaCO ₃	340 mg/L	SM 2320 B	MJL	5/9/2013
Chloride	17 mg/L	SM 4500-CL B	MJL	5/9/2013
Iron, Total	0.37 mg/L	EPA 200.7	MLI	5/17/2013
Iron, Dissolved	0.19 mg/L	EPA 200.7	MLI	5/17/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/9/2013
Hardness as CaCO ₃	240 mg/L	SM 2340 C	MLI	5/17/2013
Manganese, Total	0.038 mg/L	EPA 200.7	MLI	5/17/2013
Manganese, Dissolved	0.015 mg/L	EPA 200.7	MLI	5/17/2013
Sulfate	22 mg/L	D51690,02	CCV	5/8/2013
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	5/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Aluminum, Total	0.050 mg/L	EPA 200.7	MLI	5/17/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Boron, Total	0.28 mg/L	EPA 200.7	MLI	5/17/2013
Barium, Total	0.052 mg/L	EPA 200.7	MLI	5/17/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1513-02

Page 2 of 2

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 5/2/2013
Time Sampled: 9:25
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	5/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	5/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	5/17/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013

Reviewed by

Rodger Wilso



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1513-03
Date Received: 5/3/2013
Date Reported: 6/6/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 5/2/2013
Time Sampled: 8:18
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.34 feet	Field Measure	HMS	5/2/2013
Elevation	679.46 feet	Field Measure	HMS	5/2/2013
pH	7.32 SU	SM 4500-H+ B	HMS	5/2/2013
Temperature	12.6 deg C	SM 2550 B	HMS	5/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	5/9/2013
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	5/9/2013
Chloride	18 mg/L	SM 4500-CL B	MJL	5/9/2013
Iron, Total	0.12 mg/L	EPA 200.7	MLI	5/17/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/17/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/9/2013
Hardness as CaCO ₃	280 mg/L	SM 2340 C	MLI	5/17/2013
Manganese, Total	0.023 mg/L	EPA 200.7	MLI	5/17/2013
Manganese, Dissolved	0.019 mg/L	EPA 200.7	MLI	5/17/2013
Sulfate	53 mg/L	D51690,02	CCV	5/8/2013
Solids, Total Dissolved	460 mg/L	SM 2540 C	CCV	5/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Aluminum, Total	<0.050 mg/L	EPA 200.7	MLI	5/17/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Boron, Total	0.24 mg/L	EPA 200.7	MLI	5/17/2013
Barium, Total	0.046 mg/L	EPA 200.7	MLI	5/17/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1513-03

Page 2 of 2

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 5/2/2013
Time Sampled: 8:18
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	5/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	5/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	5/17/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1513-04
Date Received: 5/3/2013
Date Reported: 6/6/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 5/2/2013
Time Sampled: 9:02
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.72 feet	Field Measure	HMS	5/2/2013
Elevation	674.08 feet	Field Measure	HMS	5/2/2013
pH	7.38 SU	SM 4500-H+ B	HMS	5/2/2013
Temperature	11.7 deg C	SM 2550 B	HMS	5/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	5/9/2013
Alkalinity as CaCO ₃	310 mg/L	SM 2320 B	MJL	5/9/2013
Chloride	16 mg/L	SM 4500-CL B	MJL	5/9/2013
Iron, Total	0.16 mg/L	EPA 200.7	MLI	5/17/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/17/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/9/2013
Hardness as CaCO ₃	290 mg/L	SM 2340 C	MLI	5/17/2013
Manganese, Total	0.029 mg/L	EPA 200.7	MLI	5/17/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	5/17/2013
Sulfate	70 mg/L	D51690,02	CCV	5/8/2013
Solids, Total Dissolved	470 mg/L	SM 2540 C	CCV	5/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	5/17/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Boron, Total	0.39 mg/L	EPA 200.7	MLI	5/17/2013
Barium, Total	0.048 mg/L	EPA 200.7	MLI	5/17/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1513-04

Page 2 of 2

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 5/2/2013
Time Sampled: 9:02
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	5/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	5/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	5/17/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1513-05
Date Received: 5/3/2013
Date Reported: 6/6/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 5/2/2013
Time Sampled: 8:45
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.89 feet	Field Measure	HMS	5/2/2013
Elevation	680.81 feet	Field Measure	HMS	5/2/2013
pH	7.35 SU	SM 4500-H+ B	HMS	5/2/2013
Temperature	13.2 deg C	SM 2550 B	HMS	5/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	5/9/2013
Alkalinity as CaCO ₃	400 mg/L	SM 2320 B	MJL	5/9/2013
Chloride	<6 mg/L	SM 4500-CL B	MJL	5/9/2013
Iron, Total	0.42 mg/L	EPA 200.7	MLI	5/17/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/17/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/9/2013
Hardness as CaCO ₃	270 mg/L	SM 2340 C	MLI	5/17/2013
Manganese, Total	0.025 mg/L	EPA 200.7	MLI	5/17/2013
Manganese, Dissolved	0.014 mg/L	EPA 200.7	MLI	5/17/2013
Sulfate	19 mg/L	D51690,02	CCV	5/8/2013
Solids, Total Dissolved	430 mg/L	SM 2540 C	CCV	5/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	5/17/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Boron, Total	0.25 mg/L	EPA 200.7	MLI	5/17/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	5/17/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1513-05

Page 2 of 2

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 5/2/2013
Time Sampled: 8:45
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	5/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	5/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	5/17/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013

Reviewed by

Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1513-06
Date Received: 5/3/2013
Date Reported: 6/6/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 5/2/2013
Time Sampled: 8:30
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.63 feet	Field Measure	HMS	5/2/2013
Elevation	675.77 feet	Field Measure	HMS	5/2/2013
pH	7.14 SU	SM 4500-H+ B	HMS	5/2/2013
Temperature	11.5 deg C	SM 2550 B	HMS	5/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	5/9/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	5/9/2013
Chloride	13 mg/L	SM 4500-CL B	MJL	5/9/2013
Iron, Total	0.14 mg/L	EPA 200.7	MLI	5/17/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	5/17/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/9/2013
Hardness as CaCO ₃	280 mg/L	SM 2340 C	MLI	5/17/2013
Manganese, Total	0.029 mg/L	EPA 200.7	MLI	5/17/2013
Manganese, Dissolved	0.014 mg/L	EPA 200.7	MLI	5/17/2013
Sulfate	49 mg/L	D51690,02	CCV	5/8/2013
Solids, Total Dissolved	460 mg/L	SM 2540 C	CCV	5/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	5/17/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Boron, Total	0.28 mg/L	EPA 200.7	MLI	5/17/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	5/17/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1513-06

Page 2 of 2

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 5/2/2013
Time Sampled: 8:30
Sampled by: HMS

Sample Analysis

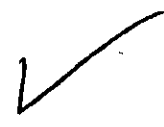
Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	5/16/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	5/15/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	5/17/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	5/17/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	5/17/2013

Reviewed by

Rodger Wilko

✓ CHECKED MAY 20 2013

GROUNDWATER



COMPANY NAME: Sunrise Coal

MINE ID: Bull dog mine

DATE: 5/2/12

CALIBRATION: BUFFER 4.00 BUFFER 7.00 7.01 BUFFER 10.0 10.07

RAIN EVENT YES NO DATE OF LAST PRECIP 1/1 AMOUNT

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	09:42	7.38	11.6	4.90'	See Attachment	1513-01
MW-2	09:25	7.48	14.7	3.52'	↓	-02
MW-3	08:18	7.32	12.6	4.34'		-03
MW-4	09:02	7.38	11.7	6.72'		-04
MW-5	08:45	7.35	13.2	5.89'		-05
MW-6	08:30	7.14	11.5	6.63'		-04
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

Bottle List

- 6 - 1L H₂SO₄ Glass Amber
- 6 - 1/2L unpres
- 12 - 1/4L HNO₃
- 6 - 1/4L HNO₃ filtered
- 6 - 1/4L H₂O

Well #	Elevation
MW-1	674.20
MW-2	674.28 674.28
MW-3	679.46
MW-4	677.08
MW-5	680.81
MW-6	675.77

NUMBER OF BOTTLES (PLASTIC)	
1 L UNPRESERVED	<u> </u>
1/2 L UNPRESERVED	<u> </u>
1/4 L HNO ₃ PRESERVED	<u> </u>

RELINQUISHED BY: Walt M. King

DATE: 5/2/12 TIME: 16:05

RECEIVED BY: Cindy Vanpatten

DATE: 5/3/12 TIME: 9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1654-01
Date Received: 6/10/2013
Date Reported: 7/9/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 6/7/2013
Time Sampled: 10:50
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.35 feet	Field Measure	HMS	6/7/2013
Elevation	674.35 feet	Field Measure	HMS	6/7/2013
pH	7.04 SU	SM 4500-H+ B	HMS	6/7/2013
Temperature	15.8 deg C	SM 2550 B	HMS	6/7/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	6/17/2013
Alkalinity as CaCO ₃	270 mg/L	SM 2320 B	MJL	6/17/2013
Chloride	9 mg/L	SM 4500-CL B	MJL	6/17/2013
Iron, Total	0.54 mg/L	EPA 200.7	MLI	6/20/2013
Iron, Dissolved	0.19 mg/L	EPA 200.7	MLI	6/20/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/17/2013
Hardness as CaCO ₃	230 mg/L	SM 2340 C	MLI	6/20/2013
Manganese, Total	0.040 mg/L	EPA 200.7	MLI	6/20/2013
Manganese, Dissolved	0.025 mg/L	EPA 200.7	MLI	6/20/2013
Sulfate	18 mg/L	D51690,02	CCV	6/11/2013
Solids, Total Dissolved	360 mg/L	SM 2540 C	CCV	6/11/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	6/20/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Boron, Total	0.21 mg/L	EPA 200.7	MLI	6/20/2013
Barium, Total	0.043 mg/L	EPA 200.7	MLI	6/20/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1654-01

Page 2 of 2

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 6/7/2013
Time Sampled: 10:50
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	6/19/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	6/18/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	6/24/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1654-02
Date Received: 6/10/2013
Date Reported: 7/9/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 6/7/2013
Time Sampled: 10:29
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.09 feet	Field Measure	HMS	6/7/2013
Elevation	673.71 feet	Field Measure	HMS	6/7/2013
pH	8.63 SU	SM 4500-H+ B	HMS	6/7/2013
Temperature	17.0 deg C	SM 2550 B	HMS	6/7/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	6/17/2013
Alkalinity as CaCO ₃	320 mg/L	SM 2320 B	MJL	6/17/2013
Chloride	15 mg/L	SM 4500-CL B	MJL	6/17/2013
Iron, Total	0.69 mg/L	EPA 200.7	MLI	6/20/2013
Iron, Dissolved	0.28 mg/L	EPA 200.7	MLI	6/20/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/17/2013
Hardness as CaCO ₃	270 mg/L	SM 2340 C	MLI	6/20/2013
Manganese, Total	0.024 mg/L	EPA 200.7	MLI	6/20/2013
Manganese, Dissolved	0.018 mg/L	EPA 200.7	MLI	6/20/2013
Sulfate	71 mg/L	D51690,02	CCV	6/11/2013
Solids, Total Dissolved	680 mg/L	SM 2540 C	CCV	6/11/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	6/20/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Boron, Total	0.20 mg/L	EPA 200.7	MLI	6/20/2013
Barium, Total	0.041 mg/L	EPA 200.7	MLI	6/20/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1654-02

Page 2 of 2

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 6/7/2013
Time Sampled: 10:29
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	6/20/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	6/18/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Phenolics, Tot. Recoverable	0.011 mg/L	EPA 420.4	MLI	6/24/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1654-03
Date Received: 6/10/2013
Date Reported: 7/9/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 6/7/2013
Time Sampled: 8:58
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.63 feet	Field Measure	HMS	6/7/2013
Elevation	679.17 feet	Field Measure	HMS	6/7/2013
pH	7.16 SU	SM 4500-H+ B	HMS	6/7/2013
Temperature	15.3 deg C	SM 2550 B	HMS	6/7/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	6/17/2013
Alkalinity as CaCO ₃	260 mg/L	SM 2320 B	MJL	6/17/2013
Chloride	12 mg/L	SM 4500-CL B	MJL	6/17/2013
Iron, Total	0.33 mg/L	EPA 200.7	MLI	6/20/2013
Iron, Dissolved	0.20 mg/L	EPA 200.7	MLI	6/20/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/17/2013
Hardness as CaCO ₃	220 mg/L	SM 2340 C	MLI	6/20/2013
Manganese, Total	0.038 mg/L	EPA 200.7	MLI	6/20/2013
Manganese, Dissolved	0.016 mg/L	EPA 200.7	MLI	6/20/2013
Sulfate	41 mg/L	D51690,02	CCV	6/11/2013
Solids, Total Dissolved	470 mg/L	SM 2540 C	CCV	6/11/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Aluminum, Total	<0.050 mg/L	EPA 200.7	MLI	6/20/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Boron, Total	0.27 mg/L	EPA 200.7	MLI	6/20/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	6/20/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1654-03

Page 2 of 2

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 6/7/2013
Time Sampled: 8:58
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	6/18/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	6/18/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Phenolics, Tot. Recoverable	0.018 mg/L	EPA 420.4	MLI	6/24/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1654-04
Date Received: 6/10/2013
Date Reported: 7/9/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 6/7/2013
Time Sampled: 10:07
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.45 feet	Field Measure	HMS	6/7/2013
Elevation	673.35 feet	Field Measure	HMS	6/7/2013
pH	7.05 SU	SM 4500-H+ B	HMS	6/7/2013
Temperature	14.5 deg C	SM 2550 B	HMS	6/7/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	6/17/2013
Alkalinity as CaCO ₃	340 mg/L	SM 2320 B	MJL	6/17/2013
Chloride	24 mg/L	SM 4500-CL B	MJL	6/17/2013
Iron, Total	0.25 mg/L	EPA 200.7	MLI	6/20/2013
Iron, Dissolved	0.13 mg/L	EPA 200.7	MLI	6/20/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/17/2013
Hardness as CaCO ₃	340 mg/L	SM 2340 C	MLI	6/20/2013
Manganese, Total	0.024 mg/L	EPA 200.7	MLI	6/20/2013
Manganese, Dissolved	0.017 mg/L	EPA 200.7	MLI	6/20/2013
Sulfate	63 mg/L	D51690,02	CCV	6/11/2013
Solids, Total Dissolved	490 mg/L	SM 2540 C	CCV	6/11/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	6/20/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Boron, Total	0.39 mg/L	EPA 200.7	MLI	6/20/2013
Barium, Total	0.048 mg/L	EPA 200.7	MLI	6/20/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1654-04

Page 2 of 2

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 6/7/2013
Time Sampled: 10:07
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	6/18/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	6/18/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	6/24/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013

Reviewed by

Rodger Wilco



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1654-05
Date Received: 6/10/2013
Date Reported: 7/9/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 6/7/2013
Time Sampled: 9:26
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.75 feet	Field Measure	HMS	6/7/2013
Elevation	679.95 feet	Field Measure	HMS	6/7/2013
pH	7.23 SU	SM 4500-H+ B	HMS	6/7/2013
Temperature	14.9 deg C	SM 2550 B	HMS	6/7/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	6/17/2013
Alkalinity as CaCO ₃	370 mg/L	SM 2320 B	MJL	6/17/2013
Chloride	<6 mg/L	SM 4500-CL B	MJL	6/17/2013
Iron, Total	0.56 mg/L	EPA 200.7	MLI	6/20/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	6/20/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/17/2013
Hardness as CaCO ₃	280 mg/L	SM 2340 C	MLI	6/20/2013
Manganese, Total	0.018 mg/L	EPA 200.7	MLI	6/20/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	6/20/2013
Sulfate	21 mg/L	D51690,02	CCV	6/11/2013
Solids, Total Dissolved	480 mg/L	SM 2540 C	CCV	6/19/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	6/20/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Boron, Total	0.19 mg/L	EPA 200.7	MLI	6/20/2013
Barium, Total	0.036 mg/L	EPA 200.7	MLI	6/20/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1654-05

Page 2 of 2

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 6/7/2013
Time Sampled: 9:26
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	6/18/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	6/18/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	6/24/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1654-06
Date Received: 6/10/2013
Date Reported: 7/9/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 6/7/2013
Time Sampled: 9:48
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.57 feet	Field Measure	HMS	6/7/2013
Elevation	675.83 feet	Field Measure	HMS	6/7/2013
pH	6.83 SU	SM 4500-H+ B	HMS	6/7/2013
Temperature	15.5 deg C	SM 2550 B	HMS	6/7/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	6/17/2013
Alkalinity as CaCO ₃	260 mg/L	SM 2320 B	MJL	6/17/2013
Chloride	13 mg/L	SM 4500-CL B	MJL	6/17/2013
Iron, Total	0.17 mg/L	EPA 200.7	MLI	6/20/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	6/20/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/17/2013
Hardness as CaCO ₃	270 mg/L	SM 2340 C	MLI	6/20/2013
Manganese, Total	0.048 mg/L	EPA 200.7	MLI	6/20/2013
Manganese, Dissolved	0.010 mg/L	EPA 200.7	MLI	6/20/2013
Sulfate	42 mg/L	D51690,02	CCV	6/11/2013
Solids, Total Dissolved	480 mg/L	SM 2540 C	CCV	6/11/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	6/20/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Boron, Total	0.24 mg/L	EPA 200.7	MLI	6/20/2013
Barium, Total	0.036 mg/L	EPA 200.7	MLI	6/20/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1654-06

Page 2 of 2

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 6/7/2013
Time Sampled: 9:48
Sampled by: HMS

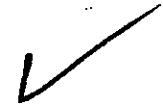
Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	6/18/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	6/18/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	6/24/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	6/20/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	6/20/2013

Reviewed by

Rodger Wilco

GROUNDWATER



COMPANY NAME: Sunrise Coal MINE ID: Bulldog mine DATE: 6/7/13

CALIBRATION: BUFFER 4.00 BUFFER 7.00 7.0 BUFFER 10.0 10.0

RAIN EVENT YES NO DATE OF LAST PRECIP 1/1 AMOUNT

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	10:50	7.04	15.8	5.35'	see Attachment ↓	1654-01
MW-2	10:29	8.63	17.0	4.09'		-02
MW-3	08:58	7.16	15.3	4.63'		-03
MW-4	10:07	7.05	14.5	7.45'		-04
MW-5	09:26	7.23	14.9	6.75'		-05
MW-6	09:48	6.83	15.5	6.57'		-06
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		
:	:	:	:	:		

- Bottle List
- 6-1L H₂SO₄ Glass Amber
 - 6-1/2L unpres
 - 12-1/4L HNO₃
 - 6-1/4L HNO₃ f: Hored
 - 6-1/4L NaOH

Well #	Elevation
MW-1	674.35'
MW-2	673.71'
MW-3	679.17'
MW-4	673.35'
MW-5	679.95'
MW-6	675.83'

(Purged well 5L before sampling)

NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED

1/2 L UNPRESERVED

1/4 L HNO₃ PRESERVED

RELINQUISHED BY: [Signature] DATE: 6/7/13 TIME: 15:55

RECEIVED BY: [Signature] DATE: 6/8/13 TIME: 9:00



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1797-01
Date Received: 7/15/2013
Date Reported: 8/8/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 7/12/2013
Time Sampled: 10:49
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.44 feet	Field Measure	HMS	7/12/2013
Elevation	673.26 feet	Field Measure	HMS	7/12/2013
pH	7.19 SU	SM 4500-H+ B	HMS	7/12/2013
Temperature	19.2 deg C	SM 2550 B	HMS	7/12/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/19/2013
Alkalinity as CaCO ₃	220 mg/L	SM 2320 B	MJL	7/19/2013
Chloride	9 mg/L	SM 4500-CL B	MJL	7/19/2013
Iron, Total	0.92 mg/L	EPA 200.7	MLI	7/24/2013
Iron, Dissolved	0.25 mg/L	EPA 200.7	MLI	7/24/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/18/2013
Hardness as CaCO ₃	270 mg/L	SM 2340 C	MLI	7/24/2013
Manganese, Total	0.038 mg/L	EPA 200.7	MLI	7/24/2013
Manganese, Dissolved	0.027 mg/L	EPA 200.7	MLI	7/24/2013
Sulfate	20 mg/L	D51690,02	CCV	7/18/2013
Solids, Total Dissolved	300 mg/L	SM 2540 C	CCV	7/18/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	7/24/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Boron, Total	0.27 mg/L	EPA 200.7	MLI	7/24/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	7/24/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1797-01

Page 2 of 2

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 7/12/2013
Time Sampled: 10:49
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	7/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	7/26/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	7/23/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013

Reviewed by

Rodger Wilso



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1797-02
Date Received: 7/15/2013
Date Reported: 8/8/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 7/12/2013
Time Sampled: 10:26
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.65 feet	Field Measure	HMS	7/12/2013
Elevation	673.15 feet	Field Measure	HMS	7/12/2013
pH	8.66 SU	SM 4500-H+ B	HMS	7/12/2013
Temperature	19.5 deg C	SM 2550 B	HMS	7/12/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/19/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	7/19/2013
Chloride	14 mg/L	SM 4500-CL B	MJL	7/19/2013
Iron, Total	0.43 mg/L	EPA 200.7	MLI	7/24/2013
Iron, Dissolved	0.10 mg/L	EPA 200.7	MLI	7/24/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/19/2013
Hardness as CaCO ₃	280 mg/L	SM 2340 C	MLI	7/24/2013
Manganese, Total	0.029 mg/L	EPA 200.7	MLI	7/24/2013
Manganese, Dissolved	0.017 mg/L	EPA 200.7	MLI	7/24/2013
Sulfate	40 mg/L	D51690,02	CCV	7/18/2013
Solids, Total Dissolved	460 mg/L	SM 2540 C	CCV	7/18/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	7/24/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Boron, Total	0.29 mg/L	EPA 200.7	MLI	7/24/2013
Barium, Total	0.045 mg/L	EPA 200.7	MLI	7/24/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1797-02

Page 2 of 2

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 7/12/2013
Time Sampled: 10:26
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	7/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	7/26/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	7/23/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1797-03
Date Received: 7/15/2013
Date Reported: 8/8/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 7/12/2013
Time Sampled: 9:06
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.62 feet	Field Measure	HMS	7/12/2013
Elevation	678.18 feet	Field Measure	HMS	7/12/2013
pH	7.11 SU	SM 4500-H+ B	HMS	7/12/2013
Temperature	18.7 deg C	SM 2550 B	HMS	7/12/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/19/2013
Alkalinity as CaCO ₃	280 mg/L	SM 2320 B	MJL	7/19/2013
Chloride	15 mg/L	SM 4500-CL B	MJL	7/19/2013
Iron, Total	0.41 mg/L	EPA 200.7	MLI	7/24/2013
Iron, Dissolved	0.15 mg/L	EPA 200.7	MLI	7/24/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/19/2013
Hardness as CaCO ₃	250 mg/L	SM 2340 C	MLI	7/24/2013
Manganese, Total	0.031 mg/L	EPA 200.7	MLI	7/24/2013
Manganese, Dissolved	0.024 mg/L	EPA 200.7	MLI	7/24/2013
Sulfate	42 mg/L	D51690,02	CCV	7/18/2013
Solids, Total Dissolved	420 mg/L	SM 2540 C	CCV	7/18/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Aluminum, Total	<0.050 mg/L	EPA 200.7	MLI	7/24/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Boron, Total	0.31 mg/L	EPA 200.7	MLI	7/24/2013
Barium, Total	0.045 mg/L	EPA 200.7	MLI	7/24/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1797-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 7/12/2013
Time Sampled: 9:06
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	7/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	7/26/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Phenolics, Tot. Recoverable	0.018 mg/L	EPA 420.4	MLI	7/23/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013

Reviewed by

Rodger Wilho



1125 E. Walnut Street
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Sunrise Coal, LLC
1183 East Canvasback Drive
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Lab Number: 2013-1797-04
Date Received: 7/15/2013
Date Reported: 8/8/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 7/12/2013
Time Sampled: 10:00
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.94 feet	Field Measure	HMS	7/12/2013
Elevation	672.86 feet	Field Measure	HMS	7/12/2013
pH	7.10 SU	SM 4500-H+ B	HMS	7/12/2013
Temperature	17.7 deg C	SM 2550 B	HMS	7/12/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/19/2013
Alkalinity as CaCO ₃	340 mg/L	SM 2320 B	MJL	7/19/2013
Chloride	19 mg/L	SM 4500-CL B	MJL	7/19/2013
Iron, Total	0.16 mg/L	EPA 200.7	MLI	7/24/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	7/24/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/19/2013
Hardness as CaCO ₃	370 mg/L	SM 2340 C	MLI	7/24/2013
Manganese, Total	0.038 mg/L	EPA 200.7	MLI	7/24/2013
Manganese, Dissolved	0.016 mg/L	EPA 200.7	MLI	7/24/2013
Sulfate	50 mg/L	D51690,02	CCV	7/18/2013
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	7/18/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	7/24/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Boron, Total	0.33 mg/L	EPA 200.7	MLI	7/24/2013
Barium, Total	0.042 mg/L	EPA 200.7	MLI	7/24/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1797-04

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Sample Identification

Bulldog Mine
MW-4

Date Sampled: 7/12/2013
Time Sampled: 10:00
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	7/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	7/26/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	7/23/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013

Reviewed by

Rodger Wilco



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Sunrise Coal, LLC
1183 East Canvasback Drive
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Lab Number: 2013-1797-05
Date Received: 7/15/2013
Date Reported: 8/8/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 7/12/2013
Time Sampled: 9:43
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.35 feet	Field Measure	HMS	7/12/2013
Elevation	679.35 feet	Field Measure	HMS	7/12/2013
pH	7.21 SU	SM 4500-H+ B	HMS	7/12/2013
Temperature	19.5 deg C	SM 2550 B	HMS	7/12/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/19/2013
Alkalinity as CaCO ₃	360 mg/L	SM 2320 B	MJL	7/19/2013
Chloride	<6 mg/L	SM 4500-CL B	MJL	7/19/2013
Iron, Total	0.40 mg/L	EPA 200.7	MLI	7/24/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	7/24/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/19/2013
Hardness as CaCO ₃	310 mg/L	SM 2340 C	MLI	7/24/2013
Manganese, Total	0.021 mg/L	EPA 200.7	MLI	7/24/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	7/24/2013
Sulfate	15 mg/L	D51690,02	CCV	7/18/2013
Solids, Total Dissolved	300 mg/L	SM 2540 C	CCV	7/18/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	7/24/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Boron, Total	0.23 mg/L	EPA 200.7	MLI	7/24/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	7/24/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1797-05

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Sample Identification

Bulldog Mine
MW-5

Date Sampled: 7/12/2013
Time Sampled: 9:43
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	7/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	7/26/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	7/23/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
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Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1797-06
Date Received: 7/15/2013
Date Reported: 8/8/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 7/12/2013
Time Sampled: 9:20
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.91 feet	Field Measure	HMS	7/12/2013
Elevation	675.49 feet	Field Measure	HMS	7/12/2013
pH	6.93 SU	SM 4500-H+ B	HMS	7/12/2013
Temperature	18.8 deg C	SM 2550 B	HMS	7/12/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	7/19/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	7/19/2013
Chloride	18 mg/L	SM 4500-CL B	MJL	7/19/2013
Iron, Total	0.22 mg/L	EPA 200.7	MLI	7/24/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	7/24/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/19/2013
Hardness as CaCO ₃	280 mg/L	SM 2340 C	MLI	7/24/2013
Manganese, Total	0.036 mg/L	EPA 200.7	MLI	7/24/2013
Manganese, Dissolved	0.017 mg/L	EPA 200.7	MLI	7/24/2013
Sulfate	30 mg/L	D51690,02	CCV	7/18/2013
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	7/18/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	7/24/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Boron, Total	0.31 mg/L	EPA 200.7	MLI	7/24/2013
Barium, Total	0.042 mg/L	EPA 200.7	MLI	7/24/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1797-06

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Sample Identification

Bulldog Mine
MW-6

Date Sampled: 7/12/2013
Time Sampled: 9:20
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	SM 4500 CN E	MLI	7/22/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	7/26/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	7/23/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	7/24/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	7/24/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1886-01
Date Received: 8/5/2013
Date Reported: 9/5/2013

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 8/2/2013
Time Sampled: 12:12
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.25 feet	Field Measure	HMS	8/2/2013
Elevation	672.45 feet	Field Measure	HMS	8/2/2013
pH	7.55 SU	SM 4500-H+ B	HMS	8/2/2013
Temperature	19.3 deg C	SM 2550 B	HMS	8/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/9/2013
Alkalinity as CaCO ₃	240 mg/L	SM 2320 B	MJL	8/9/2013
Chloride	9 mg/L	SM 4500-CL B	MJL	8/9/2013
Iron, Total	0.40 mg/L	EPA 200.7	MLI	8/16/2013
Iron, Dissolved	0.21 mg/L	EPA 200.7	MLI	8/16/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/9/2013
Hardness as CaCO ₃	230 mg/L	SM 2340 C	MLI	8/16/2013
Manganese, Total	0.028 mg/L	EPA 200.7	MLI	8/16/2013
Manganese, Dissolved	0.013 mg/L	EPA 200.7	MLI	8/16/2013
Sulfate	12 mg/L	D51690,02	CCV	8/6/2013
Solids, Total Dissolved	400 mg/L	SM 2540 C	CCV	8/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	8/16/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Boron, Total	0.26 mg/L	EPA 200.7	MLI	8/16/2013
Barium, Total	0.041 mg/L	EPA 200.7	MLI	8/16/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1886-01

Page 2 of 2

Sample Identification

Bulldog Mine
MW-1

Date Sampled: 8/2/2013
Time Sampled: 12:12
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/13/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	8/14/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	8/14/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
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Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1886-02
Date Received: 8/5/2013
Date Reported: 9/5/2013

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 8/2/2013
Time Sampled: 11:28
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.77 feet	Field Measure	HMS	8/2/2013
Elevation	672.03 feet	Field Measure	HMS	8/2/2013
pH	7.63 SU	SM 4500-H+ B	HMS	8/2/2013
Temperature	21.7 deg C	SM 2550 B	HMS	8/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/9/2013
Alkalinity as CaCO ₃	310 mg/L	SM 2320 B	MJL	8/9/2013
Chloride	13 mg/L	SM 4500-CL B	MJL	8/9/2013
Iron, Total	0.41 mg/L	EPA 200.7	MLI	8/16/2013
Iron, Dissolved	0.12 mg/L	EPA 200.7	MLI	8/16/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/9/2013
Hardness as CaCO ₃	270 mg/L	SM 2340 C	MLI	8/16/2013
Manganese, Total	0.018 mg/L	EPA 200.7	MLI	8/16/2013
Manganese, Dissolved	0.013 mg/L	EPA 200.7	MLI	8/16/2013
Sulfate	64 mg/L	D51690,02	CCV	8/6/2013
Solids, Total Dissolved	530 mg/L	SM 2540 C	CCV	8/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	8/16/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Boron, Total	0.35 mg/L	EPA 200.7	MLI	8/16/2013
Barium, Total	0.042 mg/L	EPA 200.7	MLI	8/16/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1886-02

Page 2 of 2

Sample Identification

Bulldog Mine
MW-2

Date Sampled: 8/2/2013
Time Sampled: 11:28
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/13/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	8/14/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	8/14/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1886-03
Date Received: 8/5/2013
Date Reported: 9/5/2013

Sample Identification

Bulldog Mine
MW-3

Date Sampled: 8/2/2013
Time Sampled: 9:53
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.80 feet	Field Measure	HMS	8/2/2013
Elevation	677.0 feet	Field Measure	HMS	8/2/2013
pH	7.55 SU	SM 4500-H+ B	HMS	8/2/2013
Temperature	18.1 deg C	SM 2550 B	HMS	8/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/9/2013
Alkalinity as CaCO ₃	330 mg/L	SM 2320 B	MJL	8/9/2013
Chloride	18 mg/L	SM 4500-CL B	MJL	8/9/2013
Iron, Total	0.59 mg/L	EPA 200.7	MLI	8/16/2013
Iron, Dissolved	0.32 mg/L	EPA 200.7	MLI	8/16/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/9/2013
Hardness as CaCO ₃	240 mg/L	SM 2340 C	MLI	8/16/2013
Manganese, Total	0.036 mg/L	EPA 200.7	MLI	8/16/2013
Manganese, Dissolved	0.015 mg/L	EPA 200.7	MLI	8/16/2013
Sulfate	43 mg/L	D51690,02	CCV	8/6/2013
Solids, Total Dissolved	580 mg/L	SM 2540 C	CCV	8/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Aluminum, Total	<0.050 mg/L	EPA 200.7	MLI	8/16/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Boron, Total	0.27 mg/L	EPA 200.7	MLI	8/16/2013
Barium, Total	0.051 mg/L	EPA 200.7	MLI	8/16/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1886-03

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Sample Identification

Bulldog Mine
MW-3

Date Sampled: 8/2/2013
Time Sampled: 9:53
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/13/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	8/14/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	8/14/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1886-04
Date Received: 8/5/2013
Date Reported: 9/5/2013

Sample Identification

Bulldog Mine
MW-4

Date Sampled: 8/2/2013
Time Sampled: 10:15
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.23 feet	Field Measure	HMS	8/2/2013
Elevation	672.57 feet	Field Measure	HMS	8/2/2013
pH	7.36 SU	SM 4500-H+ B	HMS	8/2/2013
Temperature	18.0 deg C	SM 2550 B	HMS	8/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/9/2013
Alkalinity as CaCO ₃	370 mg/L	SM 2320 B	MJL	8/9/2013
Chloride	18 mg/L	SM 4500-CL B	MJL	8/9/2013
Iron, Total	0.29 mg/L	EPA 200.7	MLI	8/16/2013
Iron, Dissolved	0.15 mg/L	EPA 200.7	MLI	8/16/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/9/2013
Hardness as CaCO ₃	340 mg/L	SM 2340 C	MLI	8/16/2013
Manganese, Total	0.043 mg/L	EPA 200.7	MLI	8/16/2013
Manganese, Dissolved	0.032 mg/L	EPA 200.7	MLI	8/16/2013
Sulfate	60 mg/L	D51690,02	CCV	8/6/2013
Solids, Total Dissolved	500 mg/L	SM 2540 C	CCV	8/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	8/16/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Boron, Total	0.33 mg/L	EPA 200.7	MLI	8/16/2013
Barium, Total	0.042 mg/L	EPA 200.7	MLI	8/16/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1886-04

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Sample Identification

Bulldog Mine
MW-4

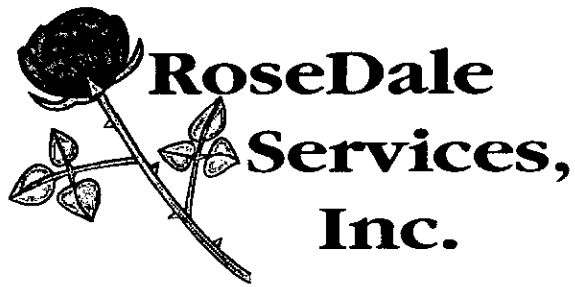
Date Sampled: 8/2/2013
Time Sampled: 10:15
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/13/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	8/14/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	8/14/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
Boonville, IN 47601

Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1886-05
Date Received: 8/5/2013
Date Reported: 9/5/2013

Sample Identification

Bulldog Mine
MW-5

Date Sampled: 8/2/2013
Time Sampled: 10:56
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.89 feet	Field Measure	HMS	8/2/2013
Elevation	678.81 feet	Field Measure	HMS	8/2/2013
pH	7.19 SU	SM 4500-H+ B	HMS	8/2/2013
Temperature	19.8 deg C	SM 2550 B	HMS	8/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/9/2013
Alkalinity as CaCO ₃	370 mg/L	SM 2320 B	MJL	8/9/2013
Chloride	<6 mg/L	SM 4500-CL B	MJL	8/9/2013
Iron, Total	0.38 mg/L	EPA 200.7	MLI	8/16/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	8/16/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/9/2013
Hardness as CaCO ₃	280 mg/L	SM 2340 C	MLI	8/16/2013
Manganese, Total	0.018 mg/L	EPA 200.7	MLI	8/16/2013
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MLI	8/16/2013
Sulfate	22 mg/L	D51690,02	CCV	8/6/2013
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	8/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	8/16/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Boron, Total	0.27 mg/L	EPA 200.7	MLI	8/16/2013
Barium, Total	0.046 mg/L	EPA 200.7	MLI	8/16/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1886-05

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Sample Identification

Bulldog Mine
MW-5

Date Sampled: 8/2/2013
Time Sampled: 10:56
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/12/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	8/14/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	8/14/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013

Reviewed by

Rodger Wilko



1125 E. Walnut Street
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Sunrise Coal, LLC
1183 East Canvasback Drive
Terre Haute, IN 47802

Lab Number: 2013-1886-06
Date Received: 8/5/2013
Date Reported: 9/5/2013

Sample Identification

Bulldog Mine
MW-6

Date Sampled: 8/2/2013
Time Sampled: 10:34
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.29 feet	Field Measure	HMS	8/2/2013
Elevation	675.11 feet	Field Measure	HMS	8/2/2013
pH	7.26 SU	SM 4500-H+ B	HMS	8/2/2013
Temperature	19.7 deg C	SM 2550 B	HMS	8/2/2013
Acidity as CaCO ₃	<10 mg/L	SM 2310 B	MJL	8/9/2013
Alkalinity as CaCO ₃	290 mg/L	SM 2320 B	MJL	8/9/2013
Chloride	18 mg/L	SM 4500-CL B	MJL	8/9/2013
Iron, Total	0.22 mg/L	EPA 200.7	MLI	8/16/2013
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MLI	8/16/2013
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	8/9/2013
Hardness as CaCO ₃	330 mg/L	SM 2340 C	MLI	8/16/2013
Manganese, Total	0.025 mg/L	EPA 200.7	MLI	8/16/2013
Manganese, Dissolved	0.019 mg/L	EPA 200.7	MLI	8/16/2013
Sulfate	40 mg/L	D51690,02	CCV	8/6/2013
Solids, Total Dissolved	410 mg/L	SM 2540 C	CCV	8/8/2013
Silver, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Aluminum, Total	<0.05 mg/L	EPA 200.7	MLI	8/16/2013
Arsenic, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Boron, Total	0.25 mg/L	EPA 200.7	MLI	8/16/2013
Barium, Total	0.039 mg/L	EPA 200.7	MLI	8/16/2013
Beryllium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Cadmium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013



1125 E. Walnut Street
Boonville, IN 47601

Lab Number: 2013-1886-06

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Sample Identification

Bulldog Mine
MW-6

Date Sampled: 8/2/2013
Time Sampled: 10:34
Sampled by: HMS

Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	8/13/2013
Cobalt, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Chromium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Copper, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Mercury, Total	<0.00020 mg/L	EPA 245.1	MLI	8/14/2013
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Nickel, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Lead, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Phenolics, Tot. Recoverable	<0.010 mg/L	EPA 420.4	MLI	8/14/2013
Antimony, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Selenium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Thallium, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013
Vanadium, Total	<0.002 mg/L	EPA 200.7	MLI	8/16/2013
Zinc, Total	<0.005 mg/L	EPA 200.7	MLI	8/16/2013

Reviewed by

Rodger Wilko

