Contractor: Rivers Drilling Company
Rig: Rig #1
Rig Type: Rotary
Drilling Fluid Type: Water
Hole Size: 8 1/2"
Casing Size: 7"
Casing Depth: 1,000'
Logging Engineer: Jason Smith
Witness: Mr. Tool Pusher
Operating Rig Time: 12:00 AM 10/15/2014
Logging Time: 12:00 AM 10/16/2014

MV Geophysical

Company: Rivers Drilling Company
Well: Cabin Creek
Field: Cabin Creek
County: Cabin Creek
State: WV
Other Services: Caliper, Gamma Ray, Neutron, Density
Permanent Datum: Ground Level
Elevation: 1,000' GL
Log Measured From: Ground Level
Drilling Measured From: Ground Level

DUAL SPACED NEUTRON DENSITY GAMMA RAY CALIPER

Comments:

MAXIMUM Caliper Arm Extension: 31"

FLAT LINE LOGGING SEE: 31"

The data and interpretations contained herein are the property of MV Geophysical and are subject to the terms and conditions of the agreement between MV Geophysical and the customer. MV Geophysical makes no warranty or representation as to the productivity, proper operations, profitableness or safety of any oil, gas or other mineral property or well in connection with which such data and interpretations are used or relied upon. Although such data and interpretations are based on information which MV Geophysical considers reliable, MV Geophysical does not guarantee the accuracy or correctness thereof and MV Geophysical shall not be responsible for any loss incurred by any person or entity which uses or relies on such data or interpretations.

MAIN PASS

MV Geophysical

Company: Rivers Drilling Company
Well: Cabin Creek
Field: Cabin Creek
County: Cabin Creek
State: WV
Other Services: Caliper, Gamma Ray, Neutron, Density
Permanent Datum: Ground Level
Elevation: 1,000' GL
Log Measured From: Ground Level
Drilling Measured From: Ground Level

1,010 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0
1,000 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0

Cabin Creek

1,000.00 ft

1,000.00 ft

MAIN PASS

MV Geophysical

Company: Rivers Drilling Company
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Permanent Datum: Ground Level
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1,010 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0
1,000 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0

Cabin Creek

1,000.00 ft

1,000.00 ft

MAIN PASS

MV Geophysical

Company: Rivers Drilling Company
Well: Cabin Creek
Field: Cabin Creek
County: Cabin Creek
State: WV
Other Services: Caliper, Gamma Ray, Neutron, Density
Permanent Datum: Ground Level
Elevation: 1,000' GL
Log Measured From: Ground Level
Drilling Measured From: Ground Level

1,010 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0
1,000 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0

Cabin Creek

1,000.00 ft

1,000.00 ft

REPEAT SECTION

MV Geophysical

Company: Rivers Drilling Company
Well: Cabin Creek
Field: Cabin Creek
County: Cabin Creek
State: WV
Other Services: Caliper, Gamma Ray, Neutron, Density
Permanent Datum: Ground Level
Elevation: 1,000' GL
Log Measured From: Ground Level
Drilling Measured From: Ground Level

1,010 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0
1,000 ft/min
0 GAPI 200
6 in 16 in
0.15 g/cc 3
0.45 0

1,000.00 ft

1,000.00 ft

Calibration Report

Company: Rivers Drilling Company
Well: Cabin Creek
Field: Cabin Creek
County: Cabin Creek
State: WV
Other Services: Caliper, Gamma Ray, Neutron, Density
Permanent Datum: Ground Level
Elevation: 1,000' GL
Log Measured From: Ground Level
Drilling Measured From: Ground Level

All calibrations performed in accordance with the manufacturer's recommended procedures.

Caliper Calibration

Tool Type: Caliper
Serial Number: 1234
Calibration Date: 10/15/2014
Calibration Time: 08:00 AM
Calibration Technician: Jason Smith
Witness: Mr. Tool Pusher

Calibration Steps

Step	Description	Expected Value	Actual Value	Tolerance	Pass/Fail
1	Closed Arm	6.00 in	6.00 in	±0.05 in	Pass
2	Open Arm to 16 in Ring	16.00 in	16.00 in	±0.05 in	Pass
3	Open Arm to 31 in Ring	31.00 in	31.00 in	±0.05 in	Pass

Gamma Ray Calibration

Tool Type: Gamma Ray
Serial Number: 5678
Calibration Date: 10/15/2014
Calibration Time: 08:30 AM
Calibration Technician: Jason Smith
Witness: Mr. Tool Pusher

Calibration Steps

Step	Description	Expected Value	Actual Value	Tolerance	Pass/Fail
1	Background	0 GAPI	0 GAPI	±5 GAPI	Pass
2	API Pit Reading	200 GAPI	200 GAPI	±5 GAPI	Pass

Neutron Tool Calibration Report

Tool Type: Neutron
Serial Number: 9012
Calibration Date: 10/15/2014
Calibration Time: 09:00 AM
Calibration Technician: Jason Smith
Witness: Mr. Tool Pusher

Calibration Steps

Step	Description	Expected Value	Actual Value	Tolerance	Pass/Fail
1	Air Reading	0 %	0 %	±1 %	Pass
2	Limestone Matrix	0 %	0 %	±1 %	Pass
3	Sandstone Matrix	-4 %	-4 %	±1 %	Pass
4	Dolomite Matrix	4 %	4 %	±1 %	Pass

Density Tool Calibration Report

Tool Type: Density
Serial Number: 3456
Calibration Date: 10/15/2014
Calibration Time: 09:30 AM
Calibration Technician: Jason Smith
Witness: Mr. Tool Pusher

Calibration Steps

Step	Description	Expected Value	Actual Value	Tolerance	Pass/Fail
1	Air Reading	0.00 g/cc	0.00 g/cc	±0.02 g/cc	Pass
2	Limestone Matrix	2.71 g/cc	2.71 g/cc	±0.02 g/cc	Pass
3	Sandstone Matrix	2.65 g/cc	2.65 g/cc	±0.02 g/cc	Pass
4	Dolomite Matrix	2.87 g/cc	2.87 g/cc	±0.02 g/cc	Pass

Caliper

Gamma Ray

Neutron

Density

Cabin Creek

1,000.00 ft

MV Geophysical

Company: Rivers Drilling Company
Well: Cabin Creek
Field: Cabin Creek
County: Cabin Creek
State: WV