

DRILL STEM TEST REPORT

Prepared For: **Black Raven Energy Inc**
165 S Union Blvd Suite 410
Lakewood CO .80228

ATTN: David Kunovic, Paul G

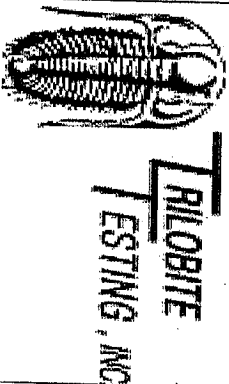
15-9-43w Sedgwick,CO

Last Woman Standing #943-15-24D

Start Date: 2015.11.06 @ 23:16:00
End Date: 2015.11.07 @ 07:31:30
Job Ticket #: 62794 DST #: 3

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.11.09 @ 11:36:06



DRILL STEM TEST REPORT

Black Raven Energy Inc
165 S Union Blvd Suite 410
Lakewood CO, 80228
ATTN: David Kurovic, Paul G

Last Woman Standing #943-15-24D
15-9-43w Sedgwick, CO
Job Ticket: 62794
DST #: 3
Test Start: 2015.11.06 @ 23:16:00

GENERAL INFORMATION:

Formation: Wolf Camp
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 01:58:30
Time Test Ended: 07:31:30
Interval: 4455.00 ft (KB) To 4527.00 ft (KB) (TVD)
Total Depth: 5726.00 ft (KB) (TVD)
Hole Diameter: 7.88 incheshole Condition: Good

Test Type: Conventional Straddle (Reset)
Tester: Ryan Nichols
Unit No: 78
Reference Elevations: 3654.00 ft (KB)
3643.00 ft (CF)
KB to GRFC: 11.00 ft

Serial #: 6752

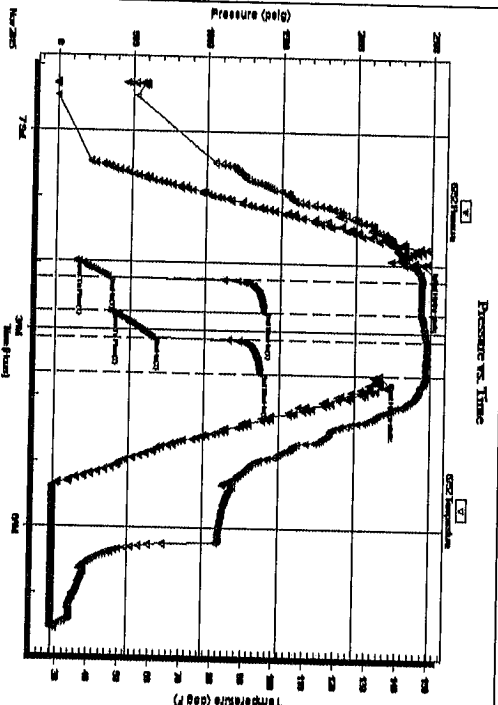
Inside

Press@RunDepth: 647.29 psig @ 4456.00 ft (KB)
Start Date: 2015.11.06 End Date:
Start Time: 23:16:01 End Time:

Capacity: 8000.00 psig
Last Calib.: 2015.11.07
Time On Btm: 2015.11.07 @ 01:58:10
Time Off Btm: 2015.11.07 @ 03:39:00

TEST COMMENT:

15 IF - 2" blow built to BoB @ 2 1/2 mins
30 ISL - No return
24 FT - 1" blow built to BoB @ 3 mins
30 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2451.09	141.62	Initial Hydro-static
1	131.18	141.47	Open To Flow (1)
15	349.42	147.44	Shut-in(1)
45	1391.75	147.16	End Shut-in(1)
46	372.48	146.89	Open To Flow(2)
69	647.29	148.85	Shut-in(2)
101	1372.28	148.73	End Shut-in(2)
101	2165.86	149.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MCW - 35%M - 65%W	0.89
898.00	MCW - 10%M - 90%W	12.60
272.00	MCW - 50%M - 50%W	3.82

Gas Rates

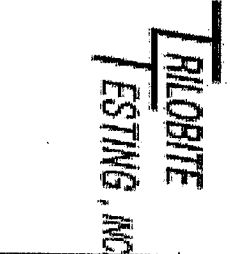
Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

* Recovery from multiple tests

Triobite Testing, Inc

Ref. No: 62794

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Black Raven Energy Inc

165 S Union Blvd Suite 410
Lakewood CO .80228

ATTN: David Kunovic, Paul G

15-9-43w Sedgwick, CO

Job Ticket: 62794
DST#:3

Test Start: 2015.11.06 @ 23:16:00

Formation: *Wolf Camp*

Deviated:	No	Whipstock:	ft (KB)

Time Tool Opened: 01:58:30

Time Test Ended: 07:31:30

Interval: 4455.00 ft (KB) To 4527.00 ft (KB) (TVD)

Total Depth: 5726.00 ft (KB) (TVD)

Hole Diameter: 7.88 inchesHole Condition: Good

Ice Elevations:	3654.00 ft (KB)
	3643.00 ft (CF)
KB to GR/CF:	11.00 ft

Serial #: 8734 Below (Straddle)

Press@RunDepth: psig @ 4532.00 ft (KB)

Start Date: 2015.11.06

2015.11.07

Capacity: 8000.00 psig

Last Calib.: 2015.11.07

Start Time: 23:16:01

07:31:30

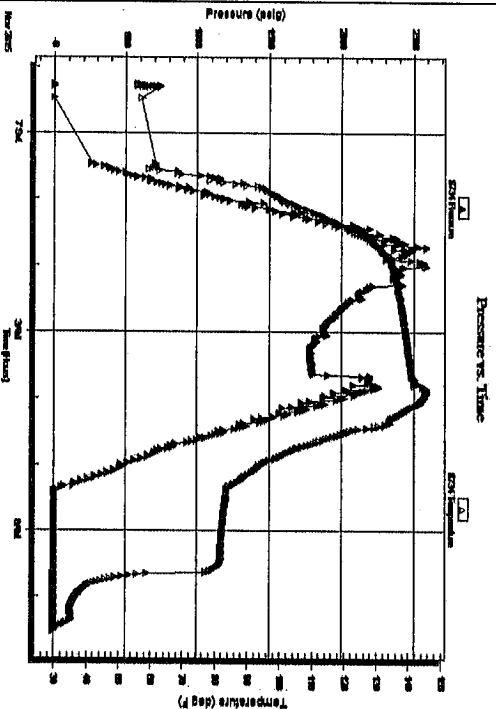
Time On Btm:
Time Off Btm:

TEST COMMENT: 15 IF - 2" blow built to BOB @ 2 1/2 mins

30 ISI - No return

24 FF - 1" blow built to BOB @ 3 mins

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PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MCW - 35%M - 65%W	0.89
898.00	MCW - 10%M - 90%W	12.60
272.00	MCW - 50%M - 50%W	3.82

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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2			
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* Recovery from multiple tests

Trilobite Testing, Inc

Ref. No: 62794

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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Black Raven Energy Inc
165 S Union Blvd Suite 410
Lakewood CO, 80228
ATTN: David Kunovic, Paul G

Last Woman Standing #943-15-24D
15-9-43w Sedgwick, CO
Job Ticket: 62794 DST#: 3
Test Start: 2015.11.06 @ 23:16:00

GENERAL INFORMATION:

Formation: Wolf Camp
Deviated: No Whipslock: ft (KB)
Time Tool Opened: 01:58:30
Time Test Ended: 07:31:30
Interval: 4455.00 ft (KB) To 4527.00 ft (KB) (TVD)
Total Depth: 5726.00 ft (KB) (TVD)
Hole Diameter: 7.88 inch/Hole Condition: Good

Test Type: Conventional Straddle (Reset)
Tester: Ryan Nichols
Unit No: 78

Reference Elevations: 3654.00 ft (KB)
3643.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8322

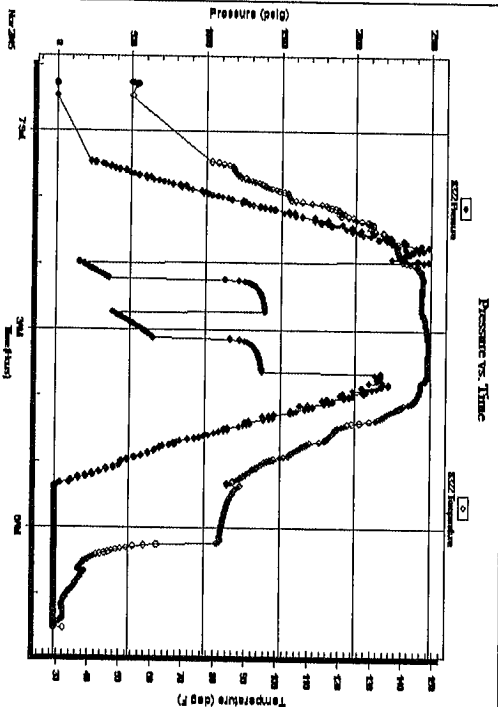
Outside

Press.@RunDepth: psig @ 4456.00 ft (KB)
Start Date: 2015.11.06 End Date: 2015.11.07
Start Time: 23:16:01 End Time: 07:31:30

Capacity: 8000.00 psig
Last Calib.: 2015.11.07
Time On Btm: 07:31:30
Time Off Btm:

TEST COMMENT: 15 IF - 2" blow built to Bob @ 2 1/2 mins

30 ISI - No return
24 FF - 1" blow built to Bob @ 3 mins
30 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MCW - 35%M - 65%W	0.89
898.00	MCW - 10%M - 90%W	12.60
272.00	MCW - 50%M - 50%W	3.82

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

* Recovery from multiple tests

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DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Raven Energy Inc

Last Woman Standing #943-15-24D

165 S Union Blvd Suite 410
Lakewood CO 80228

15-9-43w Sedgwick, CO

Job Ticket: 62794

DST#: 3

ATTN: David Kunovic, Paul G

Test Start: 2015.11.06 @ 23:16:00

Tool Information

Drill Pipe:	Length: 4267.00 ft	Diameter: 3.80 inches	Volume: 59.85 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 180.00 ft	Diameter: 2.25 inches	Volume: 0.89 bbl	Weight to Pull Loose: 100000.0 lb
Drill Pipe Above KB:	20.00 ft	Total Volume:	60.74 bbl	Tool Chased 0.00 ft
Depth to Top Packer:	4455.00 ft			String Weight: Initial 72000.00 lb
Depth to Bottom Packer:	4527.00 ft			Final 90000.00 lb
Interval between Packers:	72.00 ft			
Tool Length:	1303.00 ft			
Number of Packers:	3	Diameter:	6.75 inches	
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4428.00	
Shut In Tool	5.00			4433.00	
Hydraulic tool	5.00			4438.00	
Jars	5.00			4443.00	
Safety Joint	3.00			4446.00	
Packer	5.00			4451.00	28.00 Bottom Of Top Packer
Packer	4.00			4455.00	
Stub	1.00			4456.00	
Recorder	0.00	6752	Inside	4456.00	
Recorder	0.00	8322	Outside	4456.00	
Perforations	32.00			4488.00	
Blank Spacing	34.00			4522.00	
Blank Off Sub	1.00			4523.00	
Blank spacing	4.00			4527.00	72.00 Tool Interval
Packer	4.00			4531.00	
Stub	1.00			4532.00	
Recorder	0.00	8734	Below	4532.00	
Perforations	2.00			4534.00	
Change Over Sub	1.00			4535.00	
Drill Pipe	1195.00			5730.00	1203.00 Bottom Packers & Anchor
Total Tool Length:		1303.00			



TRIOBITE
TESTING, INC

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FLUID SUMMARY

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Last Woman Standing #943-15-24D

165 S Union Blvd Suite 410
Lakewood CO 80228

15-9-43w Sedgwick, CO

Job Ticket: 62794

DST#: 3

ATTN: David Kunovic, Paul G

Test Start: 2015.11.06 @ 23:16:00

Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 69.00 sec/qt
Water Loss: 6.40 in³
Resistivity: ohm.m
Salinity: 9400.00 ppm
Filter Cake: 2.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psig
Oil API: deg API
Water Salinity: 42000 ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
180.00	MCW - 35%M - 65%W	0.885
898.00	MCW - 10%M - 90%W	12.597
272.00	MCW - 50%M - 50%W	3.815

Total Length: 1350.00 ft Total Volume: 17.297 bbl

Num Fluid Samples: 0

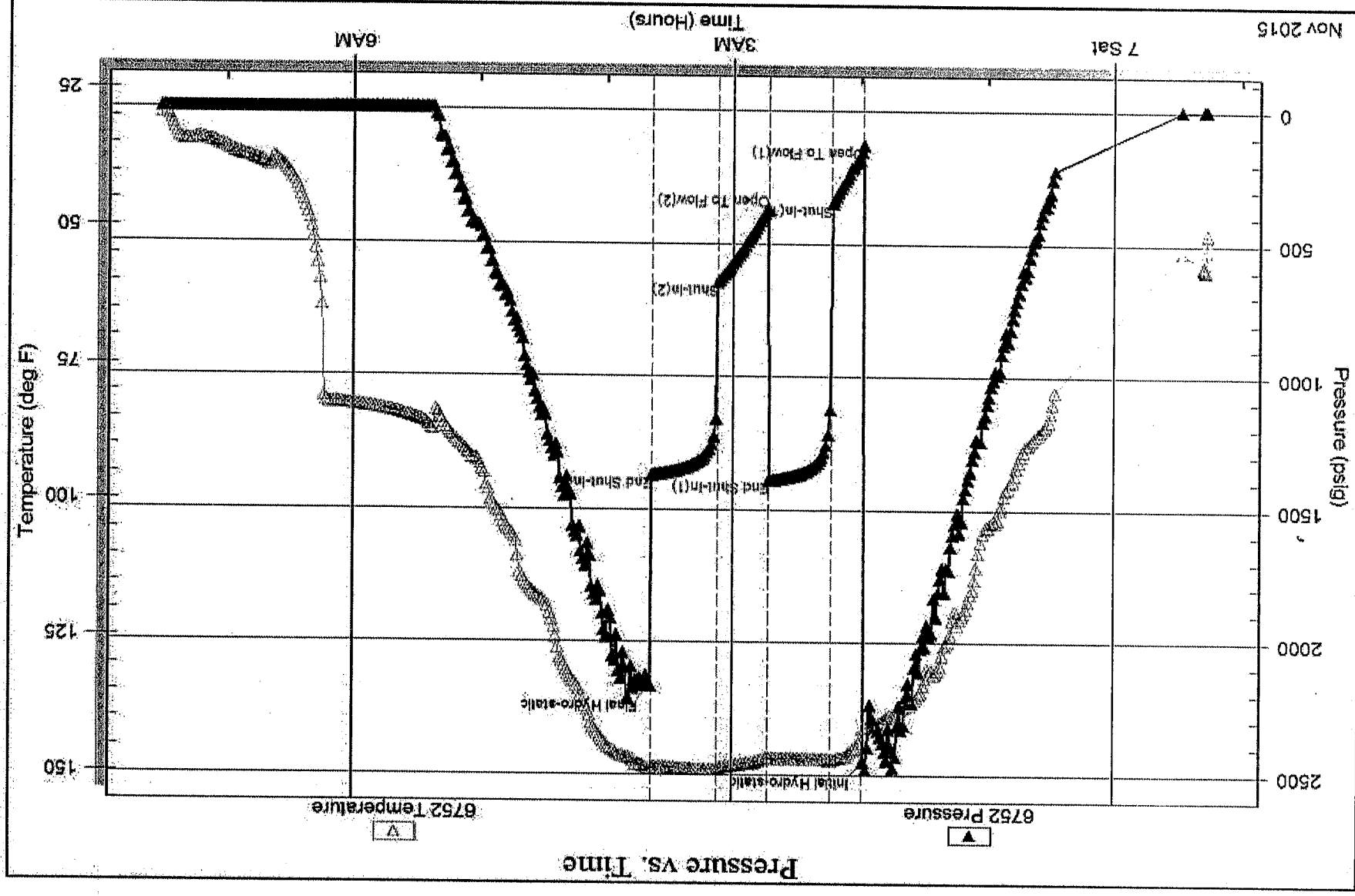
Num Gas Borings: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RM = .478 @ 27 DEG F



Serial #: 6752

Inside

Black Raven Energy Inc

15-9-43W, Sedgwick, CO

DST Test Number: 3

