

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 @ 13:59:00

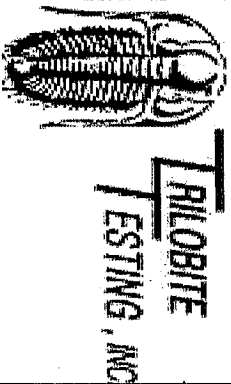
End Date: 2015.11.06 @ 22:57:49

Job Ticket #: 62793 DST #: 2

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



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
15-943w Sedgwick, CO
Job Ticket: 62793
DST# 2
Test Start: 2015.11.06 @ 13:59:00

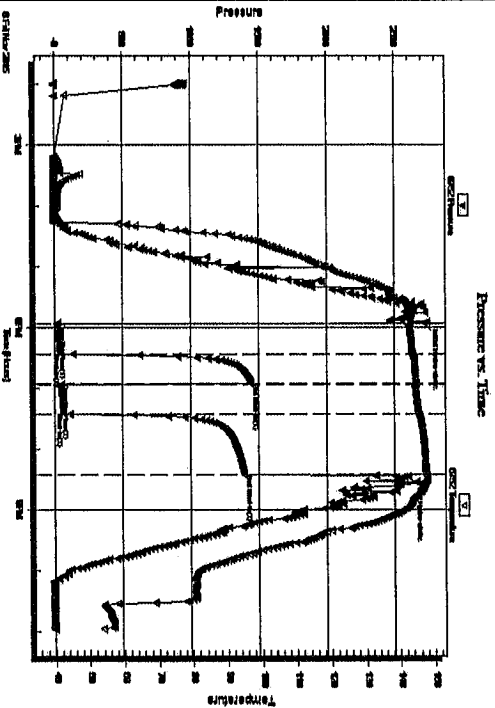
GENERAL INFORMATION:

Formation: Oread
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:56:10
Time Test Ended: 22:57:49
Interval: 4986.00 ft (KB) To 5025.00 ft (KB) (TVD)
Total Depth: 5726.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Reference Elevations: 3654.00 ft (KB)
3643.00 ft (CF)
KB to GRV/CF: 11.00 ft

Serial #: 6752 Inside
Press @ Run Depth: 66.13 psig @ 4987.00 ft (KB)
Start Date: 2015.11.06 End Date: 2015.11.06
Start Time: 13:59:01 End Time: 22:57:49
Capacity: 8000.00 psig
Last Calib.: 2015.11.06
Time On Btm: 2015.11.06 @ 17:56:00
Time Off Btm: 2015.11.06 @ 20:27:20

TEST COMMENT: 30 IF - Surface blow built to 1"

30 ISI - No return
30 FF - No blow
60 FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2717.65	143.07	Initial Hydro-static
1	19.40	141.42	Open To Flow (1)
31	44.26	143.46	Shut-in(1)
60	1446.04	144.55	End Shut-in(1)
60	45.96	144.19	Open To Flow (2)
90	66.13	145.27	Shut-in(2)
151	1395.50	147.46	End Shut-in(2)
152	2594.37	147.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WCM - 20%W - 80%M	0.30
10.00	WCM - 15%W - 85%M	0.05

* Recovery from multiple tests

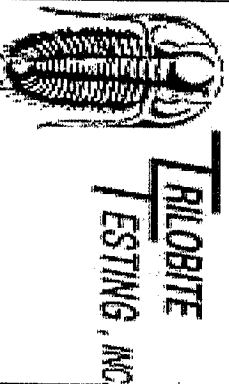
Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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Triolbite Testing, Inc

Ref. No: 62793

Printed: 2015.11.09 @ 11:36:20



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: 62793 DST#:2
Test Start: 2015.11.06 @ 13:59:00

GENERAL INFORMATION:

Formation: Oread
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:56:10
Time Test Ended: 22:57:49
Interval: 4986.00 ft (KB) To 5025.00 ft (KB) (TV/D)
Total Depth: 5726.00 ft (KB) (TV/D)
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 GRV/CF: 11.00 ft

Serial #: 8322 Outside

Press@RunDepth: psig @ 4987.00 ft (KB)

Start Date: 2015.11.06

End Date:

2015.11.06

Capacity: 8000.00 psig
Last Calib.: 2015.11.06

Start Time: 13:59:01

End Time:

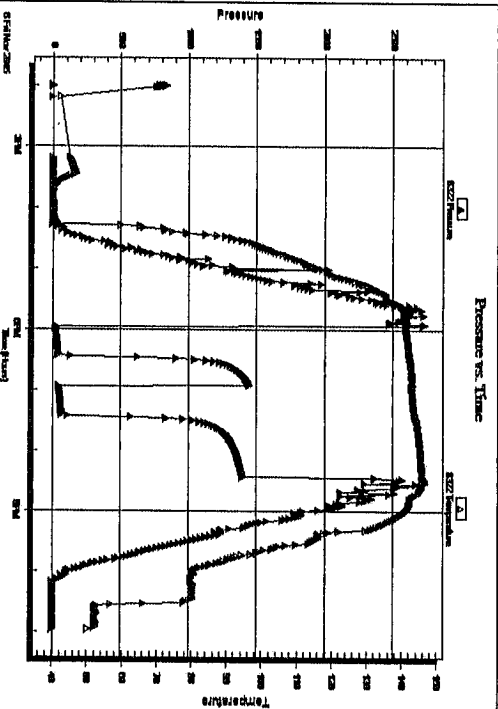
22:57:49

Time On Btm
Time Off Btm:

TEST COMMENT: 30 FF - Surface blow built to 1"

30 ISI - No return
30 FF - No blow
60 FSI - No return

PRESSURE SUMMARY



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

Length (ft)	Description	Volume (bbl)
60.00	WCM - 20%W - 80%M	0.30
10.00	WCM - 15%W - 85%M	0.05

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 62793

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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: 62793 DST #: 2

Test Start: 2015.11.06 @ 13:59:00

GENERAL INFORMATION:

Formation: Oread
Deviated: No Whipstock ft (KB)
Time Tool Opened: 17:56:10
Time Test Ended: 22:57:49
Interval: 4986.00 ft (KB) To 5025.00 ft (KB) (TVD)
Total Depth: 5726.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches 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 #: 8734 Below (Straddle)

Press@RunDepth: psig @ 5030.00 ft (KB)

Start Date: 2015.11.06

Capacity: 8000.00 psig
Last Callb.: 2015.11.06

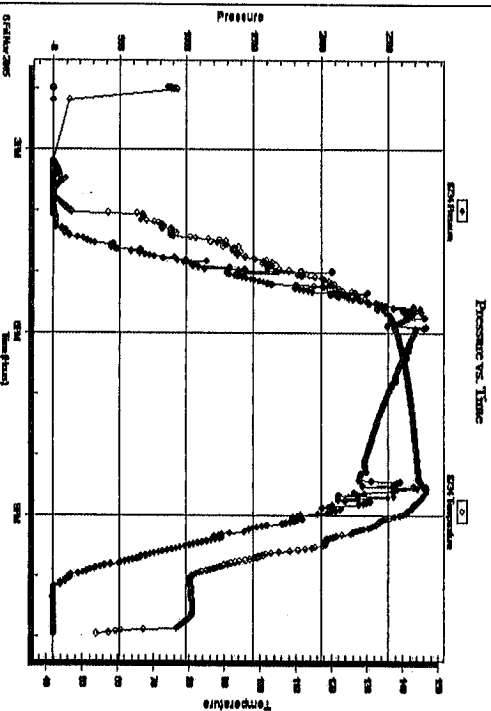
Start Time: 13:59:01

End Time:

2015.11.06
Time On Btm
Time Off Btm

TEST COMMENT: 30 IF - Surface blow built to 1"

30 ISI - No return
30 FF - No blow
60 FSI - No return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
60.00	WCM - 20%W - 80%M	0.30
10.00	WCM - 15%W - 85%M	0.05

Gas Rates

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

* Recovery from multiple tests

Trilobite Testing, Inc

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TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

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: 62793 DST#:2
Test Start: 2015.11.06 @ 13:59:00

Tool Information

Drill Pipe:	Length: 4800.00 ft	Diameter: 3.80 inches	Volume: 67.33 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: 80000.00 lb
			Total Volume: 68.22 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	4986.00 ft			Final 70000.00 lb
Depth to Bottom Packer:	5025.00 ft			
Interval between Packers:	39.00 ft			
Tool Length:	772.00 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			4959.00	
Shut In Tool	5.00			4964.00	
Hydraulic tool	5.00			4969.00	
Jars	5.00			4974.00	
Safety Joint	3.00			4977.00	
Packer	5.00			4982.00	28.00 Bottom Of Top Packer
Packer	4.00			4986.00	
Stub	1.00			4987.00	
Recorder	0.00	6752	Inside	4987.00	
Recorder	0.00	8322	Outside	4987.00	
Perforations	33.00			5020.00	
Blank Off Sub	1.00			5021.00	
Blank Spacing	4.00			5025.00	39.00 Tool Interval
Packer	4.00			5029.00	
Stub	1.00			5030.00	
Recorder	0.00	8734	Below	5030.00	
Perforations	2.00			5032.00	
Change Over Sub	1.00			5033.00	
Drill Pipe	697.00			5730.00	705.00 Bottom Packers & Anchor
Total Tool Length:		772.00			



TRIOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Raven Energy Inc

Last Woman Standing #943-15-24D

165 S Union Blvd Suite 410
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15-9-43w Sedgwick, CO

Job Ticket: 62793 DST#:2

ATTN: David Kunovic, Paul G

Test Start: 2015.11.06 @ 13:59:00

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil A/P:	deg A/P
Mud Weight: 9.00 lb/gal	Cushion Length:	Water Salinity:	24000 ppm
Viscosity: 69.00 sec/qt	Cushion Volume:		bbl
Water Loss: 6.40 in³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure:		psig
Salinity: 9400.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	WCM - 20%W - 80%M	0.295
10.00	WCM - 15%W - 85%M	0.049

Total Length: 70.00 ft Total Volume: 0.344 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW = .590 @ 34 DEG F

