



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bickle Energies LLC

2052 250th Ave
Hays KS 67601

ATTN: Eil Felts

8-14s-31w Gove Co KS

Cliffhanger #8-1

Job Ticket: 64568

DST#: 2

Test Start: 2016.03.30 @ 15:15:15

GENERAL INFORMATION:

Formation: **Lower cherokee-lower**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:29:30

Time Test Ended: 23:20:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Mike Roberts

Unit No: 75

Interval: 4460.00 ft (KB) To 4525.00 ft (KB) (TVD)

Reference Elevations: 2887.00 ft (KB)

Total Depth: 4525.00 ft (KB) (TVD)

2877.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8737 Outside

Press @ Run Depth: 239.41 psig @ 4466.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.03.30

End Date:

2016.03.30

Last Calib.:

2016.03.30

Start Time:

15:15:15

End Time:

23:20:45

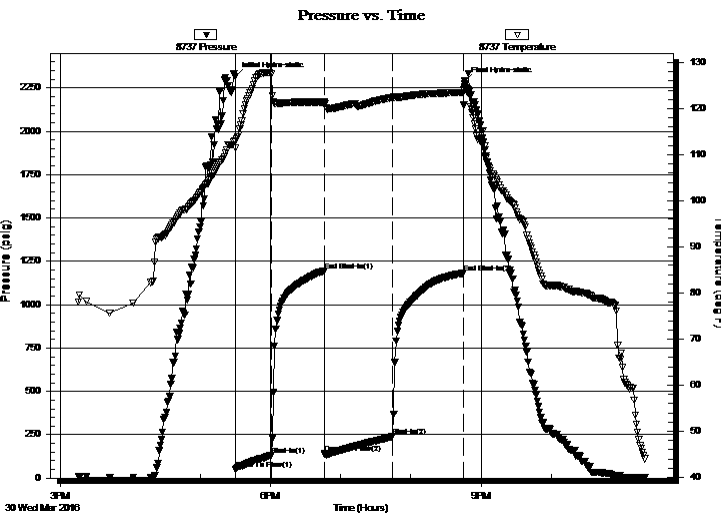
Time On Btm:

2016.03.30 @ 17:29:15

Time Off Btm:

2016.03.30 @ 20:46:00

TEST COMMENT: IF:BOB in 10 minutes
IS:Built to 1/8" blow and died in 30 minutes
FF:BOB in 12 minutes
FS:Built to 7" blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2316.72	112.94	Initial Hydro-static
1	52.80	111.37	Open To Flow (1)
31	129.94	127.49	Shut-In(1)
77	1195.59	121.40	End Shut-In(1)
77	140.89	120.92	Open To Flow (2)
136	239.41	122.42	Shut-In(2)
196	1180.78	123.53	End Shut-In(2)
197	2288.37	124.75	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
134.00	free oil 100% o	1.88
124.00	mcgo 5%m 20%g 75%o	1.74
124.00	gco 10%g 90%o	1.74
124.00	mcgo 10%m 25%g 65%o	1.74

* Recovery from multiple tests

Gas Rates

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



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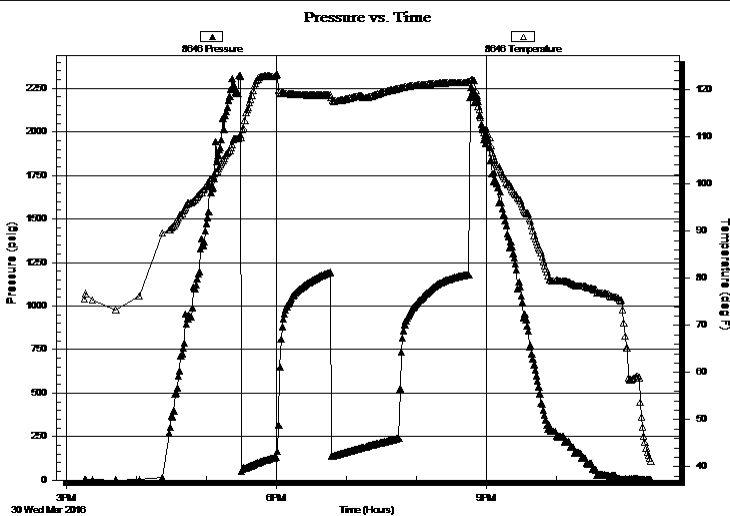
GENERAL INFORMATION:

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 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:29:30
 Time Test Ended: 23:20:45
 Interval: **4460.00 ft (KB) To 4525.00 ft (KB) (TVD)**
 Total Depth: 4525.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Mike Roberts
 Unit No: 75
 Reference Elevations: 2887.00 ft (KB)
 2877.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 8646

Press @ Run Depth: psig @ ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.03.30 End Date: 2016.03.30 Last Calib.: 2016.03.30
 Start Time: 15:15:15 End Time: 23:20:45 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF:BOB in 10 minutes
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PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
134.00	free oil 100% o	1.88
124.00	mcgo 5%m 20%g 75%o	1.74
124.00	gco 10%g 90%o	1.74
124.00	mcgo 10%m 25%g 65%o	1.74

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FLUID SUMMARY

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8-14s-31w Gove Co KS

2052 250th Ave
Hays KS 67601

Cliffhanger #8-1

Job Ticket: 64568

DST#: 2

ATTN: Eil Felts

Test Start: 2016.03.30 @ 15:15:15

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
134.00	free oil 100% o	1.880
124.00	mcgo 5%m 20%g 75%o	1.739
124.00	gco 10%g 90%o	1.739
124.00	mcgo 10%m 25%g 65%o	1.739

Total Length: 506.00 ft Total Volume: 7.097 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: API 29@ 50 corrected to 30 @ 60

Pressure vs. Time

