



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Woolsey Operating Co
125 N Market Ste 1000
Wichita, KS 67202
ATTN: Bill Klaver

25-34S-13W

Cundiff A-1

Job Ticket: 52396

DST#: 1

Test Start: 2013.09.01 @ 16:07:37

GENERAL INFORMATION:

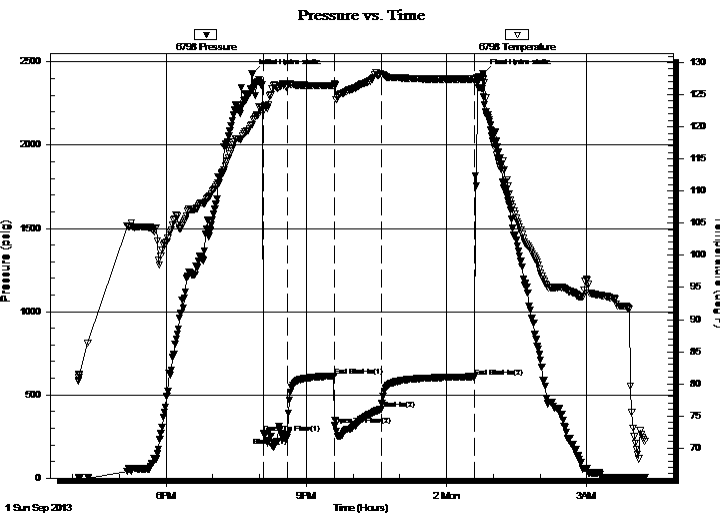
Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:05:22
 Time Test Ended: 04:15:22
 Interval: **4780.00 ft (KB) To 4906.00 ft (KB) (TVD)**
 Total Depth: 4906.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Leal Cason
 Unit No: 45
 Reference Elevations: 1513.00 ft (KB)
 1501.00 ft (CF)
 KB to GR/CF: 12.00 ft

Serial #: 6798

Inside

Press @ Run Depth: 412.92 psig @ 4781.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2013.09.01 End Date: 2013.09.02 Last Calib.: 2013.09.02
 Start Time: 16:07:38 End Time: 04:15:22 Time On Btm: 2013.09.01 @ 19:50:22
 Time Off Btm: 2013.09.02 @ 00:46:52

TEST COMMENT: IF: Strong Blow ,BOB in 1 minute, GTS in 12 minutes, Gauged & Caught Sample
 IS: Weak Surface Blow Back
 FF: Strong Blow , BOB & GTS Immediate, Gauged Gas
 FS: Weak Surface Blow Back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2427.19	120.29	Initial Hydro-static
15	271.10	122.53	Open To Flow (1)
45	246.01	126.23	Shut-In(1)
106	612.53	126.42	End Shut-In(1)
106	319.25	126.71	Open To Flow (2)
166	412.92	128.21	Shut-In(2)
286	608.96	127.43	End Shut-In(2)
297	2431.42	127.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	4098 GIP	0.00
122.00	GSY OMCW 5%G 20%O 20%M 55%W	0.61
248.00	GSY OWCM 15%G 5%O 30%W 50%M	3.48
124.00	GSY WOCM 35%G 15%W 20%O 30%M	1.74
185.00	GCM 20%G 80%M	2.60

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.50	10.00	164.59
Last Gas Rate	0.25	30.00	70.44
Max. Gas Rate	0.25	30.00	70.44



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FLUID SUMMARY

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Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

95000 ppm

Viscosity: 59.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.99 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 3000.00 ppm

Filter Cake: 0.03 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
0.00	4098 GIP	0.000
122.00	GSY OMCW 5%G 20%O 20%M 55%W	0.609
248.00	GSY OWCM 15%G 5%O 30%W 50%M	3.479
124.00	GSY WOCM 35%G 15%W 20%O 30%M	1.739
185.00	GCM 20%G 80%M	2.595

Total Length: 679.00 ft Total Volume: 8.422 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW w as .07 @ 84 degrees



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GAS RATES

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Cundiff A-1

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Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
1	20	0.50	10.00	164.59
1	30	0.50	6.00	137.61
2	10	0.50	15.00	198.32
2	20	0.50	6.00	137.61
2	30	0.25	24.00	60.92
2	40	0.25	25.00	62.50
2	50	0.25	30.00	70.44
2	60	0.25	30.00	70.44

Pressure vs. Time

