



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TDI, Inc.
1310 Bison Rd.
Hays, Ks 67601
ATTN: Herb Dienes

Engel #1
21/15S/18W-ELLIS
Job Ticket: 45244 **DST#: 1**
Test Start: 2011.09.12 @ 02:09:15

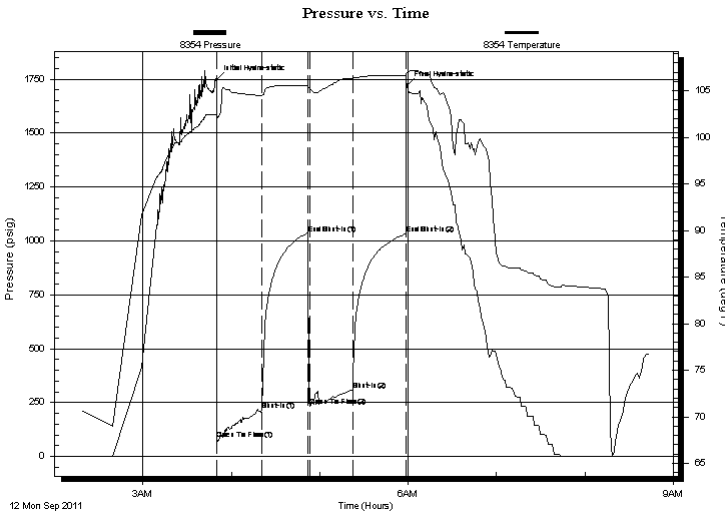
GENERAL INFORMATION:

Formation: **Cong. Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:50:25
Time Test Ended: 08:43:45
Interval: 3484.00 ft (KB) To 3582.00 ft (KB) (TVD)
Total Depth: 3582.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole
Tester: Dustin Rash
Unit No: 38
Reference Elevations: 1995.00 ft (KB)
1984.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8354 Inside
Press @ Run Depth: 306.57 psig @ 3554.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2011.09.12 End Date: 2011.09.12 Last Calib.: 2011.09.12
Start Time: 02:19:15 End Time: 08:43:45 Time On Btm: 2011.09.12 @ 03:49:55
Time Off Btm: 2011.09.12 @ 05:59:15

TEST COMMENT: IF-Strong building blow . BOB in 4 minutes 15 seconds.
ISI-Weak surface return @ 3 minutes. Died @ 1 minute.
FF-Fair building blow . BOB in 8 minutes.
FSI-No Return.

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1746.76	102.46	Initial Hydro-static
1	82.27	102.07	Open To Flow (1)
31	216.81	104.50	Shut-In(1)
63	1034.82	105.56	End Shut-In(1)
64	233.77	105.21	Open To Flow (2)
93	306.57	106.35	Shut-In(2)
129	1031.72	106.66	End Shut-In(2)
130	1721.56	106.93	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	90%Oil/10%Mud	0.87
186.00	60%Oil/30%Gas/10%Mud	2.61
186.00	60%Mud/20%Oil/20%Gas	2.61
221.00	90%Mud10%Oil	3.10

Gas Rates

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



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FLUID SUMMARY

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Test Start: 2011.09.12 @ 02:09:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 29 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.80 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3100.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
62.00	90%Oil/10%Mud	0.870
186.00	60%Oil/30%Gas/10%Mud	2.609
186.00	60%Mud/20%Oil/20%Gas	2.609
221.00	90%Mud10%Oil	3.100

Total Length: 655.00 ft Total Volume: 9.188 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

