



DRILL STEM TEST REPORT

Prepared For: **F.G. Holl Company L.L.C.**

9431 East Central Suite 100
Wichita, Kansas 67206 2563

ATTN: Ryan Greenbaum

Millard Trust #1-31

31-18s-13w

Start Date: 2014.11.21 @ 00:00:00

End Date:

Job Ticket #: 62057

DST #: 11

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

Printed: 2014.11.21 @ 12:59:53



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TESTING, INC.**

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Test Start: 2014.11.21 @ 00:00:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened:

Time Test Ended:

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: S-4

Interval: 3440.00 ft (KB) To 3450.00 ft (KB) (TVD)

Reference Elevations: 1888.00 ft (KB)

Total Depth: 3450.00 ft (KB) (TVD)

1880.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8938

Inside

Press@RunDepth: 1165.34 psig @ 3446.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.21

End Date: 2014.11.21

Last Calib.: 2014.11.21

Start Time: 04:24:00

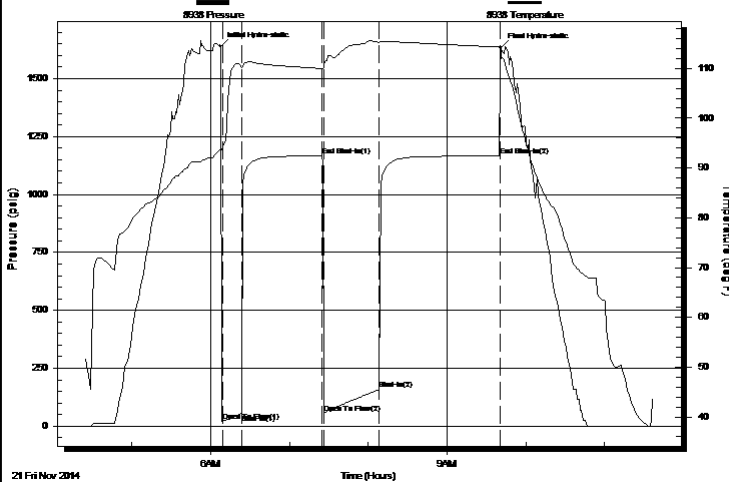
End Time: 11:36:30

Time On Btm: 2014.11.21 @ 06:07:30

Time Off Btm: 2014.11.21 @ 09:41:00

TEST COMMENT: 1st Opening 15 Minutes Weak building blow bob in 12 minutes
1st Shut-In 60 Minutes-No blow back
2nd Opening 45 Minutes-Weak building blow bob in 12 minutes
2nd Shut-In 90 Minutes-No blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1639.54	93.67	Initial Hydro-static
2	21.37	94.14	Open To Flow (1)
16	53.69	110.10	Shut-In(1)
78	1165.66	110.00	End Shut-In(1)
79	57.71	110.11	Open To Flow (2)
121	159.49	115.26	Shut-In(2)
213	1165.34	114.29	End Shut-In(2)
214	1635.37	112.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
400.00	Slightly muddy water 2%Mud 98%Water chlorides 19,000	5.61

Gas Rates

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



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Time Test Ended:

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: S-4

Interval: 3440.00 ft (KB) To 3450.00 ft (KB) (TVD)

Reference Elevations: 1888.00 ft (KB)

Total Depth: 3450.00 ft (KB) (TVD)

1880.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6651 Outside

Press@RunDepth: 1165.88 psig @ 3447.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.21

End Date: 2014.11.21

Last Calib.: 2014.11.21

Start Time: 04:24:00

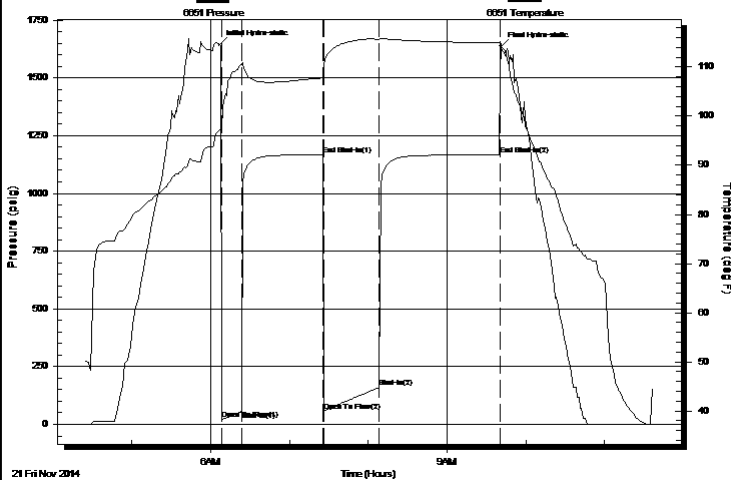
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2nd Shut-In 90 Minutes-No blow back

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1642.26	97.16	Initial Hydro-static
2	19.72	97.29	Open To Flow (1)
17	54.51	110.52	Shut-In(1)
79	1166.27	107.78	End Shut-In(1)
79	57.19	108.26	Open To Flow (2)
122	159.90	115.57	Shut-In(2)
213	1165.88	114.90	End Shut-In(2)
214	1637.23	114.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
400.00	Slightly muddy water 2% Mud 98% Water chlorides 19,000	5.61

Gas Rates

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



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TOOL DIAGRAM

F.G. Holl Company L.L.C.

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Test Start: 2014.11.21 @ 00:00:00

Tool Information

Drill Pipe:	Length: 3438.00 ft	Diameter: 3.80 inches	Volume: 48.23 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.86 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 48.23 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	26.00 ft			String Weight: Initial 55000.00 lb
Depth to Top Packer:	3440.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	10.00 ft			
Tool Length:	38.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			3417.00	
Hydraulic Tool	5.00			3422.00	
Jars	6.00			3428.00	
Safety Joint	2.00			3430.00	
Top Packer	5.00			3435.00	
Packer	5.00			3440.00	28.00 Bottom Of Top Packer
Anchor	5.00			3445.00	
Recorder	1.00	8938	Inside	3446.00	
Recorder	1.00	6651	Outside	3447.00	
Bull Plug	3.00			3450.00	10.00 Anchor Tool
Total Tool Length:	38.00				



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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:

ppm

Viscosity: 46.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.00 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
400.00	Slightly muddy water 2%Mud 98%Water chlorides 19,000	5.611

Total Length: 400.00 ft Total Volume: 5.611 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

