



DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration LLC**

8100 East 22nd Street North
Building 1800-2
Wichita Kansas

ATTN: Derek Patterson

KK #1-22

22/18S/10W/Rice

Start Date: 2014.07.19 @ 17:30:00

End Date: 2014.07.19 @ 23:49:30

Job Ticket #: 18273 DST #: 1

Superior Testers Enterprises LLC
PO Box 138 Great Bend KS 67530
1-800-792-6902

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DST#: 1

Test Start: 2014.07.19 @ 17:30:00

GENERAL INFORMATION:

Formation: **Topeka-Plattsmouth**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 19:08:30

Time Test Ended: 23:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 3325 Great Bend/54

Interval: 2668.00 ft (KB) To 2697.00 ft (KB) (TVD)

Reference Elevations: 1754.00 ft (KB)

Total Depth: 2697.00 ft (KB) (TVD)

1746.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 6749

Inside

Press@RunDepth: 120.27 psig @ 2693.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.07.19

End Date: 2014.07.19

Last Calib.: 2014.07.19

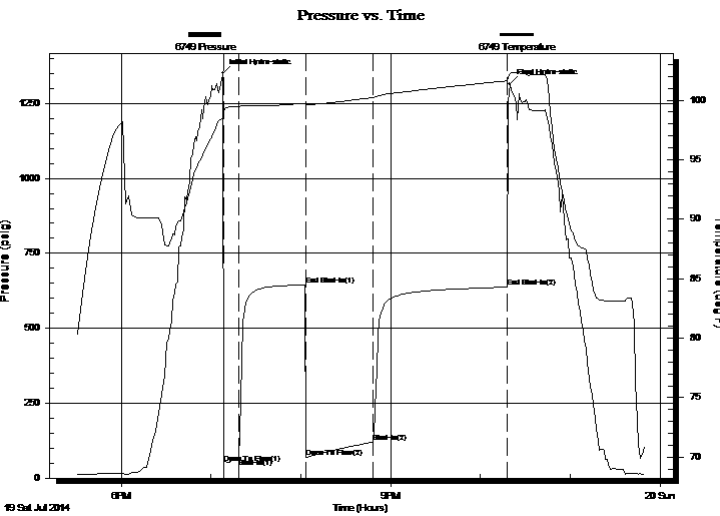
Start Time: 17:30:00

End Time: 23:49:30

Time On Btm: 2014.07.19 @ 19:08:00

Time Off Btm: 2014.07.19 @ 22:19:30

TEST COMMENT: 1ST Open 10 Minutes/Fair blow/Blow built to 7 inches
 1ST Shut in 45 Minutes/No blow back
 2ND Open 45 Minutes/Fair blow/Blow built to bottom of bucket in 27 minutes
 2ND Shut In 90 Minutes/No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1351.15	99.02	Initial Hydro-static
1	48.01	99.06	Open To Flow (1)
11	64.98	99.44	Shut-In(1)
55	645.45	99.75	End Shut-In(1)
56	69.38	99.63	Open To Flow (2)
100	120.27	100.23	Shut-In(2)
190	637.15	101.64	End Shut-In(2)
192	1315.19	102.24	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
160.00	Muddy Water with show of oil	2.24
0.00	Mud 15% Water 85%	0.00
1.00	Clean Oil 100%	0.01
0.00	Recovery Chlorides 24,000 ppm	0.00

Gas Rates

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



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Tester: Ken Swinney

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Interval: 2668.00 ft (KB) To 2697.00 ft (KB) (TVD)

Reference Elevations: 1754.00 ft (KB)

Total Depth: 2697.00 ft (KB) (TVD)

1746.00 ft (CF)

Hole Diameter: 7.80 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 6663 Outside

Press@RunDepth: 636.60 psig @ 2694.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.07.19

End Date: 2014.07.19

Last Calib.: 2014.07.19

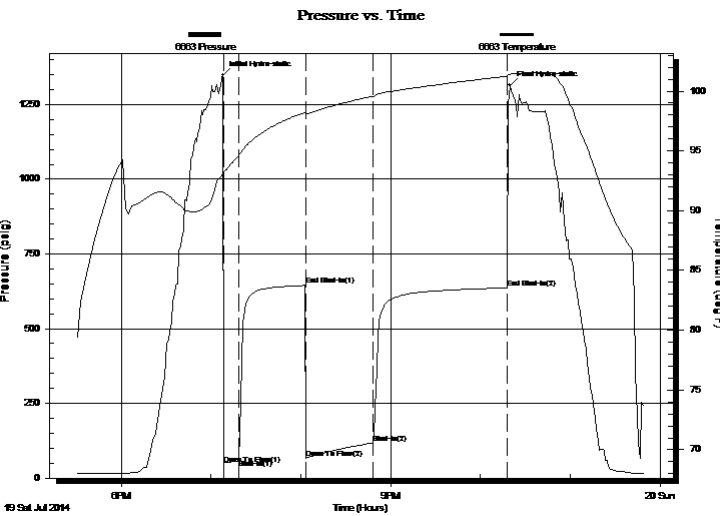
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 2ND Shut In 90 Minutes/No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1347.31	93.37	Initial Hydro-static
1	47.48	93.17	Open To Flow (1)
11	62.69	94.59	Shut-In(1)
55	644.79	98.21	End Shut-In(1)
56	67.96	98.08	Open To Flow (2)
100	117.95	99.56	Shut-In(2)
190	636.60	101.23	End Shut-In(2)
192	1314.40	101.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
160.00	Muddy Water with show of oil	2.24
0.00	Mud 15% Water 85%	0.00
1.00	Clean Oil 100%	0.01
0.00	Recovery Chlorides 24,000 ppm	0.00

Gas Rates

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



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TOOL DIAGRAM

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DST#: 1

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Tool Information

Drill Pipe:	Length: 2665.00 ft	Diameter: 3.80 inches	Volume: 37.38 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 42000.00 lb
			Total Volume: 37.38 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	2668.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	29.00 ft			
Tool Length:	56.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			2646.00	
Hydraulic tool	5.00			2651.00	
Jars	5.00			2656.00	
Safety Joint	2.00			2658.00	
Top Packer	5.00			2663.00	
Packer	5.00			2668.00	27.00 Bottom Of Top Packer
Anchor	24.00			2692.00	
Recorder	1.00	6749	Inside	2693.00	
Recorder	1.00	6663	Outside	2694.00	
Bullnose	3.00			2697.00	29.00 Anchor Tool
Total Tool Length:	56.00				



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FLUID SUMMARY

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Mud and Cushion Information

Mud Type: Gel Chem
 Mud Weight: 9.00 lb/gal
 Viscosity: 57.00 sec/qt
 Water Loss: 8.79 in³
 Resistivity: ohm.m
 Salinity: 6500.00 ppm
 Filter Cake: 1.00 inches

Cushion Type:
 Cushion Length: ft
 Cushion Volume: bbl
 Gas Cushion Type:
 Gas Cushion Pressure: psig

Oil API: deg API
 Water Salinity: ppm

Recovery Information

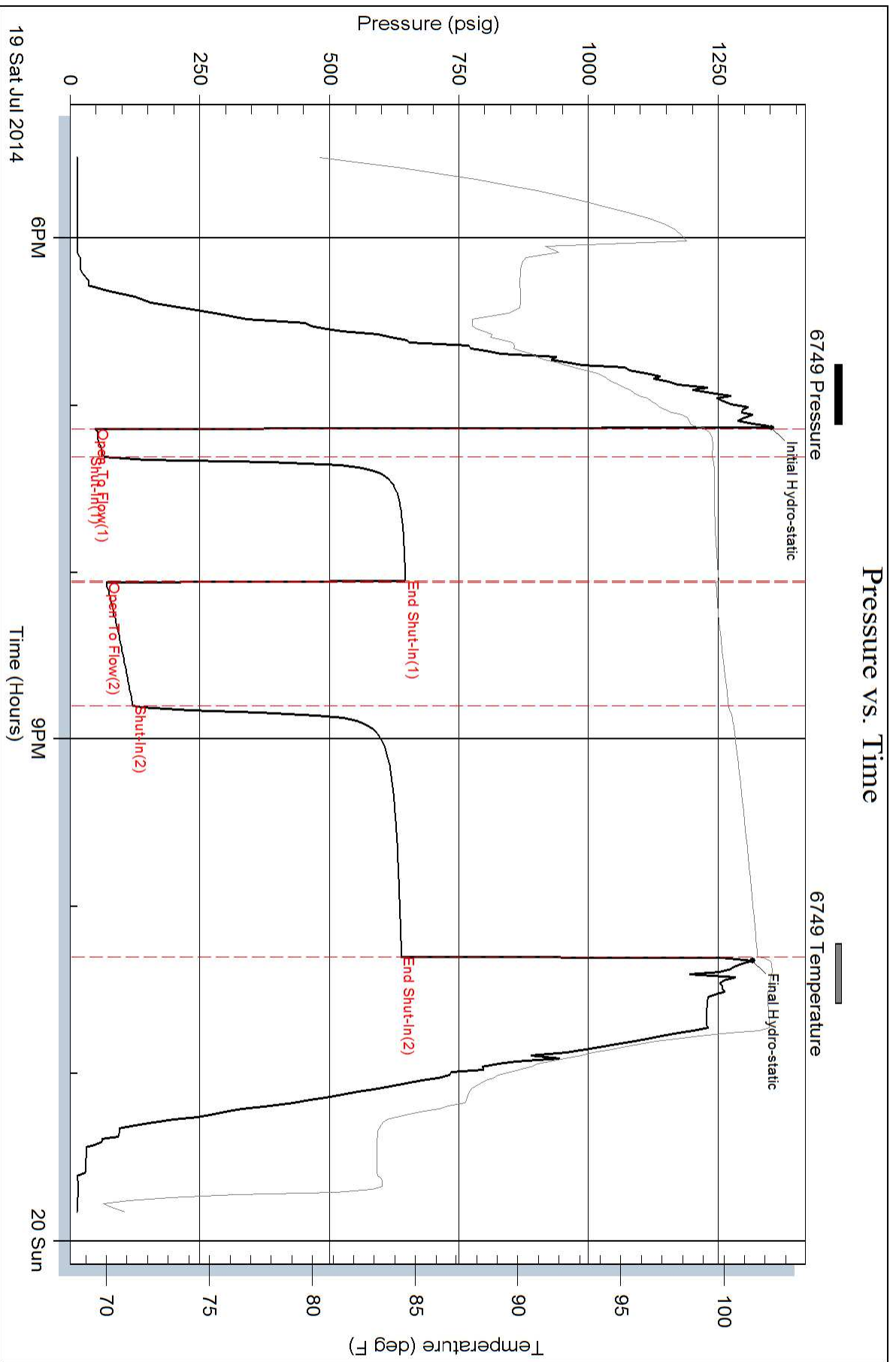
Recovery Table

Length ft	Description	Volume bbl
160.00	Muddy Water with show of oil	2.244
0.00	Mud 15% Water 85%	0.000
1.00	Clean Oil 100%	0.014
0.00	Recovery Chlorides 24,000 ppm	0.000

Total Length: 161.00 ft Total Volume: 2.258 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time



Pressure vs. Time

