



DRILL STEM TEST REPORT

Prepared For: **Valhalla Exploration L.L.C**

133 N Glendale st Whichita KS 67208+4022

ATTN: Derek Patterson

Morgenstern #1-12

12-16s-14w

Start Date: 2012.12.16 @ 10:17:00

End Date: 2012.12.16 @ 17:09:30

Job Ticket #: 16991 DST #: 2

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

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Morgenstern #1-12

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Job Ticket: 16991

DST#: 2

Test Start: 2012.12.16 @ 10:17:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:53:00

Time Test Ended: 17:09:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3320-Great Bend-50

Interval: 3332.00 ft (KB) To 3344.00 ft (KB) (TVD)

Reference Elevations: 1932.00 ft (KB)

Total Depth: 3344.00 ft (KB) (TVD)

1924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 6731

Press@RunDepth: 946.70 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.12.16

End Date: 2012.12.16

Last Calib.: 2012.12.16

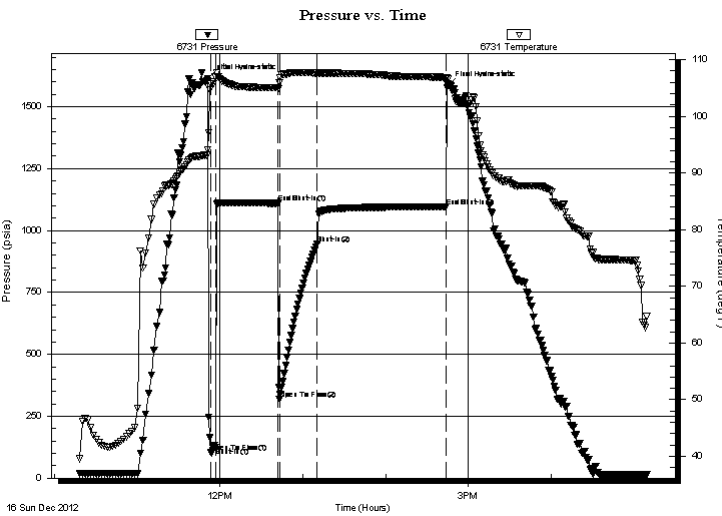
Start Time: 10:17:00

End Time: 17:09:30

Time On Btm: 2012.12.16 @ 11:51:00

Time Off Btm: 2012.12.16 @ 14:45:00

TEST COMMENT: 1st Opening 5 Minutes-Strong blow built bottom of bucket in 1 minute
 1st Shut-in 45 Minutes-No blow back
 2nd Opening 30 Minutes-Strong blow built bottom of bucket in 1 minute
 2nd Shut-in 90 Minutes-No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1612.14	94.11	Initial Hydro-static
2	105.04	105.75	Open To Flow (1)
6	124.28	106.91	Shut-In(1)
51	1110.17	105.09	End Shut-In(1)
52	318.15	106.00	Open To Flow (2)
80	946.70	107.62	Shut-In(2)
173	1096.11	106.81	End Shut-In(2)
174	1586.59	106.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
360.00	water mud 40%w ater 60%mud	5.05
1620.00	oil cut muddy w ater5%oil 25%mud 70%w	22.72
0.00	chlorides 15,000 resistivity .6@55degre	0.00

Gas Rates

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



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Tester: Jared Scheck

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Reference Elevations: 1932.00 ft (KB)

Total Depth: 3344.00 ft (KB) (TVD)

1924.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8159

Press@RunDepth: 1097.72 psia @ ft (KB)

Capacity: 5000.00 psia

Start Date: 2012.12.16

End Date: 2012.12.16

Last Calib.: 2012.12.16

Start Time: 10:17:00

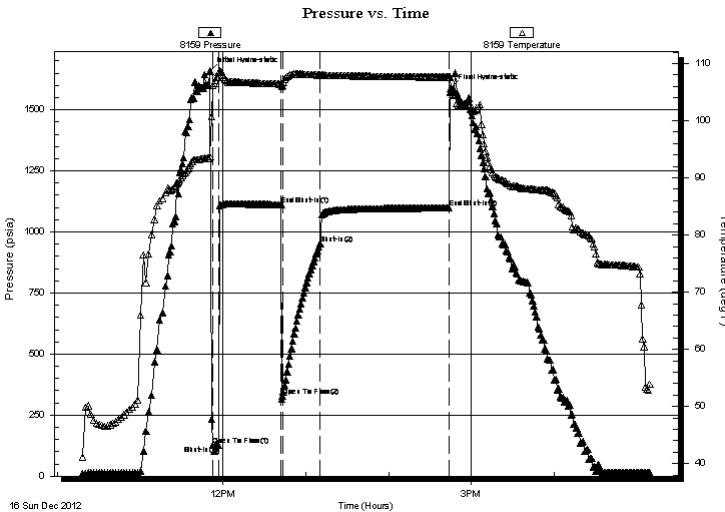
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 2nd Opening 30 Minutes-Strong blow built bottom of bucket in 1 minute
 2nd Shut-in 90 Minutes-No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1658.07	93.70	Initial Hydro-static
2	127.22	106.21	Open To Flow (1)
6	125.41	108.39	Shut-In(1)
52	1111.74	106.39	End Shut-In(1)
53	327.71	106.09	Open To Flow (2)
80	950.08	107.98	Shut-In(2)
174	1097.72	107.62	End Shut-In(2)
175	1588.77	105.66	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
360.00	water mud 40%w ater 60%mud	5.05
1620.00	oil cut muddy w ater5%oil 25%mud 70%w	22.72
0.00	chlorides 15,000 resistivity .6@55degree	0.00

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



DRILL STEM TEST REPORT

TOOL DIAGRAM

Valhalla Exploration L.L.C

12-16s-14w

133 N Glendale st Whichita KS 67208+4022

Morgenstern #1-12

Job Ticket: 16991

DST#:2

ATTN: Derek Patterson

Test Start: 2012.12.16 @ 10:17:00

Tool Information

Drill Pipe:	Length: 3328.00 ft	Diameter: 3.80 inches	Volume: 46.68 bbl	Tool Weight: 1000.00 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: 60000.00 lb
			<u>Total Volume: 46.68 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	24.00 ft			String Weight: Initial 43000.00 lb
Depth to Top Packer:	3332.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	12.00 ft			
Tool Length:	40.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut-In Tool	5.00			3309.00	
Hydraulic Tool	5.00			3314.00	
Jars	6.00			3320.00	
Safety Joint	2.00			3322.00	
Packer	5.00			3327.00	28.00 Bottom Of Top Packer
Packer	5.00			3332.00	
Anchor	7.00			3339.00	
Recorder	1.00	6731	Inside	3340.00	
Recorder	1.00	8159	Outside	3341.00	
Bullnose	3.00			3344.00	12.00 Bottom Packers & Anchor
Total Tool Length:	40.00				



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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: 51.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.20 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psia

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
360.00	w ater mud 40%w ater 60%mud	5.050
1620.00	oil cut muddy w ater5%oil 25%mud 70%w ater	22.724
0.00	chlorides 15,000 resistivity .6@55degree	0.000

Total Length: 1980.00 ft Total Volume: 27.774 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: chlorides 15,000 resistivity .6 @ 55 degrees

