



## DRILL STEM TEST REPORT

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

8100 E 22nd St N bldg 1800-2 Wichita KS  
67208

ATTN: Adam Nighswonger

### **Morrison#1-1**

#### **1-21-14w Stafford**

Start Date: 2014.06.04 @ 12:03:00

End Date: 2014.06.04 @ 19:35:30

Job Ticket #: 19249                      DST #: 5

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

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ATTN: Adam Nighswonger

Job Ticket: 19249

DST#: 5

Test Start: 2014.06.04 @ 12:03:00

## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:28:30

Time Test Ended: 19:35:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3335-Great Bend -25

Interval: **3633.00 ft (KB) To 3641.00 ft (KB) (TVD)**

Reference Elevations: 1924.00 ft (KB)

Total Depth: 3641.00 ft (KB) (TVD)

1916.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

## Serial #: 6666

Press@RunDepth: 1154.19 psig @ ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.06.04

End Date: 2014.06.04

Last Calib.: 2014.06.04

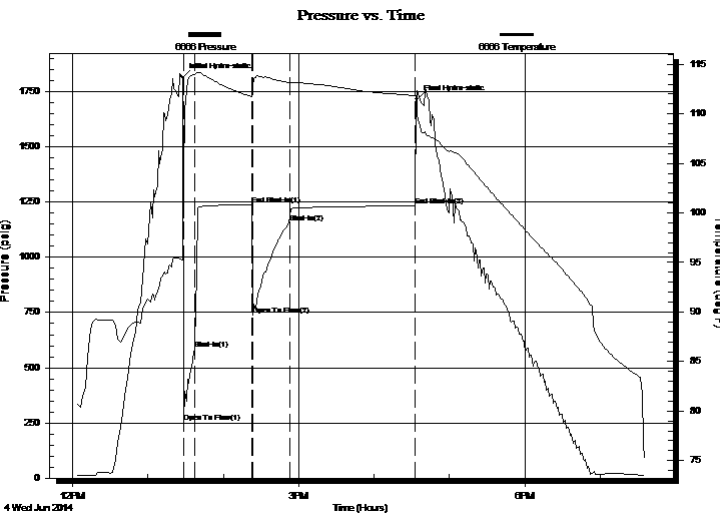
Start Time: 12:03:00

End Time: 19:35:30

Time On Btm: 2014.06.04 @ 13:27:30

Time Off Btm: 2014.06.04 @ 16:34:00

**TEST COMMENT:** 1st Opening 10 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 bucket in 1 minute  
 2nd Shut-in 90 Minutes-Very weak surface surge



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1814.72	95.28	Initial Hydro-static
1	253.43	103.61	Open To Flow (1)
10	585.56	113.96	Shut-In(1)
55	1238.05	111.70	End Shut-In(1)
56	737.54	112.80	Open To Flow (2)
85	1154.19	113.14	Shut-In(2)
186	1231.93	111.84	End Shut-In(2)
187	1715.73	110.83	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1740.00	oil cut w ater 20%oil 80%w ater	24.41
840.00	w ater	11.78
0.00	chlorides 23,000	0.00

## Gas Rates

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



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Time Test Ended: 19:35:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Jared Scheck

Unit No: 3335-Great Bend -25

Interval: **3633.00 ft (KB) To 3641.00 ft (KB) (TVD)**

Reference Elevations: 1924.00 ft (KB)

Total Depth: 3641.00 ft (KB) (TVD)

1916.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

## Serial #: 8525

Press@RunDepth: 1242.53 psig @ ft (KB)

Capacity: 5000.00 psig

Start Date: 2014.06.04

End Date:

2014.06.04

Last Calib.:

2014.06.04

Start Time: 12:03:00

End Time:

19:35:00

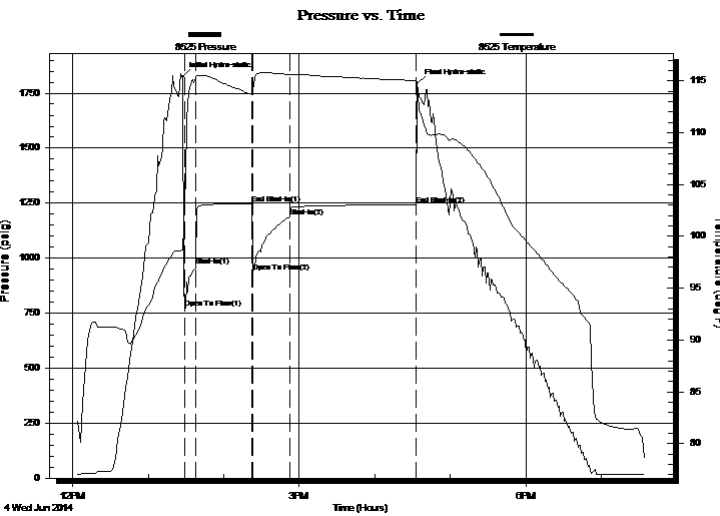
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## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1824.97	98.65	Initial Hydro-static
2	771.61	103.42	Open To Flow (1)
11	963.14	115.32	Shut-In(1)
55	1248.27	113.75	End Shut-In(1)
56	935.44	114.16	Open To Flow (2)
85	1188.88	115.63	Shut-In(2)
186	1242.53	115.05	End Shut-In(2)
187	1795.10	114.52	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
1740.00	oil cut w ater 20%oil 80%w ater	24.41
840.00	w ater	11.78
0.00	chlorides 23,000	0.00

## Gas Rates

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



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TOOL DIAGRAM

Valhalla Exploration L.L.C

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Test Start: 2014.06.04 @ 12:03:00

## Tool Information

Drill Pipe:	Length: 3612.00 ft	Diameter: 3.80 inches	Volume: 50.67 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: 70000.00 lb
			<u>Total Volume: 50.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3633.00 ft			Final 68000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	8.00 ft			
Tool Length:	36.00 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			3610.00	
Hydraulic tool	5.00			3615.00	
Jars	6.00			3621.00	
Safety Joint	2.00			3623.00	
Packer	5.00			3628.00	28.00 Bottom Of Top Packer
Packer	5.00			3633.00	
Recorder	1.00			3634.00	
Recorder	1.00			3635.00	
Anchor	3.00			3638.00	
Bullnose	3.00			3641.00	8.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>36.00</b>				



# DRILL STEM TEST REPORT

## 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: 48.00 sec/qt

Cushion Volume: bbl

Water Loss: 12.40 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 8000.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
1740.00	oil cut w ater 20%oil 80%w ater	24.408
840.00	w ater	11.783
0.00	chlorides 23,000	0.000

Total Length: 2580.00 ft      Total Volume: 36.191 bbl

Num Fluid Samples: 0

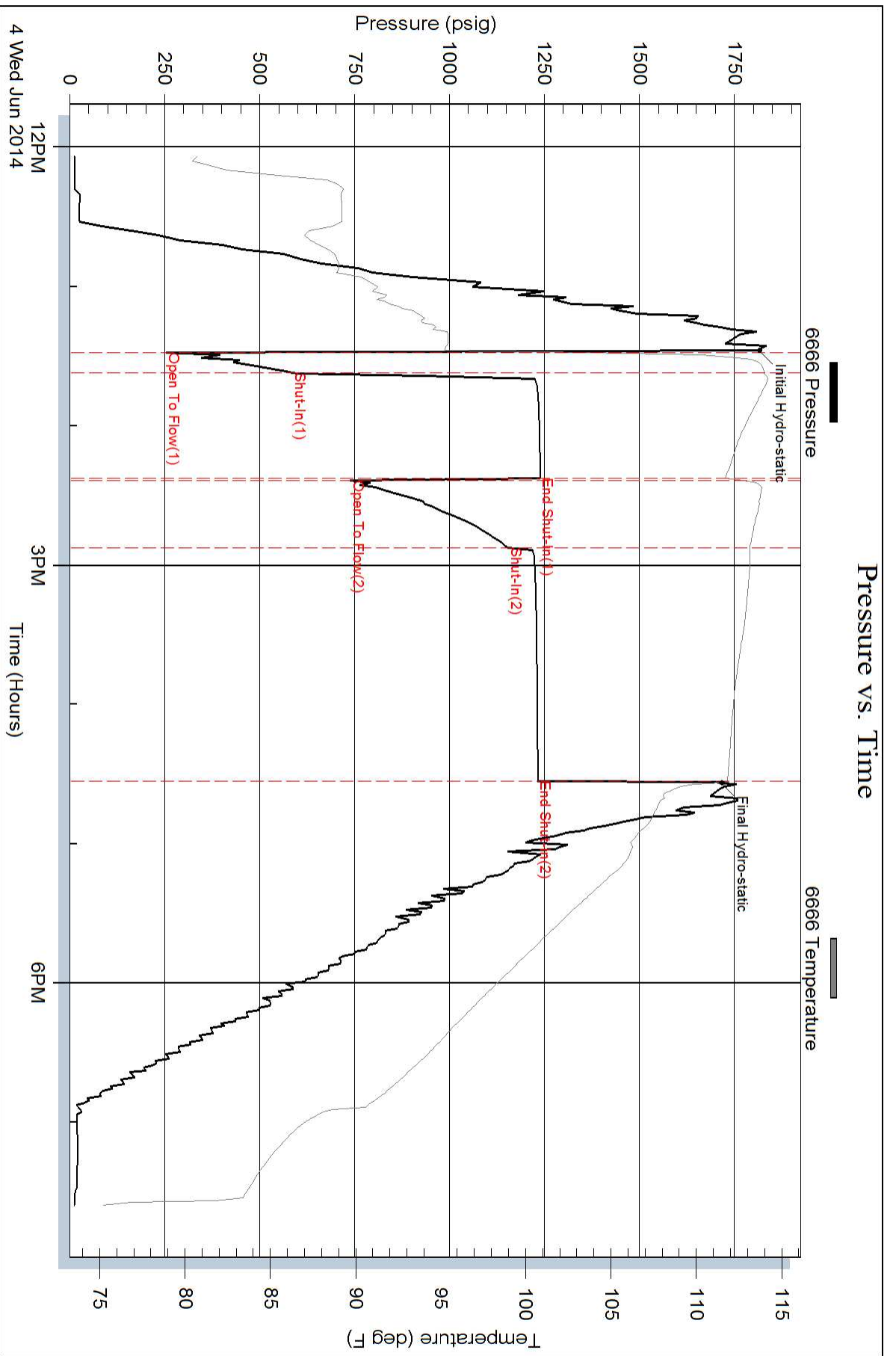
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: chlorides 23,000



### Pressure vs. Time

