

## DRILL STEM TEST REPORT

Prepared For: **Tug Hill Operating LLC**

550 Bailey Ave Ste 510  
Fort Worth TX 76107

ATTN: Winnie Scott

**Matthews #2-8H**

**8-33s-10w Barber,KS**

Start Date: 2013.04.07 @ 03:17:32

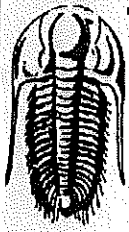
End Date: 2013.04.07 @ 19:19:32

Job Ticket #: 50948                      DST #: 1

Trilobite Testing, Inc  
PO Box 362 Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2013.04.12 @ 09:35:40

Tug Hill Operating LLC    8-33s-10w Barber,KS    Matthews #2-8H    DST # 1    Viola    2013.04.07



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Tug Hill Operating LLC

8-33s-10w Barber,KS

550 Bailey Ave Ste 510  
Fort Worth TX 76107

Matthews #2-8H

Job Ticket: 50948

DST#: 1

ATTN: Winnie Scott

Test Start: 2013.04.07 @ 03:17:32

### GENERAL INFORMATION:

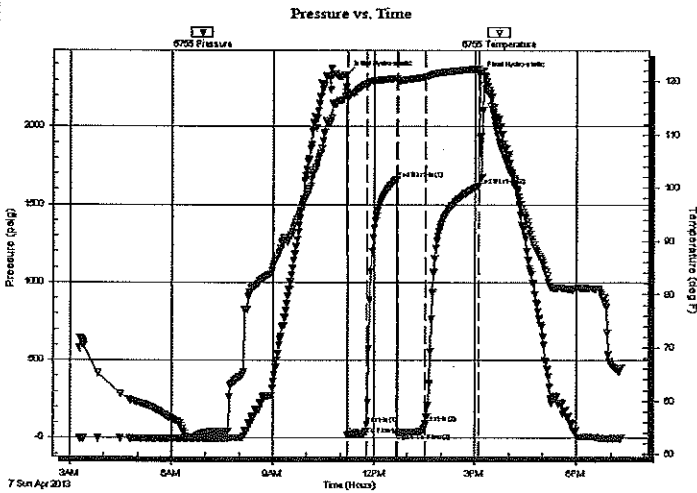
Formation: **Viola**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 11:12:32  
 Time Test Ended: 19:19:32  
 Interval: **4883.00 ft (KB) To 4911.00 ft (KB) (TVD)**  
 Total Depth: 4911.00 ft (KB) (TVD)  
 Hole Diameter: 8.75 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Chris Staats  
 Unit No: 47  
 Reference Elevations: 1569.00 ft (KB)  
 1546.00 ft (CF)  
 KB to GR/CF: 23.00 ft

### Serial #: 6755

Inside

Press@RunDepth: 95.93 psig @ 4884.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2013.04.07 End Date: 2013.04.07 Last Calib.: 2013.04.07  
 Start Time: 03:17:37 End Time: 19:19:32 Time On Btm: 2013.04.07 @ 11:10:47  
 Time Off Btm: 2013.04.07 @ 15:07:32

TEST COMMENT: IF: Weak blow 1/8"  
 IS: No blow back  
 FF: Weak blow 1/4"  
 FSI: No blow back



### PRESSURE SUMMARY

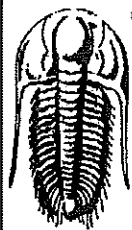
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2333.42	117.80	Initial Hydro-static
2	21.20	117.13	Open To Flow (1)
35	89.88	119.44	Shut-In(1)
91	1665.05	120.59	End Shut-In(1)
92	32.59	119.96	Open To Flow (2)
141	95.93	120.85	Shut-In(2)
235	1620.01	122.41	End Shut-In(2)
237	2330.50	121.66	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
30.00	W,M 5%w ater 95% mud	0.15

### Gas Rates

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



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

Tug Hill Operating LLC  
550 Bailey Ave Ste 510  
Fort Worth TX 76107  
ATTN: Winnie Scott

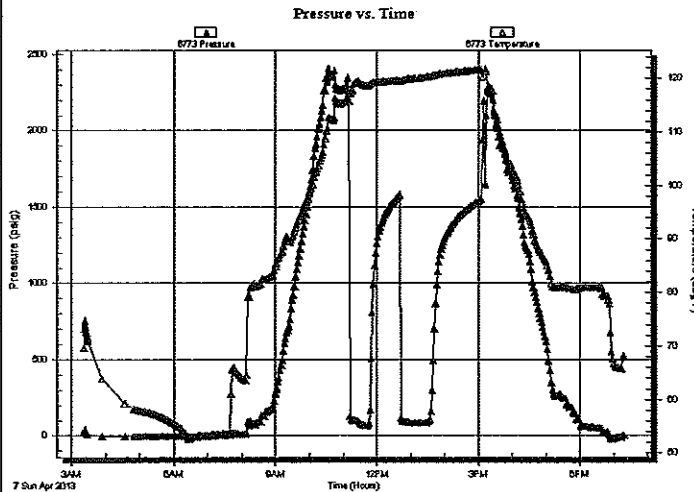
**8-33s-10w Barber, KS**  
**Matthews #2-8H**  
Job Ticket: 50948      DST#: 1  
Test Start: 2013.04.07 @ 03:17:32

**GENERAL INFORMATION:**

Formation: <b>Viola</b>		
Deviated: No    Whipstock:         ft (KB)	Test Type: Conventional Bottom Hole (Initial)	
Time Tool Opened: 11:12:32	Tester: Chris Staats	
Time Test Ended: 19:19:32	Unit No: 47	
Interval: <b>4883.00 ft (KB) To 4911.00 ft (KB) (TVD)</b>	Reference Elevations:	1569.00 ft (KB)
Total Depth: 4911.00 ft (KB) (TVD)		1546.00 ft (CF)
Hole Diameter: 8.75 inches    Hole Condition: Fair	KB to GR/CF:	23.00 ft

<b>Serial #: 6773</b> <b>Outside</b>			
Press@RunDepth:         psig @ 4884.00 ft (KB)	Capacity:	8000.00 psig	
Start Date: 2013.04.07    End Date: 2013.04.07	Last Calib.:	2013.04.07	
Start Time: 03:21:36      End Time: 19:19:31	Time On Btm:		
	Time Off Btm:		

**TEST COMMENT:** IF: Weak blow 1/8"  
IS: No blow back  
FF: Weak blow 1/4"  
FSI: No blow back



**PRESSURE SUMMARY**

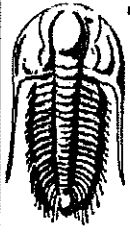
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

**Recovery**

Length (ft)	Description	Volume (bbl)
30.00	W,M 5%w ater 95%mud	0.15

**Gas Rates**

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



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Tug Hill Operating LLC

8-33s-10w Barber, KS

550 Bailey Ave Ste 510  
Fort Worth TX 76107

Matthews #2-8H

Job Ticket: 50948

DST#: 1

ATTN: Winnie Scott

Test Start: 2013.04.07 @ 03:17:32

### Tool Information

Drill Pipe:	Length: 4311.00 ft	Diameter: 3.80 inches	Volume: 60.47 bbl	Tool Weight: 22000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 544.00 ft	Diameter: 2.25 inches	Volume: 2.68 bbl	Weight to Pull Loose: 170000.0 lb
			<u>Total Volume: 63.15 bbl</u>	Tool Chased 2.00 ft
Drill Pipe Above KB:	1.00 ft			String Weight: Initial 150000.0 lb
Depth to Top Packer:	4883.00 ft			Final 150000.0 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	28.00 ft			
Tool Length:	57.00 ft			
Number of Packers:	2	Diameter: 8.00 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4855.00	
Shut In Tool	5.00			4860.00	
Hydraulic tool	5.00			4865.00	
Jars	5.00			4870.00	
Safety Joint	3.00			4873.00	
Packer	5.00			4878.00	29.00 Bottom Of Top Packer
Packer	5.00			4883.00	
Stubb	1.00			4884.00	
Recorder	0.00	6773	Outside	4884.00	
Recorder	0.00	6755	Inside	4884.00	
Perforations	24.00			4908.00	
Bullnose	3.00			4911.00	28.00 Bottom Packers & Anchor

**Total Tool Length: 57.00**



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## DRILL STEM TEST REPORT

**FLUID SUMMARY**

Tug Hill Operating LLC

**8-33s-10w Barber,KS**

550 Bailey Ave Ste 510  
Fort Worth TX 76107

**Matthews #2-8H**

Job Ticket: 50948

DST#: 1

ATTN: Winnie Scott

Test Start: 2013.04.07 @ 03:17:32

### 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: 52.00 sec/qt

Cushion Volume:

bbl

Water Loss: 4.00 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 12000.00 ppm

Filter Cake: 0.02 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	W,M 5%w ater 95%mud	0.148

Total Length: 30.00 ft

Total Volume: 0.148 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

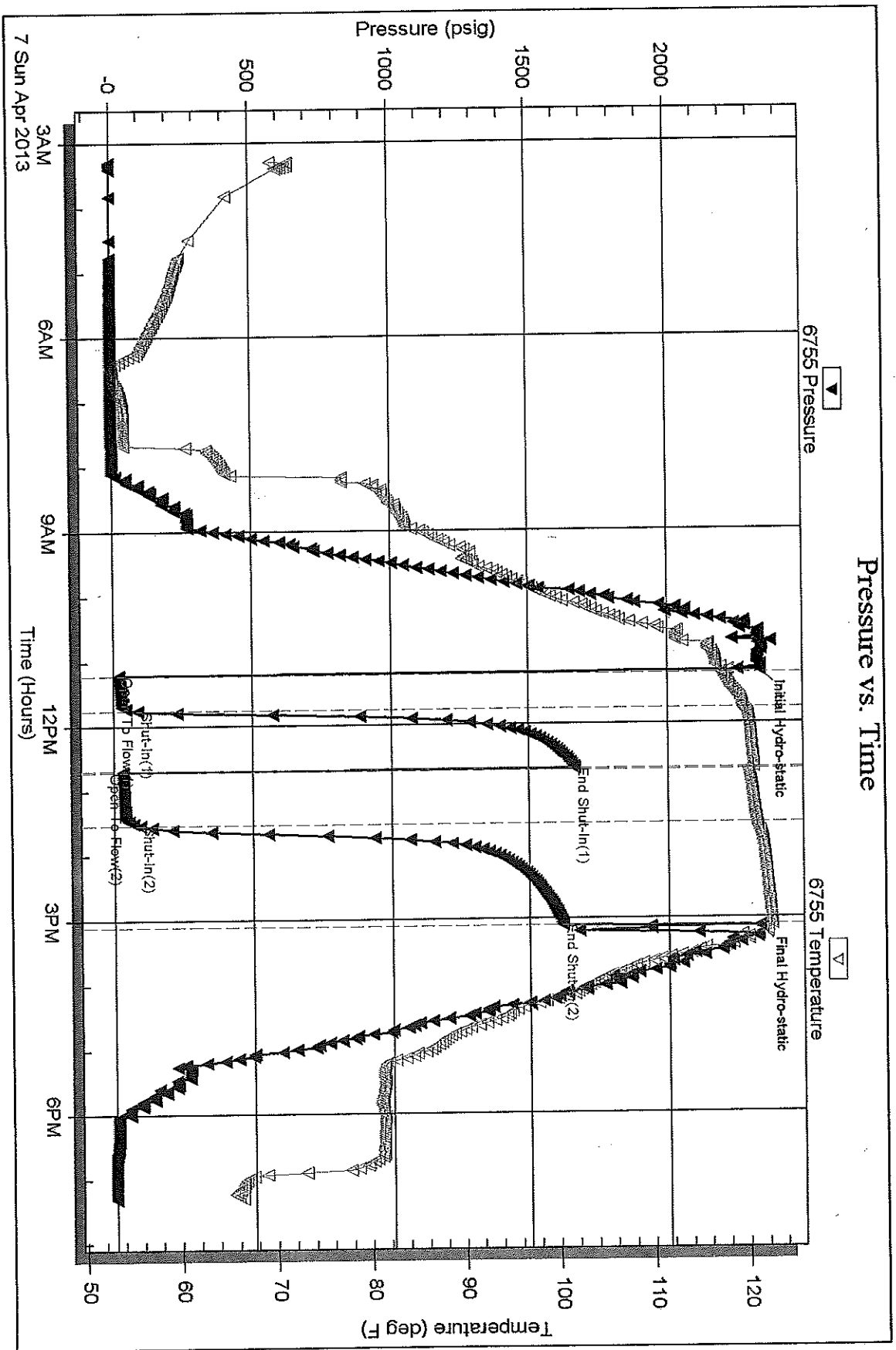
Serial #: 6755

Inside

Tug Hill Operating LLC

Mathews #2-8H

DST Test Number: 1

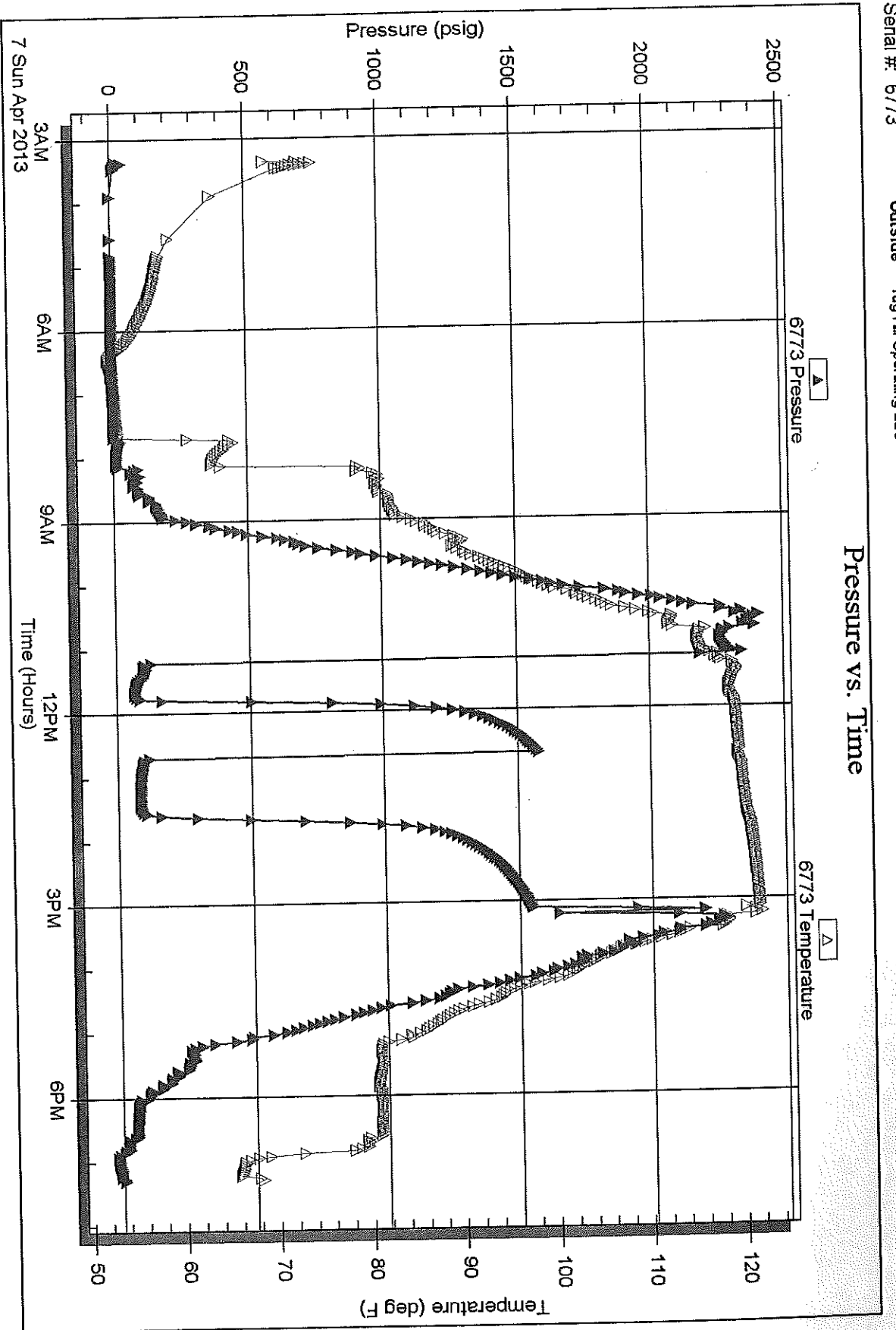


Serial #: 6773

Outside Tug Hill Operating LLC

Matthew's #2-8H

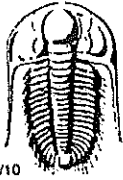
DST Test Number: 1



Trickdie Testing, Inc

Ref. No: 50948

Printed: 2013.04.12 @ 09:35:43



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 50948

Well Name & No. Matthews 2-8H Test No. 1 Date 4-7-13  
 Company Tug Hill Operating LLC Elevation \_\_\_\_\_ KB 1546 GL \_\_\_\_\_  
 Address 550 Bailey Ave, STE 510 Fort Worth TX 76107  
 Co. Rep / Geo. Winnie Scott Rig Patterson #172  
 Location: Sec. 8 Twp. 33 Rge. 10 Co. Barber State KS

Interval Tested 4883 - 4911 Zone Tested Viola  
 Anchor Length 28' Drill Pipe Run 4311 Mud Wt. 9.1  
 Top Packer Depth 4878 Drill Collars Run 544 Vis 52  
 Bottom Packer Depth 4823 Wt. Pipe Run 0 WL 4.0  
 Total Depth 4911 Chlorides 12.000 ppm System LCM 0

Blow Description IF: weak blow 1/8"  
ISL: NO blow back  
FF: weak blow 1/4"  
ISL: NO blow back

Rec	Feet of	%gas	%oil	%water	%mud
Rec <u>30'</u>	Feet of <u>W.M</u>	<u>830.26</u>			
Rec _____	Feet of _____	<u>CURTIS TURNER</u>		<u>5</u>	<u>95</u>
Rec _____	Feet of _____	<u>Curtis</u>			
Rec _____	Feet of _____				
Rec _____	Feet of _____				

Rec Total 30 BHT 122 Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm  
 (A) Initial Hydrostatic 2333  Test 1250 125.00 T-On Location 2:15  
 (B) First Initial Flow 21  Jars 250.00 T-Started 3:17  
 (C) First Final Flow 89  Safety Joint 75.00 T-Open 11:12  
 (D) Initial Shut-In 1665  Circ Sub \_\_\_\_\_ T-Pulled 14:15  
 (E) Second Initial Flow 30  Hourly Standby 3 hours 300.00 T-Out 19:15  
 (F) Second Final Flow 95  Mileage 100/155.00 Comments \_\_\_\_\_  
 (G) Final Shut-In 1620  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 2330  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_

Initial Open 30  Shale Packer \_\_\_\_\_  Ruined Packer \_\_\_\_\_  
 Initial Shut-In 60  Extra Packer 2 1/8" packers 500.00  Extra Copies \_\_\_\_\_  
 Final Flow 45  Extra Recorder \_\_\_\_\_ Sub Total 0  
 Final Shut-In 90  Day Standby \_\_\_\_\_ Total 3080  
 Accessibility 150.00 MR/DST Disc't \_\_\_\_\_  
 Sub Total 3080 ~~150.00~~ 2655.00

Approved By \_\_\_\_\_ Our Representative Cheryl Scott  
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