



DRILL STEM TEST REPORT

Prepared For: **Mid-Con Operating**

2431 E. 61stST
Ste850
Tulsa, Ok 74136-1236

ATTN: Ryan Logsdon

Hagerman #13-10

10-20s-19w Pawnee

Start Date: 2012.10.22 @ 08:20:20

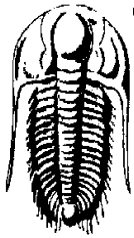
End Date: 2012.10.22 @ 21:38:45

Job Ticket #: 48580 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
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Printed: 2013.03.14 @ 13:43:44

Mid-Con Operating
10-20s-19w Pawnee
Hagerman #13-10
DST # 1
SOOY Sand
2012.10.22



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Mid-Con Operating
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Ste850
Tulsa, Ok 74136-1236
ATTN: Ryan Logsdon

10-20s-19w Pawnee
Hagerman #13-10
Job Ticket: 48580 **DST#: 1**
Test Start: 2012.10.22 @ 08:20:20

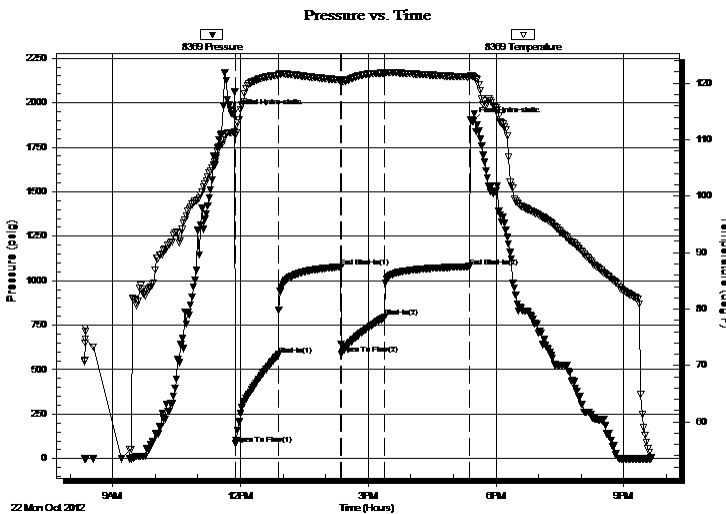
GENERAL INFORMATION:

Formation: **SOOY Sand**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 11:52:45
Time Test Ended: 21:38:45
Interval: **4147.00 ft (KB) To 4189.00 ft (KB) (TVD)**
Total Depth: 4189.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair
Reference Elevations: 2244.00 ft (KB)
2231.00 ft (CF)
KB to GR/CF: 13.00 ft
Test Type: Conventional Bottom Hole (Initial)
Tester: Ray Schwager
Unit No: 42

Serial #: 8369 Inside
Press @ Run Depth: 794.16 psig @ 4154.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2012.10.22 End Date: 2012.10.22 Last Calib.: 2012.10.22
Start Time: 08:20:20 End Time: 21:38:45 Time On Btm: 2012.10.22 @ 11:49:15
Time Off Btm: 2012.10.22 @ 17:26:45

TEST COMMENT: 60-IFP-strg bl in 3 min
90-ISIP-no bl bk
60-FFP-strg bl in 5min
120FSIP-2 1/2"bl bk

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1936.36	111.28	Initial Hydro-static
4	83.18	110.96	Open To Flow (1)
64	584.10	121.45	Shut-In(1)
152	1077.98	120.57	End Shut-In(1)
153	589.24	120.39	Open To Flow (2)
214	794.16	121.85	Shut-In(2)
334	1079.54	121.13	End Shut-In(2)
338	1895.55	121.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
0.00	930'GIP	0.00
279.00	CO	1.37
372.00	GMMWCO 30%G10%W20%M40%O	2.37
1302.00	Water	18.26

Gas Rates

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



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TOOL DIAGRAM

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Hagerman #13-10

Job Ticket: 48580

DST#: 1

Test Start: 2012.10.22 @ 08:20:20

Tool Information

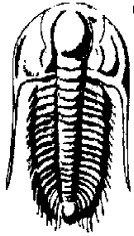
Drill Pipe:	Length: 3552.00 ft	Diameter: 3.80 inches	Volume: 49.83 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 592.00 ft	Diameter: 2.25 inches	Volume: 2.91 bbl	Weight to Pull Loose: 125000.0 lb
			<u>Total Volume: 52.74 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 96000.00 lb
Depth to Top Packer:	4147.00 ft			Final 106000.0 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	42.00 ft			
Tool Length:	70.00 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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Change Over Sub	1.00			4120.00	
Shut In Tool	5.00			4125.00	
Hydraulic tool	5.00			4130.00	
Jars	5.00			4135.00	
Safety Joint	2.00			4137.00	
Packer	5.00			4142.00	28.00 Bottom Of Top Packer
Packer	5.00			4147.00	
Stubb	1.00			4148.00	
Perforations	6.00			4154.00	
Recorder	0.00	8369	Inside	4154.00	
Recorder	0.00	8700	Outside	4154.00	
Blank Spacing	32.00			4186.00	
Bullnose	3.00			4189.00	42.00 Bottom Packers & Anchor

Total Tool Length: 70.00



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FLUID SUMMARY

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Hagerman #13-10

Job Ticket: 48580 **DST#: 1**
Test Start: 2012.10.22 @ 08:20:20

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 37 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 32000 ppm
Viscosity: 50.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.96 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 3000.00 ppm		
Filter Cake: 1.00 inches		

Recovery Information

Recovery Table

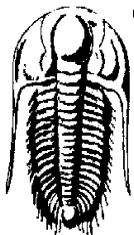
Length ft	Description	Volume bbl
0.00	930'GIP	0.000
279.00	CO	1.372
372.00	GMWCO 30%G10%W20%M40%O	2.367
1302.00	Water	18.264

Total Length: 1953.00 ft Total Volume: 22.003 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: RW .22@70F



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GAS RATES

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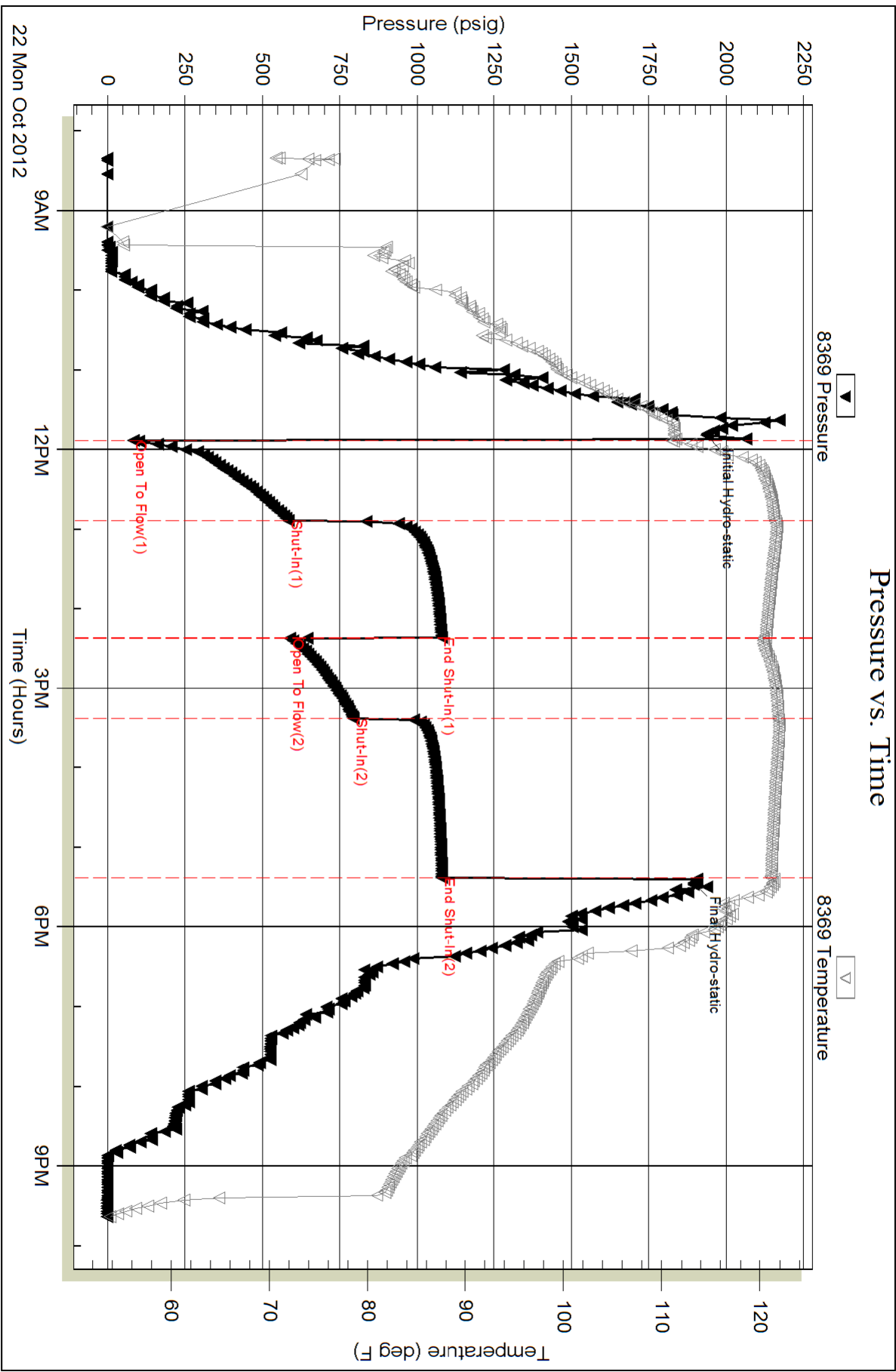
Test Start: 2012.10.22 @ 08:20:20

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
		0.00	0.00	0.00



Serial #: 8700

Outside Mid-Con Operating

Hagerman #13-10

DST Test Number: 1

