



DRILL STEM TEST REPORT

Prepared For: **TDI INC**

1310 Bison RD
Hays KS 67601

ATTN: Herb Dines

Alta #1

21-15s-18w Ellis,KS

Start Date: 2013.12.11 @ 00:38:07

End Date: 2013.12.11 @ 10:05:07

Job Ticket #: 039770 DST #: 1

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

Printed: 2013.12.13 @ 13:46:06

TDI INC
21-15s-18w Ellis,KS
Alta #1
DST # 1
LKC-H-I-J
2013.12.11



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

TDI INC
1310 Bison RD
Hays KS 67601
ATTN: Herb Dines

21-15s-18w Ellis,KS
Alta #1
Job Ticket: 039770 **DST#: 1**
Test Start: 2013.12.11 @ 00:38:07

GENERAL INFORMATION:

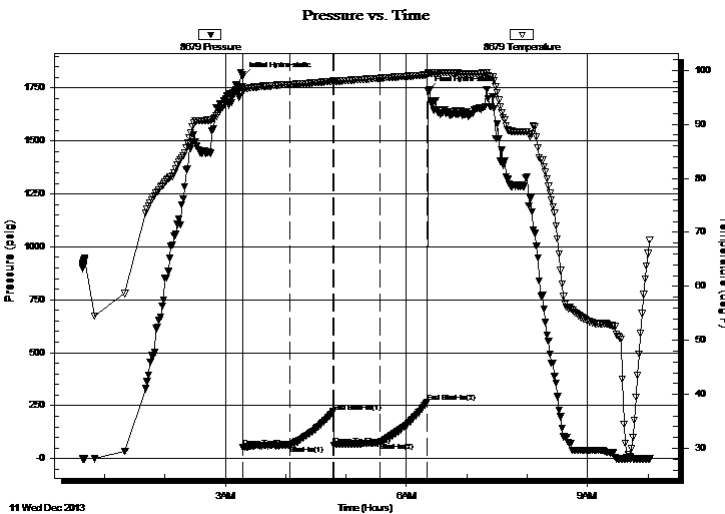
Formation: **LKC-H-I-J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 03:17:37
Time Test Ended: 10:05:07
Interval: **3418.00 ft (KB) To 3500.00 ft (KB) (TVD)**
Total Depth: 3700.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Reference Elevations: 2021.00 ft (KB)
2009.00 ft (CF)
KB to GR/CF: 12.00 ft

Serial #: 8679 Outside

Press@RunDepth: 76.78 psig @ 3486.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2013.12.11 End Date: 2013.12.11 Last Calib.: 2013.12.11
Start Time: 00:38:08 End Time: 10:02:07 Time On Btm: 2013.12.11 @ 03:17:07
Time Off Btm: 2013.12.11 @ 06:21:07

TEST COMMENT: IFP=Good blow BOB in 34-1/2 min
IS=Dead no blow back
FFP=Good blow BOB in 7 Min
FS=Dead no blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1805.54	96.91	Initial Hydro-static
1	52.78	96.15	Open To Flow (1)
47	62.10	97.35	Shut-In(1)
90	220.66	97.98	End Shut-In(1)
91	63.83	97.92	Open To Flow (2)
137	76.78	98.53	Shut-In(2)
184	266.25	99.15	End Shut-In(2)
184	1737.71	99.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
36.00	Mud w ith a scum of oil	0.50
31.00	GOCM 25%G 15%O 60%M	0.43
0.00	1102=GIP	0.00

Gas Rates

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



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TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI INC
1310 Bison RD
Hays KS 67601
ATTN: Herb Dines

21-15s-18w Ellis,KS
Alta #1
Job Ticket: 039770 **DST#: 1**
Test Start: 2013.12.11 @ 00:38:07

Tool Information

Drill Pipe:	Length: 3410.00 ft	Diameter: 3.80 inches	Volume: 47.83 bbl	Tool Weight:	2400.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	24000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume: 47.83 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	12.00 ft			String Weight: Initial	30000.00 lb
Depth to Top Packer:	3418.00 ft			Final	32000.00 lb
Depth to Bottom Packer:	3500.00 ft				
Interval between Packers:	82.00 ft				
Tool Length:	302.00 ft				
Number of Packers:	3	Diameter: 6.75 inches			

Tool Comments:

Tool Description Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Change Over Sub	1.00			3399.00	
Shut In Tool	5.00			3404.00	
Hydraulic tool	5.00			3409.00	
Packer	4.00			3413.00	20.00 Bottom Of Top Packer
Packer	5.00			3418.00	
Stubb	1.00			3419.00	
Perforations	3.00			3422.00	
Change Over Sub	1.00			3423.00	
Drill Pipe	62.00			3485.00	
Change Over Sub	1.00			3486.00	
Recorder	0.00	6625	Inside	3486.00	
Recorder	0.00	8679	Outside	3486.00	
Perforations	10.00			3496.00	
Blank Off Sub	1.00			3497.00	
Stubb	3.00			3500.00	82.00 Tool Interval
Packer	1.00			3501.00	
Stubb	1.00			3502.00	
Perforations	2.00			3504.00	
Recorder	0.00	8166	Below	3504.00	
Change Over Sub	1.00			3505.00	
Drill Pipe	190.00			3695.00	
Change Over Sub	1.00			3696.00	
Bullnose	4.00			3700.00	200.00 Bottom Packers & Anchor
Total Tool Length:	302.00				



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FLUID SUMMARY

TDI INC

21-15s-18w Ellis,KS

1310 Bison RD
Hays KS 67601

Alta #1

Job Ticket: 039770

DST#: 1

ATTN: Herb Dines

Test Start: 2013.12.11 @ 00:38:07

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: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5900.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
36.00	Mud with a scum of oil	0.505
31.00	GOCM 25%G 15%O 60%M	0.435
0.00	1102=GIP	0.000

Total Length: 67.00 ft Total Volume: 0.940 bbl

Num Fluid Samples: 0

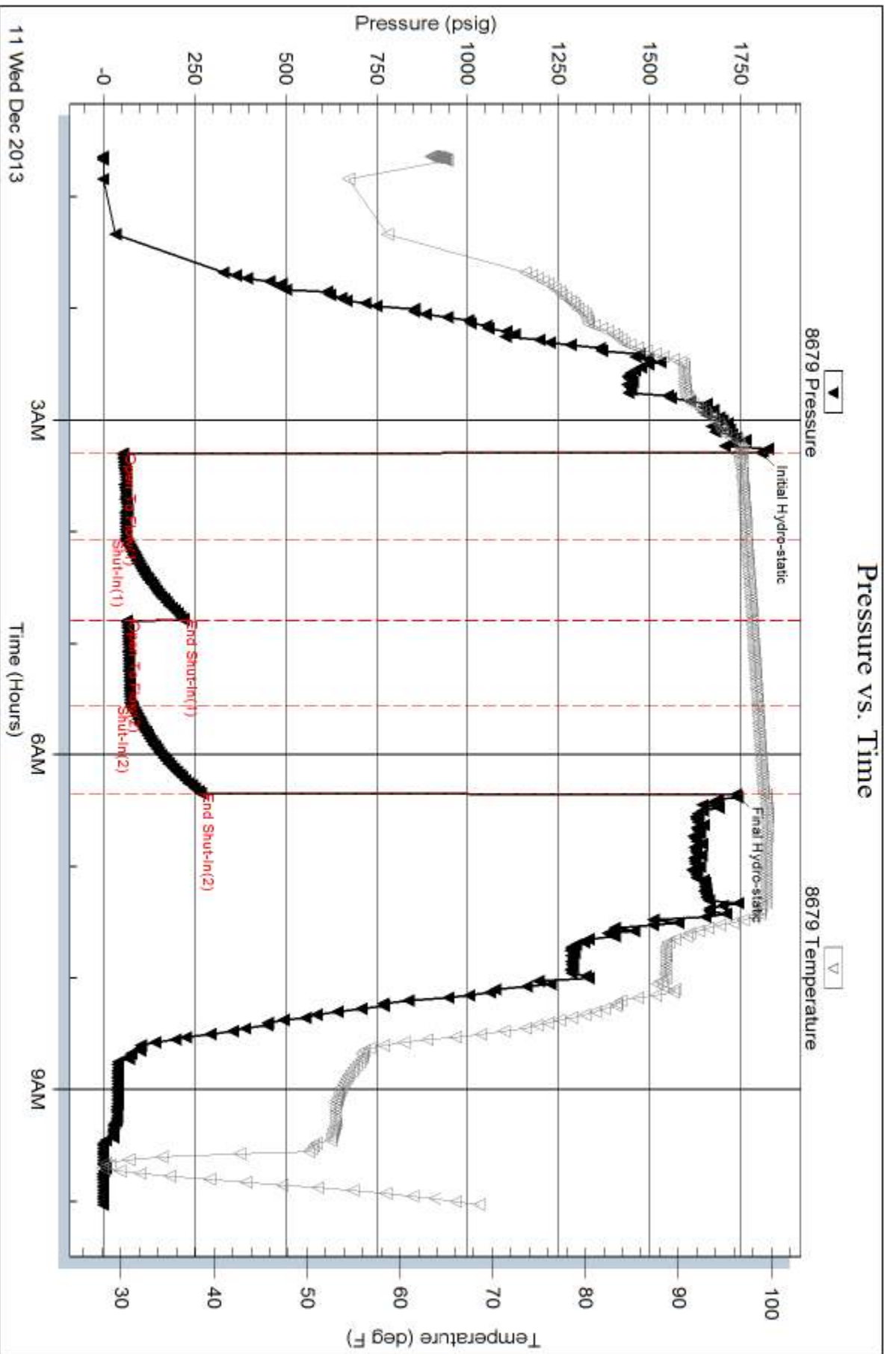
Num Gas Bombs: 0

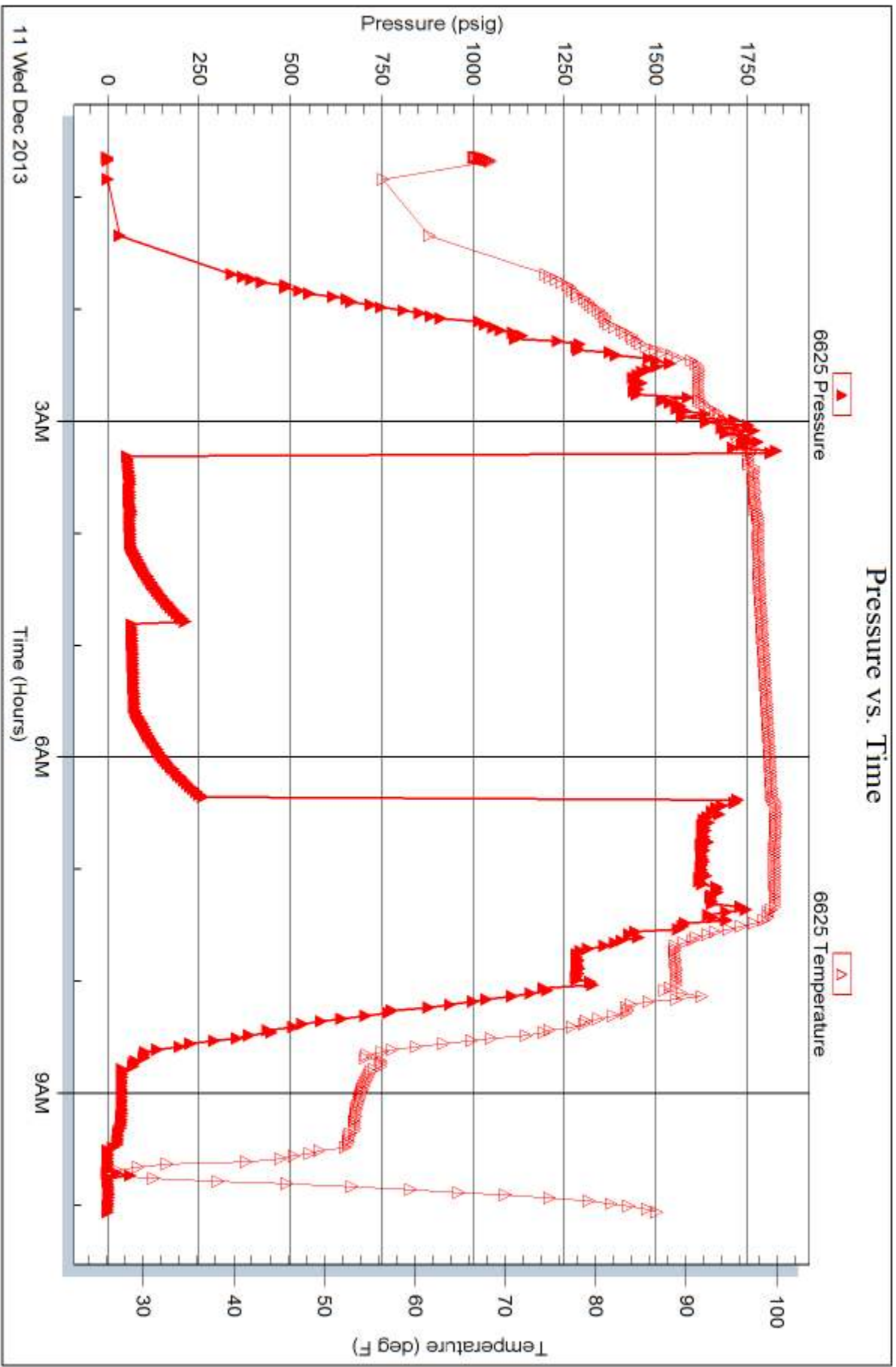
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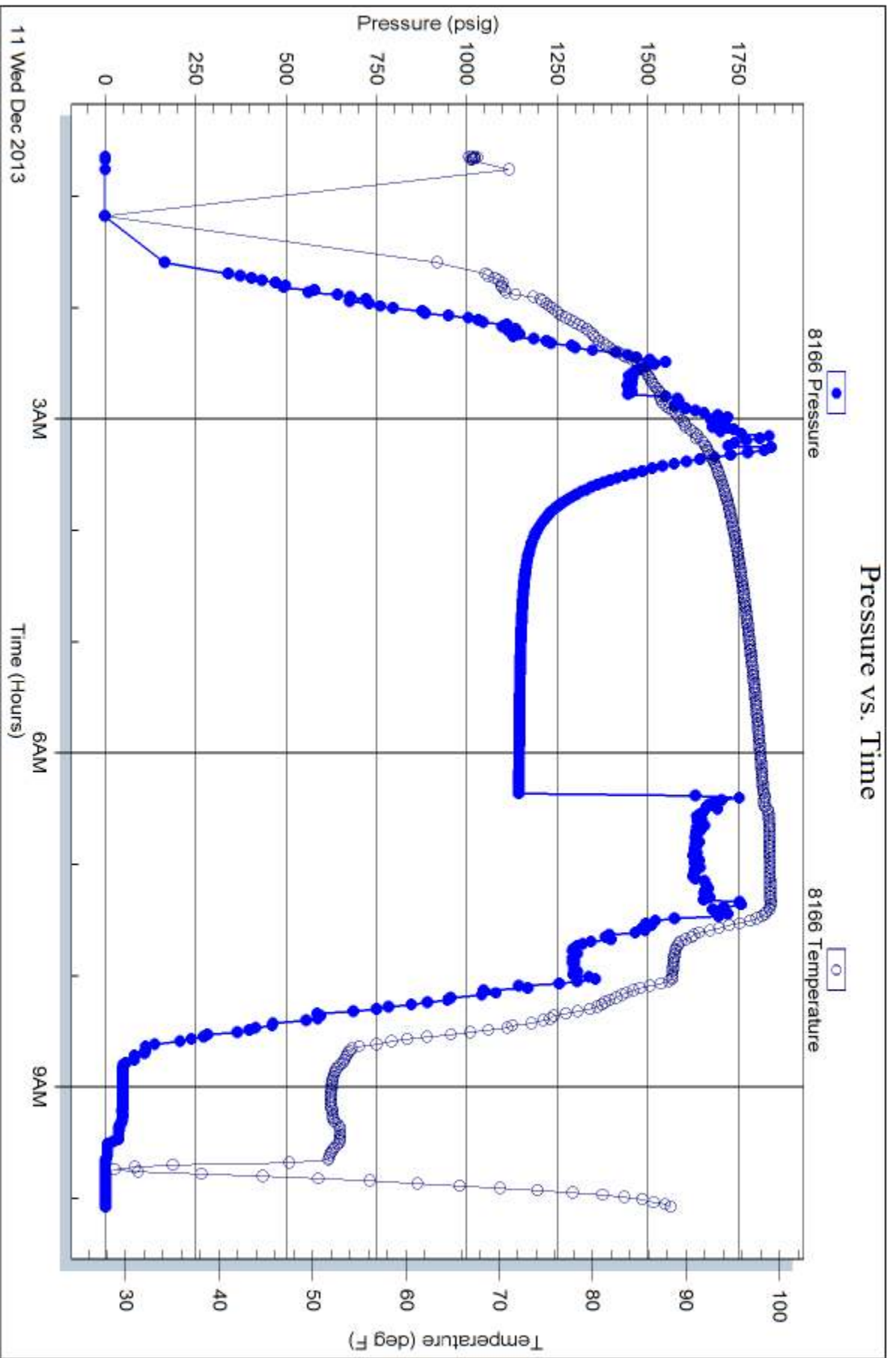
Laboratory Name:

Laboratory Location:

Recovery Comments:









TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 039770

4/10

Well Name & No. Alta #1 Test No. 1 Date 12-10-13
 Company TDI INC Elevation 2021 KB 2009 GL
 Address 1310 BISON RD Hays KS 67601 + 9696
 Co. Rep / Geo. _____ Rig SOUTH WIND #1
 Location: Sec. 21 Twp. 15 S Rge. 18 W Co. ELLIS State KS

Interval Tested 3418 - 3500 Zone Tested LKC - H-I-F
 Anchor Length 82 Anchor 200' Tq.L Drill Pipe Run 3410 Mud Wt. 9.0
 Top Packer Depth 3413 Drill Collars Run 0 Vis 53
 Bottom Packer Depth 3418 Wt. Pipe Run 0 WL 7.40
 Total Depth 3700 Chlorides 5900 ppm System LCM 2
 Blow Description AP - Good Blow BOB IN 34 1/2 min
BI - Dead NO Blow Back
AP - Good BOB IN 7 min
BI - Dead NO Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>36</u>	<u>Mud with a scum of oil</u>				
<u>31</u>	<u>60cm</u>	<u>25</u>	<u>15</u>		<u>60</u>
	<u>1102 - GIP</u>				

Rec Total 607 BHT 99 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1806 Test 1150 T-On Location 23:50
 (B) First Initial Flow 53 Jars _____ T-Started 00:38
 (C) First Final Flow 62 Safety Joint _____ T-Open 3:19
 (D) Initial Shut-In 221 Circ Sub _____ T-Pulled 6:19
 (E) Second Initial Flow 64 Hourly Standby _____ T-Out 10:05
 (F) Second Final Flow 77 Mileage 26 RT 40.30 Comments _____
 (G) Final Shut-In 246 Sampler _____
 (H) Final Hydrostatic 1738 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1790.30
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1790.30

Initial Open 45
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 45

Approved By _____ Our Representative Jeff Brown

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