



DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays, KS 67601

ATTN: Herb Deines

Virginia #1

16-15s-19w Ellis,KS

Start Date: 2011.11.15 @ 16:20:13

End Date: 2011.11.15 @ 22:49:52

Job Ticket #: 44271 DST #: 1

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

Printed: 2011.11.21 @ 16:59:39

TDI Inc
16-15s-19w Ellis,KS
Virginia #1
DST # 1
KC "H-J"
2011.11.15



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TDI Inc
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

16-15s-19w Ellis, KS
Virginia #1
Job Ticket: 44271 **DST#: 1**
Test Start: 2011.11.15 @ 16:20:13

GENERAL INFORMATION:

Formation: **KC "H-J"**
 Deviated: No Whipstock: 3520.00 ft (KB)
 Time Tool Opened: 18:25:23
 Time Test Ended: 22:49:52
 Interval: **3434.00 ft (KB) To 3520.00 ft (KB) (TVD)**
 Total Depth: 3520.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Paul Simpson
 Unit No: 39
 Reference Elevations: 2024.00 ft (KB)
 2014.00 ft (CF)
 KB to GR/CF: 10.00 ft

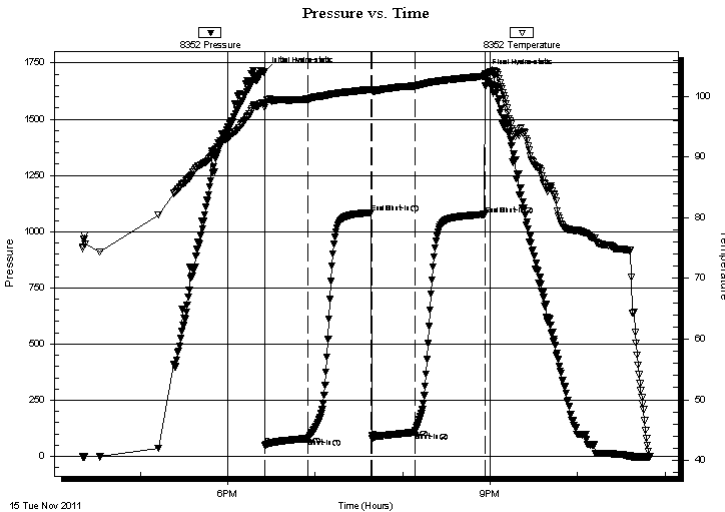
Serial #: 8352

Inside

Press @ Run Depth: 106.78 psig @ 3502.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2011.11.15 End Date: 2011.11.15 Last Calib.: 2011.11.21
 Start Time: 16:20:18 End Time: 22:49:53 Time On Btm: 2011.11.15 @ 18:25:13
 Time Off Btm: 2011.11.15 @ 20:56:33

TEST COMMENT: IF- surface blow building to BOB in 10 minutes
 IS- surface blow building to 7"
 FF -strong blow BOB in 90 seconds
 FS- surface blow building to 7"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1711.03	98.90	Initial Hydro-static
1	48.58	98.12	Open To Flow (1)
30	80.31	99.57	Shut-In(1)
73	1084.60	101.16	End Shut-In(1)
74	81.27	100.94	Open To Flow (2)
103	106.78	101.72	Shut-In(2)
151	1076.17	103.36	End Shut-In(2)
152	1701.61	103.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	gsy mo 20%g 40%o 40%m	0.84
90.00	gsy hocm 5%g 25%o 70%m	1.26
0.00	850' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

16-15s-19w Ellis, KS
Virginia #1
Job Ticket: 44271 **DST#: 1**
Test Start: 2011.11.15 @ 16:20:13

Tool Information

Drill Pipe:	Length: 3425.00 ft	Diameter: 3.80 inches	Volume: 48.04 bbl	Tool Weight: 2500.00 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: 41000.00 lb
			<u>Total Volume: 48.04 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3434.00 ft			Final 39000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	86.00 ft			
Tool Length:	106.00 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			3419.00	
Hydraulic tool	5.00			3424.00	
Packer	5.00			3429.00	20.00 Bottom Of Top Packer
Packer	5.00			3434.00	
Stubb	1.00			3435.00	
Perforations	3.00			3438.00	
Change Over Sub	0.50			3438.50	
Blank Spacing	63.00			3501.50	
Change Over Sub	0.50			3502.00	
Recorder	0.00	8352	Inside	3502.00	
Recorder	0.00	8017	Outside	3502.00	
Perforations	15.00			3517.00	
Bullnose	3.00			3520.00	86.00 Bottom Packers & Anchor

Total Tool Length: 106.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

16-15s-19w Ellis,KS
Virginia #1
Job Ticket: 44271
Test Start: 2011.11.15 @ 16:20:13

DST#: 1

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: bbl		
Water Loss: 7.18 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	gsy mo 20%g 40%o 40%m	0.842
90.00	gsy hocm 5%g 25%o 70%m	1.262
0.00	850' GIP	0.000

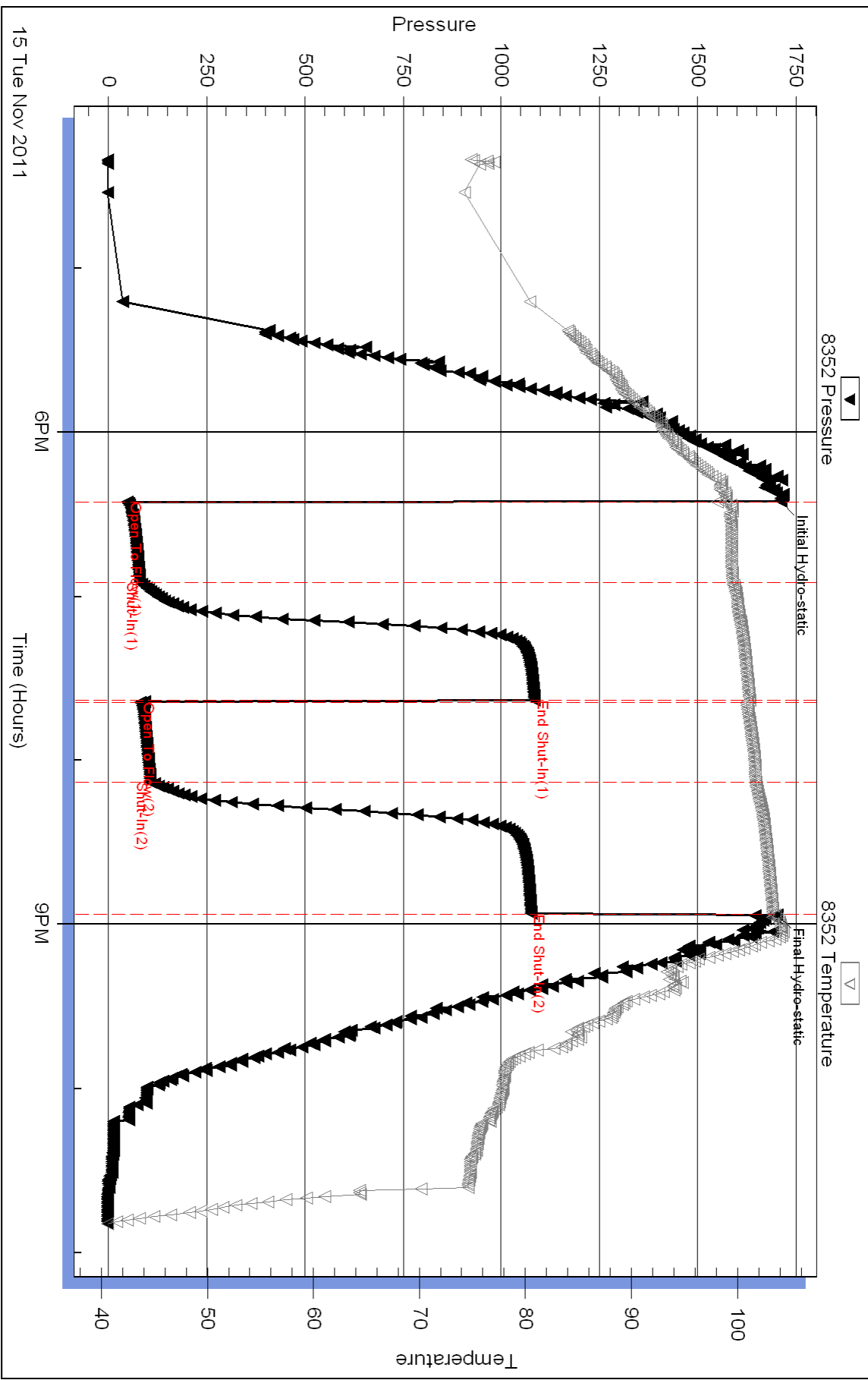
Total Length: 150.00 ft Total Volume: 2.104 bbl

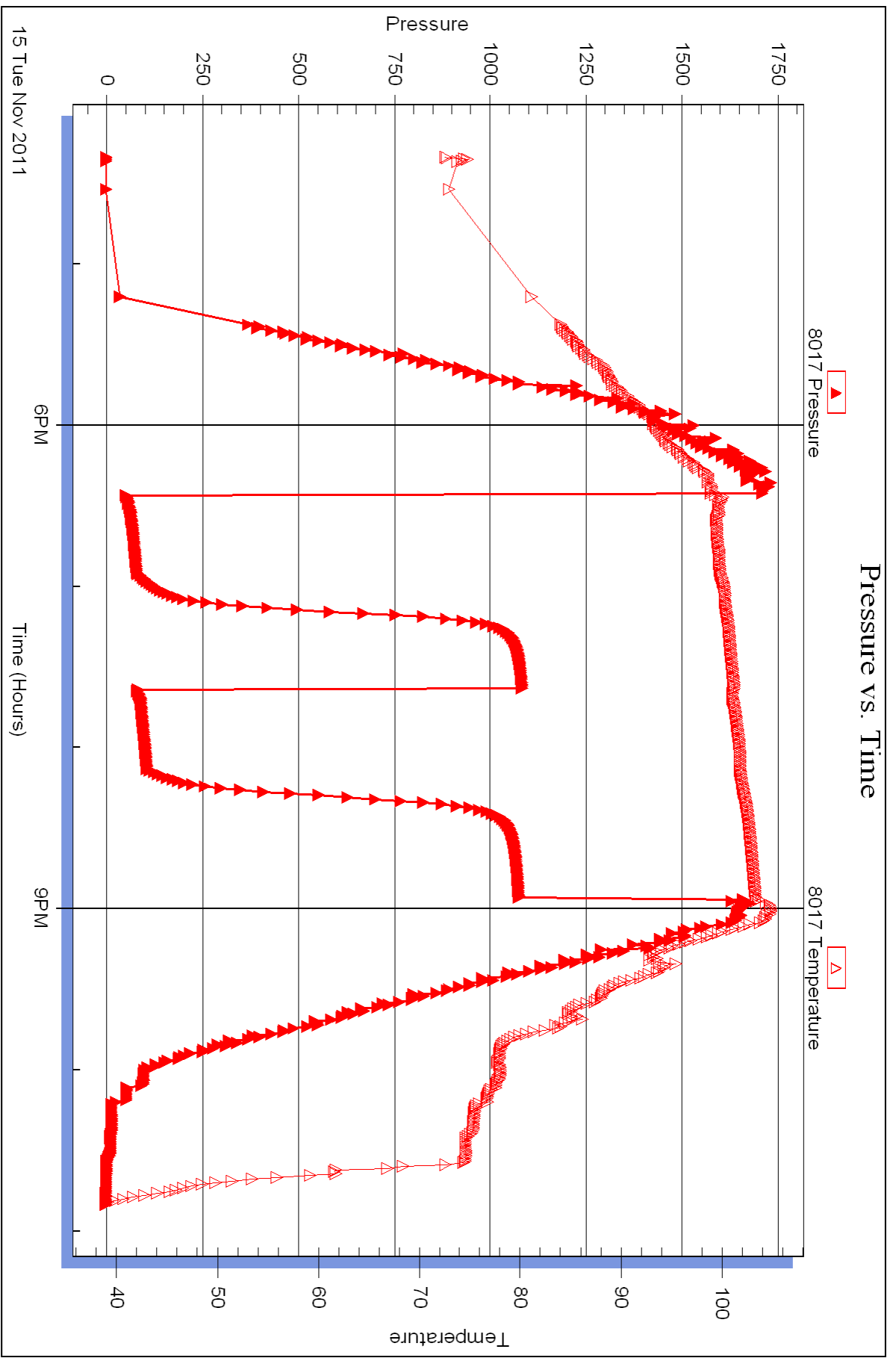
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **TDI Inc**

1310 Bison Rd
Hays, KS 67601

ATTN: Herb Deines

Virginia #1

16-15s-19w Ellis,KS

Start Date: 2011.11.17 @ 01:18:05

End Date: 2011.11.17 @ 07:34:59

Job Ticket #: 44272 DST #: 2

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

Printed: 2011.11.21 @ 17:02:36

TDI Inc
16-15s-19w Ellis,KS
Virginia #1
DST # 2
LKC "C"
2011.11.17



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TDI Inc
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

16-15s-19w Ellis, KS
Virginia #1
Job Ticket: 44272 **DST#: 2**
Test Start: 2011.11.17 @ 01:18:05

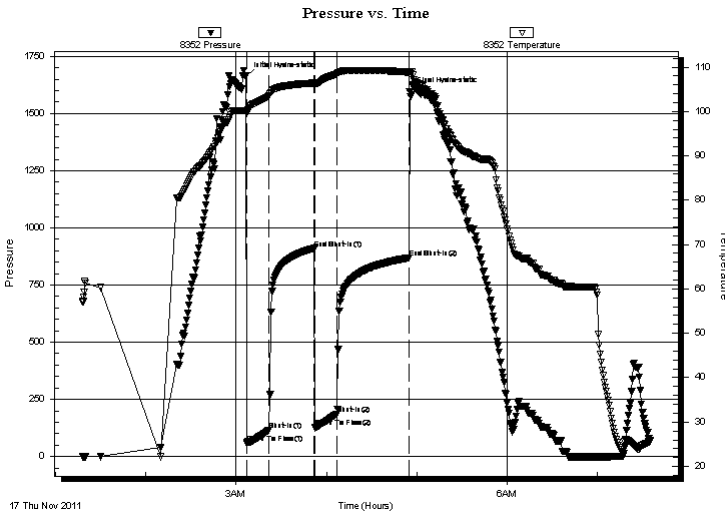
GENERAL INFORMATION:

Formation: **LKC "C"**
Deviated: No Whipstock: 3520.00 ft (KB)
Time Tool Opened: 03:07:00
Time Test Ended: 07:34:59
Interval: **3330.00 ft (KB) To 3362.00 ft (KB) (TVD)**
Total Depth: 3750.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Straddle (Reset)
Tester: Andy Carreira
Unit No: 39
Reference Elevations: 2024.00 ft (KB)
2014.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 8352 Inside
Press @ Run Depth: 185.98 psig @ 3331.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2011.11.17 End Date: 2011.11.17 Last Calib.: 2011.11.17
Start Time: 01:18:05 End Time: 07:34:59 Time On Btm: 2011.11.17 @ 03:06:40
Time Off Btm: 2011.11.17 @ 04:55:20

TEST COMMENT: IF: BOB 1 Min
IS: BOB 5 Min, After bleed off
FF: BOB Immediately
FS: Gas to surface during bleed off

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1663.29	100.21	Initial Hydro-static
1	56.23	99.56	Open To Flow (1)
16	114.85	103.48	Shut-In(1)
46	909.96	106.39	End Shut-In(1)
46	125.81	106.23	Open To Flow (2)
61	185.98	108.47	Shut-In(2)
108	868.57	108.84	End Shut-In(2)
109	1597.60	108.98	Final Hydro-static

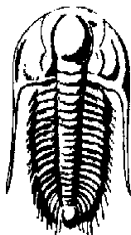
Recovery

Length (ft)	Description	Volume (bbl)
125.00	GMCO g=40% m=20% o=40%	1.75
350.00	GCO g=30% o=70%	4.91

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

TDI Inc
1310 Bison Rd
Hays, KS 67601
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16-15s-19w Ellis, KS
Virginia #1
Job Ticket: 44272 **DST#: 2**
Test Start: 2011.11.17 @ 01:18:05

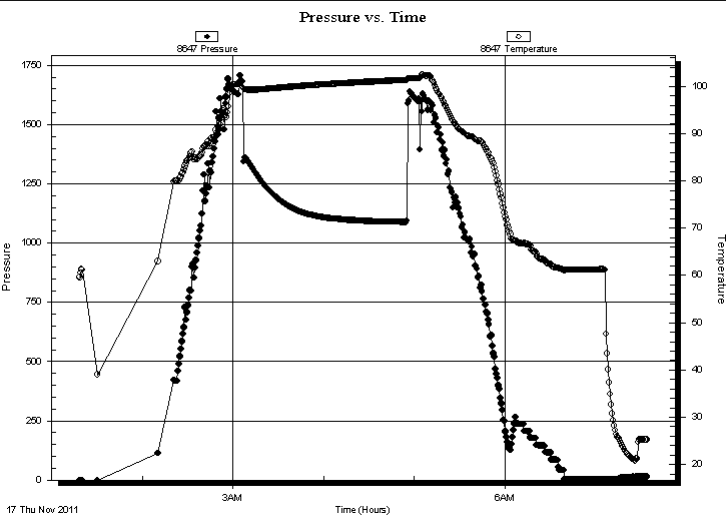
GENERAL INFORMATION:

Formation: LKC "C"	Test Type: Conventional Straddle (Reset)
Deviated: No Whipstock: 3520.00 ft (KB)	Tester: Andy Carreira
Time Tool Opened: 03:07:00	Unit No: 39
Time Test Ended: 07:34:59	
Interval: 3330.00 ft (KB) To 3362.00 ft (KB) (TVD)	Reference Elevations: 2024.00 ft (KB)
Total Depth: 3750.00 ft (KB) (TVD)	2014.00 ft (CF)
Hole Diameter: 7.88 inches	Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 8647 Below (Straddle)

Press @RunDepth: psig @ 3372.00 ft (KB)	Capacity: 8000.00 psig
Start Date: 2011.11.17 End Date: 2011.11.17	Last Calib.: 2011.11.17
Start Time: 01:18:28 End Time: 07:34:03	Time On Btm
	Time Off Btm

TEST COMMENT: IF: BOB 1 Min
IS: BOB 5 Min, After bleed off
FF: BOB Immediately
FS: Gas to surface during bleed off



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
125.00	GMCO g=40% m=20% o=40%	1.75
350.00	GCO g=30% o=70%	4.91

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

TDI Inc
1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

16-15s-19w Ellis,KS
Virginia #1
Job Ticket: 44272 **DST#: 2**
Test Start: 2011.11.17 @ 01:18:05

Tool Information

Drill Pipe:	Length: 3327.00 ft	Diameter: 3.80 inches	Volume: 46.67 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 52000.00 lb
			<u>Total Volume: 46.67 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3330.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	3362.00 ft			
Interval between Packers:	32.00 ft			
Tool Length:	445.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments: TD Log=3752, TD Geograph=3750, TD Test=3751

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3311.00	
Shut In Tool	5.00			3316.00	
Hydraulic tool	5.00			3321.00	
Packer	5.00			3326.00	20.00 Bottom Of Top Packer
Packer	4.00			3330.00	
Stubb	1.00			3331.00	
Recorder	0.00	8352	Inside	3331.00	
Recorder	0.00	8017	Outside	3331.00	
Perforations	27.00			3358.00	
Blank Off Sub	1.00			3359.00	
Blank Spacing	3.00			3362.00	32.00 Tool Interval
Packer	4.00			3366.00	
Stubb	1.00			3367.00	
Perforations	4.00			3371.00	
Change Over Sub	1.00			3372.00	
Recorder	0.00	8647	Below	3372.00	
Drill Pipe	378.00			3750.00	
Change Over Sub	1.00			3751.00	
Perforations	1.00			3752.00	
Bullnose	3.00			3755.00	393.00 Bottom Packers & Anchor
Total Tool Length:	445.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

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1310 Bison Rd
Hays, KS 67601
ATTN: Herb Deines

16-15s-19w Ellis, KS
Virginia #1
Job Ticket: 44272
Test Start: 2011.11.17 @ 01:18:05

DST#: 2

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: 49.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.79 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3600.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	GMCO g=40% m=20% o=40%	1.753
350.00	GCO g=30% o=70%	4.910

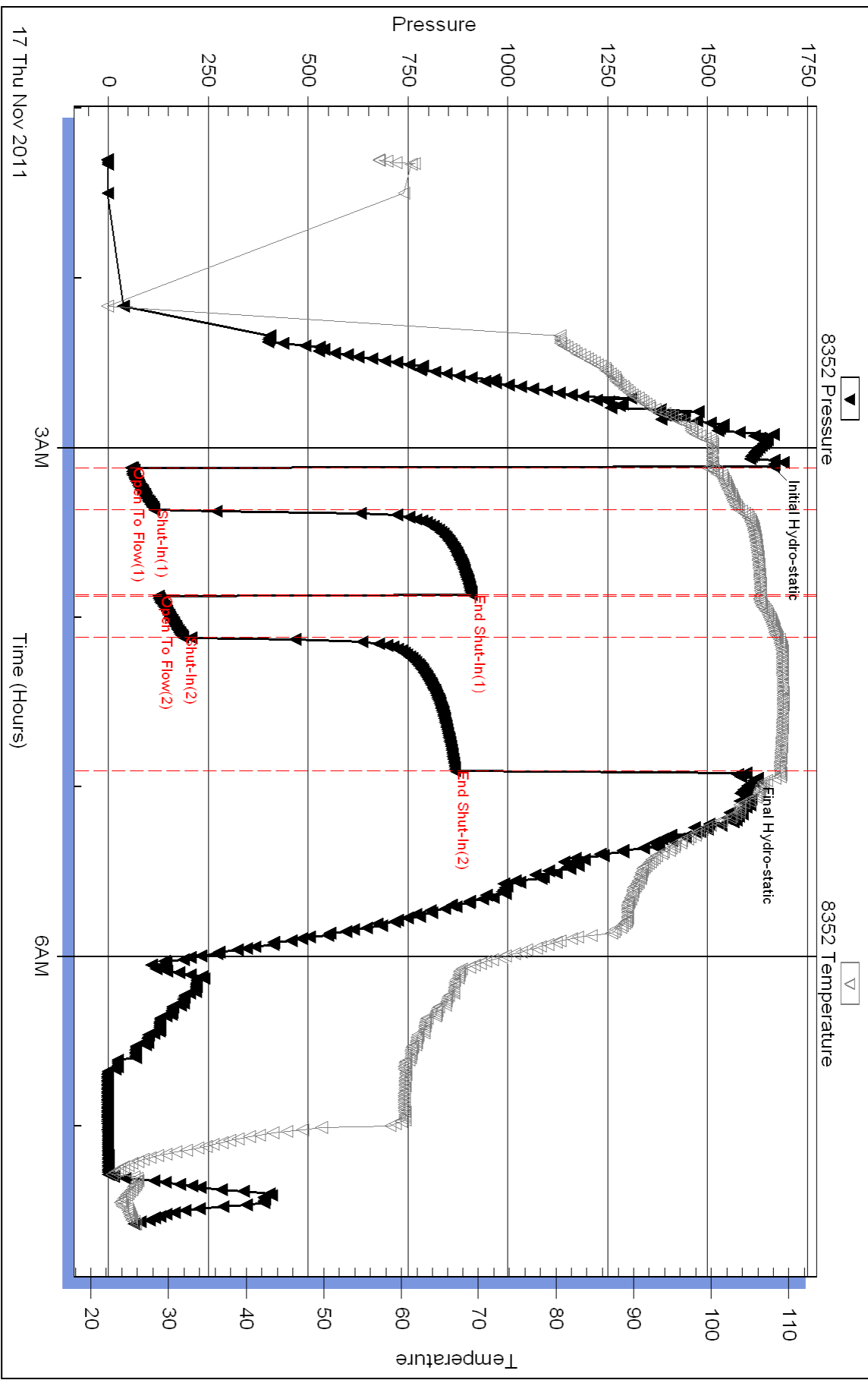
Total Length: 475.00 ft Total Volume: 6.663 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Pressure vs. Time



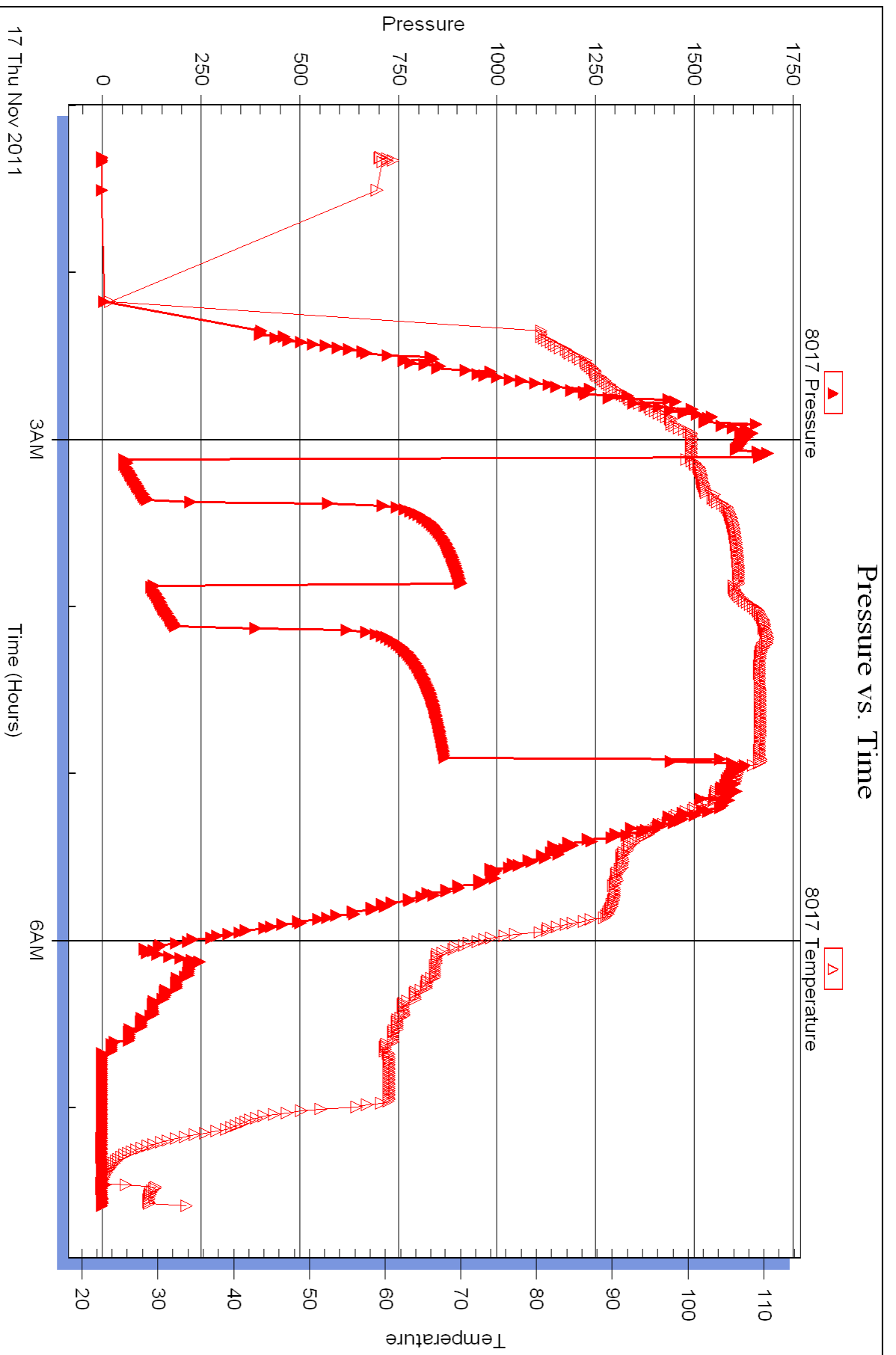
Serial #: 8017

Outside

TDI Inc

Virginia #1

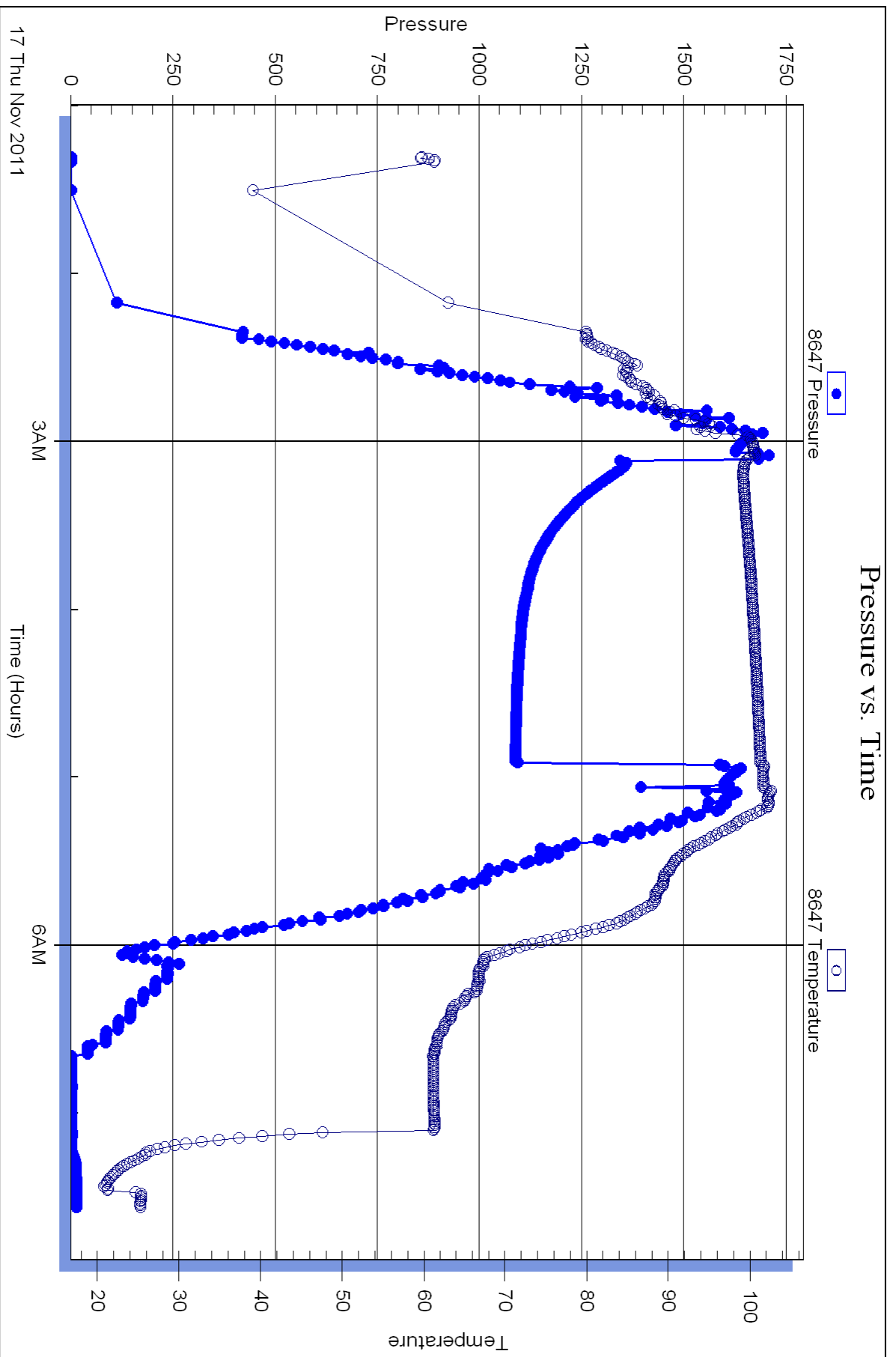
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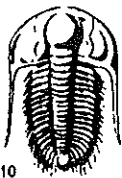


Triobite Testing, Inc

Ref. No: 44272

Printed: 2011.11.21 @ 17:02:39





TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

RECEIVED
NOV 18 2011

NO. 44271

Well Name & No. Virginia #1 BY: _____ Test No. 1 Date 11-15-11
 Company TDT Inc. Elevation 2024 KB 2014 GL _____
 Address 1310 Bison Rd. Hays Ks. 67601
 Co. Rep / Geo. Heb Deives Rig Southwind #1
 Location: Sec. 16 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3434 - 3520 Zone Tested KC - HES
 Anchor Length 86' Drill Pipe Run 3425 Mud Wt. 9.0
 Top Packer Depth 3429 Drill Collars Run _____ Vis 51
 Bottom Packer Depth 3434 Wt. Pipe Run _____ WL 7.2
 Total Depth 3520 Chlorides _____ ppm System LCM Ni/

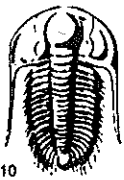
Blow Description ± F SURFACE Blow Building to Bottom of Bucket 10min.
ISI - SURFACE Blow Building to 7" IN 13min
F.P. - Blew Bottom of Bucket 1.5 min
FS - SURFACE Blow Building to 4" IN 7min

Rec	Feet of	%gas	%oil	%water	%mud
<u>60</u>	<u>AMO</u>	<u>00</u>	<u>40</u>	<u>40</u>	<u>20</u>
<u>90</u>	<u>HOCM</u>	<u>5</u>	<u>25</u>	<u>70</u>	<u>0</u>
<u>850</u>	<u>2 IP</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

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

(A) Initial Hydrostatic 1711 Test 1125' T-On Location 1500
 (B) First Initial Flow 49 Jars _____ T-Started 16:20
 (C) First Final Flow 80 Safety Joint _____ T-Open 18:25
 (D) Initial Shut-In 1085 Circ Sub _____ T-Pulled 20:55
 (E) Second Initial Flow 81 Hourly Standby _____ T-Out 22:49
 (F) Second Final Flow 107 Mileage 30 RT 42' Comments _____
 (G) Final Shut-In 1076 Sampler _____
 (H) Final Hydrostatic 1701 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 45 Day Standby _____ Total 1167'
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 45 Sub Total 1167'

Approved By _____ Our Representative [Signature]
 TriLOBITE Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

RECEIVED
NOV 18 2011

Test Ticket

NO. 44272

Well Name & No. Virginia #1 Test No. 2 Date 11-18-11
 Company TDI INC Elevation 2024 KB 2014 GL
 Address 1310 Bison Rd Hays KS 67601
 Co. Rep / Geo. Herb Deines Rig Southwind #1
 Location: Sec. 16 Twp. 15 Rge. 19 Co. Ellis State KS

Interval Tested 3330-3362 Zone Tested LKC "C"
 Anchor Length 32' Drill Pipe Run 3327 Mud Wt. 9.2
 Top Packer Depth 3330 Drill Collars Run 0 Vis 49
 Bottom Packer Depth 3362 Wt. Pipe Run 0 WL 6.8
 Total Depth 3750 Chlorides 3600 ppm System LCM 0

Blow Description FF: BOB 1min.
ISI: BOB 5min After Bleedoff
FF: BOB IMMEDIATELY
FSH WAS TO SURFACE DURING BLEEDOFF

Rec	Feet of	%gas	%oil	%water	%mud
<u>125</u>	<u>BMCO</u>	<u>40</u>	<u>40</u>		<u>20</u>
<u>350</u>	<u>GC0</u>	<u>30</u>	<u>70</u>		
<u>125</u>	<u>BMCO</u>	<u>40</u>	<u>40</u>		<u>20</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 475' BHT 108 Gravity 42 API RW @ ° F Chlorides ppm

(A) Initial Hydrostatic 1663 Test 1125' T-On Location 00:01
 (B) First Initial Flow 56 Jars T-Started 01:18
 (C) First Final Flow 114 Safety Joint T-Open 03:07
 (D) Initial Shut-In 909 Circ Sub T-Pulled 04:52
 (E) Second Initial Flow 125 Hourly Standby T-Out 07:35
 (F) Second Final Flow 185 Mileage 30 RT 42' Comments TD Log = 3752
 (G) Final Shut-In 868 Sampler TD Geolograph = 3750
 (H) Final Hydrostatic 1597 Straddle 600' Test TD = 3751
 Ruined Shale Packer
 Ruined Packer

Initial Open 15 Extra Packer Extra Copies
 Initial Shut-In 30 Extra Recorder Sub Total 0
 Final Flow 15 Day Standby Total 1767'
 Final Shut-In 45 Accessibility MP/DST Disc't
 Sub Total 1767'

Approved By _____ Our Representative [Signature] + Jim

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.