



DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Willie # 1

9-15s-19w Ellis,KS

Start Date: 2012.05.08 @ 15:00:00

End Date: 2012.05.08 @ 20:40:00

Job Ticket #: 45722 DST #: 1

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

Printed: 2012.05.10 @ 10:18:44

TDI Inc. 9-15s-19w Ellis,KS Willie # 1 DST # 1 LKC " C " 2012.05.08



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

9-15s-19w Ellis, KS
Willie # 1
Job Ticket: 45722 **DST#: 1**
Test Start: 2012.05.08 @ 15:00:00

GENERAL INFORMATION:

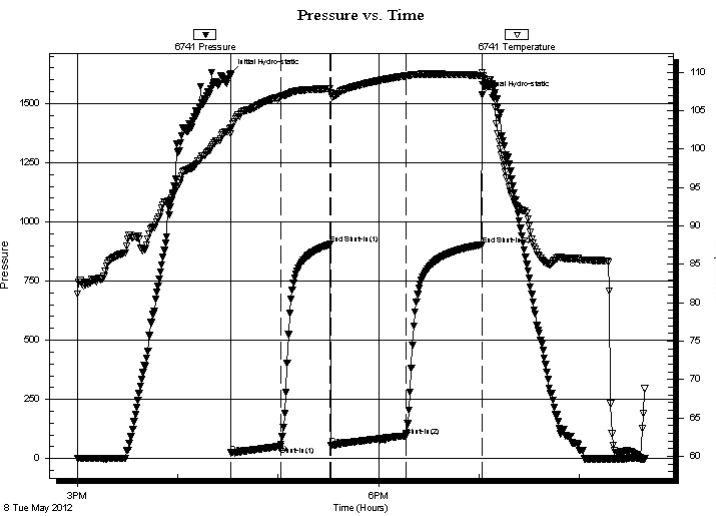
Formation: **LKC " C "**
Deviated: No Whipstock: 2043.00 ft (KB)
Time Tool Opened: 16:31:45
Time Test Ended: 20:40:00
Interval: **3349.00 ft (KB) To 3370.00 ft (KB) (TVD)**
Total Depth: 3370.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 41
Reference Elevations: 2043.00 ft (KB)
2033.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 6741

Inside

Press @ Run Depth: 95.35 psig @ 3350.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2012.05.08 End Date: 2012.05.08 Last Calib.: 2012.05.08
Start Time: 15:00:05 End Time: 20:39:10 Time On Btm: 2012.05.08 @ 16:31:40
Time Off Btm: 2012.05.08 @ 19:01:55

TEST COMMENT: 30-IFP- BOB in 4 min
30-ISIP- Surface Blow Building to 3"
45-FFP- BOB in 1 1/4 min
45-FSIP- Surface Blow Building to 7 1/2" in 30 min



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1625.27	102.81	Initial Hydro-static
1	23.44	101.99	Open To Flow (1)
30	50.75	106.80	Shut-In(1)
60	905.14	107.84	End Shut-In(1)
60	56.43	107.37	Open To Flow (2)
105	95.35	109.56	Shut-In(2)
150	903.98	109.61	End Shut-In(2)
151	1535.82	109.99	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	GO 55%g 45%o	0.21
62.00	GMCO 25%g 5% m 70%o	0.87
62.00	GMMCO 30%g 2% m 18% w 50%o	0.87
62.00	MOCW 5% m 10% o 85% w	0.87
0.00	GIP 1575	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

9-15s-19w Ellis,KS
Willie # 1
Job Ticket: 45722 **DST#: 1**
Test Start: 2012.05.08 @ 15:00:00

Tool Information

Drill Pipe:	Length: 3326.00 ft	Diameter: 3.80 inches	Volume: 46.66 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose:	40000.00 lb
			<u>Total Volume: 46.81 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial	39000.00 lb
Depth to Top Packer:	3349.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	21.00 ft				
Tool Length:	41.00 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			3334.00	
Hydraulic tool	5.00			3339.00	
Packer	5.00			3344.00	20.00 Bottom Of Top Packer
Packer	5.00			3349.00	
Stubb	1.00			3350.00	
Recorder	0.00	6741	Inside	3350.00	
Recorder	0.00	8734	Outside	3350.00	
Perforations	17.00			3367.00	
Bullnose	3.00			3370.00	21.00 Bottom Packers & Anchor
Total Tool Length:	41.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc. **9-15s-19w Ellis,KS**
 1310 Bison Rd **Willie # 1**
 Hays KS 67601 Job Ticket: 45722 **DST#: 1**
 ATTN: Herb Deines Test Start: 2012.05.08 @ 15:00:00

Mud and Cushion Information

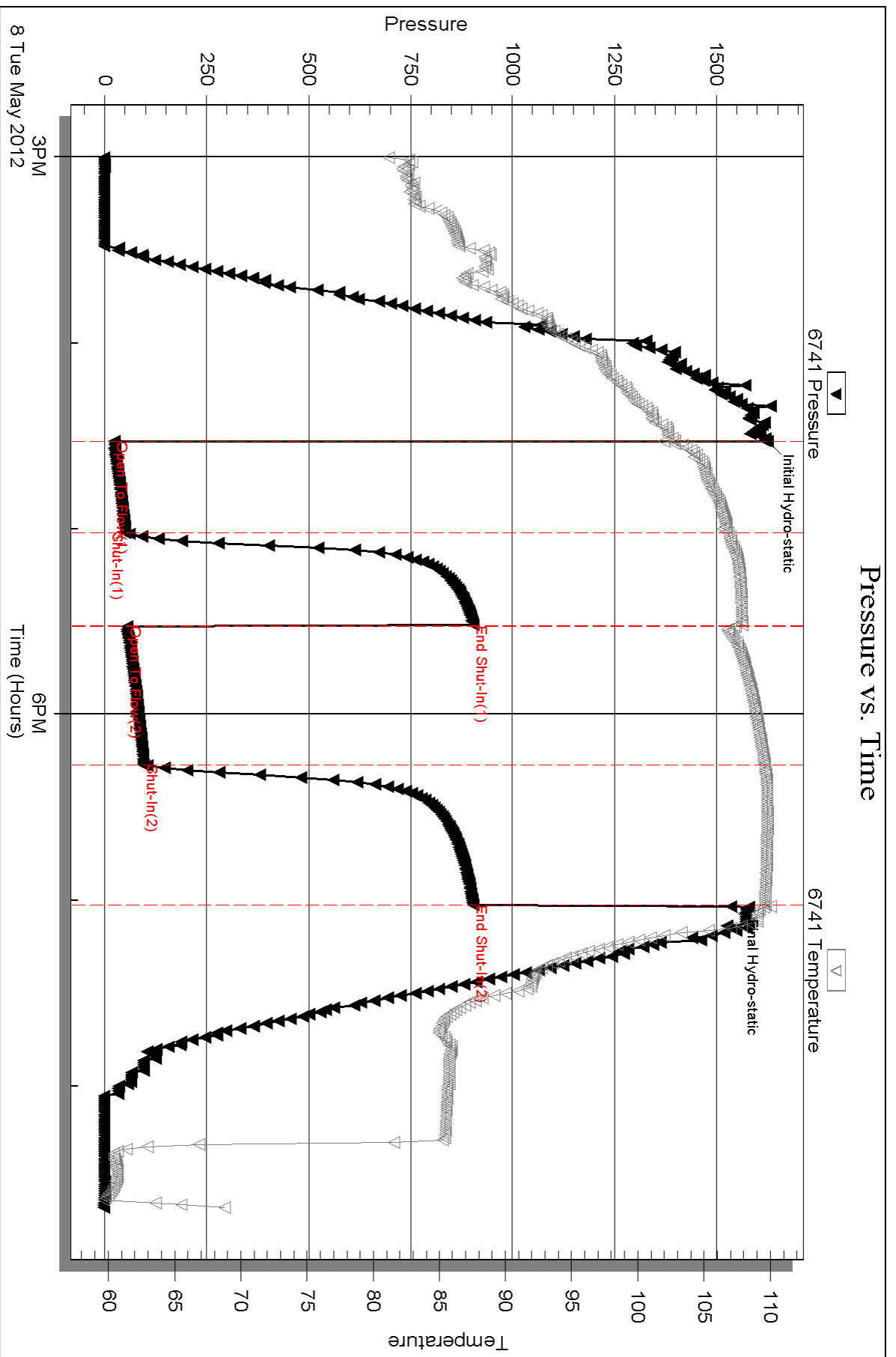
Mud Type: Gel Chem	Cushion Type:	Oil API: 39 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 30000 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl	
Water Loss: 6.78 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 1900.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
35.00	GO 55%g 45%o	0.209
62.00	GMCO 25%g 5%m 70%o	0.870
62.00	GMWCO 30%g 2%m 18%w 50%o	0.870
62.00	MOCW 5%m 10%o 85%w	0.870
0.00	GIP 1575	0.000

Total Length: 221.00 ft Total Volume: 2.819 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments: .203 @ 71

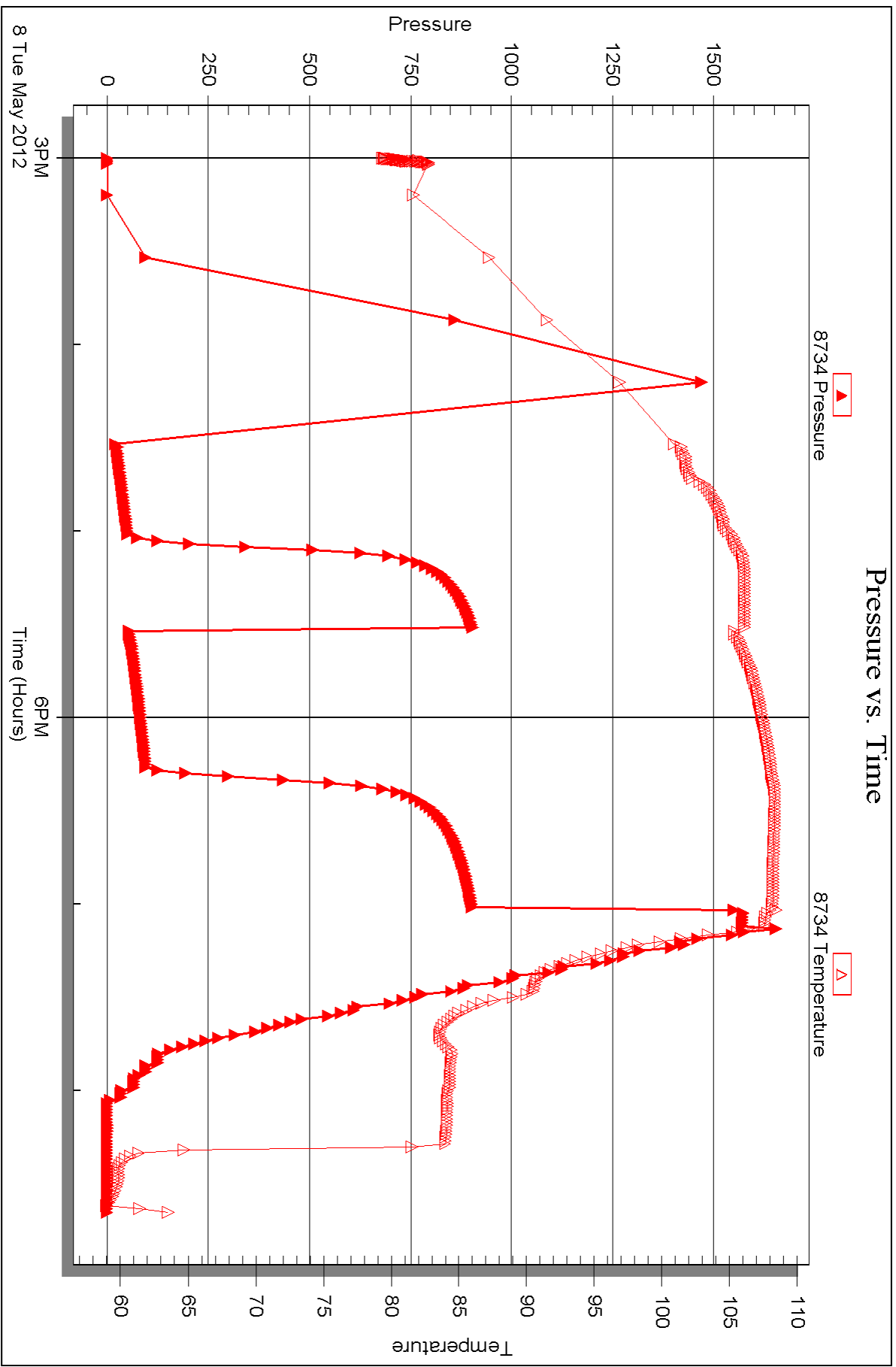


Serial #: 8734

Outside TDI Inc.

Wille # 1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 45722

Printed: 2012.05.10 @ 10:18:47



DRILL STEM TEST REPORT

Prepared For: **TDI Inc.**

1310 Bison Rd
Hays KS 67601

ATTN: Herb Deines

Willie # 1

9-15s-19w Ellis,KS

Start Date: 2012.05.09 @ 12:15:00

End Date: 2012.05.09 @ 17:30:00

Job Ticket #: 45723 DST #: 2

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

Printed: 2012.05.10 @ 10:17:44

TDI Inc. 9-15s-19w Ellis,KS Willie # 1 DST # 2 LKC " H I & J " 2012.05.09



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

9-15s-19w Ellis, KS
Willie # 1
Job Ticket: 45723 **DST#: 2**
Test Start: 2012.05.09 @ 12:15:00

GENERAL INFORMATION:

Formation: **LKC "HI & J"**
Deviated: No Whipstock: 2043.00 ft (KB) Test Type: Conventional Bottom Hole (Reset)
Time Tool Opened: 13:48:25 Tester: Jim Svaty
Time Test Ended: 17:30:00 Unit No: 41
Interval: 3448.00 ft (KB) To 3535.00 ft (KB) (TVD) Reference Elevations: 2043.00 ft (KB)
Total Depth: 3535.00 ft (KB) (TVD) 2033.00 ft (CF)
Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

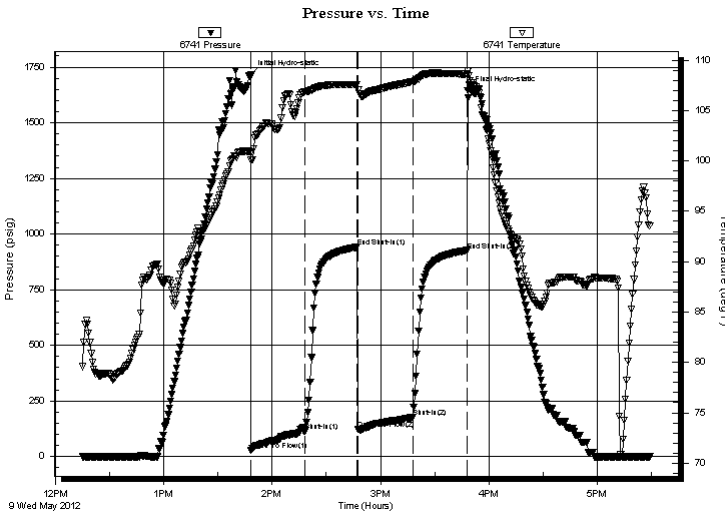
Serial #: 6741

Inside

Press @ Run Depth: 178.34 psig @ 3449.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2012.05.09 End Date: 2012.05.09 Last Calib.: 2012.05.09
Start Time: 12:15:05 End Time: 17:29:29 Time On Btm: 2012.05.09 @ 13:48:20
Time Off Btm: 2012.05.09 @ 15:48:20

TEST COMMENT: 30-IFP- BOB in 5 min
30-ISIP- 1 1/2" Blow in 5 min Died in 12 min
30-FFP- BOB in 2 min
30-FSIP- 8" Blow in 14 min Died in 24 min

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1715.14	100.87	Initial Hydro-static
1	27.26	100.07	Open To Flow (1)
30	113.68	106.84	Shut-In(1)
59	941.50	107.54	End Shut-In(1)
60	122.70	107.03	Open To Flow (2)
90	178.34	107.86	Shut-In(2)
120	926.38	108.63	End Shut-In(2)
120	1646.01	108.98	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	MUD	0.15
62.00	GOM 50%g 25%o 25%m	0.86
62.00	OM 20%o 80%m	0.87
248.00	GMWCO 25%g 5%m 10%w 60%o	3.48
0.00	1332 GIP	0.00

* Recovery from multiple tests

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

9-15s-19w Ellis,KS
Willie # 1
Job Ticket: 45723 **DST#: 2**
Test Start: 2012.05.09 @ 12:15:00

Tool Information

Drill Pipe:	Length: 3422.00 ft	Diameter: 3.80 inches	Volume: 48.00 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 31.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 48.15 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3448.00 ft			Final 43000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	87.00 ft			
Tool Length:	107.00 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			3433.00	
Hydraulic tool	5.00			3438.00	
Packer	5.00			3443.00	20.00 Bottom Of Top Packer
Packer	5.00			3448.00	
Stubb	1.00			3449.00	
Recorder	0.00	6741	Inside	3449.00	
Recorder	0.00	8734	Outside	3449.00	
Perforations	18.00			3467.00	
Change Over Sub	1.00			3468.00	
Blank Spacing	63.00			3531.00	
Change Over Sub	1.00			3532.00	
Bullnose	3.00			3535.00	87.00 Bottom Packers & Anchor

Total Tool Length: 107.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

TDI Inc. **9-15s-19w Ellis,KS**
 1310 Bison Rd **Willie # 1**
 Hays KS 67601 Job Ticket: 45723 **DST#: 2**
 ATTN: Herb Deines Test Start: 2012.05.09 @ 12:15:00

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: 6.38 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2100.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	MUD	0.148
62.00	GOM 50%g 25%o 25%m	0.861
62.00	OM 20%o 80%m	0.870
248.00	GMWCO 25%g 5%m 10%w 60%o	3.479
0.00	1332 GIP	0.000

Total Length: 402.00 ft Total Volume: 5.358 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Serial #: 6741

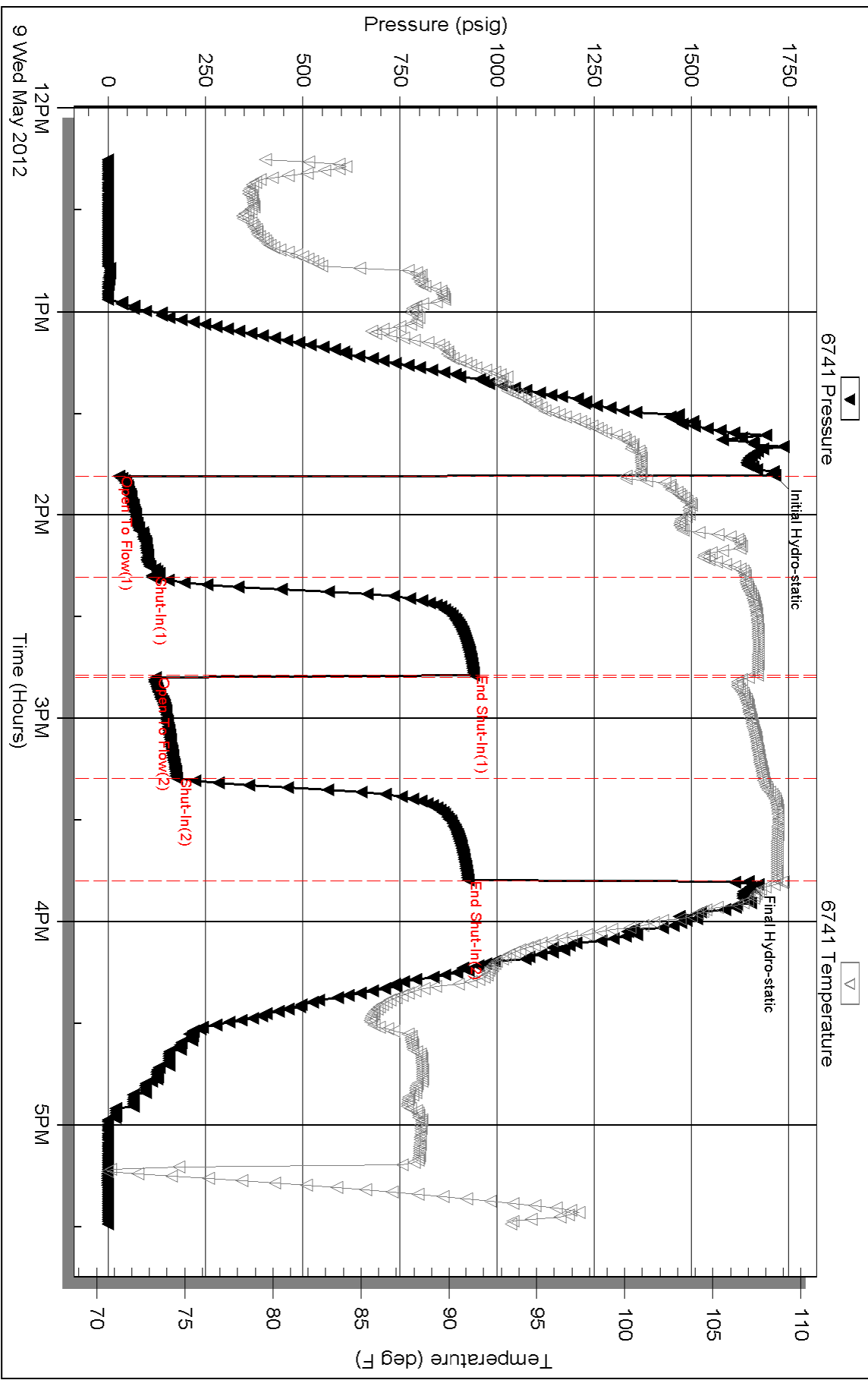
Inside

TDI Inc.

Well # 1

DST Test Number: 2

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 45723

Printed: 2012.05.10 @ 10:17:47

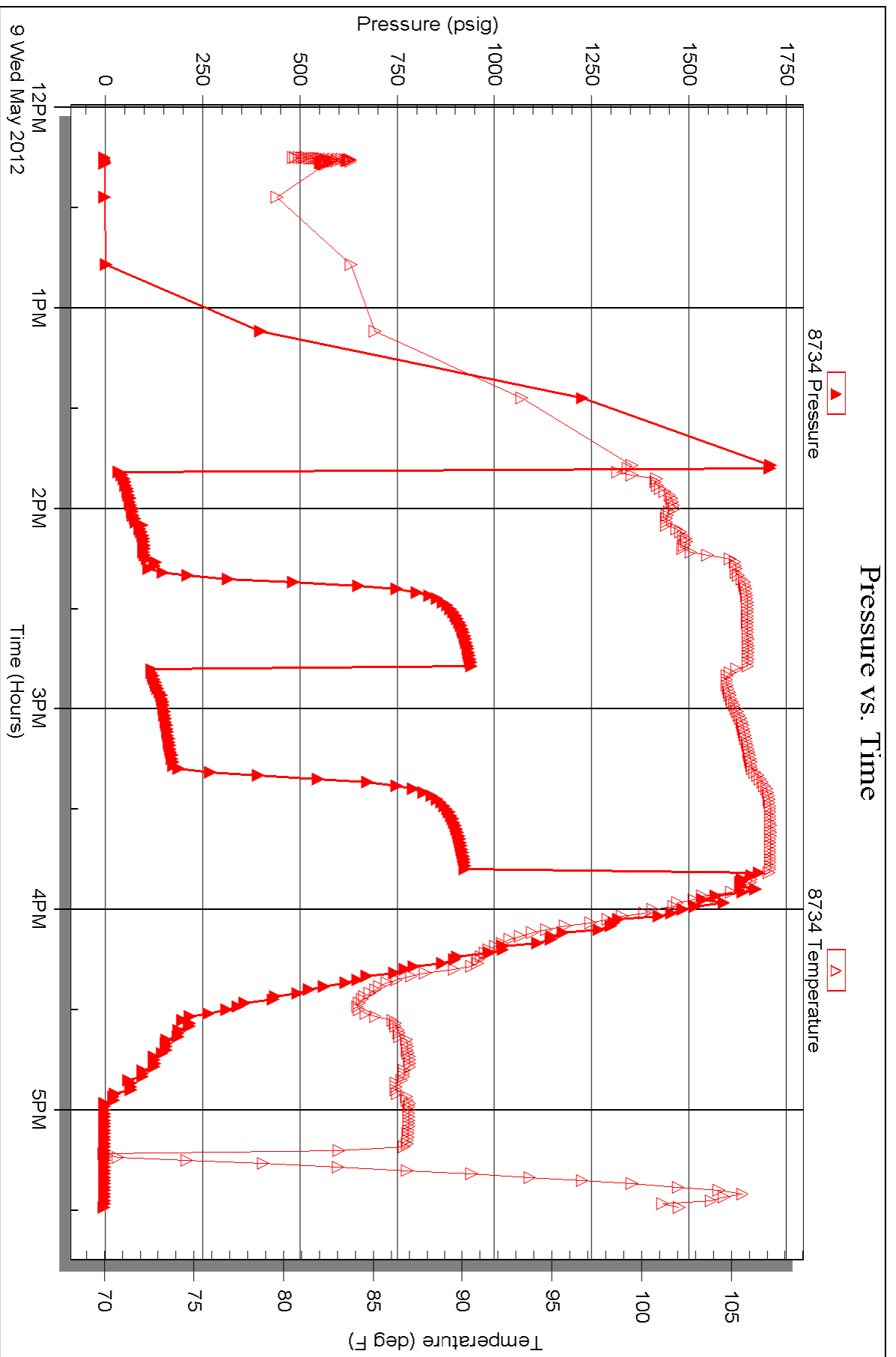
Serial #: 8734

Outside

TDI Inc.

Wille # 1

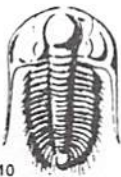
DST Test Number: 2



Triobite Testing, Inc

Ref. No: 45723

Printed: 2012.05.10 @ 10:17:47



TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 45722

Well Name & No. Willie #1 Test No. 1 Date 5-8-12
 Company TPI Inc Elevation 2043 KB 2033 GL
 Address 1310 Bison Rd. Hays Ks. 67601
 Co. Rep / Geo. Herb Reines Rig Southward #1
 Location: Sec. 9 Twp. 15^s Rge. 19^w Co. Ellis State Ks.

Interval Tested 3349-3370 Zone Tested LKC v. 2 C "
 Anchor Length 21 Drill Pipe Run 3326 Mud Wt. 9.0
 Top Packer Depth 3344 Drill Collars Run 31 Vis 55
 Bottom Packer Depth 3349 Wt. Pipe Run Ø WL 6.8
 Total Depth 3370 Chlorides 1900 ppm System LCM 1
 Blow Description IFP- BOB in 4min
ISIP- Surface Blow Building to 3in.
FFP- BOB 1.25min
FSIP-

Rec	Feet of	%gas	%oil	%water	%mud
35	210	55	45		
62	2 MCO	25	70	5	
62	2 MWCO	30	50	18	2
62	MOCW		10	85	5
1575	SIP				

Rec Total 221 BHT 109 Gravity 39 API RW 203 @ 71 °F Chlorides 30000 ppm
 (A) Initial Hydrostatic 1625 Test 1150 T-On Location 14:00
 (B) First Initial Flow 23 Jars T-Started 15:00
 (C) First Final Flow 50 Safety Joint T-Open 16:32
 (D) Initial Shut-In 905 Circ Sub T-Pulled 19:02
 (E) Second Initial Flow 56 Hourly Standby T-Out 20:40
 (F) Second Final Flow 95 Mileage 32 RT 49.60 Comments _____
 (G) Final Shut-In 903 Sampler _____
 (H) Final Hydrostatic 1535 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 1199.60
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 45 Sub Total 1199.60

Approved By _____ Our Representative [Signature] 639 5864
 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

Test Ticket

NO. 45723

Well Name & No. Nollie #1 Test No. 2 Date 5-9-12
 Company TDI Inc. Elevation 2042 KB 2033 GL
 Address 1310 Bison Rd Hays Ks. 67601
 Co. Rep / Geo. Herb Deines Rig Southwind #1
 Location: Sec. 9 Twp. 15^s Rge. 19^w Co. Ellis State KS

Interval Tested 3448-2535 Zone Tested LKC "HI & J"
 Anchor Length 87 Drill Pipe Run 3422 Mud Wt. 9.1
 Top Packer Depth 3443 Drill Collars Run 31 Vis 49
 Bottom Packer Depth 3448 Wt. Pipe Run 0 WL 6.4
 Total Depth 3535 Chlorides 2100 ppm System LCM 1

Blow Description IFP - BOB in 5min
FSIP - 1/2 in Blow in 5min Died in 12min
FFP - BOB in 2min
FSIP - 8" Blow in 14min Died in 24min

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>MUD</u>			<u>100</u>	
<u>62</u>	<u>GOM</u>	<u>50</u>	<u>25</u>	<u>25</u>	
<u>62</u>	<u>OM</u>		<u>20</u>	<u>80</u>	
<u>248</u>	<u>GMWCO</u>	<u>25</u>	<u>60</u>	<u>10</u>	<u>5</u>
<u>1332</u>	<u>GIP</u>				
Rec Total	<u>402</u>	BHT <u>108</u>	Gravity	API RW	@ °F Chlorides ppm

(A) Initial Hydrostatic 1715 Test 1150 T-On Location 10:53
 (B) First Initial Flow 27 Jars T-Started 12:15
 (C) First Final Flow 113 Safety Joint T-Open 13:48
 (D) Initial Shut-In 941 Circ Sub T-Pulled 15:48
 (E) Second Initial Flow 122 Hourly Standby T-Out 17:30
 (F) Second Final Flow 128 Mileage 49.60 Comments _____
 (G) Final Shut-In 926 Sampler _____
 (H) Final Hydrostatic 1646 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 1199.60
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 30 Sub Total 1199.60

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.