



DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Rd.
Hays, KS 67601

ATTN: Herb Deines

Orville #1

7-15s-19w Ellis,KS

Start Date: 2012.08.27 @ 21:31:15

End Date: 2012.08.28 @ 02:45:45

Job Ticket #: 49490 DST #: 1

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

Printed: 2012.09.07 @ 16:35:01

TDI, Inc. 7-15s-19w Ellis,KS Orville #1 DST # 1 Topeka-Oread 2012.08.27



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

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

7-15s-19w Ellis, KS
Orville #1
 Job Ticket: 49490 **DST#: 1**
 Test Start: 2012.08.27 @ 21:31:15

GENERAL INFORMATION:

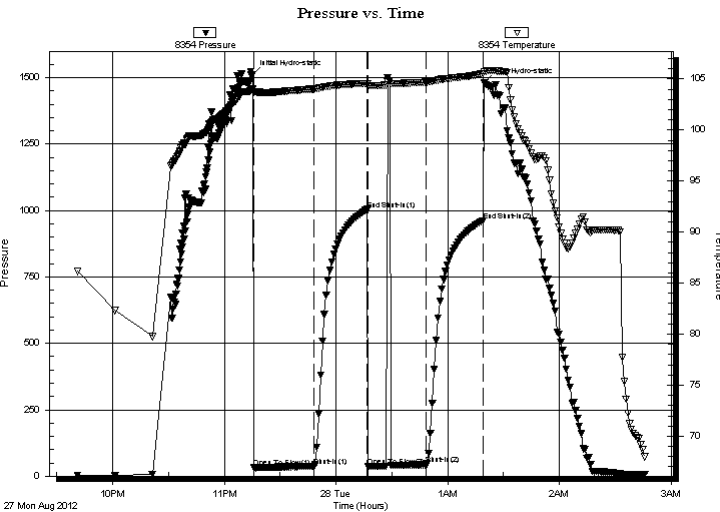
Formation: **Topeka-Oread**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:15:45
 Time Test Ended: 02:45:45
 Interval: **3188.00 ft (KB) To 3238.00 ft (KB) (TVD)**
 Total Depth: 3238.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Dustin Rash
 Unit No: 38
 Reference Elevations: 2034.00 ft (KB)
 2027.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8354

Inside

Press @ Run Depth: 42.75 psig @ 3227.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2012.08.27 End Date: 2012.08.28 Last Calib.: 2012.08.28
 Start Time: 21:41:15 End Time: 02:45:45 Time On Btm: 2012.08.27 @ 23:15:25
 Time Off Btm: 2012.08.28 @ 01:19:45

TEST COMMENT: IF-Weak 1/2 inch blow throughout.
 IS-No Return.
 FF-No Blow . Flushed Tool. Weak surface blow . Died @ 11 minutes.
 FS-No Return.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1512.71	104.03	Initial Hydro-static
1	32.67	103.73	Open To Flow (1)
33	36.68	104.02	Shut-In(1)
62	1004.15	104.58	End Shut-In(1)
62	36.75	104.21	Open To Flow (2)
93	42.75	104.69	Shut-In(2)
124	961.34	105.51	End Shut-In(2)
125	1480.05	105.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
40.00	100%Mud	0.56

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

7-15s-19w Ellis, KS
Orville #1
Job Ticket: 49490 **DST#: 1**
Test Start: 2012.08.27 @ 21:31:15

Tool Information

Drill Pipe:	Length: 3178.00 ft	Diameter: 3.80 inches	Volume: 44.58 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 22000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 15000.00 lb
			<u>Total Volume: 44.58 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer:	3188.00 ft			Final 30000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	50.00 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			3169.00	
Shut In Tool	5.00			3174.00	
Hydraulic tool	5.00			3179.00	
Packer	5.00			3184.00	20.00 Bottom Of Top Packer
Packer	4.00			3188.00	
Stubb	1.00			3189.00	
Perforations	5.00			3194.00	
Change Over Sub	1.00			3195.00	
Drill Pipe	31.00			3226.00	
Change Over Sub	1.00			3227.00	
Recorder	0.00	8354	Inside	3227.00	
Recorder	0.00	8520	Outside	3227.00	
Perforations	8.00			3235.00	
Bullnose	3.00			3238.00	50.00 Bottom Packers & Anchor

Total Tool Length: 70.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

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

7-15s-19w Ellis,KS
Orville #1
Job Ticket: 49490 **DST#: 1**
Test Start: 2012.08.27 @ 21:31:15

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: 59.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.78 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3000.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
40.00	100%Mud	0.561

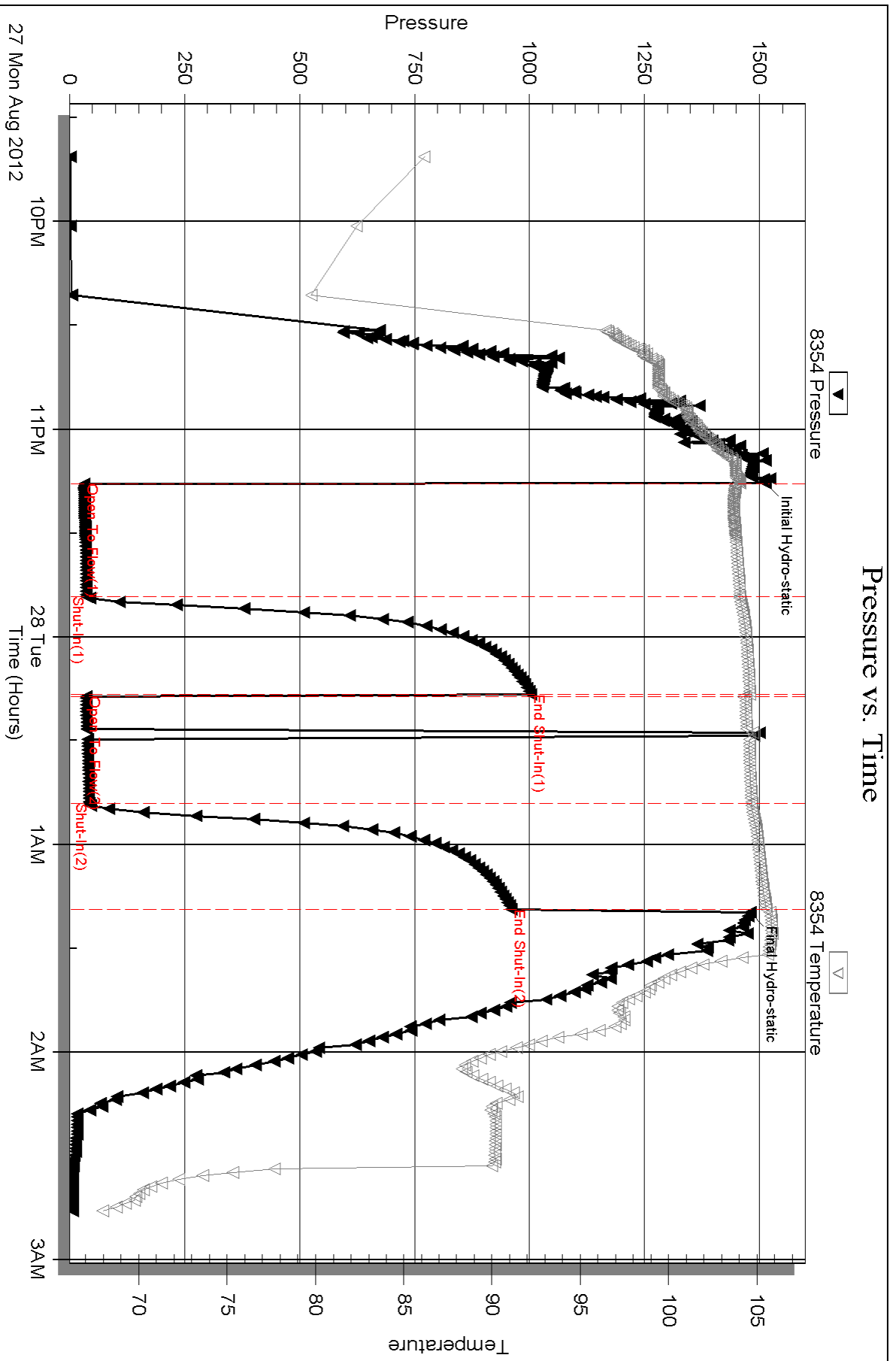
Total Length: 40.00 ft Total Volume: 0.561 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:

Pressure vs. Time

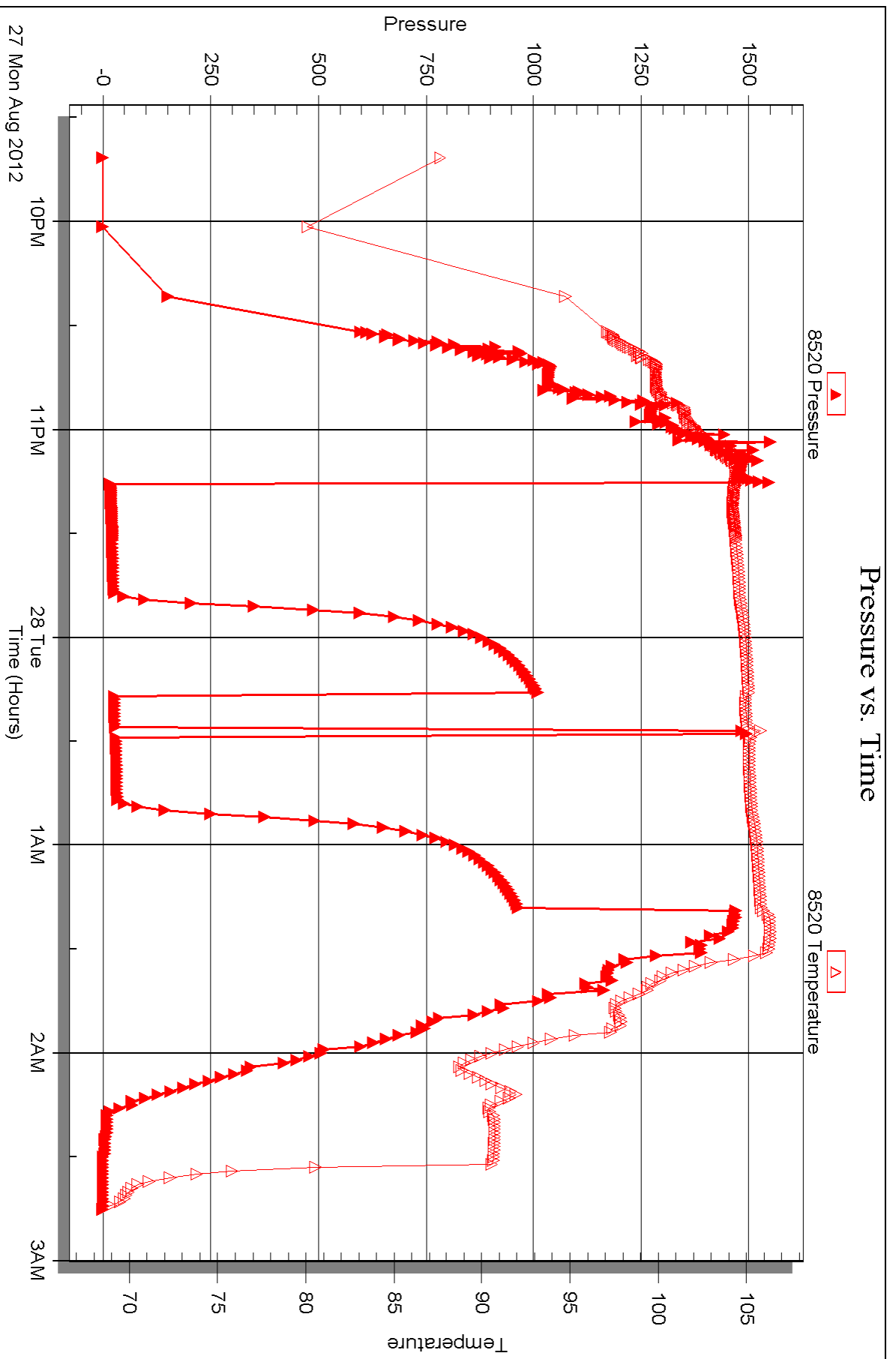


Serial #: 8520

Outside TDI, Inc.

Orville #1

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 49490

Printed: 2012.09.07 @ 16:35:06



DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Rd.
Hays, KS 67601

ATTN: Herb Deines

Orville #1

7-15s-19w Ellis,KS

Start Date: 2012.08.28 @ 12:48:30

End Date: 2012.08.28 @ 18:13:30

Job Ticket #: 49491 DST #: 2

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

Printed: 2012.09.07 @ 16:34:04

TDI, Inc. 7-15s-19w Ellis,KS Orville #1 DST # 2 LKC "A-C" 2012.08.28



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

7-15s-19w Ellis, KS
Orville #1
Job Ticket: 49491 **DST#: 2**
Test Start: 2012.08.28 @ 12:48:30

Tool Information

Drill Pipe:	Length: 3332.00 ft	Diameter: 3.80 inches	Volume: 46.74 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	5000.00 lb
			<u>Total Volume: 46.74 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	30000.00 lb
Depth to Top Packer:	3319.00 ft			Final	30000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	51.00 ft				
Tool Length:	71.00 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			3300.00	
Shut In Tool	5.00			3305.00	
Hydraulic tool	5.00			3310.00	
Packer	5.00			3315.00	20.00 Bottom Of Top Packer
Packer	4.00			3319.00	
Stubb	1.00			3320.00	
Perforations	5.00			3325.00	
Change Over Sub	1.00			3326.00	
Drill Pipe	31.00			3357.00	
Change Over Sub	1.00			3358.00	
Recorder	0.00	8354	Inside	3358.00	
Recorder	0.00	8520	Outside	3358.00	
Perforations	9.00			3367.00	
Bullnose	3.00			3370.00	51.00 Bottom Packers & Anchor

Total Tool Length: 71.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

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

7-15s-19w Ellis,KS
Orville #1
Job Ticket: 49491 **DST#: 2**
Test Start: 2012.08.28 @ 12:48:30

Mud and Cushion Information

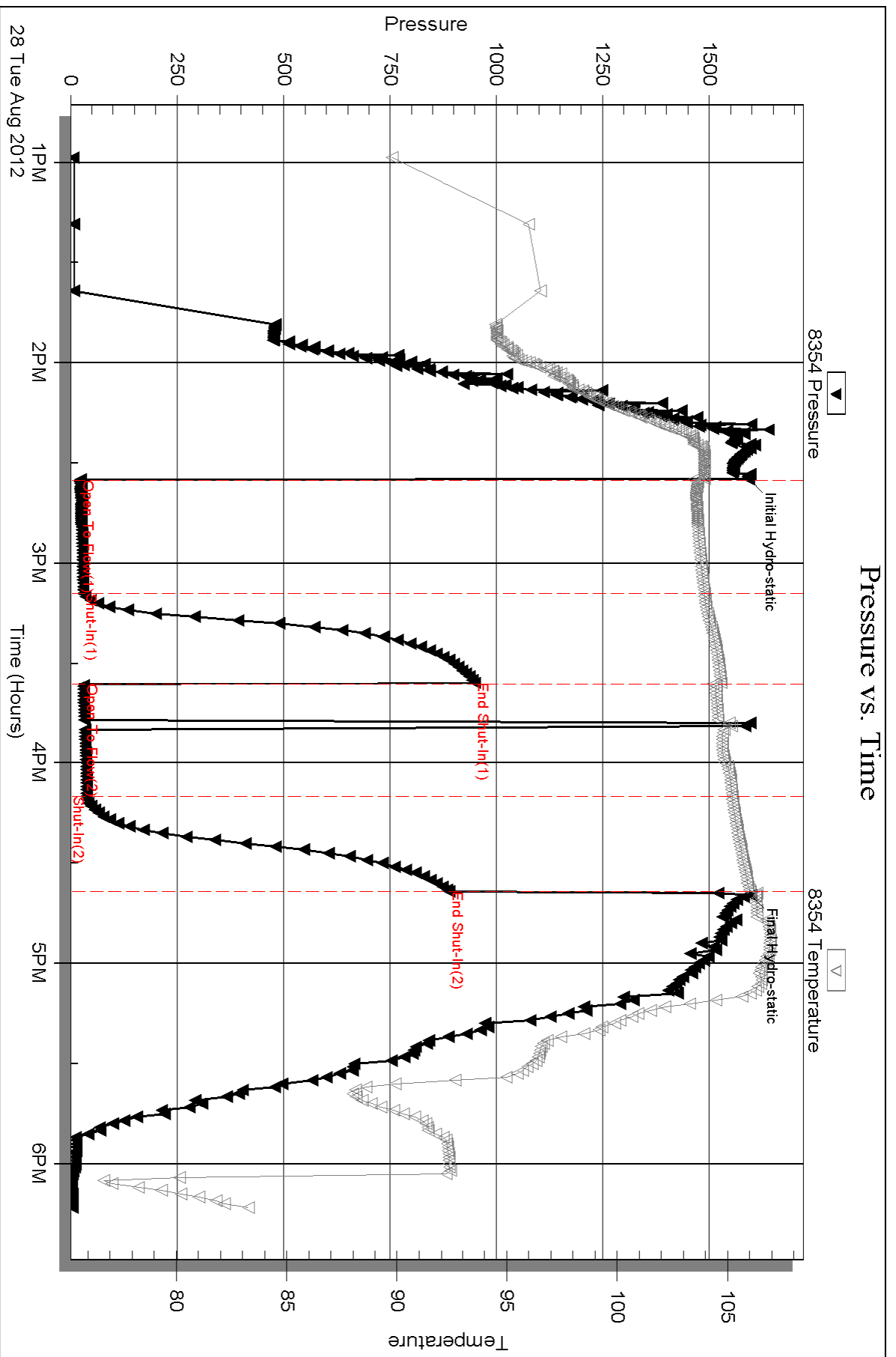
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.18 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3600.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
35.00	100%Mud	0.491

Total Length: 35.00 ft Total Volume: 0.491 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

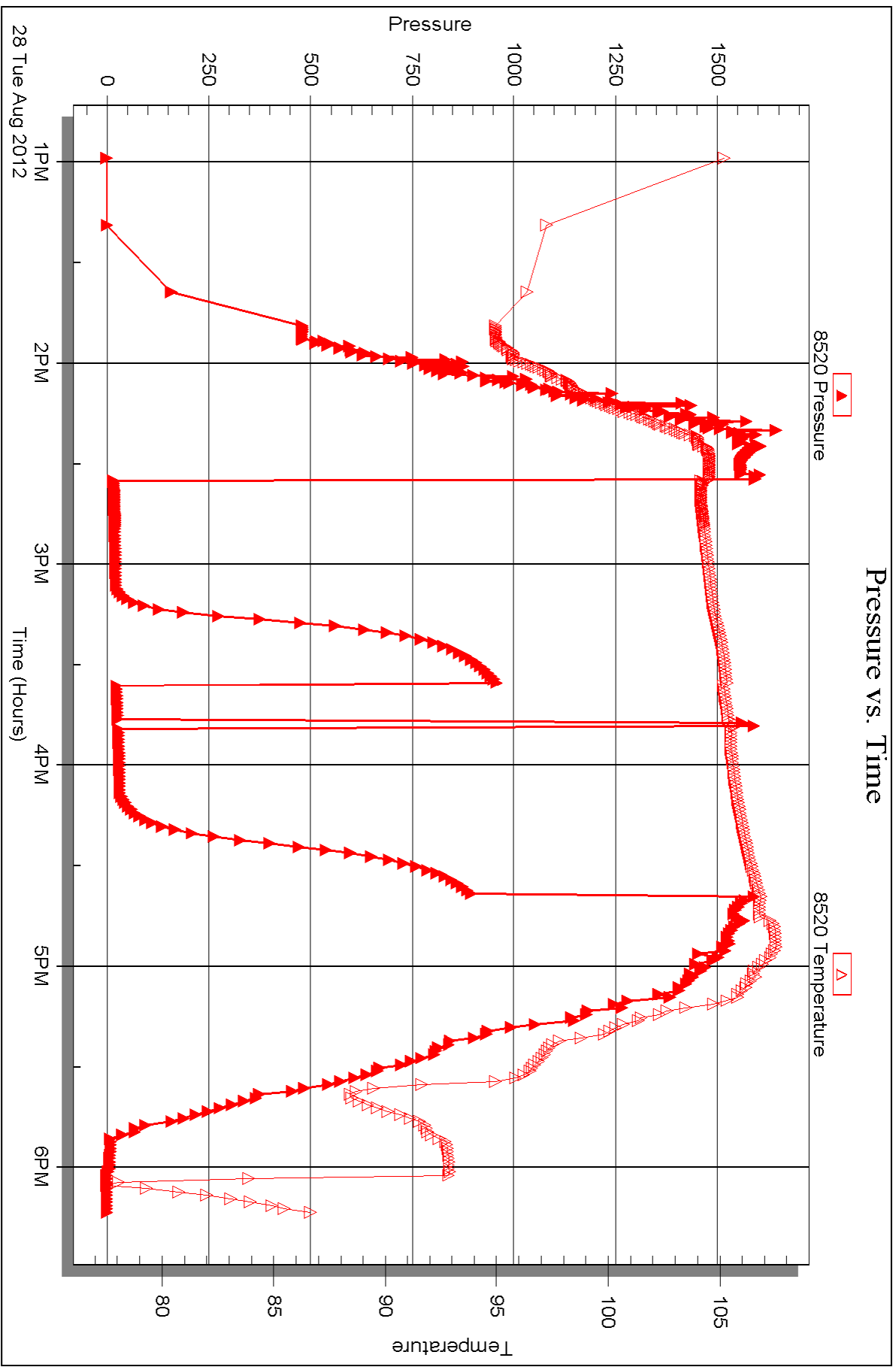


Serial #: 8520

Outside TDI, Inc.

Orville #1

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 49491

Printed: 2012.09.07 @ 16:34:09



DRILL STEM TEST REPORT

Prepared For: **TDI, Inc.**

1310 Bison Rd.
Hays, KS 67601

ATTN: Herb Deines

Orville #1

7-15s-19w Ellis,KS

Start Date: 2012.08.30 @ 01:45:15

End Date: 2012.08.30 @ 07:23:15

Job Ticket #: 49492 DST #: 3

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

Printed: 2012.09.07 @ 16:33:21

TDI, Inc.
7-15s-19w Ellis,KS
Orville #1
DST # 3
LKC "D"
2012.08.30



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

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

7-15s-19w Ellis, KS
Orville #1
Job Ticket: 49492 **DST#: 3**
Test Start: 2012.08.30 @ 01:45:15

Tool Information

Drill Pipe:	Length: 3362.00 ft	Diameter: 3.80 inches	Volume: 47.16 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	28000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	5000.00 lb
			<u>Total Volume: 47.16 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial	40000.00 lb
Depth to Top Packer:	3362.00 ft			Final	40000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	350.00 ft				
Tool Length:	370.00 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			3343.00	
Shut In Tool	5.00			3348.00	
Hydraulic tool	5.00			3353.00	
Packer	5.00			3358.00	20.00 Bottom Of Top Packer
Packer	4.00			3362.00	
Stubb	1.00			3363.00	
Recorder	0.00	8354	Inside	3363.00	
Recorder	0.00	8520	Outside	3363.00	
Perforations	19.00			3382.00	
Blank Off Sub	1.00			3383.00	350.00 Tool Interval
Packer	4.00			3387.00	
Stubb	1.00			3388.00	
Perforations	4.00			3392.00	
Change Over Sub	1.00			3393.00	
Recorder	0.00	8653	Below	3393.00	
Drill Pipe	315.00			3708.00	
Change Over Sub	1.00			3709.00	
Bullnose	3.00			3712.00	1000369.00 Bottom Packers & Anchor

Total Tool Length: 370.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

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

7-15s-19w Ellis, KS
Orville #1
Job Ticket: 49492 **DST#: 3**
Test Start: 2012.08.30 @ 01:45:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 41 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 53.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.59 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
57.00	40%Oil/60%Mud	0.800
40.00	40%Gas/60%Oil	0.561
0.00	1389' G.I.P.	0.000

Total Length: 97.00 ft Total Volume: 1.361 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

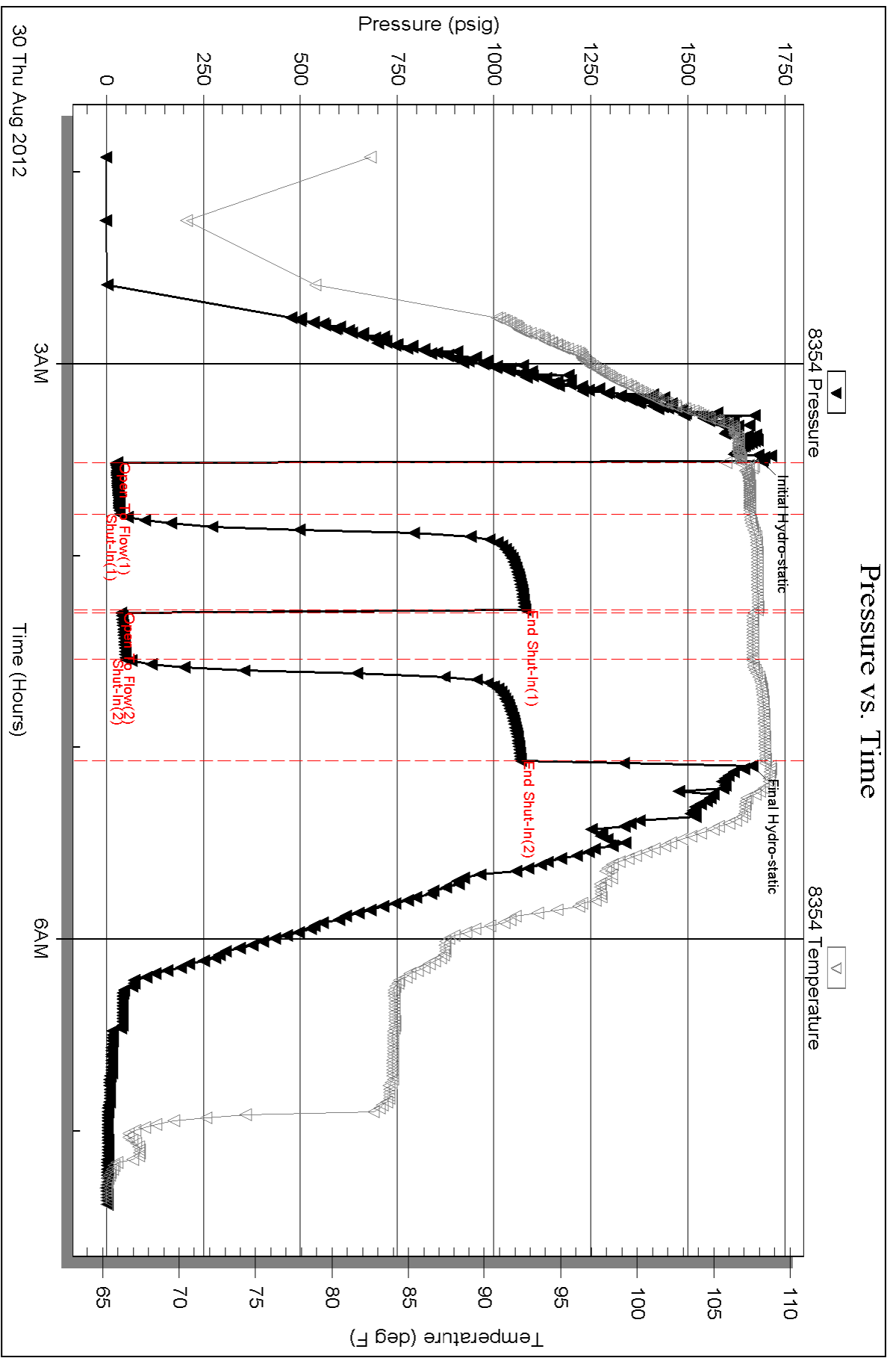
Serial #: 8354

Inside

TDI, Inc.

Orville #1

DST Test Number: 3

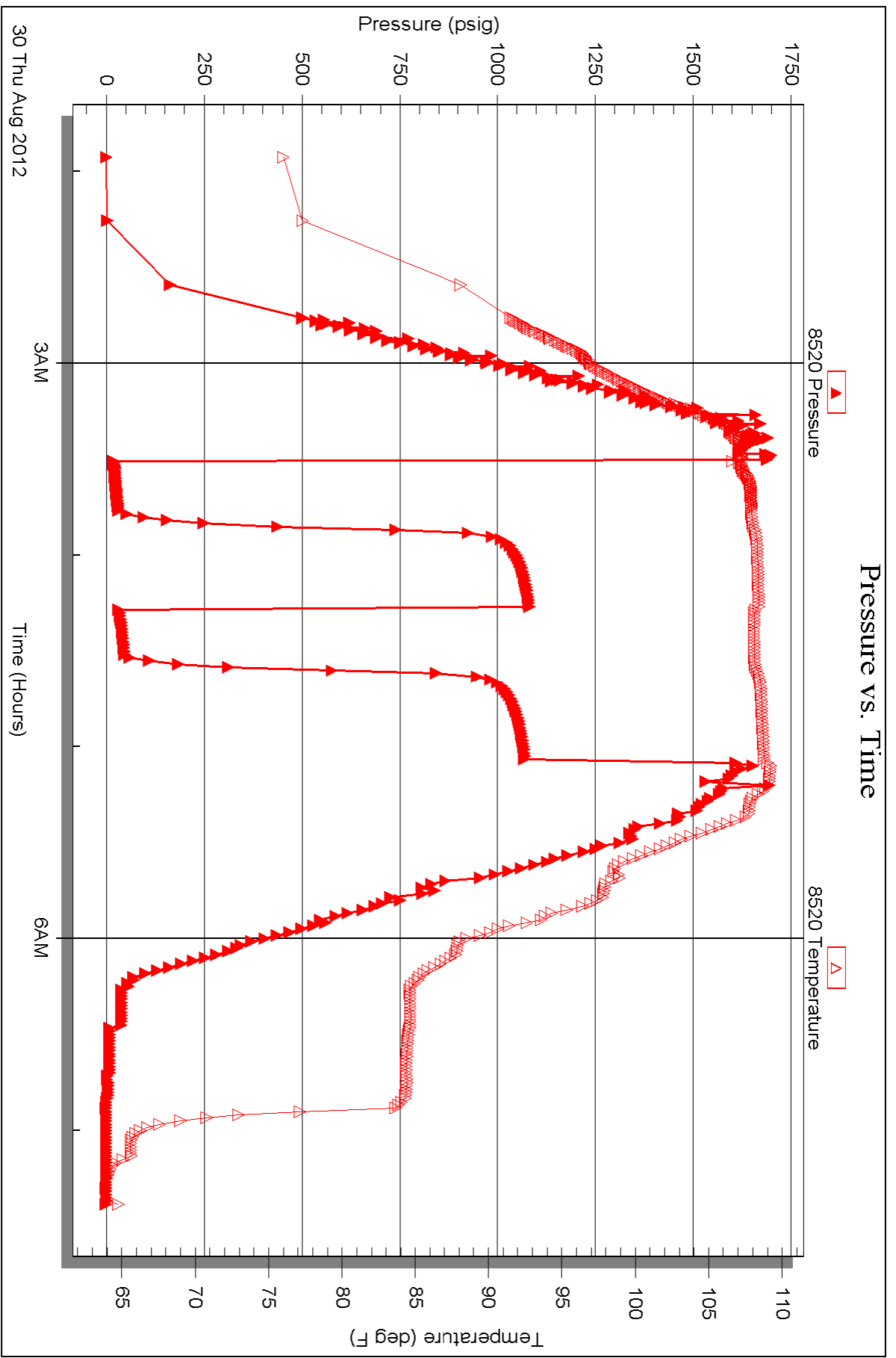


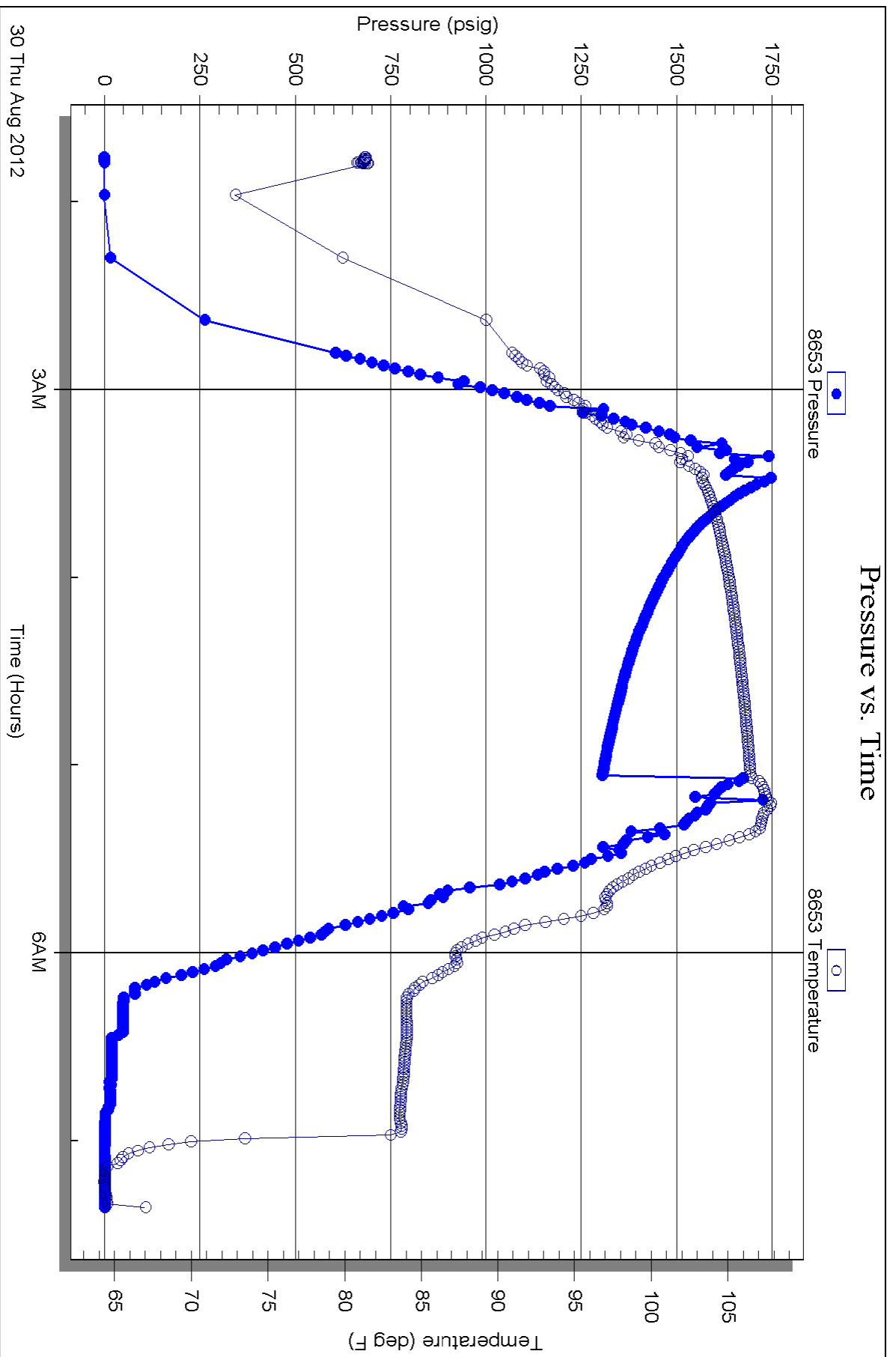
Serial #: 8520

Outside TDI, Inc.

Orville #1

DST Test Number: 3







TRILOBITE TESTING INC.

P.O. Box 1733 • Hays, Kansas 67601

Test Ticket

NO. 49490

Well Name & No. Orville #1 Test No. 1 Date 8-27-11
 Company VIV, Inc. Elevation 2034 KB 2027 GL
 Address 1310 Bison Rd. Hays, KS 67601
 Co. Rep / Geo. Herb Darnes Rig Southward 1
 Location: Sec. 7 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3188-3238 Zone Tested Topeka - Oread
 Anchor Length 50' Drill Pipe Run _____ Mud Wt. 8.7
 Top Packer Depth 3183 Drill Collars Run 0 Vis 59
 Bottom Packer Depth 3188 Wt. Pipe Run 0 WL 6.8
 Total Depth 3238 Chlorides 3000 ppm System LCM 2#

Blow Description IF - Weak 1/2 inch blow throughout
ISI - No Return
FF - No Blow. Flushed tool. Weak surface blow. Died @ 11 min.
FST - No Return

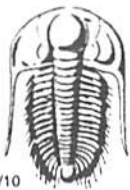
Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 40 BHT 106 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1513</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>0815</u>
(B) First Initial Flow <u>33</u>	<input type="checkbox"/> Jars _____	T-Started <u>2200</u>
(C) First Final Flow <u>37</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>2316</u>
(D) Initial Shut-In <u>1004</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>0120</u>
(E) Second Initial Flow <u>37</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>0245</u>
(F) Second Final Flow <u>43</u>	<input checked="" type="checkbox"/> Mileage <u>17X2</u> 52.7	Comments <u>BHT-2131</u>
(G) Final Shut-In <u>961</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1480</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Total <u>1202.70</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1202.70</u>	

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

Test Ticket

NO. 49491

Well Name & No. Orville #1 Test No. 2 Date 8-28-12
 Company TST, Inc. Elevation 2034 KB 2027 GL
 Address 1310 Bison Rd. Hays, KS 67601
 Co. Rep / Geo. Herb Demes Rig Southwind 2
 Location: Sec. 7 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3319-3370 Zone Tested LHC "A-C"
 Anchor Length 51' Drill Pipe Run 3332 Mud Wt. 9.0
 Top Packer Depth 3314 Drill Collars Run 0 Vis 48
 Bottom Packer Depth 3319 Wt. Pipe Run 0 WL 7.2
 Total Depth 3370 Chlorides 3600 ppm System LCM 2#

Blow Description IF - Weak surface blow, Surging @ 11 minutes.
IST - No Return,
FF - No Blow, Flushed Tool. Surface blow, Died @ 9 minutes.
FST - No Return,

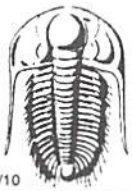
Rec	Feet of	%gas	%oil	%water	%mud
<u>35</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 35 BHT 106 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1594 Test 1150 T-On Location 1215
 (B) First Initial Flow 22 Jars _____ T-Started ~~1215~~ 1300
 (C) First Final Flow 30 Safety Joint _____ T-Open 1435
 (D) Initial Shut-In 950 Circ Sub _____ T-Pulled 1640
 (E) Second Initial Flow 31 Hourly Standby _____ T-Out 1815
 (F) Second Final Flow 38 Mileage 17X2 52.70 Comments BHT-1248
 (G) Final Shut-In 890 Sampler _____
 (H) Final Hydrostatic 1597 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 1202.70
 Final Flow 30 Accessibility _____ MP/DST Disc _____
 Final Shut-In 30 Sub Total 1202.70

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

Test Ticket

NO. 49492

Well Name & No. Owville #1 Test No. 3 Date 8-30-12
 Company TDI Inc, Elevation 2034 KB 2027 GL
 Address 1310 Bison Rd. Hays, KS 67601
 Co. Rep / Geo. Herb Dernes Rig Southwind 1
 Location: Sec. 7 Twp. 15S Rge. 19W Co. Ellis State KS

Interval Tested 3362-3382 Zone Tested LKC "D"
 Anchor Length 20' 325' TP Drill Pipe Run _____ Mud Wt. 9.1
 Top Packer Depth 3357 Drill Collars Run 0 Vis 53
 Bottom Packer Depth 3362 Wt. Pipe Run 0 WL 7.6
 Total Depth 3707 Chlorides 3600 ppm System LCM 2#

Blow Description TF - Strong building blow, BOB in 4 minutes,
ISI - No Return.
FF - Strong blow, BOB in 15 seconds,
FBI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>40</u>	<u>Gassy Oil</u>	<u>40</u>	<u>60</u>		
<u>57</u>	<u>HOCM</u>		<u>40</u>		<u>60</u>
____	____	____	____	____	____
____	____	____	____	____	____
____	<u>1389' G.I.P.</u>	____	____	____	____
Rec Total <u>97</u>	BHT <u>109</u>	Gravity <u>41</u>	API RW _____	@ _____ °F	Chlorides _____ ppm

(A) Initial Hydrostatic 1691 Test 1150 T-On Location 0100
 (B) First Initial Flow 27 Jars _____ T-Started 0145
 (C) First Final Flow 34 Safety Joint _____ T-Open 0331
 (D) Initial Shut-In 1080 Circ Sub _____ T-Pulled 0505
 (E) Second Initial Flow 38 Hourly Standby _____ T-Out 0715
 (F) Second Final Flow 50 Mileage 17X2 52.70 Comments BATT-0145
 (G) Final Shut-In 1070 Sampler _____
 (H) Final Hydrostatic 1667 Straddle 600 Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 15 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 1802.70
 Final Flow 15 Accessibility _____ MP/DST Disc _____
 Final Shut-In 30 Sub Total 1802.70

Approved By _____ Our Representative

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.